# Field Artillery

A Professional Bulletin for Redlegs

December 1993

# The Red Book

## An Annual Report



HQDA PB6-93-6

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*A Professional Bulletin for Redlegs*

December 1993 HQDA PB6-93-6





Many thanks *to CPT Christopher W. Board for his help with this Red Book*.


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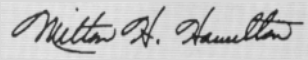
Official: 

MILTON H. HAMILTON
*Administrative Assistant to the Secretary of the Army*
03165

**John A. Dubia**
Major General, United States Army Field Artillery School Commandant

**Managing Editor:**
Patrecia Slayden Hollis

**Art Director:**
Donna J. Covert

**Assistant Editor:**
Joanne Alexander Brown

State of the Branch 1993

# A Vision for Fire Support in the 21st Century

by Major General John A. Dubia, Chief of Field Artillery

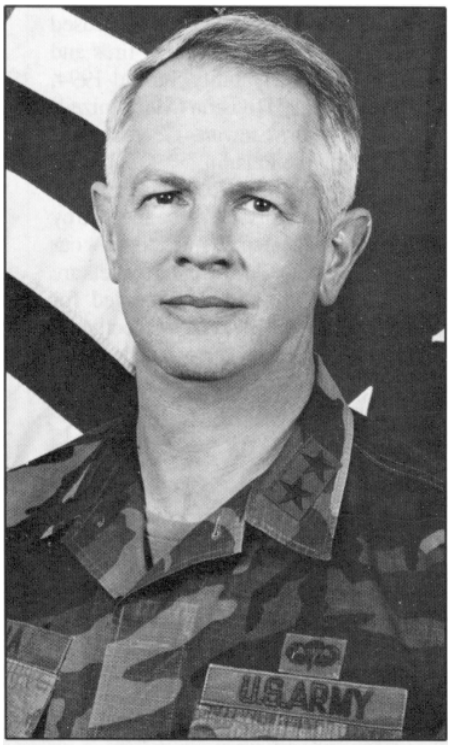
*As the nation, America's Army and the Field Artillery move through the 1990s, we face a world in the midst of fundamental change—a world in which many assumptions of the past have only marginal relevance to the future. In such a world, Field Artillery must have a vision that's sharply focused—a 20/20 vision that gives us the capacity to see through the fog of the future and position us for the new world challenges.*

Our vision rests on the solid foundation of National Military Strategy and evolving Army doctrine, the core of which is articulated in our new *FM 100-5 Operations.* FM 100-5 is the concise framework for thinking about military operations in the year 2000 and beyond.

The vision reflects change with continuity, allowing for growth in capabilities for relevance in the 21st century. The Army's goal is to remain the dominant, sustained land combat force in the world, the joint team's core force in bringing decisive victory rapidly to any battlefield. In the face of dramatic changes in the operational art of war and the explosion of technology, timely, accurate and devastating fires throughout the battlefield remain the basis for that decisive victory. Now and in the future, fires must be the continuity that binds together the entire fabric of the Army's tactics and doctrine.

We must apply the primacy of fires in an evolving National Military Strategy that emphasizes the projection of power throughout the world. With our force structure decreasing and national commitments increasing, we must be combat ready at all times and capable of quickly projecting tailored packages from the US or our forces stationed abroad.

Our vision is of a more deployable, lethal and versatile Field Artillery to meet the challenges of power projection in the 21st century. We must hone Field Artillery to a razor's edge; further, as fire supporters, Field Artillerymen must be fully capable of integrating the commander's joint assets for simultaneous, continuous fires throughout the battlefield, ensuring rapid, decisive victory.




## FM 100-5 and Fighting with Fires

Every artillery leader—officer or sergeant—must grasp the changes in FM 100-5 and meet the challenges with imagination, initiative and flexibility. Dynamics such as depth and simultaneity, battle command and battle space and the added tenet of versatility must become an integral part of our thinking, giving our leaders the capacity to incorporate them into operations during the fog and friction of war.

**Depth and Simultaneity.** The concept is to overwhelm an enemy with the continuous, all-weather, simultaneous application of complementary joint fires across the battlefield. Although fires would be simultaneous in the close and deep fights, the point at which precision fires give us the greatest advantage is at depth.

Since the 1980s, the Field Artillery has pioneered the concept of attacking an enemy at depth. Today's Depth and Simultaneous Attack Battle Lab here at Fort Sill is working to enhance command, control, communications and intelligence ($C^3I$) and reduce deep attack response times. The lab is the Army's vanguard agency for reducing the time it takes to find and attack operational and tactical targets.

In one major project, the lab is designing and testing a deep operations coordination center (DOCC) for the corps commander that can be tailored for an airborne or heavy corps. A prototype DOCC will use personnel and equipment from existing tables of organization and equipment (TOEs) to plan and execute corps deep operations. The lab will experiment with a test-bed DOCC in actual field operations using resources for communications, targeting, intelligence and quick-channel interfaces for rapid and effective joint and combined deep operations. DOCC would support such deep attack operations as theater missile defense and joint precision strike.

The lab also is developing tactics, techniques and procedures (TTP) and force structure to reduce joint sensor-to-shooter times down to the individual weapons systems. This includes expediting the time line for firing the Army tactical missile system (ATACMS) and other Field Artillery and joint systems.

In another deep attack initiative, we're developing a missile system to deliver the BAT submunition. BAT will be a brilliant

submunition capable of destroying moving armored vehicles at operational depths. As the recently published Bottom-Up Review directed by Secretary of Defense Les Aspin reaffirmed, the ground force commander needs the added versatility that BAT provides to attack deep armored formations.

We're also increasing the range and accuracy of ATACMS. By incorporating global positioning system (GPS) receivers into ATACMS, the missiles will deliver submunitions precisely at all ranges.

Combat developers from the Field Artillery School and Depth and Simultaneous Attack Battle Lab personnel operate with commands in the field to enhance current capabilities. Operation Ulchi Focus Lens in Korea, a joint and combined theater-level exercise for our forward-presence forces stationed in South Korea and other major commands around the world, is just one example. In concert with the Commander-in-Chief (CINC) of Combined Forces Korea and his staff. Fort Sill personnel helped devise TTP for theater missile defense and deep attack operations.

Simultaneity means Field Artillery must be effective in the close and deep fights—throughout the battlefield. Greater deployability, tactical mobility, precision and lethality enhance those pervasive fires and will enable us to get to the fight faster and be more effective when we get there.

Training to standards in realistic scenarios, refining our TTP and gaining access to joint improvements in strategic mobility (faster sealift, the introduction of C-17 aircraft and global prepositioning of materiel) will make us more rapidly deployable into a theater during a crisis.

At the same time, we're developing a family of fire support systems capable of being transported by C-130 aircraft into and within the theater. The new M119A1 lightweight 105-mm howitzer fielding is almost complete. For greater lethality, the search for an advanced lightweight 155-mm howitzer is ongoing. Recently, the Army and Marine Corps signed a memorandum of agreement (MOA) on the co-development of the lightweight 155-mm howitzer.

We're also developing a lighter weight wheeled version of the multiple-launch rocket system (MLRS) to provide lethal firepower at greater ranges for early entry forces during contingency operations—the high-mobility artillery rocket system (HIMARS). not yet funded. In addition, we're currently fielding the high-mobility multipurpose wheeled vehicle (HMMWV) version of a Q-36 Firefinder radar configuration, which will be retrofitted with the modular azimuth positioning system (MAPS) in 1994 to eliminate external survey requirements.

After the initial deployment, some missions may call for heavier combat forces to defeat an enemy. For such contingencies, the lethality and effectiveness of Field Artillery must be decisive. The M109A6 Paladin provides a quantum leap in combat power in close operations. With the fielding of the howitzer in the 2d Battalion, 17th Field Artillery at Fort Sill, Paladin crossed over from a developmental to a fighting system. Receiving overwhelming praise in its debut at the National Training Center (NTC) at Fort Irwin, California, the Paladin's ability to fire and displace quickly significantly increased the responsiveness of cannon fires and the system's survivability. In mid-1994, the 24th Infantry Division (Mechanized) Artillery at Fort Stewart, Georgia, will start fielding the Paladin.

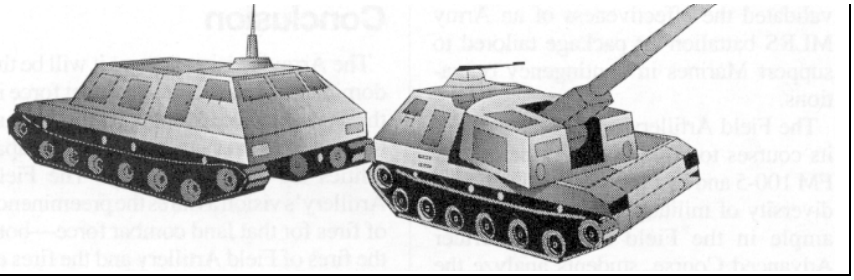
To complement our close fight capabilities in the 21st century, the sense and destroy armor (SADARM) smart munitions for our 155-mm howitzers and MLRS rockets are under development and scheduled for fielding in 1997 and 1998, respectively. SADARM will add diversity and lethality to our family of munitions. Development efforts are also underway to extend the range of MLRS rockets to at least 45 kilometers; the extended-range rocket is projected for fielding in 1998.

At the section level, the Field Artillery School has developed new occupation procedures and time standards to enhance our howitzers' responsiveness and survivability—and, therefore, lethality. The occupation tasks remain the same, but many are performed simultaneously and by different crewmembers than before. These new procedures and time standards have been validated at both the NTC and the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana.

As a priority in the Army's strategic modernization plan, we're developing the advanced Field Artillery system (AFAS) and its future armored resupply vehicle (FARV) with fielding scheduled for FY 06. As the Field Artillery weapon of the future, AFAS will be a highly mobile, rapid-fire system with automated fire control and a suite of decision aids for maximum responsiveness and killing power in the fast-paced battles of the future.

As the Army draws down, the Field Artillery is taking advantage of new technology to build a leaner, but more lethal and versatile force. Between FY 90 and FY 95, we expect to reduce Active Component units by 36 percent and Reserve Component units by 22 percent—figures that may seem excessive but, in fact, are comparable to Army-wide reductions. Our branch reduction percentages take into account the previously planned conversion of Lance and 8-inch units into MLRS

A Paladin at the NTC. One platoon of Paladins went to the NTC with 1-82 FA of the 1st Cavalry Division, Fort Hood, Texas.



An artist's conception of the AFAS and its FARV. Scheduled for fielding in FY 06, the AFAS will provide maximum responsiveness and killing power for the fast-paced battles of the future.

battalions (requiring fewer soldiers) and the elimination of Pershing and warhead custodial units. (The percentage for RC reductions could change, based on upcoming Congressional budgetary decisions.)

Concurrent with the reductions, the Field Artillery is leveraging technology in our systems to require fewer soldiers to accomplish the same or more tasks. For example, compared to an 8-inch general support battalion, an MLRS battalion gives us greater lethality yet calls for 150 fewer soldiers per battalion. Another example: the future AFAS and FARV will cut the crew from nine to six soldiers, giving us a quantum leap in capabilities. Yet another: the Q-36 HMMWV configuration reduced each crew from eight to six while still accomplishing the mission.

At the same time we're reducing spaces, we're increasing them in our fire support elements (FSEs) to make them more robust for continuous operations. Our goal is to standardize battalion FSEs with two officers and four enlisted soldiers and brigade FSEs with two officers and six enlisted soldiers.

With a smaller Field Artillery and 60 percent of our force in RC units, we must have a modernized, combat-ready Total Field Artillery capable of accomplishing diverse missions. In the latter part of 1993, our new equipment training teams (NETTs) have been aggressively converting RC battalions to MLRS over a multi-state area. The continued fielding of MLRS in active units also is central to enhancing our Total Field Artillery firepower and range.

**Battle Command and Battle Space.** FM 100-5 redefines the relationship between the art of commanding and the act of controlling a battle by using the new terms of battle command and battle space. Battle command describes the art of combat leadership and decision making. Battle space is the commander's vision of the depth of the battle in both time and the three dimensions. The vision of his battle space enhances the commander's execution of battle command. Battle space allows the commander to think beyond the "black lines on the operations overlay."

Though the new terms of battle command and battle space don't alter the role of fire support, they do place greater demands on the fire supporter. He must *know* the capabilities of all fire support systems available to the commander and advise him on their simultaneous, continuous application to meet the commander's intent and clearly defined purpose. In addition, the fire supporter must be increasingly responsive to the commander's need for quick, accurate battlefield information.

To execute the commander's vision of the battle, which changes with time and access to assets, he must have a fire support system that can win the information war. Gathering and processing data faster and more accurately than the enemy gives the commander the details he needs to adjust his vision of battle space and make superior combat decisions that wrest the initiative from the enemy.

To fight with fires, the commander must "see" the battlefield. He must be able to exploit everything from the forward observer to sophisticated operational and strategic assets available to him, synchronizing them for the most devastating effects. Battlefield information must be rapidly acquired, analyzed and transferred to facilitate timely decision making.

To win the information war, we are "digitizing" fire support—automating the Total Field Artillery. In 1993, we began fielding the initial fire support automated system (IFSAS) in our National Guard units. IFSAS, a tactical command and control system, gives many National Guard units an initial automated fire direction capability and replaces the tactical fire direction system (TACFIRE) in others. With multiple fieldings and NETTs training concurrently worldwide, all National Guard and active FA units will have IFSAS in two years. In January 1994, the 24th Infantry Division will be the first active division to receive IFSAS.

IFSAS bridges the gap in capabilities between TACFIRE and our developmental advanced Field Artillery tactical data system (AFATDS), to be fielded in 1995. AFATDS will provide commanders a single automated fire direction system of hardware and software for all Field Artillery systems. It will be the land-based "weapon" of choice for winning the information war.

One of our most critical information needs is to see the close fight more accurately and quickly. This requires our fire support teams (FISTs) be highly mobile, survivable and digital-capable. The Bradley FIST vehicle (BFISTV) will give FISTs in our forces those capabilities. In the past year, the BFISTV evolved from concept to reality. The Depth and Simultaneous Attack Lab is now experimenting with a prototype BFISTV, which will train with our forces at the NTC this spring. The BFISTV is projected to begin fielding in late FY 99.

New technology is affording us access to real-time information from strategic and operational level assets, as well as our assets at the tactical level. With connectivity of information sources at all levels, the commander will be able to accurately visualize his battle space, adjusting as he fights. With that connectivity, a FIST could very well help execute a target that has great significance at the operational and, possibly, the strategic levels of war.

**Versatility.** FM 100-5 rightfully retains its focus on *warfighting.* First, Field Artillery must be trained and ready to provide the commander devastating fires in all-out war.

But the FM emphasizes the ability to adjust to diverse mission requirements and adds versatility as a tenet of Army operations. It also expands the types of missions the Army must be capable of executing to include operations other than war (OOTW)—nation building, disaster and humanitarian assistance, civil disturbances, peacemaking, peacekeeping and other operations.

With Field Artillerymen's skills of planning and executing in detail and our superior communications capabilities,

we've supported hurricane disaster relief in Florida, civil disturbance abatement in Los Angeles, flood control in the Midwest and humanitarian assistance in Somalia and Southeast Asia. We can be assured more such missions will follow.

Field Artillerymen must be agile—both physically and mentally—to shift from one mission to another within the full range of Army operations. Operations other than war call for disciplined leaders who are sensitive to the political implications of a situation and can work with precise rules of engagement. We have to be prepared to conduct joint operations in cooperation with or under the authority of US or friendly nation governmental agencies, the United Nations or international relief organizations. The situation may or may not call for traditional fire support—measured applications of counterfire and suppression of enemy air defenses (SEAD) escalating to the application of pervasive fire support to destroy an enemy force.

We must hone our versatility. As part of that effort, we're aggressively revising our fire support manuals, beginning with the Field Artillery's capstone guide, FM 6-20. For fires doctrine to be more versatile, we must broaden its scope and application. Because we'll fight in joint operations, future fire support doctrine will address how to employ fires on the "purple battlefield" with greater specificity.

We contributed significantly to writing *Joint Pub 3-0 Doctrine for Joint Operations,* recently approved, and *Joint Pub 3-09 Doctrine for Joint Fire Support,* now in final draft and scheduled to be published in 1994. Every Field Artillery leader must become intimately familiar with and be able to apply the doctrine in these manuals in joint training and combat.

In the recent joint exercise, Desert Fire Exercise (DESFIREX) 1-94, at Twenty-Nine Palms, California, the Marines and Army, for the first time, integrated their digital fire direction systems to fire MLRS. In the 20-day exercise, MLRS from the 6th Battalion, 27th Field Artillery, III Corps Artillery, Fort Sill, live-fired for the 11th Marines in counterfire and deep operations with the integrated fire support of attack helicopters, tactical air and remotely piloted vehicles. The exercise demonstrated the joint interoperability of MLRS and the Marines' ability to support an Army MLRS battalion. Further, using the emergency deployment readiness exercise (EDRE) concept, DESFIREX validated the effectiveness of an Army MLRS battalion (-) package tailored to support Marines in contingency operations.

The Field Artillery School has revised its courses to build on the principles of FM 100-5 and incorporate training on the diversity of military operations. For example in the Field Artillery Officer Advanced Course, students analyze the manual in weekly officer professional development classes and then apply the principles to operations taken from historical battles. We're teaching our leaders to master the principles and developing their mental agility by having them apply the principles to diverse operations.

We must be versatile as a Total Field Artillery. With a smaller force, *all* Field Artillery must be trained and flexible enough to meet the demands of the full range of military operations. We're standardizing courses and training for the Total Field Artillery by taking the lead in the Army's testing of distributed training.

As part of distributed training, the Field Artillery School is developing standardized programs of instruction (POIs) for the Active and Reserve Components for all military occupational specialties (MOS) in Career Management Field (CMF) 13. Using multimedia technologies, distributed training will train all Reserve Component FA officers, NCOs and soldiers in courses that mirror those for Active Component FA students.

Also, we must train the Total Field Artillery in joint and combined scenarios. Simulations and field exercises must increasingly incorporate our sister services and allies at the various levels.

One example of such an exercise is Ocean Venture 93 in which the CINC Atlantic (CINCLANT) commanded Army active and RC forces and Air Force units to rapidly respond in a crisis built around a naval scenario. The CINCLANT received assistance from other CINCs and Federal and allied local agencies. Significant firsts for Ocean Venture were designating a naval joint force air component commander (JFACC) and using a ship as the command and control platform for joint task force operations. Ocean Venture exercised Army forces from the corps to the division levels and, for two divisions, down to the company level. The exercise not only required flexibility of thought, but also of execution, developing joint force versatility for any contingency in the future.

## Conclusion

The Army's vision assures it will be the dominant, sustained land combat force in the world, the component of the joint team that synchronizes land, sea and air capabilities for decisive victory. The Field Artillery's vision assures the preeminence of fires for that land combat force—both the fires of Field Artillery and the fires of joint forces. Grounded on the new principles articulated in FM 100-5, we will be trained and combat ready for a wide range of operations in the 21st century.

The Field Artillery School is rapidly updating doctrine, working closely with the Combat Training Centers (CTCs), implementing new training for the Total Field Artillery and exporting technology—all to increase our versatility, deployability and lethality. Field Artillery units in the field must hone their skills to a razor's edge, relentlessly training to standard at home station and the CTCs, and we must develop leaders who are agile in thought and practice. We must provide all-weather, timely, accurate and deadly Field Artillery fires and integrate the commander's continuous, simultaneous joint fires throughout the battlefield—both ensuring decisive victory.

The demands are great. But Field Artillerymen must respond with vision for the year 2020, using the same imagination, initiative and commitment that have been the hallmarks of Redlegs for more than two centuries. America and the causes of freedom for which she stands are entitled to no less.

**Major General John A. Dubia has been Chief of Field Artillery and Commanding General of the Field Artillery Center, Fort Sill, Oklahoma, since June 1993. His 12 years of troop assignments include commanding three artillery batteries, one in Vietnam; a direct support artillery battalion in the 1st Armored Division, Germany; and the 1st Armored Division Artillery. He also served as a Brigade Fire Support Officer in the 1st Infantry Division (Mechanized) in Vietnam. Other assignments include serving as Director of Officer Personnel Management for the Total Army Personnel Command, Alexandria, Virginia; two tours in the Office of the Chief of Staff of the Army, Washington, DC; serving as Executive Officer to the Commander-in-Chief of US Army Europe; and as Executive Secretary for the Department of Defense, Washington, DC.**

# First-Line Leaders and Safety Standards

by Command Sergeant Major James C. McKinney, Fort Sill and the Field Artillery

Everyone should "think safety"—officers, NCOs and soldiers. But the first-line leader is the key to a successful safety program because he's the leader closest to the hands-on action and enforces the safety standards—or, in some cases, fails to enforce the safety standards.

Since FY 88, the Field Artillery Branch has had 3,408 accidents resulting in 166 military fatalities, 3,119 military injuries and eight civilian injuries—terrible and unnecessary losses. The fiscal cost of these accidents was $50.5 million in injuries and $51 million in damages—that's an amazing loss to the Field Artillery of more than $100 million. During this period, the Field Artillery lost more than 90,000 training man days because of these accidents. That's 90,000 days a Redleg wasn't present for duty.

Even though privately owned vehicles (POVs) were involved in only 11.8 percent of the accidents, those accidents resulted in 68.6 percent of the fatalities. The most common reasons for fatalities in POVs are fatigue, speeding (too fast for the road conditions) and failure to use seat belts. Alcohol-related accidents are still a problem—although the number of these accidents is declining. Speeding, failing to use seat belts and driving under the influence of alcohol show that soldiers aren't adhering to established standards, that they lack discipline. And the consequences are steep. Of the 166 Redlegs killed, 114 of them were killed in POV accidents.

In FY 93, the number of accidents in the Field Artillery dropped by about 0.5 percent, as compared to FY 92 statistics. That reduction would appear to be an improvement—but it's not. Because the Field Artillery force structure has decreased by far more than 5 percent, our accident rate per soldier actually has increased.

**First-Line Leader On Line.** Although safety is everyone's business, the first-line leader spends the majority of his time with soldiers. His workday is always crammed with something to do, from pulling maintenance to checking equipment—all situations for potential accidents. *The way he leads, trains and cares for his soldiers plays a big part in the way soldiers act and conduct themselves.* Because accident prevention is an inherent function of leadership, the first-line leader must ensure the mission is accomplished safely.

Human error causes about 80 percent of our accidents. Soldiers make mistakes that lead to injury or death for many reasons, but the most common reason for human-error accidents is lack of discipline. Too many times, soldiers *choose not* to follow rules, regulations, standards or laws. When a leader accepts below-standard performance, he lowers the standard. Simultaneously, when a leader doesn't enforce established standards, the likelihood of an accident's occurring increases.

**Managing Risks.** Redlegs can help reduce accidents by applying risk management principles and following risk management procedures. In the process, leaders make informed decisions about potential hazards in a given situation and implement a plan to reduce the effects of those potential hazards. Four principles guide us in the risk management process; we must—

• Integrate Risk Control Measures into Planning. Leaders start integrating control measures as early as possible in, say, the training management cycle. Risks are more easily assessed and managed in the planning phase of any operation. If risk control measures are tacked on as an afterthought in the training area or on the battlefield, they'll probably fail.

• Accept No Unnecessary Risks. An unnecessary risk is one that, if taken, won't contribute meaningfully to accomplishing the mission. In fact, the reverse is true; by *not* taking an unnecessary risk and protecting soldiers and equipment, a leader improves his chances of getting the job done.

• Make Risk Decisions at the Proper Level. The right level is where the decision maker has the experience and maturity to make a good decision. The decision needs to be made at the lowest level possible because lower level leaders will have to make tough decisions in combat.

At the same time, we must ensure decision errors don't injure or kill soldiers. Lower level leaders must recognize their limitations and that the next higher level might have the resources necessary to reduce the risks.

• Accept Risk if Benefits Outweigh the Cost. Nothing humans do is risk-free; therefore, leaders in the risk-taking business must be top-quality risk managers. They must be sure that what they're gaining by taking the risk is worth the potential price.

The objective of safety is to help units protect strength through accident prevention, which helps them win faster with minimum losses. Safety starts with readiness, and readiness depends on a unit's ability to perform it's mission-essential task list (METL) to standard. To help ensure unit readiness, the leader manages risks in a five-step process; he must—

1. Identify the Hazards. The leader must be able to identify hazards associated with the training, or he won't be able to control the risks they create.

2. Assess the Impact of Hazards. In this step, the leader determines the potential impact of a hazard on the mission. Two major considerations are the probability of the hazard's occurring and severity of the impact, should it occur.

3. Determine Risk Control Options and Make Option Decisions. Control measures built into a plan will reduce or eliminate risks. In this step, the leader looks for ways to reduce risks. He then decides which of the options are truly credible and can be implemented.

4. Implement Risk Control Measures. This involves integrating risk control measures into standing operating procedures (SOPs), operational plans and similar operational directives.

5. Supervise. The leader *supervises, supervises, supervises.* He assures soldiers follow the risk control measures and meet safety standards.

By using the risk management process, leaders will decrease the number of our fatalities and injuries. Protecting our force involves tough, realistic training coupled with risk controls that protect soldiers in training and combat. And it's the responsibility of the first-line leader not only to help set those safety standards, but also to enforce them.

***The author wishes to thank Redleg Sergeant First Class Raymond G. Taylor of the US Army Safety Center at Fort Rucker, Alabama, for providing the safety statistics used in this article.***

General J.H. Binford Peay III, Vice Chief of Staff of the Army

# America's Army: Versatility, The Key to Our Future

Interview by Patrecia Slayden Hollis, Managing Editor

**Q** *Secretary of Defense Les Aspin initiated the Bottom-Up Review of the armed services, which states, "...the United States must field forces sufficient to fight and win two nearly simultaneous major regional conflicts." At the same time, the Review specified an Army of 10 divisions by 1999 instead of the originally targeted 12 divisions. What impact will the new structure have on the Army's ability to support multiple contingencies?*


**A** The Army will retain the capability to respond to multiple, simultaneous contingencies as the decisive, sustained land combat force on the joint team described by Secretary Aspin's plan. Although we'll be on a stretched time line to support those contingencies, as laid out in the strategy, Congress' commitment to procure fast sealift and, hopefully, C-17 aircraft, will improve our strategic mobility, reducing the time it takes for our forces to close in theater.

The Total-Army concept is crucial to the Army's supporting simultaneous contingencies. As the total force comes down in size, Guardsmen and Reservists are going to be involved in more "real-world" missions—from the more traditional combat operations to operations other than war.

In addition to our forward-postured forces in Europe, Panama and Korea, the US Army has between 18,000 and 25,000 soldiers deployed to some 75 countries on any given day—commitments that have doubled in little more than a year. With missions in Somalia, Honduras, the Horn of Africa, Latin America, Kuwait, Saudi Arabia, Provide Comfort, Turkey and other places, the Army must be large enough and adaptable enough to accomplish these missions and support two major regional conflicts. And that calls for an integrated, combat-ready Total Army.

However, we must recognize that to accomplish these diverse missions with a smaller Army entails greater risks than in the recent past. Our Army must be more lethal, versatile and deployable—qualities we're attaining through modernization, training and strategic mobility programs.

**Q** *What's the next step in implementing the blueprint?*

**A** Currently, we have 13 Active Component [AC] divisions, including the 6th Infantry Division (Light) in Alaska, due to inactivate in 1994. At this time, we haven't decided which two additional divisions to inactivate by 1999 as mandated by the Bottom-Up Review.

The world situation could change drastically in the next several years. We must finalize the Reserve Component [RC] end strength and design and determine the systems we can afford to support the AC and RC structure under current budgetary guidelines. We also will look hard at restructuring and re-engineering the infrastructure across the continental US [CONUS].

**Q** *Given our shrinking funds, how do we avoid creating a "hollow army"?*

**A** In simple terms, a hollow army is an army that's not ready to fight. Both the Secretary of Defense and the Army leadership are committed to ensuring America's Army is prepared to fight by providing adequate OMA dollars [annual FY Operation and Maintenance, Army funds] and fully manned units. We'll preserve money for training and combat readiness by closely managing both initial accessions and force composition. Still, unprogrammed requirements in support of our National Military Strategy, such as missions in Somalia, Southwest Asia and domestic disaster assistance, have eroded OMA funds and remain a major concern.

Training will remain the top priority for readiness. We'll exploit technological advances in weapons, simulations and administration to maximize dollars for training. Soldiers will continue to go to professional schools—in fact, at a greater rate than in the past. We'll fund training simulations; various division, corps and theater exercises; and increased rotations at our Combat Training Centers.

To increase Total-Army combat readiness, we're establishing Enhanced Reserve Component Combat Brigades and Reserve Component Contingency Force Pool Units. Fifteen of the RC combat brigades will be National Guard brigades maintained at a higher state of readiness to respond to crises. The RC contingency pool units will supplement the Army's five-division contingency force mandated in defense planning. Other Total-Army combat readiness initiatives include Bold Shift, a directed training relationship between AC and RC units to hone collective battle skills; improved RC leader training and formal education programs; and AC dedicated support.

We're committed to the intellectual reforms undertaken during the past 20 years. We have a new *FM 100-5 Operations* manual and have been major contributors to *Joint Pub 3-0 Doctrine for Joint Operations* that lay out our warfighting doctrine. Our associated doctrinal manuals and TTP [tactics, techniques and procedures] ensure the Army remains doctrinally grounded as we undergo change.

We *will* remain ready—that's a promise.

**Q** *What changes do you envision in the Army's AC/RC mix?*

**A** While it appears the relative percentage of the AC/RC mix will remain nearly the same under Secretary Aspin's plan, a smaller America's Army will require greater reliance on the Reserve Component. In fact, there are approximately 7,000 RC soldiers in the three divisions of the Army's contingency corps, which must be prepared to deploy anywhere in the world in 30 days, and 108,000 RC soldiers in the five-division contingency force, which must close in theater in 75 days. And Reservists will be among the first to deploy as part of contingency forces.

While force structure details are still uncertain, the major change to our AC/RC mix as a result of the Bottom-Up Review is the designation of 15 National Guard combat brigades as enhanced readiness brigades. Under current plans, these units would be modernized and better trained than National Guard brigades are today. After mobilization and training, an enhanced readiness brigade would supplement AC combat forces. So, as we approach the future, it's truly a Total-Army, a one-team, effort—America's Army.

**Q** *What do you see as the optimum AC/RC ratio for Field Artillery?*

**A** The percentage for today is about right: 40 percent in the AC and 60 percent in the RC. Our Reserve Component Redlegs will continue to play a major role in providing the US sustained land combat power.

Those artillery units associated with the enhanced readiness brigades will be critical elements of America's force projection Army for the 21st century. The emphasis will be on keeping them highly trained and combat ready. Americans place a high premium on their soldiers' lives. To achieve decisive victory at a minimum cost in lives requires overwhelming firepower—and we'll rely on our RC artillery units to provide a significant part of that firepower.

**Q** *What impact will fiscal constraints have on the modernization of the* ***Field Artillery?***

**A** Obviously, reductions in RDA [research, development and acquisition] funding impact negatively on Army modernization. We did, however, publish a new modernization strategy in 1992 designed to preserve our modernization overmatch for future battlefields. Rather than focusing on individual systems, the strategy identifies our highest priority requirements in five functional areas: projecting and sustaining the force anywhere in the world, protecting the force, winning the information war, providing precision strikes throughout the depth of the battlefield and dominating the maneuver battle. The modernization goal is for the Army to continue to dominate land combat—regardless of the future enemy.

The Field Artillery plays an important part in a number of these new requirements. Key is your contributions to "precision strike," which fuses joint sensors, such as JSTARS [joint surveillance and target attack radar system], through decision support systems, such as AFATDS [advanced Field Artillery tactical data system], to attack systems, such as ATACMS [Army tactical missile system]. These deep strike capabilities are included in the budget. The Army also is committed to fielding the M109A6 Paladin and developing the AFAS [advanced Field Artillery system] and improved munitions.

We've demonstrated the importance of these programs to members of Congress and senior leaders in the Department of Defense. You may see funding for some of these programs pushed farther out, but they are protected, in terms of the modernization strategy priorities.

**Q** *What changes does the Field Artillery need to make to better support the force projection Army?*

**A** Key are your intellectual acceptance of your dominant role in joint warfare and understanding our new war-fighting doctrine. Joint is the way we'll fight. And fire support is a major part of that fight. The artilleryman is best prepared to handle joint fire support—you bring to the table more skills for those responsibilities than anyone of all services. Redlegs must lead the integration of all fire support assets available to the joint team.

FM 100-5 builds on the successes of AirLand Battle doctrine and moves the Army into the 21st century where depth, tempo and massing the effects of weapons are critical to successful operations. You must *know* Army and joint war-fighting doctrine. You must understand our tenets of war, especially the new tenet of versatility. You not only must be well-grounded in the technical capabilities and limitations of joint fire support assets, but also intellectually flexible in their application and integration—quite a task.

Field Artillery must hone all those capabilities in training, which you're already doing. You must build on your successes in the Gulf War—be prepared to force package and force tailor in different ways to meet the demands of different situations.

As you improve your existing systems and make them more deployable and lethal, you give the force commander the ability to deliver a high volume of fires against targets as soon as forces arrive in theater. The Army must be a rapidly deployable, hard-hitting and dominant, sustained land combat force.

**Q** *What do you consider the most significant changes in the new* FM 100-5 Operations?

**A** Of course, FM 100-5 makes force projection a central concept, emphasizing mobilization, deployment and demobilization in an environment increasingly focused on CONUS-based and forward presence forces. While the manual

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retains its emphasis on warfighting—as it should—it also expands the scope of military operations to include operations other than war, devoting an entire chapter to those operations.

FM 100-5 also expands the nature of "Army operations" to include air, land, sea and space. It emphasizes the ARFOR [army force] commander's responsibility for synchronizing deep, close and rear operations to achieve a single purpose—clearly defined conditions for success.

**Q** *What changes most affect fire support?*

**A** The changes in FM 100-5 underscore the critical role of simultaneous, precise fires anywhere on the battlefield—fire support, the Field Artillery's forte.

The focus on deep operations has been significantly strengthened in FM 100-5. Fighting at depth with both maneuver and fires, particularly fires, is no longer done solely to ensure success in close operations—a different twist. Commanders may pursue separate battle objectives in deep and close operations, either of which may be the main effort. A well-orchestrated deep battle may contribute directly to the enemy's defeat.

The manual also emphasizes precision fires as critical to early success on the battlefield of the future. Precision fires give the Army the ability to dominate the battlefield, bring the fight to conclusion much quicker and with fewer casualties—all good news. Future operations will likely stress the delivery of precision fires where they are most effective—in deep operations where we enjoy the advantage.

The principles of depth, simultaneity, continuous operations and clearly defined conditions for success impose more responsibilities on fire supporters. You have some procedural work to do with a more complex command and control system and need more responsive operations in terms of precise, long-range targeting in real time and sensor-to-shooter times. To meet these challenges, fire supporters—all leaders—must be intelligent, competent, flexible and physically fit to handle the full range of missions and high-tempo, continuous combat operations.

> ***"...an American Army that's proficient in its primary mission—to fight and win in prompt and sustained land combat—will be able to succeed in operations other than war."***

**Q** *What are the most important lessons the Army has learned from operations other than war, such as Provide Comfort?*

**A** ...that the post-Cold War world continues to demand an American Army that's thoroughly trained to accept a wide variety of missions. However, an American Army that's proficient in its primary mission—to fight and win in prompt and sustained land combat—will be able to succeed in operations other than war. We must focus on and train for high-intensity warfare.

Now, that doesn't mean we don't need to train for operations other than war. Such operations often call for political sensitivity and have refined rules of engagement requiring a great deal of discipline. Operations other than war usually are decentralized with small unit tactics—very demanding on our junior leaders. Training on rules of engagement is essential.

Those young leaders may have to operate under the authority of local governments, Federal agencies, international organizations, United Nations or civilian personnel—organizations with which they don't routinely operate. And, of course, not all operations other than war are peaceful actions, which would call for artillerymen to play a more traditional role.

Provide Comfort underscores that we need a versatile force that's highly trained for warfighting with a full complement of embedded capabilities.


**Q** *Are Army programs and policies adequately preparing us to conduct joint operations?*

**A** Yes, and joint is how we'll fight. But history shows the nature of war is unchanged—land combat is decisive and the strategic core of joint warfighting. The importance of maintaining an immediately deployable land combat force capable of decisive victory in conventional conflict is the single most enduring imperative of the Gulf War. Air power alone cannot assure victory. Air and sea power, though critical components of warfighting, must be integrated with ground operations for decisive victory.

The Army was the Executive Agent for the publication of the recently approved Joint Pub 3-0, which reflects the realities of modern war. We went through a lengthy process to ensure the joint doctrine was right. Service leaders at the highest level had deliberate discussions about where the services fit into our joint doctrine, and we feel good about the laydown. TRADOC

> ***"To meet these challenges, fire supporters—all leaders—must be intelligent, competent, flexible and physically fit to handle the full range of missions and high-tempo, continuous combat operations."***

> ***"...history shows the nature of war is unchanged—land combat is decisive and the strategic core of joint warfighting."***

[Training and Doctrine Command] is in the final stages of publishing doctrine for joint fire support—Joint Pub 3-09.

We've set aside monies for joint exercises with the proper blend of larger unit operations as well as staff exercises. We're headed down the right road in terms of our posture from a joint perspective. The challenge will be to get the resources for joint training in the future.

We need to take every opportunity to reinforce the military's and nation's understanding of branch and service competencies and the complementary capabilities. We also must upgrade contingency plans and constantly review the changing situations and capabilities in each theater.

**Q** *What's the Army of the next century going to look like?*

**A** America's Army will be the dominant land army in the world. We have a vision of where we're going—we're on that glide path. There probably will be some modifications in force design—not major modifications, but modifications to ensure we can deploy more rapidly and that we've got the proper leader-to-led ratio in those design organizations. We'll probably have changes in command and staff relationships—perhaps smaller staffs than we have today.

We'll have organizations that can fight in close and deep operations continuously with enormous tempo, day and night.

We'll be able to close heavy and light divisions much more quickly into the objective area with tremendously improved strategic mobility. That's due to a combination of more sealift, prepositioning of global supplies and the use of the C-17 aircraft.

Our modernization vision calls for digitizing the battlefield and sharing information rapidly to get inside the enemy's decision cycle and kill his systems with greater speed.

You combine all these in the near term with, hopefully, funding in the far term to continue to bring on critical new systems and train and develop top-quality leaders and you have a blueprint for a Total Army—America's Army—that remains the best in the world. That blueprint fine tunes the Army to ensure it's relevant in the future. Our blueprint implements change with continuity and still assures growth in capabilities.

**Q** *What are the Army's greatest challenges as we move toward the 21st century?*

**A** One of our greatest challenges is resourcing. We need funding not only to keep the Army trained and ready today, but also to posture it properly for the future—for example, research and development.

Another—we must remain relevant to the constantly changing international environment—trained and ready, continually undergoing intellectual and physical changes. Americans must understand their Army and be willing to join it and serve their nation.

All the while, we must make the case to our political leaders and the American people that they maintain a relatively robust army that's resilient enough to accomplish all missions (Somalia, Honduras, the Horn of Africa, etc.), to retain a solid institutional training base and great AMC [Army Materiel Command] and also to win those nearly simultaneously major regional conflicts. You need a robust Army to do all that.

**Q** *What message would you like to send Redlegs worldwide?*

**A** Recent polls demonstrated a great respect for the military. That's not by accident. Such respect is—and was—won by hard work, sweat and blood. The Army leadership is proud of our soldiers and their accomplishments in the past and, particularly, today as we reshape yet remain ready for any mission. We must continue to win that respect into the future.

Field Artillery—both AC and RC—is clearly a major pillar of strength for America's Army as it enters the 21st century. It will retain its well-deserved reputation as the King of Battle.

The Army's fire support system should be the foundation upon which joint fire support is based. Our reconnaissance, targeting, attack and damage assessment systems should be fully interoperable with those of other services. As we put more capable fire support systems in the hands of our soldiers, we concurrently need to exploit the fire support capabilities of other services.

Maintain your warrior focus and continue to produce superb soldiers and leaders. Be technically and tactically competent and versatile. You contribute immeasurably to the Army as a trained and ready force fully capable of decisive victory.

**General J.H. Binford (Binnie) Peay III is the 24th Vice Chief of Staff of the US Army, appointed to that position in March of this year. His commands include the 101st Airborne Division (Air Assault) throughout Operations Desert Shield and Storm and at Fort Campbell, Kentucky; 9th Infantry Division (Motorized) Artillery, Fort Lewis, Washington; 2d Battalion, 11th Field Artillery, 25th Infantry Division (Light), Schofield Barracks, Hawaii; and, during one of his two tours in Vietnam, a firing battery in the 4th Infantry Division (Mechanized). General Peay also served as the Army's Deputy Chief of Staff for Operations and Plans, as Executive to the Chief of Staff of the Army, both in Washington, DC, and as Assistant Division Commander (Operations) of the 101st Air Assault Division at Fort Campbell.**


# A Fire Supporter's Guide to FM 100-5

by Colonel John W. Reitz

> ***"...the combined effects of joint fire support assets at the different levels compress operations at the tactical, operational and strategic levels into one synchronous joint battle."***

Modern technology is blurring the distinction between fires and maneuver. Ground maneuver forces were the only previous means to achieve positional advantage against an opponent. Carpet bombing and massed artillery could destroy much of a prepared force, but the close contact of infantry and armor units was still necessary to fix, turn or defeat the enemy's ground forces.

Now aircraft and attack helicopters can apply lethal fires to unprotected flanks and precision-guided and area-suppression indirect fires can nullify the protection of armor plating and prepared positions. Intelligence and acquisition systems can locate uncommitted as well as committed forces. With this knowledge, reach and lethality, operational and tactical commanders can achieve effects that fix, turn or defeat enemy ground forces by fires alone for limited but critical periods of time. In fact, the combined effects of joint fire support assets at the different levels compress operations at the tactical, operational and strategic levels into one synchronous joint battle. This growth in capability will continue, and it requires a parallel growth in the sophistication of how the Army and other services think about fire and maneuver, mass and concentration, depth, simultaneous attack and joint battle.

The 14 June 1993 edition of *FM 100-5 Operations* captures various concepts that begin this growth, and for all the familiarity of its AirLand Battle roots, there are significant shifts that the professional fire supporter must recognize and add to how he thinks about the conduct of force projection operations.

This article doesn't attempt to explore all the implications of change for fire support in the first keystone doctrine. It does, however, explore the implications of the modifications to joint operations, mass and depth and the new concept of battle space. Just as this version of FM 100-5 defies a checklist approach to analysis, I offer no pat solutions in this discussion.

Because this version of FM 100-5 vastly increased its scope but kept to the 1986 length, the writers were charged with establishing an idea fully only *once*. Without rhetorical repetition as a guidepost to signal central ideas and given the implications of some of the changes on future operations, the student of this new doctrine must read and consider it carefully to understand its changes.

## Joint Operations

A recurring theme in this FM 100-5 is that Army forces contribute to decisive operations as part of a joint, combined and interagency team. The Army is not a separate entity; it contributes forces to a combatant commander or joint task force commander that produce effects in varying combinations with other services and nations at the right time and place on the extended battlefield.

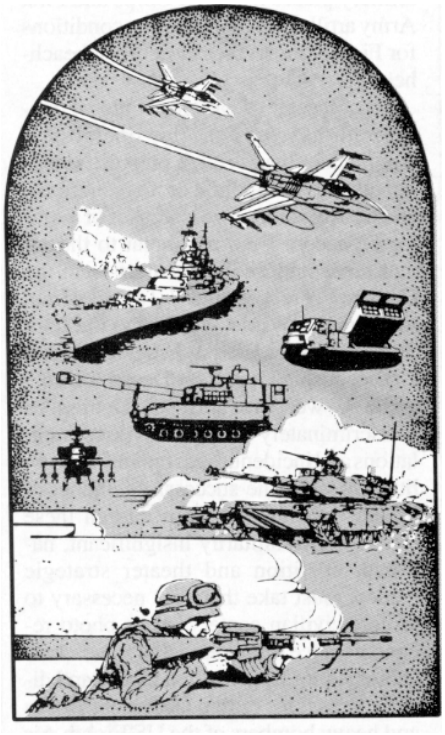
**Force Orientation.** Clarity in understanding this warfare means Army leaders need to continue to move beyond terrain-dependent thinking. While ground forces add the singular ability among air, land and sea forces to hold a piece of ground for the joint commander, the essence of future warfare focuses on defeating the enemy force rather than terrain in a multitude of ways. Shifting our conceptual

base to a force-oriented style of warfare was part of the revolution in AirLand Battle doctrine. Holding terrain or violently ejecting the enemy from terrain is still important, but joint and ground commanders of future operations can achieve greater effects on the enemy by combining the activities of joint weapons and combat multipliers to dominate decisive points that often aren't terrain-related.

In Operation Desert Storm, while coalition ground force units located south of Kuwait and Marines afloat in the Persian Gulf fixed the enemy operationally in Kuwait, the coalition air operation with joint lethal and nonlethal systems attacked the Iraqi air assets; command, control, communications and intelligence ($C^3$ I) system; and support infrastructure. After we achieved air supremacy, the combined effects of our reconnaissance-strike systems' degrading the Iraqi $C^3$ I and shutting down his air defense and artillery was far greater than the sum of the physical destruction of these multiple engagements. When the Iraqi air defenders kept their radars off and their artillery batteries silent, coalition forces had nullified two enemy combat systems merely by demoralizing their operators.

The potential synergy from an array of joint systems provides a new dimension of depth in the attack on the enemy commander's will. Defining the battlefield in control measures and boundaries determined by physical depth is a construct made obsolete by the overlapping nature of joint systems and effects. B-52 strategic aircraft carpet bombed Iraqi tank positions and minefields. A-10 close air support (CAS) tactical aircraft attacked enemy forces at operational depths. National (strategic) intelligence assets down-linked target information to weapons that engaged operational and tactical targets. AH-64 helicopters and Army tactical missile system (ATACMS) missiles struck targets located through the joint surveillance and target attack radar system (Joint STARS) aircraft. Understanding and employing the potential of the joint array of resources from different levels of war and across operating systems makes the joint battle one synchronous effort.

Understanding the potential of this new array and the joint battlefield requires recognition that the strategic, operational and tactical divisions of resources, activities and effects are now compressed. While a number of writers have pronounced the Air Force to be a maneuver force at the strategic and operational levels rather than a fire support asset at the tactical level, the reorganization of the Air Force to provide forces that fight and support the joint battle across the different levels of war should send a message to ground forces. Ground tactical units can and should think of themselves as capable of producing both tactical and operational effects. Army fire supporters need to understand the role of operational fires to assist tactical and operational commanders in creating the synchronous joint battle.



**Operational Fires.** Fires at that level are joint by nature, with the joint commander applying all of his means to achieve operational objectives. "In the concept of operations, commanders describe how they see the actions of each of their units fitting together to accomplish the mission. They describe their view of probable enemy actions and how they will defeat the enemy. This description includes, as a minimum, the scheme of maneuver and concept of fires..." (Page 6-6, FM 100-5). Operational fires, therefore, should be a distinct component of the operational concept of operations.

In addition, this doctrine holds that operational fires can accomplish missions independently as well as provide mutual support to operational maneuver. Although operational maneuver need not depend directly on these fires, the operational commander still integrates his fires and maneuver with the other components of his operational concept to achieve the best sequencing of results.

Operational fires differ from tactical fire support in scope, purpose and application. Tactical fires combine the direct fires from maneuver units with the fires of air-, land- and sea-based delivery systems in support of maneuver units to achieve tactical objectives. Tactical commanders synchronize corps and division artillery, attack helicopters, electronic warfare (EW), naval gunfire and CAS to protect the force, destroy the enemy by fire and support the maneuver of tactical units against the tactical forces of the enemy.

Operational commanders employ fires from different services independently for some objectives. They do so by timely transmission of critical target data from sensors to nonlethal EW and precision-guided and area munitions. Because the accuracy and effects of such fires can achieve significant results against the enemy's critical functions and forces, they provide mutual support to operational maneuver.

The combination of enhanced acquisition, extended range, area suppression and precision attack provides the operational commander an ability to mass devastating effects with an economy of means. For example, the effectiveness of fires from rapidly responding, extended-range, precision-guided munitions with lethal effects provide equivalent results to the previous massing of large volumes of ammunition when targets could be located and ranged. This economy of means affords the operational commander the opportunity to attack a variety of enemy forces and systems—to include sophisticated $C^3$I nodes and integrated air defenses—with focused effects.

In addition to theater air forces, operational commanders also employ land and sea systems to achieve objectives by operational fires. Operational commanders

***"Defining the battlefield in control measures and boundaries determined by physical depth is a construct made obsolete by the overlapping nature of joint systems and effects."***

must recognize that they're combined arms commanders who synchronize joint fires and intelligence systems vertically to use some tactical systems in addition to synchronizing operating systems horizontally at each level of command. They must integrate fires from the most suitable systems for each mission. For example, attack helicopters and tactical missiles have the accuracy, lethality and range to engage some operationally significant targets more efficiently than aircraft.

Operational fires achieve significant results in a major operation or campaign in three distinct ways. The first accomplishes missions of operational—sometimes strategic—significance by attacking the operational center of gravity through fires. Attack in this way attempts to dissemble the enemy's operational center of gravity by destroying critical functions and facilities necessary to his generation and support of combat power. Destruction of the enemy's integrated air defense systems, operational $C^3I$, theater missiles, air capability or theater support significantly degrades his operations and disrupts his plan while providing our forces a marked advantage. Depending on the structure of the theater, these fires also may be strategic. When there's more than one theater of operations, for example, destruction of integrated air defenses would be a significant objective of the theater strategy as well as operationally significant to each theater of operations.

The second function of operational fires provides mutual support directly or indirectly to operational maneuver. These fires delay, disrupt or destroy uncommitted forces and support facilities, thereby, establishing conditions for decisive operations. Interdiction, for example, might delay enemy operational forces to establish conditions for friendly operational maneuver. During the Korean War, the successful use of air interdiction of Chinese Communist Forces in November 1950 denied them freedom of action for three weeks. This disruption permitted the Eighth Army to break contact and withdraw to prepared defenses. Other types of interdiction missions on lines of communication all will support operational maneuver, but less directly.

The final function of operational fires mutually supports maneuver by establishing favorable conditions for operational movement and maneuver to an operational objective. This might be done by creating a gap in the enemy lines that permits the penetration of friendly ground forces. General Omar Bradley's Operation Cobra in World War II overwhelmed a determined German defense to achieve operational freedom of action. Bradley massed the First Army on a narrow front to penetrate the defense through the gap created by the combined effects of intensive bombardment. The bombardment of 25 July 1944 used 350 fighter bombers, 369 medium bombers and 1,800 heavy bombers supported by more than 1,000 artillery pieces from VII Corps and First Army artillery units and set the conditions for First Army to break out of the beachhead.

***"...this doctrine holds that operational fires can accomplish missions independently as well as provide mutual support to operational maneuver."***

When theater or national strategic considerations warrant, the operational commander may need to pursue a strategic objective with little or no operational and tactical value. Two examples of a strategic concern from the threat to theater rear areas and civilian centers were the German V-1 rockets and V-2 missiles fired at Britain in World War II and the Iraqi SCUD missiles fired at Israel and Saudi Arabia during Operation Desert Storm.

The V weapons and SCUD missiles indiscriminately attacked civilian populations and incidental rear operations with little threat to the successful conduct of military operations. Even though these threats were militarily insignificant, national, coalition and theater strategic leaders must take the steps necessary to protect civilian centers. After photo reconnaissance discovered the V-1 rockets at Peenemunde, the Allied Command diverted missions of two tactical air forces and heavy bombers of the US Eighth Air Force from other strategic targets to drop 31,000 tons of bombs on suspected launch and preparation sites between December 1943 and June 1944 alone.

The Iraqi SCUD threat also required a diversion of intelligence and attack resources from theater assets to attack mobile launchers, which—like the V-2 missiles—were detected only as they fired. Commanders may use the precision and lethality of operational fires in conjunction with other operations as an economy of force means to deal with such threats.

Future theater missile systems, however, will pose a significant military threat as modern missile technology proliferates. Coupled with weapons of mass destruction, such missiles will require an operational level counterfire capability to protect the force as well as civilian populations and rear areas. Theater missile defense in this situation will require operational fires to destroy this critical capability.

Achieving the full potential of operational fires requires agility at all levels. As the tempo of the fight increases beyond the opponent's ability to react effectively, he may uncover part of his force for attack. Operational commanders seek to exploit such conditions through the dynamic use of fires.

With better situational awareness and the ability to refocus resources to take advantage of that awareness, commanders can overcome an opponent by the fog of our ever-reforming combinations of combat power. With high-speed information systems, operational commanders can expand the scope of their objectives on the battlefield by seizing unexpected opportunities. They need the command and control agility to recognize new high-payoff vulnerabilities and shift their resources and efforts rapidly to those targets. This shift must be understood and communicated vertically and horizontally to other commanders and staffs to adjust their efforts to the new situation.

## Depth

The 1993 concept of depth is expressed in two major portions of the keystone revision. The first is the expansion of the tenet of depth, which adds purpose to the familiar description of depth as an extension of operations in time, space and resources. The second is in the Battlefield Framework. The 1986 Battlefield Framework, which consisted of deep, close and rear, was expanded, and the portion of FM 100-5 that still talks to deep, close and rear is now labeled "Operations in Depth" in the tactical chapters. The expanded framework discussed for the operational level in Chapter 6, "Planning and Conducting Operations," "...establishes an area of geographical and operational responsibility for the commander and provides a way to visualize how he will employ his forces

against the enemy" (Page 6-12). The reason for the change in both cases is an expanded use of purpose to achieve the greatest effects of joint capabilities and tempo in decisive operations.

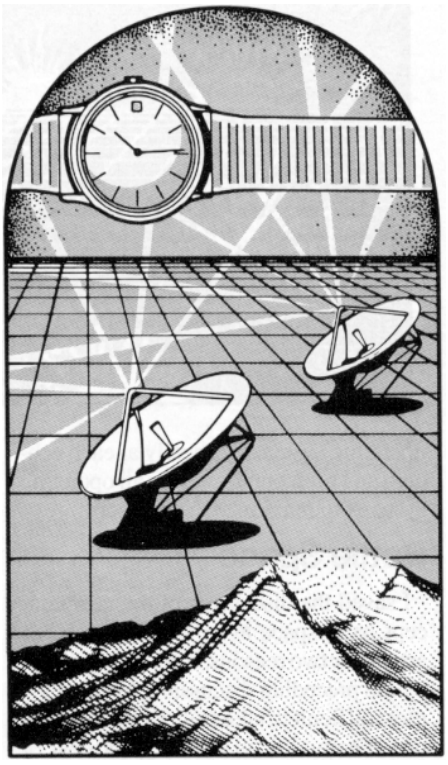
Understanding depth on the extended battlefield requires thinking about simultaneous effects and designing operations to achieve them. There are much greater effects from degrading the enemy's $C^3$ I system while simultaneously focusing fire and maneuver on the opponent's air and ground forces than the sum of the individual parts. The addition of purpose to the concept of depth adds temporal and functional dimensions to the spatial view of depth. This addition comes from solid AirLand Battle roots.

**Synergy.** In the logic of AirLand Battle, synergy came from combinations of effects linked in time to disorganize the enemy's combat organization, as a minimum, and disintegrate his capability and will to fight, as a maximum. AirLand Battle doctrine and the AirLand Operations concept advanced the concepts of synergy and synchronization as methods to think about the best use of joint resources to achieve the greatest effects.

Synchronization is instrumental to synergy as it advocates arranging activities in time, space and purpose as both a process and a synergistic result to the opponent's organizational and moral domains. The challenge for Army leaders in the near term as they apply the expanded concept of depth is that our subordinate AirLand Battle tactical doctrine still describes the battlefield in just physical terms.

Terms in vogue in 1991, such as "nonlinear battlefields" and "shaping zones," reflected early attempts to free doctrinal thought from a fixation on terrain to add thinking about the systemic and moral vulnerabilities of the opposing forces. The term "nonlinear" attempted to define the battlefield by exclusion as it denied the linearity of the contiguous nature of previous ground warfare. "Shaping zone" was another early term that similarly attempted to describe the desire to weaken the enemy's capabilities in a new way but still included the use of terrain to achieve the conditions for decisive operations.

Terrain has and always will be important, but technology has provided the reconnaissance, mobility and strike means to make terrain less important than our use of time and purpose. An effective operational reach can strip the protection previously provided by the enemy's physical distance from friendly forces.



US forces can see the enemy, find his critical capabilities and mass combat power on his capabilities anywhere on the battlefield. Time and purpose become increasingly more important in conducting decisive operations with our ability to decide upon, find and attack critical capabilities at transient and dispersed locations.

As a result of 10 years of thinking about and working with AirLand Battle, the Army practices a much more fluid and sophisticated style of warfare. Depth is thinking about the battle many moves ahead of the enemy, deciding and acting before the enemy and taking him apart in his organizational and moral domains while he's limited to reacting in the physical domain.

**Full-Dimensional Operations.** Thinking in depth should develop an array of options, and in this way, depth is linked to the concept of decisive operations. Simply taking action is not decisive in and of itself. Taking action to achieve effects that result in a marked advantage is decisive and requires a habit of thought. This, in essence, is the intent of another term: full-dimensional operations. "Such a diversity of available options should, in the end, give US commanders the means to confuse, confound and rapidly defeat armed enemies of the United States in full-dimensional operations" (Page 6-0).

One of the operational terms of art used in the design of campaigns and major operations to identify and select the options envisioned for full-dimensional operations is the decisive point (Pages 6-7 and 6-8). The addition of purpose to depth now creates a stronger link to the tenet of initiative because in the offense, taking a decisive point lends itself to gaining and maintaining the initiative. In the defense, retaining a decisive point usually denies the enemy the initiative. This doctrine expects an operational commander to select a mix of terrain, force and system objectives in a specific sequence as the design of his campaign. As he views his options, the battlefield offers a commander many decisive points from which he can choose his objectives. For example, he usually will make the $C^3$ I of a high-tech opponent an objective because of its impact on the opponent's operations.

The sequencing of objectives shapes the campaign. When these objectives involve only a series of terrain features that isolate or delay tactical or operational reserves, there's a physical shaping zone. However, when the commander sequences and combines activities that occur at different times and in dispersed locations to destroy an operating system as a critical capability, he's attacking an organizational objective rather than a terrain objective. The successful attack of the opponent's organizational functions shapes battlefield conditions in the favor of friendly objectives and offers more efficient results than just a physical shaping of the battlefield.

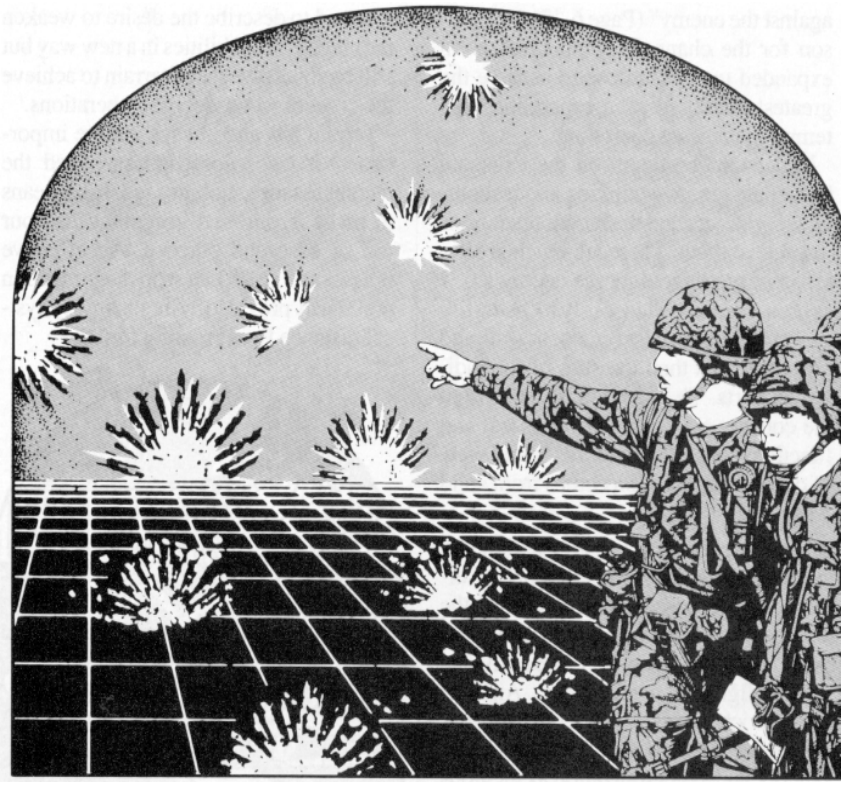
***"Synchronization is instrumental to synergy as it advocates arranging activities in time, space and purpose as both a process and a synergistic result to the opponent's organizational and moral domains."***

## Mass and Effects

This version of FM 100-5 makes a subtle but significant change to the principle of mass. It now says, "Mass the effects of overwhelming combat power at the decisive time and place" (Page 2-4). The assumption in the past was that mass and concentration of forces were synonymous. While concentration of maneuver units is still a characteristic of the tactical close battle (Page 7-2), technology has changed that equation, especially at the operational level. The increasing lethality and precision of weapons permit the generation of combat power at critical points and times through massed effects with fires that don't require concentration of forces. This is not a prescription for the timid. A ground commander may take advantage of the joint battle by relying on his mobility and greater information to maneuver against a distant enemy force and strike him with a combination of direct ground fires and air, sea or ground supporting fires in a deep operation. In doing so, he assumes he can protect his force by reacting faster than the enemy can.

This thinking led to another significant change. Deep operations assume a new significance because of the potential to achieve mass without the concentration of close combat forces. In AirLand Battle, the deep fight was conducted only to establish the conditions for success in the close battle. In full-dimensional operations, however, "Deep operations, combined with simultaneous close operations, might be decisive in one operation, while in another, deep operations set the conditions for future close operations to be decisive" (Page 6-14). Just as operational fires may be independent of operational maneuver, providing mutual support in achieving operational objectives, deep operations now also may exist spatially independent of tactical close operations.

The key is effects. Operational and tactical commanders need to be creative in thinking about potential results from the many possible combinations of systems to get the greatest effects from the use of joint and coalition forces on the battlefield. The key to conceiving the design of an operation using this new version of mass is thinking about objectives in terms of the results he wants to create and then building the plan to use the available forces in the best way to achieve those effects. The future combined arms commander must learn to integrate all his operating systems vertically at each echelon and horizontally across all operating systems to maximize their effects.



## Battle Space

I saved the discussion of the new concept, battle space, as the conclusion of this article for two reasons. It's not only set up by the preceding discussion, but also the most difficult to take from theory to practice. There was, in fact, a great deal of discussion at senior levels as to whether this concept had matured enough to enter current doctrine. The decision to include it was bold, but justified, because the expression of battle space is at the heart of the Army's effort to define the art of command that our leaders must master to meet the challenge of future operations.

The basic concept is simple: "Battle space is a physical volume that expands or contracts in relation to the ability to acquire and engage the enemy. It includes the breadth, depth and height in which the commander moves assets over time" (Page 6-12). Part of the challenge in applying this, especially in instruction and training, is its expansion and contraction over time at each echelon of command. Yet the need to understand and apply "the effects of geography and terrain, appropriately apply use of organic capabilities and integrate joint and combined assets that can be brought to bear against the enemy" is an essential part of dominating "the enemy in a given battle space" (Page 6-12). While graphics can depict three dimensions to a certain degree, the graphic depiction of changes over time complicates the attempt with the traditional map and overlays.

The other part of the difficulty in applying battle space through tactics, techniques and procedures (TTP) is the nature of overlapping levels of war, resources and effects inherent in the synchronous effects possible with joint forces. "Battle space is not assigned by a higher commander

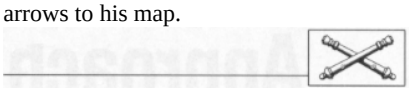
> ***"The increasing lethality and precision of weapons permit the generation of combat power at critical points and times through massed effects with fires that don't require concentration of forces."***

and extends beyond the commander's area of operations (AO). It is based on the notion that commanders expand their thinking to develop a vision for dominating the enemy and protecting the force before any mental constraints are emplaced, such as overlays depicting phase lines, boundaries and arrows. This gives them complete freedom of thought to build a broad vision according to existing factors of mission, enemy, terrain, troops and time available (METT-T)" (Page 6-12).

The fire supporter's role in this is described in Chapter 2. "Commanders are responsible for fighting their fire and maneuver assets. They fight much of their fires through the function of fire support because much of the combat power of fires is not from within their chain of command but from external resources ....Fire support is the function that binds fire resources together so that the multiple effects of each asset are synchronized with the force commander's intent and concept of the operation" (Page 2-13).

There's always opportunity in change, and the expansion of Army doctrine to new possibilities in thinking about the range and connection of fires at depth is a clear opportunity.

The magnitude of change in our keystone doctrine puts a special challenge on the fire support community because it relies so heavily on the ability to visualize effects not only on the ground, but also on the organizational integrity and will of the enemy. That creative ability of the commander to understand mass, depth and battle space on the joint battlefield requires an equally alert fire supporter to assist him in prying every possible advantage over the enemy before he starts assigning phase lines, boundaries and arrows to his map.



**Colonel John W. Reitz was on the team that wrote the new version of *FM 100-5 Operations* as part of the School of Advanced Military Studies, Command and General Staff College, Fort Leavenworth, Kansas. Currently, he's the Editor of *Military Review,* also at Fort Leavenworth. A Field Artilleryman, Colonel Reitz has served in a variety of command and fire support positions in the 3d Armored Cavalry Regiment, Germany; 8th Infantry Division (Mechanized), Germany; and the 9th Infantry Division (Motorized), Fort Lewis, Washington, the latter the division in which he commanded the 3d Battalion, 11th Field Artillery. He's a graduate of the Army War College, Carlisle Barracks, Pennsylvania.**

# Fort Sill Telephone Numbers Change

Effective as of 16 December 1993, Fort Sill has two local prefixes and two DSN prefixes. All of Fort Sill, except Reynolds Army Hospital, has the numbers (405) 442-XXXX or DSN 639-XXXX. Those calling the hospital must dial (405) 458-XXXX or DSN 866-XXXX. The last four digits of all numbers remained the same, with the exception of a few numbers for the hospital.

The following are some key telephone numbers Field Artillery units around the world may call for information and support.

## Field Artillery Center

MG John A. Dubia, CG: -3006/3709
COL Christopher C. Shoemaker, C/S: -3005/3105
CSM James C. McKinney, FA: -3205
James R. Russell, Base Ops Manager: -3106/4912
TEXCOM Fire Support Directorate: -3717/6202/4400
CECOM FATDS NET: -6950/2742
CECOM FS Software Engineering: -6950/2742/6850
Fifth Army Readiness Group: -3503/2902

## Training Command

BG David L. Benton III, DCG (Trng): -6604/3622
COL Thomas G. Bowden, C/S, Trng Cmd: -2301/5460
CSM Joseph J. McFadden, Trng Cmd: -4203/5460
USAF Rep: -2300/3261
USMC Det: -4204/6498/2307
USAR Rep: -5103/5562
ARNG Rep: -5103/5562
Special Actions Office: -4509/3323
1-30 FA (Staff/Faculty): -5088/2009/4615
3-30 FA (OBC/OAC): -6194/6415/6722
TF 2d, 2d FA: -2803/3265/4744

### Office of the Chief of Field Artillery

COL William A. Jones, Director: -4705
Initiatives Group: -4705/6702/6557
FA Proponency Office: -5220/6365/4970

### Gunnery Department

COL Kenneth R. Knight, Director: -2014/2400
Operations Div: -5415/4986
Concepts and Procedures Br: -2802/5523
Cannon Div: -3103/2761
Officer Instruction Br: -6224/2622
Enlisted Instruction Br: -6803/5345
Supply and Maintenance Br: -2323
Survey Br: -6616/2805
MLRS Div: -6688/6324
Operations Br: -4711/5151
MLRS NETT: -6306/3970
Fire Direction Systems Br: -6121/3845
Paladin Div: -5424/4418

### Fire Support and Combined Arms Operations Department

COL Sterling R. Richardson, Director: -3995/4704
Operations Div: -5079
Fire Support Div: -5819
Advanced FS Br: -4809
Basic FS Br: -5801
Combined Arms Br: -4653
C2 Div: -3115/2501
System Support Br: -6108/3925
Fire Support Automation Br: -3811/6385
Warfighter Div: -6207/3867
Joint/Combined Br: -2774/5323
CTC Br: -5323/6025
Targeting Br: -2971/5045
Radar/ Met Br: -6207/2406
Foreign Intel Research Div: -6328

### Directorate of Training and Evaluation

Dr. Phyllis D. Robertson, Director: -2005/2002
Operations Div: -6708/5771
Program Management/Integration Div: -6101/3611
Distributed Training Div: -4050/3427
Evaluation Div: -3300/3809

### Directorate of Combat Developments

COL John A. Gloriod, Director: -2604/6980
Operations Div: -6980/2604
Systems Integration/Priorities Div: -6000/5601
Concepts Br: -5601/6178
Force Structure Br: -2726/6084
Studies Div: -4715/5707
Depth/Simultaneous Attack Battle Lab: -5647/6954
Target Acquisition/Systems Support Br: -4300/3814
TSM-Cannon: -6902/4451
TSM-FSC$^3$: -5607/5960
TSM-RAMS: -6701/6607

### Field Artillery Training Center

COL Thomas L. Brown, Commander: -1261/1262
CSM Thomas E. Noel, FATC: -1262/1261
1-19 FA (BT/OSUT): -1401/1402
1-33 FA (BT/OSUT): -1303/1301
3-321 FA (BT/OSUT): -1200/1204
2-80 FA (AIT): -6272/5818
1-31 FA (BT/OSUT): -2345/2541
1-78 FA (Spt): -5022/2611
95th AG Recptn Bn: -5864/4576

### NCO Academy

CSM Karl L. Purdy, Commandant: -2417/3141
Admin Sec: -5606/3466

# The Future Force—
# A Reasoned Approach to Change

by Colonel Ralph G. Reece,
Lieutenant Colonel
James M. Holt and
Mrs. Jong (Sue) Trotter

***"Moving our Army into the next century is a journey, not a destination; we know where we are going, and we are moving out."***

These words, spoken by Chief of Staff of the Army (CSA) General Gordon R. Sullivan, reflect a theme followed throughout the force structure community as we manage change for the Army.

Signs of change are everywhere—posts at which we served have closed, units in which we "grew up" have inactivated and friends with whom we soldiered have moved on to other professions. Some of these changes may seem disjointed when you see units move from post to post and then, in some cases, inactivate. However, while the increasing pace of transition has caused turmoil, there has been a continuing effort to follow the established process and avoid knee-jerk reactions. Each decision is very carefully considered, options are weighed and the best possible choice is made. While there may be detours during the journey, there's truly a reasoned approach as we move along. First, let's look at the magnitude of the changes.

| | Army of 1990 | Army of 1995 |
|---|---|---|
| **Europe** | 2 Corps<br>4 Divisions | 1 Forward-Presence Corps<br>2 Divisions |
| **Pacific/Korea** | 3 Divisions | 2 Divisions |
| **United States** | 1 Contingency Corps<br>5 Divisions<br>1 Reinforcing Corps<br>6 Divisions<br>1 Sustained Reinforcing Corps<br>10 Divisions | 1 Rapidly Deployable Corps<br>5 Divisions<br>1 Early Reinforcing Corps<br>3 Divisions<br>1 Follow-On Reinforcing Corps<br>8 Divisions |
| *Total* | 5 Corps: 28 Divisions | 4 Corps: 20 Divisions |

Figure 1: The Army of 1990 was manned by roughly one and one-half million soldiers in the Active and Reserve Components and will build down to just over one million soldiers in 1995.

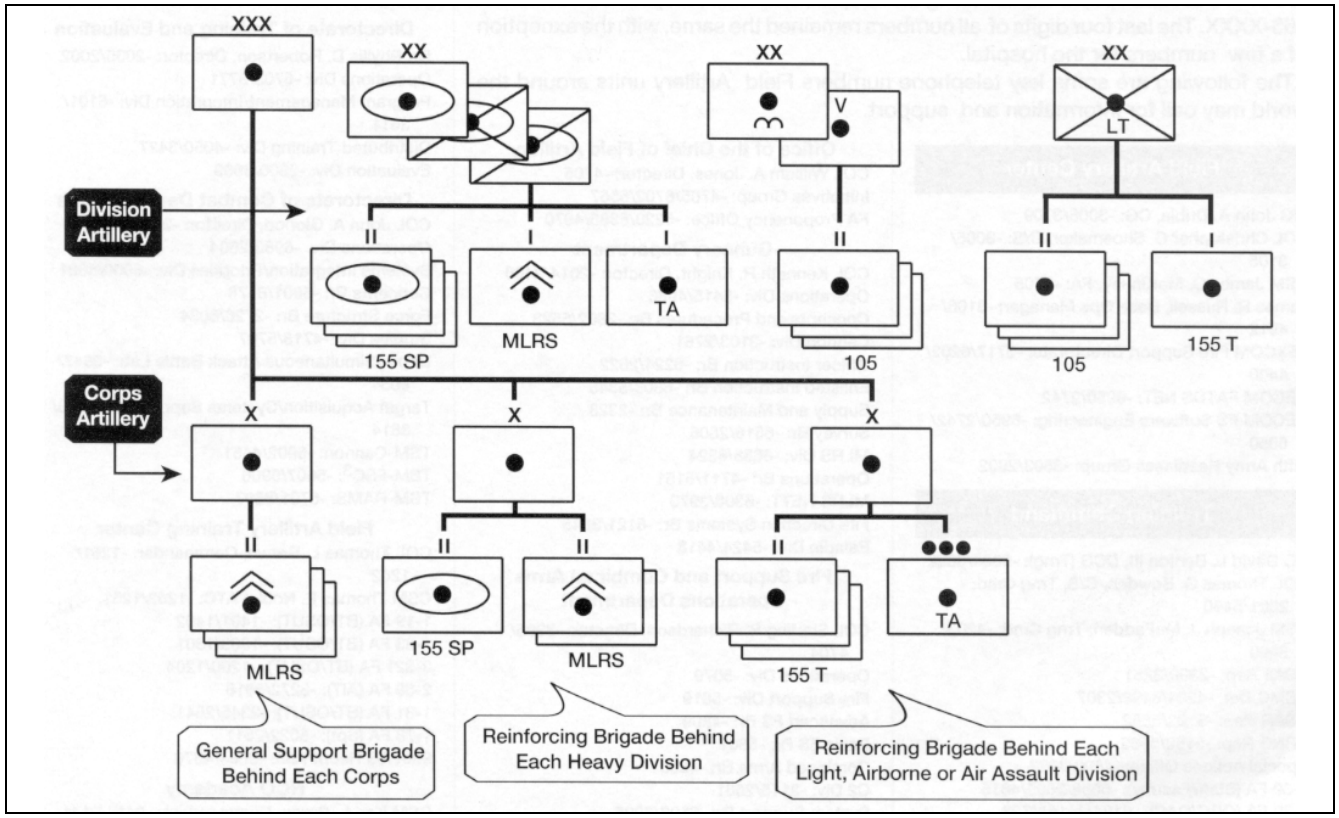



Figure 2: Field Artillery Force Allocation Rules. These rules were generated from the Army of Excellence (AOE) force design and, with little modification, will serve us well in designing our future force structure.

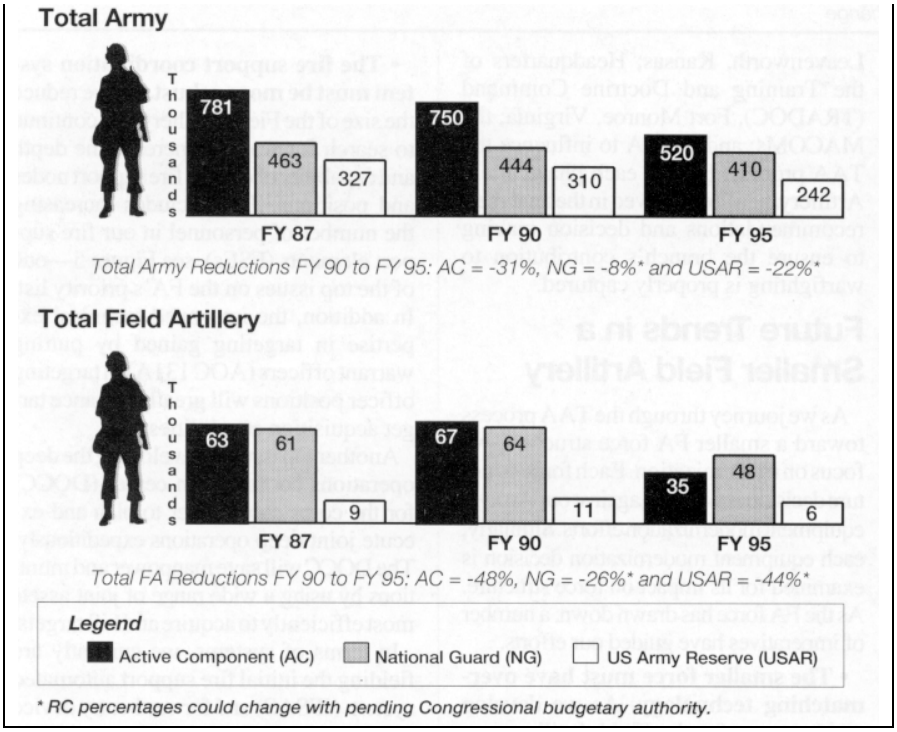



Figure 3: Total Army/Field Artillery Manpower Reduction Comparisons. Taking into consideration the conversions of units to MLRS and the elimination of Pershing and warhead custodial units, the FA is declining at about the same rate as the rest of the Army.

| | Organization | FY 90 | FY 95 | Delta |
|---|---|---|---|---|
| **Total Army** | Corps | 5 | 4 | -1 |
| | Division | 28 | 20 | -8 |
| | Heavy Separate Brigade | 9 | 7 | -2 |
| | Separate Infantry Brigade | 9 | 8 | -1 |
| | Armored Cavalry Regiment | 5 | 3 | -2 |
| **Total** | Divisional FA Battalion | 111 | 68 | -43 |
| **Field Artillery** | Divisional Battery | 34 | 26 | -8 |
| | Echelons Above Division Battalion | 102 | 73 | -29 |

Figure 4: Total Army/Field Artillery *Unit* Reduction Comparisons. The projected Total Army unit reductions from FY 90 to FY 95 are -28 percent of AC and -13 percent of RC. During the same period, these figures compare to the Total Field Artillery as follows: -36 percent of AC and -22 percent of RC units.

## Down-Sizing the Army

America's Army requires more flexible and responsive forces able to fight across the entire spectrum of warfare. To operate most effectively in this new strategic environment, the Army is in the midst of major change. In the past, the National Military Strategy focused on forward-deployed forces, relied heavily on nuclear deterrence and pursued doctrine designed to contain the Soviet Union. It was generally accepted that a force that could stop the Soviets also could meet any other challenge presented. This Cold War Army consisted of a fighting contingent of five corps and 28 divisions and was manned by roughly one and one-half million soldiers in the Active Component (AC) and Reserve Component (RC).

For several years the Army has been in the process of building down to meet its global requirements, resulting in four corps and 20 divisions manned by just over a million soldiers (see Figure 1). The recently announced Bottom-Up Review initiated by Secretary of Defense Les Aspin will draw us down even further.

To implement its portion of the Army's reduction plan, the Field Artillery force structure also will focus on capabilities for crisis response, primarily from the continental US (CONUS). The basic "force allocation rules" generated from the Army of Excellence (AOE) force design have served us well and will require little modification (see Figure 2). Each division will still have direct support battalions, one for each maneuver brigade, and a division artillery tailored for each type of division. Each corps will have one general support FA brigade; in addition, the corps artillery will have one reinforcing FA brigade for each of the corps' divisions. These FA force structure rules have remained constant, but the number of maneuver units the Field Artillery supports have changed drastically.

The downsizing of the Army to be a more flexible, responsive force and the allocation rules dictate present and future reductions in Field Artillery manpower (see Figure 3) and units (Figure 4). Many factors affect our seemingly disproportionate contribution to the Army's downsizing shown in the two figures' statistics. The factors include the conversion of 8-inch and Lance units to the multiple-launch rocket system (MLRS) and elimination of Pershing and warhead custodial units. These changes would have occurred even if the Army had not downsized. When these are set aside, the FA has declined at about the same rate as the rest of the force.

## Down-Sizing and Resourcing Process

To develop a proposed force that best meets projected mission requirements within the anticipated resource level, the Army uses a biennial process called Total Army Analysis (TAA). The process examines the Total Army: AC and RC. TAA starts with a design force and ends with a program force, including all the combat support and combat service support structure, and culminates in a program objective memorandum (POM) to secure funding for the new structure in a six-year plan. The force is revised through TAA's four-phase process: force guidance, quantitative analysis, qualitative analysis and leadership review.

**Phase I Force Guidance.** The first phase develops a theater force structure using guidance from several sources: National Military Strategy, Defense Planning Guidance, The Army Plan (TAP), threat data and information, resource assumptions and priorities, and additional force structure guidance. This guidance is considered

during the development of TAA allocation rules at the first force structure conference, which reviews the rules and related information for completeness, new doctrinal implications and resource acceptability. A Headquarters, Department of the Army (HQDA) general officer steering committee approves the first conference's findings and provides the results to the Concepts Analysis Agency (CAA) for quantitative analysis.

**Phase II Quantitative Analysis.** This phase employs a combat force in a series of computer-assisted simulations, applying the HQDA-approved allocation rules. Computer models establish time-phased, geographically distributed requirements for non-divisional forces—combat, logistical and other support units—rounding-out and balancing each divisional force. In the most recent analysis, simulated forces were deployed for combat in two major regional conflicts (MRCs): Southwest Asia and Northeast Asia.

The product of this computer modeling, called the Design Force, is sent to Army major commands (MACOMs) and commanders-in-chief (CINCs) for qualitative analysis.

**Phase III Qualitative Analysis.** The MACOMs and CINCs use the Design Force to develop an initial program force (within end-strength guidance) and the POM. This initial force specifies the numbers and types of units required and contains the plan to achieve that force structure. A series of analyses, reviews and conferences validate these requirements and add CONUS support units.

A second HQDA force structure conference reviews the MACOM/CINC input to the Design Force. Constraints, such as end-strength guidance and stationing requirements, impact the recommendations that come out of that second conference. HQDA reviews the conference's recommendations and identifies any unresolved issues. A second general officer steering committee reviews, modifies and finalizes the recommendations.

**Phase IV Leadership Review.** A force program review is conducted for the Vice Chief of Staff of the Army. The final step is a decision by the CSA and a briefing to the Secretary of the Army. The CSA's decision results in a TAA program force, which then is published and distributed.

There are opportunities for Field Artillery action officers at the US Army Field Artillery School (USAFAS), Fort Sill, Oklahoma; Combined Arms Center, Fort Leavenworth, Kansas; Headquarters of the Training and Doctrine Command (TRADOC), Fort Monroe, Virginia; the MACOMs; and HQDA to influence the TAA process. During each phase, Field Artillerymen are involved in the analyses, recommendations and decision making to ensure the branch's contribution to warfighting is properly captured.

## Future Trends in a Smaller Field Artillery

As we journey through the TAA process toward a smaller FA force structure, we focus on modernization. Each force structure decision is weighed against our Army's equipment modernization efforts. Similarly, each equipment modernization decision is examined for its impact on force structure. As the FA force has drawn down, a number of imperatives have guided our efforts.

• **The smaller force must have overmatching technology.** As we develop new systems for the Field Artillery, we must ensure they allow us to win decisively while protecting our soldiers. If we're outnumbered early in a conflict and describe decisive victory as reducing the enemy's strength by 50 percent, then we must have systems that allow us to achieve significantly favorable enemy-to-friendly loss exchange ratios to minimize casualties. A small Army can't afford heavy losses as it moves toward victory. The smaller Field Artillery must be more lethal and effective, soldier for soldier.

New systems in the FA will increase our capabilities yet decrease the number of soldiers required to operate those systems. MLRS sets the standard, reducing the general support battalion (armed with the M110 howitzer) by more than 150 soldiers while increasing lethality. The advanced Field Artillery system (AFAS) and its supporting future armored resupply vehicle (FARV) will cut the 155-mm crew from nine to six men. Improvements in the Q-36 Firefinder radar will reduce crew size from eight to six.

In addition, accuracy enhancements and investments in precision munitions—such as sense and destroy armor (SADARM) and BAT, a brilliant submunition capable of killing moving armored vehicles—will reduce the number of rounds needed to kill targets, thus saving manpower throughout our logistical system.

Each technological advancement is examined not only for its ability to kill, but also for its contribution to a smaller force.

• **The fire support coordination system must be more robust.** As we reduce the size of the Field Artillery, we continue to search for ways to increase the depth and capability of critical fire support nodes and positions. This includes increasing the number of personnel in our fire support elements (FSEs), see Figure 5—one of the top issues on the FA's priority list. In addition, the improved technical expertise in targeting gained by putting warrant officers (AOC 131A) in targeting officer positions will greatly enhance target acquisition capabilities.

Another top issue is developing the deep operations coordination center (DOCC) for the corps commander to plan and execute joint deep operations expeditiously. The DOCC will save manpower and munitions by using a wide range of joint assets most efficiently to acquire and kill targets.

In terms of systems, we currently are fielding the initial fire support automated system (IFSAS) and forward-entry device (FED) and will field the advanced Field Artillery tactical data system (AFATDS) in FY 95 and the Bradley fire support team vehicle (BFISTV) in late FY 99. These will increase the robustness of our system of systems by providing faster, more capable and more reliable tools.

| FSE | Current Officer/ Enlisted | Future Officer/ Enlisted |
|---|---|---|
| Heavy Brigade or Heavy Separate Brigade | 5 (2/3) | 8 (2/6) |
| Light Brigade | 5 (2/3) | 8 (2/6) |
| Armored Cavalry Regiment (ACR) | 4 (1/3) | 8 (2/6) |
| Heavy Task Force | 5 (1/4) | 6 (2/4) |
| Light Battalion | 4 (1/3) | 6 (2/4) |
| ACR Squadron | 4 (1/3) | 6 (2/4) |

Figure 5: FSE Enhancements. Future FSEs will be more robust for 24-hour, continuous operations.

• **The Army must have an improved precision strike capability.** One of the CSA's five modernization imperatives is the conduct of precision strikes throughout the depth of the battlefield. In 1991, the Director of Defense Research and Engineering (DDR&E) established joint precision strike as one of seven science and technology thrust areas. This focused

the science and technology community on looking at means to improve the Army's precision strike capabilities. Efforts by the Depth and Simultaneous Attack Battle Lab at Fort Sill and the Joint Precision Strike Demonstration Task Force in Washington, DC, have highlighted the significant contributions of deep fires.

How does this relate to force structure? The need for precision strike, particularly during the early entry battle, will influence the makeup of our forces. Precision strike units equipped with the M270, or the high-mobility artillery rocket system (HIMARS), should be part of early arriving forces.

Though not currently resourced, an MLRS battalion for each heavy division to help increase the reach of division commanders was recently approved by the CSA. The divisional MLRS battalion will include a headquarters, headquarters and service battery; a target acquisition (TA) battery; and two MLRS batteries with nine launchers each.

This battalion will give the division more counterfire capability while enhancing command and control for counterfire and general support fires. With the TA battery, the battalion's structure will facilitate critical sensor-to-shooter linkage for more responsive fires.

• **The Field Artillery must be more rapidly deployable.** Current military strategy calls for the Army to be able to deploy quickly and fight on short notice. Field Artillery organizations must have improved equipment to become more deployable.

To increase the Army's precision strike capabilities for early entry forces, only eight C-5A airlifts are required to quickly insert a land-based precision strike package. This package includes a two-platoon MLRS slice for firepower—including 24 Army tactical missile system(ATACMS) missiles, 36 rockets and a joint surveillance and target attack radar system (Joint STARS) ground station module (GSM)—and a Patriot missile battery for air defense—including three launch stations and 24 missiles. This deployable precision strike package gives the commander great capabilities for relatively few airframes and options for protecting his force and resolving the conflict early.

We're working a number of systems to improve the deployability of our smaller force. Radars and meteorological sections are being reconfigured onto high-mobility multipurpose wheeled vehicles (HMMWVs), and AFATDS replaces the tactical fire direction system (TACFIRE) and its five-ton trucks. New systems (such as a lightweight, towed 155-mm cannon and HIMARS) will allow Army and Marine force commanders greater flexibility and more firepower in allocating scarce lift resources. New munitions—SADARM, BAT, the 105-mm dual-purpose improved conventional munition (DPICM) and rocket-assisted projectiles (RAP)—will provide greater lethality in fewer logistical sorties.

• **The Army will increase its reliance on RC forces.** As history has proven, we've always needed a very capable National Guard and Army Reserve. Today's military strategy and our recent experience in Operation Desert Storm reinforce this need.

As we down-size the active Army, we must increase the modernization of the RC. Systems such as the M109A5 howitzer, IFSAS and MLRS keep the RC well into the modernization loop. Within budget constraints, we'll continue to modernize RC units, allowing them to grow in capability as their force structure changes.

Force structure changes (like the conversion of infantry divisions to mechanized divisions) will increase the war-fighting ability of our RC forces. Innovative changes like "separable" brigades also may affect artillery structure. The new concept envisions maneuver brigades with enhanced capabilities organized into National Guard base divisions but capable of "separating" from their division when called to active duty.

While the final state of the RC structure is still developing, there's no doubt the smaller active force will maintain a growing dependence on a modernized RC for a wide variety of missions.

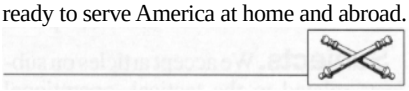
## Where Are We Going?

Secretary Aspin's Bottom-Up Review is causing further changes for the Army. As the pace of change accelerates, the iterative TAA process will help shape our decisions. With the 7th Infantry Division (Light) of California inactivated and the 6th Infantry Division (Light) in Alaska due to inactivate in 1994, the Army will have 12 active divisions. A 10-division active force and a five-division equivalent RC force of 15 enhanced (separable) brigades is on the horizon.

We're re-examining RC contributions and determining the affordability of systems to keep the America's Army modernized. The allocation rules still apply and will guide future restructuring, but the mix of AC and RC forces may change slightly from branch to branch.

The nation's economy will drive the challenge ahead. While our smaller force will be fully manned and well-trained, totally equipping it with overmatching technology will be difficult. The high technology needed to ensure decisive results with minimum casualties is expensive and perishable. The high cost of technology for advanced systems with a shrinking budget present the Army difficult decisions.

The Army's most senior leadership remains committed to ensuring the smaller force is manned with quality soldiers who are properly trained. Though the Army will be smaller in the future, we *will* remain ready to serve America at home and abroad.



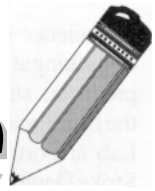
**Colonel Ralph G. Reece is Chief of the Fire Support Division, Force Development, Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS), Washington, DC. His previous assignment was as the Training and Doctrine Command System Manager for Cannon Systems (TSM-Cannon) at Fort Sill, Oklahoma, where, among other projects, he was responsible for the development of M109A6 Paladin and the advanced Field Artillery system (AFAS). He also commanded the 3d Battalion, 3d Field Artillery, 2d Armored Division, Fort Hood, Texas.**

**Lieutenant Colonel James M. Holt is an Organizational Integrator in the Fire Support Division, Force Development, ODCSOPS. He also has served as Deputy Fire Support Coordinator and Assistant Division Artillery S3 for the 1st Infantry Division (Mechanized), Fort Riley, Kansas, and S3 for the 1st Battalion, 5th Field Artillery during Operations Desert Shield and Storm, also for the 1st Division. Lieutenant Colonel Holt commanded B Battery, 1st Battalion, 17th Field Artillery, III Corps Artillery, Fort Sill, Oklahoma.**

**Mrs. Jong (Sue) Trotter is also an Organizational Integrator in the Fire Support Division, Force Development, ODCSOPS. She was the Director of Resource Management for the Eighth US Army Special Troops Command and Chief of the Program Evaluation Branch for the Assistant Chief of Staff for Resource Management, Eighth US Army, both in Korea; and Chief of the Management Division, Deputy Chief of Staff for Resource Management, First Army, Fort Meade, Maryland.**

# 1994 *Field Artillery*

# Author's Guide



**Readership.** A bimonthly magazine, ***Field Artillery*** is the professional journal for US Army and Marine Corps Redlegs worldwide. Approximately 40 percent of our readership is company-grade, both officer and enlisted, with the remaining 60 percent more senior Army and Marine personnel, Department of Defense (DoD) civilians, retirees, members of other branches and services, allies, corporate executives and our political leaders.

**Subjects.** We accept articles on subjects related to the tactical, operational and the strategic levels of war as long as the contents relate to fire support or are of special interest to our readers. But the majority of our articles address issues at the tactical or operational levels.

If an author is writing about the past, he should analyze the events and show how they apply to Field Artillerymen today—not just record history. If he's identifying current problems, he must propose solutions. In addressing the future, he should clearly explain his points and their implications.

Since its founding in 1911, one of ***Field Artillery's*** objectives has been to serve as a forum for professional discussions among the Field Artillery community. Therefore, an author's viewpoint, recommendations or procedures don't have to agree with those of the Branch, Army or DoD. But his article's contents must be logical and accurate, address disadvantages as well as advantages (as applicable), promote only safe techniques and procedures and include no classified information.

***Field Artillery*** has a theme for each edition, but we're not theme-bound. In each edition, we have several articles not related to the theme.

**Style.** Write clearly and concisely and put your thesis statement (bottom line) up front with the body of your article systematically contributing to your thesis. One way to check your organization is to add sub-heads throughout your article and see if the sequence of your points is logical and contributes to your thesis. Be specific about your points, giving examples when possible.

When writing, think like the Redleg in the field—what is it, what will it do for me and how do I implement it (or when will I get it).

Keep in mind some of your readers aren't in the Army or Marines-even the military. When using an acronym, spell it out the first time you use it. When mentioning a new or rare concept, system or technique, briefly explain it, even if it isn't your main point.

**Submissions.** Include—

- A clean, double-spaced, typed, *unpublished* manuscript of no more than 3,000 words with footnotes and bibliography, as appropriate. If possible, send a Macintosh disk (3 1/2-inch preferred) or IBM disk in ASCII text format with the hard copy of the manuscript. Except in the case of Army-wide "news" items, please *do not submit a manuscript to* ***Field Artillery*** *while it's being considered elsewhere.*
- A comprehensive biography, highlighting experience and training that credentials you as an author on your subject. Include your full name, current job, address and telephone number. If there's any change in your position or address before the article is published, notify the ***Field Artillery*** staff as soon as possible.
- Graphics with captions to illustrate and clarify your article. These can include black and white or color photographs of any size (no Polaroids, please), drawings, slides, maps, charts, graphs, unit crests or symbols, etc.

By the dates listed in the figure, send your manuscript, biography and graphics to—

***Field Artillery***
**P.O. Box 33311**
**Fort Sill, Oklahoma 73503-0311**

The ***Field Artillery*** staff will edit all manuscripts and put them in the magazine's style and format. In addition, we'll staff selected articles to subject matter experts to check them for accuracy, safety and classified information. Authors will receive a "check copy" of the edited version before publication.

If you have questions, feel free to call the Editor or Managing Editor at DSN 639-5121 or 6806 or commercial (405) 442-5121 or 6806.

## *Field Artillery* Themes for 1994

| Month | Theme | Copy Deadline |
|---|---|---|
| February | Fire Support—The Maneuver Perspective | 4 Oct 93 |
| April | FA Training | 6 Dec |
| June | Leadership | 7 Feb 94 |
| August | History | 7 Feb (Contest)*<br>4 Apr (Other) |
| October | Fighting the Close Battle | 6 Jun |
| December | Red Book: Annual Report | 1 Aug |

* 1994 US Field Artillery Association History Writing Contest rules are on Page 15 of the August 1993 edition.

# US Field Artillery Units Worldwide

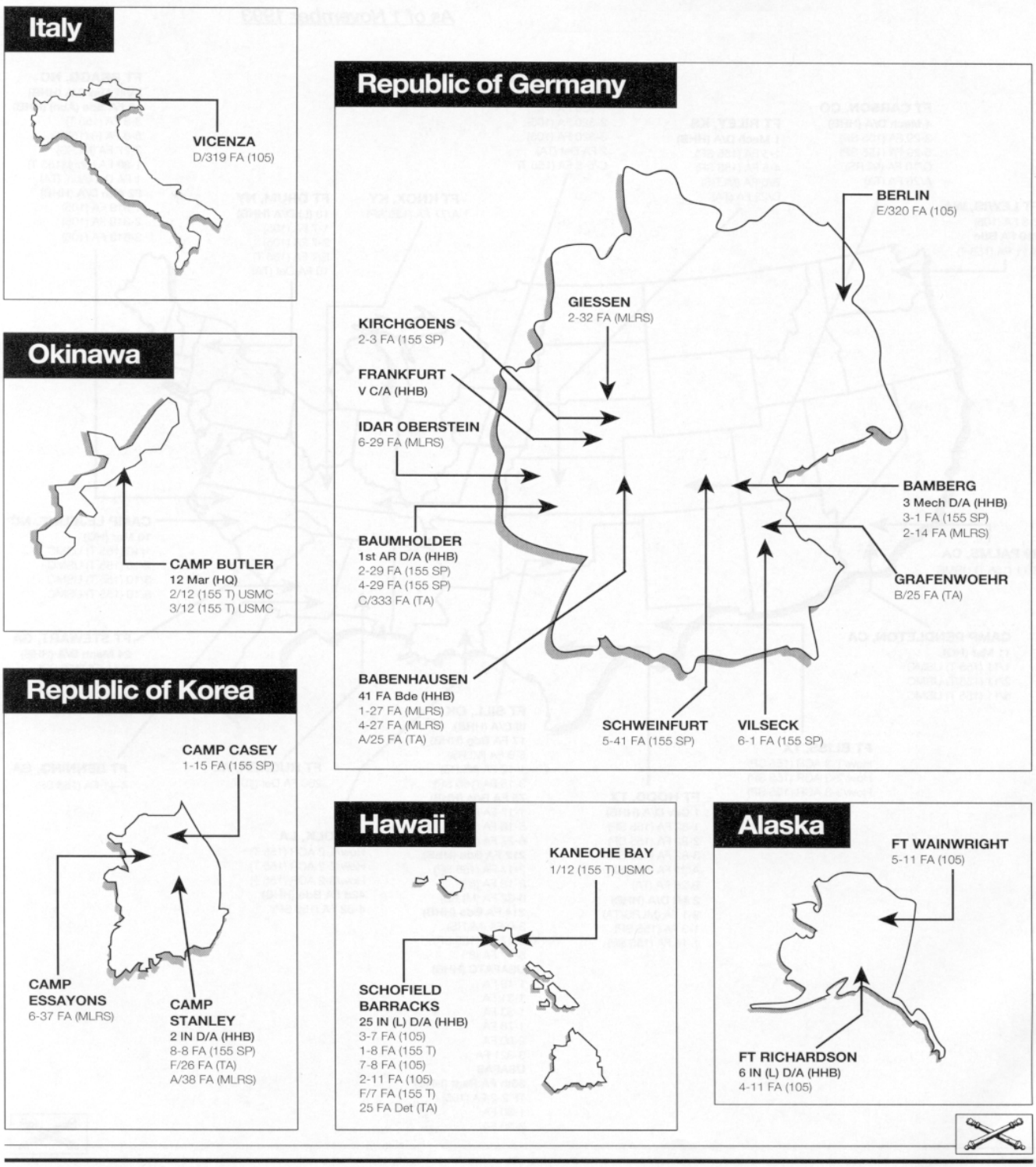
# Active Army and Marine Units in CONUS

*As of 1 November 1993*

# US Field Artillery Units Worldwide

# Active Army and Marine Units OCONUS

*As of 1 November 1993*



# US Field Artillery Units Worldwide

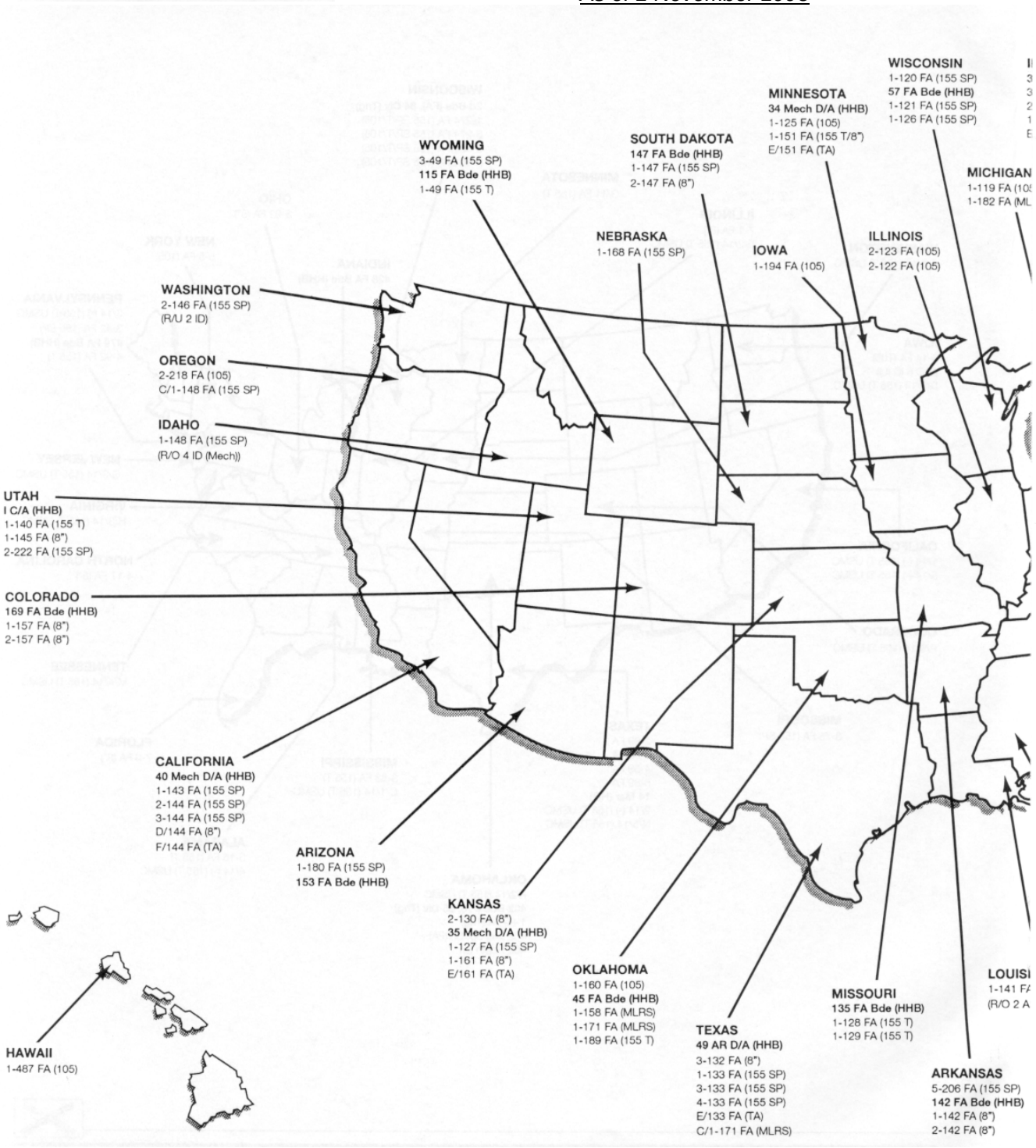
# Army and Marine Reserves

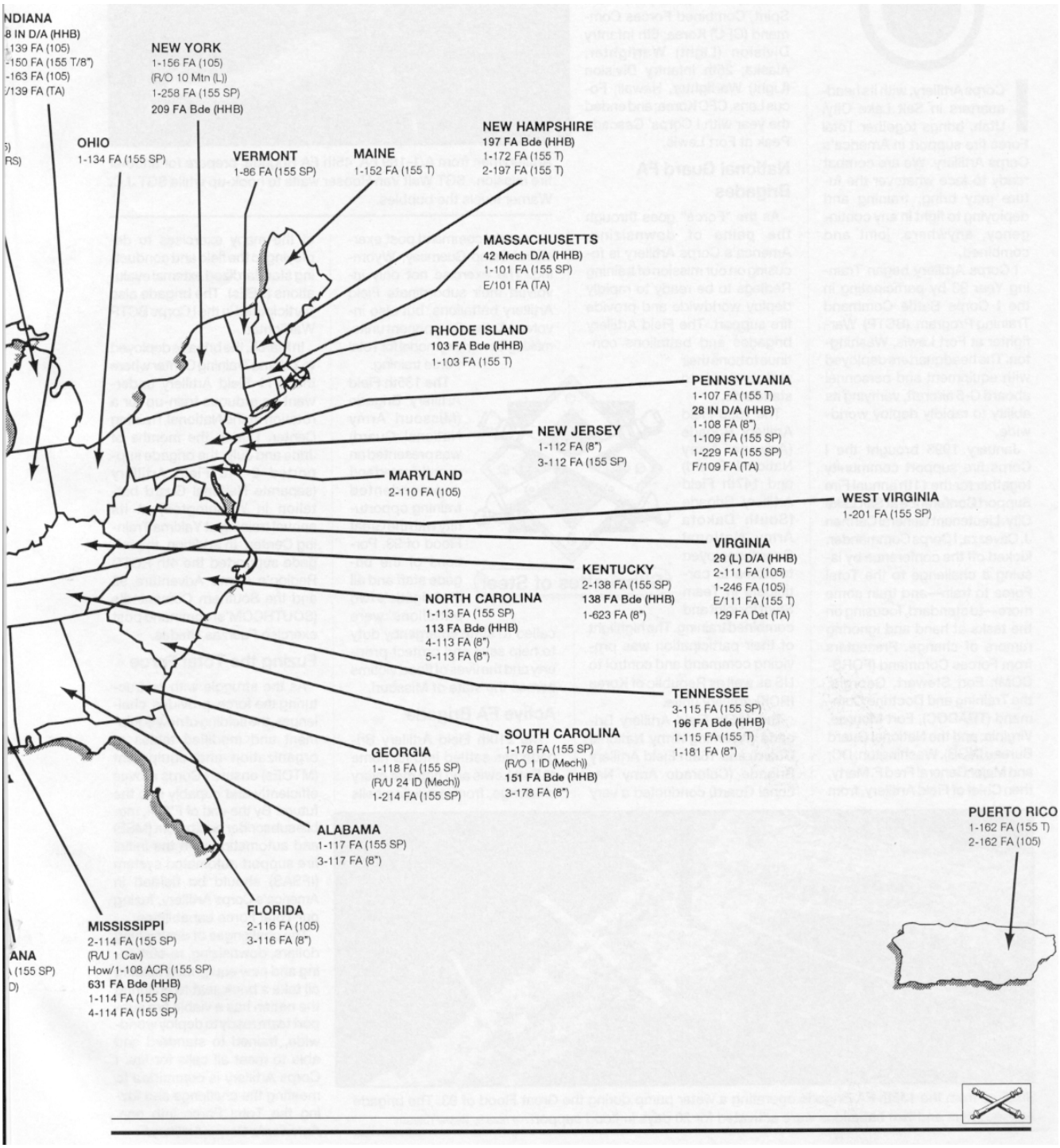
*As of 1 November 1993*

# US Field Artillery Units Worldwide

# Army National Guard

*As of 1 November 1993*

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(R/O 10 Mtn (L))
1-258 FA (155 SP)
209 FA Bde (HHB)
OHIO
1-134 FA (155 SP)
VERMONT
1-86 FA (155 SP)
MAINE
1-152 FA (155 T)
NEW HAMPSHIRE
197 FA Bde (HHB)
1-172 FA (155 T)
2-197 FA (155 T)
MASSACHUSETTS
42 Mech D/A (HHB)
1-101 FA (155 SP)
E/101 FA (TA)
RHODE ISLAND
103 FA Bde (HHB)
1-103 FA (155 T)
PENNSYLVANIA
1-107 FA (155 T)
28 IN D/A (HHB)
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1-109 FA (155 SP)
1-229 FA (155 SP)
F/109 FA (TA)
NEW JERSEY
1-112 FA (8")
3-112 FA (155 SP)
MARYLAND
2-110 FA (105)
WEST VIRGINIA
1-201 FA (155 SP)
VIRGINIA
29 (L) D/A (HHB)
2-111 FA (105)
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E/111 FA (155 T)
129 FA Det (TA)
KENTUCKY
2-138 FA (155 SP)
138 FA Bde (HHB)
1-623 FA (8")
NORTH CAROLINA
1-113 FA (155 SP)
113 FA Bde (HHB)
4-113 FA (8")
5-113 FA (8")
TENNESSEE
3-115 FA (155 SP)
196 FA Bde (HHB)
1-115 FA (155 T)
1-181 FA (8")
SOUTH CAROLINA
1-178 FA (155 SP)
(R/O 1 ID (Mech))
151 FA Bde (HHB)
3-178 FA (8")
GEORGIA
1-118 FA (155 SP)
(R/U 24 ID (Mech))
1-214 FA (155 SP)
ALABAMA
1-117 FA (155 SP)
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FLORIDA
2-116 FA (105)
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MISSISSIPPI
2-114 FA (155 SP)
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# I Corps Artillery

I Corps Artillery, with its headquarters in Salt Lake City, Utah, brings together Total Force fire support in America's Corps Artillery. We are combat ready to face whatever the future may bring, training and deploying to fight in any contingency, anywhere, joint and combined.

I Corps Artillery began Training Year 93 by participating in the I Corps Battle Command Training Program (BCTP) War-fighter at Fort Lewis, Washington. The headquarters deployed with equipment and personnel aboard C-5 aircraft, verifying its ability to rapidly deploy worldwide.

January 1993 brought the I Corps fire support community together for the 11th annual Fire Support Conference at Salt Lake City. Lieutenant General Carmen J. Cavezza, I Corps Commander, kicked off the conference by issuing a challenge to the Total Force to train—and train some more—to standard, focusing on the tasks at hand and ignoring rumors of change. Presenters from Forces Command (FORSCOM), Fort Stewart, Georgia; the Training and Doctrine Command (TRADOC), Fort Monroe, Virginia; and the National Guard Bureau (NGB), Washington, DC; and Major General Fred F. Marty, then Chief of Field Artillery, from Fort Sill, Oklahoma, provided I Corps Artillery an azimuth of the future.

I Corps Artillery steadily trained this year with other Army units, sister services and in combined exercises. The headquarters provided fire support cells to various exercises, such as Yama Sakura, IX Corps Japan; Team Spirit, Combined Forces Command (CFC) Korea; 6th Infantry Division (Light) Warfighter, Alaska; 25th Infantry Division (Light) Warfighter, Hawaii; Focus Lens, CFC Korea; and ended the year with I Corps' Cascade Peak at Fort Lewis.

Artillerymen from A/1-189 FA, 45th FA Brigade, prepare for another fire mission. SGT Walt Van Hooser waits to hook-up while SGT J.C. Warner levels the bubbles.

### National Guard FA Brigades

As the "Force" goes through the pains of downsizing, America's Corps Artillery is focusing on our mission of training Redlegs to be ready to rapidly deploy worldwide and provide fire support. The Field Artillery brigades and battalions continue to hone their skills and train to standards.

The 153d Field Artillery Brigade (Arizona Army National Guard) and 147th Field Artillery Brigade (South Dakota Army National Guard) deployed to Korea to participate in Team Spirit for joint and combined training. The highlight of their participation was providing command and control to US as well as Republic of Korea (ROK) artillery units.

The 115th Field Artillery Brigade (Wyoming Army National Guard) and 169th Field Artillery Brigade (Colorado Army National Guard) conducted a very successful command post exercise at Camp Guernsey, Wyoming. The exercise not only involved their subordinate Field Artillery battalions, but also involved Active Component units, making it a working model for Total Force training.

Silhouettes of Steel

The 135th Field Artillery Brigade (Missouri Army National Guard) was presented an unanticipated and unprecedented training opportunity with the Great Flood of 93. Portions of the brigade staff and all the brigade's two battalions were called to state emergency duty to help save and protect property and the lives of flood victims across the state of Missouri.

### Active FA Brigade

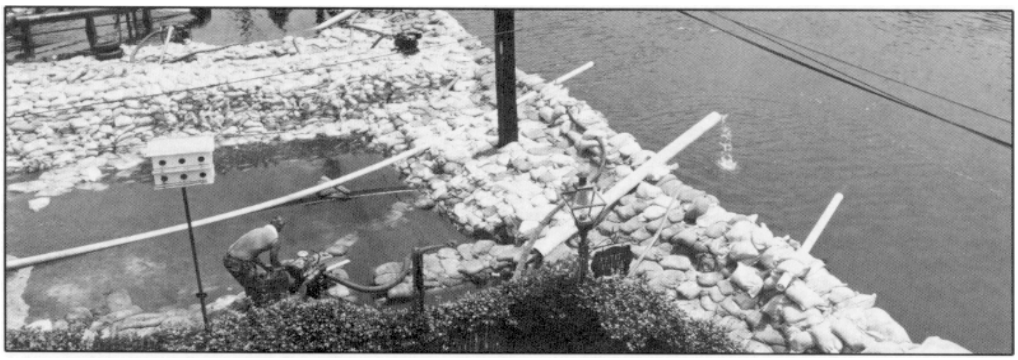
The 210th Field Artillery Brigade has settled into its home at Fort Lewis and has met every challenge, from providing cells at the many exercises to deploying to the field and conducting standardized external evaluations (SEEs). The brigade also participated in the I Corps BCTP Warfighter.

In March, the brigade deployed to Yakima Training Center where the 3-11 Field Artillery underwent an arduous train-up for a rotation at the National Training Center. During the months of June and July, the brigade supported 2-146 Field Artillery (separate National Guard battalion in Washington) at its annual training at Yakima Training Center. In addition, the brigade supported the 4th ROTC Region's Camp Adventure 93 and the Southern Command's (SOUTHCOM's) command post exercise Fuerzas Unidas.

### Fuzing the Total Force

As the struggle with restructuring the force provides challenges, the fielding of new equipment and modified tables of organization and equipment (MTOEs) ensure I Corps moves efficiently and capably into the future. By the end of FY 94, mobile subscriber equipment (MSE) and automation with the initial fire support automated system (IFSAS) should be fielded in America's Corps Artillery, fuzing our Total Force capabilities.

The challenges of diminishing dollars, downsizing, re-stationing and new equipment fielding all take a back seat to ensuring the nation has a viable fire support team ready to deploy world-wide, trained to standard and able to meet all calls for fire. I Corps Artillery is committed to meeting the challenge and fuzing the Total Force into one. ***America's Corps Artillery!***



Soldiers from the 135th FA Brigade operating a water pump during the Great Flood of 93. The brigade headquarters and two battalions were activated for 20 days in flood support. *(Photo by Wayne Crasslin)*

# III Corps Artillery

A Paladin from 2-17 FA. The first unit equipped with the new M109A6s fires during training at Fort Sill.

Continuity and change—watchwords for today's Army—have become a way of life in the Phantom Corps' Arty, Fort Sill, Oklahoma. Continuity in a proud tradition of unsurpassed excellence has been achieved through an unwavering focus on *mission, standards* and *teamwork,* even as past "constants" turned into variables. Responding to the challenges posed by worldwide, short-notice deployability and the absence of a single, coherent "threat" has allowed our four brigades, 14 battalions and 8,500+ soldiers to prove their mettle in many new areas.

**Headquarters, III Corps Arty.** In 1993, our headquarters has been a study in perpetual motion—often in multiple directions simultaneously. In addition to exercising command and control over the world's largest concentration of fire support combat power and overseeing programs focused on readiness, training, modernization and quality of life, the headquarters made all 10 stops on the "Phantom Corps World Tour." The itinerary included Korea for Team Spirit, the NTC for Operation Mojave Strike (one of the CTC rotations stressing JTF-level contingency operations, or CONOPs) and four divisional BCTPs—an itinerary culminated recently in our corps' BCTP War-fighter. Bottom line: a battle staff ready to "fight with fires," joint and combined, anywhere in the world.

**17th FA Brigade.** The past year was full of challenges for the "Thunderbolt" Brigade. The newest brigade in III Corps Arty and the first with two MLRS battalions started the year with a brigade TOC deployment to the NTC for CONOPs. A month later, the TOC again deployed, this time to Team Spirit, a very successful and worthwhile exercise. The brigade then prepared for the BCTP with the 4th Infantry Division (Mech)—another tremendous success. The brigade staff finished the summer by evaluating the 169th FA Brigade (Colorado ARNG) during AT at Camp Guernsey, Wyoming.

The battalions trained hard as well. 5-3 FA fired its last 8-inch rounds and then began converting to MLRS with the conversion to be complete next spring. 1-12 FA completed its conversion from Lance to MLRS, displaying a high degree of readiness on its EXEVAL The battalion rounded out its training program with an exciting ATACMS live-fire exercise at White Sands Missile Range. 3-18 FA converted to M109A5 and continued its mission of training with and providing fire support to the 3d Armored Cavalry Regiment (3d ACR). It completed another NTC rotation with the 3d ACR in September, again proving 3-18 FA is combat-ready.

**75th FA Brigade.** 1993 was a great year for the "Diamond" Brigade. It participated in the 1st Infantry Division (Mech) BCTP at Fort Riley last winter and massed the brigade fires during its annual "Taut Lanyards" FTX in March. Units fired in two CALFEXs and conducted many FTXs, honing their proficiency in METL tasks. The brigade also fielded the fire direction data manager (FDDM), lightweight computer unit (LCU) and Version 10 software.

The battalions focused on section and platoon lane training, which resulted in extremely successful battery and battalion annual EXEVALs. Similarly, affiliated RC battalions found lane training contributed significantly to collective training during ATs and in a Fifth Army operational readiness evaluation (ORE) of an MLRS battery (Bold Shift). 1-17 FA's EXEVAL in August prepared it well to support the 1st Cavalry Division at the NTC.

6-27 FA deployed its command and control element and three MLRS launchers from each firing battery to Twenty-Nine Palms in September to train with the 11th Marine Artillery Regiment. The unit fired rockets in counterfire and deep operations, integrating MLRS with tactical air, attack helicopters and remotely piloted vehicles.

**212th FA Brigade.** 1993 was a fast-paced training year for the "Courage and Command" Brigade. The brigade headquarters administered two annual EXEVALs and participated in a BCTP with the 1st Cav Division and in our corps' Warfighter exercise at Fort Hood. Participation in two CALFEXs and a brigade CPX further honed war-fighting skills. The highlight of the year for the headquarters was its CONOPs NTC rotation. Additionally, all battalions participated in rotations at the NTC: 2-17 FA and 2-18 FA supported the 1st Cav, and 6-32 FA became the first MLRS battalion at the NTC, firing 54 rockets during CONOPs.

2-17 FA became the Army's first unit to field the M109A6 Paladin in June. The battalion conducted NET and collective training in July and August and certified as the first Paladin battalion in its EXEVAL in September. 2-18 FA's training highlights were platoon lane training; a demanding, successful battalion EXEVAL; and support of two CALFEXs. Also, 6-32 FA conducted battery EXEVALs, each culminating in live-fire, and fired in a CALFEX.

A/1-12 "Mad Dogs" during an EXEVAL. *(Photo Courtesy Lorrall Vaught, Dallas, TX)*

**214 FA Brigade.** The "Naturally We Lead" Brigade remains the Army's largest, most diverse FA brigade: 3-9 FA, 3-17 FA and 5-17 FA, as well as the 19th Maintenance and 47th Combat Support Battalions. The brigade completed its enhanced CONUS contingency capability ($EC^3$) restationing mission by receiving the 69th Personnel Services Company and B/62d Engineers. Concurrently, the brigade inactivated the 230th Finance Support Unit and 471st Transportation Company. Also this year, soldiers from the brigade deployed to Kuwait, Somalia, Ethiopia and Egypt.

FY 93 found the delivery of fires units in the brigade training on their METL tasks to deploy, fight and sustain operations. Each FA battalion underwent annual EXEVALs—the first for 3-17 FA and 5-17 FA since their EC3 moves from Europe and the first EXEVAL for 3-9 FA as MLRS. The FY ended with 3-17 FA supporting the 3d ACR at the NTC; 3-9 FA conducting battery EXEVALs at White Sands Missile Range and 5-17 FA preparing to convert to MLRS. The brigade headquarters participated in the 35th Infantry Division (Mech) (Kansas ARNG) BCTP, supported the 361th FA Brigade (Mississippi ARNG) AT and participated in Version 10 testing with TEXCOM.

**Final Thought.** Perhaps the best way to express the capabilities and commitment of today's III Corps Arty Redlegs is to update the calling card of another professional peacemaker: Paladin. "Have Guns (& MLRS), Will Travel! Wire Fort Sill, the world-class power projection platform for ***Phantom Firepower."***

# V Corps Artillery

In the ever-changing arena of the European Theater, V Corps Artillery in Germany continues to evolve as the world's only forward-based corps artillery. Faced with various contingency missions and out-of-sector deployments, a constrained budget, closing training areas and reduced manpower authorizations, V Corps Artillery remains "Steadfast and Strong" in the execution of meaningful, high-quality training and deployment readiness.

This last year saw V Corps Artillery soldiers deploy and support out-of-sector operations in Turkey, Somalia, Saudi Arabia, Italy and the former Yugoslavia. Most of V Corps Artillery underwent force modernization and continued to train as part of the new V (Multinational) Corps. Regardless of what mission the corps artillery is called upon to perform, we are prepared and ready!

**Force Development**

As the V Corps Artillery breaks the mold of missions conducted by a heavy corps, it continues to upgrade its equipment to meet these challenges.

Earlier this year, 1-27 FA (MLRS) and 4-27 FA (MLRS) completed conversion to Version 6.0 (ATACMS-capable) and joined 2-32 FA (MLRS) in making the 41st FA Brigade "Rail-gunners" the only fully ATACMS-capable MLRS Field Artillery brigade in the world.

The Field Artillery tactical data system (FATDS) software and AN/GYK-37 lightweight computer unit (LCU) also were fielded and significantly increased the corps artillery's fire direction and mission processing capability. The addition of the new M989A1 heavy expanded-mobility ammunition trailer (HEMAT) to the 41st FA Brigade increased organic ammunition hauling capabilities. These force modernization initiatives enhance the corps artillery's flexibility, providing an increased mobility and firepower advantage to strike the enemy anywhere in the corps sector on the modern battlefield.

**Training for New Missions**

V Corps Artillery's training program has taken on added significance with our evolving role within V Corps. We began the year by deploying to the Grafenwoehr Training Area with elements of the 41st FA Brigade in an intensive effort to train the corps artillery for deployment to various theaters of operation. Supporting a new role for a corps artillery, the scenario was for light and heavy forces in a regional security mission in operations other than war.

Concurrent with this exercise, V Corps Artillery continued training to support the corps in a more traditional heavy fight. This became more challenging with V (US) Corps' change of mission to V (Multinational) Corps.

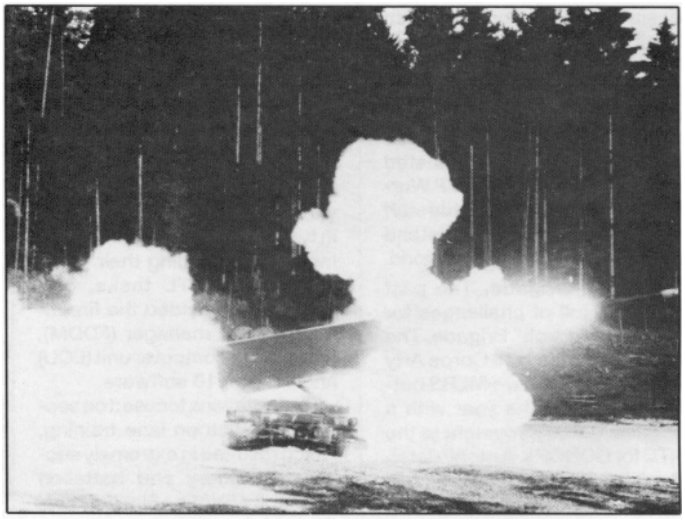
Since the 3d Infantry Division's "Marne Victory" Warfighter exercise in January, V Corps Artillery has stepped forward to meet this new multinational challenge. Exercises were conducted not only with the 1st Armored and 3d Infantry Divisions, but also the German 5th Panzer Division, the Dutch 12th Mechanized Brigade and the British 7th Armored Brigade. This new allied relationship has led to increased liaison requirements and has brought V Corps Artillery an artillery exchange officer permanently assigned from the II German Corps Artillery. Training with our NATO allies both in the execution of the corps deep battle and coordination of corps artillery fires has been especially rewarding and very educational for all concerned.

Combining the two new missions of V Corps, the corps artillery prepared for an out-of-sector deployment of the corps (-) for REFORGER/Dragon Hammer 93 by rail, road, air and sea into training areas in Italy. Extensive coordination was conducted with German and Italian allies in preparation for the deployment of the corps artillery and the deep operations cell. These elements were to deploy early to participate in a joint theater missile defense exercise with the 32d Army Air Defense Command, 6th US Fleet and 5th Allied Tactical Air Force. Unfortunately, only weeks from execution, contingency operations in another theater precluded the corps' deployment.

CPT Eric Price, G2, initiates a deep operations "Stand-to" briefing, giving an overview of the enemy situation, for BG Thomas E. Swain, Commanding General, and other key V Corps deep operations team members.

In August, the corps artillery's calendar was highlighted by a milestone training event appropriately named "Steadfast II." Conducted at Grafenwoehr, the exercise featured a three-day scenario-driven "deep" CALFEX characterized by combined, joint and multinational operations. Six different attacks mixed, matched and massed US, German and French live MLRS artillery fires in support of combined air force and army aviation deep live-fire attacks. The highly successful exercise marks a new multinational training achievement for the corps artillery.

The success of Steadfast II further demonstrates V (Multinational) Corps Artillery's ability to execute any mission assigned in the manner of our trademark motto: ***Steadfast and Strong!***



An MLRS launcher from the “Railgunners” Brigade conducts live firing at Grafenwoehr Training Area.

# XVIII Airborne Corps Artillery

5-8 FAR conducted air assault operations during a battalion training exercise in May 93.

The XVIII Airborne Corps Artillery, headquartered at the Home of Airborne, Fort Bragg, North Carolina, had another challenging and productive year in support of the contingency corps—America's premier crisis response force.

The mission of the crisis response corps artillery is unchanged and increasingly complex. The charter of being prepared to deploy rapidly by air, sea and land anywhere in the world to win decisively and redeploy is the mind-set of every corps artillery soldier.

This mind-set is indoctrinated through rigorous and realistic training airborne. Air Assault, seaborne and air-land tactics are routinely trained and exercised in realistic "no-notice" EDREs—the most aggressive such program in the Army.

The rapid changes in our forces with the drawdown and the increasing diversity required to perform multiple missions under varied scenarios necessitates a clear vision of an end state. The end state is highly trained and well maintained, equipped and motivated soldiers led by quality leaders with character and competence. The XVIII Airborne Corps Arty has the leaders, soldiers, vision and the mission. We remain focused on the end state. In the long haul, the goal will be to sustain our edge while continuing to sharpen our focus as the mission and the situation change.

**18th FA Brigade (Airborne).** The 18th Brigade, also at Fort Bragg, is the most diverse FA brigade in the Army, consisting of light, air assault and airborne battalions, an airborne HHB, an airborne radar detachment and an MLRS battalion. Its mission is to provide GS and reinforcing fires, primarily to the Airborne, Air Assault and light divisions. To refine skills for that mission, the brigade's training year began with units participating in the Corps Arty Fire Exercise 92.

Early this year, 1-39 FA air dropped a platoon in support of the 75th Ranger Regiment during the joint Leatherneck Ranger exercise. The 1-39 FAR and 3-8 FAR participated in Flying Thunder, which reassessed air deployment readiness. In that exercise, 1-39 FAR conducted an airborne operation that included a heavy drop, 200 paratroopers and six aircraft and the 3-8 FAR conducting an ARTEP. Later, the 1-39 FAR also conducted an EDRE at Fort Pickett, Virginia, with an airborne operation, including a two-gun heavy drop package and 150 paratroopers. Throughout the year 3-8 FAR participated in many air-land operations.

After transitioning to an Air Assault battalion, 5-8 FAR participated in the first Air Assault Course held at Fort Bragg. It then deployed soldiers to South Carolina to evaluate 4-113 FA (ARNG), along with 3-8 FAR, which evaluated 4-178 FA (ARNG), during the National Guard battalions' AT. At the end of the evaluation, 5-8 FAR conducted a battalion FTX with the 101st Air Assault Div Arty at Fort Campbell, Kentucky. In addition, 5-8 FAR participated with the 82d Airborne Division during the first JRTC rotation at Fort Polk.

The brigade's MLRS battalion, 3-27 FAR, also had a busy year, including participating in the 24th Infantry (Mechanized) Div Arty's BCTP Warfighter at Fort Stewart, Georgia. This year, the battalion employed multiple firing positions in an LFX, using the multiple aiming point system. C/3-8 FAR tested the aiming point system for the Army Research Lab. After upgrading its software to fire ATACMS, 3-27 FAR conducted the Army's first battalion-level ATACMS LFX at White Sands Missile Range, New Mexico. At the same time, the battalion received the Valorous Unit Award for service in Deserts Shield and Storm. The battalion also provided a platoon package for the C-17 aircraft's acceptance flight from Fort Bragg to Charleston, South Carolina. Notably, the Chief of Staff of the Air Force piloted the test C-17 with the Vice Chief of Staff of the Army on board.

The 18th Brigade supported BCTP exercises of the XVIII Airborne Corps divisions this year as well as several CALFEXs and JAATs. The brigade will continue to train tasks critical to meeting any contingency requirement anywhere.

**42d FA Brigade.** The Wheel Horse Brigade has come full circle since arriving at Fort Polk, Louisiana, in September 92 with only 30 percent of its authorized strength. With a steady flow of personnel and equipment, the brigade will reach full combat capability early in FY 94.

While coming up to strength, the 42d Brigade fulfilled its mission of supporting the heavy and Air Assault divisions with fires. This year, it sharpened command and control capabilities during the highly successful BCTP War-fighter with the 24th Division. Then the brigade and 4-82 FA battalion headquarters deployed to Fort Campbell for the Corps Arty's Dragon Fire exercise.

4-82 FA steadily increased its combat readiness by training and evaluating entirely new sections and moving into battery ARTEPs. The process culminated in a grueling 72-hour, 3x8 battalion EXEVAL, just six months after it received its equipment from Europe. The battalion also sent a command post to the NTC in support of a brigade task force from the 24th Division. 4-82 FA has been training hard to prepare for its next EXEVAL, scheduled for this month, which will validate the battalion on 3x8 battery operations.

The 42d FA Brigade is anticipated to grow by an additional active battalion in the short term and, eventually, to three battalions. As the brigade continues to grow and develop, it will refine and implement TTP in support of heavy/light operations at the JRTC and the rapid deployment forces of the XVIII Airborne Corps.

**Future Challenges.** The catch phrase of the XVIII Airborne Corps contingency force is "Increased Deployability and Lethality." The future holds a renewed dedication to that adage.

As we refine our deep and simultaneous attack doctrine in the force projection environment, we'll continue to develop more lethal and efficient uses for our current systems by taking advantage of emerging technology. America's premier crisis response force is always looking for better means to accomplish our mission—***Airborne!***

Elements of 4-82 FA conducting a mission during a field training exercise.

# Training Command: FA School, FATC and NCOA

1993 has been a year of realignment within the US Army Field Artillery School (USAFAS), Fort Sill, Oklahoma. Following the dual role assumed by the Assistant Commandant (AC) in 1992 when the Field Artillery Training Center (FATC) was aligned with the school and the AC became the Deputy Commanding General-Training, the Training Command was formally established in January 1993. It consists of the Field Artillery School (30th FA Regiment), FATC and the NCO Academy (NCOA).

In addition, the Deputy Assistant Commandant (DAC) position was eliminated with the creation of the Chief of Staff, Training Command. Effective 1 June, the Commander of the 30th FA Regiment (Provisional) assumed a dual role as the Regimental Commander and Chief of Staff of the Training Command.

During the reorganization, the Field Artillery School changed some training responsibilities. The Communications/Electronics Department (CED) was eliminated as a teaching department with communications MOS training now conducted at Fort Gordon, Georgia. Also, the Survey Division was moved from the Fire Support and Combined Arms Operations Department (FSCAOD) to the Gunnery Department (GD).

The mission of the Training Command remains on course: Train Redlegs to provide timely, accurate fires for the combined arms or joint force commander. During 1993, Fort Sill continued to provide top-quality instruction to students of all ranks, Active and Reserve Components, Army, Marines and allies.

Work at Fort Sill has produced great progress in doctrine, training, force design, equipment and leader development. Key efforts included helping to write *FM 100-5 Operations* and *Joint Pub 3-09 Doctrine for Joint Fire Support,* assisting in the planning and execution of joint precision strike demonstrations and the continued development of advanced fire support systems.

**Instruction/Training.** In spite of scarce resources, the Training Command has improved the quality of instruction and changed the curriculum to provide, among other things, more training in the field. Some of the more significant changes include—

• Tripling the time FA Officer Basic Course (FAOBC) and Officer Advanced Course (FAOAC) students spend in the field. In addition, small group leaders now are involved with every aspect of training.

• Adding a three-day, hands-on, combined arms live-fire exercise that integrates basic NCO course (BNCOC) and advanced NCO (ANCOC) students into one scenario. Also, the primary leader development course (PLDC) at our NCOA now is entirely hands-on field training.

• Developing and implementing a common scenario for training both FAOBC and FAOAC—much like the Combined Armed Services Staff School ($CAS^3$) and Command and General Staff College (CGSC) at Fort Leavenworth, Kansas.

• Increasing instruction on MLRS operations to provide field knowledge of doctrine, organization, equipment and the capabilities of the system.

• Integrating MOS 13B10 training throughout the 14-week MOS 13B one-station unit training (OSUT) curriculum to produce a better trained skill level one Cannoneer who more readily identifies with the Field Artillery. FATC also initiated an integrated 13B/13E/13F FTX to reinforce the trainees' MOS skills and allow them to appreciate their role in the total fire support equation.

Our teaching methods and curriculum may change, but the end result will be the same: topnotch, qualified and competent officers, NCOs and soldiers leaving Fort Sill and reporting to units ready to meet the challenges of today's Army.

**Force Development.** Fort Sill continues to be an Army leader in combat and force developments by conducting field research and studies to fix today's problems and design tomorrow's force. For example, the Depth and Simultaneous Attack Battle Lab is designing and testing a deep operations coordination center (DOCC) to plan, coordinate and execute deep operations at the corps level. The lab also is working to reduce sensor-to-shooter time lines to increase joint fire support responsiveness and effectiveness.

In addition, the Training Command is working a number of key systems for the Field Artillery community, which include—

• Testing the M109A6 Paladin, proving it is the "cannon system of the future." The 2-17 FA of III Corps Artillery, the first unit equipped, put Paladin through its paces—it even sent a platoon to the National Training Center. The next unit to receive Paladin is the 24th Infantry Division (Mechanized) at Fort Stewart, Georgia, with fielding in July 1994. Paladin employs "shoot and scoot" tactics that provide a 60 percent increase in howitzer survivability and a quantum leap in responsiveness. We're also fielding our M119A1 light howitzer (towed 105-mm)—almost complete.

• Continuing the development of the advanced Field Artillery system (AFAS) and its future armored resupply vehicle (FARV). The AFAS/FARV system will displace the Paladin in Force Package 1 units, allowing more flexible tactical employment and providing twice the effectiveness of the Paladin. The first unit equipped is scheduled for FY 06.

• Testing the Bradley fire support team vehicle (BFISTV) retrofit to replace M981s for company FISTs in selected units. The first unit to be equipped is scheduled for late FY 99.

• Fielding the initial fire support automated system (IFSAS) to National Guard units. In January, we'll start fielding IFSAS to active units with the fielding projected to be completed in all National Guard and active units in two years. The advanced Field Artillery tactical data system (AFATDS), which will start fielding in 1995, will provide automated fire direction software and hardware for all FA systems.

• Upgrading our Q-37 radars in the enhanced Firefinder Block I (AN/TPQ-37(V)) program. The upgrade is a non-developmental, short-term program that uses minimal technical risks to increase capabilities. It also increases commonality with the Q-36 control group and incorporates Desert Storm software. The third quarter of FY 95 is the date for the first unit equipped.

**Field Feedback**. Our best source of information is you—the Redlegs in the field. Give us your ideas and feedback. You are where the doctrine, materiel and training are put to test. ***The Training Command is here to support you!***

FATC 13B trainees load rounds into the back of a howitzer as part of their hands-on training. *(Photo by SSG J. P. Barham)*

One of A/6-29 FA POCs in the back of an M997 at the CMTC during contingency operations.

B/4-29 FA at the CMTC practicing occupying an operating base for contingency operations.

# 1st Armored Division Artillery

The 1st AD Redlegs in "Ironland" in Germany take great pride in integrating fire support for America's Tank Division. The past year's training was as dynamic as it was challenging due to the changing political environment of Europe and the world. The Div Arty's three pillars—artillery maneuver, gunnery and the integration of fires—continued to provide the cornerstones for training throughout the year. In addition, our MLRS battalion upgraded to ATACMS-capable.

1993 training began with two corps-level exercises that had the 1st AD fighting as part of a NATO effort. The Div Arty quickly integrated allied fire support assets into the division's array of combat power. Allied drones provided real-time imagery that guided the 1st Amored Division's combat power to strike the winning punch.

In March, Iron Steel exercised its artillery maneuver, the extent of which has not been seen since the REFORGERs of the Cold War days. "Rolling Steel" took our entire command and control (platoon FDCs through Div Arty TOCs) into the German countryside for a simulation-driven command field exercise. In the exercise, the G2 served as the opposing force, a Third World composite enemy, that drove us to contend with Soviet variant tactics and techniques. We also executed deep operations with the division's aviation brigade, integrating fire support and aviation assets in an actual flight within the maneuver rights area.

The CMTC became the premier arena for 1st AD soldiers to practice new peacekeeping, peacemaking and humanitarian missions. Integrating fire support into these new missions compels Iron Steel soldiers to balance the skills of warriors with the adroitness of statesmen. All four Div Arty battalions successfully rotated through the CMTC, conducting operations short of war and transitioning to mid- and high-intensity conflict scenarios.

Iron Steel always will provide devastating, accurate and timely fires for America's Tank Division. ***Iron Steel!***

Silhouettes of Steel

# 1st Cavalry Division Artillery

The Red Team of the 1st Cavalry Division, Fort Hood, Texas, enjoyed a banner year of challenge and success in 1993. Our three DS battalions—1-82 FA, 2-82 FA (reflagged from our 1-3 FA) and 3-82 FA—as well as separate batteries, performed demanding missions, ranging from four NTC rotations to three rapid overseas deployments: Operations Intrinsic Action, Restore Hope and Iris Gold.

Throughout the year, the Red Team perfected a comprehensive battery lane training program. Conducted in preparation for the NTC, these lanes build on the artillery tables and present challenging, realistic scenarios evaluated externally. The FISTs also underwent an innovative situational training exercise (STX) lane concept: a forward security element was replicated, and FISTs identified and called for fires on moving formations.

The year began with a validation of our rapid deployment capability as B/3-82 FA replaced C/1-82 in Kuwait. The battery returned in mid-December only to redeploy three weeks later in a 48-hour redeployment.

The months January through March were highlighted by force mod fieldings and 1-82 FA's NTC rotation. FSEs received the forward-entry device (FED) and A/21 FA (MLRS) received the light-weight computer unit (LCU) and upgraded their launchers to ATACMS-capable. 1-82 FA deployed to the NTC in February, taking a Paladin platoon from 2-17 FA, part of III Corps Artillery.

This was the Paladin's first NTC rotation.

Spring saw the division gearing up for BCTP. For this iteration, the Red Team developed an aggressive battle plan to eliminate the OPFOR artillery from the fight and level the playing field for maneuver. In the end, the Red Team devastated the OPFOR, leaving them with only two of more than 900 tubes still in action.

While command and control centers were involved with BCTP, Red Team NCOs organized and conducted the second iteration of Red Team Stakes, a comprehensive military skills and physical fitness competition among Div Arty units.

The Red Team continues to ride forward in the saddle to provide the First Team with superior fire support whenever necessary, wherever needed. ***First Team, Red Team!***

C/1-82 FA in US/Kuwait cross-training with MAJ Mohammed Zaid on a "direct-fire range."

# 1st Infantry Division (Mechanized) Artillery

B/6 FA shoots another round down-range during a LFX at Fort Riley, Kansas.

1-5 FA live fires during training.

1993 was a fast-paced, challenging and dynamic year in Drumfire history. The 1st Div Arty, Fort Riley, Kansas, focused on success while maintaining the highest standards in battle training.

The Div Arty started the year with two successful division CPXs that culminated with the division BCTP Warfighter exercise at Fort Riley. Once again, we proved our fire support leaders can provide the combined arms commander the fire support he needs to win a decisive victory on the battlefield.

Throughout this year, unit lane training has been the foundation of our training. 1-5 FA, 4-5 FA and B/6 FA (MLRS) validated their wartime missions with this concept. Lane training was the cornerstone for our successful NTC rotations. During both rotations, our direct support battalions contributed significantly to the combined arms team. In addition, unit-level lane training oriented to the battlefield operating systems was the basis of the B/6 FA (MLRS) external evaluation and live-fire exercise.

Additionally, the Div Arty supported 1-149 IN (Kentucky ARNG) mortar crews, 2-138 FA (Kentucky ARNG), 1-127 FA (35th Mech Div Arty, Kansas ARNG), 1-168 FA (Nebraska ARNG) and 1-120 FA (Wisconsin ARNG) during their annual training evaluations. Our leaders provided these units individual and crew/section training for cannon crews, mortar crews and fire support teams.

Most recently, we supported annual training with our round-out battalion—1-178 FA (South Carolina ARNG). The Div Arty evaluated 1-178 FA on its ability to provide timely, accurate fires during both the division's contingency operations (CONOPS) rotation and the 1st Brigade's rotation.

The Div Arty participated in the Army's testing of the General Dynamics single-channel ground and airborne radio system (SINCGARS) in January and February. 1-14 FA and 9-1 FA passed more than 70,000 digital messages with all types of digital equipment, putting the radios through a hellish test.

The 9-1 FA "Deep Strike" battalion proved its mettle in two devilishly difficult events. In April, A/92 FA (MLRS) underwent a Forces Command (FORSCOM)-level operational readiness evaluation (ORE). FORSCOM assessed the unit as mission-capable. A/92 FA is the only 2d Armored Division unit to complete an ORE and only the third active Army unit to do so. During the ORE, our 44th Chemical Company won the 1993 Sibert Award: the Army's Best Chemical Company.

The Hell's Fires' Artillery, rising like the Phoenix from the ashes of inactivation, has continued the 2d Armored Division tradition of providing demonic fire support to strike fear into the hearts of our enemies. The 2d Armored Division Artillery stands ready to make any opponent burn in ***Hell's Fires!***

Silhouettes of Steel

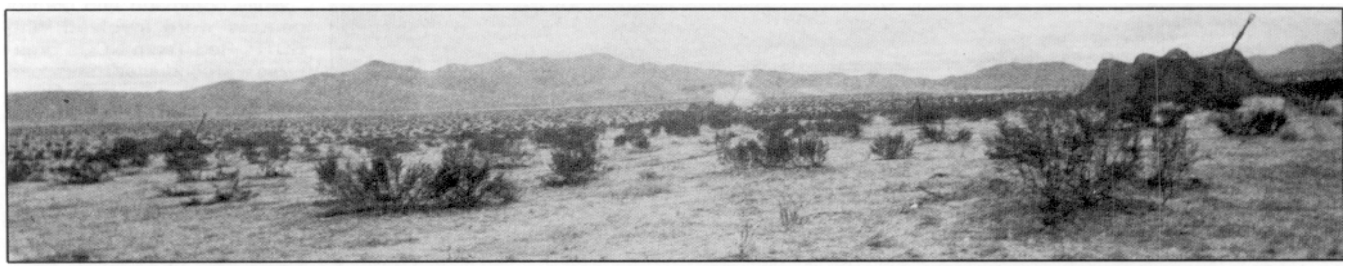
# 2d Armored Division Artillery

Hell's Fires' ignited again out of the inactivation of the 5th Infantry Division (Mechanized) in late 1992. The 5th Division at Fort Polk, Louisiana, cased it's flag in December and reflagged as the 2d Armored Division, with units moving from Fort Polk to Fort Hood, Texas, shortly thereafter. In the process, we also reflagged two battalions: 4-1 FA and 5-1 FA of the 5th Mech became 1-3 FA and 1-14 FA of the 2d Armored Division, respectively.

Hell's Fire Supporters completed a rigorous year of transition and training in 1993. During the first half of the year, the Div Arty focused on completing the deployment from Fort Polk to Fort Hood. But training remained the top priority for the year—as demonstrated in the training areas of Fort Hood and on the battlefields of the NTC.

The flames of Hell raged at their hottest during February as the 1-3 FA Redlegs rained fire and brimstone on the NTC OPFOR. The "First Gunners" provided hellacious fire support under various conditions at Fort Stewart, Georgia.

Drumfire Artillery looks forward to another challenging year of bringing quality fire support to the division. Our soldiers and NCOs remain the cornerstone of our success. Their leadership, discipline and outstanding efforts help us carry our motto of "Focus on Success!" ***Drumfire!***



A/1-3 FA fires on the OPFOR at the NTC.

# 2d Infantry Division Artillery

8-8 FA "Steel" conducts live firing at the St. Barbara Training Area in May.

In 1993, the 2d Infantry Div Arty, Korea, completed a challenging and successful year of training in its continued mission to defend the Republic of Korea (ROK). The 2d Infantry Div Arty's participation in Team Spirit and Warpath VII CPX reemphasized its importance to the 2d Infantry Division as the Army's most forward-deployed division artillery. The Div Arty activated a new MLRS battery, A/38 FA "Ghost-riders." The battery completed its first EXEVAL in September and participated in its first live-fire in November along with 6-37 FA (ATACMS/MLRS) "On-the-Minute."

In addition to supporting battalion EXEVALs, Team Spirit 93 and Warpath/Warfighter exercises, F/26 FA (TA) "Wolfpack" provided radar coverage for the Commander-in-Chief's visit to the ROK. F/26 FA's Firefinder radar assets augmented normal security measures along the DMZ due to the threat level found in this forward-deployed division area.

The 8-8 FA "Steel" and I-15 FA "First to Fire" battalions sharpened their fire support synchronization skills and relationships with their maneuver brigades through training exercises such as Strike Focus II (2d Brigade) and Iron Focus (1st Brigade). I-15 FA became the first unit in the Div Arty to execute a program of situational training exercise lanes. The "Thunder" lanes training program provided realistic scenarios to include movement, deliberate occupation, recon operations, direct fire, delivery of fires and survival tasks.

6-37 FA closed out the fiscal year by participating in the Eighth US Army CPX, Ulchi Focus Lens, in which they provided deep MLRS/ATACMS fires in defense of the Republic of Korea.

Rigorous, realistic training and responsive fire support remain the cornerstones for training in the 2d Infantry Div Arty. Our soldiers' hard work and dedication is what keeps the 2d Infantry Div Arty—***Second to None!***

Silhouettes of Steel

# 3d Infantry Division (Mechanized Artillery

"Marne Thunder" means devastating, effective fire support for the Rock of the Marne Division in the Victory Corps in USAREUR. The Div Arty remained true to its motto during a dynamic year of significant change and transition and tough, demanding training.

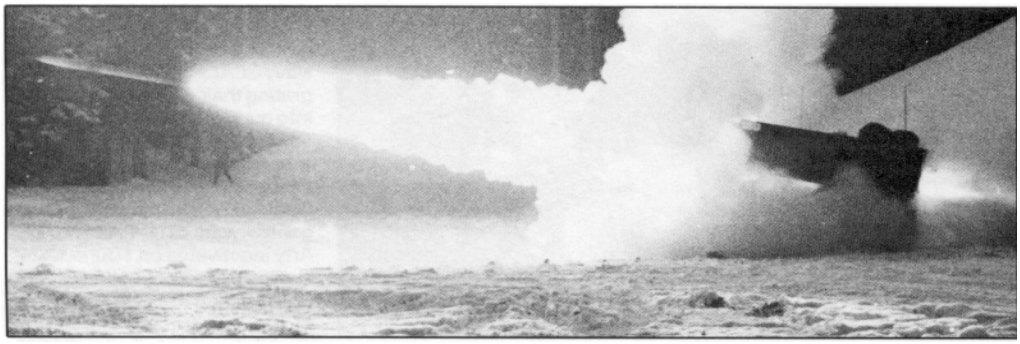
The year's training started off with the Div Arty performing as the star in Marne Warfighter, the most successful division BCTP exercise in recent years. The massed fires of Marne Thunder Artillery decisively won the counterfire battle, reducing the OPFOR artillery tube strength sevenfold while delivering punishing fires on OPFOR units in support of division operations.

The artillery systems replicated at Warfighter lived up to expectations during the Div Arty's two Grafenwoehr densities. An August density included the first exercise of operations short of war in an FA ARTEP as 2-14 FA (MLRS) tackled the special problems of refugee protection and control while transitioning from combat to peacekeeping operations. Our DS cannon battalions, 3-1 FA and 5-41 FA, augmented with GS fire support from one of 2-14 FA's MLRS batteries and attached radar support, proved their "METL" and more than met the challenge posed by the OPFOR during three brigade CMTC rotations.

In August, 3-1 FA deployed B Battery as part of a task force for an out-of-sector mission in Kuwait. In September, the Div Arty commander, with selected subordinate commanders and staff, traveled to Romania to exchange TTPs and ideas with officers holding similar positions in the Romanian Army.

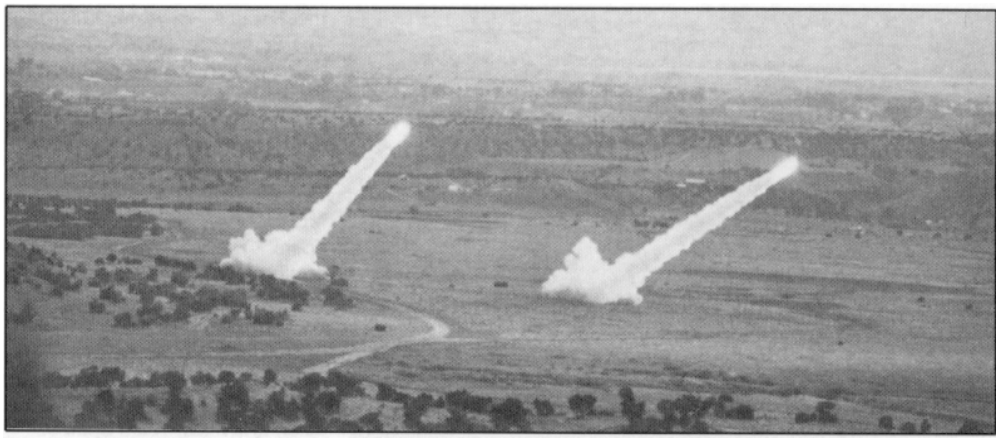
The year saw more transition as the Div Arty headquarters moved from Wuerzburg to Bamberg in June. In autumn, 2-14 FA completed an upgrade, enabling it to fire ATACMS missiles. 6-1 FA received its final "Fire Mission": draw down by 15 January 1994. 3-1 FA now assumes the habitual DS relationship with the 3d Brigade.

Although the 6-1 FA "Warbonnets" are leaving the Div Arty, the spirit and dedication of this fine unit will remain part of our spirit—***Marne Thunder!***



An MLRS from 2-14 FA sends a rocket thundering down range during live-fire training at Grafenwoehr Training Area in February 1993.

# 4th Infantry Division (Mechanized) Artillery



C/10 FA (MLRS)— Rockets Away!

Fire Support was certainly the key to another successful year in the Iron-horse Artillery at Fort Carson, Colorado. Whether synchronizing fires during the division's BCTP Warfighter or stopping the OPFOR at the NTC, the Iron Gunners of the 4th Div Arty met success on every mission.

Further development and refinement of the Iron Point Series and continued use of the standardized lane training program paid great dividends to both the 3-29 FA Pacesetters and 5-29 FA Eagles during the spring NTC rotation. Stressful, home-station training emphasizing realism and tough standards were key to this success.

The Mass Fire Exercise conducted in June proved the Div Arty could mass fires and deliver the decisive blow on time and on target. The integration of A/26 FA (TA) and the fires of C/10 FA (MLRS) were instrumental in this exercise.

Following closely on the heels of the Mass Fire Exercise was the BCTP Warfighter. The decide, detect and deliver methodology execution brought the world-class OPFOR to its knees. The Ironhorse Team excelled at every mission thanks, in large part, to fire support. Included in this success was the 17th FA Brigade, III Corps Arty, and the 1-148 FA (Idaho ARNG), our round-out battalion.

The Div Arty also conducted demanding Bold Shift training in August with the Scorpions of the 1-148 FA. Fire support personnel were trained with the maneuver units at Gowen Field, Idaho, while the guns trained at Fort Carson.

Congratulations to C Battery, which converted from Engineer to Field Artillery and certified its gun sections by the end of AT.

C/10 FA was upgraded to ATACMS-capable, and the forward-entry device (FED) was fielded during the year. Both systems greatly enhanced our ability to provide fire support.

As the year drew to a close, we were once again in the midst of a demanding Iron Point Series, preparing for an upcoming NTC rotation. As always, the soldiers of the Div Arty performed magnificently—***Iron Gunners!***

Silhouettes of Steel

# 6th Infantry Division (Light) Artillery

The 6th Infantry Division (Light) Artillery, with its headquarters at Fort Richardson, completed another busy year in Alaska's challenging environment. The "On Time" battalions trained extensively outside Alaska. Battery C/5-11 FA deployed to Japan for Operation Keen Edge, becoming the first active Army unit to live-fire in Japan since World War II. After preparing for the JRTC with a demanding 10-day division force-on-force exercise, 4-11 FA teamed with TF 1st Brigade to defeat the dreaded Atlantican Forces. 5-11 FA participated in a heavy-light contingency operation with the 2d Armored Div Arty at the NTC. With its World War II-vintage towed howitzers, 5-11 FA earned respect as it fought successfully on today's modern battlefield. Our training year ended with a highly successful BCTP Warfighter exercise.

As the Pacific Theater division ready brigade (DRB) for the first time, the division developed TTPs for peacekeeping operations in mountainous terrain and practiced them in Operation Yukon Battle. Augmented with personnel from the JRTC, 5-11 FA perfected TTPs for fire support, including counterfire procedures, which were validated by 4-11 FA.

During July, 3-14 FA (our round-out battalion) traveled from Iowa to Alaska to conduct AT. The 3-14 FA cannoneers proved their mettle in the demanding Yukon Training Area, demonstrating the readiness to integrate with active units.

We benefitted greatly by working closely with our USAF neighbors at nearby Elmendorf and Eielson Air Force Bases. The Div Arty fired in support of many JAATs and designated targets for Air Force laser-guided munitions during Operation Cope Thunder. Additionally, in August, we trained with Navy SEALs at Fort Greely, integrating their fire support training into our Div Arty readiness tests.

In 1994, the division downsizes to a light infantry brigade. 4-11 FA inactivates on 29 March 1994, but its airborne battery will reorganize with 5-11 FA. The Div Arty inactivates on 1 June 1994. However, Redlegs of the Div Arty will continue to live by "The Law of the Yukon: Only the strong shall thrive, surely the weak shall perish and only the fit survive." ***Arctic Thunder!***

Soldiers from C/5-11 FA set up their gun during air-mobile operations in a winter EXEVAL.

# 7th Infantry Division (Light) Artillery

FY 93 was a year of great challenges and great accomplishments for the Light Fighters of the 7th Div Arty, Fort Ord, California. The Bayonet Artillery was called on to maintain rapid deployment readiness; execute a demanding, fast-paced training program; move one battalion to Fort Lewis, Washington; and, ultimately, inactivate the remainder of the Div Arty. At times all four missions were being performed simultaneously.

6-8 FA Redlegs train at the NTC. *(Photo by SGT Schaffer)*

Bayonet Artillery Light Fighters fire their M119A1.

Our readiness and training programs were highlighted by a series of joint, combined arms exercises that honed our ability to provide decisive fire support from the company to division levels. 2-8 FA executed many superb CALFEXs with the 9th Infantry Regiment and Aviation Brigade; 6-8 FA completed two outstanding JRTC rotations and a battalion EXEVAL; and 7-15 FA executed two world-class joint emergency deployment readiness exercise/CALFEXs that integrated Army, Navy, Marine and Air Force fire support. Each of these exercises improved our ability to get to the fight and provide devastating fires. A Div Arty FTX and several CPXs greatly improved our ability to acquire targets and mass the fires of the direct support battalions and general support battery (B/15 FA).

These training events were complemented by a series of fire support conferences and green tab seminars designed to ensure maneuver commanders and fire supporters at all levels incorporated the "Fighting with Fires" and "Fires First" initiatives into operations.

2-8 FA then moved to Fort Lewis while the remainder of the Div Arty began the inactivation process. By 20 July, all colors had been cased and the 7th Div Arty retired from the active rolls. The outstanding Redlegs of the 7th Div Arty now proudly serve under other banners around the world, carrying forward the high standards and proud traditions of *Bayonet* ***Artillery Light Fighters!***

Silhouettes of Steel

# 10th Mountain Division (Light Infantry) Artillery

This was a challenging year for the 10th Div Arty, Fort Drum, New York, as we focused on operations other than war. We closed FY 92 supporting the massive humanitarian effort in south Dade County, Florida. The Div Arty's mission in the Hurricane Andrew Relief Operation was to coordinate efforts between government and volunteer relief agencies as well as provide a substantial work force to assist with recovery.

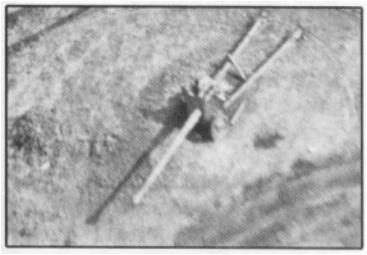
Shortly after returning from Florida, the 10th Div Arty began deploying to Somalia in support of Operation Restore Hope. The Div Arty headquarters deployed as the command and control headquarters for Combined Task Force Kismayo, which included both a US infantry battalion and a Belgian paratroopers battalion. The 10 FA Det (TA) teamed up with the 3-11 Marines and manned a joint target processing center that provided Q-37 radar coverage for key facilities in Mogadishu. Both the 1-7 FA "Danger Close" and 2-7 FA "Guns of Glory' deployed their FISTers in support of maneuver operations and as LNOs to coalition forces. Although the rules of engagement for fire support were very restrictive, our FISTers coordinated AH-1 gunships, Spector C-130s and mortars.

Upon returning from Somalia, the 10th Div Arty took to the field in May for Crimson Fury—our first opportunity to mass the division's fires since August 1992. The exercise culminated with a JAAT that included Cobra helicopters and Air Force A-10s.

The remainder of the year found 10th Div Arty units continuing to support Operation Restore Hope with the addition of two Q-36 radars, a targeting cell and Division FSE. Meanwhile, 10th Div Arty units also participated in NTC rotations, off-post training opportunities, EXEVALs and Bold Shift training with the 1-156 FA (New York ARNG), our round-out battalion.

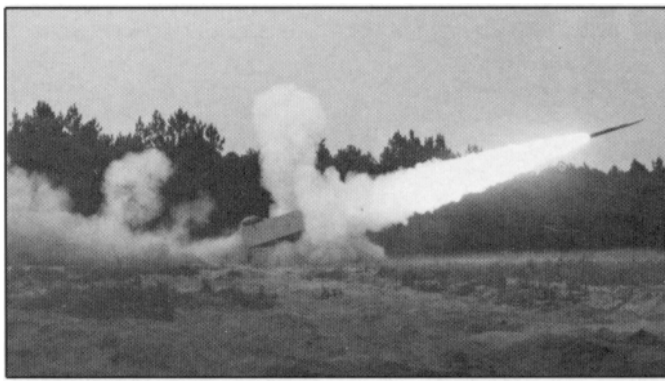
Our experiences in Florida and Somalia taught us that our METL-oriented training has given us the flexibility to successfully execute operations other than war. As such, the Redlegs of the 10th Div Arty stand ready to deploy worldwide to provide timely and accurate fires in our ***Climb to Glory!***

Catch of the day—confiscated weapons on display in front of the CTF Kismayo Headquarters. *(Photo by CPT Tom Hollis)*



Somali artillery piece destroyed by forces under the command and control of the Div Arty Headquarters, CTF Kismayo *(Photo by LTC Don Splece, Jr.)*

# 24th Infantry Division (Mechanized) Artillery



A/13 FA (MLRS) executes a fire mission during an EXEVAL. *(Photo by CPT B. Portigue)*

The Redlegs of the 24th Div Arty at Fort Stewart, Georgia, enjoyed a challenging and rewarding year. Our focus remains providing synchronized fire support to the XVIII Airborne Corps rapid deployment force's heavy division.

Battle-focused, METL-driven training was the foundation for our Div Arty's achievements this year. 1-41 FA, 3-41 FA and 4-41 FA completed successful rotations at the NTC, establishing new standards in the ready-to-fire time arena. A/13 (MLRS) conducted live-fire exercises, to include JAATs. G/333 FA (TA) sustained its training by providing support to Div Arty and Reserve Component units. The entire Div Arty honed its ability to provide division-level fire support through a series of CPXs, culminating with an extremely successful BCTP Warfighter exercise at Fort Stewart.

The Div Arty routinely exercised its deployment modules during division alerts to ensure it could fulfill the division ready force mission. C/1-41 FA and a task force fire support package deployed to Kuwait in support of Intrinsic Action, demonstrating our ability to deploy and conduct operations worldwide.

The Div Arty integrated new combat systems throughout the year. We fielded the forward entry device (FED), single-channel ground and airborne radio system (SINCGARS) and mobile subscriber equipment (MSE) system. Additionally, our DS battalions executed new equipment training and fielded the FA ammunition support vehicle (FAASV), while A/13 FA improved its ability to strike deep by fielding the MLRS retrofit, making it ATACMS-capable. G/333 FA upgraded its acquisition capability by fielding Version 7 software for the Q-36 Firefinder.

When our DS battalions field the M109A6 Paladin in 1994, we'll be the Army's most modern and lethal Div Arty.

The Victory Division Redlegs close out the year with pride in our accomplishments—poised to accept all future challenges. We remain committed to our traditional mission as the ***First to Fight!***

A/1-41 FA conducts FA lane training at Fort Stewart.

Silhouettes of Steel

# 25th Division (Light) Artillery

The 25th Division (Light) Artillery "Tropic Thunder" at Schofield Barracks, Hawaii, remains ready for rapid deployment anywhere in the Pacific as another year comes to an end. Recent events have proven our ability to accomplish our METL—whether it is a non-combatant evacuation operation (NEO) or fire support in a high-intensity conflict.

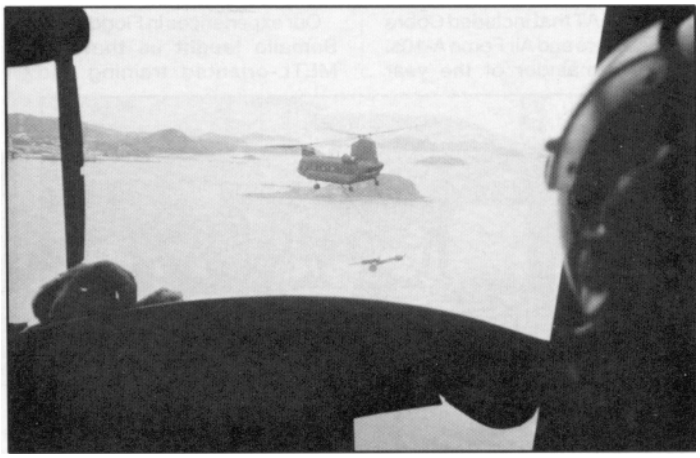
Tropic Thunder has sent elements thousands of miles to learn and teach, support and evaluate. Cross training in Thailand, exchanges with the Royal Australian Artillery, National Training Center and Joint Readiness Training Center rotations and National Guard support in Utah and Wyoming with the 115th FA Brigade and here in the islands with 1-487th FA "Hiki No" are just a few of the missions Tropic Thunder Redlegs have executed superbly.

At home here in the islands, Redlegs have continued to hone their artillery skills. We have conducted many safe and effective live-fire exercises, both here on Oahu and at the Pohakuloa Training Area on the big island of Hawaii. These include two "Thunder-ex's," involving two to three battalions, our target acquisition detachment and our separate general support battery.

In conjunction with many division deployments, Tropic Thunder sent soldiers throughout the Pacific. Thunder Redlegs participated in Operations North Wind, Japan; Pac Bond, Australia; Cobra Gold, Thailand; Ulchi Focus Lens, Korea; and Tiger Balm, Singapore. At home, we participated in a robust Tropic Lightning CPX program, culminating in the division's BCTP Warfighter exercise in October.

The Tropic Thunder Redlegs stand ready and waiting for the opportunity to perform their mission anywhere in the Pacific during the year to come.

***Hoooah—Tropic Thunder!***



C/7-8 FA soldiers conduct a 2-gun raid as part of a CALFEX for the King of Thailand during Cobra Gold 93. *(Photo by 1LT Dennis M. Small)*

1/C/2-11 FA, SGT Charles Gordon and PFC James Johnston perform PMCS on their howitzer during the live-fire portion of an NTC rotation in April 93. *(Photo by 1LT Mark Tomkovicz)*

# 28th Infantry Division Artillery

A 28th Div Arty M109 during live-firing.

Leaders of the Div Arty conduct a map exercise.

The 28th "Keystone" Division Artillery (Pennsylvania ARNG) completed yet another outstanding year. Among our many training priorities, fire support skills remained primary as we trained for and executed Warfighter 93 at Fort Leavenworth, Kansas.

The 28th Div Arty continued refining its procedures using lessons learned from our War-fighter. We welcome this type of training and plan to continue CPXs and emphasize brigade combat refresher courses during the upcoming training year.

One cornerstone of our training strategy has been making the most of evaluated training. Our units are continually undergoing evaluations. The 1-108 FA (203-mm) did an outstanding job in its operational readiness evaluation. F/109 FA (TA) received 42 "GOs" out of 42 tasks on its standardized EXEVAL, as evaluated by the 78th Maneuver Training Command, Fort Dix, New Jersey. 1-107 FA (155-mm T), 1-109 FA (155-mm SP) and 1-229 FA (155-mm SP) all received super evaluations during AT this year.

Much of our success can be attributed to the outstanding support provided by our active duty training partners from the 24th Infantry Division (Mechanized) Artillery, Fort Stewart, Georgia, and the artillery teams at the Readiness Group from Pittsburgh and Fort Indiantown Gap. They used their expertise and professionalism to not only evaluate our units, but also to assist us and forge a close working relationship in the Total Army Field Artillery community. We're deeply indebted for this superb affiliation with America's best.

During Training Year 94, the Div Arty HHB, F/109 FA and 1-229 FA will undergo a readiness mobilization exercise (REMOBE). We'll also continue involvement in the US Army Forces Command (FORSCOM) leader training programs and lane training EXEVALs to ensure we maintain our edge in providing some of the finest fire support in the National Guard to our combined arms forces.

The "plate is full," but that's the way we like it—as we remain ***Charged to Excellence!***

Silhouettes of Steel

# 29th Infantry Division (Light) Artillery

The Redlegs of the 29th Div Arty (Virginia and Maryland ARNG), with its headquarters in Virginia, had another very successful year. Training focused on individual soldier skills and proficiency at the section, platoon and battery levels. As always, the Div Arty satisfied the requirements for accurate, predicted FA fires.

HHB trained extensively for and successfully completed an external ARTEP. The Div Arty staff enhanced its skills in a division-level CPX and many Army battle simulation program (ARTBASS) exercises.

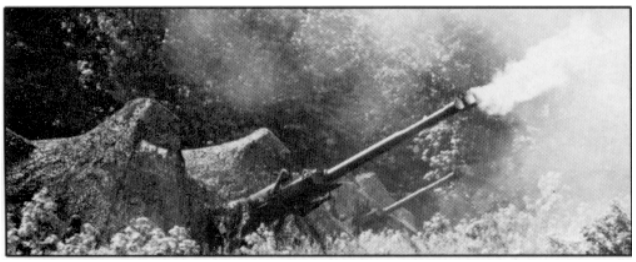
In October 1992, 2-110 FA (Maryland) boarded C-130s and flew to Fort Dix, New Jersey, to provide FA fires for the 1-158 Recon Battalion during a CALFEX at the Air Force heavy bomber range. During its AT, the battalion successfully negotiated FA lane training and participated in several live-fire JAAT missions.

In Training Year 93, 2-111 FA (Virginia) restructured, absorbing soldiers from 1-111 FA (inactivated in 1991) and moving its headquarters from Richmond to a new armory in Hampton. Since the consolidation, 2-111 FA has completed a comprehensive gunners' certification program and currently is preparing for a JRTC rotation.

1-246 FA (Virginia) successfully completed a battalion-level ARTEP during AT-93. This exercise tested the unit's ability to use recently acquired automated/digital equipment: FED, DMD, LTACFIRE, BCS and GDU.

E/111 FA (Virginia) had a very successful training year. The unit continued to mature as the GS artillery of the 29th Infantry Division (Light) while focusing on digital communications and participating in several CALFEX and JAAT exercises. The battery recently relocated to a new armory in Greensville County, Virginia. Our new 129 FA Det (TA) (Virginia) received all its MTOE authorizations, including its second Q-37 Firefinder radar, and is preparing for its 1994 EXEVAL.

As the 29th Div Arty supporting the Army's only Reserve Component Light Infantry Division, ***We Stand Ready!***



E/111 FA fires for effect during AT 93 at Fort Pickett.

1-246 FA prepares for an ARTEP during AT 93 at Fort Pickett.

# 34th Infantry Division (Mechanized) Artillery

The 34th Red Bull Div Arty (Minnesota, Iowa and Illinois ARNG), with its headquarters in Minnesota, finally received M102 howitzers for the DS battalions. The inactivation of the venerable (Museum Age) M101A1 howitzer has offered the opportunity for remembering those days of yesteryear at many retirement ceremonies.

The reorganization of the 34th Red Bull Division into a mechanized configuration continues, causing the recently acquired M102 howitzers to be scheduled for replacement. Also, the 1-151 FA (GS) battalion is being reconfigured as an 8-inch battalion.

AT 93 offered the opportunity for the 34th Div Arty to close out the SEE concept and move into lane training. The 1-194 FA (Iowa) traveled to Camp Guernsey, Wyoming, for AT in August. It accomplished leader validation and progressed to battalion-level collective training in preparation for what proved to be a very successful SEE.

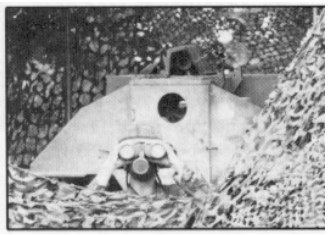
The 2-123 FA (Illinois), 1-125 FA (Minnesota) and 1-151 FA (Minnesota) conducted leader validation with their AT plans culminating in lane training. A series of situational training exercises (STXs) allowed the battalions to integrate artillery tables with other high-payoff collective tasks that support their battalion METLs. First Army has selected 1-125 FA to participate in lane training, supported by the 85th Training Division (Exercise) during AT 94.

1-125 FA fires its last M101A1 shell during AT 93 at Camp Ripley, Minnesota.

The battalions hosted 13F, 13E and 13B MOS qualification courses to complete last year's reorganization. In addition, the FISTs supported many AT periods with the 1-194 FA and 2-123 FA sending FISTs to the NTC.

The 34th Div Arty staff participated in the 34th Division CPX (Charging Bull). This and other staff exercises prepare the division for its Warfighter in August 1994. HHB, Div Arty, and E/151 FA (TA) provided all the battalions meteorological and radar support during AT periods.

The Red Bull Div Arty is ready and able to ***"Attack, Attack, Attack!"***



A 1-125 FA FIST puts steel on target.

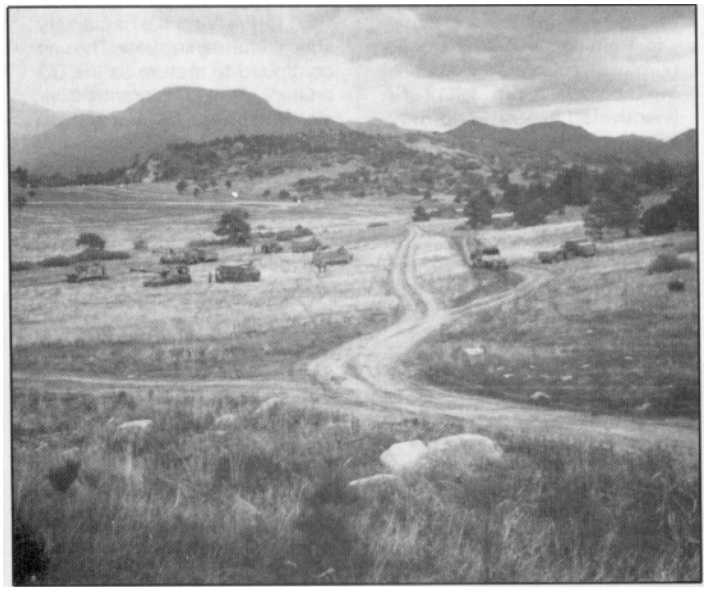
Silhouettes of Steel

# 35th Infantry Division (Mechanized) Artillery

During 1993, the 35th Infantry Div Arty (Kansas, Nebraska and Kentucky ARNG), with its headquarters in Hutchinson, Kansas, continued to focus on developing and executing training plans that led to validation of batteries under the Div Arty QCV model.

QCV—qualification, certification and validation—is systematic training at the individual, section and battery levels, using lane training. Supported by a command certified validation team, battalions underwent a series of evaluations that focused on battle tasks in fight, survive and defend lanes. The validation team was composed of members of the staffs of the 35th Div Arty and 1st Infantry Div (Mechanized) Arty out of Fort Riley, Kansas.

During the months of May and June, 35th Div Arty units trained to standards at multiple annual training sites. AT 93 began with 2-138 FA (Kentucky) at Camp Atterbury, Indiana; 1-127 FA (Kansas) at Fort Carson, Colorado; and 1-168 FA (Nebraska) training at Camp Guernsey, Wyoming.



A/1-127 FA in the assembly area at Fort Carson, Colorado, before moving to fight-survive-defend lanes.

The division staff, Div Arty staff and our direct support and general support battalions participated in multiple train-up activities throughout the year in preparation for the 35th Division's BCTP Warfighter exercise at Fort Leavenworth, Kansas. The preparation began with the Staff Officer Refresher Course (SORC) at Fort Sill, Oklahoma, that focused on War-fighter tasks and instruction, moved through a series of 35th Div Arty train-up exercises and culminated with the Warfighter exercise in August. The Div Arty continues to increase its combat readiness and warfighting capabilities.

The 35th Div Arty concluded annual training periods in August as members of the 2-130 FA (a separate battalion, also part of the Kansas ARNG) and 1-161 FA (Kansas) moved to Camp Guernsey to conduct lane training at the section and battery levels.

Always mindful of the historic tradition of the 35th Infantry Division (Mechanized), the 35th Div Arty shoots, moves and communicates in support of the ***Santa Fe Division!***

A section from B/2-150 FA prepares to fire its M198 howitzer.

# 38th Infantry Division Artillery

The 38th Div Arty (Indiana and Michigan ARNG), with its headquarters in Indianapolis, trained hard in 1993 to prepare for the 38th Division's BCTP Warfighter exercise in August and September. More than 150 officers and NCOs from the Div Arty's four battalions and two separate batteries joined the Div Arty staff in participating in this demanding, but beneficial, training and exercise. All trained long and hard to provide effective fire support during the Warfighter at Fort Leavenworth, Kansas—the climax of an excellent training year.

The Div Arty's training focus was lane training. Each battalion developed and conducted section and battery lanes, using FA tables. Because it was our first year for lane training, the Div Arty did a great deal of planning, validation and training to execute successful lane training.

The 1-119 FA (Michigan), an M101A1 105-mm howitzer battalion, conducted AT at Camp Grayling, Michigan, supporting the 46th Brigade from 12 to 26 June.

The 3-139 FA (Indiana), an M101A1, 105-mm howitzer battalion, supported the 2d Brigade AT from 24 July to 7 August 1993, which was also at Camp Grayling.

In addition the 1-163 FA (Indiana), an M101A1, 105-mm howitzer battalion, conducted AT in three battery rotations to Honduras in an overseas deployment exercise. Once in Honduras, each battery trained with a Honduran battery, using Honduran M102 howitzers. The rotation started in May with the last battery returning in July.

The 2-150 FA (Indiana), a composite M198 (155-mm)/M110A2 (203-mm) battalion, conducted AT at Camp Atterbury, Indiana, from 10 to 25 July. The battalion focused on lane training and its GS mission.

E/139 FA (TA) (Indiana) supported each of the Div Arty element's AT periods with its Q-36 and Q-37 Firefinder radars.

The diverse requirements we faced this year provided challenging and rewarding training opportunities for ***Cyclone's Thunder!***

Silhouettes of Steel

# 40th Infantry Division (Mechanized) Artillery

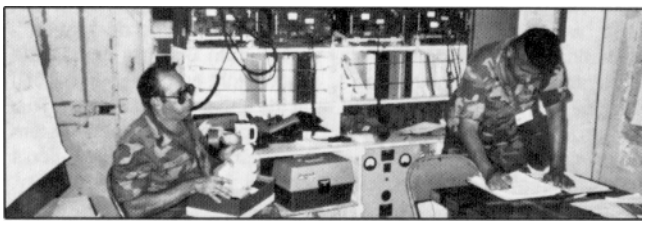
1993 was an exciting year for the Redlegs of the "Fighting Fortieth" Division Artillery, California Army National Guard. The year began with the Div Arty preparing for the possibility of another civil disturbance in Los Angeles as the Federal trial of four Los Angeles police officers approached a verdict. Fortunately, no civil unrest occurred in the wake of the trial, and the Div Arty continued training for its wartime mission.

AT 1993 presented the 40th Div Arty with several distinct objectives to achieve. We conducted a 72-hour EXEVAL of one of our 155-mm direct support battalions that included participation from the battalion's supported maneuver brigade tactical operations center (TOC) and the operations element of the 40th Division's tactical command post. Concurrently, our Div Arty TOC used the EXEVAL to drive its own initial train-up for the 40th Division's Battle Command Training Program Warfighter exercise next August at Fort Leaven-worth, Kansas. Also concurrently, our general support unit, the 1st Battalion, 144th Field Artillery, which is being downsized from a battalion to a single, six-gun firing battery in preparation for MLRS fielding, began the multitude of actions necessary to prepare unit property for turn-in or transfer.

Spirits soared as the Div Arty firing batteries received lightweight computer units (LCUs) and gun display units (GDUs) early this year. This equipment is the first step toward automating the fires of the 40th Infantry Div Arty. For the remainder of 1994, we'll focus on preparing for the division's Warfighter exercise train-up as well as implementing an aggressive plan to fully integrate Field Artillery tables into our training plans. We have even more ambitious plans for the rest of 1994, including new equipment training on the initial fire support automated system (IFSAS) the 40th Div Arty will receive in early 1995.

When it comes to setting the standard, look to the ***Redlegs of the Fighting Fortieth!***

SSG Robert Cordoza (shooter) with 1LT Steven Takekoshi (OIC) trains on the M203 qualification range, Camp Roberts, California.



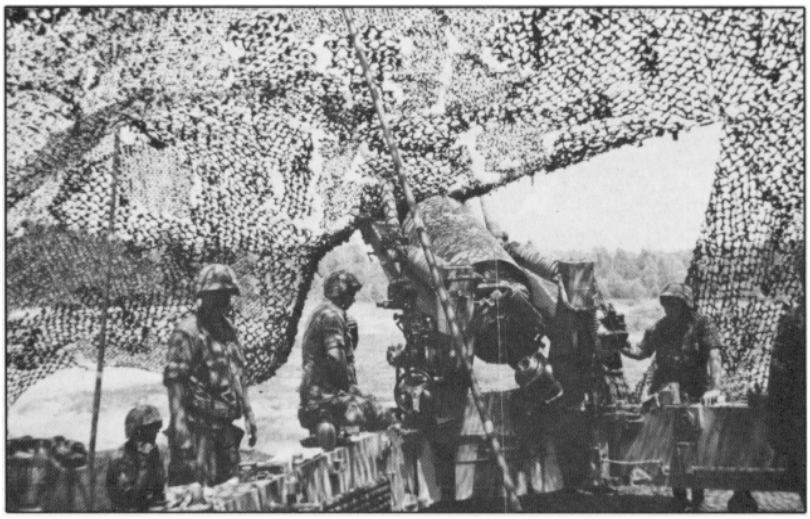
SGM Andy Strauss and SPC Louis Andes prepare for a staff briefing during the 40th Div Arty's TOC training.

# 42d Infantry Division (Mechanized) Artillery

The 42d Rainbow Division, with its new headquarters in Massachusetts, had a momentous year—not only for the division, but for the ARNG as well. It combined units from three divisions, two of which drew down on 1 September: the 26th Infantry (Yankee) Division, Massachusetts ARNG, and the 50th Armored Division, New Jersey ARNG.

The 26th Infantry (Yankee) Div Arty cased its flag and reflagged as the 42d Division, now mechanized. The "new" 42d Division (formerly with its headquarters in New York) includes units of the old 26th Infantry, 42d Infantry and the 50th Armored Divisions.

The Rainbow Division now consists of the following: HHB, 1-101 FA (M109A2 DS battalion) and E/101 FA (TA), all in Massachusetts; 1-112 FA (8-inch GS battalion) and 3-112 FA (M109A4 DS battalion), both in New Jersey; and 1-258 FA (M109A3 DS battalion) in New York. 1-86 FA (M109A4 battalion), formerly of the 26th Division, is now a separate ARNG battalion in Vermont. The 1-211 FA (8-inch) in Massachusetts and 2-192 FA (155 T) in Connecticut, both of the 26th Division, were inactivated as was the 50th Armored Division's A/197 FA (TA) in New Jersey.



A former 26th Infantry Div Arty—now 42d Infantry (Mechanized) Div Arty—gun section waits to fire during AT.

In spite of the reflagging and inactivations, the Rainbow Division devoted considerable time to training. In the past year, 1-101 FA concentrated on developing and instituting lane training to reinforce battery-level skills for all firing elements. During Div Arty AT, MOS-producing courses were conducted for 13F and 13B along with lane training on the M109 howitzer—new to some units.

The Div Arty staff participated in a two-day Army training battle simulation program (ARTBASS) exercise at Fort Dix, New Jersey. In a second two-day ARTBASS exercise, units were integrated from field locations with the mobile ARTBASS group from Fort Devens, Massachusetts.

We look forward to our new role as the 42d Division's fire supporters and are forging the skills and capabilities of all three division artillery units together as only would befit the ***Rainbow Division!***

Silhouettes of Steel

# 49th Armored Division Artillery

Training Year 93 saw the 49th Div Arty (Texas ARNG)—the "Lone Star" Div Arty—continue to build on the success it enjoyed during its 1992 BCTP Warfighter exercise at Fort Leavenworth, Kansas. Our DS and GS battalions conducted several live-fire exercises at Fort Hood, Texas, with the assistance of our E/133 FA (TA).

Throughout the year, the Div Arty and battalion staffs have refined their skills in several CPXs and TOC exercises. As a result, we completely revised our tactical SOP, making it more practical. Recognizing the importance of division-level targeting, the division FSE worked diligently with the chief of staff, G2 and G3 to create a cohesive, focused targeting team.

AT 93 at Fort Hood enabled the Div Arty to integrate the various training components it had developed during the previous year. It participated in a highly successful BCTP sustainment exercise, called Operation Iron Star, using the III Corps Simulation Center. While the staff sections participated in Iron Star, the firing battalions implemented the division's lane training program. Merging BCTP sustainment, lane training and live-fire exercises enable the Lone Star Cannoneers to enjoy a particularly intense and productive training period.

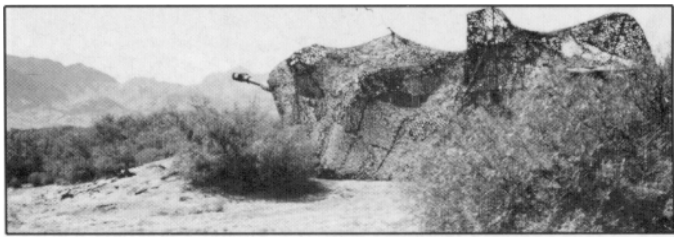
Employer support of the Guard and Reserve continues to be a priority. More than 40 civilian employers and local government officials visited our soldiers during AT and were impressed with their intensity and dedication.

The 49th Div Arty fielded the lightweight computer unit (LCU) at the battalion level in June. This fire support automation system markedly enhanced the division's overall fire support capability. This year, Texas' MLRS battery—C/1-171 FA—continued its new equipment and MOS training in association with the 45th FA Brigade (Oklahoma ARNG).

During Annual Training 93, the 49th Div Arty established a cooperative relationship with the 1st Cav Div Arty at Fort Hood. This liaison with the Red Team promises to be an excellent vehicle for exchanging expertise and training concepts.

Concentrating on both professionalism and strength, the soldiers of the 49th Div Arty remain ***Texas Artillery!***

4-133 FA in the good ole Army chow line.



A 4-133 FA gun is ready and waiting for a mission at Fort Bliss.

Members of the regiment performing a drop-zone mission at dusk.

# 82d Airborne Division Artillery

This upcoming year will be special for the paratroopers of the 82d Airborne Div Arty, Fort Bragg, North Carolina, because in the midst of an especially busy year, we'll commemorate the 50th anniversary of the airborne participation of the Normandy invasion on 6 June. As we honor those who have gone before us, today's troopers of the 319th Airborne Field Artillery Regiment stand as ready as their predecessors to deploy anywhere in the world, on no-notice, to fight and win.

During the past year, the Div Arty has maintained a high operational tempo in many training and readiness exercises both at home and abroad. Highlights include three rotations at the JRTC (to include the first at the new operational site in Fort Polk, Louisiana), jungle training in Panama, participation in the Atlantic Command (LANTCOM) exercise Ocean Venture 93 in Puerto Rico and our own battalions EXEVALs—in addition to supporting summer training for the 1st ROTC Region.

In training abroad, the regiment participated in an exchange with the German Airborne Brigade, sending our troopers to LeBach, Germany, and taking a German company-sized element on a JRTC rotation with 2-319 AFAR.

Additionally, the Div Arty provided the 2-319 AFAR to Task Force All American in Homestead, Florida, during the relief efforts in the wake of Hurricane Andrew.

The 82d Airborne Division enjoyed great success in its BCTP Warfighter exercise at Fort Bragg with the Div Arty exercising its FSEs in providing timely fires and fire support coordination to our maneuver elements.

As we look to the future, the Div Arty will strive to provide the most realistic and demanding training possible for our troopers. Through the medium of Div Arty Readiness Tests, JRTC rotations, division-level evaluations during BCTP and joint and combined training exercises, the 319th can be counted on to be as ready to fight and win as our predecessors some 50 years ago. ***All the Way! Airborne!***

Silhouettes of Steel

# 101st Airborne Division (Air Assault) Artillery

The Redlegs of the 101st Airborne Division (Air Assault) Artillery, Fort Campbell, Kentucky, again provided superb fire support to the Army's only air assault division.

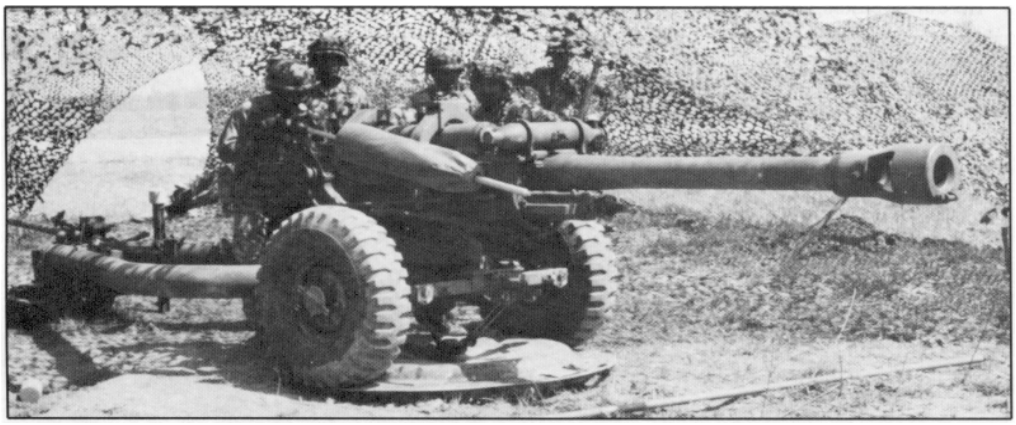
During Ocean Venture 93, the Div Arty successfully deployed the M119A1 light howitzer for the first time. Other deployments included Cascade Peak and I Corps' BCTP Warfighter, both at Fort Lewis, Washington, and Team Spirit in Korea.

The Div Arty also continued the execution of Eagle Flight IV—which is a high-resolution exercise that tests a battalion's ability to plan and execute fire support for the air assault brigade task force.

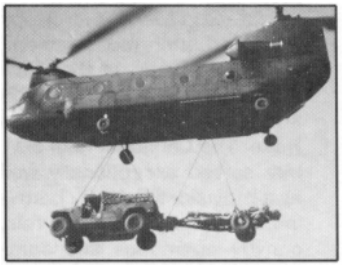
Modernization brought several new systems to the Div Arty. Mobile subscriber equipment (MSE), the single-channel ground and airborne radio system (SINCGARS), the M-40 chemical mask and the meteorological measuring system (MMS) have greatly enhanced our capabilities. Key to this new equipment is the fielding of the M119A1 howitzer. The increased range of the system radically improves our ability to provide fire support to the division's maneuver forces.

June saw a changing of the guard in the Div Arty. The Div Arty commander and the battalion commanders of 1-320 FA and 2-320 FA all changed command.

Continuing the tradition of the Screaming Eagle Division, we train hard and maintain combat readiness to deploy worldwide when America calls. The 101st Division (Air Assault) Artillery is prepared to meet any challenge that lies ahead. ***Guns of Glory!***



3-320 FA crew conducts prefire checks on the M119 howitzer prior to certification on live-fire operations.



Howitzer section in air assault training.

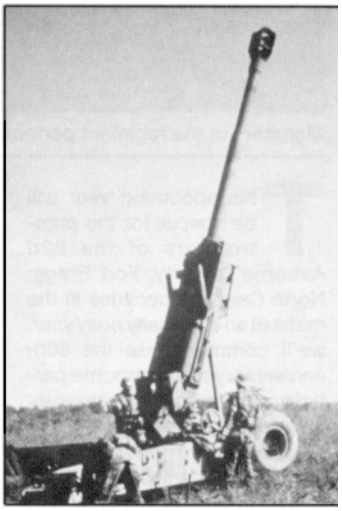
# 10th Marine Regiment

During 1993, the 10th Marines, Camp Lejeune, North Carolina, trained and deployed throughout the world under an intense operational tempo while supporting the 2d Marine Division. Elements of the 10th Marines deployed to the Indian Ocean, Mediterranean Sea, Okinawa and Twenty-Nine Palms, California, to support Landing Force 6th Fleet, Landing Force 7th Fleet, the unit deployment program (UDP) and combined arms exercises. Additionally, the 10th Marines sent firing units to Fort McCoy, Wisconsin, for Exercise Alpine Warrior 93; Norway for Exercise Battle Griffin 93; and Guantanamo Bay, Cuba, as the security force for Haitian migrants. Other significant operations included Ocean Venture 93 and regimental deployments to Fort Bragg, North Carolina, for Exercise Express Sword and Exercise Dragonfire IV; and Fort Carson, Colorado, for Exercise Castle Page and Exercise Castle Warrior. Coincidentally, the 10th Marines continue to support the Air Contingency Force commitment for the 2d Marine Division, as well as career training for midshipmen from the US Naval Academy and many east coast ROTC units.

10th Marines hustle in a helolift.

Our major training events included two regimental deployments to Fort Bragg for Exercises Express Sword 2-93 and 1-94 from 27 March to 8 April and 13 October to 27 October, respectively. These exercises included each of the 10th Marines' four battalions as well as its associated Reserve battalion, 3d Battalion, 14th Marines and Combat Service Support Detachment 25. The regiment honed its skills in command and control, joint interoperability, combat service support, tactical and technical fire direction and fire support coordination. The 10th Marines emphasized coordination in joint operations through the digital communications link of the battlefield computer terminal (BCT), a sub-system of the Marine Corps fire support system (MCFSS). The regiment will receive the MCFSS in September 1994.

In support of the "Follow Me" 2d Marine Division, the 10th Marines provide the ***Arm of Decision!***



A 10th Mar M198 at max elevation.

Silhouettes of Steel

# 11th Marine Regiment

The Cannon Cockers of the 11th Marines, with their headquarters at Camp Pendleton, California, continue to deploy to all points of the globe. As part of the nation's "911 Force in Readiness," the regiment deployed Marine Cannoneers to Somalia, Okinawa, Southwest Asia, the Persian Gulf, the Indian Ocean, Australia, Japan and Korea.

In Somalia, a battery from 2/11 Mar serving with the 15th Marine Expeditionary Unit (MEU), provided a fire support capability while 3/11 Mar, reinforced by a counterbattery radar element, deployed as part of the maritime prepositioning force (MPF) in support of Operation Restore Hope. The Cannoneers of 3/11 Mar served exceptionally well as a provisional infantry battalion, conducting security patrols, convoy operations and command post security. With the 1st Marine Division Commanding General and his staff in Somalia, the 11th Marines assumed command of the division for nearly four months as the alternate division command post.

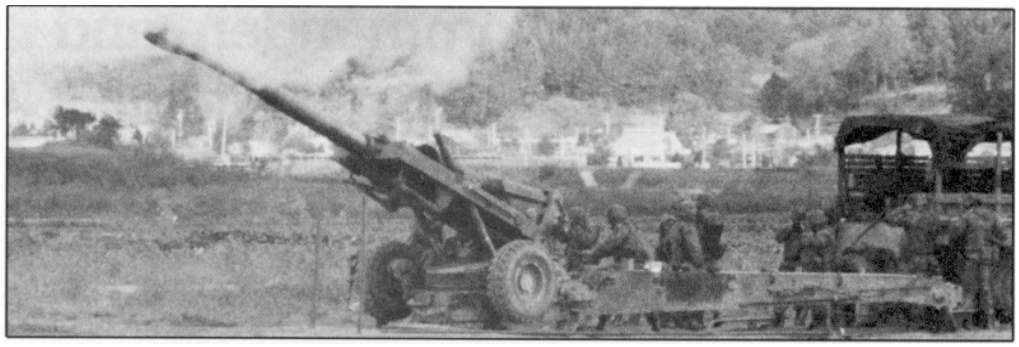
The regiment continued to support the unit deployment program (UDP) with firing batteries deployed to Okinawa for six months at a time. Additionally, firing batteries deployed with the 11th, 13th and 15th MEUs on a six-month cycle. Here in the states, units from the 11th Marines deployed to the Chocolate Mountains near Yuma, Arizona; Bridgeport Mountain Warfare School in the Sierra Nevada Mountains; and the Mojave Desert in Twenty-Nine Palms.

During the year, 2/11 Mar participated in the joint-level exercise CONOPS at the NTC, while 1/11 Mar participated in the amphibious exercise Kernal Raider off the coast of Camp Pendleton. In Operation Steel Knight at Twenty-Nine Palms, 5/11 Mar supported mechanized maneuver elements.

In early FY 94, the 11th Marines participated in DESFIREX at Twenty-Nine Palms with elements of 6-27 FA (MLRS), III Corps Arty. For the first time, MLRS was integrated into a Marine exercise, which also included Air Force assets—a very successful training event.

Dial 911 for a ready force, and your call for fire will be answered by the ***11th Marines Cannon Cockers!***

While the dust flies, 11th Marines ram a round home in their M198 howitzer.



12th Marines in Korea fire after a hasty occupation.

# 12th Marine Regiment

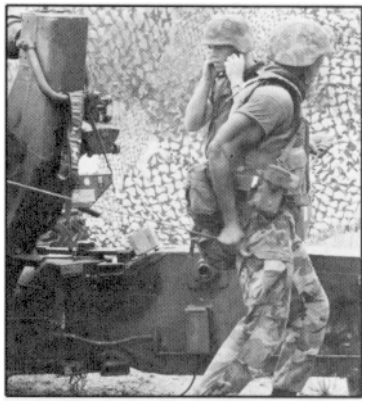
The Thunder and Steel Regiment, with its headquarters on the island of Okinawa, Japan, remains the "Crossroads of the Corps" for Marine Artillery. With five of six firing batteries sourced from CONUS (the 10th and 11th Marine Regiments) and Hawaii (1st Battalion, 12th Marines), our ongoing challenge is building our two organic battalions into cohesive, combat-ready units fully capable of executing the mandates of our METL and combat missions.

Units from the 12th Marines continually support 3d Marine Division operations as well as III Marine Expeditionary Force joint and combined operations. In the last year alone, units, elements and personnel from the 12th Marines participated in exercises Team Spirit, Ulchi Focus Lens and Valiant Blitz in Korea; Yama Sakura, Keen Edge and Forest Light in mainland Japan; Valiant Usher, the island of Hokkaido, Japan; Cobra Gold, Thailand; and Tempo Brave and Beach Crest in Okinawa.

Additionally, we had firing batteries continually deployed to Camp Fuji, Japan, throughout this year and completed battalion-sized deployments to Fuji training areas during February and again in June. Moreover, we sourced one of our batteries to the 31st Marine Expeditionary Unit (MEU), a special operations command, during this period for an extended deployment throughout the Western Pacific.

To complement this battery-and battalion-level training, two regimental, extended training exercises were conducted on the island of Okinawa. In addition, the 1st Battalion, 12th Marines conducted a month-long combined arms exercise at the Pohakaloa Training Area on Hawaii four times this year.

We stand ready to face any and all challenges while maintaining our principal focus on delivering devastating fires in support of maneuver on time, on target—as the ***Thunder and Steel Regiment!***



A 12th Marine pulls the lanyard on an M198 at the central training area at Camp Hanson, Okinawa.

Silhouettes of Steel

# 14th Marine Regiment

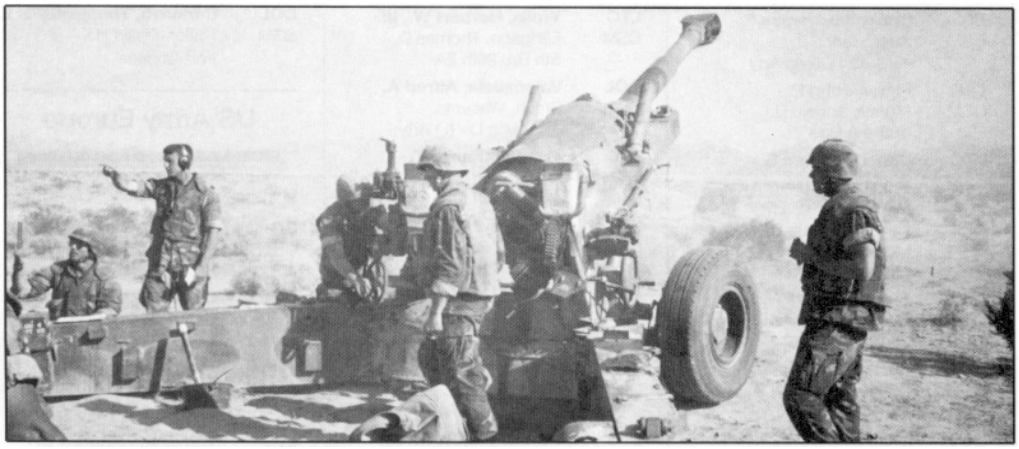
The year 1993 was one of intense training and transition for the 14th Marines (Reserves), headquartered in Dallas, Texas. As the only US Marine Reserve artillery, the regiment is currently directing our two self-propelled howitzer-equipped battalions to transition to the M198 howitzer (155-mm towed) to complete the Marine Corps' artillery piece standardization.

In the summer of 1993, the regiment participated in combined arms exercises (CAXs) 7-93 and 8-93 at the Marine Corps Air-Ground Combat Center, (MCAGCC), Twenty-Nine Palms, California—the largest enhanced Reserve CAXs ever conducted.

During the year, the regiment took steps to begin integrating the training of our firing batteries and battalion staffs with the active Marine artillery regiments to enhance the capability for augmenting those forces if needed in time of crisis. In April, the 1st Battalion, 14th Mar, headquartered in Alameda, California, participated in a FIREX at the MCAGCC, Twenty-Nine Palms, with the 11th Marines. The battalion's performance prompted a message from the Commanding General of the 1st Marine Division to Major General James Livingston, Commanding General of the Marine Reserve Force, stating, "The professionalism and operational experience of the 1st Battalion, 14th Marines was indistinguishable from that of my active duty artillery battalions."

In May, the 3d Battalion, 14th Mar, out of Philadelphia, traveled to North Carolina to train with the 10th Marine Div Arty of the 2d Marine Division. In that exercise, the Reserve battalion was fully integrated into the 10th Marines organization for combat, firing in direct support as well as the other tactical missions of general support and reinforcing.

A continuing program of integrated training is being implemented by the 14th Marines to ensure that the Marine Corps' Reserve artillery remains fully capable of falling in and, when called upon, providing ***First Round Fire for Effect!***



A/1/14 Mar crew members prepare to fire their M198 during training at Twenty-Nine Palms. *(Photo by SGT J. D Baker)*


# Field Artillery Commanders and Command Sergeants Major

*As of 1 November 1993*

## Active Army

### *Training and Doctrine Command*

#### US Army Field Artillery School and Fort Sill

| | | |
|---|---|---|
| **MG** | **Dubia, John A.** | Commandant/CG |
| **CSM** | **McKinney, James C.** | Fort Sill/FA |
| **BG** | **Benton, David L., III** | Asst. Commandant |
| **COL** | **Bowden, Thomas G.** | |
| CSM | McFadden, Joseph J. | 30th FA Regiment |
| **LTC** | **Coffman, Sammy L.** | |
| CSM | Horsley, Johnny L. | TF 2d Bn, 2d FA |
| **LTC** | **Beecher, Robert J.** | |
| CSM | Hawkins, Joseph A. | 1st Bn, 30th FA |
| **LTC** | **Mayock, Thomas J., Jr.** | |
| SGM | Jones, Benjamin R. | 3d Bn, 30th FA |
| **COL** | **Brown, Thomas L.** | |
| CSM | Noel, Thomas E. | FA Training Center |
| **LTC** | **Hughes, Griffith S.** | |
| CSM | Jackson, Richard M. | 1st Bn, 19th FA |
| **LTC** | **Biggs, John D.** | |
| CSM | Porter, Raymond L. | 1st Bn, 31st FA |
| **LTC** | **Lyons, Richard D.** | |
| CSM | Adams, Paul C. | 1st Bn, 33d FA |
| **LTC** | **Norberg, Joseph M.** | |
| CSM | Marable, Joseph L. | 1st Bn, 78th FA |
| **LTC** | **Lupo, Curtis A.** | |
| CSM | Niccum, William W. | 2d Bn, 80th FA |
| **LTC** | **Zachert, Donald H.** | |
| CSM | Kraus, Lawrence H. | 3d Bn, 321st FA |

## Forces Command

#### III Corps

| | | |
|---|---|---|
| **BG** | **von Kaenel, Howard J.** | |
| CSM | Carr, Thomas E. | III Corps Arty |
| **COL** | **Cunningham, James E.** | |
| CSM | Stockton, Gaylen V. | 17th FA Bde |
| **LTC** | **Baker, Timothy J.** | |
| CSM | Nelson, George H. | 5th Bn, 3d FA |
| **LTC** | **Hill, Jerry C.** | |
| CSM | Chappell, David B. | 1st Bn, 12th FA |
| **LTC** | **Redlinger, Mark J.** | |
| MSG(P) | Kittrell, James C. | 3d Bn, 18th FA |
| **COL** | **Arntz, Stephen J.** | |
| CSM | Kermode, William J. | 75th FA Bde |
| **LTC** | **Gibbons, Peter W.** | |
| CSM | Inman, Paul M. | 1st Bn, 17th FA |
| **LTC** | **Laffosse, Miguel D.** | |
| CSM | Meyer, Dennis | 5th Bn, 18th FA |
| **LTC** | **Cline, Robert A.** | |
| CSM | Mitchell, Sammie L. | 6th Bn, 27th FA |
| **COL** | **Barcellos, Terrance D.** | |
| CSM | Green, Gary R. | 212th FA Bde |
| **LTC** | **Riley, Sidney** | |
| CSM | Lunceford, Danny L. | 2d Bn, 17th FA |
| **LTC** | **Hunzeker, Kenneth W.** | |
| CSM | Phillips, Robert H. | 2d Bn, 18th FA |
| **LTC** | **Coker, Larry W., Jr.** | |
| CSM | Williams, Felton | 6th Bn, 32d FA |
| **COL** | **Cooper, Billy R.** | |
| CSM | Young, Richard A. | 214th FA Bde |
| **LTC** | **Kniskern, Wayne R.** | |
| CSM | Wood, Jerry L. | 3d Bn, 9th FA |
| **LTC** | **Twohig, John J.** | |
| CSM | Shady, Robert C. | 3d Bn, 17th FA |
| **LTC** | **DiGiorgio, Emilio** | |
| CSM | Santo, William T. | 5th Bn, 17th FA |

#### XVIII Airborne Corps

| | | |
|---|---|---|
| **BG** | **Brickman, James F.** | |
| CSM | Austin, John J. | XVIII Abn Corps Arty |
| **COL** | **Floris, John P.** | |
| CSM | Murrell, Angelo B. | 18th FA Bde |
| **LTC** | **Jones, William S.** | |
| CSM | Roberts, Perry L. | 3d Bn, 8th FA |
| **LTC** | **Lewis, Dennis R.** | |
| CSM | Melvin, Richard L. | 5th Bn, 8th FA |
| **LTC** | **Smith, Arnold** | |
| CSM | Quandt, David T. | 3d Bn, 27th FA |
| **LTC** | **Parsons, Steven A.** | |
| CSM | Dugan, Joseph A. | 1st Bn, 39th FA |
| **COL** | **Irick, Edward F., III** | |
| CSM | Henson, Melvin R. | 42d FA Bde |
| **LTC** | **Church, James W.** | |
| CSM | Cox, Hubert L. | 4th Bn, 82d FA |

#### Division Artilleries

| | | |
|---|---|---|
| **COL** | **Broadwater, Colby M., III** | |
| CSM | Duncan, Gary S. | 1st Cav Div Arty |
| **LTC** | **Johnsen, Nicholas R.** | |
| CSM | Schmidt, Warren A. | 1st Bn, 82d FA |
| **LTC** | **Walsh, Gerard M.** | |
| CSM | Graves, Roy L. | 2d Bn, 82d FA |
| **LTC** | **Dudley, Marcus D.** | |
| CSM | Garley, Frederick V. | 3d Bn, 82d FA |
| **COL** | **Evans, Richard E.** | |
| CSM | Edmundson, Thomas J. | 1st IN Div (Mech) Arty |
| **LTC** | **Willis, Colen K.** | |
| CSM | Rundle, Dennis J. | 1st Bn, 5th FA |
| **LTC** | **Belanger, Van-George R.** | |
| CSM | Porter, Ronnie | 4th Bn, 5th FA |
| **COL** | **Culling, Thomas E.** | |
| CSM | Lewis, Harold E. | 2d AR Div Arty |
| **LTC** | **Bolton, Michael L.** | |
| SGM | Shelly, Earl L. | 9th Bn, 1st FA |
| **LTC** | **Annen, David M.** | |
| CSM | Broadwater, William B. | 1st Bn, 3d FA |
| **LTC** | **Hayes, Michael T.** | |
| CSM | Cross, Lawrence L. | 1st Bn, 14th FA |
| **COL** | **Johnson, Alan D.** | |
| CSM | Wright, Daniel E. | 4th IN Div (Mech) Arty |
| **LTC** | **White, David C.** | |
| CSM | Tillman, Melvin | 3d Bn, 29th FA |
| **LTC** | **Wells, Herbert W., III** | |
| CSM | Ellingson, Thomas D. | 5th Bn, 29th FA |
| **COL** | **Valenzuela, Alfred A.** | |
| CSM | Smith, Walter L. | 10th Mtn Div (L) Arty |
| **LTC** | **Palmer, James T.** | |
| CSM | Drummond, Walter L. | 1st Bn, 7th FA |
| **LTC** | **Sweeney, Patrick C.** | |
| CSM | Chittum, Steven G. | 2d Bn, 7th FA |
| **COL** | **Lennox, William J., Jr.** | |
| CSM | Williams, L.C. | 24th IN Div (Mech) Arty |
| **LTC** | **Browne, Donald W., Jr.** | |
| CSM | Cruz, Arthur E. | 1st Bn, 41st FA |
| **LTC** | **Fronzaglia, Robert J.** | |
| CSM | King, Bruce J. | 3d Bn, 41st FA |
| **LTC** | **Bransford, William M.** | |
| CSM | Yancey, Andrew C. | 4th Bn, 41st FA |
| **COL** | **Gottardi, L.D.** | |
| CSM | Archbold, Cecilio M. | 82d Abn Div Arty |
| **LTC** | **Janosko, Theodore J.** | |
| CSM | Thompson, Ronald | 1st Bn, 319th FA |
| **LTC** | **Cutler, David C.** | |
| CSM | Allen, John G. | 2d Bn, 319th FA |
| **LTC** | **Hood, Jay W.** | |
| CSM | Riley, Timothy D. | 3d Bn, 319th FA |
| **COL** | **Nelson, Neil E.** | |
| CSM | Warrick, Ronald E. | 101st Abn Div (AAslt) Arty |
| **LTC** | **Page, Clyde A.** | |
| CSM | Brodeur, Albert J. | 1st Bn, 320th FA |
| **LTC** | **Kimmitt, Mark T.** | |
| CSM | Wong, Derrick G. | 2d Bn, 320th FA |
| **LTC** | **McKeeman, Michael W.** | |
| CSM | Boyd, George M. | 3d Bn, 320th FA |

#### Separate Commands

| | | |
|---|---|---|
| **COL** | **Stricklin, Toney** | |
| CSM | Dixon, Donald L. | 210th FA Bde (I Corps Arty) |
| **LTC** | **Patterson, Dan B.** | |
| CSM | Walker, Jimmy L. | 3d Bn, 11th FA (210th FA Bde) |
| **LTC** | **Odierno, Raymond T.** | |
| 1SG | Charfauros, Joseph A. | (Acting) 2d Bn, 8th FA |
| **COL** | **Dudley, Robert M.** | |
| MSG | Finch, Lowell R. | TEXCOM FA Board |
| **COL** | **Cannava, Thomas J.** | |
| SGM | Hafler, Phillip H. | Fort Chaffee |

## US Army Europe

#### V Corps

| | | |
|---|---|---|
| **BG** | **Swain, Thomas E.** | |
| CSM | Underwood, Johnny W. | V Corps Arty |
| **COL** | **Chambless, James R.** | |
| CSM | Stanislas, Rawle B. | 41st FA Bde |
| **LTC** | **Chase, Randall D.** | |
| CSM | Dungey, William E. | 1st Bn, 27th FA |
| **LTC** | **Wynarski, Andrew E.** | |
| CSM | McPherson, Paul D. | 4th Bn, 27th FA |

**LTC** **Bonney, Daniel J.**
CSM Foster, Thomas H., III
2d Bn, 32d FA

### Division Artilleries

**COL** **Gingrich, John R.**
CSM Harris, Sherman W.
1st AR Div Arty

**LTC** **Dunn, Colin K.**
CSM Castillo, Ivan A.
2d Bn, 3d FA

**LTC** **Bailey, Stephen L.**
CSM Sturdivant, Lash L.
2d Bn, 29th FA

**LTC** **Murphy, Dennis M.**
CSM Stewart, Quinton M.
4th Bn, 29th FA

**LTC** **House, John M.**
CSM Hundley, William C.
6th Bn, 29th FA

**COL** **Dayton, Keith W.**
CSM Unroe, James P.
3d IN Div (Mech) Arty

**LTC** **Ralston, David C.**
CSM Sampson, Clyde
3d Bn, 1st FA

**LTC** **Collier, John A., Jr.**
CSM Victorino, James P.
6th Bn, 1st FA

**LTC** **Hiemstra, Michael A.**
CSM Speeks, Rickey D.
5th Bn, 41st FA

**LTC** **Shafer, Jeffrey L.**
CSM Lopes, Lucio O.
2d Bn, 14th FA

## US Army Pacific

**COL** **Tetu, William J.**
CSM Cunningham, Jackie L.
2d IN Div Arty

**LTC** **McDonald, John H., Jr.**
CSM Causby, Mal E.
8th Bn, 8th FA

**LTC** **Nahrwold, Scott E.**
CSM Freeman, Lesley, Jr.
1st Bn, 15th FA

**LTC** **Wright, Randy C.**
CSM Santos, Angel, Jr.
6th Bn, 37th FA

**COL** **Lovelace, James J.**
CSM Luke, Ashley J.
6th IN Div (L) Arty

**LTC** **Niederlander, Gary D.**
CSM Noah, Larry R.
4th Bn, 11th FA

**LTC** **Woods, John C.**
CSM Brown, Daniel S.
5th Bn, 11th FA

**COL** **Clemmons, Reginal G.**
CSM Perry, William J., III
25th IN Div (L) Arty

**LTC** **Soby, Charles S.**
CSM Williams, Anthony J.
3d Bn, 7th FA

**LTC** **Boyle, James W., Jr.**
CSM Dinkel, Larry H.
1st Bn, 8th FA

**LTC** **Yingling, John A.**
CSM Evans, Kenneth L.
7th Bn, 8th FA

**LTC** **Gant, James H., Jr.**
CSM Bostic, Clyde J.
2d Bn, 11th FA

## Army National Guard

### I Corps

**BG** **Ewing, Donald M.**
CSM Boyington, Richard L.
I Corps Arty

**LTC** **Johnson, James D.**
CSM Williams, Brock H.
1st Bn, 140th FA

**LTC** **Becker, George A.**
CSM Christensen, Kent B.
1st Bn, 145th FA

**LTC** **Roberts, Daniel S.**
CSM Walbeck, William B.
2d Bn, 222d FA

### Division Artilleries

**COL** **Richar, William C.**
CSM Sheard, James J., Jr.
28th IN Div Arty

**LTC** **Hilliard, George R.**
CSM Nett, David L.
1st Bn, 108th FA

**LTC** **Gallagher, Brian J.**
CSM Sauer, John J., Jr.
1st Bn, 109th FA

**LTC** **Kraft, Dennis R.**
CSM Vacant
1st Bn, 134th FA

**LTC** **Messina, Michael R.**
CSM Houston, David J.
1st Bn, 229th FA

**COL** **Wilkins, Daniel B.**
CSM Yeager, Thomas E.
29th IN Div (L) Arty

**LTC** **Holweck, Ralph D.**
CSM Perando, Scott A.
2d Bn, 110th FA

**LTC** **Bramlitt, Carl W.**
CSM Sparkman, Miles E., III
2d Bn, 111th FA

**LTC** **Grant, Rorer J.**
CSM Ferguson, Lowell T.
1st Bn, 246th FA

**COL** **Bode, Louis O.**
CSM Watson, Judd L.
34th IN Div (Mech) Arty

**LTC** **Malicki, Gregg H.**
CSM Goodwin, Randy C.
2d Bn, 123d FA

**LTC** **Feaski, Thomas N.**
CSM Ibberson, Steve P.
1st Bn, 125th FA

**LTC** **Halverson, Ronald L.**
CSM Froelich, Kirby R.
1st Bn, 151st FA

**LTC** **Warnock, Tracy T.**
CSM Peterson, Leslie D.
1st Bn, 194th FA

**COL** **Mitchell, John W., Jr.**
CSM Rudder, John L.
35th IN Div (Mech) Arty

**LTC** **Hoefer, Galen D.**
CSM Maag, Curtis R.
1st Bn, 127th FA

**LTC** **Clark, William G., Jr.**
CSM Supplee, James L.
2d Bn, 138th FA

**MAJ** **Miller, Michael J.**
CSM Stevens, George E.
1st Bn, 161st FA

**LTC** **Grandstaff, Curtis G.**
CSM Terrell, Eldon J.
1st Bn, 168th FA

**COL** **Burgett, David M.**
CSM Osborne, John D.
38th IN Div Arty

**LTC** **Vadnais, Gregory J.**
CSM Wierman, Michael L.
1st Bn, 119th FA

**LTC** **Purtee, David E.**
CSM Nicholson, Jerry D.
3d Bn, 139th FA

**LTC** **Stempson, Thomas A.**
CSM Parsons, Jackie P.
2d Bn, 150th FA

**LTC** **Austin, Larry L.**
CSM Mattingly, James R.
1st Bn, 163d FA

**COL** **Throckmorton, Richard L.**
CSM Andrews, Gary W.
40th IN Div (Mech) Arty

**LTC** **Newman, Randall H.**
CSM Tafoya, Raymond A.
1st Bn, 143d FA

**LTC** **Starich, Jack G.**
CSM Vacant
2d Bn, 144th FA

**LTC** **Burke, Steven**
CSM Randall, Jerry E.
3d Bn, 144th FA

**COL** **Leite, Abel C.**
CSM Beirne, John E.
42d IN Div (Mech) Arty

**LTC** **Pappas, Gary A.**
CSM Engler, Paul D.
1st Bn, 101st FA

**LTC** **Starrett, Robert J.**
CSM Szymborski, Stanley
1st Bn, 112th FA

**LTC** **Cherry, Alfred B.**
CSM Newman, Frank T., Jr.
3d Bn, 112th FA

**LTC** **Gidansky, Martin**
CSM Murfitt, Arthur M.
1st Bn, 258th FA

**COL** **Powers, Christopher J.**
CSM Wesch, Larry
49th AR Div Arty

**LTC** **Ortiz, Victor M., Jr.**
CSM Vacant
3d Bn, 132d FA

**LTC** **Bouillion, Kayward J.**
CSM Rigsby, Hulen T., III
1st Bn, 133d FA

**MAJ** **Rives, Charles**
CSM Talbot, Joseph E.
3d Bn, 133d FA

**LTC** **Timmerman, Thomas**
CSM Belyeu, Leonard W.
4th Bn, 133d FA

### Brigades

**COL** **Morford, Jim E.**
CSM Plaster, Gerald S.
45th FA Bde

**LTC** **Hills, Thomas L.**
CSM Watts, Charles W.
1st Bn, 158th FA

**LTC** **South, Arthur R.**
CSM Ahrens, Lewis E.
1st Bn, 171st FA

**LTC** **Shirley, Tom L.**
CSM Ray, Robert F.
1st Bn, 189th FA

**COL** **Strawn, Marvin I.**
CSM Yenchesky, James H.
57th FA Bde

**LTC** **Schiller, James A.**
CSM Weller, Gary P.
1st Bn, 121st FA

**LTC** **Friedl, Michael J.**
CSM Hannah, Bruce J.
1st Bn, 126th FA

**COL** **Ryan, James F.**
CSM Iannelli, Paul A.
103d FA Bde

**LTC** **Wood, John H.**
CSM Vacant
1st Bn, 103d FA

**COL** **Lupus, Lawrence G.**
CSM Abraham, Daniel R.
113th FA Bde

**LTC** **Wallace, John W., Jr.**
CSM Ingram, Larry G.
4th Bn, 113th FA

**LTC** **Newton, Joel B.**
CSM Ellington, Orman B., Jr.
5th Bn, 113th FA

**LTC(P)** **Wray, Cannon S.**
CSM Cash, Jack H.
115th FA Bde

**LTC** **Dunning, Forest B.**
CSM Hirsch, Bruce A.
1st Bn, 49th FA

**COL** **Griffey, Bobby G.**
CSM Blair, Charles M.
135th FA Bde

**LTC** **Henry, Walter E.**
CSM Heinzler, James J.
1st Bn, 128th FA

**LTC** **Vessell, Charles R.**
CSM Green, Roger B.
1st Bn, 129th FA

**LTC** **Smith, James L.**
CSM Dermon, Robert E.
138th FA Bde

**LTC** **Curtin, Michael J.**
CSM Hoffman, William F.
1st Bn, 623d FA

**COL** **Pennington, James R.**
CSM Fagala, Robin F.
142d FA Bde

**LTC** **Kimmey, Kim**
CSM Jordan, Alva C.
1st Bn, 142d FA

**LTC** **Posey, Carl J.**
CSM Bull, Jack R.
2d Bn, 142d FA

**COL** **Goldhorn, Donald J.**
CSM Howe, Randolph H.
147th FA Bde

**LTC** **Smith, Conrad G.**
CSM Hurney, Richard J.
1st Bn, 147th FA

**LTC** **Davies, James R.**
CSM Logan, Richard L.
2d Bn, 147th FA

**COL** **Sipe, Nicholas P.**
CSM Smith, James D.
151st FA Bde

**LTC** **Richardson, Andrew L.**
CSM Davis, Albert E.
3d Bn, 178th FA

**COL** **Davila, Manuel B., Jr.**
CSM Finny, Jack E.
153d FA Bde

**COL** **Crowder, Ronald G.**
CSM Miller, David E.
169th FA Bde

**LTC** **Tyson, John M.**
CSM Rowan, Thomas D.
1st Bn, 157th FA

**LTC** **Paul, Walter**
SGM Thomas, Ainsley P.
2d Bn, 157th FA

**COL** **Darling, James P.**
CSM McDaniel, John C., Jr.
196th FA Bde

**LTC** **Marshall, Herschell W.**
CSM Pratt, John F.
1st Bn, 115th FA

**LTC** **Clark, Alan N.**
CSM Gentry, Gary J.
1st Bn, 181st FA

**COL** **Leclerc, Joseph G.E.**
CSM Crotto, Gregory H.
197th FA Bde

**MAJ(P)** **Aubin, John P.**
CSM O'Brien, John B.
1st Bn, 172d FA

**LTC** **Murphey, Lawrence H.**
CSM Hammel, Leonard D., Jr.
2d Bn, 197th FA

**COL** **Losel, Glenn W.**
CSM Flye, Jerome E.
209th FA Bde

**COL** **Freeman, William L., Jr.**
CSM Cowley, Gerald R.
631st FA Bde

**LTC** **Price, Michael L.**
CSM Cummins, Ancle W.
1st Bn, 114th FA

**LTC** **Pierce, Billy L.**
CSM Cooley, Donald L.
4th Bn, 114th FA

### Round-Up Battalions

**LTC** **Triplett, Michael W.**
CSM Marshall, Ben A.
2d Bn, 114th FA
(1st Cav Div Arty)

**LTC** **Nessmith, Charles R.**
CSM Allen, Thomas G.
1st Bn, 118th FA
(24 IN Div (Mech) Arty)

**LTC** **King, Craig S.**
CSM Robinette, Max G.
2d Bn, 146th FA
(2d IN Div Arty)

### Round-Out Battalions

**LTC** **Jones, Ivan M.**
CSM Smith, Robert G.
1st Bn, 141st FA
(2d AR Div Arty)

**LTC** **Schuster, Donald D.**
CSM Murphy, Patrick W.
1st Bn, 148th FA
(4th IN Div (Mech) Arty)

**LTC** **Morgan, James T.**
CSM Gliedman, Jeffrey A.
1st Bn, 156th FA
(10th Mtn Div (L) Arty)

**LTC** **Templeton, Robert S.**
CSM Sexton, Jimmie R.
1st Bn, 178th FA
(1st IN Div (Mech) Arty)

### Separate Battalions

**LTC** **Brubaker, Harry H.**
CSM Hoopes, William L.
3d Bn, 49th FA

**LTC** **Eaton, Clark J.**
CSM Leggett, Ronald W.
1st Bn, 86th FA

**LTC** **Irvine, John C.**
CSM Honkus, Thomas D.
1st Bn, 107th FA

**LTC** **Montague, Harry W.**
CSM Simpson, Lanny E.
1st Bn, 113th FA

**LTC** **Prince, Calvin F.**
CSM Turner, William B.
3d Bn, 115th FA

**LTC** **Welch, Jerold P.**
1SG(P) Dooley, Gary L.
2d Bn, 116th FA

**LTC** **Connor, Thomas W.**
CSM Danley, Dwight L.
3d Bn, 116th FA

**LTC** **Smith, Harry G.**
CSM Jackson, Charles R.
1st Bn, 117th FA

**LTC** **Reed, Robert E.**
CSM Snyder, Pugh K.
3d Bn, 117th FA

**LTC** **Schwenner, John T.**
CSM Ambrose, Leo L.
1st Bn, 120th FA

**MAJ(P)** **Mackey, John T.**
CSM Kizart, James P.
2d Bn, 122d FA

**LTC** **Tritsch, Thomas M.**
CSM Bahr, Ronald E.
2d Bn, 130th FA

**LTC** **Tardie, Donald A.**
1SG Rolfe, Randall G.
1st Bn, 152d FA

**LTC** **Greenfield, James L.**
CSM Bates, John B.
1st Bn, 160th FA

**LTC** **Valldejuli, Alberto L.**
CSM Cruz, Jose
1st Bn, 162d FA

**LTC** **Molano, Jesus M.**
1SG Otero, Luis
2d Bn, 162d FA

**LTC** **Robey, William J.**
CSM Ditsch, Thomas D.
1st Bn, 180th FA

**LTC** **Johnson, Sheldon D.**
1SG Young, Robert L.
1st Bn, 182d FA

**LTC** **Kappa, Stephen S.**
CSM Harman, John E.
1st Bn, 201st FA

**LTC** **McGee, Nathaniel**
CSM Wilson, Harry
5th Bn, 206th FA

**LTC** **Thomas, William A.**
CSM Hewell, Gerald M.
1st Bn, 214th FA

**LTC** **Tomasovic, Robert S.**
1SG(P) Smith, Joseph A.
2d Bn, 218th FA

**LTC** **Carpenter, James R.**
1SG(P) Makuakane, Jack
1st Bn, 487th FA

## Army Reserve

### Brigades

**COL** **Bugg, Jimmie C.**
CSM Rutherford, Barry C.
428th FA Bde

**COL** **Bannon, George A.**
CSM Holland, Gregory J.
479th FA Bde

**LTC** **Utz, Bruce R.**
CSM Manno, Richard
4th Bn, 92d FA

### Training Brigades

**LTC(P)** **Davis, Gary W.**
CSM Parker, Frank H.
2d Bde (FA-OSUT)
84th Div (Tng)

**LTC** **Majewski, Anthony J.**
CSM Stadler, Gary J.
1st Bn, 274th FA

**LTC** **Priem, Randy J.**
CSM Kotloski, Kenneth M.
3d Bn, 274th FA

**LTC** **Geib, Donnell H.**
CSM Clark, Charles A.
3d Bn, 334th FA

**MAJ** **Duchateau, Patrick J.**
CSM Thompson, John L.
2d Bn, 351st FA

**COL** **Dollar, Douglas O.**
CSM Bailey, William A.
402d Bde (Tng)(FA)
95th Div (Tng)

**LTC** **Cushman, Paul D.**
CSM Morris, Haywood C.
1st Bn, 89th FA

**LTC** **Jester, James L.**
CSM Castro, John
2d Bn, 89th FA

**LTC** **Robinson, Robert G.**
CSM Carter, Garry L.
3d Bn, 89th FA

**LTC** **Pike, David S.**
CSM Dunklin, Stanley J.
4th Bn, 89th FA

**LTC** **Putthoff, Ernest R.**
CSM Gilbert, Billy D.
5th Bn, 89th FA

**LTC** **Debaca, Frank A.**
CSM Anders, William E.
402d Tng Spt Bn

**LTC** **Fairbanks, Steven E.**
CSM Brown, Paul L.
402d Rcptn Bn

### Separate Battalions

**MAJ(P)** **Wroblewski, Walther R.**
CSM Harden, Frank L.
7th Bn, 1st FA

**LTC** **Corrigan, Michael G.**
CSM Trinca, Ernest
5th Bn, 5th FA

**LTC** **Chavez, Robert M.**
CSM Long, Robert W.
7th Bn, 9th FA

**LTC** **Rydell, Terry L.**
CSM Pearson, Andrew L.
3d Bn, 14th FA
(R/O 6th IN (L) Div Arty)

**LTC** **Zimmerman, Raymond C.**
MSG Badgett, Kenneth L.
3d Bn, 15th FA

**LTC** **Spear, Robert K.**
MSG Turner, Malcolm W.
4th Bn, 17th FA

**LTC** **Lucas, Everett D.**
CSM Tobin, Joseph A.
3d Bn, 42d FA

**LTC** **Drewel, Charles A.**
CSM Lenox, Chester A.
3d Bn, 75th FA

**LTC** **Scanlan, John J.**
CSM Ward, Cecil M.
3d Bn, 83d FA

**LTC** **Martin, John T.**
CSM Hanna, Richard M.
3d Bn, 92d FA

**LTC** **Zabecki, David T.**
MSG Milewski, William F.
303d Spt Gp (RAOC)
(3d IN Div (Mech))

## Marines

**Col** **Hughes, Philip E.**
SgtMaj Seymour, Gerald L.
10th Marines

**LtCol** **Morris, Charles W.**
SgtMaj Huerta, Ernest A.
1st Bn, 10th Mar

**LtCol** **Ward, Stephen C.**
SgtMaj Capper, Kenn J.
2d Bn, 10th Mar

**LtCol** **Click, Robert L.**
SgtMaj Crews, David E.
3d Bn, 10th Mar

**LtCol** **Dunn, Kenneth D.**
SgtMaj Flores, Richard F.
5th Bn, 10th Mar

**Col** **McAbee, Jerry C.**
SgtMaj Cortez, Ruben
11th Marines

**LtCol** **Mitchell, Mike C.**
SgtMaj Wilburn, Donald E.
1st Bn, 11th Mar

**LtCol** **Davis, Mark S.**
SgtMaj Westenburger, Steven J.
2d Bn, 11th Mar

**LtCol** **Lesnowicz, Edward S.**
SgtMaj Pacheko, Alex
3d Bn, 11th Mar

**LtCol** **Forrest, R. Lindsey**
SgtMaj Madero, Michael A.
5th Bn, 11th Mar

**Col** **Ford, Walter G.**
SgtMaj Gonzales, Eusebio, Jr.
12th Marines

**LtCol** **Kelly, Thomas R.**
1stSgt Garcia, Edwin
1st Bn, 12th Mar

**LtCol** **Portman, Terrance M.**
1stSgt Strickland, David E.
2d Bn, 12th Mar

**LtCol** **Hicks, Michael K.**
SgtMaj Cox, Melton E.
3d Bn, 12th Mar

**Col** **Stuart, Lynn A.**
SgtMaj Rivera, Reynaldo
14th Marines

**LtCol** **Hart, Kevin P.**
SgtMaj Murphy, Jack L.
1st Bn, 14th Mar

**LtCol** **Veteto, Patrick A.**
SgtMaj Davis, James K.
2d Bn, 14th Mar

**LtCol** **Mears, James A.**
SgtMaj Wright, Arthur G.
3d Bn, 14th Mar

**LtCol** **Williams, Harry T.**
SgtMaj Stamper, James J.
4th Bn, 14th Mar

**LtCol** **Bloom, Peter W.**
SgtMaj Carrillo, Carlos, Jr.
5th Bn, 14th Mar

# Field Artillery Assignment Branches

*As of 1 November 93*

## Active Army Branch Teams

### Officers

**LTC Michael L. Combest**
Field Artillery Branch Chief

**MAJ(P) Jeffrey J. Perry**
Colonels Division
Colonel Assignments

**MAJ(P) John W. Morgan III**
Lieutenant Colonel Assignments

**MAJ(P) Ronnie G. Rogers**
**MAJ Thomas J. Roth**
Major Assignments

**CPT Gary R. Hisle, Jr.**
**CPT Antoine B. Bethel**
Captain Assignments:
Company-Grade Qualified

**CPT Jeffrey C. Lieb**
Captain Assignments: OAC

**CPT William A. Turner**
Lieutenant Assignments:
Accessions/OBC

**CPT Glenn H. Goldman**
Future Readiness/Functional Area Designation/Professional Development

**CW3 John M. Clancy**
Warrant Officer Career Manager Assignments

Addresses and Telephone Numbers

**Lieutenant Colonels (P) and Colonels:**

Commander, PERSCOM
ATTN: TAPC-OPC
200 Stovall Street
Alexandria, VA 22332-0412

Telephone: DSN 221-7862
Commercial (703) 325-7862

**Lieutenant Colonels to Lieutenants:**

Commander, PERSCOM
ATTN: TAPC-OPE-F
200 Stovall Street
Alexandria, VA 22332-0414

Telephone: DSN 221-0116
Commercial (703) 325-0116

**Warrant Officers:**

Commander, PERSCOM
ATTN: TAPC-OPW-FA
200 Stovall Street
Alexandria, VA 22332-0420

Telephone: DSN 221-5239/7837
Commercial (703) 325-5239/7837

**Officers' Microfiche Records.**
To request your microfiche in writing, include name, rank, SSN and address and sign the request. Mail to:
Commander, PERSCOM
ATTN: TAPC-MSR-S
200 Stovall Street
Alexandria, VA 22332-0444

### Enlisted

**LTC Gregory Morton**
Field Artillery Branch Chief

**SGM Larry L. Harris**
Branch Sergeant Major

**MSG Jeffery L. Jones**
Senior Career Advisor
13B (SFC), 13Z (1SG/MSG) and Drill SGT

**SFC(P) Melquiades DeLaConcepcion**
13B (E1 thru E6)

**SSG(P) Jeffrey Ashmen**
13C, 13E and 13F/AFSO Program

**MSG Louis Klein**
13R, 82C and 93F

**SFC David Hixson**
13M and 13P/Recruiting Duty

**SFC Miguel Quinones**
Reclassification/Qualitative Management/Retirement/Service Schools

**Mr. William E. Wagner**
ANCOC/BNCOC

Address and Telephone Numbers

Commander, PERSCOM
ATTN: TAPC-EPK-F
2461 Eisenhower Avenue
Alexandria, VA 22331-0452

Telephone: DSN 221-0304
Commercial (703) 325-0304

## Army Reserve Branch Teams

### Officers

**LTC Rosa L. O'Brien**
Colonels

**LTC Glenn A. Septer**
Field Artillery Branch Chief
Lieutenant Colonels

**MAJ Charles R. Cook**
Majors

**MAJ Melvin R. Cape**
Captains

**MAJ Michael A. Casey**
Lieutenants

**CW5 Wilbur A. Christopher**
Warrant Officer Branch Chief

**CW2 Ruth Kelly**
Personnel Management Officer

Addresses and Telephone Numbers

**Colonels:**

Commander, ARPERCEN
ATTN: DARP-OPS-COL
9700 Page Boulevard
St. Louis. MO 63132-5000

Telephone: DSN 892-3431
Commercial (314) 538-3431
Toll Free 1-800-325-4387

**Lieutenant Colonels to Lieutenants:**

Commander, ARPERCEN
ATTN: DARP-OPC-FA
9700 Page Boulevard
St. Louis, MO 63132-5200

Telephone: DSN 892-3871/3351
Commercial (314)
538-3871/3351/3302
Toll Free 1-800-325-4950

**Warrant Officers:**

Commander, ARPERCEN
ATTN: DARP-OPF-WO
9700 Page Boulevard
St. Louis, MO 63132-5200

Telephone: DSN 892-3997
Commercial (314) 538-3997
Toll Free 1-800-325-4361

### Enlisted

**MSG John F. Murchison, Jr.**
Field Artillery/Air Defense Branch Chief

**SFC Miguel A. Quiles**
Last SSN Digits of 00-18

**SFC Joseph A. Reed**
Last SSN Digits of 19-36

**Vacant**
Last SSN Digits of 37-54

**SFC Douglas L. Ziegelmann**
Last SSN Digits of 55-81

**SFC Joe C. Cohen**
Last SSN Digits of 82-99

Address and Telephone Numbers

Commander, ARPERCEN
ATTN: DARP-EPA-FA/AD
9700 Page Boulevard
St. Louis, MO 63132-5200

Telephone: DSN 892-2219
Commercial (314) 538-2219
Toll Free 1-800-325-4730


The following is a list of articles and selected items from "On the Move" (OM), "View from the Blockhouse" (VB), "Incoming" (INC), "Right by Piece" (RBP) and "From the Gun Line" (FGL) appearing in ***Field Artillery*** during calendar year 1993. The entries are categorized by subject and listed chronologically by title and edition.

## Unit Reports

"Air Attack! 12th Aviation Brigade FSE in Joint and Combined Operations in ODS," (V Corps) Feb
"The Outermost Point—A Farewell to the 559th USAAG," (INC) Apr
"Operation Desert Storm—Mobilization and Deployment of the 142d Field Artillery Brigade," (Arkansas Army National Guard) Jun
"Increasing the Strategic Airlift for Airborne Artillery," (82d Abn Div Arty) (RBP) Jun
"Deployment Readiness—What it Takes to Make the Eagle Fly," (101st Abn Div (Air Asslt) Arty) Jun
"Deploying for Victory," (24th IN Div (Mech) Arty) Jun
"Airborne Artillery and Operation Leatherneck-Ranger," (1-39 FAR (Abn) and 3-75 Rangers) (RBP) Oct
"NCOs Lead the Way: M119A1 Fielding in the Air Assault Division," (3-320 FA, 101st Abn Div (Air Asslt) Arty) (RBP) Oct
"Operation Hurricane Andrew Relief: Humanitarian Assistance, Redleg Style," (1-7 FA and 2-7 FA, 10th Mtn Div (Light) Arty) Oct
"Silhouettes of Steel," (Reports by US FA Corps Artys and Div Artys) Dec

## Training

"New Distributed Training Programs: FAOAC and 13B ANCOC," (VB) Feb
"Blue Flag—Air Force Exercises for Theater Interoperability," Feb
"Synchronization and TCDC: Mission-Essential Task Training for Commanders," Feb
"New Equipment Training for Paladin—The Future is Now!" (VB) Feb
"Junior Leader Development—Setting the Conditions for Success," (FGL) Apr
"Redlegs Ready for Ranger School," (INC) Jun
"Deployment Success—A Senior NCO's Perspective," Jun
"Deployment Readiness—What it Takes to Make the Eagle Fly," Jun
"Deploying for Victory," Jun
"MLRS Reduced-Range Practice Rocket (RRPR) Fielding in October," (RBP) Jun
"At the Cutting Edge of Battle—The Light Fire Support Officer's Course," Jun
"NCOs and Individual Soldier Training," Aug
"The Infantry Battalion Commander and His FSO—Focusing on Training," Aug
"Fire Support NCO: Transition Training for the Universal Soldier," (INC) Oct
"FA ANCOC-BNCOC LFX," (INC) Oct
"Airborne Artillery and Operation Leatherneck-Ranger," (RBP) Oct
"NCOs Lead the Way: M119A1 Fielding in the Air Assault Division," (RBP) Oct
"Ocean Venture 93: An Overview," Oct
"Multimedia Technologies to Train the Total FA," (VB) Oct
"FA M577s Prepositioned at the NTC," (VB) Oct

## Targeting/Gunnery

"Accurate Predicted Fire," (INC) Feb
"The Korean Theater—One-of-a-Kind," (Interview with Robert W. RisCassi, CINC, Combined Forces Command Korea) Feb
"Fire Support Coordination = Supervision of the Plan: A Brigade FSO's Perspective," Feb
"Deep Operations," (OM) Feb
"Shaping the Battlefield—Deep Operations in V Corps," (Interview with LTG Jerry R. Rutherford, CG, V Corps), Apr
"Top-Down Fire Planning Revisited," (INC) Apr
"The Corps Artillery Commander and Deep Operations," Apr
"Depth and Simultaneous Attack—One Battle Lab Helping to Forge the Army's Future," Apr
"Survey for Remote Areas," Jun
"Targeting—Making it Work," Jun
"Tactically Employing Today's SLGR," (VB) Jun
"Firefinder Initialization with Limited Map or Survey Data," (VB) Jun
"TA Warrant Officer Restructure Approved," (VB) Aug
"What is the Most Accurate Gunnery Solution for Lightfighters?" (VB) Aug
"Firing Table, GFT and GST Update," (VB) Aug
"Response to 'Accurate Predicted Fire,'" (INC) Oct
"Ocean Venture 93 and the Joint Targeting Coordination Board," Oct
"Airspace Coordination in Joint Operations," Oct
"HMMWV Version of Q-36 Radar Fielding NOW," (VB) Oct

## Doctrine and Tactics

"Synchronizing Fires in Joint and Combined Operations," (OM), Feb
"Artillery in Reserve," (INC) Feb
"Accurate Predicted Fire," (INC) Feb
"Artillery TTP's for the Danger Close Fight: LID in the Movement-to-Objective and Initial Contact," Feb
"Is the FPF Dead?" Feb
"Joint Precision Strike—The Field Artillery Contribution," Feb
"Deep Operations," (OM) Apr
"Top-Down Fire Planning Revisited," (INC) Apr
"Fighting Maneuver and Fires in the Third Dimension," Apr
"The Corps Artillery Commander and Deep Operations," Apr
"Synchronizing the Divisional Deep Fight," Apr
"Deep Interdiction—The MLRS Deep Strike Option," Apr
"The Artillery Combat Team: Providing Versatility for America's Tank Division," Apr
"Artillery TTPs for the Danger-Close Fight: LID in the Attack," Apr
"A Warfighting Philosophy," Apr
"Artillery TTPs for the Danger-Close Fight: Preventing Fratricide in the LID," Jun
"Scout FISTs for the Task Force Deep Fight," (INC) Aug
"Commander's Intent and Fire Support Guidance," (INC) Aug
"The Fires Paragraph—What is It?" (VB) Aug
"Reflections on the Storm—FA Vector for the Future," Aug
"The Mech Company FIST...A Proposal for Reform," (INC) Oct
"Response to 'Accurate Predicted Fire,'" (INC) Oct
"A Russian Analysis of Warfare Leading to the Sixth Generation," Oct
"The Infantry Battalion Commander and His FSO—Tactics and Team Building," Oct
"State of the Branch 1993: A Vision for Fire Support in the 21st Century," Dec
"America's Army: Versatility, The Key to Our Future," (Interview with GEN J.H. Binford Peay III, Vice Chief of Staff of the Army) Dec
"The Fire Supporter's Guide to FM 100-5," Dec

## Personnel/Force Structure

"The Myth of the Well-Rounded Artilleryman," (INC) Feb
"Response to 'The Myth of the Well-Rounded Artilleryman,'" (INC) Apr
"Response to 'The Myth of the Well-Rounded Artilleryman' and 'Cannoneers with Hairy Ears,'" (INC) Jun
"Response to 'Nuke...End of Mission, Out,'" (INC) Jun
"Yesterday and Today: 50 Years of the Army," (Interview with GEN (Ret.) Walter T. Kerwin, Jr., Former Vice Chief of Staff of the Army) Aug
"Reflections on the Storm—FA Vector for the Future," Aug
"TA Warrant Officer Restructure Approved," (VB) Aug
"Fire Support NCO: Transition Training for the Universal Soldier," (INC) Oct
"Advice to NCOs Today—Be Patient and Professional," (Interview with CSM James C. McKinney, Sergeant Major of the Field Artillery and Fort Sill) Oct
"A Few Initial-Entry Soldiers Late Reporting to Units," (VB) Oct
"State of the Branch 1993: A Vision for Fire Support in the 21st Century," Dec

"America's Army: Versatility, The Key to Our Future," (Interview with GEN J.H. Binford Peay III, Vice Chief of Staff of the Army), Dec
"The Future Force—A Reasoned Approach to Change," Dec
"US Field Artillery Commanders and Command Sergeants Major," Dec
"Field Artillery Assignment Branches," Dec
"Fort Sill Telephone Numbers Change," Dec

## Leadership

"Commandership," Feb
"Synchronization and TCDC: Mission-Essential Task Training For Commanders," Feb
"Lightening the Redleg Lightfighter's Load," Feb
"Junior Leader Development—Setting the Conditions for Success," (FGL) Apr
"Command Transition: Sharing a Vision," Apr
"Why Command?" (INC) Jun
"Deployment Success—A Senior NCO's Perspective," Jun
"NCOs and Individual Soldier Training," Aug
"Fire Support with 20/20 Vision," (OM) Aug
"Yesterday and Today: 50 Years of the Army," (Interview with GEN (Ret.) Walter T. Kerwin, Jr., Former Vice Chief of Staff of the Army) Aug
"ULLS S-4 and the Change-of-Command Inventory," (VB) Aug
"Advice to NCOs Today—Be Patient and Professional," (Interview with CSM James C. McKinney, Sergeant Major of the Field Artillery and Fort Sill) Oct
"NCOs Lead the Way: M119A1 Fielding in the Air Assault Division," (RBP) Oct
"The Infantry Battalion Commander and His FSO—Tactics and Team Building," Oct
"First-Line Leaders and Safety Standards," Dec

## History

"Response to 'The Battle of Antietam: The Creation of Artillery Hell,'" (INC) Feb
"Cannoneers with Hairy Ears—Serving with the Horse-Drawn Artillery," Feb
"THOR: A Case Study in Multi-Service Coordination," Feb
"Response to 'THOR: A Case Study in Multi-Service Coordination,'" (INC) Apr
"The Outermost Point—A Farewell to the 559th USAAG," (INC) Apr
"Response to 'The Myth of the Well-Rounded Artilleryman' and 'Cannoneers with Hairy Ears,'" (INC) Jun
"Going from East to West—The 9th Panzer Division Artillery," Jun
"The Viet-Minh at Dienbienphu: Artillery in a Mountainous Environment," Aug
"Parker's Crossroads: The Alamo Defense," Aug
"Redleg Heroism at Suoi Tre," Aug
"Yesterday and Today: 50 Years of the Army," (Interview with GEN (Ret.) Walter T. Kerwin, Jr., Former Vice Chief of Staff of the Army) Aug
"Fighting with Fires—The Russian Way," (Interview with General of the Army Makhmut A. Gareev, Former Deputy Chief, General Staff of the Soviet Union) Aug
"Modernizing the King of Battle: An Overview," Aug
"A Russian Analysis of Warfare Leading to the Sixth Generation," Oct

## Equipment and Technology

"Lightening the Redleg Lightfighter's Load," Feb
"New Equipment Training for the Paladin—The Future is Now!" (VB) Feb
"Joint Precision Strike—The Field Artillery Contribution," Feb
"Depth and Simultaneous Attack—One Battle Lab Helping to Forge the Army's Future," Apr
"Goodbye, BCS and BUCS—Hello, LCU," (VB) Apr
"Automated Range Safety System, Version 4.0," (VB) Apr
"MLRS Reduced-Range Rocket (RRPR) Fielding in October," (VB) Jun
"Tactically Employing Today's SLGR," (VB) Jun
"Fire Support with 20/20 Vision," (OM) Aug
"Modernizing the King of Battle: An Overview," Aug
"Reflections on the Storm—FA Vector for the Future," Aug
"Myths and Misconceptions about the Paladin," Oct
"A Russian Analysis of Warfare Leading to the Sixth Generation," Oct
"NCOs Lead the Way: M119A1 Fielding in the Air Assault Division," (RBP) Oct
"Multimedia Technologies to Train the Total FA," (VB) Oct
"HMMWV Version of Q-36 Radar Fielding NOW," (VB) Oct
"Naval Fire Support and the Force Projection Army," Oct
"State of the Branch 1993: A Vision for Fire Support in the 21st Century," Dec
America's Army: Versatility, The Key to Our Future," (Interview with GEN J.H. Binford Peay III, Vice Chief of Staff of the Army) Dec
"The Future Force—A Reasoned Approach to Change," Dec

## Joint and Combined Operations

"Synchronizing Fires in Joint and Combined Operations," (OM) Feb
"THOR: A Case Study in Multi-Service Coordination," Feb
"Joint Precision Strike—The Field Artillery Contribution," Feb
"Air Attack! 12th Aviation Brigade FSE in Joint and Combined Operations in ODS," Feb
"Synchronizing Fire Support and Joint SOF Operations," Feb
"Blue Flag—Air Force Exercises for Theater Interoperability," Feb
"The Korean Theater—One-of-a-Kind," (Interview with GEN Robert W. RisCassi, CINC, Combined Forces Command Korea) Feb
"Deep Operations," (OM) Apr
"Fighting Maneuver and Fires in the Third Dimension," Apr
"Response to 'THOR: A Case Study in Multi-Service Coordination,'" (INC) Apr
"Shaping the Battlefield—Deep Operations in V Corps," (Interview with LTG Jerry R. Rutherford, CG, V Corps), Apr
"Operation Restore Hope—A Logistical Challenge," (Interview with MG Waldo D. Freeman, Deputy CINC, CENTCOM) Jun
"'Fortune Favors the Brave'—NATO's New Rapid Reaction Corps," (Interview with MG Graham S. Hollands, Royal Artillery, Chief of Combat Support, ACE Rapid Reaction Corps) Jun
"Fighting with Fires—The Russian Way," (Interview with General of the Army Makhmut A. Gareev, Former Deputy Chief, General Staff of the Soviet Union) Aug
"Preparing for the Purple Battlefield," (OM) Oct
"The AirLand Composite Wing," Oct
"EUCOM—At the Center of the Vortex," Oct
"Ocean Venture 93: An Overview," Oct
"Naval Fire Support and the Force Projection Army," Oct
"A Russian Analysis of Warfare Leading to the Sixth Generation," Oct
"State of the Branch 1993: A Vision for Fire Support in the 21st Century," Dec
"America's Army: Versatility, The Key to Our Future," (Interview with GEN J.H. Binford Peay III, Vice Chief of Staff of the Army) Dec

## Contingency Operations

"Air Attack! 12th Aviation Brigade FSE in Joint and Combined Operations in ODS," Feb
"Operation Restore Hope—A Logistical Challenge," (Interview with MG Waldo D. Freeman, Deputy CINC, CENTCOM) Jun
"Operation Desert Storm: Mobilization and Deployment of the 142 Field Artillery Brigade," Jun
"Deploying for Success," (Operation Desert Shield) Jun
"Operation Hurricane Andrew Relief: Humanitarian Assistance, Redleg Style," Oct
"EUCOM—At the Center of the Vortex," Oct

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Patricia S. Hollis
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