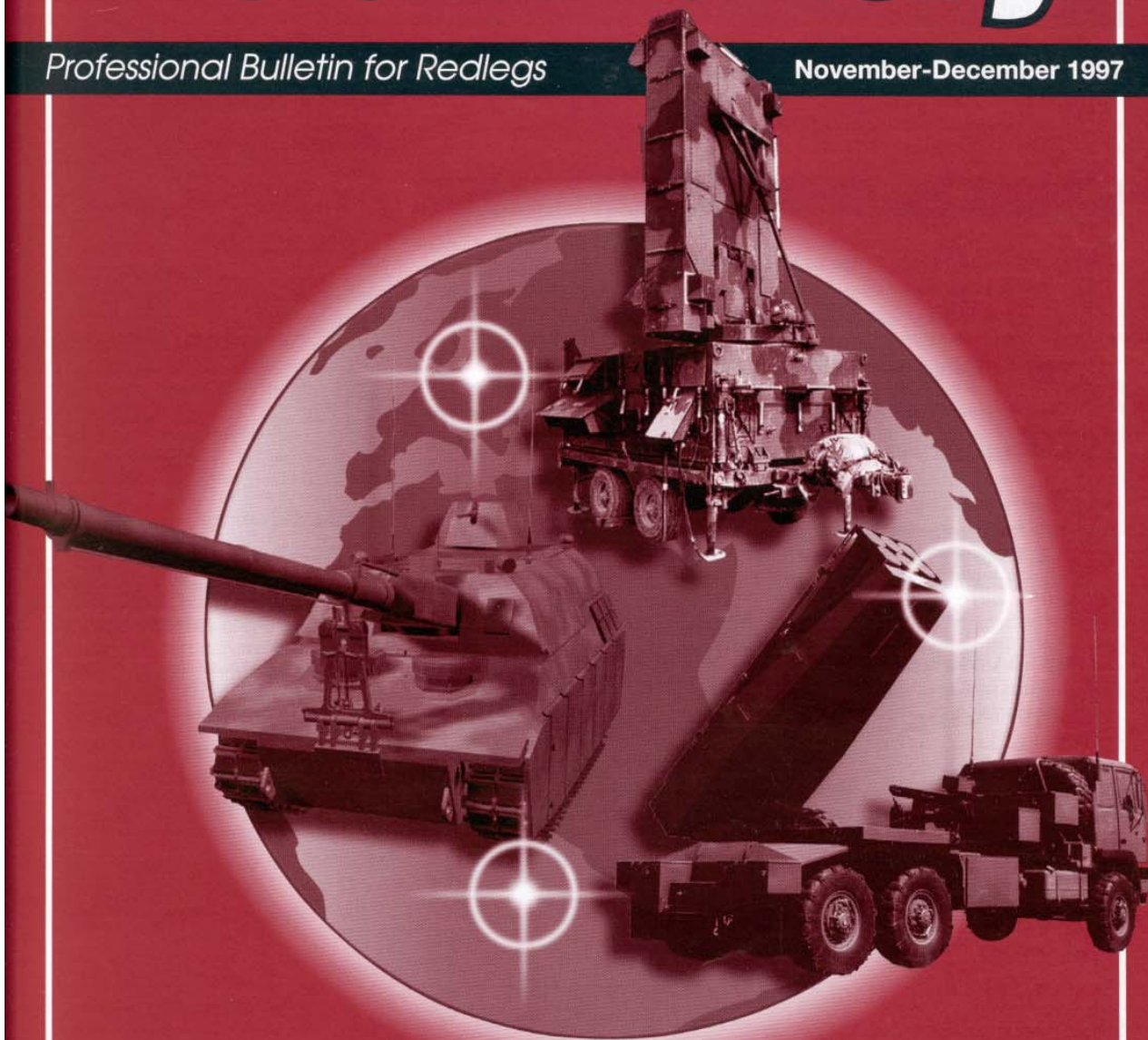


# **Field Artillery**

*Professional Bulletin for Redlegs*

November-December 1997



AN ANNUAL REPORT  
**THE RED BOOK**

# Field Artillery

A Professional Bulletin for Redlegs

November-December 1997

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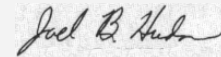
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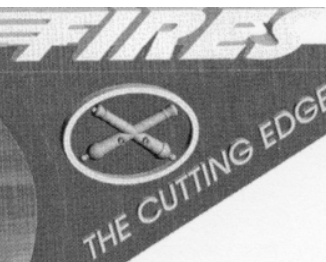
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# Honing the Edge: State of the Field Artillery 1997

by Major General Leo J. Baxter, Chief of Field Artillery



**F**ield Artillery—The Cutting Edge. These words stand for a never-ending quest for excellence, a state of being that characterizes the King of Battle. Our quest manifests itself in literally everything we do: leading, equipping, training and, when called upon to do so, fighting or maintaining the peace. For those of us tracing our professional heritage back to Blockhouse Signal Mountain, our collective charter is to ensure that the Field Artillery remains on the cutting edge through Army XXI to the Army After Next and beyond—perpetually, as historically, on the cutting edge.

The road to the future is passing through a series of advanced warfighting experiments (AWEs), a journey that promises in large measure to shape the Army and with it the Field Artillery force of the next century.

In the Focused Dispatch AWE, we validated the indispensable role of fire support in our future fully digitized force. Conducted at Fort Knox during 1995, this experiment explored sensor-to-shooter connectivity, digitally linking, for example, an Abrams tank with a howitzer to execute calls-for-fire. Focused Dispatch upheld the absolute requirement for fire supporters at all levels to clear and integrate fires, regardless of the degree of digitization achieved.

Recent Prairie Warrior exercises conducted at Fort Leavenworth's Command and General Staff College verified the necessity for a command and control headquarters for fires and explored the potential of future fires. Prairie Warrior 95 demonstrated the versatility of the division artillery in executing emerging operational concepts, such as the artillery-based strike force, in addition to performing the more classic missions: counterfire, suppression of enemy air defenses (SEAD) and close support of committed maneuver

forces. Prairie Warrior 96 and 97 highlighted fires as a potentially dominant force on the 21st century battlefield. The exercises also reinforced the fact that the Div Arty is uniquely suited to execute the core function of commanding, controlling and integrating all organic and supporting fire support assets in division operations.

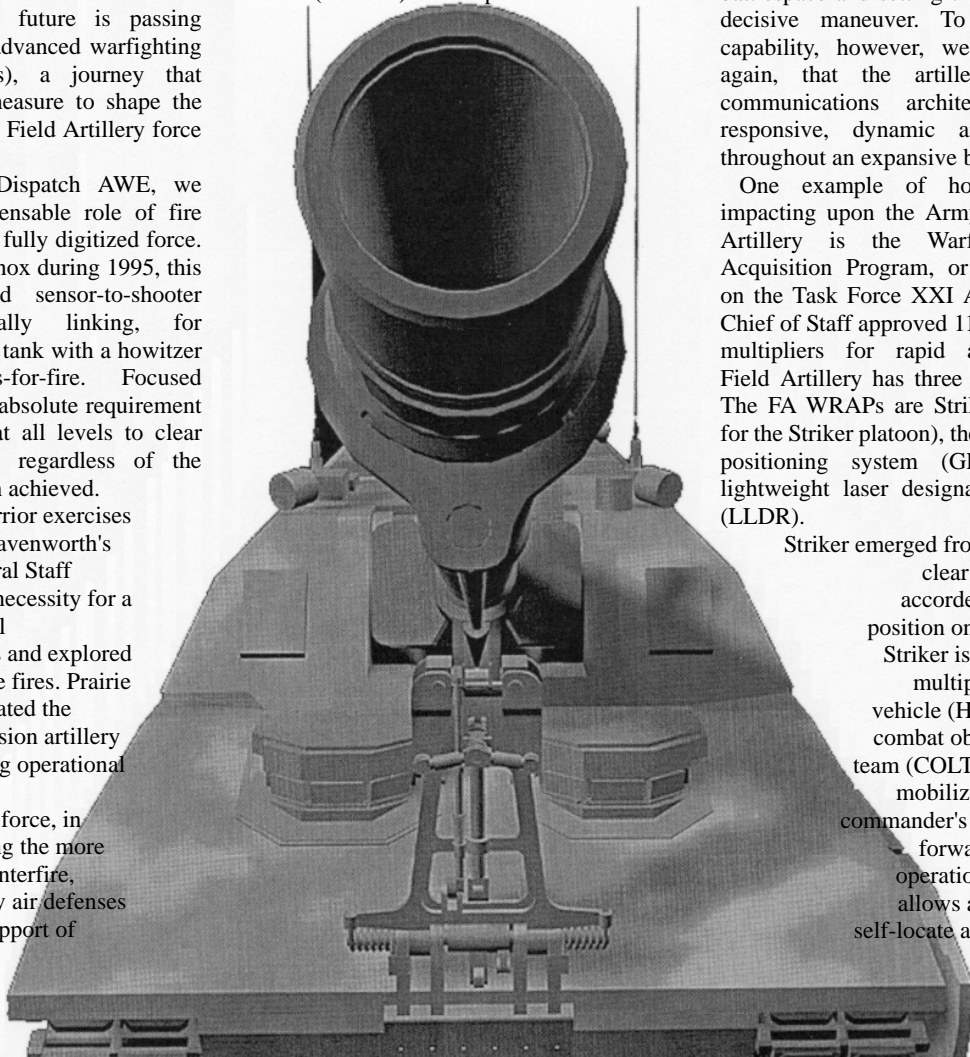
The Task Force XXI AWE in March 1997 at the National Training Center (NTC) at Fort Irwin featured a brigade combat team (BCT) from the 4th Infantry Division (Mechanized) pitted against the NTC's renowned world-class opposing force (OPFOR). The experiment

tested the hypothesis that a digitized force employing the new technologies and doctrine will experience significant increases in lethality, survivability and tempo. Although we are still sifting through the experiment's expanse of analytical data, the AWE vividly illustrated that the how-to-fight paradigm of "focusing with intelligence, shaping with fires and finishing with maneuver" is a valid one.

Successes experienced in the Task Force XXI force-on-force operations clearly showed that the fire support system is, indeed, capable of shaping battlespace and setting the conditions for decisive maneuver. To optimize this capability, however, we learned, once again, that the artillery requires a communications architecture that is responsive, dynamic and dependable throughout an expansive battlespace.

One example of how AWEs are impacting upon the Army and the Field Artillery is the Warfighting Rapid Acquisition Program, or WRAP. Based on the Task Force XXI AWE, the Army Chief of Staff approved 11 critical combat multipliers for rapid acquisition—the Field Artillery has three of the top five. The FA WRAPs are Striker (the vehicle for the Striker platoon), the gun laying and positioning system (GLPS) and the lightweight laser designator rangefinder (LLDR).

Striker emerged from the AWE as a clear winner and was accorded the Number 1 position on the WRAP list. Striker is a high-mobility multipurpose wheeled vehicle (HMMWV)-based combat observation lasing team (COLT) capability that mobilizes the maneuver commander's digitized "eyes" forward in his area of operations. This vehicle allows a Striker team to self-locate and determine its range,





azimuth and vertical angle to the target. Striker also has a designation and night observation capability with a small signature, increasing the Striker team's survivability. With fielding to begin in less than three years, Striker will be a critical link in the seamless fire support chain of the 21st century...it has universal support in the Army.

The GLPS places survey control at the battery level, eliminating the firing battery's dependency on the battalion for accurate survey. This man-portable, tripod-mounted gyroscope integrates an eyesafe laser and a precision lightweight global positioning system (GPS) receiver (PLGR) and provides both position and direction data to a firing unit. GLPS-equipped units will experience increased flexibility for autonomous operations and emergency displacements and missions, a qualitative improvement in the overall responsiveness of fires. GLPS should begin reaching units in 1998.

Forward observers rejoice—we heard you and we are acting. The heavy and unwieldy ground/vehicular laser locator designator (G/VLLD) is out and LLDR is in. The LLDR allows the observer to locate targets out to 10 kilometers to an accuracy of 80 meters and to designate mobile targets at three kilometers and stationary targets out to five kilometers. The designation function allows the

delivered by fixed- and rotary-wing aircraft. Given the LLDR's modular form and a weight of less than 35 pounds, the day of carrying rangefinding and target designation to the enemy in a rucksack is almost here. Look for fielding in the next three years.

While awaiting the results of the Division XXI AWE scheduled for November at Fort Hood, Texas, we continue the Field Artillery's progress toward the Army After Next. As we do so, we'll incorporate the lessons learned from the experiment in our blueprints for modernizing, training, manning and projecting a fully modernized Field Artillery force, a cutting edge force for the future.

## Firepower for the New Millennium

History has proven that modernizing the force during peace ensures force protection and victory during war. Today, your branch is fortunate to have many funded programs that will ensure continued success.

**Cannons.** The mainstay of Field Artillery direct support will continue to be the cannons of Army XXI. As we complete the final fielding of the elderly M109A6 during the waning moments of the 20th century, we anxiously await the arrival of Crusader, the cutting edge

light forces, will bring increased lethality, tactical mobility and survivability to the fight.

**Crusader.** As the Army's most advanced land combat system, Crusader will be our backbone for operations in Army XXI and the Army After Next. Our Army always will require a ground component to close with and destroy the enemy, clear and occupy terrain. The premiere weapon of tomorrow's battlefields, Crusader will provide information dominance, at last, and overmatch any artillery system currently available or projected to be developed by any Army in the world.

The combined combat power of Crusader's increased range and rate-of-fire will give ground commanders the ability to exploit the expanding, fluid battlefield of tomorrow. Its embedded diagnostics will exploit the potential of information dominance. Through improved sensor-to-shooter links, to include links to advanced aircraft, and its on-board decision aids, Crusader will revolutionize fires in the 21st century. The system will manage information to make intelligent recommendations to ensure fires are placed at the proper place and time. The decision aids prompt the section at decision points for such items as resupply, route planning and survivability moves. Crusader also leads the way technologically to the Army After Next.

As a technology carrier, Crusader's body composition and robotics are revolutionary. The hull's composite material makes it significantly lighter and more survivable. Its robotics for auto-reload and auto-track of round location will produce devastating results on tomorrow's battlefield. After initially loading the resupply vehicle, the crew never again touches the ammunition—it's all done by robotics.

We at Fort Sill observed an example of Crusader's leap-ahead capabilities when we pitted Paladin against Crusader in a 15-round mission. The experienced Paladin crew firing as fast as it could finished in just under 10 minutes. Crusader's actual cannon configured with a state-of-the-art robotic reload system fired 15 rounds in 100 seconds...and this was not its maximum rate-of-fire. Crusader's robotics makes it revolutionary. Paladin simply cannot compete.



observer to employ all current and planned precision-guided munitions and NATO munitions, to include those

cannon for the 21st century. Both Crusader and the lightweight 155-mm howitzer, which we're preparing for our



Combined with increased mobility (nearly 50 miles per hour off-road and 80 on the highway), greater range and improved fire control, this system guides the Army into a new era of warfare. With munition improvements including the point engagement of armored targets with the sense and destroy armor (SADARM) projectile, Crusader will give the ground commander the ability to use direct support systems against all targets to rapidly shape his battlespace.

This program remains fully funded with simultaneous fielding to the active Army and the National Guard in about eight years. It is our Army's highest priority.

**LW155.** This lightweight howitzer is a testament to how successful joint acquisition ventures can be. Satisfying both Army and Marine Corps needs in the next century, the LW155 weighs nearly half of the current 155-mm towed system and fires twice as fast. This system has an attached computer and state-of-the-art electronics incorporating many of the locating capabilities of Crusader.

The LW155 will significantly increase the lethality of our Army light and Marine forces. The Marine Corps will begin fielding in the next five years and the Army in the next eight.

**Tank Killers.** The Field Artillery of the new millennium will provide maneuver commanders a new option—an all-weather ability to kill armored vehicles in depth. We're on the brink of having this capability.

An extremely successful SADARM test recently in Alaska combined with the capabilities of Crusader confirm the Field Artillery as the predominant "Tank Killer" of tomorrow. In the test, active duty soldiers fired SADARM, the Army's first fire-and-forget smart munition, with the munition's firing process transparent to the soldiers, but its results not-so-transparent—devastating.

SADARM fulfilled all performance expectations against targets employing offensive and defensive countermeasures in conditions of fog, rain and wind...a great success story. And we're in production.

Combined with such long-range precision munitions as the multiple-launch rocket system (MLRS) smart tactical rocket (MSTAR) and Army tactical missile system (ATACMS) Block II (discussed later), shaping battlespace in the 21st century has a new perspective: eliminating armored vehicles in mass



The new LW155 weighs nearly half of our current 155-mm towed howitzer and fires twice as fast, significantly increasing the lethality of our Army light and Marine forces.

with direct and general support Field Artillery. Redlegs are Tank Killers...cutting edge.

**Rockets and Missiles.** Our rocket and missile family of weapons constitutes a large portion of our firepower. As we enter the new millennium, these systems, coupled with Crusader, will assume a dominant role in future joint warfighting.

**MLRS System.** In the near future, MLRS will have a new mission. Improvements to the launcher and the introduction of new rocket munitions will expand its role beyond its focus as the counterfire weapon of choice to a much more expansive role in shaping battle-space.

Launcher improvements will increase the ground commander's combat power through reduced mission times, faster reload times and improved survivability. The new M270A1 MLRS launcher, entering developmental testing this year, will upgrade virtually the entire system.

Programmed improvements will reduce launcher elevation and slew times from more than 90 seconds to just 16 seconds for maximum range rocket missions. Reload times for this system will decrease by 33 percent. Finally, the weapon's survivability also improves with this upgrade by reducing its exposure by 75 percent. Combined with new rockets, the M270A1 will usher in a new era for rocketry.

**High-Mobility Artillery Rocket System (HIMARS).** In less than eight years, HIMARS will deploy with and support early entry forces. This Army After Next

system features a C-130-deployable, wheeled launch platform capable of delivering the entire MLRS family of munitions. With applicability to heavy forces as well, four prototype HIMARS are nearing completion, three of which will be delivered to the XVIII Airborne Corps Artillery for testing early in 1998. The 3d Battalion, 27th Field Artillery, at Fort Bragg will maintain these weapons for two years to test and provide feedback to refine the system before it's fielded Army-wide.

We continue to push for early funding for this system as a combat multiplier for early entry forces. The XVIII Airborne Corps is the HIMARS' biggest advocate and most vocal supporter. HIMARS—a new cutting edge capability.

**Rockets.** Flexibility, precision and depth are attributes the new MLRS munitions bring to the fight. These improvements come in three sequential steps.

The extended-range MLRS (ERMLRS) increases range to 45 kilometers and reduces a problematic bomblet dud rate to less than one percent. This reduced dud rate will increase force protection to friendly forces as they maneuver through a very fluid battle-space. Fielding continues on track for next year with limited procurement as an interim solution until the guided MLRS rocket (GMLRS) is developed and fielded.

The GMLRS further increases range to greater than 60 kilometers and produces

much greater accuracy. With the introduction of a guidance package to the warhead, the GMLRS will be the first MLRS munition that can attack area or point targets. This munition is designed for soft and lightly armored stationary targets. Development of GMLRS is beginning this year.

The MLRS smart tactical rocket (MSTAR) goes one step further, using smart submunitions to attack a greatly expanded target set—hot or cold, moving or stationary, and soft or hard. Using organic and supporting fires, the maneuver commander will bring firepower to bear on the entire spectrum of targets encountered in his battlespace.

While neither designed for nor instrumental in support of the close fight, the significance of these improvements in shaping the battlespace is devastating...cutting edge.

ATACMS. The terms "depth" and "precision" will soon take on new meaning as the enemy facing ATACMS and Crusader will know no sanctuary. Critical enemy forces and functions that formerly enjoyed immunity from attack by land-based surface-to-surface weapons because of their depth, are about to get some bad news—ATACMS is getting long legs.

The current Block I missile saturates target areas with 950 antipersonnel/antimaterial fragmentary bomblets out to a range of 165 kilometers; Block IA will nearly double that range to 300 kilometers. ATACMS Block II will incorporate BAT brilliant submunitions to engage moving, armored formations to a

range of about 140 kilometers. Each missile contains 13 BATs employing both acoustic and infrared sensors that autonomously seek out and destroy individual vehicles within tactical formations.

Testing of ATACMS Block II is in its early stages with fielding of this fire-and-forget missile projected in four years. Block IIA will take the capability to 300 kilometers.

At the bottom line? ATACMS brings to the fray the ability to hold the enemy at risk anytime and anywhere he ventures within the corps' expanded battlespace.

*Eyes to Support the Depth.* The Firefinder (Q-37) Block II will ensure we can exploit the deeper capabilities of ATACMS. Its increased range and accuracy will detect both conventional artillery (60 kilometers) and tactical ballistic missiles (250-plus kilometers) at a rate of up to 50 targets per minute.

Linking the improved Q-37 and the longer range ATACMS, senior commanders soon will have a viable real-time retaliation to future tactical ballistic missile attacks. This enhanced Firefinder capability finds its way to the Army in about six years.

**Digital Interoperability.** The advanced Field Artillery tactical data system (AFATDS) will be the digital center of gravity for the fires of Division XXI and beyond. The division artilleries of the 1st Cavalry and 4th Infantry (Mechanized) Divisions and III Corps Artillery headquarters have provided valuable feedback as we continue to refine AFATDS. This year fielding

expands to the battlefield coordination detachments (BCDs) in Korea and Germany as well as continued fielding to the remainder of the corps headquarters.

The Total Force connectivity that AFATDS provides will confederate joint fires in the 21st century. This system exploits the uncharted potentials of horizontal and vertical connectivity. Linking the sensor-to-shooter, intelligence and fire support systems and the forward observer all the way to the joint targeting coordination board (JTCB) at echelons above corps will ensure timely and efficient fires in the next century.

AFATDS is interfacing with and enriching the Total Force. Active Component (AC) and Reserve Component (RC) units will field AFATDS, and our sister services are committed to implementation as well. The Marine Corps is fully involved in AFATDS' operational testing and will begin fielding the system next year.

AFATDS' interface with the Air Force's contingency theater automated planning system (CTAPS)—and its follow-on theater battle management core system (TBMCS) to be fielded as early as 1999—ensures the connectivity and interoperability required for seamless joint operations in the next millennium.

AFATDS is leading the Total Force to achieve cutting edge capabilities in interoperability for fires...and it just keeps getting better.

**Launching the King to Battle.** Fort Sill continues to prove itself as an exceptional power projection platform for mobilization, training and rail and air movement of AC and RC units. Wartime requirements make Fort Sill responsible for projecting the four FA brigades of III Corps Artillery and mobilizing, training and deploying another 330 RC units.

Current on-post rail facilities allow us to move 1.3 battalions per day. A new rail facility scheduled for completion in three years will triple the installation's capacity to project forces by rail. The post airfield can deploy units via C-130, C-17 and C-5 aircraft to continental US (CONUS) and outside the continental US (OCONUS) sites. Beyond the "front gates," the Lawton-Fort Sill Regional Airport and both Altus and Tinker Air Force Bases can accommodate any military or commercial aircraft.

Fort Sill remains a platform to project significant firepower for warfighting commanders-in-chief (CINCS) around



1st Battalion, 14th Field Artillery, 214th Field Artillery Brigade from Fort Sill, fires multiple MLRS launchers at White Sands Missile Range in New Mexico. (Photo by Vance Saenz)

the world...a relevant, world-class enduring Army installation—cutting edge in every way.

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## Knocking Down Classroom Walls

The schoolhouse at Fort Sill will continue to arm our units and trainers with the current and comprehensive knowledge necessary to keep our soldiers and Marines on the cutting edge...but be prepared because the schoolhouse won't look the same. General Dennis J. Reimer, our Army Chief of Staff, said, "We must create interactive classrooms, classrooms without walls, classrooms 'on the net' linked to databases around the world..." So the walls are coming down, and they are coming down soon.

The institutional training system of tomorrow will look dramatically different. Envision a battalion S3 who can develop a first-class, week-long field training exercise (FTX) with all the support requirements in a day or two. Also envision that, simultaneously, down in the battery training rooms Sergeant Smith, Staff Sergeant Jones and Captain Brown are nearing completion of their basic and advanced NCO courses (BNCOC and ANCO) and officer advanced course (OAC) requirements, never having left their home station. Meanwhile, a sister battalion is conducting new equipment training (NET) on its own schedule at a time that is best for the unit.

These classrooms without walls are on the way to becoming reality, and the FA School is leading the Army in every aspect of this revolutionary training approach.

**Distance Learning.** As the Army's leader for distance learning, the Field Artillery School is transitioning to a system that will allow soldiers to complete most of their school requirements before they arrive at Fort Sill. By the turn of the century, Redlegs will complete 60 percent of their course requirements at their home station using interactive teletraining and interactive courseware via the Internet or CD-ROM. The Army goal is to have distance learning initiated for all schoolhouses by the Year 2010. The FA is leading the force in its transition to distance learning and will reach the goal by 2005...cutting edge work.

New equipment training (NET) also is entering the information age. Currently, teams from Fort Sill travel to units around the world to conduct NET. Often the team can't come when the unit needs the training or when the scheduling is optimal. Unit leaders need more control over this training, and so they shall through distance learning.

In a graduated implementation, 55 percent of FA NET across the Total Army will be conducted via distance learning by the Year 2000. When the transition is complete in 2010, units will receive 70 percent of NET through distance learning technologies with a small NET contingent at the unit for troubleshooting.

Unit commanders and their staffs spend too much time preparing and not enough time executing training. As a rule of thumb, units spend three days to prepare for one day of training. The Field Artillery, in concert with the other schools in the Training and Doctrine Command (TRADOC), is developing Warfighter XXI Training Support Packages (WF TSPs) that will enable units to spend one day preparing for three days of training. This reversal is possible through an on-line, unit-driven program that will maximize planning time.

Based on unit input, these pre-exercise TSPs produce focused training plans. Products include observer/controller (O/C) support packages, rules of engagement (ROE), higher headquarters' operations orders, overlays, opposing force (OPFOR) support packages and other tools needed to expedite training preparation time. On-line capabilities begin in 1998.

The cornerstone of the Army's success, both today and in the past, has been the high-quality training of our soldiers and units—this will continue. Our next step is to "knock down the classroom walls" of the Field Artillery School and, literally, export ourselves to the world.

**Electronic Doctrine.** The days are over when bundles of manuals, tied together with twine sit in some post warehouse or the S3's closet until the next support cycle. No more carrying footlockers of manuals to the external evaluation just to find out "C Battery doesn't have Changes 5, 7 or 8 posted" in a critical manual. The schoolhouse is now updating and transmitting current doctrine to units electronically.

The Field Artillery is leading the Army

in providing current doctrine to the soldier via the Fort Sill home page (<http://sill-www.army.mil>) or TRADOC's Army Training Digital Library (ATDL) (<http://206.135.244.73/>). Field and other training manuals and tools (even in draft) are becoming accessible electronically (see the Figure on Page 6). All our FA field manuals (FMs) and mission training plans (MTPs) are on-line now with most of them revised or soon to be revised versions. In addition, all 10 of our soldiers manuals (SMs) are on-line and current. We continue to develop and revise manuals that describe the operations of several new concepts, force structures and fire support systems for field access electronically. This is truly on the cutting edge.

As always, we rely heavily on comments and suggestions from the field about our doctrine, tactics, techniques and procedures. Indeed, field feedback is more important now than at any time in the past 50 years, and it's easier than ever to provide. We await your comments.

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## Redleg Developments

The Army has great leaders in all its branches, but Napoleon said the best leaders come from the artillery. We have a tradition of having the best and the brightest within our ranks—the exacting requirements of our art and science demand nothing less. Two initiatives that ensure our continued success are our lieutenant accessions campaign and the Change in the NCO Structure (CINCOS) program.

Field Artillery is, again, a premiere branch selection by cadets. Not long ago, about one-third of our accessions were directed to branch FA. We recognized this as unacceptable and conducted an aggressive campaign in recent years to promote the branch and improve the accessions satisfaction rate. The efforts proved successful as the Class of 1997 had a 99.2 percent satisfaction with Field Artillery branch selection, bringing the best of the best into the Field Artillery. Ninety-nine out of 100 of our new FA officers want to be part of the King of Battle...*cutting edge*.

CINCOS has been another success story for our branch with an improved career progression pyramid for future FA NCOs. In 1996, the Army initiated



On-Line Now	Revised/On-Line FY 98	Revised/On-Line FY 99
22 Field Manuals (FMs) 10 Mission Training Plans (MTPs) 10 Soldiers Manuals (SMs) 5 Graphic Training Aids (GTAs) Other Training Tools: <ul style="list-style-type: none"> <li>• TTP for AFATDS</li> <li>• TTP for the Task Force XXI Paladin Battalion</li> <li>• Task Force XXI Fire Support Handbook</li> <li>• TTP for the Strike/Recon Platoon (STRIKER)</li> <li>• Fires Integration Exercise Guide</li> </ul> Special Texts (STs): <ul style="list-style-type: none"> <li>• 6-1-1 IFSAS Supervisor and Staff Guide</li> <li>• 6-1-2 IFSAS Aid</li> </ul>	FM 6-2 (Change 1) FA Survey FM 6-20 Doctrine for Fire Support FM 6-20-1 Field Artillery Cannon Battalion FM 6-20-2 Corps Artillery, Division Artillery and FA Brigade Operations FM 6-20-30 Fire Support for Corps and Division Operations FM 6-300 Army Ephemeris ARTEP 6-102-MTP Corps Artillery, Division Artillery and FA Brigades ARTEP 6-115-MTP Cannon Battalion ARTEP 6-395-MTP MLRS Battalion	FM 6-20-40 Fire Support for Brigade Operations (Heavy) FM 6-30 Observed Fires FM 6-60 MLRS Operations ARTEP 6-303-30-MTP Target Acquisition Battery  <div style="border: 1px solid black; padding: 5px;"> <p><b>Legend:</b></p> <p><b>AFATDS</b> = Advanced Field Artillery Tactical Data System</p> <p><b>ARTEP</b> = Army Training and Evaluation Program</p> <p><b>IFSAS</b> = Initial Fire Support Automation System</p> <p><b>MLRS</b> = Multiple-Launch Rocket System</p> <p><b>TTP</b> = Tactics, Techniques and Procedures</p> </div>

Electronic Doctrine. Of our 22 FA FMs, all are on-line, nine have been revised in the past five years and nine are scheduled for revision in FY 98 and FY 99. (Note: the revision schedule is subject to change based on the results of the November Division XXI AWE.) Of our 10 FA MTPs, all are on-line, six were revised in FY 97 and the remaining four are scheduled for revision in FY 98 and FY 99.

a program to reduce the current Army NCO-to-soldier content. Based on an Army average grade distribution matrix (AGDM), all branches were directed to restructure their NCO contents without hurting warfighting capabilities.

In the FA CINCOS recommendations approved by the Chief of Staff of the Army in July, we were able to bring our NCO corps closer to the AGDM while simultaneously improving the developmental and senior positions available to our corps. Essentially, our overall proportion of NCO-to-soldier remained the same while the restructuring significantly improved opportunities for our senior sergeants. For example, the master sergeant position in division fire support elements (FSEs) has been upgraded to a sergeant major. This makes the fire support sergeant the same grade as other operations sergeants in division tactical operations centers (TOCs).

The recommendations also create cannon and MLRS Master Gunner positions. Cannon battalions will have a 13B sergeant first class to serve as the unit Master Gunner and assistant operations sergeant. MLRS units will have a 13M sergeant first class Master Gunner at the brigade level.

The results of CINCOS: through thoughtful analysis and responsive submission of recommendations, Field Artillery soldiers have a more symmetrical promotion pyramid as we

enter the 21st century. Redlegs of tomorrow will continue as the select few who carry our proud heritage forward into the new millennium.

## Beyond Tomorrow

The AWEs focus our efforts through 2010. But as Field Artillerymen, we still want to know "What's next?" and "How do we get there from here?" Our long-term future, based on Crusader, is focused on fires for the Army After Next. For this reason, a special task force has been gathered to develop our direction through the Year 2025.

The task force vision will determine the relevant Field Artillery force that will be the linchpin for fires in support of Army After Next. With this updated vision and the results of the AWEs, we'll continue refining and validating our routes to the future—the cutting edge. The vision will be the capstone briefing in the 9 to 13 February 1998 Senior Fire Support Conference at Fort Sill.

As we enter a new millennium, we face, at a minimum, an evolution in warfare. Information age technologies present new applications and approaches to warfare in the 21st century. With our emerging systems, we see ourselves leading the Army.

One thing is certain, the Field Artillery will remain a dominant arm on the battlefields of tomorrow. The cutting

edge—the essence of pride in our heritage, the strength of the present and the passionate quest for the future. It's what your branch is all about.



**Major General Leo J. Baxter has been Chief of Field Artillery and Commanding General of Fort Sill, Oklahoma, since June. In his previous assignment, he commanded the Total Army Personnel Command in Alexandria, Virginia. He also commanded the 3d Infantry Division (Mechanized) Artillery in Germany and the 2d Battalion, 6th Field Artillery in the 3d Armored Division, also in Germany. As a Brigadier General, he was the Assistant Division Commander for Support in the 3d Infantry Division and the Assistant Commandant of the Field Artillery School and Deputy Commanding General for Training of Fort Sill. Also at Fort Sill, he was the post Chief of Staff. General Baxter has peacekeeping experience as a member of the United Nations Truce Supervision Organization in the Palestine, serving in Egypt, Israel and the Sinai Desert. He served as S3 of the 4th Infantry Division (Mechanized) Artillery and Battalion Executive Officer, also in the 4th Division at Fort Carson, Colorado. Major General Baxter holds a master's degree in Personnel Management from Central Michigan University and attended the Advanced Management College of Stanford University.**



# CALL TO ARMS

## Meeting America's Military Challenges in the 21st Century

by General (Retired) J.H. Binford Peay III

**Editor's Note:** This article was taken from a speech delivered by General Peay to officers and NCOs at the General Maxwell R. Thurman Leadership Luncheon at Fort Sill, Oklahoma, on 14 May 1997. At the time, General Peay was the Commander-in-Chief of the US Central Command (CENTCOM) with its headquarters at MacDill AFB, Florida.



I'm honored to have the opportunity to address this group of great Redlegs and other military leaders—patriots cut from the same cloth as historic artillery figures such as Jackson, Bragg, Ridgeway, Taylor, Westmoreland, Kerwin, Vessey, Keith, Vuono, Thurman and Reimer, our current Chief of Staff.

Being here today rekindles recollections of my own time as a young artilleryman learning the basics of our trade. The passage of the years has not dulled memories of hanging out at Meers, attending the great Sooner Football games at Norman, the agonizing study and details of "charts and darts," witnessing the Little John in a demonstration "shoot out" into the Lawton Cemetery and waiting in terror that my gunnery instructor would call on me to adjust fires as I was hopelessly lost on East Range—and then watching the first rounds observed as "Lost, Repeat."

I remember sitting through lectures on world events, doctrine and leadership from well-known and not so well-known figures—fighting the great battle to keep my eyes open. And though the details of those presentations have faded in my mind, I still remember passionate references to professional competency, selfless service and the utter necessity of remaining true to

the bedrock soldierly virtues of duty, honor and country. While the world has changed in the intervening years, there is a timeless quality to the speakers' message that connects officers and educators long gone, old soldiers and you, our current leaders.

As I prepared for my presentation today, I was struck by the many faddish notions and competing ideas on global conflict, US foreign policy imperatives and appropriate US military needs one finds bandied about in public discourses. I wrestled with the implications of these "confusing messages" for you as Redlegs in today's Army.

In the end, I crafted two propositions that define my personal views on the challenges America's military faces in the years ahead and what this means for you as leaders of our artillery and our Army.

## Meeting the Challenges

Let me begin with Proposition 1: *America's military must prepare to handle increasingly complex threats to our national security and contending with these threats requires a combination of military forward presence in vital parts of the world and our nation's power projection capabilities.*

The end of the Cold War and the collapse of the Soviet Union may have removed from the scene any credible "peer competitor" to American military might. But in the process, this has unleashed instability, uncertainty, fragmentation and new international alignments. Nowhere is this more evident than in the 20 nations of United States Central Command's area of responsibility. This area is vast, extending from Egypt, Sudan and the Horn of Africa through the Gulf states to Iraq, Iran, Afghanistan and Pakistan and includes the waters and maritime choke points of the Red Sea, Arabian Gulf and the western portion of the Indian Ocean.

Owing to its large oil reserves and control of key maritime routes, it is a region of vital interest to our nation, a region where we must maintain freedom of navigation and access to commercial

markets, protect American citizens and property abroad and promote the security of regional friends in the context of a comprehensive Middle East peace. It is a region of stark contrasts in wealth and stability where millions lack access to education and employment and struggle daily to obtain their next meal, acquire clean water and find shelter.

With a 420,000-man Army, the region's largest, Iraq is the most serious near-term threat. Three times in the past three years, Iraq has moved aggressively against its neighbors. Iran, meanwhile, is the long-term peril, seeking to dominate its neighbors and lead the Islamic world by standing up the region's largest navy and brazenly supporting terrorism. Further exacerbating tensions, Iraq, Iran and others in the Middle East have embarked on aggressive programs to develop or procure ballistic missiles and chemical, nuclear and biological weapons. These conditions provide fertile ground for extremists who are prepared to attack any target, anywhere in the world, anytime, with any weapon to achieve political and social change.

While some wish other nations would take the lead in confronting global troublemakers, there is no one else. Only America possesses the physical, intellectual and moral strength and international prestige to lead. While we cannot solve every problem, right every wrong, respond to every natural or man-made disaster or topple every tyrant, we Americans cannot ignore our global leadership responsibilities and must remain true to our national values.

America's military confronts threats and protects the nation's interests in the Central Region and elsewhere in the world by reassuring foreign friends and deterring potential adversaries through military presence. We don't deter with bluffs. We know from experience that likely foes respect and are intimidated by military strength.

With this in mind, we in the US Central Command employ a lethal mix of relatively small numbers of naval, air, ground and special operating forces to carry out maritime intercept operations and enforce a no-fly zone against Iraq, maintain Patriot air defense coverage in the region, conduct exercises with regional states and preposition stockpiles of supplies and equipment needed to prosecute our operational plans. Such activities cement relations with regional states; promote our access to regional airfields, ports, fuel and water; and assist



regional partners in meeting their legitimate self-defense needs.

Through this package of forward presence units, we signal our resolve to use force to resist aggression, prevent the escalation of tensions that precede conflict, provide a first line of defense during crisis and facilitate a seamless transition to war. We do all this with a forward presence that capitalizes on the complementary and reinforcing capabilities of each of the services to manage risk and gain maximum flexibility to contend with wide-ranging regional challenges.

While our presence deters conflict, it does not provide all of the forces needed to carry out major combat operations or fight and win a major war decisively. In these instances, we exploit America's power projection capabilities: fighters, bombers and support aircraft; carriers, naval combatants and support ships; and Army troops and Marines—all deploying from the US and elsewhere around the world and all relying on our nation's access to global bases and ports to arrive on time.

This combination of forward presence and power projection supplies the blend of military capabilities that overcomes enormous distances, poor weather, punishing terrain, an uncertain enemy and difficulties inherent in multinational operations to achieve victory.

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## Leading the Future Force

All this leads to my second and most important proposition: *Realizing our national aspirations and associated military requirements hinges on having leaders at all levels who can meet these challenges head on, overcoming the obstacles to triumph in any mission.*

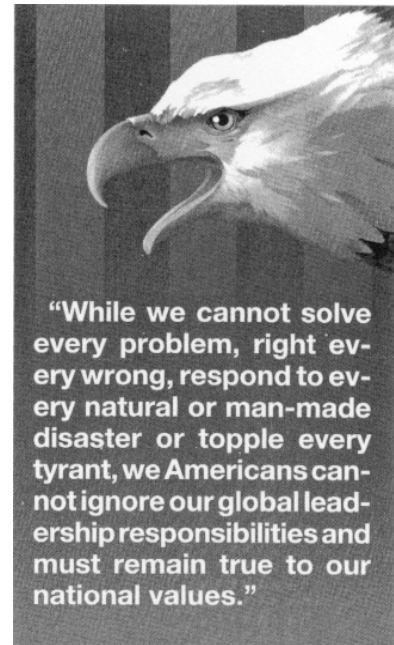
I have identified five cardinal leadership qualities I believe stand out among the many you have or will achieve in the years ahead: professional competence, high standards, an ability to cope with chaos in war, a stringent code of ethics and an "out-front" leadership style.

**1. Be professionally competent.** To meet the strategic, operational and tactical challenges I have described, we need senior military leaders with wisdom and vision to guide our organizations, making use of long years of experience as soldiers and the professional knowledge acquired through formal and self-studies to enrich and mentor subordinates. We need senior leaders who

can visualize the future geopolitical landscape and threats and discern requisite military responses—leaders who can define the air, ground and sea forces needed to fight and win future battles and the logistical and medical resources required to sustain those units.

We need senior leaders schooled on the complex cultural dynamics found around the world, who can draw on finely tuned diplomatic skills to hammer out agreements with foreign military leaders and who are sensitive to the web of international economic linkages. We need senior leaders able to communicate complex operational schemes to our nation's civil leaders while concurrently reducing intricate strategic concepts to simple terms for subordinates. We need senior leaders who are masters of military art and tactics, who know doctrine "backward and forward" but are unconstrained by traditions or rules, who possess "instincts" that evolve from experience and education, and who draw on those instincts to be imaginative, improvise and respond promptly to the unexpected in the heat of battle.

Becoming a senior leader with these skills takes time—none of us in uniform are born with them. You already have mastered the basics and much more, and you will continue to grow as you pursue a lifetime of professional study. You need to continue to read religiously, practice your listening skills, be patient with subordinates and peers, guide and mentor and make people feel important and valued.



**"While we cannot solve every problem, right every wrong, respond to every natural or man-made disaster or topple every tyrant, we Americans cannot ignore our global leadership responsibilities and must remain true to our national values."**

As a lieutenant, captain and major, you should seek the tough jobs and savor the pain and rewards that ensue, for those jobs will make you intellectually and emotionally tougher and more versatile. At the same time, you must treat every job assigned as if it is the most important and perform it enthusiastically and masterfully—whether it be protocol officer, instructor, recruiter, adjutant or battery commander—for this is the essence of selfless service.

You must be an expert on the fundamentals of artillery, your basic branch,



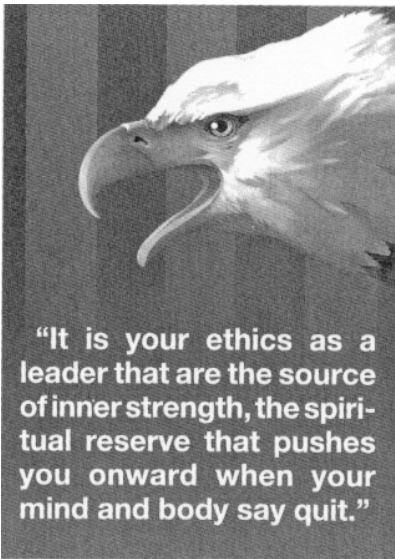
GEN Peay briefing Secretary of Defense Cohen on his airplane en route to visit Central Command troops in the Gulf. (June 1997)

for this is the most important function you will perform in the early years of service and will define your early reputation as a military leader. You must know how to train, motivate and cajole those you lead.

As a leader and trainer, you must be able to distinguish the essential battle tasks your organization must do, devise imaginative ways to exercise associated skills and ensure troops meet training standards. And training does not stop "at the water's edge." Even as the first troops stumble down the ramp of a C-141 after an exhausting 20-hour flight, even as the first troops recover from that initial blast of 120-degree desert heat, even as the first artillerymen climb sluggishly aboard their 155-mm howitzers, MLRS [multiple-launch rocket system] launchers and HEMTTs [heavy expanded-mobility tactical trucks] and move to initial defensive positions, you are still their leader and trainer. It is your job to build your training plan to fine tune fighting skills and, in short order, push your people to practice those skills—fighting skills that will keep them alive and triumph in increasingly sophisticated, fast-moving, lethal combat operations.

**2. Have the moral and physical courage to enforce high standards and discipline and fix problems even when tired, bored and scared.** Anyone can be a hero when he is well-rested; it's 70 degrees, sunny and dry; there are no bugs; and there is plenty of hot chow. The real hero, however, is the guy that drives his 155-mm howitzer through a choking sand storm in broiling heat; fights through an enemy ambush; moves all night to conduct an artillery raid before dawn; and, after hitting the objective, dresses his wounds, reloads, refuels and moves out to hit the next objective. And Redlegs who do such deeds deserve a leader who draws on his inner reserves and rises to the occasion to overcome his own exhaustion, discomfort and fear to produce results.

When your troops are tired, have suffered casualties or have endured a meat-grinding experience, compromising on standards is attractive. It's convenient to rationalize: "We worked hard. We sacrificed. We now deserve a break. The other howitzer sections and batteries aren't suffering like this." But, it is precisely at times like this that you, as the leader, must stand up and have the courage and your soldiers' respect to demand they adhere to high standards.



At times like this, soldiers are most prone to quitting and most susceptible to making fatal mistakes and your unit is at the greatest risk of disintegrating.

**3. Be able to cope with the uncertainty and confusion of war.** The very technological wonders that allow our military to accomplish its diverse missions with such alacrity have led to suggestions that new equipment and methods will allow future military leaders to go into battle with near perfect knowledge of enemy and friendly situations. As a result, as the argument goes, the enemy quickly will be overwhelmed, collateral damage will be significantly reduced and our forces will suffer few, if any, casualties.

Our military leaders must reject such falsehoods, for war will remain the realm

of human passion, fear, danger, death, destruction and confusion. Battles will not be remotely controlled, bloodless, sterile affairs.

As mightily as our leaders and troops may strive, things on the battlefield won't happen as quickly or precisely as we would like. Poor weather will hamper air operations over the target area, maps will not be accurate, mines will impede our ships, flooding will slow down the erection of bridges, chemical weapons will contaminate crucial ports and airfields, vehicles and computers will break down, artillery salvos will not always be entirely effective and people will get tired.

Given the improved situational awareness derived from advanced technologies, senior and junior leaders must resist the temptation to wait for perfect knowledge—to dawdle until they are certain of the friendly and enemy situations before making decisions or committing to a course of action. Such delays can prove disastrous. And the more senior the leader, the more insidious the effects of procrastinating.

Leaders at every level must master the flood of often contradictory data and intelligence, conduct detailed planning, adopt a course of action that accomplishes the mission while minimizing danger to their troops and work tirelessly to reduce the unknown. But then they must get on with the business at hand and move out smartly.

On some future battlefield, the commander of the 82d Airborne Division, fighting outnumbered, will be delaying



Then Major General Peay, Commanding General of the 101st Airborne Division (Air Assault), is "out front" talking to his soldiers during Operation Desert Shield.

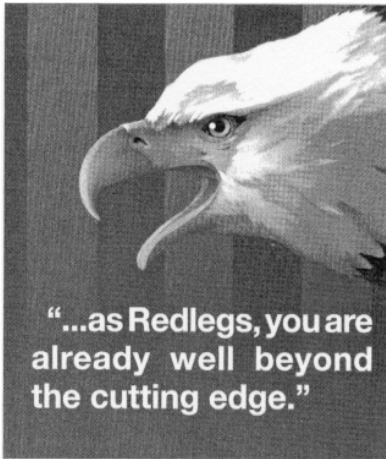
an attacking enemy corps for the 101st Airborne Division to strike the enemy's strategic reserve 90 miles to his north. Elsewhere on the battlefield, at a different level of command, Alpha Battery will be supporting an infantry assault on Hill 700 under the cover of darkness while depending on Bravo Battery to suppress the enemy on Hill 300 to the left flank. In situations such as these, we will need leaders at all levels who think creatively, reason critically, act innovatively, operate decisively in the face of ambiguity and uncertainty, apply well-honed instincts and are not prisoners of their fears. That is what being a combat military leader is all about.

**4. Embrace the highest code of ethics.** All of the previous qualities are built on this one. It is your ethics as a leader that are the source of inner strength, the spiritual reserve that pushes you onward when your mind and body say quit.

Your ethics point the way to proper conduct in ambiguous moral settings. These ethical standards transcend strict legal definitions of right and wrong. It is an ethical spirit deeply ingrained in your heart and mind, an ethical awareness first learned from loved ones, ministers, priests or rabbis, coaches and teachers and then nurtured in your military training. It is an ethical awareness that will continue to grow over the coming years as you rise in positions of responsibility.

It's the ethical standards that guide you as you look your battalion or brigade commander in the eyes and report on the maintenance of your vehicles, account for your unit's property, detail the gunnery skills of your troops or explain why a round landed outside of the range limits. It's the ethical standards that guide you when you oversee training of new recruits, lead your battery into a village minutes after being ambushed on a convoy march or handle prisoners of war. Your ethics will be tested daily for as long as you serve. *Never* compromise.

**5. Lead out front...always.** All the previous leadership qualities stress the central role of the leader in setting the example—taking care of his people and ensuring his unit is successful. In this age of rapid-fire information transfer, Email and video-teleconferencing, it is becoming increasingly easier to control organizations over great distances and to spend less time in face-to-face contact. But there is a big difference between controlling units and leading people.



Senior leaders must take special care to guide, train and provide resources for subordinates and then trust them to do the task at hand. They must strike a balance in controlling units while not micromanaging subordinates. They must avoid second-guessing the decisions of subordinates or encouraging a "zero-defects" mind-set or they risk producing timid subordinate leaders, afraid to make tough decisions during crises and unwilling to take the prudent risks required for success in military operations. Such a mind-set creates conditions that lead inevitably, in the larger sense, to failure in battle and higher casualties.

In this age of advanced technologies, you must take the time to look your men and women in their eyes and ensure they understand orders, listen to them, help them deal with their fears, reassure them, demand they meet your high standards and share their hardships. You must display what I call "tough love."

You must be a leader who cares, a leader who identifies problems and aggressively solves them, a leader who sacrifices his own comfort and popularity for others and a leader willing to lay down his own life for those under his charge.

The two propositions I have posited today capture what I believe are your major challenges as military leaders. Trends I have detailed underscore that our nation faces serious threats...that we Americans must lead peace-loving people around the world in surmounting these perils...that this will involve an intense national commitment to ensure we are ready to fight and win wars...that advances in technology will allow us to fight better, over greater distances, with greater precision, but that wars will still be fought by men and women at great risk to their lives...and that our nation will require patriots like you to rise to the occasion and take up the mantle of leadership.

As I reflect on world events during my 35 years of service, I am amazed at the consistency with which our nation's military has had to deal with periodic expansion and contraction of obligations and resources. In my own time on duty, I have witnessed this from the Berlin Crisis, to the intervention in the Dominican Republic, to Vietnam, to the post-Vietnam War fight to save our Army, to the military renaissance of the 80s, to Just Cause and Desert Storm, to the collapse of the Soviet Union and victory in the Cold War and to the post-Cold War era of uncertainty and instability.

In the future, you can expect your trials to be even tougher, yet exhilarating. You have already answered the call to arms and chosen a profession that requires you routinely to surmount all manner of obstacles through teamwork and living the Army values of selflessness, commitment, physical and mental courage, obedience and loyalty, discipline and honor. And as Redlegs, you are already well beyond the cutting edge.

Never forget the strict code of character you have embraced, the stringent standards of citizenship you are expected to uphold, the high level of competency that must be maintained and the absolute sense of duty you are expected to follow. If you compromise on these precepts, you will have failed yourself, your comrades in arms and your nation.

As you progress in your career, all of us are counting on you to inspire, guide and care for America's sons and daughters and to accomplish our Army's missions. I know we are in good hands—and so is America.



**General J.H. Binford (Binnie) Peay III, former Commander-in-Chief of the US Central Command headquartered at MacDill AFB, Florida, retired from the Army on 1 October 1997. He also served as the 24th Vice Chief of Staff of the Army. General Peay commanded the 101st Airborne Division (Air Assault) during Operations Desert Shield and Storm in the Gulf and at its home post, Fort Campbell, Kentucky; the 9th Infantry Division (Motorized) Artillery at Fort Lewis, Washington; the 2d Battalion, 11th Field Artillery, part of the 25th Infantry Division (Light) at Schofield Barracks, Hawaii; and, during one of his two tours in Vietnam, a firing battery in the 4th Infantry Division. He also served as the Army's Deputy Chief of Staff for Operations and Plans and as Executive to the Chief of Staff of the Army.**





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#### Tactical Software Hotline:

Software Problems  
24-Hour Response 5607

#### Fort Sill Home Page:

<http://sill-www.army.mil/index.htm>

#### PERSCOM FA Branch

##### "Situation Report"

<http://perscom.army.mil/opmd/fas/itrep.htm>

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- ARTEP MTPs
- TADSS
- FA Tables
- Unit TSP Development
- CATS
- SATS
- STRAC
- New Systems Integration

### Integration and Operation Division (ATSF-DI) 4902/FAX 5724

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- Quality Assurance of Training Products
- Instructor Certification
- Job and Task Analysis
- Needs Assessment/Needs Analysis
- Individual Training Plans
- Course Administrative Data

### Individual Training Branch (ATSF-DI)

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- FA WOES/NCOES POIs
- STPs
- TATS POIs and TSPs
- Institutional POIs and TSPs
- IRR POIs and TSPs
- Review of CBI Courseware
- ACCP Technical Enquires

Doctrine Division (ATSF-DD)  
5644/3427/2836/FAX 7085

- FA Doctrine and TTP Development
- FA Field Manuals
- Joint Fires Issues
- CTC Trend Analysis

Training Management Division (ATSF-DM) 2834/5903/3611/FAX 7764

- FA ACCP 3611
- Multimedia Production 3809
- Media Analysis 6101
- Editorial and Graphics Design 5903
- ATRRS 3611
- TATS Courses 3611
- VTT Training on Demand 4325
- Classroom XXI 5903
- Distance Learning 5903
- ASAT 5903
- Multimedia Courseware 3611/5903

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Combined Arms 4653/6808

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Paladin Cadre Course 2708/3994

Cannon Division 2761/3103

M119/M198 Maintenance (ASI U6)  
4483

OBC Revision 6224/5409

Manual/Automated Gunnery 6224/5409

Unit-Level Logistics System (ULLS) 2323

MOS 13E Instruction 6803/5345

MLRS Instruction Branch 4711/5151

MLRS NET 2431

MLRS Fire Direction Branch 6121/2606

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- FIST Equipment
- Radars
- Meterological Equipment

Analysis (ATSF-CC) 4715/5707/FAX 4802

- FA Related Studies/Scenarios
- TA Fire Support Model

Force Programs & Priorities (ATSF-CD-FPP)  
6309/2807/3702/2726/6520 FAX 4802

- Force Structure/Documentation Prioritization/Concepts
- Budget
- Science and Technology (S&T)
- Force Design Update (FDU)
- Total Army Analysis (TAA)
- Warfighting Lens Analysis (WFLA)

Tactical Software Division (ATSF-CT)  
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- IFSAS/LTACFIRE 5607
- Communications 6418
- FDS/BCS 6067
- FireFinder 6067
- FED/HTU 5607
- Fire Support Interoperability 6418
- TF XXI 5719
- User Interface Requirements 6067

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M270A1 MLRS Launcher

HIMARS

Rockets

ATACMS

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# 1998 *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.

Two versions of the magazine are printed. *Field Artillery* is published by the Field Artillery School at Fort Sill, Oklahoma, for free distribution to Army and Marine Field Artillery units and DoD or other government agencies working with FA/fire support issues, organizations or materiel.

The *FA Journal* is printed by the US FA Association for subscribers-service members who wish to receive personal copies at their home addresses-and retirees, corporate members, allies and other interested parties. The *FA Journal* is a reprint of *Field Artillery* with color, advertising and some Association news items added.

An author will receive three copies each of the editions in which his article is published.

**Subjects.** The majority of the articles *Field Artillery* accepts cover subjects at the tactical level of war with some at the operational and strategic levels as long as their contents relate to

Field Artillery or fire support or are of special interest to our readers.

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. (An author may identify problems without proposing solutions only in a letter-to-the-editor.) 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 FA 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 most editions, we include articles not related to the theme.

Articles must be clear and concise with the thesis statement (bottom line) up front and the body of the article systematically contributing to the thesis. When writing, authors must 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?").

## Submissions. Include—

- A clean, double-spaced, typed, unpublished manuscript of no more than 3,000 words with footnotes and bibliography, as appropriate. 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, authors should not submit a manuscript to *Field Artillery* while it's being considered elsewhere.

- A comprehensive biography, highlighting experience and training relevant to the article's subject. Include address and telephone and Fax numbers and keep them current with the FA Bulletin.

- Graphics with captions to illustrate and clarify the article. These can include photographs of any size, drawings, slides, maps, charts, unit crests, etc. We accept art electronically on CD or a 200 MB Syquest-compatible cartridge in the following formats: PS3 (Mac Adobe Photoshop), PSD (PC Adobe Photoshop), EPS or TIFF. Note: Art must be saved at a *minimum* of 300 dpi.

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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, call the Editor at DSN 639-5121 or 6806 or commercial (580) 442-5121 or 6806. To Fax, call DSN 639-7773 or commercial (580) 442-7773.

## Field Artillery Themes for 1998

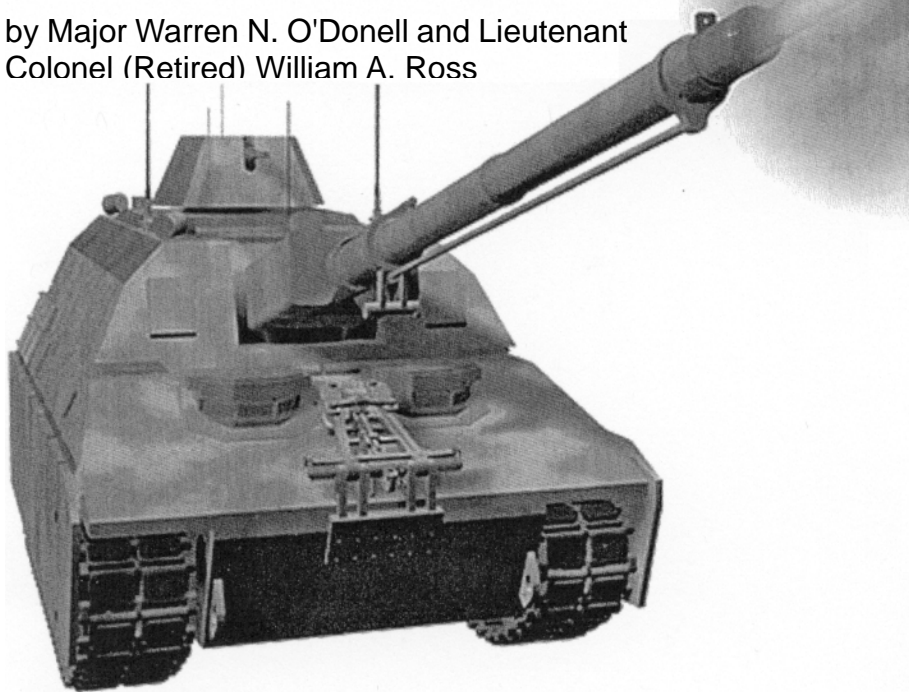
Edition	Theme	Copy Deadline
Jan-Feb	Fire and Counterfire	15 Sep 97
Mar-Apr	Joint and Combined Operations	17 Nov
May-Jun	21st Century Fire Support	19 Jan 98
Jul-Aug	History	2 Feb (History Contest)* 16 Mar (Other)
Sep-Oct	TTP for the Close Fight	18 May
Nov-Dec	Red Book	13 Jul

\*Deadline for the US FA Association 1998 History Writing Contest. (Rules appear on Page 38 of the September-October 1997 edition.)



# TTP for the Crusader Battalion— A Beginning

by Major Warren N. O'Donnell and Lieutenant Colonel (Retired) William A. Ross



The Army is transitioning to Army XXI where battlespace will be expanded in space, operations tempo and complexity. Fires for such a dynamic environment must be able to support distributed, nonlinear operations and be capable of shaping outcomes over the entire battlefield simultaneously. To meet these challenges, the Field Artillery must take advantage of information dominance and state-of-the-art technologies to provide undeniably overmatching fires for victory against the toughest future opponent. With its fielding in 2005, Crusader, the Army's "technology carrier" for future combat platforms, will do just that.

This article discusses Crusader's revolutionary capabilities; its most recent concept experimentation program (CEP) experiments; and the developmental tactics, techniques and procedures (TTP) for the new howitzer and its resupply vehicle. Although our assessment of the impact of Crusader on the battlefield is preliminary at this point, we know enough to begin reexamining how the Field Artillery battalion is organized, fights and resupplies. Clearly, the impact of Crusader on Army operations will be significant.

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## Crusader—A Combat Overmatch

No artillery system in the world will be able to match Crusader's battle tempo. Crusader will be the most tactically mobile artillery system ever fielded, presenting a rapidly moving target that's very difficult to acquire—one that, in combination with its advanced munitions, also will be the most deadly cannon system ever fielded. With the mobility of an M1 Abrams tank, Crusader will be able to move in maneuver formations or autonomously. Its advanced cannon will deliver the latest in lethal, fire-and-forget munitions at 10 to 12 rounds per minute up to 50 kilometers and with more precision than ever before achieved. Firing the latest munitions, Crusader will be deadly against all targets, including the toughest: armored, moving vehicles.

Crusader will set new standards in responsiveness of fires. Recently, Crusader's XM297E cannon and a state-of-the-art robotics armament system set up on a hardstand delivered 15 rounds on a single target in 100 seconds—more than five times faster than a well-trained

Paladin crew firing at the maximum sustained rate. Employing its multiple round simultaneous impact (MRSI) capability, a single Crusader howitzer can routinely mass—rapidly fire four to eight rounds programmed to impact simultaneously on an unsuspecting enemy target, a surprise that will "ruin his day."

The resupply vehicle's robotic ammunition transfer can completely rearm and refuel the howitzer within 12 minutes, enabling the Crusader howitzer's higher rate of fire while eliminating crew exposure to enemy fires. To sustain Crusader's capabilities, streamlined Army ammunition management and rearm operations will be vital.

The Crusader system—self-propelled howitzer and ammunition resupply vehicle—will be linked by a tactical fire control system. Each will incorporate the latest on-board and networked information processing, automated fire control and command and control capabilities, setting new standards for responsiveness and accuracy of fires.

Crusader's advanced capabilities will significantly increase the force commander's lethality, operational flexibility and tactical agility. But with its advantages comes the challenge of determining how to most effectively integrate Crusader into Army XXI. To address this challenge, the Training and Doctrine Command (TRADOC) System Manager—Cannon (TSM—Cannon) at the Field Artillery School, Fort Sill, Oklahoma, is developing TTP in a series of three CEPs. The goal is to formulate TTP for the early user test in the First Quarter of FY 2000.

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## Crusader Concept Exploration

In the 97 CEP, members of the 1st Cavalry Division's 2d Battalion, 82d Field Artillery (2-82 FA), the *Steel Dragons* out of Fort Hood, Texas, were among the first Redlegs to have "hands-on" experience employing Crusader. For nearly three weeks this summer, the *Steel Dragons* experimented with various battalion-level TTP in the CEP using a high-resolution, warfighting simulation in the III Corps Battle Simulation Center at Fort Hood.

TSM—Cannon, the proponent for the CEP, teamed with several organizations to conduct this combination concept exploration and research project: the

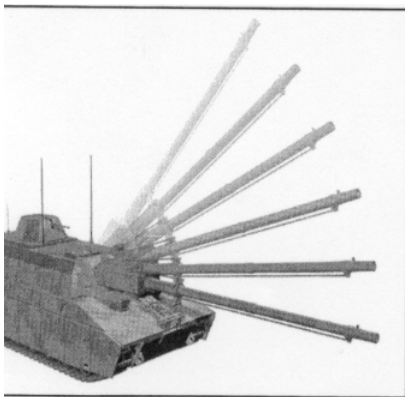


Depth and Simultaneous Attack Battle Lab (D&SABL), Human Research and Engineering Directorate of the Army Research Laboratory (ARL) and Fire Support Test Directorate of the Test and Experimentation Command (TEXCOM), all at Fort Sill.

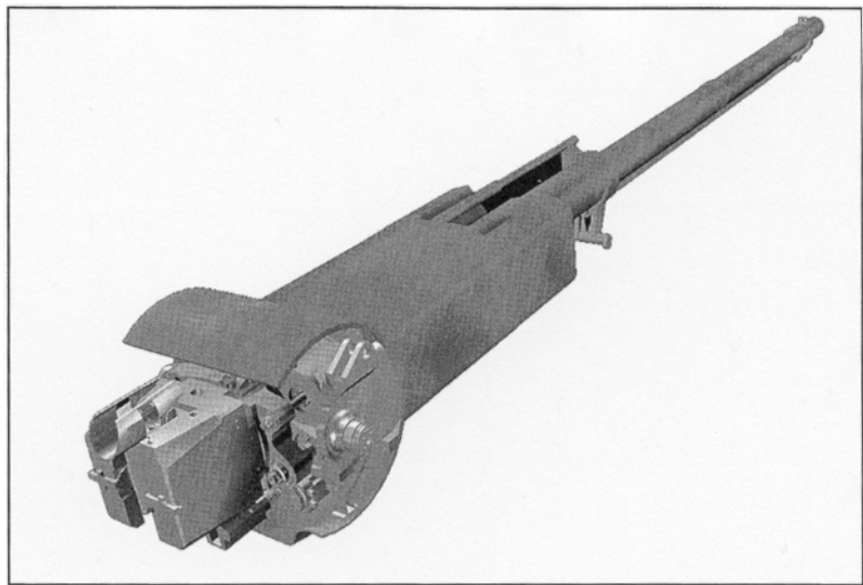
The long-term CEP plan uses a series of operational concept documents (OCDs) on the major components of Crusader—mobility, fires, communications and sustainment—to test concepts and develop theories about Crusader employment. Based on comments and lessons learned from the various simulation exercises or experiments that use Crusader or its system characteristics, an OCD is updated before the next CEP experiment. The OCDs build on each other and, ultimately, will transition into the Crusader Special Text (ST) 6-50-XX.

The 1997 CEP consisted of a series of force-on-force offensive and defensive tactical scenarios employing Crusader. In each scenario, the opposing force (OPFOR) significantly outnumbered the Crusader-supported force. The fire support simulation played a virtual Crusader unit reinforced by a virtual unit that responded to fire orders from the 2-82 FA battalion fire direction center (FDC). 2-82 FA performed tactical fire control and fire support coordination with live tactical systems. Among other things, this CEP validated that successful fire support depends on surviving the counterfire threat, shaping operations throughout the battlefield and dominating the close fight.

*Offensive Scenario.* This was a Southwest Asia scenario fought on the terrain of the National Training Center (NTC), Fort Irwin, California. The artillery mission was to support a deliberate attack



Employing MRSI, a Crusader howitzer can routinely mass—rapidly fire four to eight rounds programmed to impact simultaneously on an unsuspecting enemy target.



Crusader's cannon, shown here in an artist's rendition, was set up on a hardstand with a state-of-the-art robotics reload system and fired 15 rounds on a single target in 100 seconds—more than five times faster than a well-trained Paladin crew can fire at the maximum sustained rate.

against prepared enemy defensive positions. The friendly maneuver force had to conduct a forward passage-of-lines and battle hand-off, seize an intermediate objective along the axis of advance, breach obstacles, account for bypassed forces and destroy enemy forces on the final objective.

The attacking maneuver forces advanced more than 40 kilometers between the line-of-departure and the final objective; at no time was Crusader far behind. During the battle, the Crusader unit performed the essential fire support tasks (EFSTs) that supported this rapidly changing operation. (EFSTs were formerly known as critical fire support tasks, or CFSTs.)

*Defensive Scenario.* A Northeast Asia defensive scenario was fought against an artillery-heavy enemy. The mission called for the *Steel Dragons* to support by indirect fires a terrain-oriented, deliberate defense against an attacking enemy tank brigade reinforced by two tank battalions. The threat force had the option of conducting his main attack along one of three avenues of approach.

Crusaders shaped battlespace by influencing the enemy's selection of the main avenue of approach and his main effort. Crusader forces destroyed high-payoff targets (HPTs), significantly reducing enemy combat power, disrupting the timing of his movements and increasing the space between his tactical echelons in sector, which allowed the maneuver force to defeat him.

#### *Mission Rehearsals and Battle Execution.*

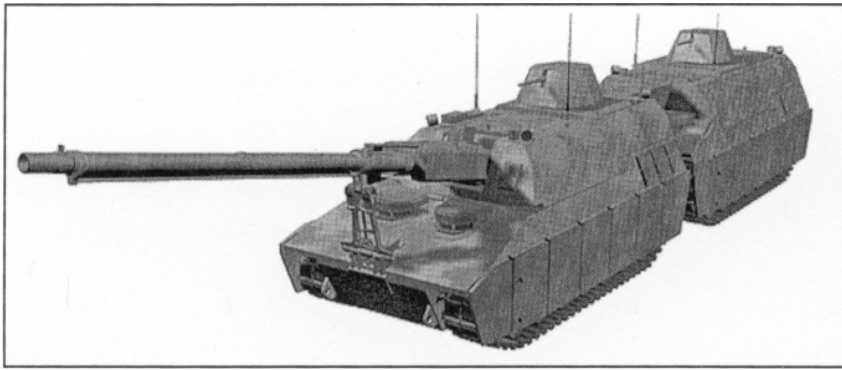
To ensure participants understood the 97 CEP plan and could execute it, we conducted several rehearsals and pilot tests. The plan called for the employment of fire support doctrine, the latest advanced Field Artillery tactical data system (AFATDS) software updated with Crusader capabilities and a well-trained artillery battle staff.

During the CEP, we observed how the unit managed digitized operations and employed Crusader. A single battle was fought each day for a total of nine days throughout the CEP, a pace that permitted the research team to focus data collection and identify important lessons learned.

## The Birth of Crusader TTP

It was clear in the 97 CEP that a revolutionary system such as Crusader requires innovation and a willingness to change the way the Field Artillery conducts business. As we gain more experience with Crusader in future experiments, its battlefield implications will become more concrete, and we'll be able to revise procedures and factor Crusader capabilities into doctrine. But here are some of the some of the initial implications we have found to date.

- *Crusader must have access to superior, rapid information to be most effective.* Crusader will be in a state of near-constant motion to negate an enemy counterfire threat. In a short amount of



The Crusader system—self-propelled howitzer and ammunition resupply vehicle—will be linked by a tactical fire control and have other systems to provide information dominance.

time, it will move farther and fire more rounds than any previous artillery system.

To keep up with Crusader's physical status, current and future locations and to immediately impact the battle, battle staffs must rely more heavily on digitized command and control processes to pass and filter information. The battalion staff must have almost instant access to the current tactical situation to position firing units, support EFSTs and manage frequent rearm, refuel and resupply operations.

The battalion and battery staffs must use AFATDS information more effectively to anticipate rather than react to changes in battlefield conditions. Because Crusader will be equipped with on-board data processing equipment, information flows from the battalion tactical operations center (TOC) to the howitzer levels must be streamlined. This shared information will improve the quality of situational awareness, ensure efficient dissemination of battlefield information and improve Crusader responsiveness. Information management is a cornerstone to managing the mobility of Crusader.

To facilitate information management and automated data processing, establishing information nodes is critical. Logistics and fire support functions will consolidate into specific nodes within the battery and battalion. These functional nodes will have mirror capabilities and maintain common databases. Crusader will enable the artillery to become the first fully digitized operating system able to exchange essential battlefield information and achieve unprecedented performance by maximizing information dominance.

- *Command and control of Crusader mobility operations must mimic maneuver.* The Crusader will have the mobility to be integrated into maneuver combat formations. This is a new option the Field

Artillery battalion commander and force commander can exercise, based on the tactical situation.

Like their maneuver brethren, the Crusader crew's leaders must be mobile and survivable enough to keep up with their systems. When Crusader is integrated into a maneuver formation, the battery commander or platoon leader, who now moves in an M1068 or high-mobility multipurpose wheeled vehicle (HMMWV), will have to have a vehicle that can keep up with maneuver forces and survive the front-line environment. Solutions might be to add Bradley fighting vehicles to the battery table of organization and equipment (TO&E) or make one of the three crew stations in the howitzer a command and control workstation. From either of these platforms, a commander will be able to interact and keep up with his Crusaders during the course of a battle.

Crusader will be part of a fully integrated command and control architecture. The howitzers will be controlled from Field Artillery command posts that are mobile enough and equipped with the processing power needed to sustain continuous fire support on the 21st century battlefield.

- *Crusader survivability moves must be initiated at the howitzer section level.* In the 97 CEP, we observed a survivability trend that takes advantage of Crusaders' ability to rapidly displace to alternate firing positions before the threat can deliver counterfire. If the section waited for "end of mission," Crusader howitzers often were attacked.

Crusader operated within the enemy's counterfire decision cycle due to its fast fire mission reaction times and improved dash speed. Digitized tactical and technical fire control systems permit Crusader to process requests for subsequent fires while displacing. In addition, Crusader is designed to

emplace and fire within seconds. Combined with the inherent tactical fire control flexibility of the Crusader firing unit, these features will contribute to continuous fire support coverage during survivability moves.

Crusader should displace immediately after it generates a "rounds complete" message. The success of a survivability move will depend on tactical considerations and situational awareness at the section level. The Crusader section will have decision aids and route planning tools to help the chief of section select and move into a survivability position. The alternate position must lie outside the counterfire footprint (at least 750 meters away) and have been inactive for at least 30 minutes.

Crusader's vulnerability to counterfire can be virtually eliminated through a superior command and control system that manages battlespace and updates that understanding frequently. The section will have the information it needs to make timely survivability decisions without compromising its mission requirements. Crusader always will be "in position, ready to fire"—even on the move.

- *Crusader's MRSI can weight an attack or thicken a defense in the shortest time with the fewest number of weapons.* Time-on-target, massed artillery fires demoralize and destroy the enemy. MRSI decreases the number of weapon systems that must engage a target to achieve the desired effects. MRSI allows the force commander to achieve those effects—mass fires—without committing an entire Crusader battalion, or even battery. This gives the commander greater flexibility on how and where to fight his force.

- *Crusader firing operations must be closely synchronized with rearm operations, and resupply management will be centralized at the battery level.* Crusader's rate-of-fire and increased fire mission load will overload the ammunition resupply system, even with automated ammunition transfers at the howitzer level. Effective fire support operations depend on rearm tactics, ammunition management and tactical considerations.

In the CEP, firing batteries implemented several approaches to ensure Crusader always had enough ammunition. Rearming was initiated in conjunction with survivability moves when a rearm trigger had been reached. Rearming was facilitated by the close positioning of logistics facilities—for example,

resupply vehicles in hide areas and logistics resupply points forward and close to the howitzers but outside counterfire footprints.

Maximum flexibility and responsiveness were achieved in ammunition management by centralizing control of the ammunition resupply in the battery and not dedicating a specific resupply vehicle to a specific howitzer. To make the most of each resupply vehicle, the batteries established and managed a vehicle operational cycle that complemented tactical operations. Automated ammunition transfers permitted near-continuous throughput of ammunition to forward areas. But this called for pooling resupply assets under a centralized manager. The manager had to project what would happen in the battle and where and when the ammunition was needed to support the battle.

• *To resupply the Crusader battalion, the administration and logistics operations center (ALOC) must have fast, accurate information on the Crusaders.* Crusader's ammunition management was improved by extending AFATDS to the ALOC and providing the logistics staff a current battlefield picture. When ALOC personnel had firsthand information about the situation, they closely coordinated ammunition support with fire support requirements.

This functional coordination was further improved when the unit rehearsed logistics support. Logistics rehearsals with unit technical and fire support mission rehearsals helped ensure a common understanding of critical fire support requirements and issues were resolved in the preparation phase instead of during execution.

Relocating the ammunition officer from the ALOC to the battalion TOC also improved ammunition management and prevented gaps in fire support. From the battalion TOC, the ammunition officer could more closely monitor the tactical situation and use his knowledge of the battle to implement "just-in-time" ammunition resupply, reducing the frequency and duration of ammunition transfers within the battle area. Just-in-time logistics eliminates the need to keep large stockpiles of ammunition in forward areas to support any contingency. With Crusader and real-time logistics information, ammunition from pooled resupply vehicles can be positioned where it is accessible when needed.

The flow of status information between battery operations centers and their howitzers and resupply vehicles has been

digitized to permit accurate visibility for each system, as needed. This information is automated and can be queried by the ALOC without disrupting crew operations. We must improve the ALOC's quality of information so it can anticipate logistical support for Crusader. By ensuring the ALOC has an AFATDS to monitor the battle, we will tailor our logistical package to the tactical situation.

• *The Crusader Section Chief assumes the role of Crusader Commander.* The Crusader section chief will move from his current role as a "technician" focused on the assembly line, man-intensive type tasks of firing a projectile from Point A to Point B, to that of a "Commander" focused on the art of fighting his system. This shift is brought about by Crusader's advanced capabilities enabling rapid, autonomous operations.

The process of loading and firing a projectile will be completely automated. The gunner and driver will execute the functions of "current" operations, such as firing the system and maneuvering from position to position. The Crusader Commander will focus on fighting "future" operations.

The Crusader Commander will plan survivability moves to ensure he moves with the maneuver forces and positions his weapon to best support the battle. He will track the howitzer's ammunition status and project expenditures to ensure he has the proper ammunition on hand to support each phase of the battle. He will coordinate with the other howitzers in the unit to ensure he does not move into an untenable location and to orchestrate his movement. In short, the section chief's scope will increase to encompass the entire battle rather than just the technical fire control of his howitzer.

Crusader will require a new generation of artillerymen trained to share battle management responsibilities and perform tactical as well as technical functions. We must field the best teams possible to maximize Crusader's potential.

Crusader is a "system-of-systems" made up of digitized tactical fire control, an automated ammunition handling and resupply vehicle and a vastly improved howitzer. The employment success of this revolutionary artillery system requires innovative approaches to fighting, supporting and training. To ensure Crusader is the combat multiplier its capabilities promise, we must develop and disseminate battlefield information, streamline fire mission processing and implement more responsive ammunition management.

This article has only scratched the surface of the challenges surrounding the employment of Crusader. There are many questions yet to answer. With its tremendous firepower and mobility comparable to maneuver units, "Can Crusader be 'maneuvered'?" With Crusader's information processing capabilities, "Is it feasible to flatten the FA command and control architecture—will the future FA battalion consist of a single command and control center talking directly to Crusader systems?" "How do we train and realign the personnel in the battalion to make the most of this technologically advanced system?" These are just a sampling of the challenges that must be resolved as we develop and field Crusader.

Soon we'll be able to devastate an opponent with overmatching fires delivered throughout the battlefield on targets of the greatest value to the maneuver commander. Soon—in the Year 2005—Crusader's combat capabilities and application of information dominance will not only shape battlefields, but also help create a firepower revolution for the new millennium.



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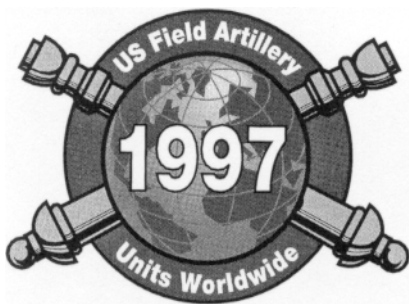
Lieutenant Colonel (Retired) William A. Ross, FA, is a Senior Research Scientist with Hughes Training, Inc., who serves at Fort Sill with the Human Research and Engineering Directorate of the Army Research Laboratory. He manages the data collection and performance analysis for the Crusader CEP. He has conducted three field studies of Crusader using synthetic environments to measure soldier and process performance. Lieutenant Colonel Ross also has formulated and implemented research designs and data collection plans to assess the impact of digitization on the fire support functional area. Email: [rossw@doimex1.sill.army.mil](mailto:rossw@doimex1.sill.army.mil)



# Active Army and Marine Units in CONUS

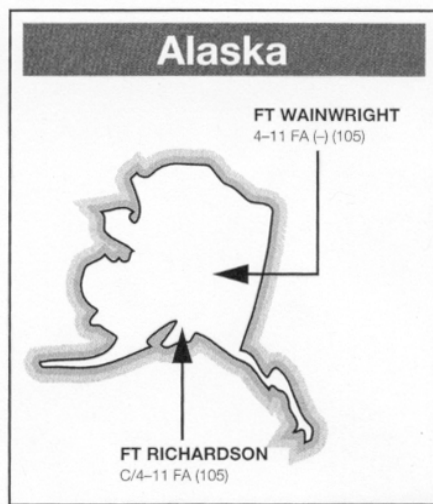
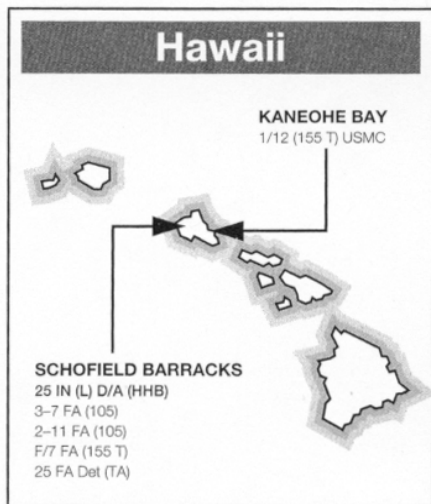
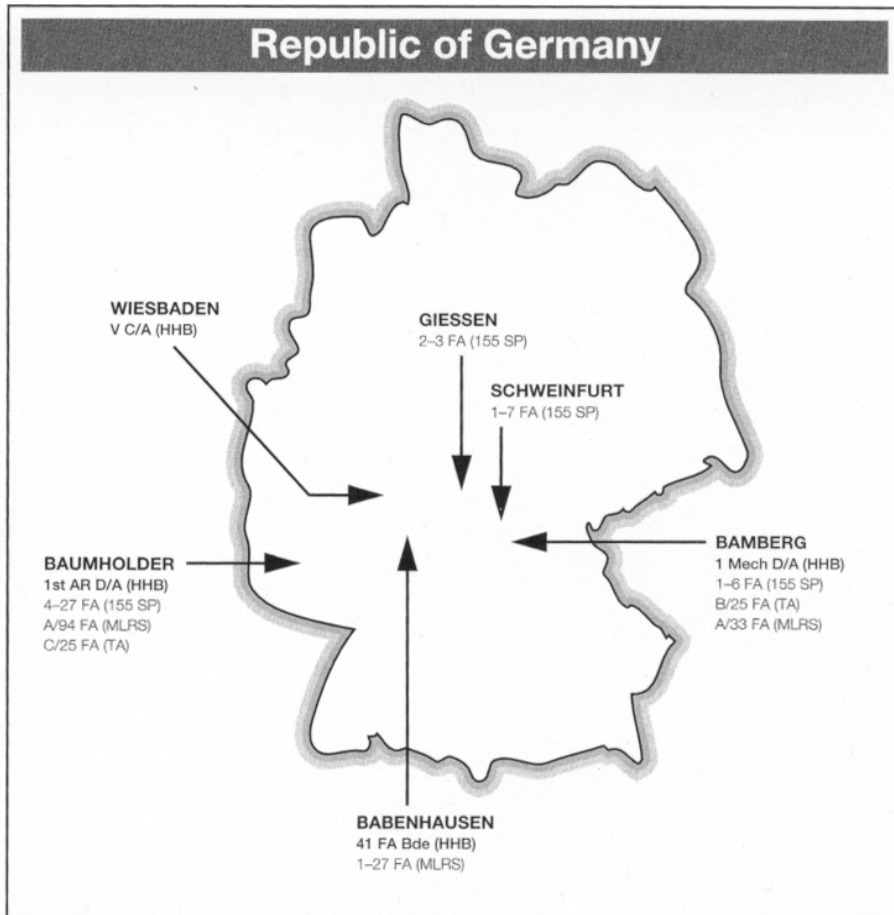
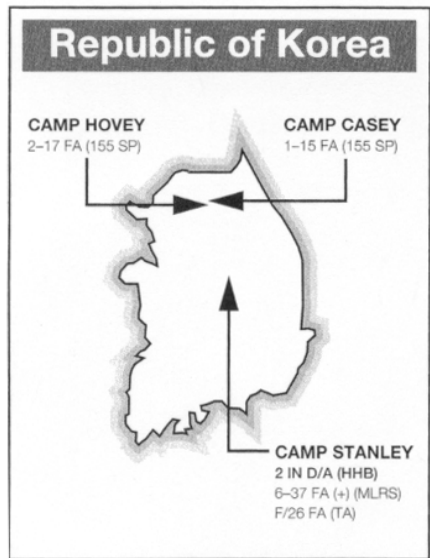
As of 1 November 1997



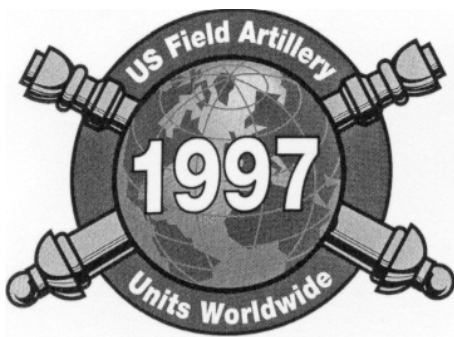


# Active Army and Marine Units in OCONUS

As of 1 November 1997

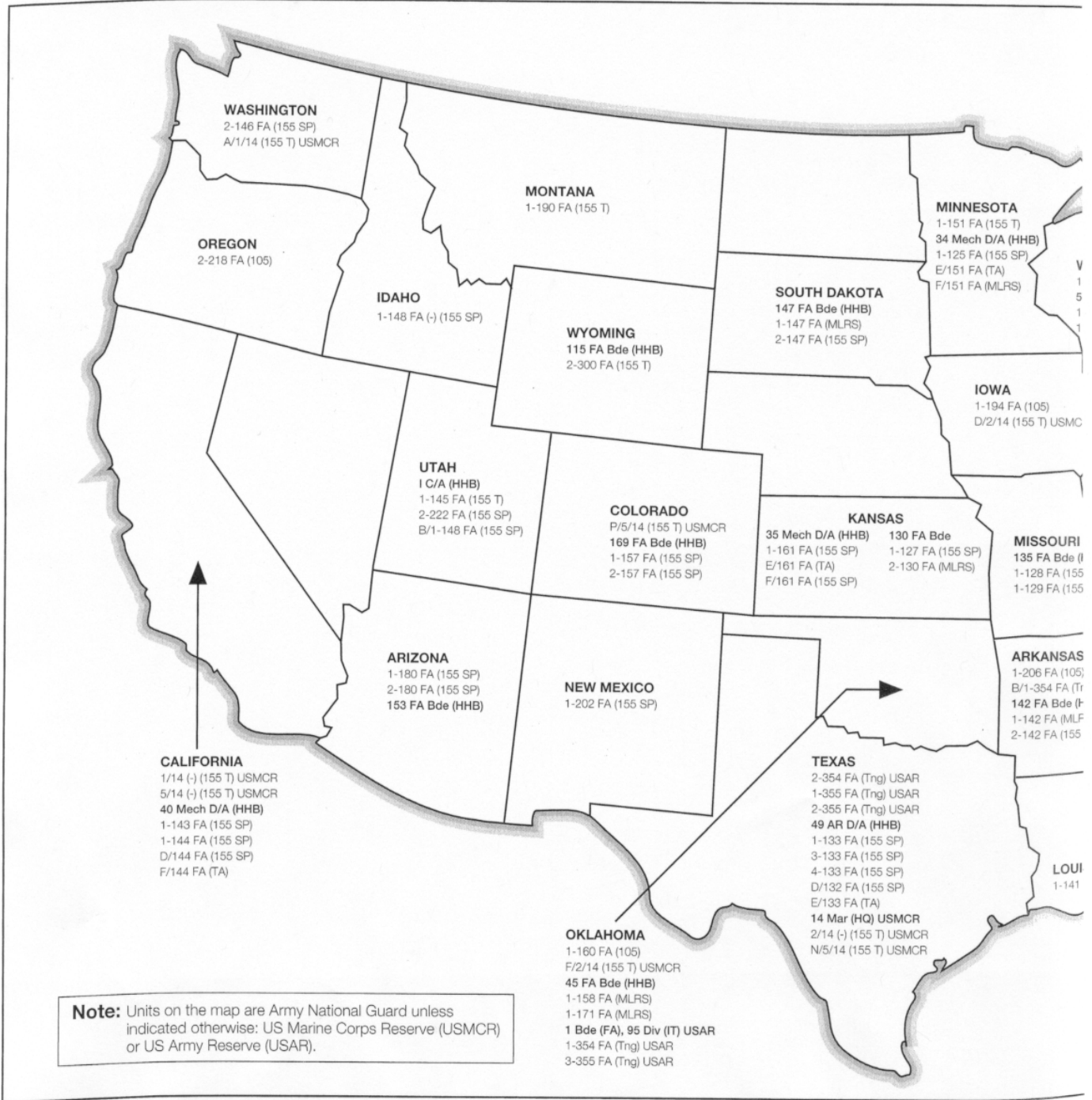


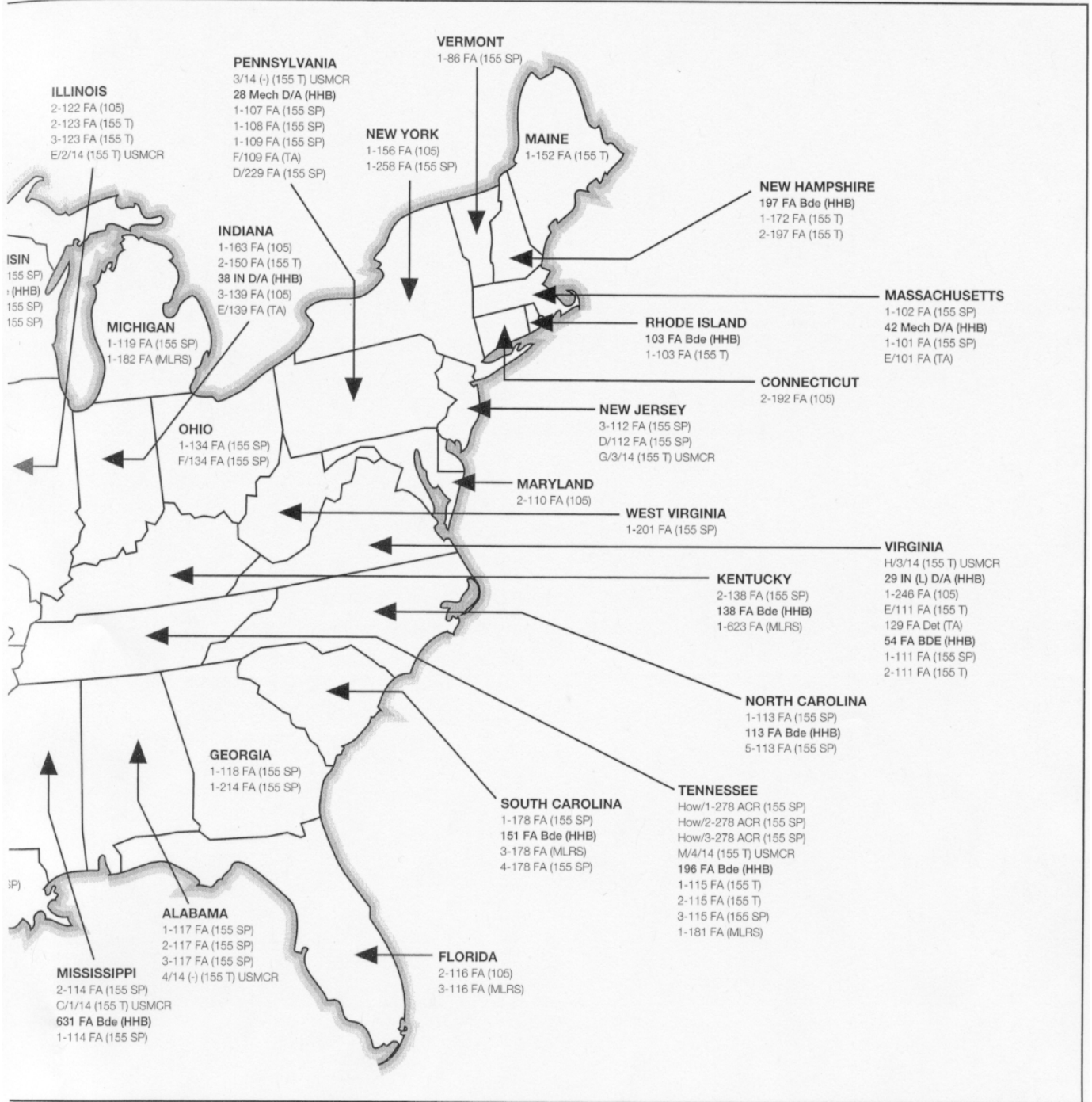
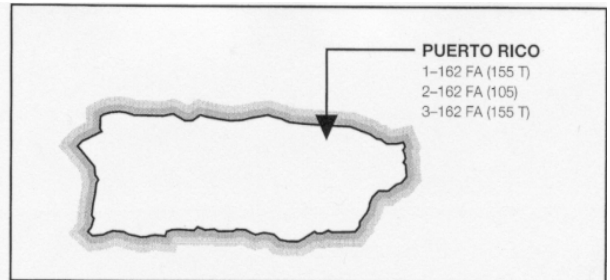
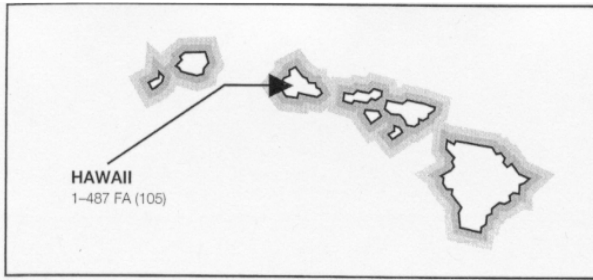




# Army National Guard and Army/Marine Reserves

As of 1 November 1997







# Field Artillery Commanders and Command Sergeants Major

As of 1 November 1997

## Active Army

### Training and Doctrine Command

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

**MG Baxter, Leo J.**  
Commandant/CG

**CSM Kermode, William J., Jr.**  
Fort Sill

**BG Stricklin, Toney**  
Asst. Commandant

**COL White, David C.**  
CSM Porter, Raymond L.  
(Acting)  
30th FA Regiment

**LTC O'Donnell, Thomas J.**  
CSM Cruz, Arthur E.  
2d Bn, 2d FA

**LTC Weafer, Thomas W.**  
CSM Porter, Raymond L.  
1st Bn, 30th FA

**LTC Bray, Britt E.**  
SGM Day, Earl A.  
3d Bn, 30th FA

**COL McKeeman, Michael W.**  
CSM Roberts, Perry L.  
FA Training Center

**LTC Steuber, George W.**  
CSM Hall, Steven A.  
1st Bn, 19th FA

**LTC Michel, Gabriel J.**  
CSM Drummond, Walter L.  
1st Bn, 22d FA

**LTC Alicea, Francisco, Jr.**  
CSM Christian, Fred L.  
1st Bn, 40th FA

**LTC Ewing, Jefferson G.**  
CSM Thompson, Donald W.  
1st Bn, 78th FA

**LTC O'Sullivan, John M.**  
CSM Adams, Ronnie E.  
1st Bn, 79th FA

**LTC Horner, Ann L.**  
CSM Ellenburg, William L.  
2d Bn, 80th FA

**LTC Pedone, Joseph E.**  
CSM Daliz, Rosa S.  
95th AG Bn (Rec)

### Forces Command

#### III Corps

**BG Broadwater, Colby M., III**

CSM Williams, Anthony J.  
III Corps Arty

**LTC(P) Wynarsky, Andrew E.**  
CSM Shady, Robert C.  
17th FA Bde

**LTC McPhee, Richard R.**  
CSM Talley, Marty R.  
5th Bn, 3d FA

**LTC Kaiser, William E., Jr.**  
CSM Walker, Michael  
1st Bn, 12th FA

**LTC Slate, Nathan K.**  
CSM Byrd, Willie L.  
3d Bn, 18th FA

**COL Combest, Michael L.**  
CSM Underwood, Johnny W.  
75th FA Bde

**LTC Henderson, David S.**  
CSM Gant, Murray S.  
1st Bn, 17th FA

**LTC Bonsell, John A.**  
CSM Howard, Glenn  
6th Bn, 27th FA

**LTC Boozer, James C., Jr.**  
CSM Duff, Fernando C.  
1st Bn, 77th FA

**COL Soby, Charles S.**  
CSM Meyer, Dennis  
212th FA Bde

**LTC McMillan, Donald G.**  
CSM Lanier, Mark A.  
2d Bn, 5th FA

**LTC Clark, Michael G.**  
CSM Reed, Morgan B.  
2d Bn, 18th FA

**LTC Otterstedt, Charles C.**  
CSM Kelly, John E., Jr.  
6th Bn, 32d FA

**COL Brant, Bruce A.**  
CSM Dinkel, Larry H.  
214th FA Bde

**LTC Spellissy, Thomas F.**  
CSM Stanley, Joseph W.  
2d Bn, 4th FA

**LTC Freund, John R.**  
CSM Finkle, Timothy M.  
3d Bn, 13th FA

**LTC Ifflander, David F.**  
CSM Bushue, William P.  
1st Bn, 14th FA

**LTC Good, Ted M., OD**  
CSM Talley, Ricky J.  
19th Maint Bn

**LTC Hightower, Joseph C., MS**  
CSM Traylor, Willie M.  
47th Cbt Spt Bn (Prov)

## XVIII Airborne Corps

**BG Miller, Geoffrey D.**  
CSM Archbold, Cecilio M.  
XVIII Abn Corps Arty

**COL Lewis, Dennis R.**  
CSM Taylor, Michael R.  
18th FA Bde

**LTC Couey, James S.**  
CSM Stewart, Quenten M.  
3d Bn, 27th FAR

**LTC Hickey, James R.**  
CSM Towery, Ronald L.  
1st Bn (Abn), 321st FA

**LTC McDonald, James M.**  
CSM Dixon, Donald L.  
3d Bn, 321st FAR

**LTC Rodriguez, Carlos**  
CSM Taylor, Larry E.  
1st Bn, 377th FAR (AAslt)

## Division Artilleries

**COL Ralston, David C.**  
CSM Inman, Paul M.  
1st Cav Div Arty

**LTC Cunningham, Robert A.**  
CSM Ingram, Larry W.  
1st Bn, 21st FA

**LTC Johnson, Albert**  
CSM McMurtry, Thomas O.  
1st Bn, 82d FA

**LTC Mitchell, Stephen D.**  
CSM Ortiz, Miguel A.  
2d Bn, 82d FA

**LTC West, Stephen K.**  
CSM Sherman, Ernest, Jr.  
3d Bn, 82d FA

**COL Yingling, John A.**  
CSM Lopes, Lucio O.  
3d IN Div (Mech) Arty

**LTC Cheek, Gary H.**  
CSM Nelson, Jerry  
1st Bn, 9th FA

**LTC Torrance, Thomas G.**  
CSM Porter, Ronnie  
1st Bn, 10th FA

**LTC Ramirez, Joe E., Jr.**  
CSM Canuela, Gilbert L.  
1st Bn, 41st FA

**COL Valcourt, David P.**  
CSM Shelly, Earl L.  
4th IN Div (Mech) Arty

**LTC Stapleton, Mark L.**  
CSM Batts, Adner M.  
9th Bn, 1st FA

**LTC Roth, Thomas J., II**

CSM Schindler, Gerald R.  
3d Bn, 16th FA

**LTC Hull, Frank R.**  
CSM Williams, Tommy A.  
3d Bn, 29th FA

**LTC Cardillo, Richard G., Jr.**  
CSM McLawhorn, Linwood E., Jr.  
4th Bn, 42d FA

**COL Reese, Robert J.**  
CSM Watkins, Don B.  
10th Mtn Div (L) Arty

**LTC Grand, Frank J., III**  
CSM Warren, James  
3d Bn, 6th FA

**LTC Roth, Jerry H.**  
CSM Grainger, James A.  
2d Bn, 15th FA

**COL Hood, Jay W.**  
CSM Thompson, Ronald  
82d Abn Div Arty

**LTC Keegan, William T.**  
CSM Hand, Norris A.  
1st Bn, 319th AFAR

**LTC Thein, Scott E.**  
CSM Amacker, Wilfried W.  
2d Bn, 319th AFAR

**LTC Anderson, Rodney O.**  
CSM Beason, Dwayne D.  
3d Bn, 319th AFAR

**COL Bagby, Byron S.**  
CSM Brodeur, Albert J.  
101st Abn Div (AAslt) Arty

**LTC Evans, Philip M.**  
CSM Cottrell, John G.  
1st Bn, 320th FA

**LTC Hale, Matthew T.**  
CSM Wong, Derrick G.  
2d Bn, 320th FA

**LTC Greer, William L.**  
CSM Victorino, James P.  
3d Bn, 320th FA

## Separate Units

**LTC Moosman, Christopher P.**  
CSM Donohue, Thomas J.  
4th Bn, 1st FA

**LTC Rozell, David A.**  
CSM Humphries, John L.  
1st Bn, 5th FA

**LTC Vozzo, Martin L.**  
CSM Dunn, Gerald R.  
2d Bn, 8th FA

**LTC Palermo, James M.**  
CSM Sanders, Ronald H.  
1st Bn, 37th FA

## United States Army Europe

### V Corps

**COL Vacant**  
CSM Allen, John G.  
V Corps Arty

**COL Seay, Stephen M.**  
CSM Ostos, Joseph M.  
41st FA Bde

**LTC Steinke, Ralph R.**  
CSM King, Dennis M.  
1st Bn, 27th FA

### Division Artilleries

**COL Kimmitt, Mark T.**  
CSM Nelson, George H.  
1st AR Div Arty

**LTC Pieper, Kenneth L.**  
CSM Phipps, Marlon B.  
2d Bn, 3d FA

**LTC Heverin, James M., III**  
CSM Bean, Walter L.  
4th Bn, 27th FA

**COL Hunzeker, Kenneth W.**  
CSM Castillo, Ivan A.  
1st IN Div (Mech) Arty

**LTC Young, Morris M.**  
CSM Woods, James T.  
1st Bn, 6th FA

**LTC Teague, George E.**  
CSM McPherson, Carl B.  
1st Bn, 7th FA

## US Army Pacific

**COL Church, James W.**  
CSM Purdy, Karl L.  
2d IN Div Arty

**LTC Fitzgerald, Michael D.**  
CSM Collins, Joseph  
1st Bn, 15th FA

**LTC Kolditz, Thomas A.**  
CSM Walker, Jimmy  
2d Bn, 17th FA

**LTC Oaksmith, Sidney G.**  
CSM Moyer, Jeffrey L.  
6th Bn, 37th FA

**COL Woods, John C.**  
CSM Hopkins, Charles D.  
25th IN Div (L) Arty

**LTC Rooney, John P.**  
CSM Broadwater, William B.  
3d Bn, 7th FA

**LTC Defferding, Michael S.**  
CSM Shaw, Oscar, Jr.  
2d Bn, 11th FA

### Separate Unit

**LTC Saul, Lawrence H.**  
CSM Jackson, George R.  
4th Bn, 11th FA

## National Guard

### I Corps

**COL(P) Gordon, Stanley J.**

CSM Walbeck, William B.  
I Corps Arty

**LTC Fotheringham, David B.**  
CSM Stone, Steven T.  
1st Bn, 145th FA

**LTC Christensen, Thomas R.**  
CSM Alger, Don R.  
2d Bn, 222d FA

### Brigades

**COL McCall, Daryl K.**  
CSM Bennett, Larry P.  
45th FA Bde

**LTC Doyle, James L.**  
CSM Lynn, William R., Jr.  
1st Bn, 158th FA

**LTC Redelsperger, John C.**  
CSM Ahrens, Lewis E.  
1st Bn, 171st FA

**COL Dunn, David N.**  
CSM Halfacre, Howard E.  
54th FA Bde

**LTC Coleman, Michael J.**  
CSM Eacho, James E.  
1st Bn, 111th FA

**MAJ Taylor, Charles D.**  
CSM Tate, George V.  
2d Bn, 111th FA

**COL Luebke, Ronald A.**  
CSM Yenchesky, James H.  
57th FA Bde

**LTC Schrader, Edward C.**  
CSM Weller, Gary P.  
1st Bn, 121st FA

**MAJ Much, Bryan T.**  
CSM Hannah, Bruce J.  
1st Bn, 126th FA

**COL Nuttall, James W.**  
CSM Iannelli, Paul A.  
103d FA Bde

**LTC Walsh, Charles F.**  
CSM McDonough, John J., IV  
1st Bn, 103d FA

**COL Newton, Joel B.**  
CSM Ingram, Larry G.  
113th FA Bde

**LTC Sawyer, Linwood M.**  
CSM Daniels, Allen C., Jr.  
5th Bn, 113th FA

**COL Weiser, James A.**  
CSM Kidd, Ernest T.  
115th FA Bde

**LTC Jackson, Jonathan R.**  
CSM Varner, Marvin S.  
1st Bn, 190th FA

**LTC Wright, Edward L.**  
CSM Hoopes, William L.  
2d Bn, 300th FA

**COL Vonderschmidt, William W.**  
CSM Putman, Dale L.  
130th FA Bde

**LTC McAuley, John M.**  
CSM Althouse, Michael D.  
1st Bn, 127th FA

**LTC Johnson, Calvin S.**  
CSM Bahr, Ronald E.  
2d Bn, 130th FA

**COL Shull, George D.**

CSM Green, Roger B.  
135th FA Bde

**LTC Petrich, Robert J.**  
CSM Rich, William B., II  
1st Bn, 128th FA

**LTC Heldenbrand, Dennis W.**  
CSM Coy, Eldon L.  
1st Bn, 129th FA

**COL Carpenter, Jasper**  
CSM Satchwell, Edgar L.  
138th FA Bde

**LTC Wright, Barry G.**  
CSM Hoffman, William F.  
1st Bn, 623d FA

**COL Cox, Norman J.**  
CSM Fagala, Robin F.  
142d FA Bde

**LTC Ross, G. Michael**  
CSM Kelly, Clarence H.  
1st Bn, 142d FA

**LTC Graves, Russell D.**  
CSM Branch, Gary D.  
2d Bn, 142d FA

**COL Davies, James R.**  
CSM Hurney, Richard J.  
147th FA Bde

**LTC Bray, Robert T.**  
CSM Aiken, Robert J.  
1st Bn, 147th FA

**LTC Hawley, Spencer L.**  
CSM Leonard, Thomas D.  
2d Bn, 147th FA

**COL Richardson, Henry B., Jr.**  
CSM Smith, James D.  
151st FA Bde

**LTC Gordon, Ronnie E.**  
CSM Herndon, Charles R.  
3d Bn, 178th FA

**LTC McCoy, John W., Jr.**  
CSM Ward, Franklin P.  
4th Bn, 178th FA

**COL Perry, Gerald L.**  
CSM Lara, Ysabel  
153d FA Bde

**COL Tyson, John M.**  
CSM Rowan, Thomas D.  
169th FA Bde

**MAJ(P) Beers, John K.**  
CSM Holt, Larry D.  
1st Bn, 157th FA

**LTC Loftus, Cory L.**  
CSM Lattone, Joseph A.  
2d Bn, 157th FA

**COL Moore, William R.**  
CSM McDaniel, John C., Jr.  
196th FA Bde

**LTC Harris, Robert A.**  
CSM Pratt, Robert R.  
1st Bn, 115th FA

**LTC Miller, Lonnie R.**  
CSM Stevens, Barrett M.  
2d Bn, 115th FA

**LTC Armour, Michael D.**  
CSM Turner, William B., Jr.  
3d Bn, 115th FA

**LTC Jones, Walter M.**  
CSM Gentry, Gary J.  
1st Bn, 181st FA

**LTC(P) Aubin, John P.**  
CSM Crotto, Gregory H.  
197th FA Bde

**LTC Scogin, Travis F.**  
CSM O'Brien, John B.  
1st Bn, 172d FA

**MAJ(P) Dupuis, Donald R.**  
CSM Starr, John D.  
2d Bn, 197th FA

**COL Farris, Joe P.**  
CSM Cowley, Gerald R.  
631st FA Bde

**LTC Willingham, Joe D.**  
CSM Cummins, Anclé W.  
1st Bn, 114th FA

### Division Artilleries

**COL Fry, Alan K.**  
CSM Nett, David L.  
28th IN Div (Mech) Arty

**LTC Golden, Paul D.**  
CSM Houston, David J.  
1st Bn, 107th FA

**LTC Walker, Martin H.**  
CSM Buch, Howard W., Jr.  
1st Bn, 108th FA

**LTC Scott, Mark W.**  
CSM Vonstein, Dale T.  
1st Bn, 109th FA

**COL Stevens, Wayne S.**  
CSM Sparkman, Miles E., III  
29th IN Div (L) Arty

**MAJ Graf, Donald M., Jr.**  
CSM Forrester, Clarence O.  
2d Bn, 110th FA

**LTC Gilliam, Dabney T., Jr.**  
CSM Glazener, Edwin H.  
1st Bn, 246th FA

**LTC Caporizo, James P., III**  
CSM Duddie, Joseph, Jr.  
2d Bn, 192d FA

**COL Trost, Jon L.**  
CSM Peterson, Leslie D.  
34th IN Div (Mech) Arty

**LTC Disher, Gregory R.**  
CSM Shapiro, Marc O.  
1st Bn, 120th FA

**LTC Kautt, William J., III**  
CSM Beranek, Steven W.  
1st Bn, 125th FA

**MAJ(P) Bargfrede, Craig**  
CSM Peters, David B.  
1st Bn, 194th FA

**COL Tritsch, Thomas M.**  
CSM Wright, David L.  
35th IN Div (Mech) Arty

**LTC Kelly, Kenneth E.**  
CSM Middleton, William E., Sr.  
2d Bn, 122d FA

**LTC Nicholas, Robert M.**  
CSM Supplee, James L.  
2d Bn, 138th FA

**LTC Stewart, James M.**  
CSM Stevens, George E.  
1st Bn, 161st FA

**COL Montgomery, Michael B.**  
CSM Shelton, Joseph D.  
38th IN Div Arty



**LTC Purtee, David E.**  
CSM Wierman, Michael L.  
1st Bn, 119th FA

**LTC Halle, Albert, III**  
CSM Payne, Thomas B.  
1st Bn, 134th FA

**LTC White, James R.**  
CSM Nicholson, Jerry D.  
3d Bn, 139th FA

**COL Kelley, William J., Jr.**  
CSM Andrews, Gary W.  
40th IN Div (Mech) Arty

**LTC Bungarden, John R.**  
CSM Duran, Jesse  
1st Bn, 143d FA

**LTC Gee, David W.**  
CSM Pointer, John W.  
1st Bn, 144th FA

**LTC Soden, Rodger R.**  
CSM Elifritz, James R.  
2d Bn, 180th FA

**COL Russell, Edward H.**  
CSM Blevins, Johnny L.  
42d IN Div (Mech) Arty

**LTC Sammartano, Gaetano V.**  
CSM Engler, Paul D.  
1st Bn, 101st FA

**LTC Overton, Clyde L., Jr.**  
MSG Revera, Rene  
1st Bn, 258th FA

**LTC Watson, Robert E.**  
CSM Newman, Frank T., Jr.  
3d Bn, 112th FA

**COL Ortiz, Victor M., Jr.**  
CSM Dean, Herbert D.  
49th AR Div Arty

**LTC Hawkinson, David D.**  
CSM Rigsby, Hulen T., III  
1st Bn, 133d FA

**LTC Kohlhoff, Kris F.**  
CSM Peterson, John  
3d Bn, 133d FA

**LTC Beam, Michael A.**  
CSM Benner, Gerald E.  
4th Bn, 133d FA

#### Separate Units

**LTC McCoy, Matthew A.**  
CSM Campbell, Steven F.  
1st Bn, 86th FA

**LTC Pappas, Gary A.**  
CSM Sampson, Richard M.  
1st Bn, 102d FA

**LTC Garren, Terrell N.**  
CSM Travis, Ronald K.  
1st Bn, 113th FA  
(30th Sep Mech Bde)

**LTC Bailey, Larry J.**  
CSM Marlow, Johnny N.  
2d Bn, 114th FA  
(155th Sep AR Bde)

**LTC Malloy, John M.**  
CSM Bateman, James M.  
2d Bn, 116th FA  
(53d Sep IN Bde)

**LTC Thornhill, Columbus L.**  
CSM Danley, Dwight L.  
3d Bn, 116th FA

**LTC Pyron, Walter L.**  
CSM Jackson, Charles R.  
1st Bn, 117th FA\*

**LTC Chandler, Robert J., Jr.**  
CSM Pike, Eddie W.  
2d Bn, 117th FA  
(31st Sep AR Bde)

**LTC Harmon, Blake L.**  
CSM Snyder, Pugh K.  
3d Bn, 117th FA

**LTC Williams, Francis B., III**  
CSM Ray, Claude E., III  
1st Bn, 118th FA  
(48th Sep Mech Bde)

**LTC Kemp, Neal W.**  
CSM Sanders, Ralph A.  
2d Bn, 123d FA

**LTC Young, Walter F.**  
CSM Dagley, Joe P.  
3d Bn, 123d FA

**LTC Hennigan, John R., Jr.**  
CSM Tyrrell, Patrick J.  
1st Bn, 141st FA  
(256th Sep Mech Bde)

**LTC Wright, James A.**  
CSM Culhane, Frank  
2d Bn, 146th FA  
(81st Sep Mech Bde)

**LTC Flynn, Fred V., Jr.**  
CSM Autenrieth, Robert E.  
1st Bn, 148th FA  
(116th Sep AR Bde)

**LTC Weissingner, Jerrold D.**  
CSM Parsons, Jackie P.  
2d Bn, 150th FA

**LTC Zieska, Kenneth W.**  
CSM Wog, Richard H.  
1st Bn, 151st FA

**LTC Boyles, Brent M.**  
CSM Small, Gregory R.  
1st Bn, 152d FA

**LTC Giacumo, Robert L.**  
CSM Hoetker, John A.  
1st Bn, 156th FA  
(27th Sep IN Bde)

**LTC Anderson, Clifton K.**  
CSM Langley, Alvin D.  
1st Bn, 160th FA  
(45th Sep IN Bde)

**LTC Rivera, Agustin**  
CSM Otero, Luis A.  
1st Bn, 162d FA

**LTC Rivera, Edwin I.**  
CSM Soto, Juan A.  
2d Bn, 162d FA  
(92d Sep IN Bde)

**LTC Alfonso, Ivan**  
CSM Arocho, Hector  
3d Bn, 162d FA

**MAJ(P) Cheeseman, Nicholas D.**  
CSM Carlile, Daniel E.  
1st Bn, 163d FA  
(76th Sep IN Bde)

**LTC Fudger, Wesley J.**  
CSM Sexton, Jimmie R.  
1st Bn, 178th FA  
(218th Sep Mech Bde)

**MAJ Wodash, Donald L.**  
CSM Gates, James A.  
1st Bn, 180th FA  
(11th ACR)

**LTC Meyers, Berri K.**  
CSM Young, Jacob  
1st Bn, 182d FA

**LTC Holland, Richard E.**  
CSM St. Clair, Patrick S.  
1st Bn, 201st FA

**LTC Walker, Donald P.**  
CSM Piedra, Abraham A.  
1st Bn, 202d FA

**LTC Duncan, David S.**  
CSM Powell, Larry N.  
1st Bn, 206th FA  
(39th Sep IN Bde)

**LTC Dudney, Lawrence E., Jr.**  
CSM Hewell, Gerald M.  
1st Bn, 214th FA

**LTC Webber, Craig A.**  
CSM Smith, Joseph A.  
2d Bn, 218th FA  
(41st Sep IN Bde)

**LTC Keolanui, Stanley R., Jr.**  
CSM Inouye, Robert N.  
1st Bn, 487th FA  
(29th Sep IN Bde)

\*All battalions in this category are corps-level assets or, as noted, DS to 16 separate brigades or the 11th ACR at the NTC.

### Army Reserves

#### Training Brigade

**COL Shafer, Robert L.**  
CSM Carter, Garry L.  
1st Bde (FA), 95th Div (IT)

**LTC Hatfield, Mark C.**  
CSM Coleman, Eddie  
1st Bn, 354th FA (Tng)

**LTC Strickland, Tracy L.**  
1SG Becerra, Jose G.  
2d Bn, 354th FA (Tng)

**LTC Foust, Daniel G.**  
CSM Donahue, Robert F.  
1st Bn, 355th FA (Tng)

**LTC Benoit, Phillip B.**  
CSM Brumley, Benney J.  
2d Bn, 355th FA (Tng)

**LTC Gebhardt, Richard P.**  
CSM Wedding, Dale T.  
3d Bn, 355th FA

### Marines

**Col Click, Richard L.**  
SgtMaj Frank, Joseph J.  
10th Marines

**LtCol Pace, James A.**  
SgtMaj Adams, Charles E., Jr.  
1st Bn, 10th Mar

**LtCol Christie, Richard A.**  
SgtMaj Morris, Charles R.  
2d Bn, 10th Mar

**LtCol Dallas, George M.**  
SgtMaj Thompson, Lawrence E.  
3d Bn, 10th Mar

**LtCol Dozier, Robert D.**  
SgtMaj White, Michael O.  
5th Bn, 10th Mar

**Col Weber, Joseph F.**  
SgtMaj Towry, Robert L.  
11th Marines

**LtCol Karcher, David P.**  
SgtMaj Veator, Donald G.  
1st Bn, 11th Mar

**LtCol Marletto, Michael P.**  
SgtMaj Rollins, David S.  
2d Bn, 11th Mar

**LtCol Pino, Eugenio G.**  
SgtMaj Guerra, Dennis  
3d Bn, 11th Mar

**LtCol Caspers, Jeffrey L.**  
SgtMaj Anderson, Charles D.  
5th Bn, 11th Mar

**Col Kelly, Thomas R.**  
SgtMaj Mayhue, C.F.  
12th Marines

**LtCol Lance, Joseph M.**  
SgtMaj Mendiola, John M.  
1st Bn, 12th Mar

**LtCol Barile, David J.**  
SgtMaj Pulley, Frankie E.  
3d Bn, 12th Mar

**Col Garner, John M.**  
SgtMaj Martin, Willie J.  
14th Marines

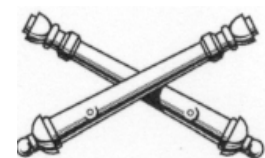
**LtCol Giron, Bruce**  
SgtMaj Ryan, Oliver A.  
1st Bn, 14th Mar

**LtCol Workman, Mark A.**  
SgtMaj Martin, Marvin E.  
2d Bn, 14th Mar

**LtCol Phillips, Hayden R.**  
SgtMaj Cianchetta, Mario  
3d Bn, 14th Mar

**LtCol Gilbert, John T.**  
SgtMaj Lawson, George R.  
4th Bn, 14th Mar

**LtCol Foulk, Robert E.**  
SgtMaj Plymale, Dennis J.  
5th Bn, 14th Mar







# US Total Army Personnel Command

As of 1 November 1997

## Field Artillery Assignment Branches

### Officers

#### Field Artillery Branch Chief

COL Gerard M. Walsh  
walshg@hoffman-emh1.army.mil

#### Colonels Division/Colonel Assignments

LTC Leo S. Peterson  
petersl0@hoffman-emh1.army.mil  
Janet M. Petties  
pettiesj@hoffman-emh1.army.mil

#### Lieutenant Colonel Assignments

MAJ(P) Kenny R. Dahl  
dahlk@hoffman-emh1.army.mil  
Janet M. Petties  
pettiesj@hoffman-emh1.army.mil

#### Major Assignments

MAJ Thearon M. Williams  
williat0@hoffman-emh1.army.mil  
CPT(P) Gregory A. Olson  
olsong@hoffman-emh1.army.mil  
Joyce Queen  
queenj@hoffman-emh1.army.mil

#### Captain Assignments (Branch Qualified)

CPT(P) John H. McPhaul, Jr.  
mcphaulj@hoffman-emh1.army.mil  
CPT William L. Richardson  
richardw@hoffman-emh1.army.mil  
Jay K. Harmon  
harmonj@hoffman-emh1.army.mil

#### Captain Assignments/FAOAC (Non-Branch Qualified)

CPT Clay S. Scherer  
schererc@hoffman-emh1.army.mil  
Jay K. Harmon  
harmonj@hoffman-emh1.army.mil

#### Functional Area Designation/Professional

CPT Clay S. Scherer  
schererc@hoffman-emh1.army.mil

#### Pre-Command Course

Janet Petties  
pettiesj@hoffman-emh1.army.mil

#### Lieutenant Accessions/Assignments OBC

Mary E. Patrick  
patrickm@hoffman-emh1.army.mil  
Grace M. Toler  
tolerg@hoffman-emh1.army.mil

#### Warrant Officer Career Manager Assignments

CW4 Ronnie R. Mathews  
mathewsr@hoffman-emh1.army.mil

#### Addresses and Telephone Numbers

#### Colonels to Lieutenants

Commander, PERSCOM  
ATTN: TAPC-OPE-F  
200 Stovall Street, Suite 4N51  
Alexandria, VA 22332-0414  
Telephone DSN 221-0116  
Commercial (703) 325-0116  
FAX: DSN 221-5463  
Commercial FAX (703) 325-5463

#### Warrant Officers:

Commander, PERSCOM  
ATTN: TAPC-OPW-FA/AD  
200 Stovall Street, Suite 6N07  
Alexandria, VA 22332-0420  
Telephone: DSN 221-5240/7837  
Commercial (703) 325-5240/7837  
FAX: DSN 221-5232  
Commercial FAX (703) 325-5232

#### Officers' Microfiche Records.

Request your microfiche in writing; include your name, rank, SSN and address and sign the request. Mail to:

Commander, PERSCOM  
ATTN: TAPC-MSR-S  
200 Stovall Street  
Alexandria, VA 22332-0444  
Telephone DSN: 221-9426  
Commercial (703) 325-9426  
FAX DSN: 221-5204  
Commercial FAX: (703) 325-5204

### Enlisted

#### Field Artillery Branch Chief

LTC Timothy G. Konkus

**Branch Sergeant Major**  
SGM Earnest C. Bridges

#### Senior Career Advisor 13B (SFC)/13Z (1SG/MSG)/Drill Instructor

MSG Cesar W. Guerrero  
Lucy Salley

#### 13B (PVT thru SSG)

SFC Raymond L. Drinkard  
Tina M. Jacobs

#### 13C/13E/13F

SFC Alan H. Williams  
Kim D. Stewart

#### 13R, 82C and 93F

SFC Alvin E. Melton  
Beverly C. Younger

#### 13M/13P/Recruiting Duty

SFC Steven R. Shaner  
Beverly C. Younger

#### ANCOC/BNCOC/Service Schools

Mr. William E. Wagner

#### Address and Telephone Numbers

Commander, PERSCOM  
ATTN: TAPC-EPK-F  
2461 Eisenhower Avenue  
Alexandria, VA 22331-0452  
Telephone: DSN 221-1585  
Commercial (703) 325-1585  
FAX: DSN 221-4533  
Commercial FAX (703) 325-4533  
E-Mail: epfa@hoffman-emh1.army.mil  
1-800-394-3763 (1-800-FYI-EPMD)

This toll free number provides a Help Menu with specifics when you punch in your SSN.

#### Enlisted Microfiche Records

To request your microfiche, call the Enlisted Records Evaluation Center at Fort Benjamin Harrison, Indiana, at DSN 699-3714 or Commercial (317) 542-3714. Follow the computerized instructions; the microfiche will automatically be mailed to your duty station address.

## I Corps Artillery

I Corps Arty, headquartered in Salt Lake City, Utah, continues to provide Total Force fire support to I Corps—*America's Corps*. Realistic training and a continuing focus on readiness were our constant goals for the year. I Corps Arty remains battle-focused and continues to train to deploy and fight in any contingency, anywhere, joint and combined.

**Utah ARNG.** In addition to its warfighting mission, I Corps Arty assumes an important and active role in the Utah ARNG. It serves as a major subordinate command (MACOM) and provides administrative, logistical, operational and training support for our two in-state battalions: 1-145 FA (155 T) in Salt Lake City and 2-222 FA (155 SP) in Cedar City. We also support B/1-148 FA (155 SP) and FISTs, located in Smithfield and Logan, part of the 1-148 FA headquartered in Idaho.

I Corps Arty continues to be a leader in providing training assistance, guidance and coordination for a major portion of the Reserve Component FA brigades. These units and their associated FA battalions are located throughout the US. Participation with these brigades during exercises and training conferences continues to be one of the highlights of I Corps Arty's responsibilities. *America's Corps Artillery* is proud to be associated with these high-quality soldiers who are so committed to the defense of our country.

### I Corps Fire Support

**Conference.** January 1997 brought the I Corps fire support community together for the 15th Annual Fire Support Conference at Salt Lake City. Lieutenant General C. Glen Marsh, I Corps Commander, and Colonel Howard E. Baysinger, Jr., I Corps Arty Commander, opened the conference by presenting their command guidance and direction for the Corps and its fire support units. Their guidance set the standards for productive, mission-oriented training for the upcoming year.

Other presenters included the Adjutant General for Utah, Major General James M. Miller, the Commandant of the FA School, Major General Randall L. Rigby; Fifth Army, First Regional Training Brigade, Combat Integration; and I Corps' G3, G2 and our Deputy Fire Support Coordinator (DFSCOORD).

In attendance were representatives from National Guard Bureau in Washington, DC; the FA School and III Corps Arty, both from Fort Sill, Oklahoma; the 40th Mech Div Arty, CAARNG; 57th FA Brigade, WIARNG; 103d FA Brigade, RIARNG; 113th FA Brigade, NCARNG; 115th FA Brigade, WYARNG; 135th FA Brigade, MOARNG; 142d FA Brigade, AKARNG; 153d FA Brigade, AZARNG; 631st FA Brigade, MSARNG; representatives from the 81st Mech Brigade, WAARNG; 311 COSCOM, CAARNG; Readiness Group Salt Lake City and Denver and many FA battalions. The

conference provided an excellent opportunity for command interface with the fire support community.

**Training the Corps Arty.** I Corps Arty began the Training Year in October by participating in the I Corps BCTP Warfighter Cascade Peak at Fort Lewis, Washington. This was an American, British, Canadian and Australian (ABCA) multi-national exercise. Our headquarters participated with full equipment and personnel, verifying its ability to deploy successfully. By employing advanced techniques for fighting the corps deep battle, we were instrumental in the OPFOR's overwhelming defeat. The Corps Arty significantly influenced the battle by firing ATACMS at high-payoff targets deep in the corps and division zones. The Corps Arty was also responsible for planning, coordinating and executing all suppression of enemy air defenses (SEAD) and joint SEAD missions in support of the corps' deep attacks.

*America's Corps* was supported in the ABCA exercise by the deployments and superb operations of six FA brigades: 115th; 135th; 147th, SDARNG; 153d; 169th, COARNG; and 209th, NYARNG.

In January, I Corps Arty returned to Japan and Fort Lewis for another successful Yama Sakura exercise supported by the 115th, 147th, 153d and 169th FA Brigades. Then it was back to Fort Lewis to support Tempo Brave and to Thailand to support Cobra Gold, both yielding excellent joint operations training.

With summer came the Desert Strike exercise at Dugway Proving Ground with the 103d FA Brigade, which deployed its headquarters to train with our Utah FA battalions in a very successful operation. In August, the 113th FA Brigade HQ with its 5-113 FA (155-SP) deployed to Dugway for the Global Apache exercise. A headquarters slice from I Corps also deployed to operate with

the FSE in the deep operations coordination cell (DOCC) training in support of the exercise. Global Apache was a joint exercise held with the Air National Guard and Air Force with operations centered on Dugway Proving Ground and Fort Drum, New York. The exercise focused on deep operations with real-time management of air assets and worked all the sensor-to-shooter links within the Corps area of operations. The distributed exercise included a vast array of sensors against emitters deployed on the ground to replicate enemy units being portrayed in the joint conflict model (JCM) that was operated at Fort Lewis. The live emitters enabled I Corps Arty to assess the effectiveness of the sensor-to-shooter process.

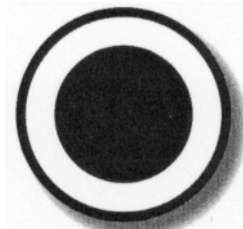
*America's Corps Artillery* actively supported brigade/battalion battle simulation (BBS) exercises with four of its FA brigades. These were distributed exercises with the simulation operated from Fort Lewis and the brigades at home station, resulting in very valuable training at reduced costs.

I Corps Arty is leaning forward and ready to field AFATDS at the beginning of the next training year. It will replace the initial fire support automation system (IFSAS) and keep the unit on the cutting edge of FA technology. I Corps Arty will be the first National Guard unit fielded the new AFATDS.

**Fusing the Total Force.** 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 worldwide. I Corps Arty is committed to meeting the challenge and fusing the Total Force into one. *America's Corps Artillery!*



A 2-222 FA howitzer from the Utah Army National Guard prepares to occupy a new firing position.



## III Corps Artillery

The III Armored Corps Artillery, Fort Sill, Oklahoma, is *America's Premiere Power Projection Force*. This year, the Corps Arty increased its lethality with the activation of 231 FA Det (TA) and the transition of two cannon battalions to Paladin. The largest artillery organization in the Army now consists of four FA brigades, 12 artillery battalions (nine MLRS and three Paladin), a maintenance battalion and a combat support battalion. Another initiative was the fielding of the advanced FA tactical data system (AFATDS), further enhancing our ability to command and control fires on the battlefield.

Key training events during the year included the 1st Cavalry Division BCTP Warfighter and 4th Infantry Division's Advanced Warfighting Experiment (AWE) at Fort Hood, Texas, with the awesome firepower of the Corps Arty critical to the success of both exercises. Off-post deployments continued this year to White Sands Missile Range, New Mexico; Twentynine Palms, California; the NTC; Fort Chaffee, Arkansas; Fort Bragg, North Carolina; Fort Stewart, Georgia; and Pinyon Canyon, Colorado.

**17th FA Brigade.** The *Thunderbolt Brigade* completed another year of challenging training. The headquarters supported the 1st Cav Warfighter with superb deep fires and then participated in a series of exercises in Korea. The brigade took part in the 2d Infantry Division's reception, staging, onward movement and integration (RSOI); deployed leaders to support Korea's Gateway Exercise; and successfully fought the counterfire fight during Ulchi Focus Lens 97.

3-18 FA (155 SP) began the year fielding Paladin with certification and an AEE in June. The battalion then deployed its operations and intelligence (O&I) section and a firing battery to the NTC in support of 1st Cav's 1st Brigade. 5-3 FA (MLRS) demonstrated its warfighting skills by providing devastating counterfires during the 1st Cav Warfighter and then deployed to White Sands where it conducted its AEE. 1-12 FA (MLRS) conducted battery AEEs at Fort Sill in January and February and



C/2-5 FA conducts live-fire training at Fort Sill in preparation for providing fire support to the 3d Armored Cavalry Regiment during NTC Rotation 98-01 in October 97.

then deployed to White Sands where it conducted an AEE. At Fort Bragg, it supported the EXEVAL of 3-27 FA (MLRS). 1-12 FA also won the prestigious DA Connolly Award for Excellence in Dining Facility Operations.

**75th FA Brigade.** 1997 was another good year for the *Diamond Brigade*. During the 1st Cav Warfighter, the brigade rendered the OPFOR combat ineffective with devastating counterfires. The brigade also supported the 1st Cav as the counterfire headquarters during Ulchi Focus Lens 97 with similar results. During the brigade's annual Taut Lanyards FTX, the 75th conducted a realistic rehearsal of a major contingency plan scenario, including its first employment of a Paladin battalion in the MLRS force protection role. Key 75th leaders also participated in the Gateway Exercise in Korea.

1-17 FA (155 SP) began the year fielding Paladin with a successful AEE in May. It also deployed its O&I section to the NTC in a reinforcing role for the 1st Cav. 6-27 FA (MLRS) conducted the first deployment, live-fire and AEE by an active duty MLRS battalion at Fort Chaffee in April. In September, it deployed to Twentynine Palms to support the 11th Marines' Desert Fire Exercise (DEFIREX). 6-27 FA Redlegs also conducted an ATACMS Block IA live-fire at White Sands and participated in the first test of the M270A1 improved launcher. 1-77 FA (MLRS) deployed its O&I section

to the NTC in January to support the close fight with counterfire, raids and SEAD. In September, the battalion deployed to White Sands and executed a superb AEE.

**212th FA Brigade.** The *Courage and Command Brigade* had an eventful year. The brigade supported the 3d Infantry Division Warfighter at Fort Stewart by delivering deadly, effective counterfires. It refined MLRS and Paladin TTP in an integrated counterfire exercise during the 3d Division's CPX. Key leaders assisted with the AT for 1-201 FA (WVARNG) of the 142 FA Brigade and participated in the 42d Infantry Division (Mech) (HQ, MAARNG) ramp-up exercise.

2-5 FA (155 SP) had a busy 1997. In February, the battalion supported the 3d Division Warfighter and participated in NTC rotation 97-05. In July, the battalion took part in Rifles Rampage with the 3d ACR at Pinon Canyon and then was DS to the 3d ACR for NTC Rotation 98-01. 2-18 FA (MLRS) deployed to Fort Chaffee where it conducted battery AEEs and later to White Sands for its battalion AEE. The battalion also live fired an ATACMS Block IA at White Sands. 2-18 spent much of the remainder of the year providing AEE evaluator support for four other MLRS battalions. 6-32 FA (MLRS) deployed to Twentynine Palms in March and supported the 11th Marines' DEFIREX 2-97. In October, the battalion deployed its O&I section with a firing battery

to support the 3d ACR at the NTC.

**214th FA Brigade.** 1997 was one of the busiest years in history for the Army's largest FA brigade. The *Naturally We Lead Brigade* spent the year conducting many training exercises and deployments to ensure readiness as part of America's Power Projection Army.

All three MLRS battalions deployed to White Sands. The brigade headquarters deployed with 2-4 FA and 3-13 FA in February and administered battalion ARTEP-based EXEVALs. Both battalions deployed with the brigade HQ to Fort Hood in May, September and November as the reinforcing brigade to the 4th Infantry Division AWE. 1-14 FA participated in an NTC rotation in June and conducted battery AEEs at White Sands in September. In August, the brigade took part in Ulchi Focus Lens.

As always, the outstanding 19th Maintenance Battalion and the 47th Combat Support Battalion (Prov) supported not only the brigades, but the rest of Fort Sill as well. Both battalions deployed elements to White Sands for the AEEs in addition to providing personnel and equipment for missions worldwide. The 47th also conducted Expert Field Medical Badge training and testing.

As further evidence of its diversity, the brigade stood ready to deploy up to 1,100 soldiers in September to support wildfire fighting operations in the continental US.

The accomplishments of the III Armored Corps Artillery's 8,000 (+) soldiers demonstrate our enormous capabilities and contributions to the Total Force. When the nation requires firepower and professionalism, **Phantom Firepower** is ready!



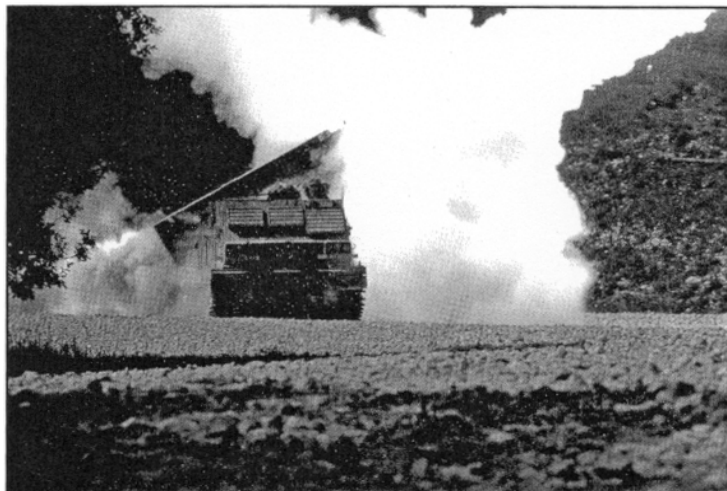
## V Corps Artillery

**V** Corps Artillery (VCA) in Germany—the only forward deployed Corps Artillery in the US Army—perseveres through decreasing resources and increasing commitments to continue its tradition of providing fire support for contingency operations; conducting joint, multinational training; and continuing as the leader of deep operations in the artillery community.

Training activities during the year focused on resharpening deep attack competencies, working through issues inherent in joint operations and joint fires, providing conventional fire support and continued support of operations in Bosnia.

**Fire Support.** VCA deployed its exportable FSE to Bosnia to provide fire support planning and coordination to the 11th Aviation Brigade along air routes and checkpoints and to conduct weapons storage site inspections and other critical operations. The FSE also deployed to Africa in support of the Southern European Task Force (SETAF)-led joint task force (JTF) noncombatant evacuation operations (NEO) in Zaire. VCA fire supporters developed fire support plans and products with a focus on nonlethal fires, controlled joint fire support assets and coordinated with other nations in the joint operations area. This opportunity allowed the FSE to gain valuable experience working with the State Department and other nations participating.

In Germany, VCA performed fire support planning and coordination in Exercises Vigilant Lion and Island Thunder. During Vigilant Lion at the CMTC/Grafenwoehr Training Area in October 1996, VCA supported a SETAF-led JTF focusing on nonlethal fires and targeting. For Island Thunder in Sardinia, Italy, VCA planned and conducted joint/combined live-fire exercises with assets from all services, to include the Italian Army. The challenges and advantages of employing multiple fire support assets simultaneously (i.e., cannons, AV8s, F16s, Cobras, mortars, etc.) during this



2/B/1-27 FA MLRS firing at Grafenwoehr. (Photo by Major Charles Bush)

exercise demonstrated that VCA can undoubtedly perform its mission with increased confidence.

**Deep Operations.** It had been little more than a year since VCA performed deep operations. Thus, it began the year in Babenhausen, Germany, with exercise Sandstorm I in January. Sandstorm I was created to retrain VCA in conducting deep operations. Two months later, VCA returned to Grafenwoehr to meet the challenges of the Battle Command Training Program (BCTP) in Victory Strike, a Corps and 1st Armored Division War-fighter exercise. This exercise marked the first time the Corps deep operations coordination cell (DOCC) and associated Reserve Component units were brought together to perform deep operations. VCA became the joint fires element (JFE) supporting the V Corps-led JTF during this exercise. This was a seemingly insurmountable task because VCA had not performed deep operations in more than a year; however, VCA fire supporters worked the coordination and joint fire support issues that arose during the Warfighter exercise to a successful conclusion.

Because of Victory Strike, VCA was set up for success in joint exercises such as Trailblazer and Agile Lion. Trailblazer, a US Air Force in Europe (USAFE)-led JTF exercise, gave VCA and

USAREUR's battlefield coordination element (BCE) the opportunity to learn valuable lessons from the Air Force, lessons that are vital to deep operations. Happy 50th Birthday, Air Force!

In Agile Lion, a Marine-led JTF exercise, VCA focused on humanitarian assistance and disaster relief. VCA was joined by nongovernmental organizations (NGOs) and US and foreign diplomatic personnel to form a cohesive team and ensure a smooth, successful operation.

The 41st FA Brigade, *Railgunners*, supported Victory Strike by taking control of the counterfire mission for the Corps. Recently, the 41st FA Brigade, along with its German and Italian partnership units, participated in 1-27 FA's (*Gridsmashers*) grueling 10-day ARTEP. They focused on fires and force protection. III Corps Artillery and the 1st Armored Division Artillery provided observer/controller support for the exercise. The *Gridsmashers* successfully completed their challenging ARTEP/CMTC rotation at Grafenwoehr firing more than 160 rockets.

**Support for Operations Joint Endeavor/Guard and Partnership for Peace.** VCA participated in Mountain Eagles IV and V, which were part of the predeployment mission rehearsal for Bosnia. FCXs were conducted, including multiple JAAT

operations to validate the task forces' ability to synchronize firepower prior to their deployment to Bosnia.

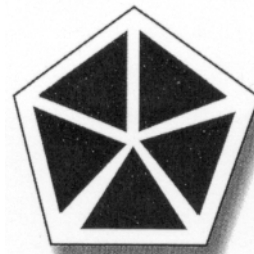
The Partnership for Peace exercise in Bulgaria was a multinational training event that included live fire with other nations' small arms. This NATO peacekeeping exercise included 41st Brigade sponsorship of units from the Tennessee Army National Guard. The Brigade sponsored and validated FSEs and target acquisition batteries (TABs), facilitating their deployment to Bosnia.

**Other Events.** VCA participated in Exercise Lionsword, a multinational task force led by the United Kingdom. The VCA response cell replicated a US Armored Division and gained experience working with British forces.

Unfortunately, VCA witnessed the inactivation of A/25 FA (TA). A/25 deployed the entire battery to Tuzla, Bosnia, last year in December in support of Operation Joint Endeavor. Upon its return, the battery received the inactivation notice and performed the ceremony in August. The actual inactivation occurred the following month.

August also saw the beginning of new equipment training (NET) for the Army's advanced Field Artillery tactical data system (AFATDS) as VCA became the first unit in Europe equipped with the system.

VCA continues to provide professional, flexible and agile fire support coordination with lethal and nonlethal fires under the most adverse of conditions to accomplish all missions. V Corps Artillery, as its motto states, remains **Steadfast and Strong!**



## XVIII Airborne Corps Artillery

The XVIII Airborne Corps Artillery at Fort Bragg, North Carolina, continues to provide fire support to the Army's strategic contingency force. The Corps Artillery headquarters, 18th Field Artillery Brigade (Airborne) — three M198 battalions, one MLRS battalion and two Field Artillery target acquisition detachments stand ready to deploy within 18 hours of notification by land, sea or air to fight and win anywhere in the world.

The Army's only contingency, rapidly deployable Corps Artillery executed its METL tasks in a high OPTEMPO environment. The XVIII Airborne Corps Artillery continues to ensure its ability to deploy in support of any unit to any place and at any time by conducting tough, realistic training in airborne, air assault, rail and sea deployments.

During the past 12 months, the Corps Artillery participated in numerous joint and service component exercises. The XVIII Airborne Corps was the joint task force (JTF) headquarters in Unified Endeavor 97-1, a US Atlantic Command (USACOM)-sponsored Tier III exercise. Our FSE performed duties as the joint force fires coordinator (JFFC). The FSE coordinated and synchronized joint fires for the commander of the JTF.

The XVIII Airborne Corps was the army force (ARFOR) in Coherent Defense 97, a USACOM-directed joint exercise designed to demonstrate theater

missile defense (TMD) for the Chairman of the Joint Chiefs of Staff. The Corps Artillery used the demonstration as a training opportunity to refine tactical ballistic missile and joint fires TTPs, coordinate and process the attack of time-sensitive targets and improve the automated target nomination process with the joint force air component commander (JFACC).

Two of the major service component training exercises this year were the 3d Infantry Division's BCTP Warfighter Exercise in March at Fort Stewart, Georgia, and the 34th Infantry Division's BCTP Warfighter in August at Fort Leavenworth, Kansas. During the 3d Infantry Division's Warfighter, the Corps Artillery significantly influenced the battle by firing ATACMS at high-payoff targets (HPTs) deep into the corps and division zones in addition to planning, coordinating and executing all suppression of enemy air defense (SEAD)/joint-SEAD (JSEAD) missions in support of corps deep attacks. The 18th FA Brigade (Airborne) brilliantly executed its GS mission in support of the corps, allowing the 3d Infantry Division Artillery to focus on the close battle.

The Corps Artillery provided personnel and equipment support to deployed forces in Bosnia with the 18th Field Artillery Brigade's Meteorological Section and the 229th Aviation's Task Force Tiger FSE.

The 18th Field Artillery Brigade



Paratroopers from 1-321 FAR (Abn) execute a DZ mission.

Photo by Jonathan Kammen, Fayetteville, NC

had a tremendously successful training year. The brigade conducted various battery- and battalion-level EXEVALs, participated in divisional BCTP Warfighter exercises and deployed on a variety of other tactical and live-fire exercises. The brigade and battalions participated in Lightning Fire exercises (brigade live-fire exercises) and corps-initiated emergency deployment readiness exercises (EDREs). The EDREs involved everything from M198 howitzer heavy parachute drops with live-fire drop zone missions to deploying a MLRS battery and support elements via C5 Galaxy aircraft to Fort Bliss, Texas. This deployment culminated with an ATACMS live-fire at White Sands Missile Range in New Mexico. The flawless performance of all Corps Artillery units consistently validated their ability to deploy rapidly and decisively. The brigade deployed to the combat training centers providing reinforcing fires to the divisions' rotations, developing trust and confidence in the brigade's ability to provide timely, accurate fires for light and mechanized maneuver forces.

Corps Artillery is the Field

Artillery proponent for two force modernization programs: the lightweight 155-mm howitzer in 3-321 FA and the high-mobility artillery rocket system (HIMARS) in 3-27 FA. These advanced fire support systems will provide light forces a quantum leap in deployability while maintaining a timely and lethal fires capability.

The Corps Artillery continues to lead the way as the Army's only airborne corps artillery. We remain *America's Contingency Corps Artillery*, with outstanding, dedicated soldiers and families ready to deploy, fight and win anywhere on a moment's notice—**Thunderbolt! Air Assault! Steel Rain! Airborne!**



Photo by Jonathan Kammen, Fayetteville, NC



## Field Artillery Training Command

The FA Training Command—the FA Training Center (FATC), NCO Academy and FA School—Fort Sill is responsible for the doctrine, organizations, training, leader development, materiel and soldier issues to ensure Army and Marine Redlegs deliver Cutting Edge Fires today and in the 21st century.

**Ensuring our Continued Success.** The FATC is the Army's premier training center. Our trainees' physical fitness test scores are well above the Army average with trainee performance improving by 76 percent. This year, we received 16,000 new recruits and transformed them into soldiers who will serve our country well into the next century.

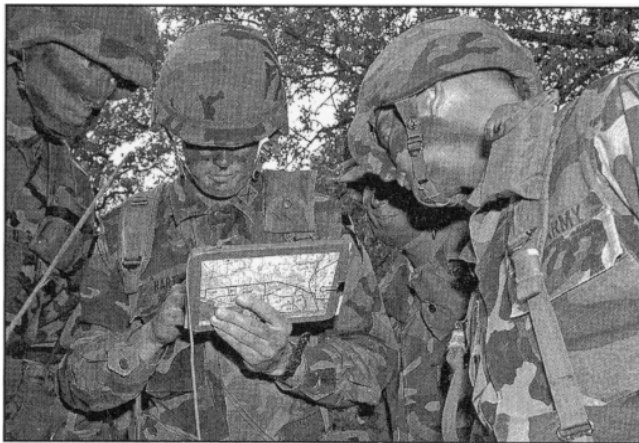
Based on field feedback, FATC leadership and training assessment tools have been designed that continually monitor trainee progress in soldier and cannoner skills. Most importantly, the FATC instills spirit, discipline and teamwork in our new Redlegs, ensuring they can win on tomorrow's battlefield.

The NCO Academy trained more than 1,500 students this year. Its PLDC classrooms were significantly upgraded for high-tech delivery and computer-based instruction—among the first such classrooms in the Army's NCO academies. Our Academy continues to take the Army lead in creating an environment that produces professionals to train, fight and lead.

The FA School is the center of gravity for the Training Command, the focal point for training officer and enlisted soldiers and Marines and developing warfighting requirements for the FA in Army XXI and beyond.

In April, we began a program to evaluate Janus simulations in enhanced classrooms for the FAOAC. This invaluable technology allows future FSOs, staff officers and battery commanders to plan, wargame and fight the battles of the future without leaving the classroom.

FAOBC began a new curriculum this year with wide acceptance. The instruction focuses lieutenants on the artillery systems and tasks required in their first units and incorporates more hands-on and FTXs. In addition, we introduced the new lightfighters LFCX in an FSO lane training scenario. The



FAOBC students in their new FSOLFCX lane training for lightfighters.

exercise was designed in conjunction with the JRTC and XVIII Airborne Corps Artillery to meet the fire support needs of our light forces.

The FA School is leading the Army in Classroom XXI, multimedia courseware development and distance learning. We have established multimedia and simulation enhanced classrooms. Our current paper-based training is being converted into multimedia modules. MOS 13B, 13E and 13F are completed, and 13M, 13C, 13P, 131A (warrant officer), FAOAC and Paladin New Equipment Training (NET) will be available to units in 1998.

Our state-of-the-art video teletraining capability reached out and trained soldiers in the Sinai, BNCO students at Fort Hood and Battle Staff NCO students from III Corps Arty and provided AFATDS sustainment training for the 1st Cavalry Division at Fort Hood. A prime application of our satellite video teletraining is for unit NET instead of deploying a NET team to each site. By the Year 2000, we'll be providing more than half the NET for AC and RC FA units around the world via distance learning.

The Training Command has gained many insights from the March 1997 Task Force XXI Advanced Warfighting Experiment (AWE) at the NTC. The Striker platoon was one of the AWE's high-end performers, giving the brigade commander lethal "eyes" forward. Striker is a platoon of six forward observation teams in HMMWV-based vehicles with

lightweight laser designator/rangefinders (LLDRs). Based on AWE results, the Striker platoon's vehicle garnered one of the top spots in the Army's Warfighting Rapid Acquisition Program (WRAP). Two other FA systems made the WRAP's top five: LLDR and the gun laying and positioning system (GLPS). All three are now fully funded Army programs.

As the Army's Number 1 land combat platform, Crusader will change cannon operations from Army XXI through Army After Next-forever. Crusader is the first system in the Army to capitalize on robotics technology with its automated reload/resupply. Combined with its information dominance, mobility and ability to fire 33 percent farther and five times faster than Paladin, Crusader will be a combat overmatch for any current or developmental howitzer system in the world.

We are continuing to develop combat systems and doctrine for our cutting edge future—for example, the high-mobility artillery rocket system (HIMARS), M270A1 MLRS improved launcher, AFATDS, Firefinder V8, Bradley FIST vehicle (BFIST), meteorological measuring set (MMS) and several new munitions. These munitions include SADARM, the Army's first truly smart munition; the developmental M982 projectile, providing the flexibility to deliver a variety of deadly submunitions at an extended cannon range; and the series of developmental ATACMS Block munitions coming on-board that sequentially extend

the range, precision and lethality of ATACMS, significantly expanding the missile's combat role.

**Preparing for the New Millennium.** The Training Command is preparing for the Division XXI AWE in November, matching the fully digitized 4th Infantry Division (Mech) EXFOR employing 21st century battle command, doctrine and systems against the BCTP's world-class OPFOR. The results of this AWE will significantly impact the design of the Army XXI division.

The AWE's Div Arty will have three Crusader battalions and an MLRS/TA command and attack battalion. Two FA brigades with two MLRS and one Crusader battalion each will reinforce the Div Arty. In its train-up for the AWE, the 4th Division leveraged a host of complementary weapons against deep armored formations, including our Crusader firing SADARM, the MLRS smart tactical rocket (MSTAR) and ATACMS Blocks I, IA, II (BAT) and IIA (BAT P<sup>3</sup>I). The Training Command will conduct "a full court press" in analyzing lessons learned during the Division XXI AWE and refining fire support for the first digital division.

Looking to 2025 and beyond, the Training Command is defining an overarching vision to guide the FA into the 21st century. Our goal is to transition the FA of Army XXI to a relevant FA force for Army After Next. This vision will be presented to the CG of TRADOC and the Vice Chief of Staff of the Army in November 1997 and serve as a centerpiece of the 9-13 February Senior Fire Support Conference at Fort Sill titled "Joint Fires for the 21st Century."

This year was very productive for the branch. We truly are postured to provide the 21st century joint force commander accurate, lethal and responsive fires... **The Cutting Edge.**



## 1st Armored Division

The 1st Armored Division Redlegs in Germany take pride in providing fire support for America's Tank Division.

This year, the Div Arty Headquarters returned from Bosnia and established the division rear operations center (DROC)

responsible for redeploying the Division. Also this year, 4-29 FA (*Iron Thunder*) and C/333 FA (*WolfPack*) reflagged to 4-27 FA (MLRS) and C/25 FA (TAB), respectively; and 2-3 FA moved from Kirchgoens to Giessen.

As part of an aggressive

recovery program, the Div Arty refocused training from peace enforcement to high-intensity operations, including honing tactical and technical skills in the Division and V Corps Warfighter Victory Strike at Grafenwoehr.

The battalions and separate batteries executed artillery tables and TOC exercises at Baumholder to refine their gunnery and maneuver skills in May.

A/94 FA (MLRS) and 4-27 FA conducted live-fire demonstrations for the Partnership for Peace visit of officers from Poland, the Czech Republic, Slovakia and Croatia. The Division FSE participated with II German Corps in a NATO deep operations exercise. 4-27 FA won the Excellence in Maintenance Award at the USAREUR level and was the Army's entrant in the DoD prestigious Phoenix

competition.

The last half of 1997 was fast-paced as the Div Arty headquarters returned to Bosnia to establish Force Field Artillery Headquarters "Steel Forward" for Operation Joint Guard. Elements from 2-3 FA and the 2d ACR will join their Russian and Turkish counterparts to provide fire support for 1st Armored Division Multinational Divisional (North) of the NATO Stabilization Force 2 (SFOR-2).

To complete the FY 97 training, A/94 FA participated in an artillery shoot with the German Army; 4-27 FA finished an aggressive CMTC rotation and deployed to Grafenwoehr for semiannual gunnery and support of its brigade; and 2-3 FA (-) ended a gunnery rotation to Grafenwoehr, deployed to Taszar, Hungary, and is executing intermediate staging base operations for the 1st AD's deployment.

This year was fast-paced and challenging. 1998 will prove no less important as the Div Arty redeploys from Bosnia and fields Paladin. **Iron Steel!**



Elements of 1st Armored Division Artillery complete recovery operations after their historic mission to Bosnia-Herzegovina. (Photo by Gia Mangino)

## 1st Cavalry Division Artillery

Redlegs of the 1st Cavalry Division Artillery (*Red Team*), Fort Hood, Texas, remain trained and ready to provide steel-on-target for America's Heavy Contingency Division.

This past year provided numerous training opportunities for Redlegs across the division, beginning with 1-7 Cav's deployment to Kuwait. The Div Arty fire supporters and cannoneers from B/1-82 FA trained and deployed alongside "Garry Owen" soldiers on their mission of coalition training.

Tough realistic training helped hone the combat skills of the 1-82 and 2-82 FA during rotations to the NTC. Refinement of Paladin operations and COLT platoon tactics were key areas of emphasis during both rotations.

AFATDS fielding was completed in May with the Div Arty receiving the AFATDS lightweight computer units (LCUs). This system will keep commanders and fire supporters in the digital information loop regardless of their positions on the

battlefield. The Div Arty is continuing to assist the FA School test incremental AFATDS software upgrades to ensure feedback from soldiers in the field.

Home station training continues with cannoneers refining crew drills during the *Red Team's* Paladin Gunnery Tables. Patterned after the M1 tank gunnery tables, the Paladin Tables provide a realistic, battle-focused scenario and immediate feedback on crew proficiency. Our COLTs and FISTs sharpened their combat skills by training alongside their maneuver counterparts and during their certification. Once again, our fire supporters matched wits with the world class opposing force (OPFOR) during the Division's Warfighter exercise and clearly demonstrated

the devastating effects of "Steel Rain."

On 16 September, we activated 1-21 FA (MLRS), the Army's first divisional command and attack battalion. It consists of our former divisional MLRS battery and TAB, an additional MLRS battery and HHS.

Cav Country continues to be a challenging, rewarding place to serve. *Red Team* Redlegs consistently demonstrate their professionalism, pride and proficiency-remain trained and ready to put steel on target...any time, anywhere. **First Team-Red Team!**



A launcher from 1-21 FA (MLRS), the Army's first divisional command and attack battalion.

## 1st Infantry Division (Mechanized) Artillery

**D**rumfire Artillery in Bamberg, Germany, spent this year dispersed between two continents and four countries with "priority of fires" to providing lethal fire support for Task Force Eagle in Operations Joint Endeavor and Joint Guard. Bottom line: our Redleg professionals were very successful.

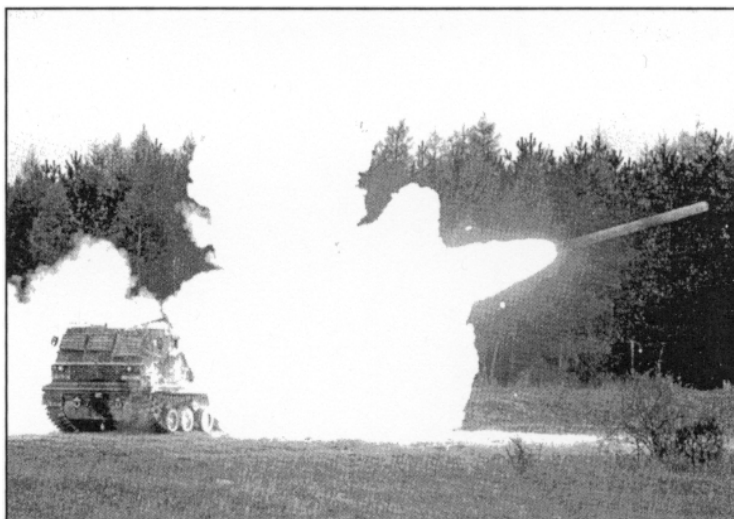
The year opened with B/25 (TAB) (*Wolfpack*) returning from 12 months in Bosnia, logging more than 13,000 radar acquisitions. Meanwhile, 1-7 FA (*First Lightning*) deployed to Bosnia with the Covering Force (CFOR) for the 1st Armored Div Arty's withdrawal and assumed the mission of force FA (FFA) headquarters. With an attached TAB, an additional brigade FSE, three Met sections and elements of 1-6 FA and HHB Div Arty, "TF 1-7 FA" was the FFA HQ with over 800 Redlegs covering an area of over 8,500 square kilometers.

The first of the year, 1-6 FA (*Centaurs*) began train-up at Grafenwoehr and the CMTC to deploy to Bosnia as part of the Stabilization Force (SFOR). Highlights were the Div Arty FCX

and firing eight Copperheads in one day

In Bosnia, TF 1-6 FA continued to improve the FFA HQ's position and demonstrated the "lethal option" by delivering accurate and timely fires in platoon exercises at Resolute Barbara Range. The highlight was the first US live-fire with the Russian artillery. 1-6 FA redeployed to Germany in November. From February to November, HHB Div Arty provided command and control of deploying/redeploying Task Force Eagle forces at the Intermediate Staging Base at Taszar, Hungary.

Warfighting skills remained the 1st IN Div Arty's priority. The Division FSE conducted several targeting exercises, A/33 (MLRS) (*Arapaho*) and B/25 deployed to Grafenwoehr twice and the Div Arty conducted a maneuver rights area exercise in Northern Bavaria. In a separate exercise, A/33



A/33 MLRS conducts live-fire at Grafenwoehr Training Area.

became the first US unit to conduct tactical operations in "East Germany" since World War II.

Our sister battalion at Fort Riley, Kansas, 1-5 FA (*Hamilton's Own*), maintained its fighting edge at the NTC in February, firing over 3,000 rounds in support of 1st Brigade's

defeat of the Krasnovians. The battalion fielded FAASVs in May.

Flexible, adaptable, professional—the Redlegs of the 1st ID can reflect on this past year with extreme pride. **Drumfire!**

## 2d Infantry Division Artillery

**W**arrior Thunder, the most forward-deployed and powerful Div Arty in the world, continues to provide lethal fire support for the *Warrior Division* and our Republic of Korea (ROK) allies. Our two US cannon battalions, MLRS battalion (+), TA battery and habitually associated ROK cannon battalion all fight together providing the Korean Peninsula awesome capabilities.

After completing a Warsteed live-fire EXEVAL in February and March, 1-15 FA (*Guns Battalion*) prepared to become the first battalion in the ROK to receive Paladin. After intense new equipment training, the battalion supported the Div Arty and Division in several exercises, culminating in the August theater-level exercise, Ulchi Focus Lens (UFL).

Capitalizing on the success of 1-15 FA's

Paladin fielding, 2-17 FA (*Steel*) received Paladin in July. It, too, underwent a rigorous fielding schedule and, in stride, successfully transitioned to UFL and supported the Division in several combined forces command exercises.

665 (ROK) FA (*Phoenix*) provided DS fires to the 5th (ROK) Armored Brigade (*Iron Storm*) during live-fire exercises, force-on-force operations and combined arms training, proving a commitment to excellence and combined operations.

6-37 FA (MLRS) (*On the Minute*) was equally as busy as the Div Arty's cannoneers. With its four batteries of MLRS, the battalion conducted more live-fire training than any other MLRS battalion in the world. In three live-fire exercises, the rocketeers demonstrated the unique capabilities of the Division's counterfire force.

As continuous, tough, realistic training kept the Div Arty prepared for war in the event of hostilities, F/26 FA (TA) (*Wolfpack*) observed every fire mission. The battery also observed for the different ROK systems firing.

Participating in 16 major exercises this year, the Div Arty overcame the challenges of the most forward-deployed Redlegs in the world while providing the counterfire and indirect fire deterrent to the resumption of hostilities. Overcoming training challenges while maximizing readiness, we are **Warrior Thunder!**



C/1-15 FA sends the first round down range from its M109A6 Paladin.

## 3d Infantry Division (Mechanized Artillery)

**M**arne Thunder roared louder than ever during 1997 as the Redlegs of the Rock of the Marne Division trained and deployed in support of exercises worldwide. The 3d Div Arty remains ready to execute its mission: rapidly deploy to a contingency area by air, sea and land to provide fire support as the "Iron Fist" of the XVIII Airborne Corps.

The Div Arty wreaked havoc during the Division Warfighter, providing decisive fires in the overwhelming defeat of the world class OPFOR. Marne Thunder, once again, took the lead in the division Interdiction Counterfire Exercise (Marne ICE). Marne ICE enhanced sensor-to-shooter links by combining artillery live-fire, Firefinder radars, Army Aviation and Air Force attacks and using intelligence from division, corps and echelons-above-corps collection assets.

Rock Support, soldiers of 1-10 FA, deployed to Kuwait from January to April for Operation Intrinsic Action. 1-10 FA also deployed twice to the NTC, once

DS to the 3d BCT and, again, to reinforce its sister battalion, 1-41 FA.

BattleKings of 1-9 FA excelled during the March Marne Focus exercise, providing devastating fires for the Spartan Brigade, followed by a very successful April NTC rotation. The BattleKings also deployed a battery to Fort Knox, Kentucky, in July to support US Military Academy cadet training.

Glory's Guns of the 1-41 FA deployed to Egypt for Operation Bright Star in September and October. 1-41 FA also provided fires for the Raider Brigade during its NTC rotation in October 1996 and, later, to reinforce 1-9 FA.

Steel Rain, A/13 FA (MLRS), completed a rigorous EXEVAL in July. It also conducted a corps sea emergency readiness deployment exercise (SEDRE) in November 1996, embarking on a Bob Hope Class vessel.

Speed in Action, A/39

FA(TA), provided timely, reliable support in three NTC rotations, Marne ICE and many other LFXs. More significantly, it helped train and prepare soldiers of F/109 FA (TA), PAARNG, and E/101 FA (TA),

MAARNG, for deployment to Bosnia.

The 3d Div Arty leads the way in fire support as the muscle of the Rock of the Marne. Marne Thunder!



A/13 FA (MLRS) live firing at Fort Stewart, Georgia. (Photo by Donald Teft)

## 4th Infantry Division (Mechanized Artillery)

**M**aximizing the capabilities of next-generation technology, the Ivy Redlegs of the 4th Div Arty, Fort Hood, Texas, are leading the fire support community into the 21st century. In a series of demanding exercises culminating in the Division XXI AWE, we demonstrated the accuracy, lethality and effectiveness that ensure the FA will remain the King of Battle.

This year, the Ivy Redlegs balanced their dual mission of maintaining combat readiness while conducting experimentation as the Army's EXFOR. Not only did we field systems ranging from the Paladin howitzer to the improved SINCGARS, but we also participated in numerous live-fire exercises and deployments, including to the NTC and Operation Intrinsic Action in Kuwait. We also conducted rigorous competitions for the Master FIST, Best COLT and Top Howitzer Section.

3-16 FA (Rolling Thunder) continues to provide accurate, responsive fires to the 2d BCT. In March, the unit deployed its TOC

as the reinforcing battalion and counterfire headquarters for the Task Force XXI rotation at the

NTC, silencing the guns of the world class OPFOR. 3-29 FA (Pacesetters) completed an

extremely successful rotation to the NTC in July. Making the most of its new Paladins, AFATDS and SINCGARS, it provided the 3d BCT with first-round effects that set the conditions for success. 4-42 FA (Straight Arrows), having participated in the Task Force XXI NTC rotation, served as the Div Arty's model for preparing for the November 97 Division AWE. 9-1 FA (Provisional) (Deep Strike) continues its support of the Division, sending B/20 FA (MLRS) and A/26 FA (TAB) with the 3d BCT for exercises with the Kuwaiti Army. The battalion will stand down in June 1998 as we activate one of the Army's first divisional command and attack battalions, 2-20 FA (MLRS). The fires of 2-20 FA synchronized with the Division's deadly 4th Aviation Brigade will give the 4th ID the winning edge in the deep fight.

Ivy Redlegs anticipate the challenges of the coming year. Manned by highly trained soldiers and employing the most modern equipment in the Army, we stand ready as the fire supporters of the 21st century—Ivy Redlegs!



4-42 FA's FAASV during the Task Force XXI rotation at the NTC.

## — 10th Mountain Division (Light Infantry) Artillery —

This was a year of great challenges and great accomplishments for the Redlegs of the 10th Mountain Division Artillery at Fort Drum, New York. The *Mountain Thunder* Artillery successfully completed many worldwide deployments in support of critical operations in the Sinai, Saudi Arabia, Bosnia, Panama, Cuba and the Southwest United States.

Focusing on the development of superb leaders, fighting soldiers and tough training, the 10th Div Arty implemented a realistic, physically and mentally demanding training program that emphasized perfecting the brigade task force concept. Training as we'd go to war, the soldiers of 2-15 FA, 3-6 FA, E/7 FA and 10 TAD are complemented by a foundation of strong NCOs and first-line supervisors who demand tactical competence and provide the expertise and toughness necessary to make significant improvements in our battle-focused training. As a result, the 10th Div Arty could concentrate on providing close

fires in support of infantry through the execution of many CALFEXs and air assault missions. With the emphasis on developing leaders to make smart decisions in unpredictable environments, the 10th Div Arty trained on reaction to contact, convoy and defensive live fires.

Integrated throughout our training were many *Mountain Thunder* Exercises to mass all weapon systems. This year's training provided the Div Arty the maximum opportunity to develop and mature.

Deployments to the JRTC; Canada; Fort Pickett, Virginia; Camp Blanding, Florida; West Point, New York; and Fort Bragg, North Carolina, complemented our ability

to train and fight in different environments and gave the Div Arty the chance to validate and test readiness SOPs. The 10th Div Arty closed out the year focusing on division deep fires

and deep operations coordination cell (DOCC) operations during Exercise United Endeavor.

All in all, the *Mountain Thunder* Redlegs will finish the year with pride in our

accomplishments—poised to accept all future challenges. The Div Arty remains committed to combat excellence and training to high standards. ***Mountain Thunder!***



C/3-6 FA conducts a two-gun raid during Mountain FEST 97.

## — 25th Infantry Division (Light) Artillery —

The Redlegs of the *Tropic Thunder Artillery*, Schofield Barracks, Hawaii, enjoyed another year of realistic, battle-focused training. Throughout a variety of military operations, the Div Arty has proven itself ready to provide the 25th ID (L) with timely and accurate fires.

1997 saw soldiers of the *Tropic Thunder* deploy to Japan, Australia, Singapore, Korea, Thailand, Alaska, Texas, Washington, Kansas, California and Louisiana.

3-7 FA (105) executed an extremely successful JRTC rotation in addition to sending soldiers to Tiger Balm (Singapore) and Tandem Thrust (Australia); 2-11 FA (105) sent batteries to the NTC and Cobra Gold (Thailand); 1-8 FA (105) honed its skills with two rotations to Pohakuloa Training Area (PTA) on the Island of Hawaii (Big Island); F/7 FA (155 towed) moved north to Alaska to test the new sense and destroy armor (SADARM) munition; and the 25th FAD continued with outstanding support to all Div Arty units as well as verified an air assault dual-point hookup

technique for the Q-37 radar shelter and generator for stability in

flight and better directional control for emplacement. As a highlight,

each unit in the Div Arty conducted a highly successful EXEVAL.

In June, the Div Arty received news of the impending inactivation of 1-8 FA as part of the Army's restructuring process. In the true professional manner of the *Automatic 8th*, the battalion's last mission was executed to perfection—inactivation on 15 September 1997.

The Div Arty proved its ability to provide fire support to the Division through battle-focused training, beginning with a Div Arty base piece shoot and maturing to live-fire exercises and EXEVALs on Oahu and at PTA. Training culminated with the flawless execution of the 25th Division Warfighter. Combined arms training was enhanced through CALFEXs with the Division's maneuver and aviation elements, an exercise involving SEAD for F-16s and CPXs with sister divisions.

Throughout the vast expanses of the Pacific Rim, the Div Arty stands ready to provide quality fire support when needed. ***Tropic Thunder!***



The 25th FA Detachment prepares a Q-37 radar for air movement at Pohakuloa Training Area (PTA).



## 28th Infantry Division (Mechanized) Artillery

This year, the Pennsylvania Army National Guard's *Kings of the Keystone*, the 28th Div Arty, continued its support to the Army's international peace enforcing efforts in Bosnia, participated in a BCTP Warfighter exercise and other training and was fielded two systems in our modernization program.

In early 1997, the 28th Div Arty deployed a portion of its target acquisition battery to Sarajevo, Bosnia-Herzegovina. On 26 February 1997, F/109 FA (-), based in York, Pennsylvania, mobilized its headquarters and two Q-36 Firefinder radar sections for deployment to Bosnia with a mission of detecting violations of the cease fire implemented in the Dayton Peace Accord. F/109 FA (-) mobilized quickly and smoothly and deployed without incident.

In addition to this overseas deployment, 28th Div Arty soldiers maintained the brisk pace of



CW2 James Horn, F/109 FA (TA), acquiring targets inside the AN/TPQ-36 Firefinder radar shelter. (Photo by MAJ Peter Grzywacz)

training that enabled them to successfully complete last year's BCTP Warfighter exercise. Div Arty units' training schedules have featured howitzer section and

battery training and certification, initial fire support automation system (IFSAS) sustainment training and a major division-level command post exercise, Atlantic

Dagger.

This year's AT included our units participating in a mobilization study and an emergency operations exercise. The latter required the Div Arty to support the Division's response to a major civil disturbance.

Modernization of the 28th Div Arty also continues with fielding of the precision lightweight global positioning system receiver (PLGR) and the palletized load system (PLS). These two systems will facilitate Div Arty firing operations and ammunition resupply.

With its continuing support to worldwide contingencies, intensive training and the acquisition of

state-of-the-art equipment, the *Kings of the Keystone*—the 28th Infantry Division (Mechanized) Artillery—remain **Charged to Excellence!**

## 29th Infantry Division (Light) Artillery

1997 was a year of unexpected opportunities and unprecedented challenges for the 29th Div Arty, headquartered in Sandston, Virginia. Overseas deployments,

unit reorganizations and realignments, artillery table training, digital communications exercises and a renewed emphasis on family readiness activities each were milestones marking our passage

through the second year of "Journey Into Excellence."

2-110 FA (Pikesville, Maryland) keyed on command team proficiency, leader training and strength maintenance. It progressed from individual to collective training, accomplishing Artillery Tables I through VIII during June AT.

1-246 FA (Danville, Virginia) deployed Detachment 1, a 46-man brigade FSE, to Bosnia in February to support the NATO Stabilization Force's Nordic-Polish Brigade. This battalion also completed Artillery Tables I through VIII this year, resulting in a successful collective training program that included mastering digital fire support links.

2-192 FA (Westbrook, Connecticut) joined the 29th Div Arty in early 1997, exchanging missions and MTOEs with 1-111 FA as part of a multi-state agreement that created the 54th FA Brigade Headquarters in Virginia. The 29th Division's 2-192 FA (DS to the 26th Infantry Brigade) acquired 1-111 FA's equipment during their joint annual training at

Fort Pickett, Virginia. 1-111 FA leaves the Div Arty to join the 54th in early 1998.

2-111 FA (Petersburg, Virginia) conducted an intensive multiechelon training program during the year, focusing on digital fire control and communications. During its July AT, it had its first training lane evaluation as a forward support package (FSP) unit. 2-111 FA also will join the 54th in early 1998.

E/111 FA (Sandston) spent the year using Artillery Tables I through V to reinforce 13B and 13E skills mastered after its reconstitution in 1996. The battery also participated in a highly successful readiness-for-mobilization exercise with the Div Arty HHB and 129 FA Det (TA) in AT. The 129 FAD (Sandston) spent most of 1997 preparing for September's deployment to Bosnia-combat lifesaver training, individual weapons qualifications and Q-36 radar transition training.

To deliver FA fires and coordinate fire support for the 29th IN Division (L)—**We Stand Ready!**

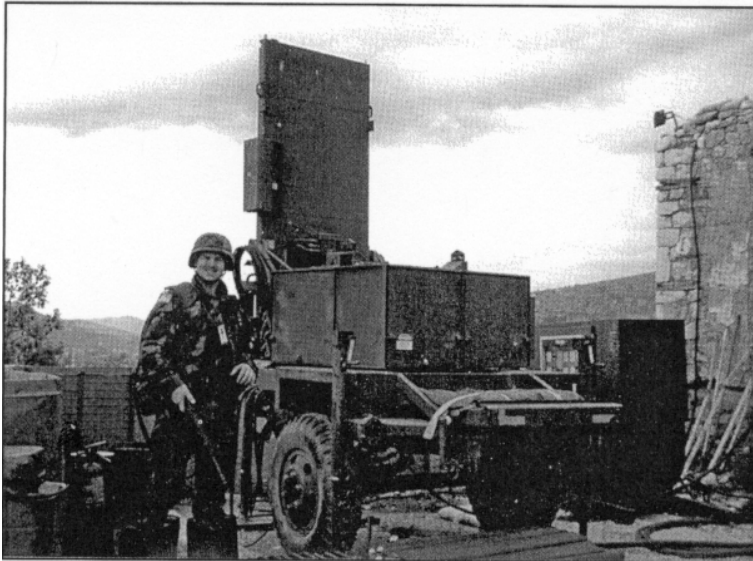


1-111 FA soldiers demonstrate proficiency in basic M109A5 skills during weapons system transition. (Photo by CW3 A.M. Pishdad, Virginia Army National Guard)

## 34th Infantry Division (Mechanized) Artillery

The 34th *Red Bull* Div Arty (Minnesota, Iowa and Wisconsin ARNG) has developed an international focus during Training Year 1997 with our organizations involved in overseas operational environments in Bosnia, Norway and Greece. While supporting these overseas deployments, the Div Arty's training priority for TY-97 has been to prepare for the Division's BCTP Warfighter exercise at Fort Leavenworth, Kansas, in August 1997. We've continued to develop our relationship with our new DS battalion, 1-120 FA in Wisconsin, in direct support to the 32d Brigade (Mech). That relationship became official in October.

The most significant event for the 34th Div Arty in TY-97 was the successful deployment and redeployment of a detachment from E/151 FA (TA) in support of Operation Joint Endeavor. Detachment I provided Q-36 Firefinder radar support for



SGT Todd Whipps, E/151 FA (TA), stands with his Q-36 radar at the "Turkish Fort" location overlooking the city of Sarajevo. (Photo by 1SG Stephen Kama)

NATO while stationed in Sarajevo for 270 days. We are proud of the professionalism displayed by the soldiers of Detachment I, E/151 FA, as they served side-by-side with our NATO partners in

Bosnia-Herzegovina.

Another highlight for the 34th Div Arty was that one of our battalions was selected to be a member of the NATO Composite Force—our 1-125 FA in

Minnesota, which is DS to the 1st Brigade. The battalion successfully completed its first deployment to Norway in February and March; it will deploy its staff in Training Year 1998 and the entire battalion in Training Year 1999.

1-194 FA in Iowa, which is DS to the 2d Brigade, continues to gain proficiency in performing air assault operations. This year, the battalion successfully integrated air assault operations into its lane training program.

1-151 FA, another FA unit in state, is the Minnesota ARNG's only force support package (FSP). The battalion is preparing for its new wartime mission with batteries' implementing aggressive lane training programs.

The 34th *Red Bull* Div Arty is a proud partner in America's Army—ready to **Attack, Attack, Attack!**

## 35th Infantry Division (Mechanized) Artillery

The 35th *Santa Fe* Division Artillery (Kansas, Illinois and Kentucky Army National Guard) had a busy year this TY, preparing for and executing a highly successful BCTP Warfighter exercise, supporting units deployed to Bosnia and conducting digital and other training.

While working with the 17th FA Brigade, III Corps Artillery, Fort Sill, Oklahoma, the 35th Div Arty continued its tradition of excellence during its Warfighter. The Division staff, Div Arty staff and our DS and GS units participated in multiple train-up activities in preparation for the 35th Division BCTP Warfighter exercise at Fort Leavenworth, Kansas. During the BCTP, the 35th Div Arty and its supporting FA brigade successfully destroyed the OPFOR artillery.

1-161 FA (DS) of Kansas conducted qualification, certification and validation training at Fort Riley, Kansas, with one battery validating in the battery lane. The 2-138 FA (DS) in Kentucky conducted section- and battery-level

lane training at Fort Stewart, Georgia. The 35th Div Arty is happy to add to its ranks the 2-122 FA (105) in Illinois, which is the DS battalion for the 66th Brigade (Light).

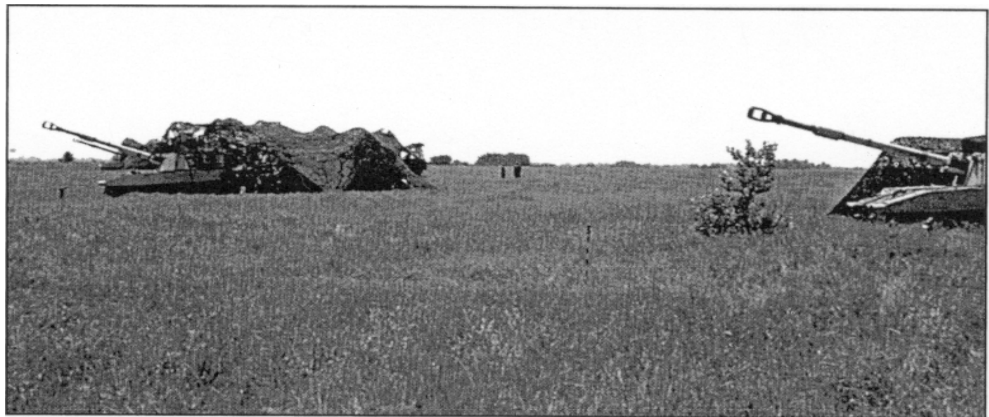
The 35th Div Arty completed the second of two deployments to Bosnia in support of Operations Joint Endeavor and Joint Guard. The Div Arty sent more

than half of its target acquisition battery last year and followed up by sending its Meteorology Section this year. Both units deployed and returned without incident.

The Div Arty is looking forward to finalizing its digital training program utilizing the digital systems test and training simulator (DSTATS) to drive initial fire support automation system (IFSAS)

training in various locations over the phone. This training program will solve the problem of maintaining the level of expertise of our various digital operators located some distance from each other.

The 35th Div Arty stands trained and ready to meet the challenges of the future and support the **Santa Fe Division!**



35th Div Arty—Annual Training 1997 at Fort Riley, Kansas.

## 38th Infantry Division Artillery

**C**yclone's Thunder—the 38th Infantry Division Artillery, Army National Guard, headquartered in Indianapolis, Indiana, with units in Indiana, Michigan and Ohio—continued to upgrade its fire support

proficiency using the initial fire support automation system (IFSAS) during Training Year 1997. In addition, the 38th Div Arty successfully completed the BCTP Warfighter at Fort Leavenworth, Kansas. These

activities were the culmination of a long year of CPXs and Warfighter ramp-up training.

1-119 FA (155 SP) of Lansing, Michigan, continued its familiarization and training on the M109 howitzer. Live-fire exercises

and staff-level training dominated its training calendar throughout the year.

1-134 FA (155 SP) of Columbus, Ohio, is DS to the 37th Armored Brigade. Comprised of M109 howitzers, it too implemented an aggressive training program of live-fire exercises and staff training to improve its troop decision-making process skills.

3-139 FA (105) of Crawfordsville, Indiana, was heavily involved in the Warfighter exercise ramp-up training as well as AT-97. The battalion's execution of both was outstanding.

E/139 FA (TA) completed its mission in Bosnia as part of NATO's Task Force Eagle with tremendous success and significantly improved skills. In June, the battery redeployed to home station's anxiously waiting loved ones.

The 38th Infantry Division Artillery will take the lessons learned in Bosnia and the BCTP Warfighter and apply them to future training exercises to ensure our continued capability and success as *Cyclone's Thunder!*



3-139 FA cannoneers emplace an M102 (105-mm) howitzer at Camp Atterbury, Indiana.

## 40th Infantry Division (Mechanized) Artillery

**T**raining Year 97 saw the *Sunburst Div Arty*, the 40th Infantry Division (Mechanized) Artillery, CAARNG, headquartered in Los Angeles, California, reorganized on 1 October. At that time, we official became a two-state Div Arty, including the 2-180 FA in Arizona. The 1-143 FA in Richmond, an M109 DS battalion; the newly formed 1-144 FA in Burbank, an M109 DS battalion; our new 2-180 FA in Phoenix, an M109 DS battalion; D/144 FA in Ventura, an M109 GS battery; and F/144 FA (TA) in Los Angeles, our target acquisition battery, all make up the 40th Div Arty.

During the training year, the 40th Div Arty was presented with several distinct objectives to achieve. We successfully completed the consolidation of two California M109 howitzer battalions (2-144 FA and 3-144 FA) to form the

1-144 FA, while providing equipment and training resources for the activation of 2-180 FA in Arizona. Concurrently, F/144 FA (TA) prepared to deploy with its Firefinder radar assets to Bosnia-Herzegovina as part of

Operation Joint Guard. In combination with these and other activities, all aspects of the Div Arty fire support personnel and systems were stressed to their limits.

Also during this year, the Div

Arty provided battalion fire support elements (FSEs) to two OPFOR rotations at Fort Lewis, Washington; then the Div Arty provided a battalion FSE for the 29th Separate Infantry Brigade's annual training period in Hawaii;

and finally the Div Arty TOC provided digital fire support through the initial fire support automation system (IFSAS) and mobile subscriber equipment (MSE) a distance of more than 50 miles to the 40th Division TOC. The latter activities were part of our BCTP Warfighter train-up. We finished out the year by providing a reinforcing battalion TOC for a brigade NTC rotation at Fort Irwin.

The *Sunburst Div Arty* will continue to meet the challenges, train and modernize for excellence and ensure quality fire support is provided to the *Fighting Fortieth Infantry Division!*



Members of 1/144 FA providing live fire support for the testing and development of a target tracking improvement for the U.S. Navy's Phalanx system. The live fire support was conducted at the China Lake Naval Weapons Range.

## 42d Infantry Division (Mechanized) Artillery

The Redlegs of the 42d Infantry *Rainbow Division Artillery*, Massachusetts Army National Guard, headquartered in Rehoboth, Massachusetts, enjoyed many successes in the pursuit of excellence and in our modernization efforts during FY 97.

The 40 members of Detachment 2 (Provisional), Headquarters Battery, 1-101 FA, returned from a nine-month deployment in support of Operation Joint Endeavor in Bosnia-Herzegovina in April 1997. While this Det was still in country, the 42d Div Arty rolls were called to duty a second time. The second mobilization was 86 soldiers of E/101 FA (TA). Under the auspices of Readiness Group Devens and the Div Arty, the TAB's mobilization readiness training culminated with a seven-day radar and initial fire support automation system (IFSAS) CPX at Fort Stewart, Georgia, with wheels-up in July.

Our GS 1-112 FA in New Jersey was redesignated D/112

FA in September. This year, our DS battalions-1-101 FA in Massachusetts, 1-258 FA in New York and 3-112 FA in New Jersey-continued to train toward Artillery Table VIII.

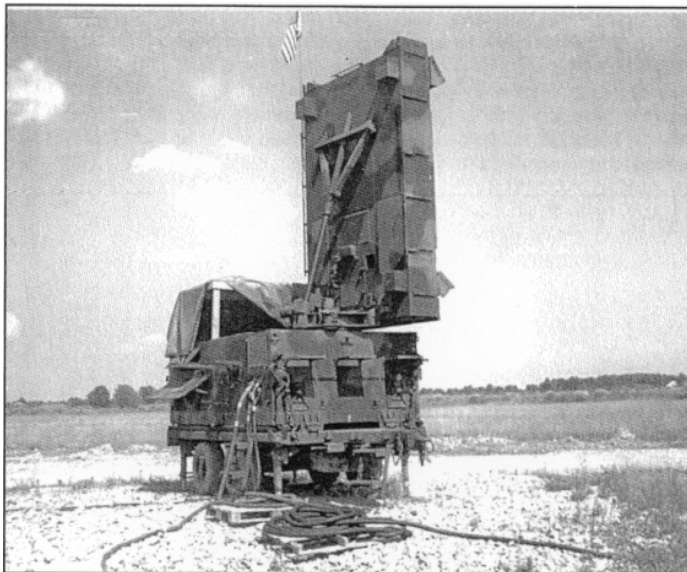
Complementing these efforts was an enhanced training program integrating our new IFSAS, BCS and G/VLLD. The training culminated in the support of the 3d Brigade CPX with members from Massachusetts, New York and New Jersey employing IFSAS' enhanced digital communications with radar and meteorological equipment. Through the 1st Quarter of TY 98, the Div Arty trained for our BCTP Warfighter exercise scheduled for July 1998 at Fort Leavenworth, Kansas.

The challenge to our soldiers to maintain "Rainbow Readiness" across the Div Arty continued all year with training programs in physical

fitness, common task training, rifle marksmanship, MOS-qualified school priorities and equipment maintenance.

With confidence in our

officer corps and competence in the professionalism and dedication of our soldiers, we remain Rainbow Ready to face global mission requirements with **Redleg Thunder!**



A Q-37 radar of E/101 FA (TA), Massachusetts Army National Guard, maintains its vigil at Camp Colt, Bosnia.

## 49th Infantry Division Artillery

The *Texas Redlegs* of the 49th Armored Division Artillery worked to sustain the previous year's tempo for TY-97. Mobilization and mission readiness were the buzzwords as the specter of deployment became reality for members of E/133 FA (TAB) and the Div Arty fire support element (FSE).

The DS battalions regularly conducted live-fire exercises and lane training at Forts Hood and Bliss in Texas to hone their battle skills. AT at Fort Hood for the Div Arty Headquarters; E/133 TAB (-); 1-133 FA; 4-133 FA; and D/132 FA was conducted to test the Call Forward exercise as well as to provide an intense internal evaluation. Meanwhile, 3-133 FA trained under the desert sun of Fort Bliss. The initial fire support automation system (IFSAS) provided communications and fire control for the second year, highlighting the

imperative of speed and accuracy in fire support.

November saw the deployment

of a detachment from E/133 TAB along with its AN/TPQ-36 and Q-37 target acquisition radars to

Bosnia in support of Operation Joint Guard. The detachment returned in July and interfaced with the mobilization and deployment of E/133's second detachment as well as an FSE contingent of 46 soldiers to Bosnia.

The Q-36 and Q-37 radars that went (and stayed) have proven the system's stamina and reliability, logging more than 8,600 operating hours and tracking more than 8,500 target acquisitions.

Once again, the Employer Support of the Guard and Reserve Airlift program served to underscore to our civilian employers the viability and necessity for the Guard's role in national defense. Guests were treated to a C-130 flight from various air bases to Fort Hood where static displays, informational presentations and a live-fire demonstration elicited both respect and awe for the Texas **Balls of Fire!**



Members of a Q-36 radar section, Detachment 1, E/133 FA, in Bosnia in support of Operation Joint Guard in February.



## 82d Airborne Division Artillery

The paratroopers of the 82d Airborne Division Artillery, Fort Bragg, North Carolina, are ready to provide the best fire support to *America's Guard of Honor*. Throughout the history of the 82d Airborne Division, its Redleg paratroopers have proven themselves the ultimate combat multiplier. Today, as in the past, our highly trained airborne paratroopers are ready to accomplish their primary mission: Deploy on no-notice anywhere in the world, fight and win.

In the past year, training deployments to Panama, Haiti, Honduras, Uzbekistan and Kazakhstan provided the paratroopers of the 319th Airborne Field Artillery Regiment many opportunities to hone their warfighting skills. Stateside training opportunities included multiple JRTC rotations and several battery-level deployments to the NTC; Fort Stewart, Georgia; Camp Lejeune, North Carolina; and Fort Pickett, Virginia.

The Div Arty's training strategy seeks to build combat ready teams at the section, battery and

battalion levels. The foundation of this strategy is our section certification programs that sharpen the skills of our howitzer crews, FDC sections and fire support teams. This year's live-fire training included a series of fire coordination exercises, danger-close walk and shoots, platoon and company combined arms live-fire exercises and convoy live-fires.

Additionally, each of our batteries underwent a Div Arty readiness test (DART), which is a challenging three-day exercise to evaluate their readiness to deploy and fight.

Army force modernization improved the Div Arty's mobility and accuracy of fires with the fielding of the family of medium tactical vehicles (FMTVs) and the M-94 radar chronograph. The fielding of AFATDS and the Q-36 Firefinder Version 8 during the



A/2-319 paratroopers placing an M119 into action on Normandy Drop Zone.

next year will further improve the accuracy and responsiveness of our fires.

The courage and commitment of the Redleg paratroopers of

the 319th Airborne Field Artillery Regiment continues to be second to none. ***Airborne—Loyalty—All the Way!***

## 101st Airborne Division (Air Assault) Artillery

The 101st Div Arty at Fort Campbell, Kentucky, trained under demanding, realistic conditions this year, focusing on warfighting. *Air Assault Redlegs* sharpened skills to plan, coordinate and deliver timely, accurate fires for the Division.

In October 1996, the Div Arty administered an EXEVAL to 1-320 FA. Later that month, the *Air Assault Redlegs* participated in exercise Mega Gold, an intensive two-week division FTX focused on artillery and attack helicopter fires in the air assault. In February, the Div Arty executed a position shoot on a dug-in company followed by the spring deployment of the FSEs of the air cavalry, attack aviation battalion, aviation brigade and assault command post with chaplain support and Met teams to the JRTC for three brigade rotations. In July, the Div Arty participated in the Corps Sea EDRE, culminating in a CALFEX-attack aviation, air cavalry, infantry, four

batteries of 105s and three radars-under the command and control of the Div Arty's Task Force Glory.

In September 1996, 1-320 FA (*Top Guns*) welcomed home the 2-502 Infantry FISTS after five

months in Panama. 1-320 FA completed its EXEVAL in October 1996 with extremely accurate fires. Once again, it excelled in March at the JRTC.

2-320 FA (*Balls of the Eagle*) completed a tough EXEVAL in

August 1996. In January, it endured the coldest month on record for the JRTC, conducting LFXs, battery raids and deliberate air assaults while integrating a mock radar into deception operations.

3-320 FA (*Red Knights*) successfully completed its EXEVAL in November 1996. In April, the *Red Knights* were deadly in three brigade-level air assaults during its JRTC rotation.

This year, the *Crusaders* of C/1-377 FA completed an EXEVAL; live-fired Copperhead; and completed a demanding evaluation, winning best battery in their battalion.

The 2d FA Det (*Guardians*) sling loaded the Q-37 by Chinook on 17 July—the first air assault of this version of the Q-37.

Redlegs of the 101st Division are trained and ready to deploy anywhere and anytime, to provide fire support for the *Screaming Eagle Division*. ***Air Assault!***



The *Red Knights* of 3-320 FA in the air assault.



## 10th Marine Regiment

As the *Arm of Decision* of the 2d Marine Division, the 10th Marines, Camp Lejeune, North Carolina, achieves a balanced excellence of tactical proficiency and operational readiness. This year, we were forward deployed to the coral shores of the Western Pacific to the desert sands of Africa and then the rugged terrain of the Mediterranean.

The centerpiece of the Marine Air Ground Task Force's (MAGTF) fire support capability, the 10th Marines focused training and operational deployments on warfighting as a naval expeditionary force in readiness. With four M198 cannon battalions, we maintained an ability to task organize for division and Marine Expeditionary Units (Special Operations Capable) (MEU(SOC)) operations.

10th Marines was forward deployed with the 22d, 24th and 26th MEUs (SOC), demonstrating and validating the concept for



10th Marines provide fire support in "every clime and place." (Photo courtesy of 2d Marine Division, Combat Camera Unit)

naval power projection ashore: Operational Maneuver from the Sea. During these deployments, we planned and integrated lethal and nonlethal fires for the MAGTF.

During FY-97, 10th Marine

training and operations focused on balanced excellence across the spectrum of conflict, from military operations other than war (MOOTW) to major regional contingencies. Type commanders

amphibious training (TCAT) and mobile riverine force exercises honed our skills in projecting power from the sea in support of the MAGTF.

Refining the traditional artillery skills for combat, the 10th Marine Regiment deployed twice to Fort Bragg, North Carolina, for Operation Express Sword. These exercises used our METL as the foundation and training to standards as the objective. In addition, we trained and operated in the GS role with 3-27 FA (MLRS) of the 75th FA Brigade at Fort Sill, Oklahoma, and the 3d and 4th Battalions of the 14th Marines (USMCR) with its headquarters in Dallas, Texas. Our units also deployed to the MCAGCC, Twentynine Palms, California, to refine combat SOPs during combined arms live-fire exercises in September 1996

and May.

The 10th Marines stand ready to perform "such other duties as the President may direct" as the 2d Marine Division's **Arm of Decision!**

## 11th Marine Regiment

In 1997, the *Cannon Cockers* of the 11th Marines based at Camp Pendleton and Twentynine Palms, California, have upheld the high standards and traditions of the regiment while supporting the 1st Marine Division – the *Old Breed*. The 11th Marines trained and sourced combat-ready firing batteries for the battalion landing teams of four forward-deployed,

special-operations-capable Marine Expeditionary Units – the 11th, 13th, 15th and 31st MEU (SOC)—which provided contingency capabilities for the US Pacific and Central Commands. Integral to the MEUs, these batteries participated in operations, exercises and training in Japan, Korea, Australia, Kuwait, Jordan, Oman, Qatar and the United Arab Emirates.

The 11th Marines sustained combat readiness in two desert firing exercises (DEFIREXs) at the Marine Corps' finest live-fire training facility – the MCAGCC at Twentynine Palms. In both DEFIREXs, a III Corps Artillery MLRS battalion from Fort Sill, Oklahoma, participated, improving Marine and Army FA interoperability. We integrated 6-32 FA (MLRS) and then 6-27 FA

(MLRS) into these DEFIREXs along with units of the 14th Marines, making DEFIREX a truly Total Force exercise. In 1997, 11th Marines also participated in Desert Scimitar, the 1st Marine Division's integrated live-fire maneuver and FSCX at MCAGCC.

Our battalions supported four separate CAXs at the MCAGCC; Kernel Blitz, a 3d Fleet and I MEF major biannual amphibious exercise; and Steel Knight, a I MEF (forward) maritime prepositioning force employment exercise. This year, we also exchanged batteries with the 2d Regiment of the Royal Canadian Horse Artillery in Petawawa, Ontario.

We also participated in Warfighting Experiment Hunter Warrior at MCAGCC; in the operational assessment and shoot-off of the advanced towed cannon artillery system, also at MCAGCC; and as the Marine operational test-bed for AFATDS.

As it has throughout its proud history, the 1st Marine Division continues to receive fire support on time, on target from its **Cannon Cockers!**



11th Marine cannoneers fire during a DEFIREX in the California desert at Twentynine Palms.

## 12th Marine Regiment

During 1997, the 12th Marines, with its Headquarters on Okinawa, Japan, fulfilled its mission of providing artillery support to the 3d Marine Division. From January

through June, the 12th Marines conducted three live-fire exercises on-island, for a total of 10 firing days. The 12th Marines also made the most of off-island live-fire training opportunities by

deploying units to Camp Fuji, Japan, and Australia.

The first highlight of the year was the deployment of a large portion of Headquarters Battery of the 12th Marines and 3d Battalion, 12th Marines to Tandem Thrust 97 in Australia. During this deployment, the battalion took advantage of the large maneuver and impact areas offered at Showalter Bay Training Area. At this area, 3/12 fired both Copperhead and high-explosive, rocket-assisted projectile (RAP) rounds.

The second highlight was the deployment of Headquarters Battery of the 12th Marines; 1st Battalion, 12th Marines from Kaneohe Bay, Hawaii; and 3d Battalion, 12th Marines from Okinawa to participate in the May exercise Fire Dragon 97 at Camp Fuji. During this deployment, the Regimental combat operations center (COC) controlled multiple battalion headquarters

under a tactical scenario. Out of the 26 regimental METL tasks, 20 were trained during exercise Fire Dragon.

Two other major events occurred during this exercise. First, the Regiment's vehicles made an 800-mile motor march from Sasebo to Camp Fuji without an incident. Second, the 12th Marines' Headquarters Battery successfully underwent an NBC functional area inspection (FAI) built into the tactical scenario.

In other training events, Regimental CPXs were conducted to enhance the COC's capabilities to control tactical artillery operations in support of our METL and to reinforce and sustain proficiency in Marine Corps fire support system (MCFSS) digital communications.

Finally, working closely with United States Forces in Japan, the 12th Marines and the Government of Japan came to an agreement on funding, location and a schedule for relocation shoots.

As always, we remain—**Thunder and Steel!**



12th Marine gunners conducting live-fire exercise.

## 14th Marine Regiment

The 14th Marines with its Headquarters in Dallas, Texas, is the Marine Corps' largest and only Reserve artillery regiment. Although widely disbursed over 19 cities in 13 states, the Regiment's five battalions have overcome the substantial challenges of time and distance to stand *At the Ready* to augment and reinforce the active Marine Corps.

In February, elements of 1/14 participated in a battalion firing exercise at Camp Pendleton, California, while 4/14 conducted a battalion firing exercise at Fort McClellan, Alabama. Elements of 4/14 also participated in Hunter Warrior at MCAGCC, Twentynine Palms, California. 1/14 conducted its AT at MCAGCC in March with the 11th Marines out of Camp Pendleton. 2/14 also participated in a firing exercise at Fort Sill, Oklahoma. 3/14's Headquarters and I Batteries went to Fort Indiantown Gap,

Pennsylvania, for a FSCX while Batteries G and H fired in exercises at Fort Dix, New Jersey, and Fort A.P. Hill, Virginia, respectively.

In April, the 14th Marine command operations center (COC) linked up with 5/14 at

Camp Pendleton for a live-fire shoot and to refine Force FA HQ procedures in support of I Marine Expeditionary Force (I MEF) during a major regional contingency. Batteries D and E of 2/14 went to Fort McCoy, Wisconsin, to conduct a firing

exercise while 4/14's COC went to Fort Bragg, North Carolina, to participate in Express Sword 2-97 with the 10th Marines. A/1/14 fired in an exercise in Yakima, Washington, while 3/14 participated in CAX 8-97 with the 25th Marines.

Exercise Rolling Thunder AT-97 was at Fort Carson, Colorado, in June and emphasized training as a Force FA Headquarters for I MEF. During AT, training built through battery and battalion operations to the Regimental HQ as the Force FA HQ. 2-157 FA, COARNG, was GSR to 2/14 and 4/14. Air Force Reserve F-16s for CAS as well Air Force Reserve C-130s to insert assets from the 134th Long-Range Reconnaissance Platoon from the NEARNG onto the battlefield via parachutes completed the package.

Every training opportunity, every task required, every Marine deployed helps keep the 14th Marines **At The Ready!**



Exercise Rolling Thunder AT-97 at Fort Carson, Colorado.



The following is a list of articles and selected items from "From the Firebase" (FF), "View from the Blockhouse" (VB), "Incoming" (INC), "Redleg Review" (RR) and "Registration Points" (RP) appearing in *Field Artillery* during calendar year 1997. The entries are categorized by subject and listed chronologically by title and edition.

## Unit Reports

- "TA in Sarajevo—Multinational and Terrain Challenges of Operation Joint Endeavor," (35th IN Div (Mech) Arty) Jan-Feb
- "Detect and Deliver: I Corps' DeepLook 96," Jan-Feb
- "RS2: Radar Survivability and Synchronization for the 82d Airborne Division BCTP," Jan-Feb
- "The Role of the Div Arty S2," (4th IN Div (Mech) Arty) Jan-Feb
- "Removing the Unknown from Counterfire BDA—A 90 Percent Solution," (10th Mtn Div Arty) Mar-Apr
- "Company FIST in the Desert—1st Cav in Kuwait," (INC) May-Jun
- "Silhouettes of Steel," (Reports by US FA Corps Artys and Div Artys) Nov-Dec
- "US FA Units Worldwide," (Maps of Army and Marine FA AC and RC Units, Separate Battery and Above) Nov-Dec

## Targeting/TA

- "Targeting UAVs—The Need is Great, The Time is Now," (RP) Jan-Feb
- "Maintaining the Q-37 Firefinder in Bosnia," (INC) Jan-Feb
- "TA in Sarajevo—Multinational and Terrain Challenges of Operation Joint Endeavor," Jan-Feb
- "Firefinder Maintenance Tips," Jan-Feb
- "Training the Targeting Technician," (VB) Jan-Feb
- "The Role of the Div Arty S2," Jan-Feb
- "New Joint Targeting School Classes and Mobile Training Teams Available," Jan-Feb
- "Detect and Deliver: I Corps' DeepLook 96," Jan-Feb
- "Radar Section TLP and RSOP TTP," Jan-Feb
- "RS2: Radar Survivability and Synchronization for the 82d Airborne Division BCTP," Jan-Feb
- "Firefinder Improvements for the 21st Century," Jan-Feb
- "Removing the Unknown from Counterfire BDA—A 90 Percent Solution," Mar-Apr
- "FAIO's Steps in Killing a Target," Mar-Apr
- "The Fires Planning Process," (A Flow Chart by FSCAOD, USAFAS) Mar-Apr
- "The Lightfighter FO," (RP) May-Jun
- "Company FIST in the Desert—1st Cav in Kuwait," (INC) May-Jun
- "Why We Need FISTs—Never Send a Man

- When You Can Send a Bullet," May-Jun
- "Universal Observers: Punching Our FIST into the 21st Century," May-Jun
- "Forward Observer's Lament," May-Jun
- "The FO and His PLGR in the Close Fight," May-Jun
- "The Eyes of the Light Force—Equipping Observation Teams," (VB) May-Jun
- "GUARDFIST II—Training the FO," May-Jun
- "Response to 'Punching Our FIST into the 21st Century,'" (INC) Jul-Aug
- "Counterfire Operations for Task Force XXI," Sep-Oct

## Training

- "Training the Targeting Technician," (VB) Jan-Feb
- "RS2: Radar Survivability and Synchronization for the 82d Airborne Division BCTP," Jan-Feb
- "Technological Advances in Training," Mar-Apr
- "BCTP: Be Unpredictable, Take Risks—or Lose," Mar-Apr
- "Building a Better FISTer: MOS 13F AIT," May-Jun
- "Lightfighter FCE Coming to FAOBC," (VB) May-Jun
- "GUARDFIST II—Training the FO," May-Jun
- "NTC Truisms—Fighting with Effective Fires," Jul-Aug
- "NTC Notebook," Jul-Aug
- "Joint Readiness Training Center Observations," Jul-Aug
- "Time on Target: Preparing Soldiers for Army XXI," Jul-Aug
- "Digital Sustainment Training in the National Guard," Jul-Aug
- "Paladin Training Strategy: Breaking the Paradigm," Jul-Aug
- "BMAR: The First Paladin Range in the Army," Jul-Aug
- "Simulations to Train and Develop the 21st Century FA," Jul-Aug
- "FSCATT: Closed-Loop Training of the FO, FDC and Howitzer Section," (VB) Jul-Aug

## Doctrine and TTP

- "FA Publications and More on the Internet," (VB) Jan-Feb
- "Through the Eyes of a 1SG: Battery (Light) Defense," (INC) Mar-Apr
- "Removing the Unknown from Counterfire

- BDA—A 90 Percent Solution," Mar-Apr
- "BCTP: Be Unpredictable, Take Risks—or Lose," Mar-Apr
- "The Fires Planning Process," (A Flow Chart by FSCAOD USAFAS) Mar-Apr
- "Risk Estimate Distances for indirect Fires in Combat," Mar-Apr
- "Echeloning Fires," Mar-Apr
- "Battle Calculus and Fire Support Planning," Mar-Apr
- "Firing Tables Update," (VB) Mar-Apr
- "MVV Corrections in BCS and BUCS for Light FA Units," (VB) Mar-Apr
- "Corrections to FM 6-40: HOB Illumination Calculations," (VB) Mar-Apr
- "Automated Training Management and MTPs—Breaking the Paper Paradigm," (VB) Mar-Apr
- "Fire Support for the Nordic-Polish Brigade—An Interoperability Lesson for the Future," May-Jun
- "Company Fire Support Matrix—Getting it Right at the First Line of the Fight," May-Jun
- "The FO and His PLGR in the Close Fight," May-Jun
- "Scheme of Fires Matrix and PLOT-CR: Tools for Integrating Brigade Fires," May-Jun
- "The Lost Art of Controlling AC-130 Gunships," May-Jun
- "The Challenge: Synchronizing Fires, Maneuver and Intel," Jul-Aug
- "NTC Truisms—Fighting with Effective Fires," Jul-Aug
- "NTC Notebook," Jul-Aug
- "Joint Readiness Training Center Observations," Jul-Aug
- "Safety Data Update for Cannon Gunnery," (VB) Jul-Aug
- "Three Letters: Risk Estimate Distances for Close Fires," (INC), Sep-Oct
- "The New FM 100-5 and the Fundamentals of Fires," Sep-Oct
- "Fire Support Challenges in Contingency Operations," Sep-Oct
- "Counterfire Operations for Task Force XXI," Sep-Oct
- "TTP for the Crusader Battalion—A Beginning," Nov-Dec

## Personnel/Force Structure/Leadership

- "FA Warrant Officer Azimuth Check," (INC) Jan-Feb
- "Light COLT Platoon: Improving the Effectiveness of Brigade Deep Operations," Jan-Feb
- "JSTARS' FSO/Aviation Officer Crewmembers," (VB) Jan-Feb
- "Competence is Your Watchword—FA NCOs, Embrace Your Hi-Tech Systems," (INC) Mar-Apr
- "Through the Eyes of a 1SG: Battery (Light) Defense," (INC) Mar-Apr
- "Reflections—Admiration of an NCO," Mar-Apr

"Division Redesign—Fires for Force XXI," Jul-Aug  
 "Open Letter to New FA Officers," Jul-Aug  
 "Field Artillery: On the Cutting Edge," (FF) Sep-Oct  
 "The FA Cascade: Flexibility for the Future," (INC) Sep-Oct  
 "Inside the Professional Development System: The New OER," Sep-Oct  
 "New OER—Redleg Thoughts," Sep-Oct  
 "FA NCO Restructuring—FY 2000," Sep-Oct  
 "OPMS XXI: What Does It Mean for Your Future?" Sep-Oct  
 "The FA's New Command and Attack Battalion," Sep-Oct  
 "The FA Battalion Commander is a Lady," Sep-Oct  
 "Call to Arms: Meeting America's Challenges in the 21st Century," Nov-Dec  
 "Honing the Edge: State of the Field Artillery 1997," Nov-Dec  
 "Field Artillery Training Command Directory," Nov-Dec  
 "US FA Units Worldwide," (Maps of Army and Marine FA AC and RC Units, Separate Battery and Above) Nov-Dec  
 "US FA Commanders and Command Sergeants Major," (List of FA Commanders/CSMs in Total Army/Marines, Battalion and Higher) Nov-Dec  
 "US Total Army Personnel Command (PERSCOM) FA Assignments Branches," Nov-Dec

**History**

"Red Storm: The Russian Artillery in Chechnya," Jan-Feb  
 "The Ultimate FO: Lieutenant John Fox, Medal of Honor Winner," May-Jun  
 "Salute Battery Names Howitzer After a Medal of Honor Winner," May-Jun  
 "Six Days in August: Observed Fires from Hill 314 at The Battle of Mortain," May-Jun  
 "Artillery and Counterinsurgency: The Soviet Experience in Afghanistan," May-Jun  
 "Sill Salute Battery Howitzer Named After MOH Winner," (INC) Sep-Oct  
 "Serenade 1944: Fire Support in Combined Operations," Sep-Oct  
 "Tempo and Fires in Support of WWI German Infiltration Tactics," Sep-Oct  
 "Lieutenant Colonel John Pelham: The Extraordinary Artillerist," Sep-Oct  
 "The First World War and the Birth of the Modern Style of Warfare," (RR) Sep-Oct  
 "Fort Kamehameha: The Story of the Harbor Defenses of Pearl Harbor," (RR) Sep-Oct  
 "WWII Artillery at Sea—First Strike Against the Japanese Navy," Sep-Oct

**Equipment and Technology**

"Targeting UAVs—The Need is Great, The Time is Now," (RP) Jan-Feb  
 "Crusader Update," Jan-Feb  
 "Competing with Long-Range Enemy Artillery," Jan-Feb

"Firefinder Improvements for the 21st Century," Jan-Feb  
 "Competence is Your Watchword—FA NCOs, Embrace Your Hi-Tech Systems," (INC) Mar-Apr  
 "Precision Weapons—Not for 'All Seasons,'" (RP) Mar-Apr  
 "Commo: IFSAS Over MSE TPN," (INC) Mar-Apr  
 "Commo for Dispersed MLRS," (INC) Mar-Apr  
 "Improving the Effects of Fires with Precision Munitions," Mar-Apr  
 "Risk Estimate Distances for Indirect Fires in Combat," Mar-Apr  
 "Crusader Update (Shoot)," Mar-Apr  
 "Fires 2020: The Field Artillery Road Map," Mar-Apr  
 "The Mortar Fire Control System," Mar-Apr  
 "ATACMS Block IA Fires Deep and Deadly," Mar-Apr  
 "MVV Corrections in BCS and BUCS for Light FA Units," (VB) Mar-Apr  
 "The New M94 Muzzle Velocity System," (VB) Mar-Apr  
 "Corrections to FM 6-40: HOB Illumination Calculations," (VB) Mar-Apr  
 "Crusader Update (Move)," May-Jun  
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 "The Eyes of the Light Force—Equipping Observation Teams," May-Jun  
 "BFIST is on the Way," May-Jun  
 "Cyberspace Techno Geek," (INC) Jul-Aug  
 "The Challenge: Synchronizing Fires, Maneuver and Intel," (Interview with BG William S. Wallace, CG of the NTC) Jul-Aug  
 "Division Redesign—Fires for Force XXI," Jul-Aug  
 "Three Letters: Risk Estimate Distances for Close Fires," (INC) Sep-Oct  
 "Paladin Training Strategy: Breaking the Paradigm," Jul-Aug  
 "BMAR: The First Paladin Range in the Army," Jul-Aug  
 "The FDC-V: The Task Force XXI Platoon Operations Center," Sep-Oct

"The FA's New Command and Attack Battalion," Sep-Oct  
 "Tips on the MVS Fielding with Paladin," (VB) Sep-Oct  
 "Honing the Edge: State of the Field Artillery 1997," Nov-Dec  
 "TTP for the Crusader Battalion—A Beginning," Nov-Dec

**Joint/Combined and Contingency Operations**

"Air Fires' Edition—Bilenski's Letters-to-Editor about USAF Articles Miss the Mark," (INC) Jan-Feb  
 "Task Force Eagle in Operation Joint Endeavor—Lessons Learned in Peace Enforcing," (Interview with MG William L. Nash, CG, 1st AD and Task Force Eagle, Bosnia-Herzegovina) Jan-Feb  
 "Peace Enforcing: Never Let Them See You Sweat," (Interview with COL Gregory Fontenot, Commander of 1st Brigade Combat Team, 1st AD and Task Force Eagle, Bosnia-Herzegovina, Operation Joint Endeavor) Jan-Feb  
 "TA in Sarajevo—Multinational and Terrain Challenges of Operation Joint Endeavor," Jan-Feb  
 "New Joint Targeting School Classes and Mobile Training Teams Available," Jan-Feb  
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