

Field Artillery Journal



November-December

1986



The Red Book



An Annual Report



Field Artillery Journal



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November-December 1986

Number 6

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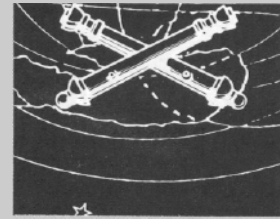
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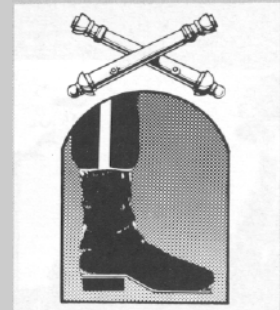
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Assistant Commandant:
BG Jerry C. Harrison

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Managing Editor:
Tammy D. Wyatt

Art Director:
Donna Jeanne Covert

Circulation Manager:
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Today's Field Artillery — Good and Getting Even Better

For 211 years the US Field Artillery has served our nation well. Through 9 major wars and scores of campaigns, dedicated Army and Marine Corps gunners have never wavered in their support of the maneuver arms. In fact, today's Redlegs are the heirs of a remarkable legacy of solid values and stellar combat performances. By my judgment, today's artillerymen are upholding those proud traditions and are writing some exciting new chapters in the history of the King of Battle. Today's Redlegs are a thoroughly professional group of combat-ready warriors who are making the most of the on-going, dynamic era of force modernization.

Redleg Warriors

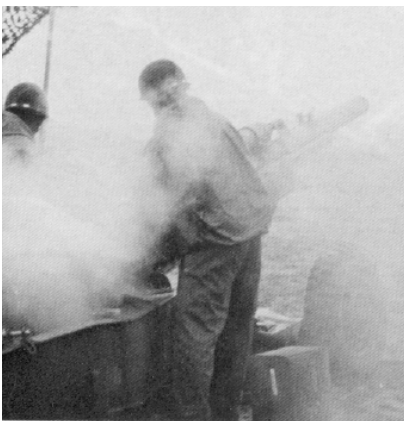
As I travel the far-flung outposts of the Fire Support Community, I never cease to wonder at the extraordinary job our cannoners, missileers, rocketeers, and target acquirers are doing. From Grafenwoehr to the National Training Center to the Korean DMZ, our Field Artillery leaders are contributing to the readiness of

America's combined arms team and the health of our great branch. The 17,122 noncommissioned; 266 warrant; and 9,135 commissioned officers of the Total Force Field Artillery—aided by some 28,534 soldiers and thousands of dedicated Department of the Army civilians—are putting iron on target with unprecedented timeliness and accuracy. Certainly, we are not perfect in our total fire support performance, but we are making steady progress in every area.

One of the most impressive dimensions of our overall effort is fire support training. The Field Artillery School now has every right to claim the title of School of Fire Support. The graduates of its 87 different courses learn a full range of combined arms skills and put those lessons to good use in our units stationed around the globe. Our success rates on skill qualification tests provide graphic testimony of the individual readiness of Field Artillerymen. In career management field (CMF) 13 alone, 94 percent of our Redlegs attained passing scores. What's more, the consistently outstanding

Today's Redlegs are the heirs of a remarkable legacy of solid values and stellar combat performances.





Our aim must be fire support on time, on target, every time!

performance of Active and Reserve Component battalions during Army training and evaluation program-based qualifications tests (ABQT) testifies to the synergism that occurs when well-trained troops operate together in well-practiced units. Nevertheless, we still have much training to do. The results of rotation after rotation at the National Training Center tell us that we must work even harder in our planning and execution of fire support for the combined arms team. Our aim must be fire support on time, on target, every time! The clear message is that we must train as we will fight—as a *combined arms team*.

Good quality, performance-oriented training to demanding standards is one of the keys to combat readiness. But there are others. In the areas of personnel and materiel readiness we are making steady headway. Across the Army in CMF13, we are filling 102 percent of spaces in all ranks. And by the end of this fiscal year we will have completed about 75 percent of the Active Component fielding of the multiple launch rocket system, 100 percent for the battery computer system, and 97 percent of the Firefinder radars. Again in 1986, Field Artillery units have done well in keeping their guns rolling. The 2d Battalion, 147th Field Artillery from the South Dakota National Guard, for example, recently won the coveted Walter T. Kerwin Readiness Award presented at the Association of the United States Army Convention.

The bottom line is clear. Redlegs are, as individuals and units, ready to confront a full range of combat contingencies. They are ready to carry on our tradition of excellence in fire support.

A Balanced Fire Support Force

Our units had better be prepared. We face many implacable foes.

- The Soviets maintain an exceptionally well-equipped, flexible force of 201 active divisions practiced in the execution of rapid-paced, offensive operations in depth.

- Even underdeveloped Third World countries possess sizable arsenals of modern weapons, and in this era of growing political tensions they often put their tools of death to work.

Today's Field Artillery stands ready to deliver appropriate support across the whole spectrum of conflict. Day-by-day we continue to build a better balanced force of:

- Rapidly deployable light artillery units capable of providing fire support in low-intensity conflicts.

- Robust heavy corps and division artilleries to fight mid-to-high intensity battles.

- Deep-striking, highly accurate Pershing II missile systems to help maintain our nation's strategic nuclear deterrent.

None of these units stands alone. They are all integral parts of our Army's maturing combined arms teams. Redlegs are working with leaders from every branch and service to ensure that whenever and wherever hostilities commence our balanced forces will be able to use AirLand Battle doctrine to achieve victory. Joint and combined exercises, interservice and international standardization agreements, and emphasis on every aspect of interoperability are all helping

us synchronize our efforts and build a sound deterrent to hostilities.

Our Branch's Future

We have come a long way from the French 75s of World War I and the FADAC-equipped batteries of the early 70s, but we still have a considerable way to go. Fortunately, we have a well-conceived, concisely articulated, evolutionary road map which charts our future course. We call it our Mission Area Development Plan. But most Redlegs are more familiar with its abbreviated form—the Field Artillery Azimuth. In either form, it includes doctrinal, training, force structure, and materiel initiatives designed to improve both our deterrent and war-fighting capabilities at all levels of conflict.

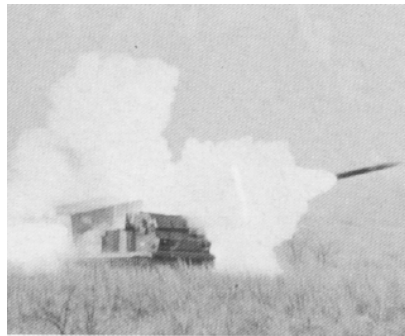
The Azimuth focuses on 5 specific objectives generated by a thorough analysis of what it will take to provide quality fire support to future combined arms teams.

- Increased lethality.
- Improved

personnel-to-weapon ratios and survivability.

- Seeing better and deeper.
- Attacking deeper.
- Improved command, control, and communications.

As later sections of this Red Book make abundantly clear, we are making considerable headway in each of these areas. Programs ranging from the highly accurate Copperhead projectile to the more effective howitzer improvement program M109 to the deep-seeing Aquila to the highly sophisticated, user-friendly advanced Field Artillery tactical data system promise to make the King of Battle better everyday.



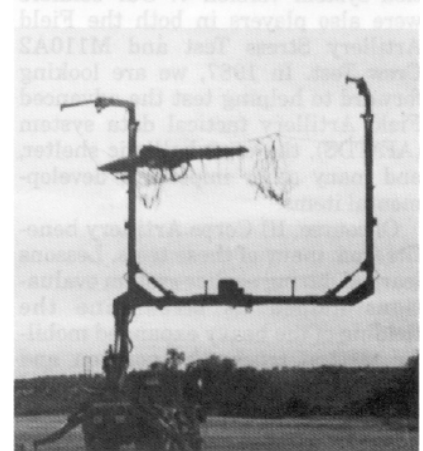
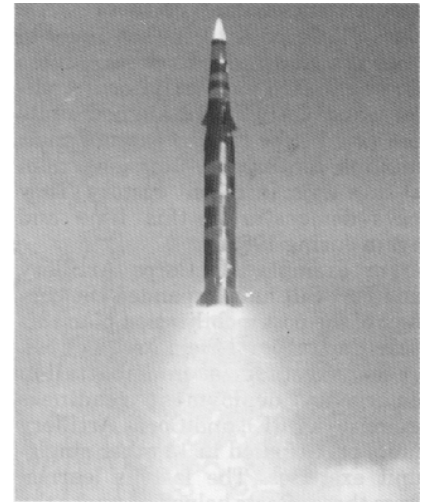
But we should not be overawed by the prospect of advanced technology like robotics, artificial intelligence, and smart munitions. The quality of our future support will depend first and foremost on the quality of our Redleg warriors. And the quality of our warriors is inextricably tied to the core values by which American artillerymen have lived for over 200 years. Today as at Yorktown, Redlegs serve with discipline, stamina, competence, loyalty, and courage born of a unique commitment to the freedom and human rights guaranteed by our Constitution. Like their predecessors, contemporary gunners are dedicated to ensuring that no artillery will be better served than ours.

Conclusion

1986 has been a good year for the King of Battle. We have made steady progress on all fronts. And we have come to realize yet again that the time-honored values and the unfaltering pursuit of excellence which have motivated and characterized American gunners for over 2 centuries are as important as ever. The Field Artillery—our high-tech, combat leaders branch—has a bright future! It's up to each and every Redleg to help make that future become reality.



We have a well-conceived, concisely articulated, evolutionary road map which charts our future course.





Cannon of all caliber, all makes of missiles and rockets with reach—these are the combat multipliers that the artillery units of the III Mobile Armored Corps add to the modern battlefield. With these tools, III Corps Artillery continues to hone to a sharp edge its preparedness for war. In fact, today's III Corps Artillery and CAPSTONE-aligned units are now better able to execute their multiple-contingency missions than at any time in recent history. They have demonstrated this time and again during 1986.

For example, III Corps Artillery and Fort Sill have expanded the concept of the post mobilization plan this year. Each of our 3 Field Artillery brigades executed a multibattalion emergency deployment readiness exercise (EDRE), and Corps Artillery units participated in 15 other single-unit exercises. The lessons learned from these efforts helped us revise the mobilization plan.

Supporting the Future

Throughout the year, the support provided to the Field Artillery School and Field Artillery Board has never slackened. In fact, with the current force modernization efforts undertaken by the Field Artillery Board, it has increased. This year, III Corps Artillery units have participated in tests of the M109E5 howitzer improvement program 1, the battery computer system-interface training simulator, and the tactical fire direction system version 7. Our soldiers were also players in both the Field Artillery Stress Test and M110A2 Crew Test. In 1987, we are looking forward to helping test the advanced Field Artillery tactical data system (AFATDS), the crew ballistic shelter, and many other important developmental items.

Of course, III Corps Artillery benefits from many of these tests. Lessons learned during earlier system evaluations helped us streamline the fielding of the heavy expanded mobility tactical truck, the position and azimuth determining system, and other new items of equipment. These

force modernization efforts, along with force structure changes such as the 3x8 conversion of the 1st Battalion, 20th Field Artillery at Fort Hood, have created additional training and maintenance challenges. We are now planning for the 3x8 conversion of 2 more of our 8-inch battalions in 1987.

Despite these support and modernization actions, III Corps Artillery has retained the wartime mission as its primary focus. That's why over the past year we have concentrated on 3 top priorities.

- Preparing for war.
- Developing leaders.
- Caring for soldiers and their families.

Preparing for War

III Corps Artillery is moving toward the Army of Excellence ideal at a rapid pace. But we're doing so with an eye to efficiency and effectiveness. In fact, we are using our institutionalized training management system to maintain constant combat readiness.

Leaders throughout III Corps Artillery understand the need for timeliness in planning, resourcing, preparing, and executing training. Using documents ranging from the section's mission essential task list to our overall command training guidance, III Corps Redlegs focus on mission-oriented training. We also use quarterly training briefings as well as weekly battery and battalion training meetings to keep on target.

Our 7-week support-training cycle allows our brigades to plan their training around their many support requirements. The brigades' training sequence—from maintaining section proficiency during their support cycle, through section certification tests, to brigade-level exercises during the training cycle—culminates with a periodic III Corps Artillery exercise known as

Phantom Firex. This field training exercise allows the staff to practice wartime skills, mass the fires of multiple units, and evaluate corps artillery-level command, control, and communications.

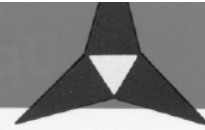
During 1986, III Corps Artillery has been very involved in assisting and evaluating Reserve Component units. Twenty-four such units received normal evaluations and 3 underwent certifying Army training and evaluation programs. III Corps Artillery has also participated in a full range of corps exercises. The most noteworthy of these were Golden Saber, REFORGER, Bold Eagle, Gallant Eagle, Crested Eagle, Cabin Fever, and Team Spirit. In all of this training—from brigade exercises at Fort Sill, to Gallant Eagle in California, to Bold Eagle in Florida—the participation of our CORTRAIN partners and support from Fort Sill has been superb.

Upcoming exercises for fiscal year 1987 include Able Archer, Ready Phantom, Roadrunner, and WINTEX. In addition to these exercises, Active and Reserve Component III Corps Artillery units participated in several terrain-walk exercises in preparation for their wartime missions. These reconnaissances of the actual contingency areas provided a wealth of



Jill Ponto

SP4 Peter Burnham checks the radar control panel of the AN/TPQ-37 Firefinder.



Soldiers of III Corps' Phantom Artillery are better able today to execute their multiple-contingency missions than at any time in recent history. Through repeated training in such areas as maintenance management, field training exercises, and equipment repair, III Corps soldiers stay ready for their wartime missions.

information for the development of each unit's "battle book." In the years ahead, we will continue to develop and refine plans to ensure that our units can make smooth transitions into their respective theaters of operation.

Despite our emphasis on training and support, we realize that maintenance and sustainability require unwaivering attention. Our equipment receives constant use during both support and training cycles. During our support cycle we often turn over our equipment to other units, including our CAPSTONE organizations which can bring only limited assets to Fort Sill. That's why we must have a solid maintenance management system to deal with extraordinarily high usage levels.

To keep our units rolling, we publish command maintenance guidelines, conduct monthly Corps Artillery maintenance system reviews focusing on systemic trends and long-range problems, and hold monthly battalion maintenance management reviews. This system has worked very well. Specifically, our operational readiness rates have not slipped during numerous off-post deployments. That says more than anything else about how solid our maintenance programs really are.

Developing Leaders

In 1986 we have continued the tremendous progress begun during the

"Year of Leadership." We ensured that there is a positive connection between our mission, unit goals, and our officers' evaluation reports. We conducted a monthly noncommissioned officer critical skills certification program designed to bring new NCOs on board quickly. This exciting program entails an Army physical readiness test followed by an MOS-immaterial hands-on test stressing maintaining, training, leading, and caring. Each of our battalions has a variety of leadership development programs with specific 30-, 60-, and 90-day objectives to bring new officers and NCOs on board rapidly. Our 120-day transition program for new commanders has also worked very well.

Caring for Soldiers and Their Families

We have superb family initiatives in III Corps Artillery. Each battalion has an effective sponsorship program for both single and married soldiers. Newcomer orientations occur at battalions, brigades, and at Corps Artillery level. In conjunction with the Army Community Service (ACS), we have developed a program tying our families into the ACS Outreach Program. Furthermore, each battalion publishes a newsletter. Comments received from numerous family members underscore the success of this specific command information program.

Our efforts as contributors to Fort Sill's Army Family Action Plan III have keyed on supporting battalion-level family and sponsorship programs with ideas and materials. Meetings with family representatives have surfaced the need for a series of "how-to" booklets on sponsorship and establishing family support groups during off-post exercises. Several of our battalions have already developed support group pamphlets which proved very helpful for family members during recent REFORGER deployments.

The medical care of our family members has vastly improved in 1986. Fort Sill's implementation of Family Practice Centers will eventually enable all of our families to receive care from a "family doctor" practicing out of a "neighborhood clinic" located near troop billets.

Conclusion

The Phantom Corps Artillery met its many challenges head-on in 1986. With solid leadership from its NCOs and officers, III Corps Artillery supported the Field Artillery School, conducted some superb training, made a fine maintenance system work, and fine-tuned its deployment plans and quality of life programs. The nature and diversity of these accomplishments demonstrate that the professionals of III Corps Artillery care. In fact, they're Redlegs who care enough to give their very best!



Throughout 1986, V Corps Artillery has been very active in seeking better ways to apply tactical fire support doctrine. Specifically, we have added units and established procedures which we believe substantially improve our Corps' fighting ability. What follows is a brief recap of our major programs and initiatives.

Expanding Fire Support for the Corps

In the force structure area, we have participated in 3 major changes.

- The reactivation of Headquarters and Headquarters Battery, V Corps Artillery.
- The early expansion of 155-mm self-propelled battalions to the 3x8 format.
- The addition of a corps-level multiple launch rocket system (MLRS) battalion.

The fieldings of TACJAM, Traffic Jam, and Quickfix have complemented this growth by augmenting Corps' nonlethal fire support assets.

Dispersed Corps' Command Post

As we look forward to the completion of artillery battalion up-gunning and the receipt of more MLRS units in the near future, we must be sure that our doctrine and tactics make full use of our capabilities.

Of particular significance in V Corps Artillery is the requirement to support the "dispersed combat headquarters" concept which seeks to reduce vulnerability and signatures by spreading out major functional groupments over a large geographical area. To meet these challenges, we have aligned an appropriate artillery representative with each of the Corps' headquarters modules. In that way, we place a premium not only on developing fire support plans but also ensuring that the commander's targeting guidance is in consonance with the overall maneuver plan.

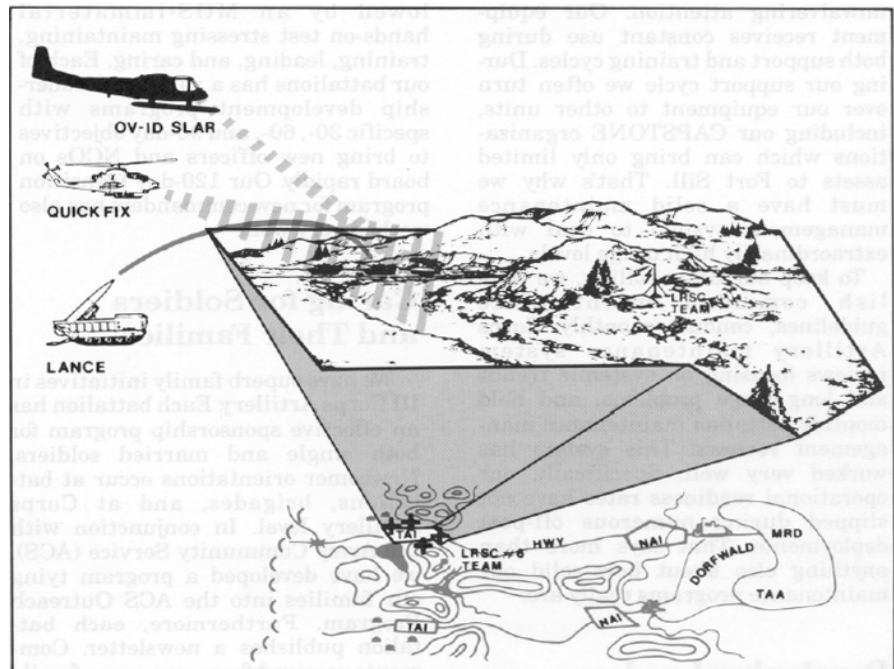


element (CAME), and the Air Force air support operations center (ASOC); the fire support module also houses the air liaison officer (ALO); G3 air; and representatives from the Corps nuclear, biological, and chemical and engineer staffs. Finally, the fire support element includes the Corps electronic warfare officer who, with the rest of the electronic warfare cell, works for the fire support element chief in garrison.

Targeting Guidance

V Corps Artillery has also developed a targeting guidance tool which the Corps Commander and staff use to coordinate intelligence and fire support efforts. The Corps' targeting guidance is the basis for target data collection, target development, and attack decisions made in the fire support element. Attack execution may remain under centralized control for specific operations such as joint suppression

Specifically, we have artillerymen in all the Corps' main headquarters modules—current battle, plans, fire support, and intelligence, as well as rear area operations and the Corps tactical command post. Our fire support module also includes representatives from other Corps staff elements. Composed of the Corps Artillery headquarters, the fire support element (FSE), the Corps' airspace management



Targeting must be developed and executed as a total system: targeting guidance (decide), M1 sensors or Field Artillery target acquisition (detect), and lethal and nonlethal fire engagement (deliver).



of enemy air defense (JSEAD), Lance and electronic warfare ambushes, or battlefield air interdiction (BAI) strikes. In other instances execution may be decentralized for missions such as electronic countermeasures (ECM) or counterfire programs.

Targeting Areas

Our targeting guidance format divides close and deep operations into 3 areas of concentration.

- Enemy divisions in contact.
- Follow-on divisions.
- Follow-on armies.

Enemy divisions in contact are the responsibility of our divisions. In this area the Corps will support the divisions but may take direct control of certain operations such as counterattacks, Corps-directed JSEAD, or cross-forward line of own troops insertions.

The second area for targeting guidance addresses enemy follow-on divisions. This is the area of the Corps' deep operations. Under the North Atlantic Treaty Organization's follow-on forces attack doctrine, the Corps' primary area of responsibility falls between the fire support coordination line and the reconnaissance and interdiction planning line (RIPL). The RIPL serves to divide the army group air interdiction area of responsibility from the corps' battlefield air interdiction (BAI) area and assists in focusing our targeting efforts. For V Corps the RIPL runs at a depth which approximates the limit of a corps' area of influence. Corps in Europe are dependent upon fire support—and especially air power—for the attack of follow-on forces in this area.

The third targeting guidance category—follow-on army—relates to the Corps' area of interest. In this area, V Corps will nominate targets to the army group for inclusion in its air interdiction campaign.

How Targeting Guidance Works

A simple example demonstrates how the targeting guidance and the

TARGETING GUIDANCE			
	DIVISION IN CONTACT	FOLLOW-ON DIVISIONS	FOLLOW - ON ARMY
UNITS IN PRIORITY	XX MRD XY MRD	XZ MRD XX TANK DIV ITR	XX TANK ARMY
OBJECTIVE	DESTROY	DISRUPT 10% ATTRITION	DELAY EAST OF OX RIVER UNTIL 011200Z
AREAS OF INTEREST	HAUNE RIVER TO IGB	TAA's AND LOCs VICINITY DORFWALD	TAA's AND LOCs EAST OF RIPL
GENERAL TARGETS OF INTEREST	MANEUVER FIRE SUPPORT C ³ AD	C ³ MANEUVER FIRE SUPPCRT AD	LOC C ³ MANEUVER
SPECIFIC TARGETS IN PRIORITY	TANK/RECON CO RAGs/DAGs/MRL BNs XX MRD CPs SA - 8	X X CAA MAIN CP MRR BN AI CHOKE PT SSM LONGTRACK RADAR	OX RIVER BRIDGES VICINITY HEIM
ADDITIONAL GUIDANCE	PRIORITY OF CAS TO JAAT IN 3AD SECTOR	COORD JSEAD FOR AI PACKAGE TIME BLOCK III	COORD AI WITH CENTAG

The Corps staff divides close and deep operations into the 3 areas shown. Columns are read vertically. The Corps battle focuses on the follow-on divisions.

fire support module work. The G2 predicts the movement of a follow-on motorized rifle division from its tactical assembly area into 2 possible approach avenues for commitment against the Corps at 0600 hours on Day X. The Corps Commander's guidance is to delay and disrupt this commitment until 1500 hours and to prompt its commitment into a southern avenue of approach. To support this scheme the G3 will execute a deception plan and alert the Corps' counterattack forces. The G2 will incorporate coverage of appropriate named areas of interest into his collection plan and update IPB products for selection of choke point target areas of interest. He will also plan for the use of collection resources that will trigger target activations.

In light of the fact that BAI sorties are not available, the fire support element alerts Lance and Quickfix units. Target analysts plan for the use of conventional Lance and pass the resulting target groups to appropriate units. The G2 assigns electronic support measures through the military intelligence technical control and analysis element which maintains the electronic

order of battle. When the appropriate collector—including the OV-ID SLAR and long-range surveillance company teams—report target activation, the fire support element establishes a time-on-target and issues Lance and electronic countermeasure fire missions. The G2 monitors the attack and reports battle damage assessment. The results—smoldering enemy vehicles, disrupted plans, and a confused enemy who will be unable to commit his full force.

Conclusion

We believe V Corps Artillery is making substantial progress in refining and improving its warfighting capabilities. Our soldiers and weapon systems have experienced both quantitative and qualitative improvement over the past year. What's more, we are building innovative procedures into our command and control systems and developing streamlined tactical employment concepts. Both serve us well and will make the transition to new fire support weapon systems easier in the future.



The Artillery of the VII US Corps supports what is currently the largest maneuver corps in the Free World. Headquarters, VII Corps Artillery; its 13 battalions and 3 Field Artillery brigade headquarters; the artilleries of the 1st Armored and the 3d Infantry Divisions; the 2d Battalion, 5th Field Artillery of the 1st Infantry Division Forward; the howitzer batteries of the 2d Armored Cavalry Regiment, and the artillery of the 12th German Panzer Division form our remarkable Field Artillery Community. During the past year, the leadership of these fine units have taken advantage of new equipment and organizations to improve the quality and quantity of fire support to the VII Corps. Several of our specific initiatives in force modernization, training, command and control, and deep operations are particularly noteworthy.



Force Modernization

The main thrust of VII Corps Artillery force modernization effort has been increased firepower. Implementation of Division 86 and the Army of Excellence designs has resulted in an increase in the number of cannon tubes within the Corps. Specifically, our up-gun program consists of 3 parts.

- Conversion of all 155-mm battalions from the 3x6 to 3x8 format.
- Conversion of 8-inch battalions from the 3x4 and 3x6 formats to the 3x8 organizations.
- Conversion of the divisional 8-inch and multiple launch rocket system (MLRS) battalions to separate MLRS batteries.

So far 3 155-mm battalions have undergone conversion. The coming year will witness the upgunning of 11 more. In 1987, 2 divisional 155-mm battalions will convert to the 3x8 design, 2 divisional composite battalions will deactivate, and 7 8-inch battalions will become 3x8 organizations. Overall, by the end of the 8-inch conversion in fiscal year 1988, VII Corps will have received 12 more

155-mm howitzers and 36 more 8-inch howitzers. By fiscal year 1990, VII Corps will have 240 155-mm howitzers organized in 60 battery computer system-equipped firing platoons and 168 8-inch howitzers in 42 4-howitzer platoons.

In the areas of mobility and transportability, VII Corps Artillery recently began to improve its cargo fleet with the initial fielding of the M984 and M977 heavy expanded mobility tactical truck (HEMTT). Each of these 10-ton trucks will replace 2 5-ton trucks for ammunition transport in the cannon battalions. Our MLRS units received the M985 model HEMTT for ammunition hauling and handling. Modernization of the Corps Artillery's survey capabilities also continued with the fielding of 9 additional position and azimuth determining systems.

Training

Using the generic howitzer section evaluation found in FM 6-50, units throughout the Corps' Fire Support Community developed detailed section evaluations for each of their battalion's sections. These training tools now provide chiefs of section with a pocket-sized reference that lists all of the appropriate tasks, conditions, and standards necessary to train and evaluate their sections. They use these documents not only to develop quality training, but also to promote healthy competition.

Command and Control

All US units in VII Corps Artillery are tactical fire direction system (TACFIRE)-equipped. That's why we are particularly proud of the achievements of our TACFIRE Coordination Board. This committee brings together the best TACFIRE minds from each of our Field Artillery brigades, division artilleries, and subordinate battalions. Together, these Redlegs identify, analyze, and solve hardware and software problems. For example, this body of experts recently published standardized, Corps-wide SOPs which have greatly enhanced the ability of our battalions and brigades to perform their missions.

Furthermore, the TACFIRE Coordination Board has developed a comprehensive logistics-maintenance support plan that has paid off time and time again. The fielding of TACFIRE software version 7 offers a case-in-point. The TACFIRE Coordination Board assembled a cadre of instructors, developed classes and practical exercises, assembled the necessary resources to provide maintenance support to the computers, and then proceeded to field the new software version throughout VII Corps. This highly efficient fielding technique yielded the added advantage of allowing each brigade, division artillery, and battalion to generate a complete field system tape—to include "go-to-war data"—with the assistance and supervision of their higher headquarters.

Deep Operations

The VII Corps Commander has tasked the Corps Artillery to oversee his deep operations efforts. In the past, range capabilities, established battlefield coordination procedures, overburdened and scarce collection resources, as well as the slow response times characteristic of deep attack assets have limited deep operations to battlefield air interdiction (BAI) strikes. Now, with the activation of

VII Corps Artillery



By the end of	FY 86	FY 87	FY 88	FY 89	FY 90
155mm Howitzers	198	222	222	234	240
8 inch Howitzers	132	156	168	168	168
Net increase (Δ)					
155mm Howitzers	18	24	0	12	6
8 inch Howitzers	0	24**	12	0	0
Units converted					
	6/14FA-1AD	*1-94FA-1AD	1-75FA-72d Bde	2-28FA-210th Bde	1-18FA-17th Bde
	1/22FA-1AD	2-78FA-1AD	3-5FA-210th Bde	2 AOR	
	4/5FA-11D(F)	*1-76FA-3ID			
		2-39FA-3ID			
		2-41FA-3ID			
		1-10FA-3ID			
		1-30FA-17th Bde			
		1-36FA-17th Bde			
		3-35FA-72d Bde			
		6-10FA-72d Bde			
		3-37FA-210th Bde			
*Inactivations					
**Not reflective of the 24 tubes transferred from division inactivations.					

The VII Corps Artillery Uppgun program charts a course for Field Artillery unit modernization in the largest corps in the Free World.

the Corps Artillery's Headquarters and Headquarters Battery comes the ability to manage Lance and MLRS at the corps-level and to use them to engage the follow-on regiments of committed enemy divisions while BAI sorties engage the follow-on divisions.

To make deep battle a profitable undertaking, we must decide which high-payoff targets will delay, disrupt, or attrit the enemy's follow-on forces and in turn cause the enemy commander to delay or alter his plans. Our fire support elements must determine what the targets look like, where to look for them, and how to engage. In other words, they must employ the "decide, detect, and deliver" process.

- **Decide**—"Up-front analysis" including intelligence preparation of the battlefield begins the "decide" phase of the process. The next steps are to identify what the high-payoff targets look like to our sensors and what types and amounts of ordnance will achieve the desired destructive results. All of this planning occurs before the battle starts. Once hostilities begin, the commander produces daily guidance listing the high-payoff targets in priority.

- **Detect**—Based on the commander's guidance and on the results of the up-front analysis, corps leaders can focus their scarce collection assets on finding high-payoff targets.

- **Deliver**—Once the intelligence system has found the high-payoff target, we must attack it before it moves. In VII Corps, deep targeting data goes to Lance or MLRS battalions for firing.

In response to our deep operations tasking, VII Corps Artillery has undertaken the following specific initiatives:

- The Corps G2 and Corps Artillery G2 have begun the required up-front analysis.

- Updating terrain-related intelligence preparation of the battlefield.

- Analyzing enemy forces including their force modernization efforts.

- Examining the signatures of high-payoff targets including types and frequencies of emitters.

- Templating and predicting locations of high-payoff targets.

- The new Headquarters and Headquarters Battery is augmenting the Corps' main command post to form a combat support center, which brings representatives of all fire support and combat support means into 1 collocated group designed to fight the deep battle.

- The Corps Artillery G2 now takes his variable format message entry device to the Corps' all source intelligence center (ASIC). This allows us to place timely targeting information into the TACFIRE system.

- The allocation of the Corps' communication assets now allows us to communicate directly with Lance and MLRS units. This arrangement takes advantage of launchers which we have standing by to fire in less than 15 minutes.

Combined, these initiatives allow us to decide, detect, and deliver in support of the Corps Commander's concept of the operation. In the future, aerial sensors will improve our real-time analysis capabilities, and the Army tactical missile system will give us a true deep attack weapon. These improvements will help us accomplish our mission within our established framework; no change in our command, control, communications, and intelligence arrangements should be needed.

Conclusion

The Field Artillerymen of the VII Corps are proud of their innovations. What's more, they are proud to be leading the way during these exciting and challenging years of force modernization and doctrinal evolution. The next few years promise to be even more challenging, but in VII Corps we stand ready to accept whatever the future has in store and to create new opportunities for improved fire support in our dynamic organization.



As the Army's contingency corps, the XVIII Airborne Corps plans for deployments ranging from small show of force efforts to multidivision forced entry operations. Under these various contingencies, the Corps may deploy alone or as the Army's component of a joint task force. Consequently, the challenges to the XVIII Airborne Corps Artillery in providing fire support are numerous and highly varied.

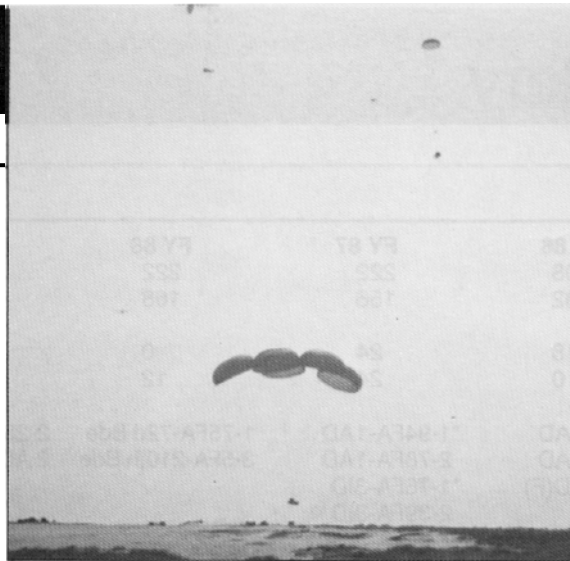
Specifically, Corps Artillery must be able to deploy the necessary personnel and equipment using limited numbers of airframes and, upon arrival, provide and coordinate fire support for both Corps and other forces within the area of operations. In consequence, Corps Artillery has undertaken 3 major initiatives:

- Better force packaging.
- More efficient deployment.
- Improved interoperability in the joint arena.

Corps "D" Plan

Currently, Corps Artillery is refining its deployment plans using the XVIII Airborne Corps "D" concept which seeks to provide a high priority, immediately responsive force with a worldwide orientation. As the Corps' crisis action document, the automated Corps "D" plan lays out force packages which planners tailor for specific crises. The heart of the concept is the packaging of brigade and division task forces to include accompanying combat, combat support, and combat service support units.

Under this concept, XVIII Airborne Corps Artillery has developed fire support packages ranging from a single M198 platoon to appropriate fire support organizations for airborne, air assault, and mechanized task force operations. Corps Artillery planners have tailored each of these packages to allow for deployment in 3 echelons. This approach fosters the timely flow of high priority assets, the simultaneous displacement of support organizations with applicable combat units, the accurate identification of lift requirements, and the logical



linkage of the deployment schedules with the concept of operations.

Fire Support Architecture

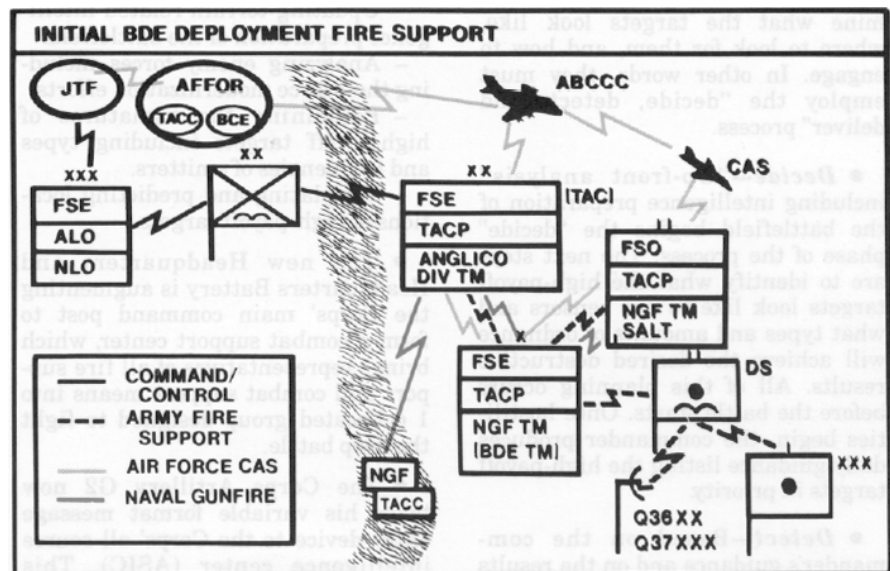
Our second major planning effort is the creation of a fire support architecture for a contingency corps. As part of the Corps' development of an architecture of battle (AOB), this program gives leaders a picture of the Corps at various stages of deployment. In concert with the automated "D" plan, the AOB allows leaders to address command and control, intelligence, fire support, air defense, and logistics problems throughout the 3 major

stages of deployment. Corps Artillery, for example, has developed 3 pictorial representations of the evolution of fire support from the bare-based forced entry of a single brigade to a fully deployed corps. Our planners have also put together a fourth representation portraying the multiple command, control, and communication systems available within the TACFIRE and non-TACFIRE equipped artillery units of the XVIII

Airborne Corps. The work on this project has assisted in refining deployment and force package plans; identifying command, control, communications, and intelligence requirements; and defining problems requiring coordination within the Fire Support Community.

Joint Operations Procedures

Our third, near-term effort is the development of a joint operations procedures (JOP) memorandum of understanding. JOP preparation began in August 1985 in response to problems experienced during command



Fire support architecture of battle (AOB) for XVIII Airborne Corps which depicts a single brigade entry scenario during the period C to C + 3.

Tomorrow in the Army's Contingency Corps



An M198 howitzer completely derigged and prepared for tactical movement following a successful low altitude parachute extraction system (LAPES) operation.



LAPES of an M813 5-ton truck during rapid deployment exercise.

post exercise Solid Shield 85. Through a series of meetings and exchanges of information, fire support representatives of the XVIII Airborne Corps Artillery, I Marine Amphibious Force (IMAF), II Marine Amphibious Force (IIMAF), and 1st Special Operations Command (1st SOCOM) identified 12 major areas of concern within the fire support arena. Subsequently, these divergent commands were able to develop solutions for each. Agreements to follow existing doctrine—such as cross boundary fire support coordination—solved the easy issues. Other areas—target acquisition support, laser designator code management, and attachment of artillery between services—required more detailed coordination.

A test of these jointly coordinated solutions occurred during joint readiness exercise Gallant Eagle 86. Air and artillery assets of the XVIII Airborne Corps and IMAF conducted a live fire exercise at the Marine Corps training facility at Twentynine Palms, California. The involved organization will use the lessons learned during this exercise to refine existing fire support agreements and to develop new ones as required.

The Future

The efforts noted above focus on the near-term and grapple with the harsh realities of today's world. But Corps Artillery is also looking to the future. It is

preparing to accept new units and modify old ones to generate more firepower and achieve more rapid deployments.

Corps Artillery's force structure will change dramatically by fiscal year 1988. With the activation of 4 new units and the receipt of several new systems, XVIII Airborne Corps Artillery will experience significant increases in its target acquisition, firepower, and deployment capabilities.

One particularly significant change will occur in August 1987 with the activation of the Army's first airborne 155-mm artillery battalion. The 1st Battalion, 39th Field Artillery will become the 1st Battalion (Airborne), 39th Field Artillery. In the process the M198 battalion will reorganize under the 3x8 design, which greatly increases the forced entry capability of the Rapid Deployment Force.

Other major changes scheduled for 1987 include the activation of a Corps Artillery Headquarters and Headquarters Battery (HHB) and the 1st Battalion, 14th Field Artillery. HHB, Corps Artillery will become the force artillery headquarters for the Corps as well as the alternate Corps tactical operations center. In March, the 1st Battalion, 14th Field Artillery will form at Fort Stewart, Georgia as a 3x8 8-inch battalion. It will draw upon assets already in place at Fort Stewart as well as from elements at Forts Carson and Polk.

Further activation plans include a corps target acquisition battalion and the 3rd

Battalion, 27th Field Artillery (MLRS) in 1988. These units will greatly enhance the command and control, target acquisition, and firepower of the contingency Corps.

In addition to the planned activation of these units, XVIII Airborne Corps Artillery will receive several items of new equipment. These systems promise to improve the Corps' logistics capabilities in accordance with the AOB concept. For example in the 1987 to 1988 time frame, the M925 5-ton truck, high-mobility multi-purpose wheeled vehicle (HMMWV) and heavy-expanded mobility tactical truck (HEMTT) will arrive at Corps Artillery units.

Conclusion

The XVIII Airborne Corps Artillery is planning for both current and future operations in support of the Army's contingency corps. The Artillery "D" plans, fire support AOB developments, and JOP memoranda will help Corps Redlegs provide adequate fire support in every conceivable contingency. The Army of Excellence (AOE) force structure and modernization plans for XVIII Airborne Corps Artillery will ensure adequate fire power and more responsive deployment capabilities for all future XVIII Airborne Corps contingency missions. Today and tomorrow, XVIII Airborne Corps' gunners will be ready. After all, they're Airborne!



For years the Russian Bear has stalked the borders of Western Europe. It is huge, bold, and aggressive. Behind it are the assembled armies of the USSR and its satellites. In sheer numbers of men and volume of firepower, the Bear seems almost invincible as it appears poised to assault the Western World.

Today, the Soviets are again seated at the bargaining table. But some of their bluster is gone. Many senior officials in the US and Europe credit this change to the fact that the 56th Field Artillery Command (Pershing) completed the fielding of 108 new Pershing II missiles in 1985.

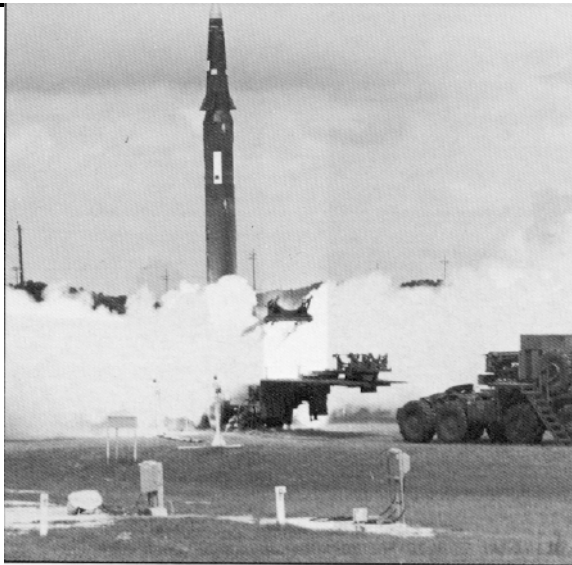
The Russian Bear has decided that because the West has shown it can play rough too—they would rather talk than stalk.

The System

The USSR watched angrily as the first of 24 Pershing Ia missiles arrived in Europe in 1963. In 1969, they witnessed an increase in Pershing's maneuverability and survivability when Pershing units traded in their tracked vehicles for wheeled erector launchers. Ten years later, the North Atlantic Treaty Organization (NATO) Twin-Track Agreement made possible a second upgrading of the Pershing system; and in 1985, following 16 months of training, testing, and evaluation, our soldiers had 108 Pershing II missiles in place.

The Soviets know the accuracy, reliability, and rapidity of action of the Pershing II. That's why they have reason for concern! The Pershing II is a tactical ballistic missile with a nuclear capability and a range fan that extends approximately 1,800 kilometers. It also possesses increased accuracy, easier warhead yield selection, and reduced emplacement and displacement times over its Pershing I predecessor.

The Soviets also know that a weapon system is only as good as the men and women who operate and maintain it. The Pershing II is manned and maintained by soldiers of the only Field Artillery Command in the United States



Army—the 56th. This recent designation reflects not only the size and complexity of our organization, but also our importance to the overall NATO mission of deterrence.

The 6,000 soldiers of the 56th Field Artillery Command (Pershing) are based in the Schwaebisch Gmuend, Heilbronn-Neckarsulm, and Ulm-Neu Ulm areas of West Germany. The command includes a Headquarters and Headquarters Battery; 3 Pershing firing battalions; infantry, signal, and maintenance support battalions; and an aviation company.

The Missions

This complex, self-sufficient unit is a NATO organization with dual missions and chains of command. In peacetime, the leaders of the 56th report directly to the United States Army, Europe and the United States European Command. The mission of the 56th demands that we remain combat ready, with some units always alert to respond to immediate missions in a matter of minutes.

During periods of tension or actual war, the 56th's operational command and control shifts to the NATO chain. Specifically, the Command falls under the control of Allied Air Forces, Central Europe. At that point, the Command's mission is to provide general supporting nuclear fires to the theater commander.

The Soldiers

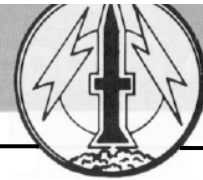
None of this would be possible without highly-trained, disciplined, physically fit, and well-motivated soldiers. After intensive training in the United States, Pershing soldiers continue to hone their skills in Germany. Squad, battery, and battalion Army training and evaluation programs conducted in the German countryside heighten the realism of our training. In fact, a typical 56th Command maneuver finds Pershing soldiers passing through 3 or 4 German states before reaching their objectives. Even anti-Pershing demonstrators play a part by giving our infantry units the "aggressor activity" we need to make optimum use of our field training time.

Soldiers of the 56th Field Artillery Command proved our readiness in 1986 when they successfully launched 8 Pershing missiles from firing ranges in White Sands, New Mexico and Cape Canaveral, Florida. But the fact



One of the benefits of the Pershing II system is the elimination of the cumbersome firing position cables common to the Pershing Ia.

Thwarting the Stalking Bear



SGT Chris Taylor

A 56th Field Artillery Command firing platoon leader conducts a simulated firing mission in the platoon control central.

that our soldiers performed flawlessly under pressure is not surprising. From the time of the decision to field the Pershing II, Pershing soldiers have demonstrated disciplined performance to standard in the face of intense political pressures; media coverage; and more than 35,000 anti-Pershing and anti-nuclear demonstrators.

Although demonstrator activity has decreased dramatically in 1986, the continuing threat of international terrorism requires the Command to maintain both constant vigilance and a high state of readiness. For instance, the need for increased security for the missile has led to the creation of a ballistic shield for protection during transit. Autobahn screening walls have been constructed to shield missiles and support personnel from ground-based surveillance.

Other construction projects, totaling more than \$100 million, are part of a long-range building and renovation program to provide the best facilities for the US Army's most modern missile system. In fact, there are construction and modernization projects—new motor maintenance facilities and renovated motor pools—underway at all 56th Command locations. Missile storage areas and garages, communications and

electronics facilities, and repair parts buildings are all under construction. Such new facilities will not only provide Pershing soldiers with a safe and efficient working environment, but also aid the Command in maintaining the vast amounts of new equipment already received or on the way.

In addition to maintaining our equipment, we are dedicated to maintaining our people as well. Quality time with the family, as part of an overall morale maintenance program, receives heavy emphasis. Living in 1 of the most beautiful areas of Germany, the Command's soldiers enjoy the 4 seasons and the accompanying recreational opportunities.

Another manifestation of the Command's interest in and caring for our people is the remarkable history of success experienced by noncommissioned and commissioned

officers who served in the 56th. Pershing soldiers enjoy a high rate of selection for promotions, commands, and advanced military schooling. It is this high quality of leadership, backed by well-disciplined and trained Pershing soldiers, that makes our Command a force to be reckoned with.

Conclusion

History may someday note that the Russian Bear's superior numbers of troops and masses of equipment poised along the borders of our European Allies were held in check by the unpalatable risk of retaliation posed by such combat ready soldiers as those in the 56th Command. History will then have demonstrated why the 56th's fine professionals can justifiably lay claim to the title —Peacemakers.



The Pershing II missile requires one-half the time to emplace and displace than the Pershing Ia. The addition of the ballistic shield (bottom) protects the newer system while in transit

As the School of Fire Support, our goal is to train Field Artillerymen for combat. Our purpose is to give those Redlegs the comprehensive training, sound doctrine, and robust organizational structures they need to support the maneuver arms. Let us tell you about some of the things we're doing to realize these ambitious goals.

Training

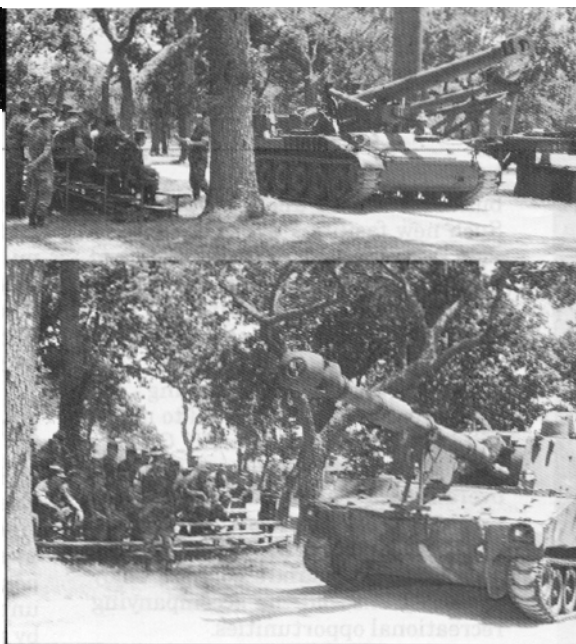
Training soldiers for combat is the Field Artillery School's most important business. Here at our branch's home, we are continually updating institutional training to accommodate changes in doctrine, force structure, and materiel. And we are always looking for new and innovative ways to deliver better fire support to our maneuver brethren.

Our aim is to produce tactically and technically proficient soldiers. That's why we put tremendous emphasis on both areas. During 1986 we trained some 16,000 students in our resident courses. This number includes over 300 Allied Redlegs from more than 30 countries.

The proliferation of light forces created many new training challenges for the School of Fire Support. Accordingly, our training developers put together an extensive light training program to meet the particular needs of light artillerymen. Their product has both institutional and exportable components. For example, at Fort Sill we have integrated light training initiatives into the existing course structure. But to reach an Army-wide audience, we have also developed an impressive exportable evaluation package designed to meet the training needs of light units. We still have a lot more work to do. That's why we're working closely with the 7th and 25th Infantry Divisions to improve our products.

The Field Artillery Officer Advanced Course (FAOAC) has undergone extensive changes recently. Two particular modifications warrant special mention.

- First, we reduced the course from 26 to 20 weeks in length.
- Second, we integrated the Nuclear and Chemical Target Analysis Course



the fire support training requirements associated with new systems and combined arms concepts. For example, we have a major effort underway to develop a training package for Field Artillery aerial observers. This will be a combined arms program designed to teach aviation skills at Fort Rucker and fire support skills at Fort Sill. The course should be up and running next year, and we should soon be sending well trained aerial observers out to support the maneuver arms.

Doctrine

Doctrinal development is a dynamic area. And the leaders of the School of Fire Support recognize their responsibility to provide timely doctrine to the field. Several initiatives are underway to make that happen.

Last November we began to accelerate the replacement of FM 6-20, *Fire Support in Combined Arms Operations*, with a 4-manual series designed to be a user-friendly set of publications that is short on philosophy and long on practical applications. Good input from the field and valuable lessons learned from the National Training Center have given us some new insights into old problems, and the new FM 6-20 series promises to be a true "how-to" product.

All of us remember FM 6-40, *Field Artillery Cannon Gunnery*, as the Redleg's Bible. As automation of fire direction accelerates, many artillerymen have become rightfully concerned that the art of gunnery will be forgotten. To keep that from happening, we are reformatting FM 6-40 to cover both gunnery fundamentals as well as the broad range of new technologies. Section 1 of the manual—the "Old Testament"—will focus on theory and ballistics. Section 2—the "New Testament"—will include separate appendixes for each automated system as well as for manual procedures. This versatile approach will allow us to update FM 6-40 as new systems reach the field.

Grade in the School of Fire Support



Follow-on instruction for MLRS, Lance, and Pershing II after the Field Artillery School's Officer Basic and Advanced Courses is constantly upgraded to keep pace with improvement in the systems' maintenance, training, and tactics.

We are also working on a fire support handbook for maneuver commanders. This small, pocket-sized volume will focus on battalion and brigade-level operations. It will cover general fire support information, duties and responsibilities, as well as planning requirements and employment considerations.

Doctrinal lessons learned from the National Training Center are applicable to Field Artillery units worldwide. And we're using these valuable lessons to test, improve, and update our doctrine. Our Directorate of Evaluation and Standardization is setting up a special office to facilitate the rapid collection, analysis, and dissemination of lessons learned. This center for Army lessons learned (CALL) office will be a valuable doctrinal resource for the Fire Support Community.

Force Integration

Field Artillery force integration is what we call our efforts at developing organizations and systems designed to implement fire support doctrine on the AirLand Battlefield. During the past year, we have been busy on a number of force integration initiatives which will have profound effects upon the fire support we can deliver to the maneuver arms.

For example, we are currently working hard to get more multiple launch rocket system (MLRS) battalions into the total force. The Army's leadership has already approved a transition plan which will

result in 8 additional MLRS battalions. Under this program, the Field Artillery will trade 5 M110 battalions for 5 MLRS battalions. But we will not lose a single tube. They will merely upgrade other 8-inch units to the 3x8 configuration. The plan also calls for the compression of 8, 3x2 Lance battalions into 4, 3x4 battalions. This shift will make room for 3 more MLRS battalions. The net gain will be 8 MLRS battalions without dropping a single tube or launcher from the force.

As we restructured the force, we never lost sight of the individual soldier. The School's Field Artillery Proponency Office (FAPO) has been working on several initiatives which will have an impact on Redlegs worldwide. One of particular significance involves Pershing missileers.

Last year a Pershing study group took a hard look at the Pershing space imbalanced MOS (SIMOS) problem and submitted some innovative recommendations to the Army staff. If approved, the study group's new Pershing force concept will radically change existing personnel and management policies. Two specific recommendations are particularly noteworthy. The study proposed a reversed rotational system which would home base Pershing soldiers in Europe. It also outlined an attractive incentives package to compensate for lengthy overseas assignments.

At Fort Sill, our biggest force integration challenge is to exploit rapidly developing technologies while at the

same time keeping systems user-friendly and cost effective. Our fire support materiel is already the best in the world, but we are working hard to make it even better.

For example, our Directorate of Combat Developments has been working on a number of important initiatives. The Army tactical missile system (ATACMS) and the M109 howitzer improvement program along with new and diverse smart munitions will add new "muscle" to our fire support system. Firefinder II, the Aquila remotely piloted vehicle (RPV), and the elevated target acquisition system (ETAS) will enable the sharp "eyes" of the fire support system to search deeper than ever before. Lastly, the advanced Field Artillery tactical data system (AFATDS), the "brains" of fire support, will provide artillery units with a state-of-the art command and control capability.

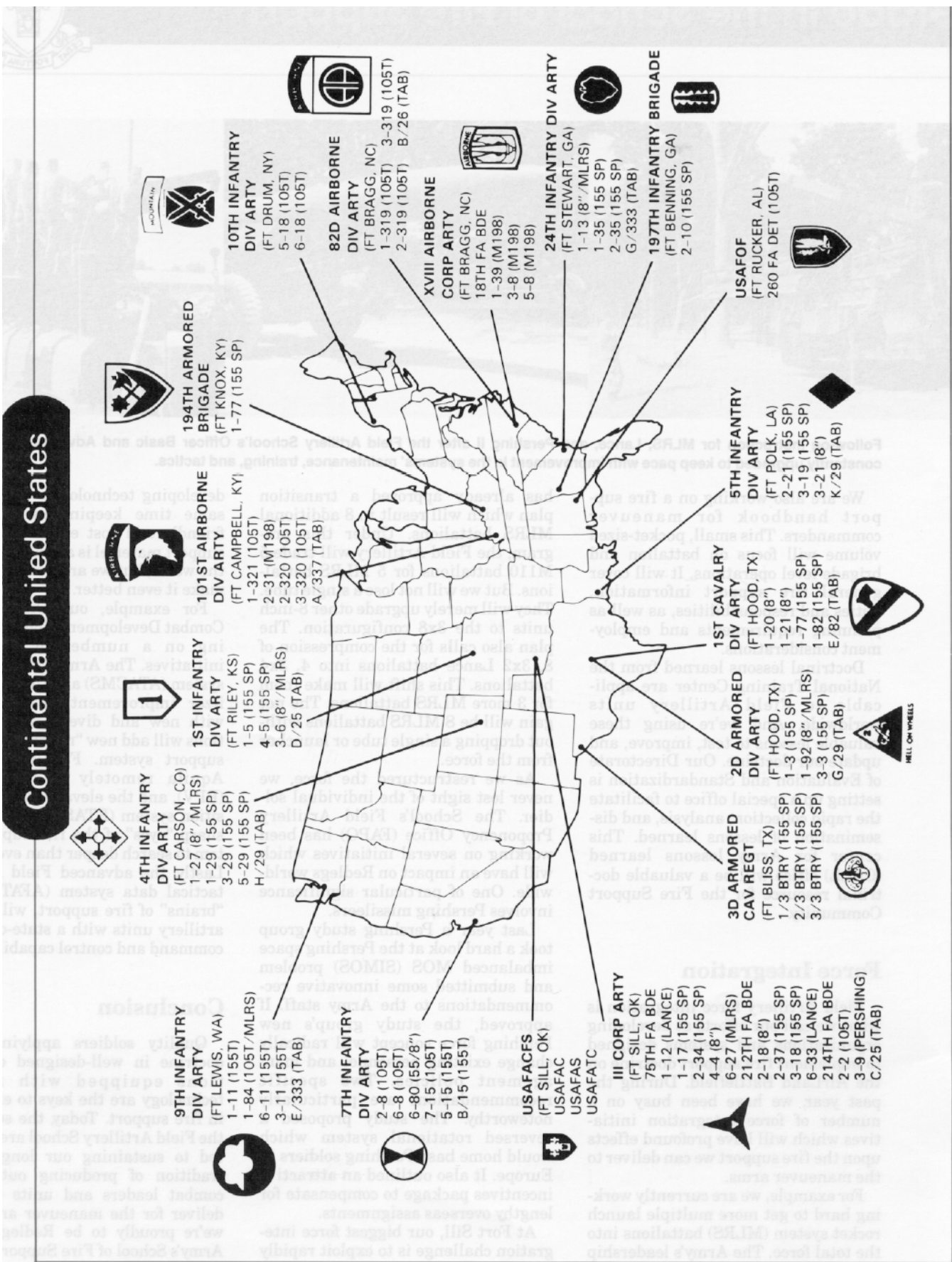
Conclusion

Quality soldiers applying sound doctrine in well-designed organizations equipped with modern technology are the keys to excellence in fire support. Today, the soldiers of the Field Artillery School are committed to sustaining our longstanding tradition of producing outstanding combat leaders and units that can deliver for the maneuver arms. And we're proudly to be Redlegs at our Army's School of Fire Support.

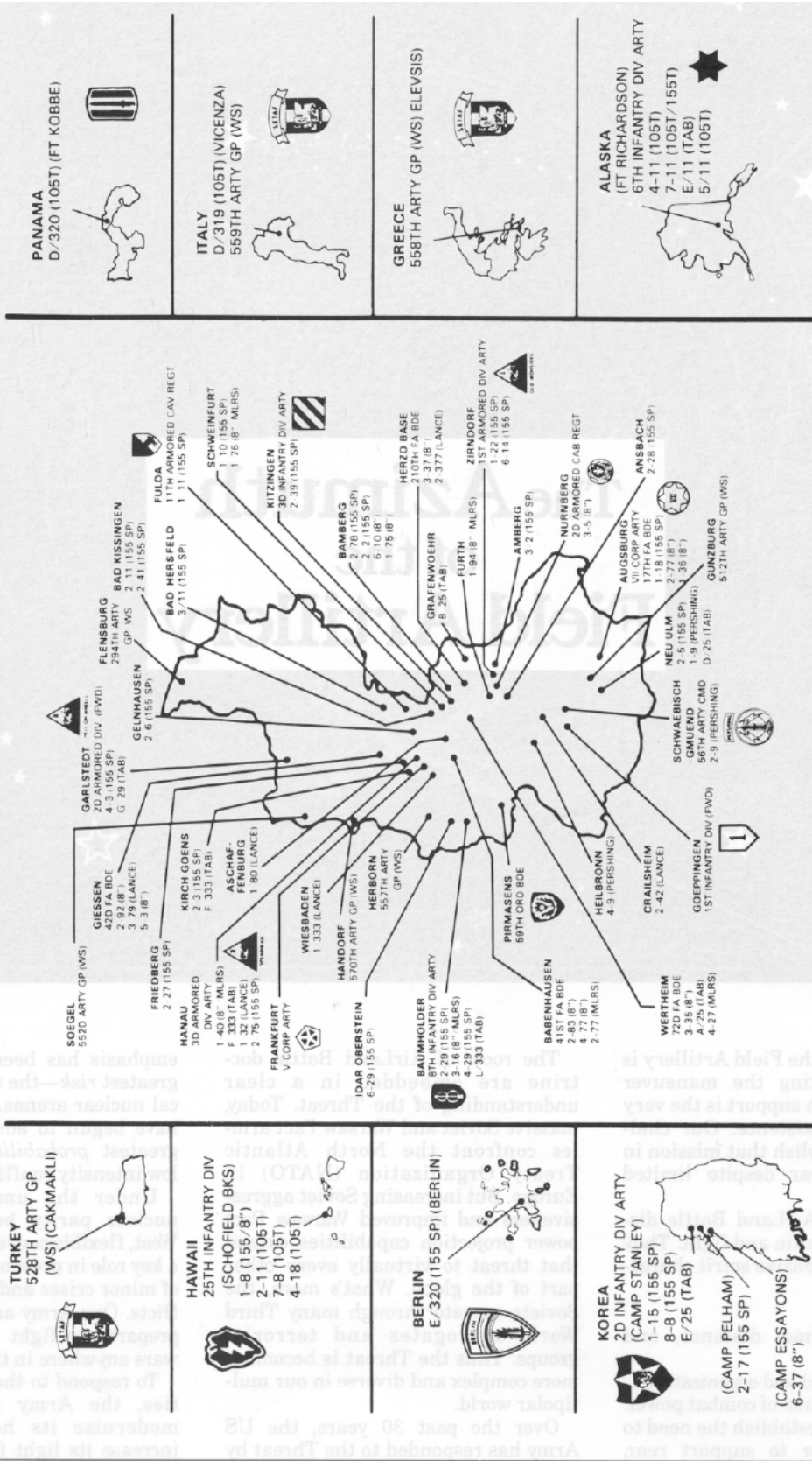


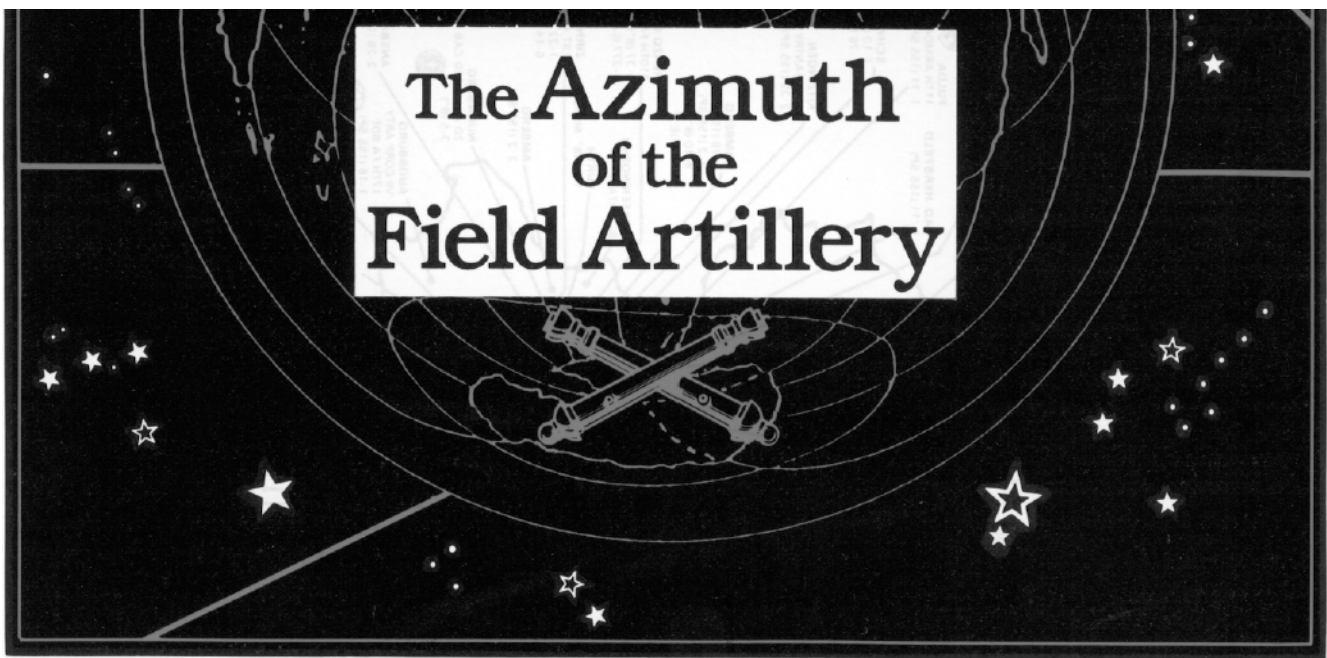
US ARMY FIELD ARTILLERY LOCATIONS

Continental United States



Overseas





The focus of the Field Artillery is on supporting the maneuver arms. In fact, such support is the very reason for our existence. Our challenge is to accomplish that mission in peace and in war despite limited resources.

The tenets of AirLand Battle dictate how we will train and fight. They emphasize the offensive spirit characterized by:

- Initiative.
 - Depth in time, distance, and resources.
 - Agility of mind and organizations.
 - Synchronization of combat power.
- They also clearly establish the need to allocate firepower to support rear, close, and deep operations.

The roots of AirLand Battle doctrine are embedded in a clear understanding of the Threat. Today, massive Soviet and Warsaw Pact armies confront the North Atlantic Treaty Organization (NATO) in Europe. But increasing Soviet aggressiveness and improved Warsaw Pact power projection capabilities extend that threat to virtually every other part of the globe. What's more, the Soviets operate through many Third World surrogates and terrorist groups. Thus the Threat is becoming more complex and diverse in our multipolar world.

Over the past 30 years, the US Army has responded to the Threat by becoming progressively heavier. Our emphasis has been on the areas of greatest *risk*—the

strategic and tactical nuclear arenas. More recently, we have begun to address the areas of greatest *probability*—terrorism and low intensity conflict.

Under the umbrella of rough nuclear parity between East and West, flexible conventional forces play a key role in preventing the escalation of minor crises and low intensity conflicts. Our Army and branch must be prepared to fight such conventional wars anywhere in the world.

To respond to these strategic realities, the Army is continuing to modernize its heavy forces and increase its light force's capabilities. The Field Artillery's modernization

efforts are no exception to the rule. Our branch is moving ahead in a clear, logical fashion to accomplish its mission.

The mechanism by which the King of Battle charted its course was the mission area analysis. Using this methodology, experts war-gamed the programed force against a threat projected years into the future. They identified deficiencies in 4 broad functional areas—doctrine, training, force structure, and materiel. Then they developed proposed solutions to deal with not only the Field Artillery's but also the Fire Support Community's shortfalls.

Of course, modernizing the Field Artillery is a continuous, ongoing process that is *evolutionary* in nature. Our road map for future change is itself constantly changing. Major efforts such as the Fire Support for Light Forces Conferences, Close Support Study Group III, and the Legal Mix VI Study necessitate alterations in our plans. They focus on key aspects of improving fire support to maneuver and are a logical extension of the mission area analysis process. The net result of this effort is a master plan for our branch's future. We call it the Field Artillery Azimuth.

The Field Artillery Azimuth

The thrust of the Azimuth is to provide the requisite fire support to a Combined Arms Team capable of winning an AirLand Battle. The 5 specific elements of the Azimuth are:

- Increased lethality.
- Improved personnel-to-weapon ratios and survivability.
- Seeing better and deeper.
- Attacking deeper.
- Improved command, control, and communications.

Many changes in each of these areas are already underway; others will come about in due time. What follows is a brief outline of just a few of these actions organized under the 4 major functional areas noted earlier—doctrine, training, force structure, and materiel.

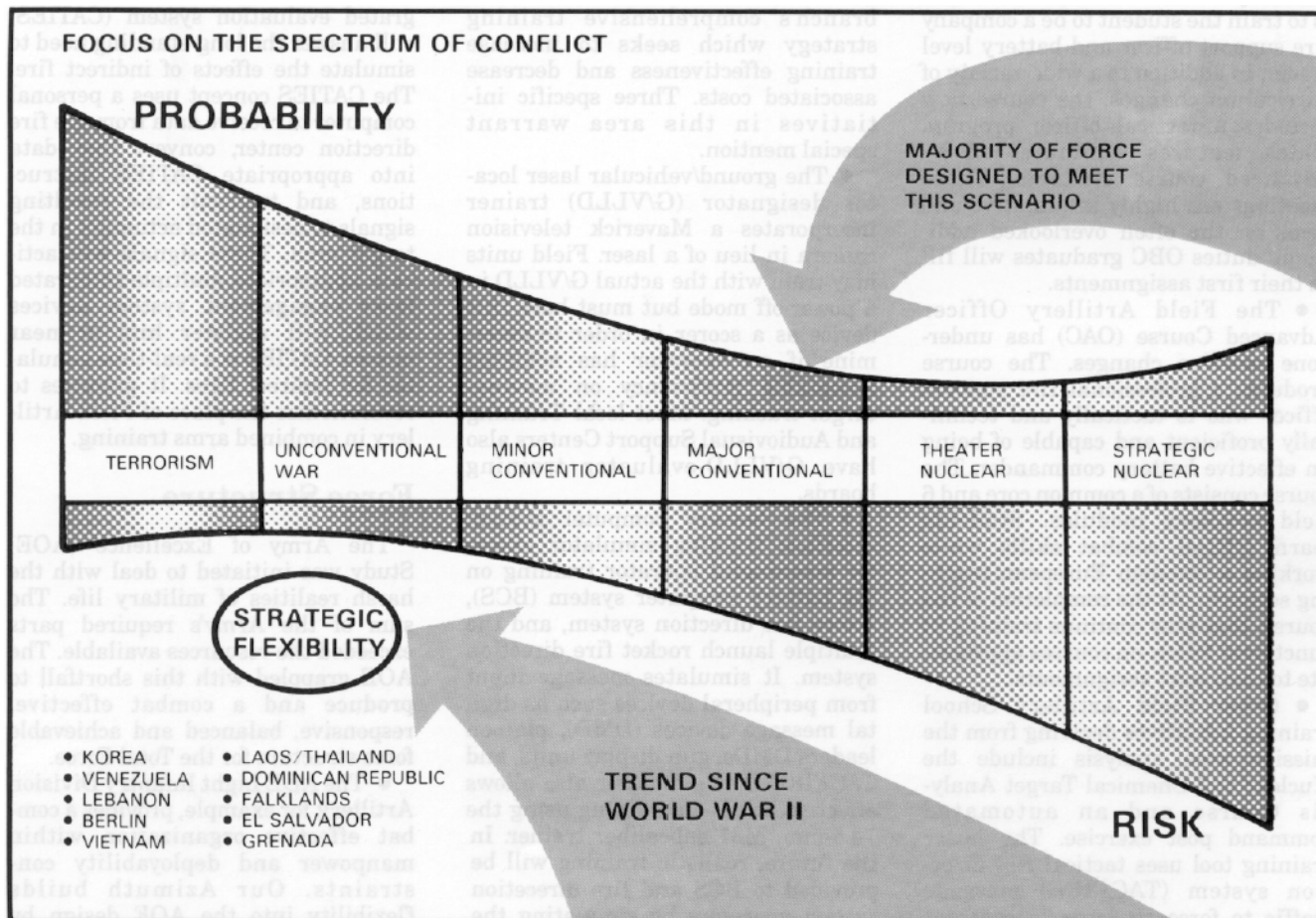
Doctrine

Our Azimuth calls for several new doctrinal initiatives and publications which will make our execution of the AirLand Battle more efficient.

- Army-Air Force Interaction. Efficient and effective joint operations are vital in the execution of AirLand Battle doctrine. Improved coordination links such as the battlefield coordination element (BCE) will improve the synchronization of fire support.

- Detailed Targeting Process. To make full use of the mountains of available information, the Field Artillery must harmonize its efforts with those of the Intelligence Community. That's why both organizations are working hard to develop a detailed targeting process which will allow us to maximize the use of available sensors to generate appropriate targets which we can attack quickly with the appropriate lethal and nonlethal fire support means.

- Target Value Analysis (TVA). The target value analysis process increases the effectiveness of fire support. Every target's value is situational; its relative value depends on how that particular target might affect the overall success of the maneuver commander's plan. The result of this analysis is a determination of *which* targets should be



attacked as well as *when* and *where*. Current and projected uses of this process will give the maneuver commander significant tactical benefits.

Training

The Field Artillery is changing its institutional training to accommodate doctrinal, force structure, and materiel changes. Training is particularly important because it cuts across the entire spectrum of our modernization efforts. In some instances, training by itself can resolve mission area deficiencies; but more often, training is a necessary component of larger system-wide changes.

Institutional Training.

The Advanced Noncommissioned Officer Course (ANCOC) produces masters of Field Artillery specialties. NCO students must demonstrate their ability to perform critical combat tasks as well as to train and lead highly-skilled subordinates. ANCOC's 2 field training exercises are particularly important because they help prepare NCOs for additional leadership responsibilities.

- The goal of the revised Field Artillery Officer Basic Course (OBC) is to train the student to be a company fire support officer and battery level leader. In addition to a wide variety of curriculum changes, the course now includes a tactical officer program which features seminars led by advanced course students. These meetings are highly informative and focus on the often overlooked additional duties OBC graduates will fill in their first assignments.

- The Field Artillery Officer Advanced Course (OAC) has undergone massive changes. The course produces a professional fire support officer who is tactically and technically proficient and capable of being an effective battery commander. The course consists of a common core and 6 field artillery modules. Students learn critical combat skills while working a common European teaching scenario. At the completion of the course, they may continue training in functional follow-on courses appropriate to their next assignments.

- Other Field Artillery School training initiatives deriving from the mission area analysis include the Nuclear and Chemical Target Analysis Course and an automated command post exercise. The latter training tool uses tactical fire direction system (TACFIRE) message traffic to force students to confront



During the Advanced Noncommissioned Officer Course, students demonstrate their ability to perform combat critical tasks.

the battlefield challenges found in a brigade area of operations.

Training Devices. Training devices are an integral part of the branch's comprehensive training strategy which seeks to increase training effectiveness and decrease associated costs. Three specific initiatives in this area warrant special mention.

- The ground/vehicular laser locator designator (G/VLLD) trainer incorporates a Maverick television camera in lieu of a laser. Field units may train with the actual G/VLLD in a power-off mode but must have this device as a scorer in order to determine if an operator has achieved acceptable proficiency on moving-target tracking. Most local Training and Audiovisual Support Centers also have G/VLLD-evaluator training boards.

- The battery computer system interface training simulator allows for meaningful operator training on the battery computer system (BCS), Lance fire direction system, and the multiple launch rocket fire direction system. It simulates message input from peripheral devices such as digital message devices (DMD), platoon leaders DMDs, gun display units, and TACFIRE. The simulator also allows effective hands-on training using the 14.5-mm, M31 subcaliber trainer. In the future, realistic training will be provided to BCS and fire direction system operators by simulating the

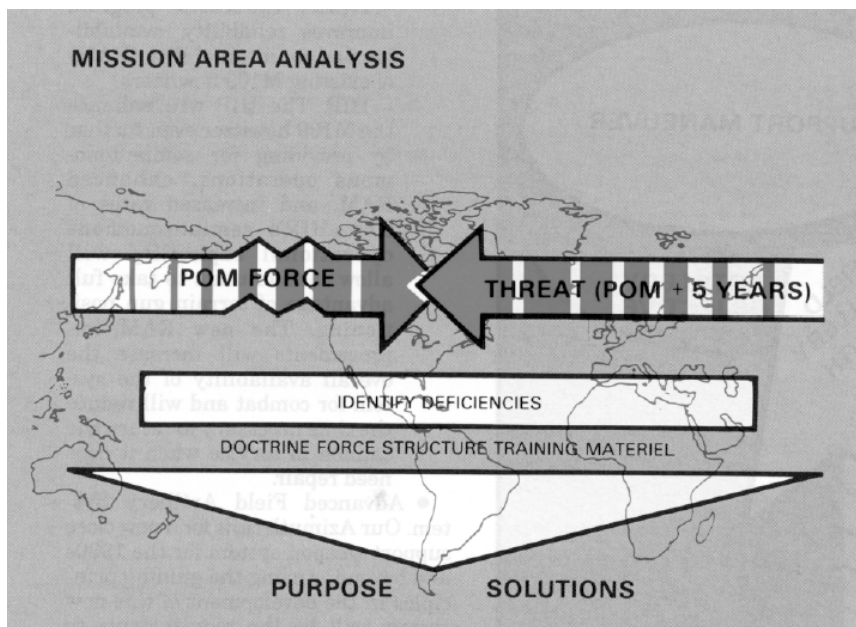
interface with the advanced Field Artillery tactical data system (AFATDS).

- The combined arms team integrated evaluation system (CATIES) will answer the long-standing need to simulate the effects of indirect fire. The CATIES concept uses a personal computer to receive data from the fire direction center, convert that data into appropriate CATIES instructions, and transmit the resulting signals to designated actuators in the target area. These signals will activate appropriate multiple integrated laser engagement system devices which will register hits or near misses. CATIES is a real-time simulator for indirect fires. It promises to revolutionize the place of Field Artillery in combined arms training.

Force Structure

The Army of Excellence (AOE) Study was initiated to deal with the harsh realities of military life. The sum of the Army's required parts exceeded the resources available. The AOE grappled with this shortfall to produce and a combat effective, responsive, balanced and achievable force structure for the Total Force.

- The AOE Light Infantry Division Artillery, for example, provides a combat effective organization within manpower and deployability constraints. Our Azimuth builds flexibility into the AOE design by



calling for a POMCUS option to upgun 105-mm batteries with the 155-mm howitzer should the light division deploy to Europe.

- The AOE design for heavy divisions not only implements the 3x8 firing battery structures called for by our Azimuth, but also removes the 8-inch howitzer from the division which retains a 9-launcher divisional multiple launch rocket system (MLRS) battery.

- Our master plan also calls for the proliferation of combat observation lasing teams (COLT). These organizations will significantly enhance fire support by adding flexibility and robustness to the fire support teams already in place. Commanders may use COLTs to weight the main attack or shore-up key vulnerable areas.

- Finally, we are making a major change in the way we design tables of organization and equipment (TOE) and document changes. Under the previous documentation methodology, there was a one-time application of a basis of issue plan (BOIP) to an existing table. Because of the extended fielding schedules for most major items of equipment, many units have gone for considerable periods of time without the modified equipment they are authorized. Under the new "Living TOE" methodology, the base TOE is the least modernized, common denominator document. Incremental change packages (ICP)—which include basis of issue plans, manpower

authorization requirements criteria, and doctrinal changes—are then applied to the base TOE to create intermediate tables. This gives everyone a clearer picture of what units have and how ready they really are.

Materiel

Although doctrinal, training, and force structure changes are significant aspects of our Azimuth, the vast majority of the Field Artillery's modernization efforts fall into materiel domain. Of course, each of these systems has many doctrinal, training, and force structure implications, but under the Azimuth we deal with them using the 5 key objectives noted earlier.

- **Increase lethality.** The Field Artillery supports maneuver by destroying, neutralizing, and suppressing enemy forces throughout the depth of the battlefield. So as threat forces have become heavier and more mobile, the Field Artillery has had to increase its lethality through the development of new munitions which will produce a greater assurance of target defeat.

- **105-mm DPICM.** Because the 105-mm howitzer will be the major weapon system organic to the new light division, we must increase its lethality. Currently, the 105-mm weapon does not have the capability to attack materiel targets. That's why a development program for a new, lightweight

dual-purpose improved conventional munition (DPICM) is already underway.

- **105-mm rocket assisted projectile.** The present range of the direct support weapon for the light forces is too short. The new M119 howitzer will achieve increased range with the M200 propellant charge, but the new rocket assisted projectile (RAP) for use with the M119 promises even greater ranges—up to 20 kilometers.

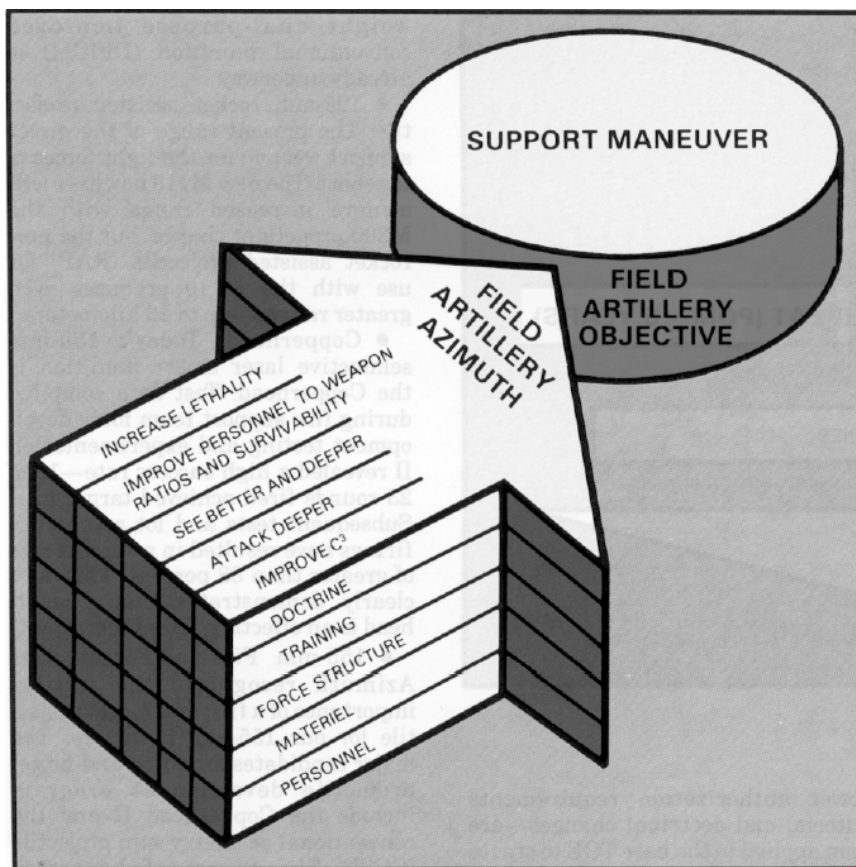
- **Copperhead.** Today's 155-mm semiactive laser smart munition is the Copperhead. Test data compiled during fire support team force development testing and experimentation II revealed a high success rate—19 of 23 rounds fired achieved target hits. Subsequent tests and lot acceptance firings have resulted in a success rate of greater than 88 percent. This data clearly demonstrates that Copperhead is an effective, lethal munition.

- **155-mm Fire-and-Forget.** Our Azimuth recognizes the critical importance of a fire-and-forget projectile for our 155-mm howitzers. The major candidates for a fire-and-forget projectile development program include the Copperhead II and the conventional geometry spin projectile (CGSP). The recommended approach is to develop and buy Copperhead II in the near-term, followed in the mid-and far-terms by the development of a conventionally shaped fire-and-forget projectile which should reach Field Artillery units just as the advanced Field Artillery system (AFAS) comes into service in the early 1990s.

- **Sense and Destroy Armor.** The sense and destroy armor (SADARM) projectile promises tremendous antiarmor lethality. Under our Azimuth the development and fielding of SADARM should be continued for 155-mm and the MLRS. In fact, our studies suggest that SADARM is also a very cost effective counterfire weapon and has utility against many other targets, particularly in the offense.

- **MLRS Terminally Guided Warhead.** The MLRS terminally guided warhead (TGW) offers the opportunity to attack moving, hard targets on the battlefield. The Azimuth calls for acceleration of the NATO-sponsored development and fielding of terminally guided warheads for MLRS.

- **Army tactical missile system Block II Warhead.** The Army tactical missile system (ATACMS) Block II warhead offers the opportunity to attack moving *hard* targets out to very great ranges. It goes beyond the use of the bomblets associated with



block I and allows attack of second echelon heavy divisions before they reach the close-in fights.

- Lethal attack of emitters capability. This exciting capability in concert with the ATACMS Block II warhead will allow our commanders to attack the Threat's command centers along with second echelon combat vehicles. In fact, this high-tech program promises a coordinated attack scheme that will disrupt and destroy the enemy's attacking functions and force modification of the Threat commander's plans.

Improve Personnel to Weapon Ratios and Survivability. In all likelihood, the overall strength of our Army will *not* increase significantly and the number of spaces devoted to Field Artillery will undoubtedly remain constant. Such ceilings have a tremendous impact on our Azimuth. If the Field Artillery is to continue to make progress in meeting its tough challenges, it must be prepared to provide ever-increasing firepower within manpower constraints.

- Multiple Launch Rocket System. With the fielding of additional multiple launch rocket system (MLRS)

units, we can enhance the firepower potential of our fighting force. MLRS is an efficient, high-powered weapon system. In fact, it is currently the most manpower efficient system in the Field Artillery's inventory. Our Azimuth calls for launcher procurement to support additional MLRS fielding in the years to come. The force structure to field these additional battalions will come from reorganization of existing cannon and Lance battalions.

- Trade 8-inch for MLRS. The Legal Mix VI Study developed a preferred cannon-rocket mix for the Field Artillery supporting a typical heavy corps in Europe in 1995. The study recommended trading 8-inch battalions for more MLRS battalions to take advantage of the rocket system's 300 percent increase in relative, battalion-level firepower.

- Howitzer Improvement Program (HIP).

The Army's leadership recently decided to combine the howitzer extended life program (HELP) and HIP initiatives for the production phase. The combined improvements should keep the M109 howitzer fleet in service until about the year 2000.

- HELP: The HELP program improves reliability, availability, and maintainability (RAM) of existing M109 howitzers.

- HIP: The HIP will enhance the M109 howitzer even further by providing for semiautonomous operations, enhanced RAM, and increased rates of fire. HIP's semiautonomous operational capability will allow cannon units to take full advantage of terrain gun positioning. The new RAM improvements will increase the overall availability of the system for combat and will reduce the time necessary to return the cannon to service when it does need repair.

- Advanced Field Artillery System. Our Azimuth calls for a new close support weapon system for the 1990s and beyond. Among the guiding principles in the development of this new system will be the requirements to reduce personnel-to-weapon system ratios and to enhance survivability. Robotics, artificial intelligence, unicharge, liquid propellant, electromagnetic propulsion, and a chassis common with future combat systems are all technologies which branch leaders and materiel developers are considering for the AFAS program.

- Field Artillery Ammunition Support Vehicle. The Field Artillery ammunition support vehicle (FAASV) will dramatically improve howitzer section survivability. Far superior to the present M548, the FAASV will provide mobility and armored protection for both cargo and crew. It will also incorporate a ventilated face piece for nuclear, biological, and chemical (NBC) protection; and its communication system will allow for independent positioning.

See Better and Deeper. To use all of these new weapon systems, field artillerymen must be able to see the enemy in sufficient detail and depth to be able to target and attack him appropriately. Major strides have already been made in this area with the fielding of the Firefinder radars and such new equipment as the fire support vehicle (FSV). However, our Azimuth calls for still greater over-the-hill capabilities.

- Firefinder Improvements. The first step in improving Firefinder's already impressive capabilities is to mount the AN/TPQ-36 on commercial utility cargo vehicles and then high-mobility multipurpose wheeled vehicles for use with light forces. This

Field Artillery Journal

initial effort will be followed by a single vehicle Firefinder II mounted on the Army's new medium tactical truck (MTT).

- **Aquila.** Our current remotely piloted vehicle (RPV) program provides us the capability to locate over-the-hill targets. But we can do even better. The development of the multiple Aquila control system (MACS) promises to allow each ground station to control more than 1 remotely piloted vehicle. What's more, the addition of a forward looking infrared (FLIR) device to Aquila's sensor package will also allow night observation and target engagement. Studies are also underway to downsize Aquila's ground support equipment for use with light forces.

- **The JSTARS.** The deep-looking joint surveillance target attack radar system mounted on an Air Force platform and monitored by Army ground stations promises even greater capabilities to locate and attack moving targets at operational ranges.

- **ETAS.** The current family of ground surveillance radars (GSR) and moving target locating radars (MTLR) is reaching obsolescence. What's more, spare parts problems give these aging radars low availability rates. The solution to this problem is to apply very intelligent surveillance and target acquisition (VISTA) technology to field a single vehicle-mounted, multiple radar system to replace all of the outmoded systems. The best candidate to fill this role is the elevated target acquisition system (ETAS). Our Azimuth calls for its use in targeting, while providing simultaneous intelligence and surveillance data to intelligence and maneuver elements.

Attack Deeper. Field Artillery systems suffer from range limitations. Our Azimuth seeks weapons which will not only out-range those of any opposing force but also hit targets before they enter the close-in battle. Specifically, we seek weapons with the following objective ranges:

Light Cannon 20km
Heavy Cannon 40 to 50km
Rocket..... 70km

To achieve this remarkable reach, the Field Artillery is working on a variety of programs.

- **Develop ATACMS.** The Army tactical missile system (ATACMS) will give the corps commander the tool he needs to attack the Threat's second echelon. This MLRS-based system promises to defeat a wide spectrum of

targets and should enjoy collateral survivability and maintainability benefits by virtue of being fitted into an MLRS launcher.

- **Pershing II.** The Pershing II (PII) missile is a state-of-the-art improvement of the Pla weapon system. It uses minimum ground support equipment and provides the capability to launch missiles simultaneously and in far less time than its predecessor systems. The PII gives the theater army commander the ability to attack and destroy point targets out to a range of 1,800 kilometers.

Improve C³. The ability to employ all the aforementioned systems hinges on advancing our command, control, and communications (C³) capabilities. That's why our Azimuth calls for the following major new systems.

- **AFATDS.** The accelerated development of the advanced Field Artillery tactical data system (AFATDS) occupies a high priority in our Azimuth. AFATDS is the control system for the *fire support* node in the Army Command and Control System (ACCS) architecture. It will work with the maneuver control system and other "Sigma Star" elements to enhance the integration of fire support with maneuver. Furthermore, AFATDS will automate target value analysis, nuclear target analysis and planning, and the allocation and distribution of fires. It will also enhance the survivability of the command, control, and communications systems through the use of small, redundant, common hardware items with very rapid processing capabilities. AFATDS software will reach units in blocks rather than as a whole and will be fielded to entire corps.

- **SINCGARS.** Now scheduled for fielding in 1989, the Army's single channel ground and airborne radio subsystem (SINCGARS) will replace today's VRC-12 family of frequency modulated radios. It is a lightweight, portable or vehicular-mounted radio. Its capabilities include single channel and frequency hopping operations and secure voice and data communications.

- **PJH.** PJH is a hybrid integration of two systems—the position location and reporting system (PLRS) and the joint tactical information distribution system (JTIDS). Both are data radios. It will not only distribute data among automated command, control, communications, and intelligence systems, but also provide position and navigation information for systems and command and control users. Our Azimuth envisions the enhanced

PLRS user unit (EPUU) as the primary data radio for both existing and proposed field artillery data devices. The EPUU is a man-portable or vehicular-mounted communications device with a built-in radio which provides a jam-resistant data communications medium.

- **MSE.** The mobile subscriber equipment (MSE) system will replace the existing multichannel area communications system at maneuver brigade, division, and corps levels. It consists of a nodal, switching system extended by radio-telephones (cellular) to selected commanders. The MSE integrates the functions of transmission, switching, and control to permit users to transmit either voice, facsimile, or record copy information. Although MSE does not allow for dedicated circuits, it does provide a responsive long-range voice communications system for the Field Artillery and will complement the suite of available voice communications mediums.

- **MDS.** Fielding of the meteorological data system (MDS) will provide the Field Artillery with its first new meteorological (met) system in 36 years. The system provides automatic data processing of met information and can produce any of the required met messages. The MDS has direct interface with TACFIRE and the battery computer system.

- **PADS.** The Azimuth seeks additional procurement and fielding of the widely-acclaimed position and azimuth determining system (PADS). Other position control systems will not be available in sufficient quantity before fiscal year 1990. Therefore, PADS is essential to establishing survey control. What's more, PADS frees personnel assets to be used elsewhere in the force.

- **MBC.** The mortar ballistic computer (MBC) is a hand-held computer that automates the mortar fire direction functions of ballistic computations, data management, and communications. It is a digital device capable of direct access to the TACFIRE system. The MBC promises to deliver what the National Training Center experience clearly says we need—improved mortar integration into the overall fire support plan.

Tech-Base Initiatives. The Field Artillery Azimuth looks far into the future. In doing so, it challenges the

technology base to concentrate in several areas.

- **Advanced Seekers and Sensors.** Advanced seeker and sensor technology will make munitions "smarter" and may well deny the enemy the sanctuary of forests and friendly population areas.

- **Robotics.** Robotics may reduce significantly the number of personnel required for weapon systems.

- **Advanced Propulsion Techniques.** To achieve dramatically increased ranges, scientists are looking at a tremendous variety of advanced propulsion techniques. Liquid propellants and electromagnetic weapons are just 2 examples of the burgeoning technology in this area.

- **Composite Materials.** Our Azimuth calls for the use of composite

materials to reduce system weight and improve crew protection. Although it will take some doing, a 9,000 pound 155-mm howitzer may be achievable through the use of such materials and innovative recoil techniques.

- **Passive Acquisition Techniques.** By and large, today's target acquisition systems use active emitters subject to enemy countermeasures and attack. New acquisition systems which exploit passive techniques are the wave of the future.

- **Advanced Communications Techniques.** In the Field Artillery, efficient, jam-free communications systems are essential. Semiautonomous and autonomous operations by howitzers and MLRS will place even greater emphasis on the transmission of data and

voice communications.

- **Ammunition Resupply Initiatives.** Increased emphasis on specialized ammunition makes packaging a problem of prime importance. What's more, the Field Artillery needs to turn ammunition handlers into ammunition shooters. That makes ammunition handling a matter of even graver concern.

Conclusion

No one should ever doubt that the King of Battle has a plan for the future. As this review of our dynamic Azimuth makes clear, we Redlegs have a well-conceived road map by which to chart our journey into the years to come. Now, it's up to us to navigate that course well.



Send Your Best Shot Downrange —

Read the *Journal*



Name (Last, First, MI)	Rank, Title
Address	SSAN
City	State

RATES

	US & APO Addresses	Foreign Addresses Except APO
1 Year	<input type="checkbox"/> \$16.00	<input type="checkbox"/> \$25.00
2 Years	<input type="checkbox"/> \$31.00	<input type="checkbox"/> \$49.00
3 Years	<input type="checkbox"/> \$46.00	<input type="checkbox"/> \$73.00

STATUS

- US Army
- US Marine Corps
- Active Component
- US Army Reserve
- US Marine Corps Reserve
- National Guard
- Retired Military
- Allied Military
- Civilian
- Industry/Office/Library
- Other

I am a member of a certified US Field Artillery Association Local Chapter. The name of my local chapter is _____

Name

Location

Signature

Date

**MAIL TO:
US FIELD ARTILLERY ASSOCIATION
PO BOX 33027
FORT SILL, OK 73503**

Field Artillery

King of Battle



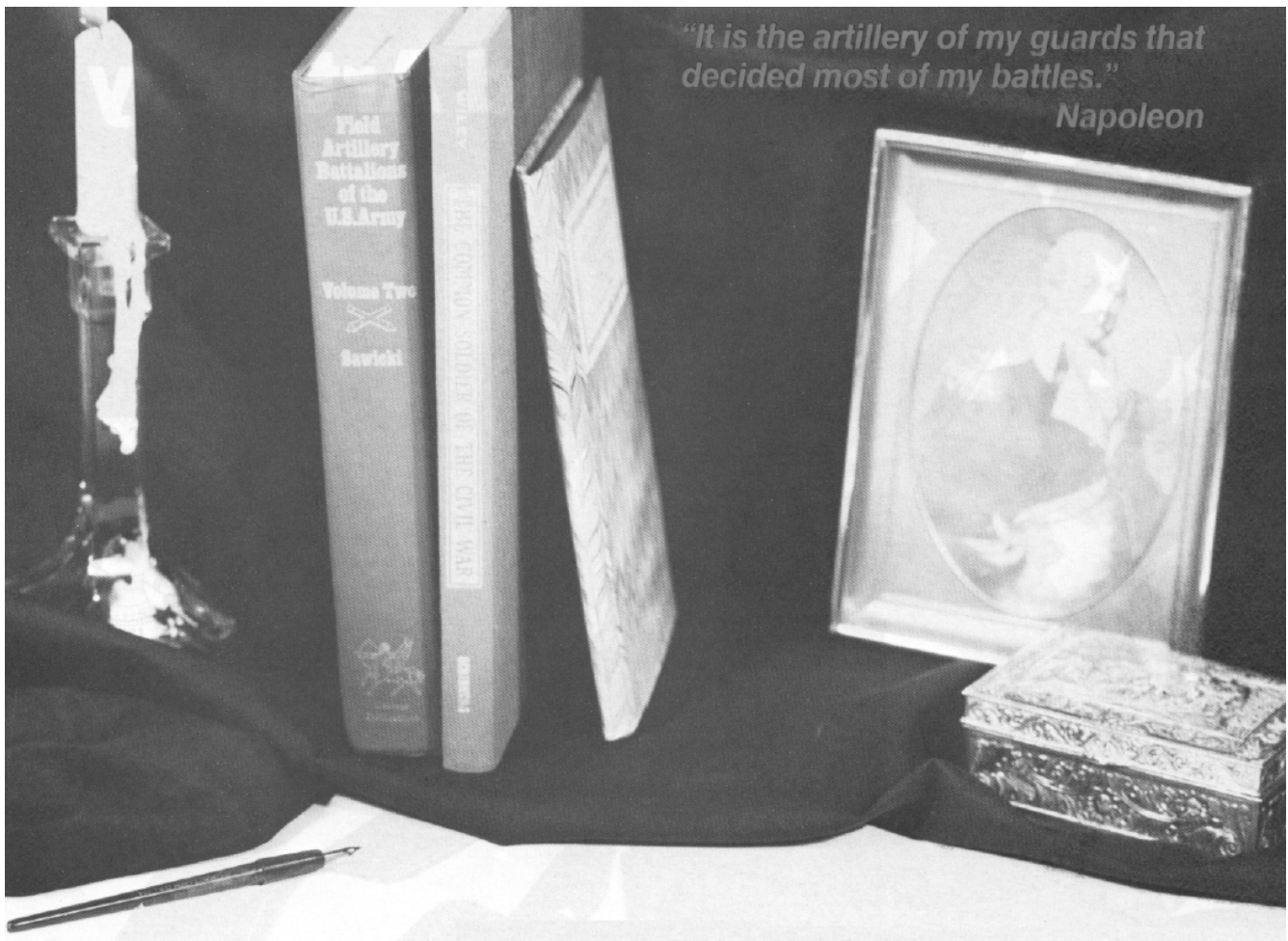
Brilliant clouds of billowing smoke, the thunder of massed guns and the staccato beat of a lone observer's heart, the bittersweet fragrance of burning cordite—these are the sights, the sounds, and the smells of the King of Battle—the Field Artillery.

From Boston to Yorktown, Palo Alto to Mexico City, Bull Run to Gettysburg, Saint Mihiel to the Hindenburg Line, the Kasserine Pass to the Bulge, and Ia Drang Valley to Loc Ninh, gunners have shot and shot and shot again in support of their gallant comrades.

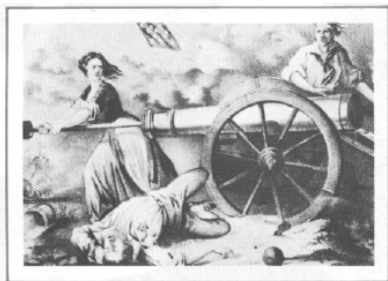
With cannons, rockets, and missiles, Red-legs have become the synchronizers of steel on the modern battlefield. With consum-

mate tactical skill, they have orchestrated the triumphant music of the "Symphony of Mars." They have become the King's Men—the practiced, high-tech professionals who lead America's "best and brightest."

Take a few minutes to review the following pages. And then judge for yourself whether you too have the "right stuff" to be a King of Battle.



*"It is the artillery of my guards that decided most of my battles."
Napoleon*

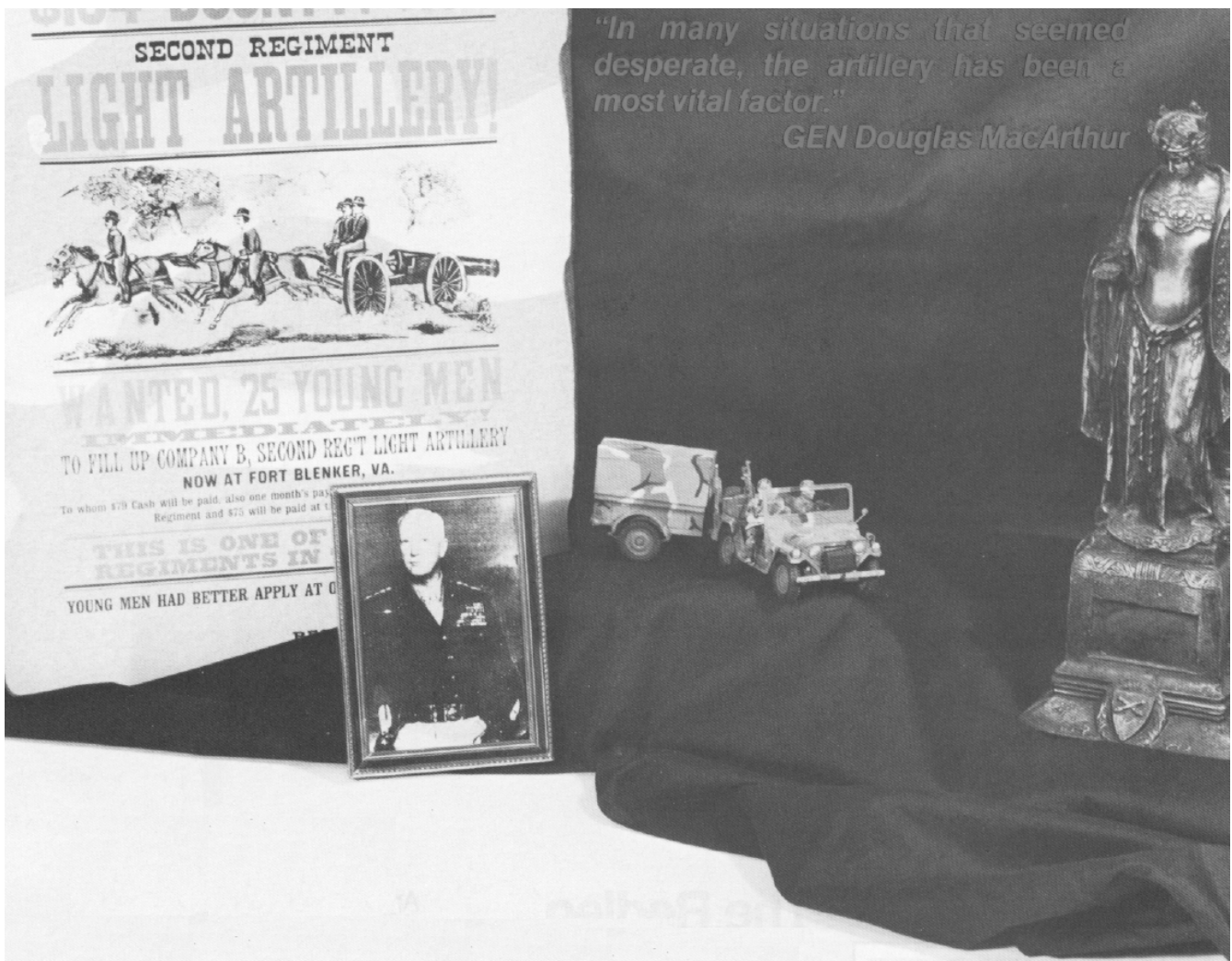


The Redleg's Legacy of Excellence

The King of Battle has a proud history of battlefield success. In fact, American gunners have oftentimes proven the difference between victory and defeat. Henry Knox, our first Chief of Field Artillery, established the branch's standard of excellence when he led an expedition to transfer 59 captured British guns from Fort Ticonderoga to the Dorchester Heights overlooking Boston. Through the deep winter snows of 1775, Knox and his courageous gunners dragged the guns over a grueling

300-mile trek. Their efforts forced the British to abandon the city and established Colonel Knox and his artillerymen as warriors who would deliver when the chips were down.

In the Mexican and Civil Wars, Redleg leaders like Samuel Ringgold, Braxton Bragg, Henry Hunt, and Stonewall Jackson once again demonstrated the extraordinary courage, tenacity, and skill that have become the hallmarks of American gunners. Their successors in the "War to End All Wars," World War II, and the Korean War became battlefield champions. Time and again they delivered devastating massed fires that turned the tide of



George S. Patton, Jr. observed
of World War II: "I do not need
to tell you who won the war.
You know the Artillery did!"

In May 1953, the cannoneers
of a 280-mm gun dubbed
Atomic Annie ushered in the
tactical nuclear era. But even
under the nuclear umbrella, our
guns have kept firing. Redlegs
carved fire bases out of the
Vietnamese jungle; and the
American artillerymen of the
82d Airborne Division provided
immediate, continuous, and
reliable fires on the tiny island
of Grenada. They too were the
proud heirs of Henry Knox's
legacy of excellence.

For over 211 years, the Field
Artillery has relied on "leaders of
steel"—men and



women who can confront the
challenges of combat and
prevail. You too can join this
proud tradition. You too can
become a high-tech combat
leader in today's King of Battle.



The Redleg Challenge

Today's leaders of the "King of Battle" look to you to fulfill our challenging mission—"To destroy, neutralize, or suppress the enemy by cannon, rocket, and missile fires and to integrate all fires into combined arms operations." They look to you to be a leader in the combined arms team—Infantry, Armor, Aviation, and the Field Artillery—working together.

Wherever you look across the globe, the responsibility for coordinating the fires of combined arms teams rests in the hands of Field Artillerymen

serving as fire support officers at every level of tactical command. Today's Redleg must be competent not just in his own branch's tactics and techniques, but also in the doctrine of maneuver, naval gunfire, and air support.

The Redleg's Power

The firepower controlled by a single Field Artillery lieutenant is mind-boggling. And the challenge of the junior Field Artillery officer is to lead, train, and care for the men and women who produce that firepower. As a



"Formerly to win a victory the fighting force needed only courage and strength; today it must have artillery."

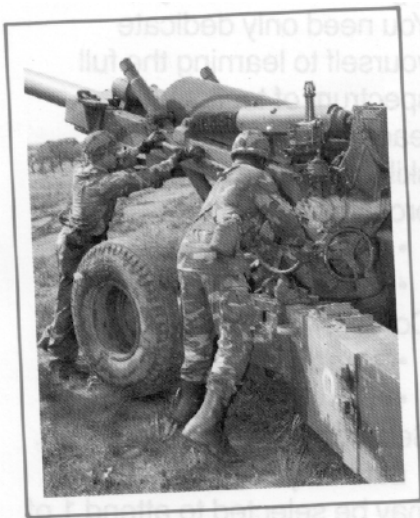
MG William J. Snow

Redleg leader, you'll control units comprised of highly trained soldiers and first-rate equipment.

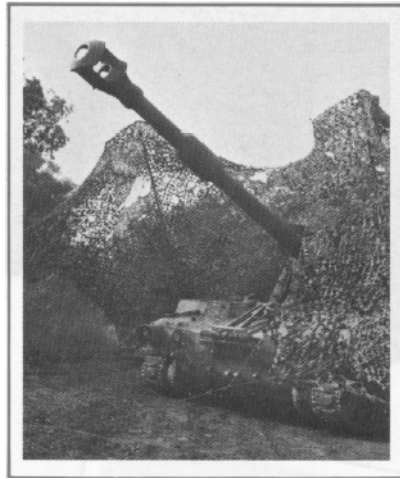
Redleg leaders in the Army's light infantry, airborne, and air assault divisions now supervise highly trained crews of rapidly deployable M102 105-mm howitzers like this one.



Field Artillery lieutenants in infantry divisions work with the extremely accurate M198 155-mm howitzer.



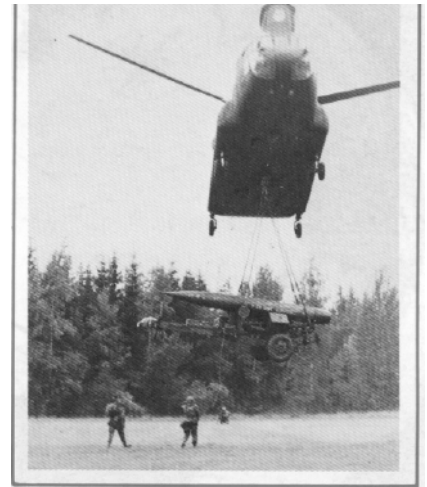
Battalions of the M109 155-mm self-propelled howitzers are the backbone of fire support in the Army's mechanized infantry and armor divisions.



Junior artillery leaders also command the devastating long-range fires of the M110 8-inch howitzers in division and corps artilleries as well as artillery brigades.



You'll also find lieutenants employing the Lance missile system.

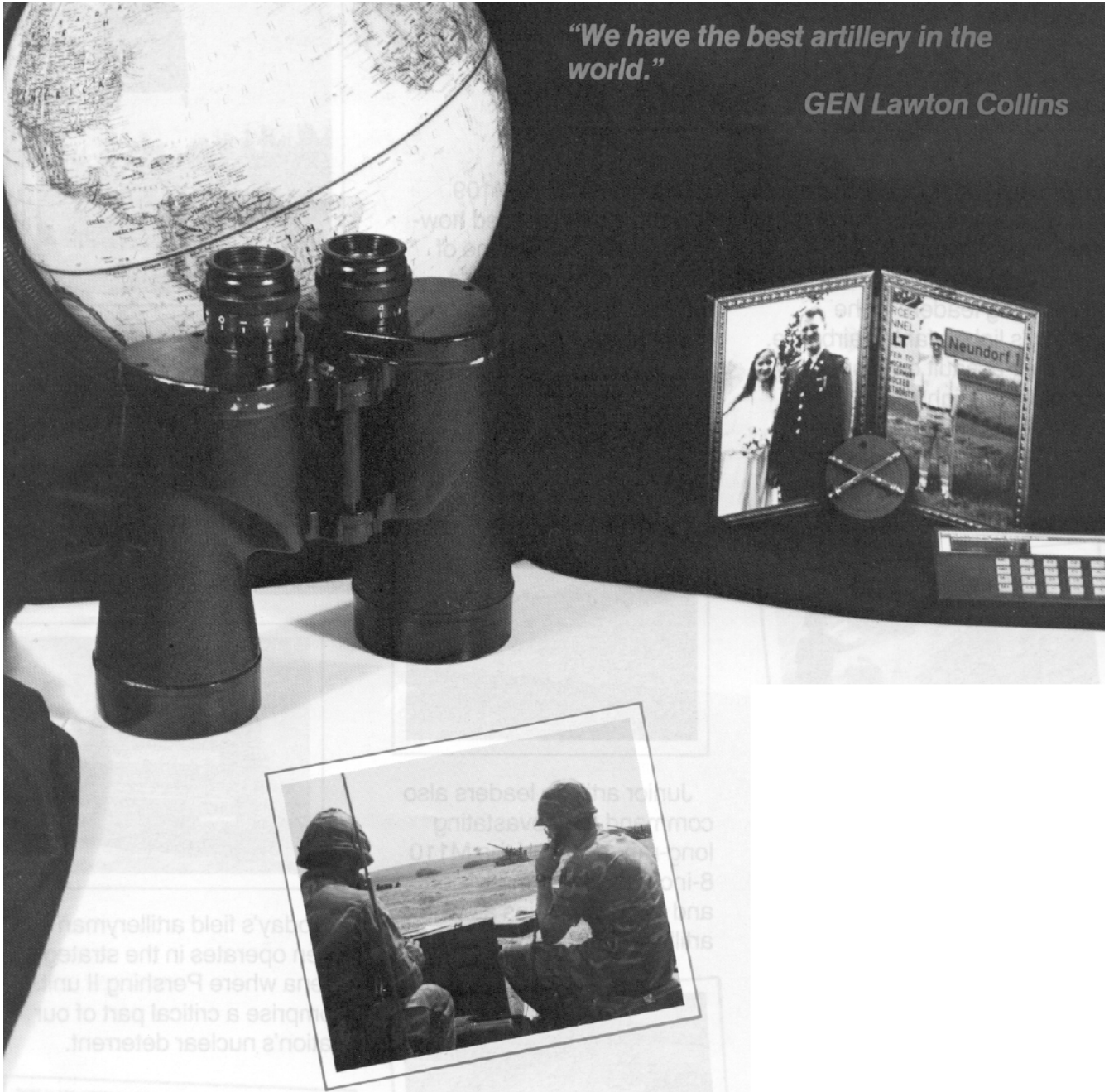


Junior Redleg officers lead high-tech rocketeers equipped with the lethal, multiple launch rocket system (MLRS) which is capable, in a single 12-rocket ripple, of delivering destructive firepower comparable to that of 88 separate howitzers.



Today's field artilleryman even operates in the strategic arena where Pershing II units comprise a critical part of our nation's nuclear deterrent.





“We have the best artillery in the world.”

GEN Lawton Collins

leader. You need only dedicate yourself to learning the full spectrum of tactical, leadership, and technical skills as your training progresses through:

- The Officer Basic Course.
- The Officer Advanced Course.
- Specialty Courses.
- The Combined Arms and Services Staff School (CAS³).

Later in your career you may be selected to attend 1 of

Whatever the weapon system, the most important ingredient is *people*. Junior officers in the King of Battle take on immediate leadership responsibilities and set the standards of excellence for the men and women they lead.





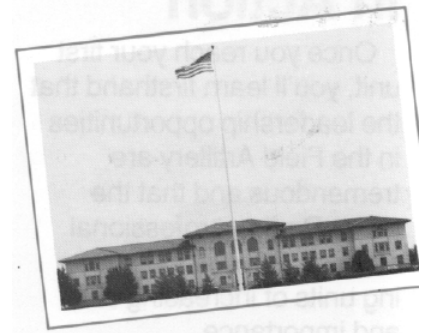
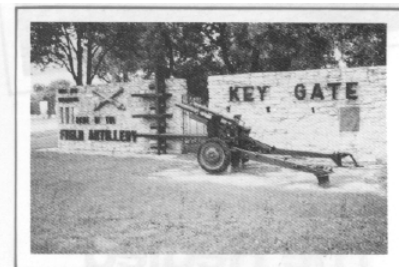
the staff service schools such as the Army's Command and General Staff College. Following that, highly qualified officers may attend 1 of the senior service colleges such as the Army or National War Colleges.

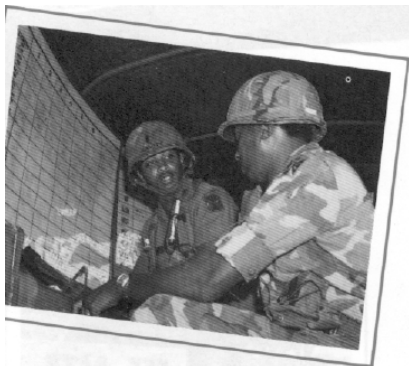
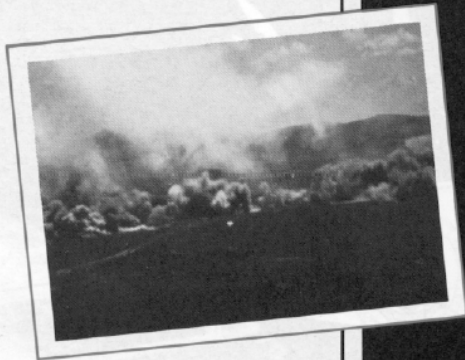
But the first step for every Field Artillery leader is the basic course at Fort Sill, Oklahoma—the Field Artillery Training Center of the Free World.

As a student in the 19-week Field Artillery Officer Basic Course (OBC), you'll learn to perform the duties of company fire support and cannon battery officers. You'll focus on tactics, gunnery, communications, weapons, target acquisition, and of course, leadership.



You'll learn to use such high-tech equipment as the state-of-the-art battery computer system. And you'll learn how to put massive amounts of firepower on target. Depending on your initial duty assignment, you may take follow-on courses in survey and target acquisition, Pershing or Lance missile employment, MLRS operations, or the tactical fire direction system (TACFIRE).





The Redleg in Action

Once you reach your first unit, you'll learn firsthand that the leadership opportunities in the Field Artillery are tremendous and that the junior Redleg professional can look forward to leading units of increasing size and importance.

As a **fire direction officer**, you'll train and supervise the highly skilled soldiers of the fire direction center, ensuring that accurate and timely data puts first-round fire on target!

As a **company fire support officer**, you'll plan and coordinate fires for a maneuver company. You'll be the maneuver commander's right-hand man.

As a **platoon leader or executive officer**, you'll control the line of metal—the guns of a platoon or firing battery.

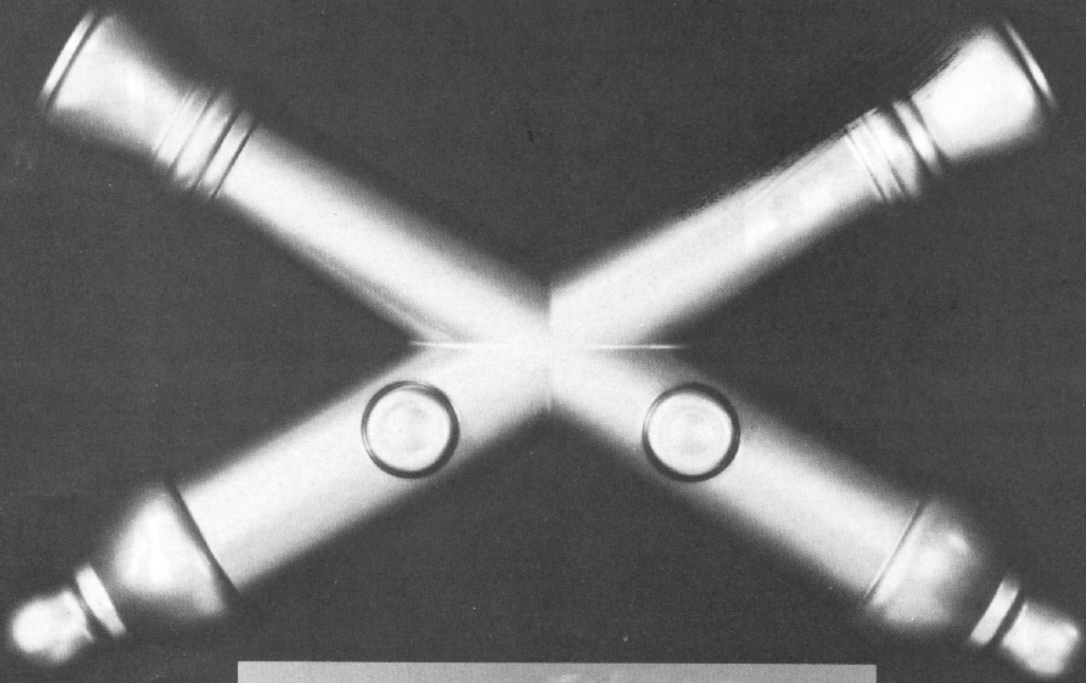
As a **battery commander**, you'll assume the responsibility for the welfare, training, and leadership of over 100 officers and men.



You can expect your profession to carry you around the world—from the continental United States to Asia to Europe. But wherever you go, you'll find the Field Artillery is *the* place to be. It offers a tradition of excellence as well as the challenges and responsibilities of leadership on the modern battlefield.

If you're a leader, give some thought to joining the Field Artillery. Then step forward to join the King's Men—our high-tech leaders branch that delivers excellence.





for
br
A
you

INTERVIEW

Army Chief of Staff, General John A. Wickham, Jr.

"Never forget that we are a combined arms team."

Q: *Some of the Army's critics are quick to allege that some officers are careerists rather than professionals. Are they right?*

I'm not sure that's a valid criticism. I think everyone is ambitious. Clearly, one of the values we are emphasizing in the Year of Values is that people want to improve themselves.

I think there are 2 kinds of ambition. One kind is valuable—it's positive ambition where you want to get ahead because you can then create more opportunities to help people. You can give of yourself. It is an *other*-oriented type of ambition. That's positive ambition, and I think professional soldiers and officers who have that kind of ambition are striving in the right direction.

Negative ambition is *self*-oriented. You want to get ahead to have power over other people, and it's selfish rather than selfless. It's where we get tied up in careerism....But that, by and large, has gone by the boards in the Army.

Q: *Do we have the proper balance of land, sea, and air power?*

The Army has had about 25 to 26 percent of the defense dollar for 10 or more years....I'd like to see more of the defense dollar going to land power.

If we as a people are really serious about raising the nuclear threshold—and I think we are—then we must recognize that nuclear cuts increase the importance of our conventional capabilities.

We also need to recognize that land power deployed ashore keeps the peace and changes history. The longest period of peace in 400 years of European history has been kept by land and air power deployed ashore. It's the same in Korea. Since 1953 we've kept the peace there.



SSG Scott Flaherty

Q: *In view of the present and projected Threat, do we have an appropriate mix of heavy and light forces?*

As you know, the US Armed Forces, particularly the land power part of them, have to deal with a spectrum of conflict ranging all the way from the high-intensity down to the low-intensity.

The heavier part of the Army has been associated with the high-intensity part of the spectrum. In recent years we have done and will continue to do considerable modernization of the heavier side of the Army. We have doubled the amount of ammunition and the amount of prepositioned supplies we have in Europe. We've also increased the number of divisions for which we have prepositioned sets of equipment there.

Where we have *not* done well is on the lower side—the lighter side of the Army. In recent years, we have begun to increase the special operations forces. As you know, we have formed a Ranger regiment. We're also increasing the all-weather aviation capability necessary to

insert and extract special operations forces. We've begun the formation of some of our light divisions, and we are trying to make some of our existing divisions—the 101st and 82d—even lighter, so we can deploy them much more rapidly.

As we look out at the world we face today, we can foresee that the probability of involvement in hostilities is highest at the lower end of the spectrum. Grenada is one illustration. So, I think we need to continue to improve our capabilities at the lower end of the spectrum. Our goal is a balanced, flexible force that is more relevant to the times.

Q: *How do you respond to our media critics with regard to the Bradley and Aquila systems?*

Some of that is a manifestation of the Reform Caucus. They go after *systems*. The DIVAD was, unfortunately, a system that was in trouble. And, because members of the caucus were able to kill that system, they think that there must be others they should go after.

The Bradley, I think, has been unfortunately maligned. The Bradley is not a DIVAD! We've already procured about 3,000 Bradleys. And we're talking about improving it as we do with every other weapon system.

The Bradley passed all of the tests dealing with the threats for which it was designed. It protected against artillery fragments; it protected against small arms and machine gun fire. It was never designed to be a protected vehicle against large caliber antitank or main-gun systems. And yet that is what people now seem to think it should do.

The testing that is now underway is to see that the product improvements that we have planned—a spall liner, some reactive armor, and some restowage of munitions

INTERVIEW

and fuel—can substantially reduce the possibilities of serious injury to the crew or catastrophic loss of the vehicle. And we think that they will. Those product improvements are relatively inexpensive—under \$100,000 a vehicle.

I think we have demonstrated to the critics that the Bradley is a fine vehicle. Our soldiers need it. It is an essential element of the combined arms team on the battlefield. There's no vehicle to take its place.

The Aquila is another important system. It's important to the artillery, and it's important to the ground commander because of its ability to see deeply into the battlefield.

The Aquila is sophisticated, and it is expensive. But it is less expensive than a manned aircraft. Moreover, it offers great promise to be able to laser designate targets, to give 8-digit coordinates, and to provide jam-proof communications of what it is seeing back to the ground commander. It's also very hard to detect. So it will be hard to knock down.

Q: Do you believe that we have been overly firepower-intensive in our approach to operations?

What kills is firepower.... Firepower is part of maneuver. I don't think we have overemphasized firepower.

If you look at the AirLand Battle doctrine, one of its essential elements is the ability to fire deeply as well as along the forward line of own troops. Being able to strike deeply you are going to have a significant influence on the enemy's second and third echelons. So, they will not arrive at the forward line unimpeded and uninjured. In other words, we want to hold all the Soviet echelons at risk, and firepower is the only thing that can do that.

Maneuver will have limited effect. You might put some special operations forces in the rear, but you're going to have to have firepower. That's what the Army tactical missile system is all about.

The ability to move artillery around on the battlefield—that's part of maneuver as well as firepower. Take a look at the Soviet's capabilities. They have gone heavily in the direction of artillery and rocket capabilities. They have a concept similar to our AirLand Battle. It involves operational maneuver groups (OMG)



Both the Bradley fighting vehicle and the Aquila systems have been under scrutiny by defense budget naysayers. GEN Wickham views both systems as important parts of the combined arms team.

which they plan to maneuver deep into our rear area. It also involves complementary firepower concepts that merge all air and ground firepower to support operations about the way we do in our concept of deep battle. Maneuver is important, to be sure, but so is firepower.

Q: Is the Army's regimental system producing the desired result of greater cohesion?

First, we made a decision a couple of years ago to separate the regimental system from the cohesion initiatives to be sure they could both proceed at their own pace.

I'm wearing the regimental insignia of the 6th Infantry Regiment; and gradually every soldier, NCO, and officer in the Army will be able to affiliate with a

regiment.

To the extent that the Army can do it and our individuals want it, we will try to put that individual back, again and again—overseas and in the United States—with his regiment of choice. Perhaps the affiliation with the regiment and the history and the camaraderie that comes from associating with the people who have been in the unit will make soldiers think more deeply and lovingly towards the Army and the traditions of the Army.

Q: Guarantees have been made that the new retirement policy, which took effect 1 August, will not affect the 20/50 formula promised to soldiers currently on Active duty. Do you know of any circumstances that might change that policy in the future?

I don't see any right now. The practical realities have been that there have been changes over time. I would not want to prognosticate that in the next 5 to 10 years there will not be any changes in the entitlements package that we see today.

Q: Some soldiers have speculated that the current slowdown in mid-level NCO promotions will continue in fiscal year 1987. Will that slowdown force any modification of the "up or out" policy?

I don't think so. I think some of the slowdown you are witnessing is a result of the Gramm-Rudman-Hollings cutback in 1986.

Although personnel costs were exempted in the Gramm-Rudman-Hollings cutback of 1986, Congress authorized us a number of entitlements for junior enlisted; but they didn't give us the money. Because we had these entitlements, and because we had indicated that we're going to do such things as increase weight allowance for junior enlisted, I decided that we would fund them. But we had to take money out of the personnel accounts to do so. That forced us to make some adjustments, extend tours, and slow down promotions to pay for those entitlements.

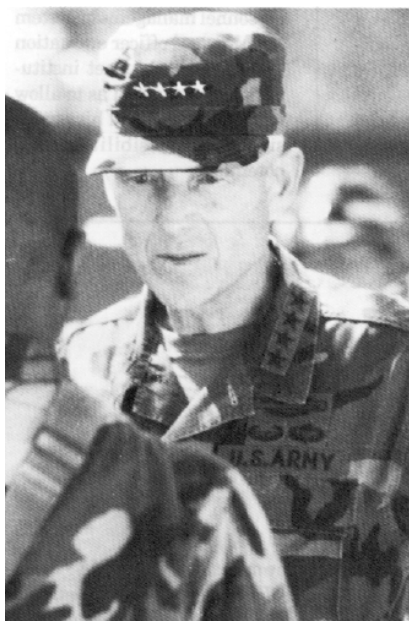
I think the promotion business now is going to be accelerated back almost to where it was. So I don't see any problems in that area.

INTERVIEW

Q: Some enlisted soldiers charge discrimination between single and married soldiers because of housing and ration allowances paid to married soldiers. They say it gives married soldiers the opportunity to enjoy a higher standard of living. Where do you stand on that issue?

The cultural norms in this country and even our income tax structure are supportive of married couples....I think the military structure reflects that same cultural norm. Some people may have the view that extra entitlements for married soldiers are unfair, but I don't share that view. However, when it comes to job performance, improved mobility, and opportunity the Army does not discriminate between married and single soldiers.

Q: Army involvement in Bolivian drug raids apparently met with widespread approval on Capitol Hill. Are you comfortable with the Army's involvement in law enforcement operations?



SSG Scott Flaherty

Army Chief of Staff GEN John A. Wickham, Jr. talks about soldier training with PVT Robert L. Mitchell, Jr. of B Battery, 2d Cannon Training Battalion during his visit to Fort Sill's Field Artillery Training Center.

There are limits to what the Army can do. The so-called *Posse Comitatus Act* prohibits the Army and other military forces from being involved in certain police-type actions. What we have done in Bolivia and elsewhere is simply to assist law enforcement officials. All we do in Bolivia is ferry the Bolivian police and the American drug enforcement people.

We're doing some things in the Southwestern United States—using our infrared systems and night observation devices as well as providing information to the Border Patrol. But it's part of our normal training at Fort Huachuca.

My guess is, we're going to see more of that....It's not going to be without risk. We may see some attacks on our people who are doing this kind of work. But it is of fundamental importance to the health and well-being of the nation we all love. We've got to go after the sources of chemistry that are undermining the cohesion and strength of our society, and we've got to go after the people who are trading in drugs.

Those people are just as much terrorists in orientation and just as much of an enemy as those who strike our interests directly. They are destroying the fiber and well-being of our society. As a citizen, I also think we need to go after the problem in the United States. We must educate our people against debasing their bodies through the use of drugs. Until we mount some major efforts to deglamorize drug usage, we are going to continue to have a substantial market that attracts more and more outside suppliers.

Q: What are your views on Joint Chiefs of Staff reform?

I've had a lot of time in the joint arena. I guess about 15 out of the past 18 years I've been in joint assignments. And I've always been a proponent of evolutionary reform.

Many of the aspects of the congressional proposals make a lot of sense. They are, in many ways, bringing the books up-to-date. But like a lot of things we do in this country, we sometimes have moved to excess. I think there are some excessive proposals, particularly on the House side. Some of them deal with mergers of the service's and the secretary of the service's staffs as well as the stripping

away of much of the Army chief's responsibility to manage the staff for the secretary and to ensure cohesion in Army programs. That is an area where I think they have gone too far.

But I'm hopeful that with the joint conference, presidential action, and the implementing actions by the service departments we will provide for solid progress in the joint arena.

Q: What single message would you like to convey to American artillerymen around the world?

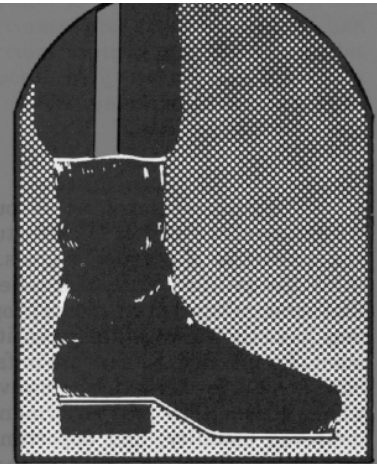
I have an observation and 3 messages. First the observation: The Fire Support Community is in good health. You have acquired some very capable systems. The MLRS and the Pershing II are superb systems and are doing very important work for the nation. You've also made great progress in the automation you have brought into fire direction and fire precision.

- My first message is: "Capitalize on those successes and drive on hard to assure that the best of technology can be brought aboard in improving artillery—robotics for example." That doesn't mean that you have to have all kinds of bells and whistles to put on systems, but it does mean that the best of technology should be brought into improving our firepower capabilities as rapidly as possible in order to improve our lethality and save manpower and maintenance costs.

- My second message is: "Never forget that we are a combined arms team." As we develop more and more capabilities with firepower to strike deeply and more precisely, we must gain greater control over firers. The depth at which you can strike on the battlefield will have a bearing on ground maneuver. All of that requires a much greater sensitivity to how firepower plays a role in concert with all the other elements of the combined arms.

- My third message is: "Recognize that however good our equipment may be, the long pole of the tent is the human dimension." Assure that the artillerymen of the future are as good as they are today in terms of their professional training, high standards, and quality of leadership. Don't lose sight of that by becoming mesmerized with equipment. ✉

Redleg Officers Career Guide



One is selfish, the other egoistic. Good Redleg officers fall into the first category. They develop themselves for the right reasons—service to country and its soldiers. They concur with General Henry Knox's assessment that "Officers can never act with confidence until they are masters of their profession," and they understand that to become a complete professional they must have a career of breadth and challenge.

In other words, there is nothing wrong with an officer managing his career if he does

his soldiers, and the branch. Every Redleg should strive "to be all he can be," but he must never forget that the ultimate measure of a Field Artilleryman is his selfless, professional service.

This guide provides an overview of the Field Artillery's officer corps as well as the Army's policies and programs for career development. Although the statistics presented offer only a momentary snapshot of our constantly evolving branch, the prose paints an accurate picture of the system in which Redlegs

should strive to develop themselves as Kings of Battle.

Overview

The men and women of the Field Artillery's 9,135-person Active duty officer corps constitute a sizeable group. When you add the 4,624 Army Reserve Component and National Guard Redleg officers, our ranks swell to 13,759 strong.

These officers have the undeniable responsibility to develop themselves as professionals,

and our Army has established mechanisms to help them. Specifically, the Army has designed its officer professional development system (OPDS), officer personnel management system (OPMS), and officer evaluation system (OES) to meet institutional needs as well as to allow each officer to fulfill his professional responsibilities and potential.

Officer Professional Development System

The officer professional development system (OPDS) seeks to strengthen and fortify the will, character, knowledge, and skills of Redleg leaders. It has as its fundamental precept that officers must develop a vision of the nature of future warfare and personally prepare

themselves and their subordinates to fight and win. So, in the final analysis, it is the demands of combat and our democratic heritage that define the values of the officer corps.

To meet this challenge Field Artillery officers must:

- Become professionals.

- Embrace the Warrior Spirit.

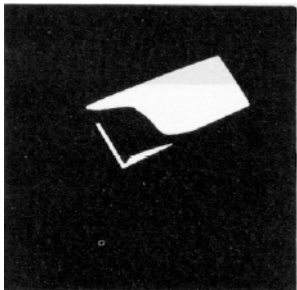
- Master the art and science of war.

- Mold themselves as action-oriented leaders.

- Develop a broad base of knowledge.

These ambitious goals necessitate a long-term developmental

effort. In fact, OPDS envisions 6 distinct, progressive development periods throughout which Redleg officers should mature as professionals. What follows is a brief recapitulation of those periods and what you can expect as you grow as a Field Artilleryman.



LIEUTENANTS

Field Artillery lieutenants attend the resident 19-week officer basic course (OBC) at Fort Sill, Oklahoma. The purpose of the course is to:

- Provide newly commissioned officers with a general knowledge of the Field Artillery system.
- Give these lieutenants the skills and in-depth knowledge of observed fire, fire direction, and management of individual training needed by company fire support officers, cannon battery fire direction officers, and cannon battery executive officers.
- Train the lieutenants on how to conduct maintenance and collective training at the battery level.
- Selected basic course graduates participate in specific follow-on training modules

designed to prepare them for their initial assignments.

- Cannon System Qualification Course — 2 weeks.
- Nuclear Warhead Detachment Course — 2 weeks and 3 days.
- Tactical fire direction system (TACFIRE) Battalion Fire Direction Course — 7 weeks.
- Lance Officer Course — 7 weeks.
- Pershing Officer Course — 6 weeks and 2 days.
- Nuclear and Chemical Target Analysis Course — 4 weeks and 1 day.
- Multiple launch rocket system (MLRS) Course — 6 weeks and 1 day.
- A Redleg lieutenant's initial duty assignment after OBC should be in 1 of the following branch material positions with troops.
 - The company fire support officer leads a fire support team (FIST) and is the eyes of the artillery. He puts artillery "steel on target" and coordinates the fires of other supporting units.
 - The fire direction officer (FDO) leads the artillery's nerve center—the fire direction center—and translates the FIST's call for fire into firing data for the guns, missiles, and rockets.

the firing battery. They get rounds downrange and destroy the enemy.

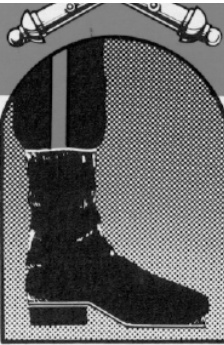
- The Lance firing platoon leader and Pershing assistant firing platoon leader not only supervise the assembly of missiles and warheads, but also oversee high-tech, launch countdowns.
- The target acquisition platoon leader plans survey operations, establishes survey control throughout

survey officer formulates and implements the battalion's survey plan.

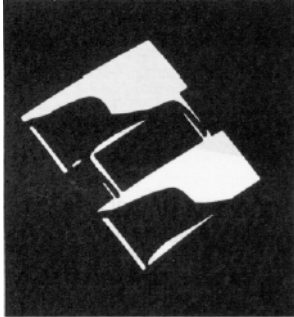
- The platoon leader in a Field Artillery detachment works with the Redlegs of Allied nations and shoulders responsibilities for the control of powerful special weapons.
- Battalion and division artillery staff officers assist their commanders in operations, intelligence, personnel, and logistic matters.



The Field Artillery Officer Basic Course provides newly commissioned officers with an in-depth knowledge on how to be a top-notch fire support officer.



Redleg Officers Career Guide

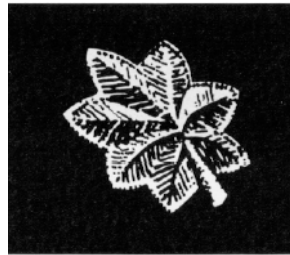


CAPTAINS

• Redleg captains should attend the 20-week resident officer advanced course (OAC) prior to taking battery command. The advanced course seeks to produce professionals qualified:

- For battery command and for staff duties at battalion, division artillery, and corps artillery levels.
- To be fire support officers at battalion and brigade levels.
- Selected advanced course graduates will attend follow-on courses to prepare them for subsequent specialty assignments.
- Field Artillery captains should become branch qualified by:
 - Completing a successful, 12-month battery command.
 - Serving with an artillery delivery system.
 - Finishing an overseas tour.
 - Spending 3 years leading troops at the battery or battalion level.
- By the end of their ninth year of commissioned service, Redleg captains should have attended the 9-week Combined Arms Staff and Services School (CAS³) at Fort Leavenworth, Kansas. Following completion of the 142-hour,

nonresident phase of CAS³, captains proceed to the resident instruction administered in 12-person staff groups under the supervision of a senior field grade leader. CAS³ produces a graduate who can analyze and solve problems; work as an effective member of a staff; communicate with precision; and understand Army organizations, operations, and procedures.



MAJORS AND LIEUTENANT COLONELS

- Field Artillery majors should complete a resident

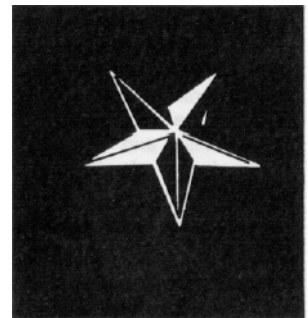
or nonresident command and staff level course prior to selection for promotion to lieutenant colonel.

- They should also develop their functional area and branch qualifications by assignments in both.
- A few Redlegs will participate in the Advanced Military Studies Program at Fort Leavenworth. Their follow-on assignments will be to division and corps "G" staff positions.



COLONELS

- Redleg colonels should strive to obtain military education level 1 (MEL1) status by participating in a senior service college program or 1 of a variety of alternative fellowships.
- Selected colonels may participate in the advanced management program based on their potential for continued service.



GENERALS

- General officers will attend a formal transition course.
- General officers will participate in executive development and orientation programs.



Field Artillery officers become branch qualified by serving in a variety of specialty assignments following the advanced course.

SGT Judy Ward

CIVILIAN SCHOOLING

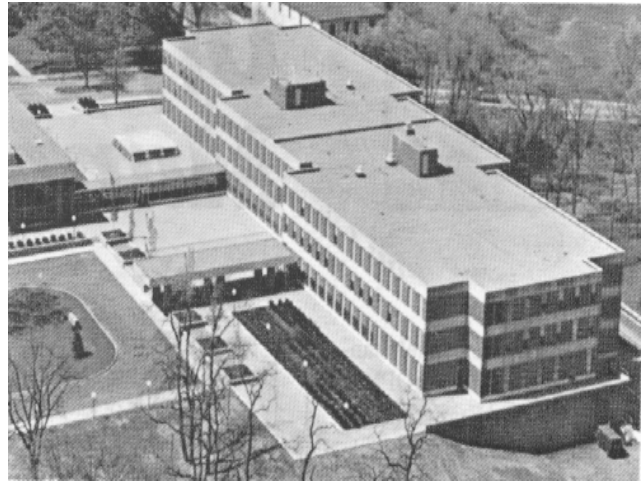
The Army's civilian schooling program complements OPDS by filling requirements established by the Army Educational Requirements Board (AERB) and by providing officers the opportunity to satisfy their own educational aspirations. These opportunities include both fully and partially funded programs.

- The fully funded civilian education program involves 4 major subprograms. Under each program the Army pays full tuition and fees to include limited reimbursement for textbooks and supplies. Participating officers draw full pay and allowances.

- The advanced degree schooling program meets specific Department of the Army requirements of the AERB. Officers must work in an AERB position for 3 years following graduation.
- The top 5 percent USMA and ROTC graduates program offers 18 months of advanced study. Participating officers must attend school between their fourth and tenth years of commissioned service. Their study must support OPMS specialties, and officers will serve in an appropriate AERB position for 3 years following graduation.
- The scientific and engineering graduate schooling program for distinguished military graduates (DMG) offers 18 months of advanced schooling to fewer than 15 Regular Army DMGs who have a bachelor of science degree in mathematics, engineering, or physical science. Program participants attend graduate school sometime between their fourth and tenth year of commissioned service, provided their performance of duty and demonstrated potential are at least equal to that of other officers considered for graduate schooling. Their discipline of study must support OPMS specialties,

and participants must agree to serve in an AERB validated position for 3 years following graduation.

- The short course training program pays tuition expenses for 20 weeks of study in subjects not available in the service school system. The study must support the officer's present duty and may include such curriculae as the advanced management program and academic enrichment courses for USMA faculty members.
- Partially funded programs provide full pay and allowances as well as moving expenses to participants who may also use their veteran's education benefits. Participating officers pay for their own tuition, fees, and books. Several specific programs fall under the partially funded category.
- The degree completion program authorizes up to 12 months for officers to complete undergraduate or graduate degree requirements. Graduate degrees must support the officer's branch or functional area. Graduates from this program incur a 3-year service obligation following graduation. Army Regulation 621-1 governs the application process.
- The advanced degree program for ROTC instructors seeks to upgrade academic qualifications and provide assignment stability to officers assigned to ROTC duty. A 3-year ROTC assignment will follow this schooling.
- The cooperative degree program offers officers the opportunity to obtain a master's degree during attendance at the command and general staff colleges, senior service colleges, and other service schools. Attendance is normally concurrent with normal military schooling, but officers may receive up to 6 months of time to complete



Officers are selected in their sixteenth through twenty-third year of service to attend the US Army War College at Carlisle Barracks, Pennsylvania.

the degree requirements after graduation from the military school. Officers pay all educational costs.

- The Army's training with industry (TWI) program provides exposure to industrial procedures and practices not available through military service schools or civilian colleges. The Army authorizes \$1,500 in travel cost reimbursement; and participating officers receive full pay and allowances while at the industrial training site. Although participants receive no academic degree, their personnel records will reflect TWI training. What's more, they will receive an appropriate assignment upon program completion. Army Regulation 621-1 outlines application procedures.

Command and Staff College

Command and staff colleges prepare officers for duty as commanders of battalion and brigade-sized units and as principal staff officers at brigade and higher levels. A Department of the Army selection board chooses officers in their tenth through fourteenth years of service to attend resident courses at the Army Command and General Staff College (CGSC); Armed

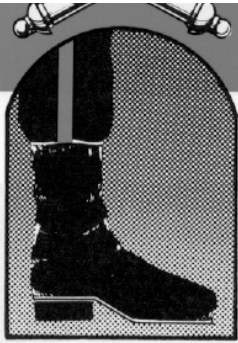
Forces Staff College; Navy, Marine, and Air Command and Staff Colleges; the School of the Americas; and several foreign schools.

Nonresident instruction provides an alternative method of gaining CGSC-level credit. Prerequisites for the Army's correspondence course are completion of at least 8 but no more than 18 years of commissioned Army service, graduation from an Army advanced course, no prior CGSC diploma, and compliance with the Army's height and weight requirements.

War College

A Department of the Army selection board selects officers in their sixteenth through twenty-third year of service to attend resident courses at the Army, Navy, and Air Force War Colleges; the National War College; the Industrial College of the Armed Forces; the Canadian National Defense College; and the Inter-American Defense College.

Fellowships include the Advanced Operational Studies Program at Fort Leavenworth, the Army Research Associates Program, the Harvard Fellows Program, the Atlantic Council Program, and the Georgetown University Center for Strategic and International Studies.



Officer Personnel Management System

The officer personnel management system (OPMS) is the Army's program for matching the best available officer to an assignment while meeting the professional development needs of the officer corps. Over the years OPMS has evolved. Several recent changes in the system will have a dramatic impact on Redlegs serving around the world.

To understand the new complexities of OPMS, one must first come to grips with the terms identified in the accompanying table.

OPMS Changes

The recently revised OPMS does away with "specialties." The Army now classifies officers by branch, functional area, area of concentration, and skill. What's more, authorization documents — tables of organization and equipment (TOE), and tables of distribution and allowances (TDA) — now reflect the same classifications.

But there is more to the new OPMS! Specifically, there have been 2 other major changes.

- The Army intends to "fill the foxholes" and realign the force as necessary to meet its needs. The Army's largest requirement for lieutenants is in the combat arms. Combat readiness dictates that we fill all of these requirements. However, by the time these lieutenants become captains there are not enough jobs in the combat arms for all of them, yet there are many unfilled requirements in the

CAREER FIELD	
<ul style="list-style-type: none"> - Branch or functional area in which officers are assigned, developed, and promoted. - Field Artillery is a career field. 	
BRANCH	
<ul style="list-style-type: none"> - Group of officers by arm or service. - A career field requiring significant education, training, and experience. - Repetitive tours. - A means of accessing officers. - As a Redleg, your branch is Field Artillery (Code 13). 	
FUNCTIONAL AREA	
<ul style="list-style-type: none"> - A group of officers by career field other than branch. - A career field requiring significant education, training, and experience. - Repetitive tours. - Not a means of accessing officers. - Examples of functional areas include ORSA, research, development, comptroller. 	
AREA OF CONCENTRATION	
<ul style="list-style-type: none"> - Identifies an area of expertise (subdivision) within a branch or functional area. - An officer may possess and serve in more than 1 area of concentration within his branch or functional area. - Areas of concentration within the Field Artillery are varied. 	
SKILL	
<ul style="list-style-type: none"> - A specialized qualification which can be related to more than 1 branch or functional area - May require significant education, training, or experience. - Progressive assignments and repetitive tours are not required. 	
IMMATERIAL POSITIONS	
<ul style="list-style-type: none"> - A duty position which is not identified with or limited to 1 specific branch of the Army but can be filled by any commissioned officer from 1 of the 4 categories shown below. - All Field Artillery officers should expect to serve in immaterial assignments at times during their career. 	
IMMATERIAL CATEGORIES	FIELD ARTILLERY ELIGIBILITIES
01A- Branch Immaterial	Yes
02A- Combat Immaterial	Yes
03A- Logistics Immaterial	No
04A- Personnel Immaterial	Yes

branches. This trend continues through the field grades.

Because congress mandates the size of the officers corps, the Army must realign officers to fill the most urgent requirements. Some other than regular army (OTRA) officers, particularly in the combat arms, will be rebranched into the combat support and service support branches through the conditional voluntary indefinite (CVI)

process. The board which selects officers for rebranching consists of representatives from the donor branches and the proponents. This means that some officers must branch transfer at about 3 years of service in conjunction with promotion to captain and the CVI process.

- The Army now provides 2 career patterns—single track and dual track. The single track permits officers to

serve repetitive assignments in a single branch or functional area. The dual track is similar to the dual specialty concept which was a part of the original OPMS. The difference is that under the dual track career pattern, an officer will serve in only 1 branch and 1 functional area. Officers who branch transfer as part of the CVI process or upon individual request may either single track in the new branch or add a functional

area and dual track for the remainder of their career. Officers who concentrate their careers in a functional area will single track in the functional area.

In the Field Artillery the vast majority of officers will participate in the dual track option. In fact, the Chief of Field Artillery has identified the need for only a few single-tracked Redlegs, and these officers should anticipate several branch immaterial postings during their careers.

Assignments and Records

Assignment officers in the Field Artillery Branch of the Army's Military Personnel Center use the OPMS to match officers to positions. To do their jobs effectively, they need your help in 4 ways.

- First, keep your *Officer's Assignment Preference Statement*, DA Form 483, up to date. Follow the directions included in the form and send it *unfolded* to your assignment officer.

Submit a new form:

- About 12 months before completing an overseas tour.
- About 12 months after reporting to a continental US (CONUS) station.
- Within 30 days after starting a class at a CONUS service school or a civilian institution.
- Whenever your personal desires change.
- Second, keep your personal records up to date.

- The official military personnel file (OMPF) is the primary means by which promotion and selection boards judge you. Maintained by the Military Personnel Center in Alexandria, Virginia, the OMPF is composed of 2 microfiche—the *service fiche* which includes promotion orders, oath of

office, Regular Army appointment orders, accession data, and other service data; and the *performance fiche* reports which contains officer evaluation reports, awards, and letters of commendation. Army Regulation 640-10 contains detailed guidance concerning documents authorized in the OMPF. You may request a copy of your OMPF at any time by writing to Commander, USA MILPERCEN, ATTN: DAPC-MSR-S, 2461 Eisenhower Road, Alexandria, VA 22331-0302. And by all means, you must review your OMPF annually.

- The *officer record brief* (ORB), part of your 201 file, is kept by the personnel service company that maintains your files. Personnel managers, commanders, and the Department of the Army selection boards use your ORB as a quick snapshot of your schooling, training, and career development. You must review and update your ORB annually during your birth month, but you may elect to review it more often if necessary. DA Pam 640-1, *A Pocket Guide to the ORB*, provides detailed information.

- Third, keep your photograph up to date. Provide an impressive photo even if it requires repeated effort.

- Fourth, maintain personal contact with your assignment officer.

Promotions, Commands, and Such

Not every Redleg can or wants to be a general or a battalion commander. Nevertheless, many field

TIME IN SERVICE	SELECTION RATE OBJECTIVE	GRADE
1.5 years	100 percent fully qualified	1LT
4.0 years	100 percent fully qualified	CPT
10 ± 1 year	80 percent	MAJ
16 ± 1 year	70 percent	LTC
22 ± 1 year	50 percent	COL

artillerymen judge their success by precisely these measures. The accompanying chart not only summarizes the promotion and selection performance of Army officers but also shows how well Field Artillerymen have done against the average.

Bars and Stars

Commanders in the field promote officers to the rank of first lieutenant. All other promotions except lieutenant general and general result from Department of the Army selection boards.

Promotion boards convene under the guidance of the Secretary of the Army. Normally divided into 3 panels according to branch and functional area representation, board members review appropriate records in order to assess the demonstrated ability and indicated potential of officers eligible for promotion. Using a "whole person" criteria, they then vote on each file, establish an order of

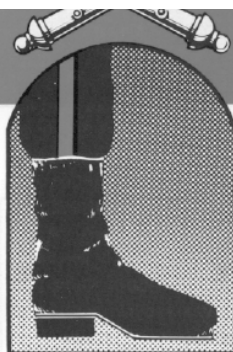
merit list, and ensure that they meet the branch and functional area "floors and ceilings" set down in their instructions.

Because the Army contracts and expands over time; promotion policies may change from year to year. Certainly, there are no guarantees, but the Defense Officer Personnel Management Act (DOPMA) establishes the following non-binding time-in-service and selection rate guidance for promotions.

The below-the-zone promotion system allows for the accelerated promotion of those officers who have demonstrated performance and indicated potential superior to their peers. Below-the-zone selections apply only to promotion to major, lieutenant colonel, and colonel. DOPMA authorizes a maximum of 5 percent below-the-zone promotions to major and 10 percent to the lieutenant colonel and colonel levels.

FIELD ARTILLERY OFFICER STRENGTH*	
Colonels	420
Lieutenant Colonels	885
Majors	1,299
Captains	3,208
Lieutenants	3,323
Accessions	994
TOTAL	9,135

*Assets as of July 1986-OPMD Specialty Code Demographics and Trends



Redleg Officers Career Guide

Women have historically served our nation and its Armed Forces with selfless dedication and remarkable distinction. Today's Redleg women continue that proud tradition as they help accomplish the Army's mission. Women first entered the ranks of the Field Artillery in 1978. Initially they served in artillery detachments, Lance, Pershing, and target acquisition units. The only units closed to women were the cannon artillery organizations identified in the Secretary of the Army's Combat Exclusion Policy. In 1982, a Women in the Army Policy Review Group (WITAPRG) study produced the contemporary policy concerning the role of women in uniform.

Today, our policy identifies positions in the Army as opened or closed to women by using direct combat probability coding (DCPC). The DCPC system examines 4 fundamental dimensions of any position.

- The duties of the job or military occupational specialty.
- The unit's mission.
- The unit's likely battlefield location in the theater.
- Army doctrine.

Essentially, each duty position's proximity to the enemy and the primary mission of the job and unit, coupled with AirLand Battle doctrine, ultimately dictates where women can and cannot serve in the Army.

In developing the direct combat probability coding system, experts defined 7 codes—numbered P1 through P7. A soldier in a P1 position

Headquarters and Service Batteries in Lance Battalions	of the 6th Field Artillery Command (Pershing)	6th Ordnance Brigade
MOS/AREA OF CONCENTRATION		
ENLISTED	WARRANT OFFICER	OFFICER
13N Lance Crew Member	201A Met Technician	13A Field Artillery Officer, General
13Z FA Senior Sergeant	211A Tgt Acq Radar Technician	13B Field Artillery Officer, Light Missile
15E Pershing Missile Crew Member	212A RPV Technician	13C Field Artillery Officer, Heavy Missile
93F FA Met Crew Member	214E Pershing Missile System Technician	13D Field Artillery Officer, Tgt Acq
	214G Lance Missile System Technician	

has the highest probability of participating in direct combat, and a soldier in a P7 position has the least probability of participating in direct combat. Under this system only P2 through P7 positions are open to women. The following table of organization and equipment units, military occupational specialties, and areas of concentration are open to women.

The Training and Doctrine Command has made a proposal which simplifies this coding process. Instead, positions would be identified as either male only or interchangeable—male or female.

The positions and units listed above may vary depending on the modified tables of organization and equipment of each command. All table of distribution and allowance (TDA) units, including the Field Artillery School and Army Training

Center are open to women. These units provide good opportunities for women to command and serve in a variety of positions.

Today there are 427 women in career management field 13. They are broken down as follows:

DISTRIBUTION OF WOMEN	
OFFICERS:	157
WARRANT OFFICERS:	1
NCO:	116
ENLISTED:	153
TOTAL:	427

These Field Artillery women are progressing through the ranks and performing their duties with pride and distinction

alongside their male counterparts. Our most senior female officer is a promotable captain, and our most senior enlisted women are sergeants first class. Our only female warrant officer is a chief warrant officer 2. So far, the Field Artillery women have commanded Pershing, Lance, and target acquisition batteries; warhead detachments; corps artillery headquarters and headquarters batteries; and Army Training Center batteries. What's more, they are working all staff levels to include joint and special activities.

Women have performed their jobs professionally. The King of Battle will always have a need for physically fit, qualified soldiers who can get the job done. Our history makes it abundantly clear that there is indeed a place for women in the Field Artillery.

Green Tabs

Commanders in the field control battery level commands, and Department of the Army selection boards designate battalion and brigade-level commanders. The senior leadership of the Army selects general officers for higher level commands.

Most company grade Redlegs should have an opportunity to command. That's why a successful battery command is an integral component of branch qualification.

Company grade officers can enhance their chances for command by seeking greater responsibility, doing the best job they can, and ensuring their ORB and OPMF reflect their achievements.

The centralized command selection system establishes the procedures for the selection of officers to fill designated lieutenant colonel and colonel-level troop commands. The system seeks to place the best qualified officers in command. The Commander, MILPERCEN, designates those positions to be filled by centralized boards.

• For lieutenant colonel-level commands, officers must:

- Be in the grade of lieutenant colonel or major (promotable) and not have completed 21 years Active federal commissioned service (AFCS) as of 1 October in the fiscal year

being considered.

- Not have commanded an OPMS designated command at the lieutenant colonel level.
- Not have been selected as a principal command designee by a previous lieutenant colonel-level centralized command selection board.
- Not have declined a lieutenant colonel-level command after having been selected.

• For the colonel-level command, officers must:

- Be in the grade of colonel or lieutenant colonel (promotable) and not have completed 26 years AFCS as of 1 October of the fiscal year in which they are being considered.
- Not have previously served in an OPMS-designated command at the colonel level.
- Not have been previously selected as a principal command designee by a previous colonel-level centralized command selection board.
- Not have declined a colonel-level command after having been selected.
- Not have declined a project managership after having been selected.

Separate lieutenant colonel and colonel-level command boards convene annually for combat arms, combat support

arms, and combat service support categories. There is a separate project managership board for colonels. Each board reviews the records of all eligible officers, identifies those best qualified for command, and rank-orders them by command category. MILPERCEN then programs principal command designees for command. The Army activates and assigns alternate designees to command when requirements occur for which no principal command designee is available. If not assigned to command, alternate command designees receive reconsideration along with all other eligible officers at the next board. An officer is not designated as a principal in more than 1 command category but may be designated as an alternate selectee in several categories.

Selective Continuation

The selective continuation program provides for the continued service of officers not chosen for promotion. A Department of the Army board convenes immediately upon adjournment of the promotion board to consider the retention of Active duty officers twice nonselected for promotion to major and lieutenant colonel. The board produces a list of officers qualified for continuation.

The Secretary of the Army establishes selection criteria for

each board. Initially, selected other than Regular Army officers and Regular Army officers in the grade of captain will be continued for 3 years. The enactment of DOPMA as implemented by DOD directive 1320.8 provides that post-DOPMA Regular Army majors who are within 6 years of retirement eligibility will be selectively continued until they complete 20 years service. Officers who elect to refuse continuation or those not selected for continuation receive separation pay. An officer's promotion consideration continues during the period of selective continuation.

Conditional Voluntary Indefinite Extension

The conditional voluntary indefinite (CVI) extension program allows Reserve commissioned officers to remain on Active duty in a career status. Reservists are eligible if they can complete 20 years ACFS before the last day of the month in which they would attain the maximum age for service. They should apply for a CVI extension upon completion of 2 years Active federal commissioned service on their current tour. Army Regulation 635-100 outlines the application process and specific eligibility criteria.



Officer Evaluation Reports

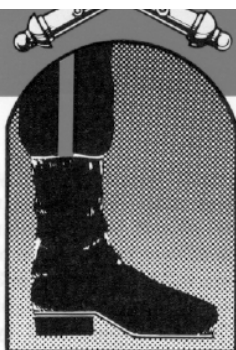
Just about every Redleg officer has had one. And virtually everyone has worried about those little soldiers standing shoulder-to-shoulder.

In fact, officer evaluation reports (OER) are as much a part of the Army as mess halls and cannons. That's why every Redleg

leader should understand the OER's use and potential abuse.

The officer evaluation system is the Army's method of

identifying those commissioned and warrant leaders best qualified for promotion and assignment to positions of increased responsibility.



Success

"Success /sek-'ses/—The achievement of something desired, planned, or attempted. Having obtained something desired or intended."

This is the definition of success provided by the *American Heritage Dictionary*. The funny thing about dictionaries is that they can tell you what success is, but they will never tell you how to achieve it.

Virtually every Field Artillery lieutenant around the world has asked, "What do I have to do to become a successful Redleg?" The answers are tremendously varied. Some measure success by the amount of time spent leading soldiers. Others believe that they can become successful by being good staff officers. Yet others think that advanced schooling is the key. Who's right and who's wrong? In this case, everyone is right!

The official Army policy states that lieutenants "should

Officer (13B)	Lance bn/btry	firing platoon leader Ammo platoon leader Battalion FDO (1) Ammo platoon leader (1) Firing battery XO Btry detail plt ldr Asst XO (firing battery) Firing platoon ldr (2 ea) Assembly & trans plt ldr
Heavy Missile Field Artillery Officer (13C)	Pershing bde	Aide de camp (6) HHB bde XO (6)
	Pershing bn	Ammo plt ldr (6) Fire control officer (6) Support plt ldr (6)
Field Artillery Target Acquisition Officer (13D)	TAB	Counterfire officer
	HHB, Lance/Cannon	Survey plt ldr Radar plt ldr Sound ranging plt ldr (2)
Cannon Field Artillery Officer (13E)	155-mm/8" bn	Btry XO Btry FDO Ammunition officer Bde asst FSO (4) Maneuver bn FSO (3 ea) (4) Bn FDO
		Other

Notes:

- (1) Positions available to male or female.
- (2) Only in Reserve and National Guard units.
- (3) Recon/survey officer may be female in Lance battalions only.
- (4) Fire support officer slots only apply to DS artillery battalions.
- (5) Warhead detachment positions are filled by officers holding the necessary area of concentration, one for each area (13E, 13E fills cannon maintenance/assembly officer position, 13B fills Lance maintenance/assembly officer position.)
- (6) All Pershing positions are open to both men and women.

normally be assigned at battery level to gain troop experience in their assigned area of concentration...and complement this with staff experience." Couple this with attendance at the Field Artillery Officer Advanced Course, as well as good, consistent performance of duty, and you've just met the criteria for being a successful lieutenant in the Army. Simplified,

Success = Leadership + Staff + Schooling + Performance

It's an easy formula. And yet there are still some officers who believe the opportunities to do all these things are few and far between. They are wrong! Just look at the accompanying table. The Field

Artillery has the leadership positions a lieutenant needs to succeed.

As the formula suggests, advanced schooling also plays a major role in a lieutenant's success. The Military Personnel Center schedules Field Artillery officers for attendance at the officer advanced course between their third and fifth years of service. Designed primarily to prepare lieutenants

for battery command and fire support officer positions, the advanced course also provides instruction on the latest tactics and equipment used by the Field Artillery.

The Field Artillery also provides ample command opportunities. Approximately 30 percent of the positions available to Field Artillery captains are command positions, and another 30 percent are designated as fire support officer positions. As the numbers currently stand, an officer can expect to command either a table of organization and equipment or a table of distribution and allowances unit sometime between his fourth and ninth years of service.

If promotion rates indicate potential for success, then the Field Artillery stands among the best. Our branch currently promotes 97 percent of its lieutenants to captain—a number comparable to both Armor and Infantry and well above the overall Army average.

The Field Artillery has all of the key ingredients to produce successful junior officers. But someone must draw all those ingredients together. That's why senior Redlegs must take an extremely active role in the development of lieutenants. With thought, planning, and effort, commanders can influence the success of their junior officers. A strong mentorship program or at least regular counseling sessions will help keep lieutenants moving along the path to success.

Of course, none of this is possible unless we continue to bring ambitious, quality leaders into our branch. They, more than anyone or anything else, will determine the future of the Artillery. The Field Artillery, as a branch, provides every opportunity for success. With desire and drive, our junior officers will continue to be the Kings of Battle.

Army Regulation 623-105 is your guide to the officer evaluation system. It explains how the Army documents your performance for future use in determining promotions and selecting leaders for schooling, command, and special assignments.

There is no secret about how to get good evaluation reports. You must do 3 things.

- Establish clearly defined goals and objectives with the members of your rating chain.
- Work diligently in pursuing and achieving these goals and objectives.
- Concentrate on leading, maintaining, training, and caring for your soldiers as you accomplish your missions.

The system relies on 2 forms and competent, committed, and caring leaders to produce quality evaluations.

The Officer Evaluation Report Support Form, DA Form 67-8-1, documents the face-to-face identification of goals and objectives between the rated officer and his rater. It also allows the rated officer to "blow his own horn" at rating time. Good Redleg leaders use the support form:

- As they conduct a one-on-one support form review within 30 days of the arrival of the rated officer.
- As they periodically counsel their subordinates.
- As they complete the description of duties and performance portion of the OER.

The Officer Evaluation Report, DA Form 67-8, gets more attention than any other document in a Redleg officer's file. Promotion boards and commanders use it as a yardstick by which they compare the rated officer with his peers. In preparing and interpreting efficiency reports, Field Artillerymen should keep several points in mind!

The Officer Evaluation Report, DA Form 67-8, sets the goals and objectives of a job expected from an individual's performance.

table suggests, does a Redleg have to receive all top-block scores to have a successful career.

Every Redleg leader should understand the tension that exists between the tradition of "Field Artillerymen

taking care of their own" and the need for raters "to tell it like it is." Good, useful ratings require honest, well-attuned raters. But even more important, they require good, solid, professional performance.

Board	Date Results Released	Selected Officers with at Least 1 Evaluation Less than Top Box	Selected Officers with at Least 2 Evaluations Less than Top Box	Selected Officers with at Least Half of their Evaluations Less than Top Box	Box Range
Senior Service College	AUG 85	More than two-thirds	More than half	Almost a fifth	1-4
Lieutenant Colonel	OCT 85	More than nine-tenths	Four-fifths	More than half	1-5
Command and Staff College	DEC 85	Almost nine-tenths	Almost three-fourths	Almost one-third	1-5
Colonel Command	JAN 86	More than four-fifths	More than half	Almost a fifth	1-5
Chief Warrant Officer 3	MAR 86	More than nine-tenths	Almost nine-tenths	Almost four-fifths	1-6
Chief Warrant Officer 4	MAR 86	More than nine-tenths	More than four-fifths	More than half	1-6
Lieutenant Colonel Command	APR 86	More than four-fifths	Almost two-thirds	More than one-quarter	1-5
Major	JUL 86	More than nine-tenths	Almost nine-tenths	Almost three-quarters	1-6
Brigadier General	AUG 86	More than half	One-third	Almost one-tenth	1-2
Colonel	AUG 86	Almost nine-tenths	More than two-thirds	More than a third	1-5

US Army Military and Reserve Personnel Update

Field Artillery Officer Branch Teams

ACTIVE COMPONENTS



COL Harry R. Yarger
Field Artillery
Branch Chief



LTC Jack G. Wolf
Officer Team
Chief

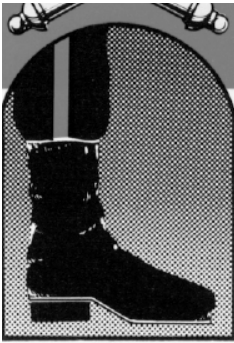


LTC Jimmie R. Lackey
Colonel
Assignments



MAJ David E. Johnson
Lieutenant Colonel
Assignments

Redleg Officers Career Guide



Every Redleg leader should understand the link that exists between the tradition of World War II and the modern Redleg. But even more important, they require good, solid professional conduct.



MAJ David C. Ralston
Major Assignments



MAJ Stephen C. Randolph
Chief, Strength Management



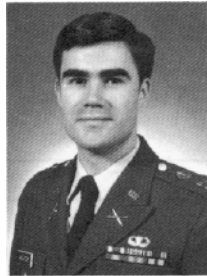
CPT Stover S. James
Captain Assignments:
Functional Area/Nominative



CPT David C. Cutler
Captain Assignments:
Troop/Advanced Course
Follow-On Assignments



CPT Carl E. Lewis
Lieutenant Assignments
Accessions



CPT Thomas W. Weafer
Lieutenant Assignments
Officer Advanced Course
Lieutenant Colonel
Precommand Course



CPT Mark A. Graham
Distribution Officer
Strength Management



CW3 George B. Chiasson
Warrant Officer
Assignments

An officer may request his performance fiche, service fiche, and officer record brief (ORB). The Field Artillery Branch has the responsibility for official file review during a US Army Military Personnel Center (MILPERCEN) visit. An officer may visit his assignment

officer and review his official military personnel file (OMPF) in only 1 stop; however, he must notify the assignment officer at least 72 hours prior to the visit so that the assignment officer will have the OMPF available.

MAILING ADDRESS AND TELEPHONE

LIEUTENANT COLONELS AND BELOW

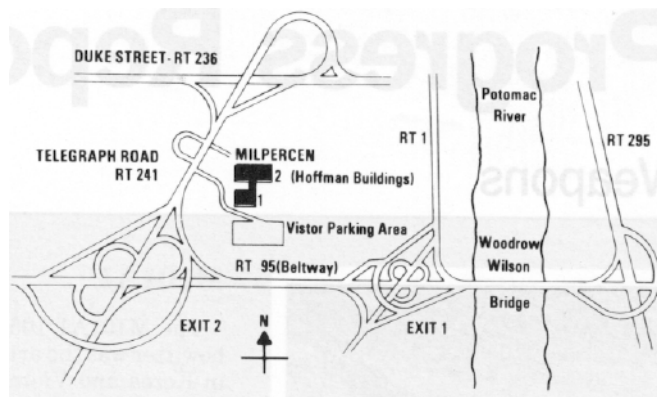
Commander, MILPERCEN
ATTN: DAPC-FA-O
2461 Eisenhower Avenue
Alexandria, VA 22331-0400
AUTOVON 221-0187/0116/7817/0118
Commercial (202)325-0187/0116/7817/0118

LIEUTENANT COLONELS(P) AND COLONELS:

Commander, MILPERCEN
ATTN: DAPC-OPC
200 Stovall Street
Alexandria, VA 22332-0400
AUTOVON 221-7862/7863
Commercial (202)325-7862/7863

Directions to MILPERCEN Offices

Follow Interstate 95 (the Capital Beltway) toward Alexandria, Virginia; then take Exit 2 north to Telegraph Road. The Hoffman Buildings I and II are on the immediate right after exiting the Beltway and are located adjacent to the Holiday Inn. Visitors should park in visitor parking only and register privately owned vehicles with the security personnel in the lobby of Hoffman Buildings I or II.



RESERVE COMPONENTS



MAJ Joe Rogers
Field Artillery
Branch Chief
All Lieutenants Colonels
1-800-325-4952



MAJ Gary Profit
Captains with
last SSN digits
of 00-49
1-800-325-4952



MAJ Harry Ackroyd
All Majors
1-800-325-4899



MAJ Mel Brown
Captains with
last SSN digits
of 50-99
1-800-325-4899



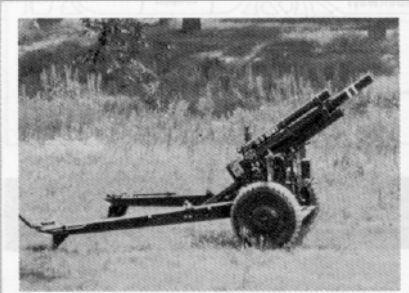
CPT Danny Harvey
All Lieutenant
1-800-325-4950

Personnel management officers assist in obtaining assignments for individuals to a Reserve Component unit in an individual's locale. If such an assignment is not available, the personnel management officer explains Reserve Component participation options and arranges appropriate training to keep the individual active and qualified as a Reserve Component officer.

Mailing address: Commander, ARPERCEN (Provisional)
ATTN: DARP-OPC-FA
9700 Page Boulevard
Saint Louis, MO 63132-5260
Telephone: AUTOVON 693-7871/7873/7351
or use the appropriate toll-free
number listed above.

Major Systems and Progress Reports

Weapons



M101A1

The M101A1 105-mm, light towed howitzer was the artillery's workhorse in Korea and Vietnam. Today it provides direct support in only a few Active and Reserve Component units. It fires semifixed ammunition and has a maximum range of 11,200 meters with conventional rounds; or 14,500 meters with the rocket assisted projectile (RAP). The prime

mover for the M101A1 is a 2½-ton cargo truck, and it can be lifted by CH47 helicopters. It can fire all the 105-mm ammunition in the inventory including high explosive RAP, illumination, improved conventional munitions, smoke, white phosphorous, and antipersonnel (beehive) projectiles. There is presently only 1 battalion of M101A1s on Active duty in the Army, and it is located in Alaska.



M102

The M102 105-mm light towed howitzer is the direct support weapon for the Army's light infantry, airborne, and air assault divisions. It can be airlifted by the CH47 and UH-60 helicopters, towed by a cargo truck, or dropped by parachute. It fires the same type of ammunition as the

M101A1 but has a maximum range of 11,500 meters and with the RAP it has a range of 15,000 meters.

Two distinguishing features of the 3,171 pound M102 are its very low silhouette when in the firing position and the roller tire attached to the trail assembly. This roller tire permits the weapon to be rotated full circle providing 6,400 mils firing coverage.



M109-HIP

The M109 155-mm self-propelled howitzer dates from the early 1960s. The M109A2, an improved version of the original M109, and the M109A3, which is a depot modified M109A1, provide the primary indirect fire support in the Army's armor and mechanized infantry divisions. An aggressive modernization program is underway to improve the M109 fleet.

The howitzer improvement program (HIP) addresses deficiencies in survivability; fire control; as well as the reliability, availability, and maintainability of the system.

Major HIP improvements include:

- Survivability.
 - Nuclear, biological, and chemical (NBC) collective protection and microclimate conditioning system.
 - Remotely operated travel lock.
 - Modular azimuth positioning system (MAPS).
 - Vulnerability reduction.
- Responsiveness.
 - Automatic fire control system.
 - AN/VRC-89 single channel ground and airborne radio subsystem (SINCGARS) radio.
 - Gun-drive servos.
 - Loader assist.

Weapons

- Reliability, Availability, Maintainability.
- Prognostics and diagnostics system.
- Upgraded hydraulic and electrical systems.
- Engine desert cooling package.
- M109A3E2 improved armament system.
- M109A3E3 advanced armament system.

- Terminal Effects.
- Increased range.
- Compatibility with all 155-mm munitions.

The M109A3E2/E3 HIP howitzer fielding should begin in fiscal year 1989 and continue for 4 years. The HIP conversion of 1,700 M109A2/A3s involves all Active force M109 battalions and selected National Guard units.



M110A2

The M110A2 is a 203-mm heavy self-propelled howitzer which provides general support and general support reinforcing fires. Presently located in division and corps artilleries, it fires separate loading ammunition and has a maximum range of 30,000 meters. The United States Marine Corps also employs the M110A2 for general support.

Two important product improvement programs (PIP) for the venerable M110A2 203-mm 8-inch howitzer are now under consideration—the mid-life PIP (MLP) and the crew ballistic shelter (CBS) PIP.

The M110A2 MLP consists of 28 items including upgrades in such

important areas as hydraulics, rammer, equilibrator, spade operation, fire suppression, suspension system, electrical system, engine operation, track system, fuel system, instrumentation, hull, drive train, and system technical support hardware.

The CBS PIP consists of a removable aluminum-kevlar laminate ballistic shelter mounted on the rotating platform of the M110A2 howitzer. The PIP also includes 8 low risk improvements—crew compartment; rammer manifold modification; spade cylinder rod guard; tube retract warning signal; North Atlantic Treaty Organization (NATO) slave receptacle; elevating and traversing torque lock; travel lock handle; through-the-roof fire control; and NBC ventilated face piece.



M114A1/A2

The M114A1/A2 is a 155-mm medium towed howitzer which provides direct or general support for the Army's infantry divisions. Its prime mover is a 5-ton cargo truck, and it can be lifted by a CH47 helicopter. It fires separate loading ammunition and has a maximum range of 14,600 meters. The main difference between the M114A1 and the M114A2 is the rifling. The M114A2 has a 1 in 20

twist versus the 1 in 25 in the M114A1. This change made the M114A2 compatible with all the projectiles and propelling charges used in the M109 series howitzers. Today M114A2 can shoot a RAP to a range of 19,300 meters.

There are no M114A1/A2 howitzers in the Active Component of the Army. However, this battle-proven weapon is still found in a number of Reserve and National Guard units. The Marine Corps has 3 8-gun M114A2 batteries.



Weapons



M119

The M119 is a nondevelopmental, 105-mm light howitzer made in the United Kingdom. It will provide fire support for the Army's light infantry divisions and other rapid deployment forces now outfitted with the M102 and the M101A1 howitzers.

The M119 will fire all conventional 105-mm ammunition including the rocket assisted projectile and a dual-purpose

improved conventional munition round (DPICM) now under development. Initial fielding in fiscal year 1988 will follow the procurement of 64 units in 1987.

M102/M119 Range Comparison (KM)			
	HE	HE RAP	DPICM
M119	14.3	19.5	16.8
M102	11.5	15.0	—



M198

The M198 is a 155-mm towed howitzer which was originally developed as a successor to the M114A1 155-mm towed howitzer. Now fielded on a far wider scale, it is the standard corps general support weapon for nonmechanized divisions as well as the direct support weapon of infantry divisions.

The M198 provides major increases in range and reliability over its predecessor. It can fire scatterable mines, nuclear rounds, improved conventional munitions, conventional high

explosives, and Copperhead. The weapon can achieve ranges of 30 kilometers with rocket assisted projectiles.

Although 20 percent heavier than the M114A1, the M198 is still light enough to be parachute-delivered or carried by the CH47 helicopter and various cargo aircraft.

With more than 1,000 M198s already in service, the Army has elected to delay procurement of additional howitzers. Additional procurements should resume in fiscal year 1988 and continue through fiscal year 1991.

Advanced Field Artillery System

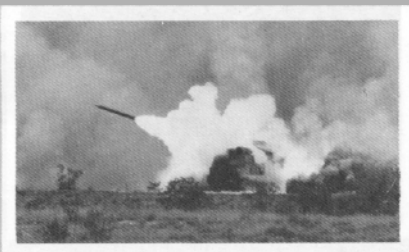
Although the improved M109 howitzer looms large on the horizon, the Army is still looking farther yet to the next generation of self-propelled howitzers. Plans are now underway to develop the advanced Field Artillery system (AFAS) which will feature

greater mobility, enhanced survivability, increased range, higher rates of fire, increased ammunition lethality, and improved operational characteristics.

The development process will explore all applicable technologies for possible incorporation into the AFAS system. Experts are considering robotics and automation; artificial

intelligence; and new propellants—modular charge, unicharge, liquid propellant, and electromagnetic propulsion—for incorporation in the AFAS.

Concept exploration and requirements definition will continue through 1989. After testing, initial AFAS fielding should occur in fiscal year 1997.



MLRS

The multiple launch rocket system (MLRS) filled a tremendous void in the Army's conventional fire support system. Capable of striking deep in the division's area of influence, it supplements cannon artillery by delivering tremendous volumes of firepower in a short time against critical,

time-sensitive targets including enemy artillery, air defense, and other soft targets.

The system employs 2 replaceable, prepackaged 6-rocket launch containers which require no crew maintenance after shipment from the factory. Capable of firing its 12 rockets singly or in rapid ripples, the MLRS can achieve ranges in excess of

Weapons

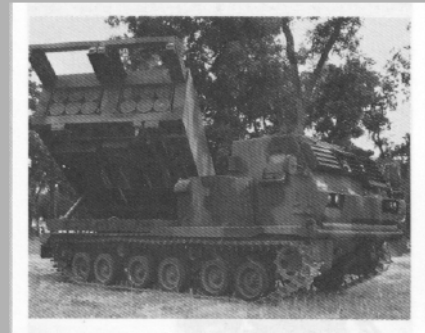
30 kilometers. In addition to its dual-purpose improved conventional munitions warhead, the MLRS will be able to deliver the German developed scatterable mine warhead as well as a terminally guided warhead now under NATO development.

The system incorporates a number of important features which enhance its responsiveness as well as improve crew survivability. Although the M270 armored vehicle mounted rocket launchers are normally operated by a 3-man crew, 1 soldier can work the entire system in an emergency. During firing, the crew remains inside the cab which provides

a collective NBC protective environment. Other innovations include devices which determine both location and direction, compute fire commands, set fuzes, and automatically fire the rockets.

A 9-launcher MLRS battery is organic to the division artilleries of mechanized and armored divisions. An MLRS battalion of 3 identically organized firing batteries will be assigned to each corps.

Initial fielding of the MLRS occurred in 1983 after an accelerated developmental schedule. Originally a "US-only" effort, the MLRS has become a standard NATO weapon.



Lance

The Lance is an all-weather, day and night, nuclear and conventional missile that gives the force commander the ability to engage priority targets well beyond rocket and cannon ranges. In the conventional mode, Lance can engage soft targets such as air defense and logistic sites out to a range of 91 kilometers. In the nuclear configuration the Lance missile can engage targets out to 133 kilometers.

The primary launcher for the Lance is the M752 self-propelled launcher. However, this launcher can be converted into a lightweight towable launcher that gives the Lance an airlift capability.



ATACMS

The Army tactical missile system (ATACMS) is a developmental program to replace the conventional Lance. The ATACMS will provide the corps commander with the firepower to destroy, delay, suppress, or neutralize enemy forces beyond the ranges of cannon and rocket artillery.

With this system the corps commander will have the organic fire support needed to fight at operational depths and to degrade the enemy's ability to reinforce and support the close-in battle. The ATACMS mission will include the attack of enemy surface-to-surface missiles and associated ground support equipment as part of its antitactical missile role.

The system will be a dramatic improvement over Lance in a variety of areas. It will have a high rate of fire, be less manpower-intensive, and possess tremendous range. The multiple launch rocket system launcher will be the basic carrier for the ATACMS, and each M270 vehicle will be able to fire both MLRS and ATACMS munitions.

Weapons



Pershing II

The Pershing II missile system gives NATO an effective nuclear deterrent against the burgeoning Soviet threat. It is an evolutionary improvement to the Pershing I and Pershing Ia systems.

Although very similar to the Pershing Ia in appearance, the Pershing II has some important improvements over its predecessor.

The Pershing II's remarkable accuracy—a 10-fold increase over Pershing Ia—is based on a radar area correlation system. Where the Pershing Ia warhead's final approach to the target was the final leg of a strictly ballistic trajectory, the Pershing II

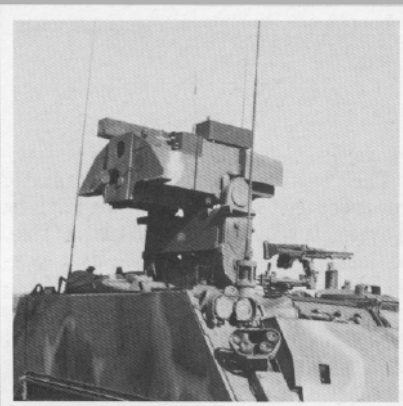
warhead flies directly into the target. Pershing II's terminal guidance is possible because the Pershing airborne computer compares differences between live radar reflections from the target and the stored digitized target scene. Those differences result in corrections being applied to the warhead's trajectory. Because of the high degree of accuracy, the use of smaller nuclear yields minimizes collateral damage to nonmilitary aspects of the target area.

Fielded on an accelerated schedule, the Pershing II achieved initial operational capability in December 1983. Two years later the Pershing II system achieved full operational capability with 108 missiles in the European Theater.

Comparing the Pershing II with the Pershing Ia

Category	Pershing Ia	Pershing II
Range	400 miles	1,000 miles
Yields	Larger	Smaller
Accuracy	Good	Excellent
Launch response	Sequential	Simultaneous
Guidance	Inertial	Terminal

Target Acquisition, Survey, and Meteorology



Fire Support Vehicle

The M981 fire support vehicle (FSV) is a modified M113-series armored personnel carrier equipped for use by artillery observers in mechanized and armored units.

Similar in appearance to the M901 improved tube-launched, optically tracked, wire-guided missile (TOW) vehicle, the FSV has a top-mounted "hammerhead" which the operator can raise or lower. Instead of housing a twin TOW launcher, the M981 hammerhead contains the forward observer's ground/vehicular laser locator designator, AN/TAS-4 night sight and north-seeking gyrocompass.

The FSV is a versatile target acquisition asset. Equipped with extensive

communications equipment and the targeting station control display (TSCD), the FSV can communicate with artillery command posts and firing units by voice and digital message. The 14-ton FSV can transport its 4-man crew up to speeds of 42 mph, and it can achieve a cruising range of up to 300 miles.

Each maneuver company fire support team and each brigade-level combat observation lasing team (COLT) found in an armored and mechanized division will also have the FSV.

Some 719 FSVs are already in use in Europe, Korea, and in the continental United States. Modification of the remaining M113s should occur by 1990.

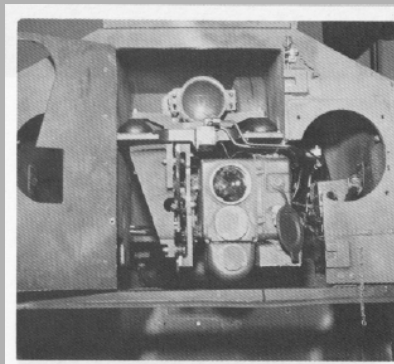
Target Acquisition, Survey, and Meteorology

G/VLLD

The ground/vehicular laser locator designator (G/VLLD) is a precision fire support tool used to find the range, azimuth, and elevation to targets in order to minimize the time required to bring conventional artillery on the target and save ammunition in the process. It can also project an invisible, coded laser spot so that laser homing munitions such as Copperhead, Hellfire, the Marine Corps' Maverick, and the Air Force's laser-guided munitions can destroy designated targets.

Normally mounted on the fire support vehicle, the G/VLLD can also be tripod-mounted for ground operation as the tactical situation dictates. In light divisions the G/VLLD will only be fielded to the combat observation lasing teams which will transport it on the high-mobility multipurpose wheeled vehicle.

Selected units in Europe, Korea, and the continental US already have their G/VLLDs. Worldwide fielding will continue through 1989.



Firefinders

Today's Firefinder radars deliver the timely targeting information that commanders need to influence the battle by detecting enemy indirect fire weapon systems.

The Firefinder family consists of 2 different radars—the AN/TPQ-36 and AN/TPQ-37.

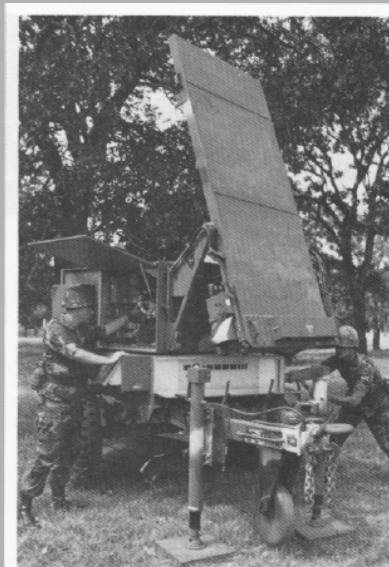
- The highly mobile AN/TPQ-36 locates high-angle trajectory weapons, but it will also find enemy low-angle weapons. The Q36 has a maximum range of 24 kilometers and an azimuth sector of coverage of 1,600 mils with up to 6,400 mils of coverage in the extended azimuth mode of 1,600 mils at a time. The radar will locate 10 weapons firing simultaneously and can store up to 99 targets in its permanent memory. It has a digital communications capability for rapid information transmission.

- The AN/TPQ-37 is best suited for locating weapons firing low-angle trajectories. The less mobile Q37 operates from 8 to 12 kilometers

behind the forward line of own troops (FLOT). It has a maximum range of 50 kilometers and an azimuth sector of coverage of 1,600 mils. The Q37 will also locate 10 weapons firing simultaneously and store up to 99 targets in its permanent memory. Like the Q36, it has digital communications, an embedded training program, and built-in diagnostic tests.

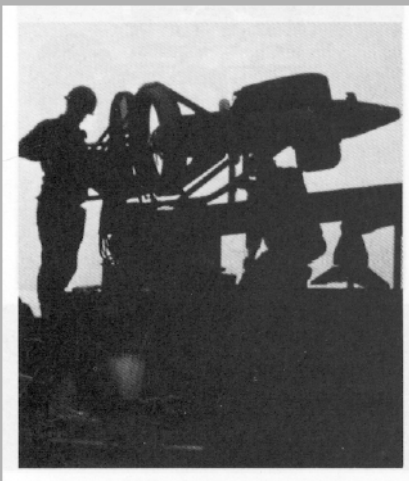
Fielding of the Firefinder radars for the Active Army and Marine Corps has been completed. Fielding for the National Guard and Army Reserve should be completed by the end of fiscal year 1989.

Firefinder II is an ongoing project designed to combine the capabilities of the 2 existing radars. Likely improvements will include increased detection capability, better mobility, and survivability. Firefinder II will have the ability to locate and identify enemy fires by type and subtype out to ranges of 36 kilometers. What's more, it will have an improved communications ability for passing counterfire data to the advanced Field Artillery tactical data system while moving.



Target Acquisition, Survey, and Meteorology

The Remotely Piloted Vehicle



The remotely piloted vehicle (RPV) Aquila is an unmanned air vehicle designed to provide the commander with real-time battlefield information. It can detect, recognize, identify, and locate stationary and moving forces beyond the line-of-sight of ground-based sensors and observers.

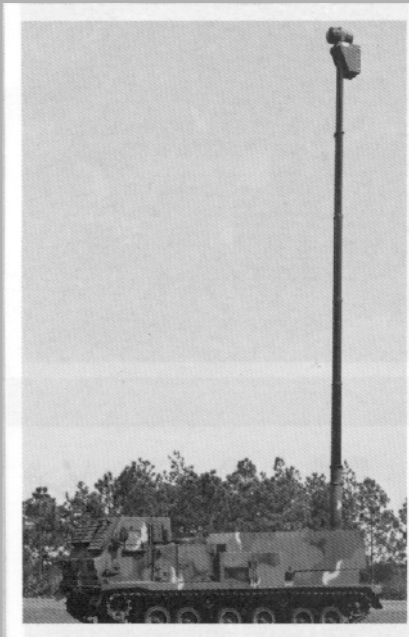
Aquila can fly into enemy territory and locate targets, adjust artillery fire, and designate targets for destruction by laser-seeking munitions. It can also perform surveillance, reconnaissance, damage assessment, and other functions.

Rail-launched from a truck and recovered in a net upon completion of its mission, the laser-designating RPV will carry a daylight television camera or a forward looking infrared (FLIR) sensor payload. When the RPV detects a target, the operator centers

a cross-hair sight on the target image portrayed on the television screen and then transmits the resulting target coordinates to an artillery unit for engagement. The RPV can orbit in the target area to adjust artillery fire. The operator can also illuminate a target with a laser beam thus enabling target engagement with laser seeking weapons such as Hellfire, Copperhead, or Air Force laser-guided munitions.

Powered by a 2 cylinder, 26 horsepower engine driving a pusher propeller, the Aquila has a length of 6 feet and a wingspan of almost 13 feet. The vehicle weighs about 260 pounds. The RPV can cruise for up to 3 hours and can achieve a service ceiling of 12,000 feet. It operates at speeds of between 56 and 113 mph.

As a corps asset, an RPV battery will have 13 air vehicles. Aquila is currently in full-scale development with initial operational capability (IOC) expected by the second quarter of fiscal year 1991.



Elevated Target Acquisition System

The elevated target acquisition system (ETAS) is a multisensor target acquisition and surveillance platform which will provide the maneuver brigade commander with a responsive, survivable system to locate targets. It will replace the AN/TPS-25, TPS-58, PPS-15, and the PPS-5 systems.

ETAS will employ passive sensors for target acquisition out to 10 kilometers and a low-probability-of-intercept radar for targets up to 20 kilometers.

The sensor package will be mounted on a 20 meter telescoping mast and includes a thermal imager, a high-resolution television, a laser rangefinder/designator, and the radar.

Experts will test 2 ETAS "proof of principle" models during a force development test and experimentation at Fort Sill in the fourth quarter of fiscal year 1988. Fort Sill's combat developers are drafting a required operational capability document to support transition into full-scale engineering development.

Position and Azimuth Determining System

The AN/USQ-70 position and azimuth determining system (PADS) is a self-contained, inertial surveying system

capable of rapidly determining accurate position, elevation, and azimuth. Operators can install PADS in the high-mobility multipurpose wheeled vehicle, the commercial utility cargo vehicle, and M151-series

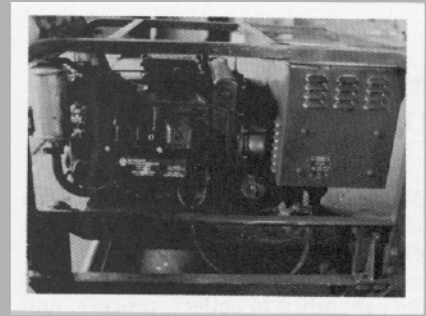
Target Acquisition, Survey, and Meteorology

wheeled vehicles. PADS can be transferred to an OH58 or UH1 helicopter.

PADS is operated by a crew of 2 soldiers. It has an operational survey area of 55 kilometers radius from the last update survey control point and a 7-hour mission duration. PADS can store up to 30 reference points in its memory and has demonstrated survey accuracy of 6 meters circular error

probable (CEP) for horizontal position error, 2 meters probable error (PE) for vertical position error, and .4 mils probable error for azimuth error.

PADS is currently deployed in artillery survey sections and the survey sections of Patriot battalions. PADS is the Field Artillery's primary survey system.



Modular Azimuth Positioning System

Exploiting inertial technology, the self-contained modular azimuth position system (MAPS) provides modern combat vehicle crews with current and continuous position information even when "buttoned up." The system will be integrated into the overall fire control or sensor control system and standardized for multivehicular applications.

When initialized and updated with survey control data currently provided by PADS, the MAPS will provide onboard position and azimuth

data for various weapon and sensor systems and facilitate autonomous operations. The PADS-MAPS complementary configuration will eventually yield to a totally autonomous position and navigational system which integrates the MAPS with an onboard global positioning system (GPS) receiver. The GPS is a satellite-based positioning system.

The MAPS will be available for various weapon and sensor systems including the M109- and M110-series howitzers, towed howitzers, Lance, Pershing II, Patriot, Aquila, Firefinder II radar, and the elevated target acquisition system. It consists of 3 components:

- Dynamic Reference Unit (DRU)—A computer, gyroscopes, and accelerometers which provide azimuth, pitch, roll; and XYZ position data.
- Control Display Unit (CDU)—A unit which contains controls necessary for system operations and output data displays.
- Vehicle Motion Sensor (VMS)—A unit which transmits velocity data directly from the vehicle's transmission to the DRU.

The initial and largest MAPS user will be the howitzer improvement program (HIP), M109A3E3, scheduled for fielding in fiscal year 1989.

Survey Electronic Distance Measuring Equipment

The survey electronic distance measuring equipment-medium range (SEDME-MR) system greatly enhances the Field Artillery surveyor's ability to provide accurate, responsive common survey control. Especially suitable for short- and midrange survey applications, the SEDME-MR, in conjunction with other conventional survey equipment, provides needed flexibility in PADS survey operations.

The SEDME-MR is the military version of a commercially available lightweight survey instrument which measures distances from 30 to 7,000 meters in a matter of seconds. The system can operate day or night.

In production since the third quarter of fiscal year 1986, the SEDME-MR will replace the current DME microwave system and the DM60. Initial fielding will occur in the second quarter of fiscal year 1987 with 1 instrument available for each Field Artillery conventional survey party and each engineer topographic survey section.

Target Acquisition, Survey, and Meteorology

Meteorological Data System

The meteorological data system (MDS) is a mobile, automated data acquisition and processing system with nonradiating ground-based components. It will provide the Army with the capability to collect, process, and transmit meteorological data to artillery fire direction centers for use in ballistic calculations. The MDS will also provide meteorological information for use by chemical sections for radiological fallout predictions and US Air Force Weather Service detachments for forecasting purposes.

The MDS consists of a ground acquisition and processing station mounted in an SJ280 shelter on a 5-ton vehicle and a trailer mounted radio direction-finding antenna. The system uses balloon-borne, battery-powered, meteorological radiosondes to measure atmospheric temperature, pressure, and relative humidity during the balloon's ascent. Atmospheric data reaches the ground station by radio signals in either of 2 designated meteorological frequency bands. The system uses both NAVAIDS (400 to 406 megahertz) and radio direction-finding (1,660 to 1,700 megahertz) modes for tracking the radiosonde in

flight. The MDS will communicate with artillery fire direction centers and other users via tactical communications systems. Its primary interface will be with the artillery's tactical fire direction system.

Artillery School experts are now exploring an alternate downsized meteorological system for light divisions.

The Army has awarded a contract for 55 MDS systems. Initial fielding should occur in fiscal year 1988.

Support Vehicles



6-Ton Tracked Cargo Carrier

The M548 is a fully-tracked lightweight unarmored cargo carrier used in the Field Artillery as the ammunition support vehicle for self-propelled weapons. The M548 can carry 6 tons

of ammunition over all terrain; and it can be equipped with a materiel handling kit with a 1,500 pound capacity to aid in loading palletized ammunition. The vehicle has an inland water swimming capability, a normal operating range of 500 kilometers, and is air transportable by C141 and larger aircraft.



Field Artillery Ammunition Support Vehicle

The M992 formerly called the Field Artillery ammunition support vehicle (FAASV)—now called the carrier ammunition track (CAT)—will replace the current M548 cargo vehicle for ammunition supply in the Army's self-propelled artillery units.

The vehicle automates some of the slow and fatiguing ammunition supply routines and provides greater protection to the crews and cargo. The CAT should improve crew protection

by 45 percent and work performance by 13 percent.

The CAT incorporates the M109 chassis and has a large armored housing in place of the turret. It provides protected transport for 93 complete 155-mm rounds plus a 10 percent overage of propellants and fuzes. The projectiles rest in removable horizontal racks. A hydraulic conveyor passes the ammunition directly to the supported howitzer at a maximum rate equal to the M109 series howitzers' rate of fire.

The vehicle has several important features that improve reliability as well as provide an increased degree of

Support Vehicles

crew protection. The CAT has an almost 85 percent commonality of parts with the M109. It also has automated test equipment for the engine as well as an auxiliary power unit and hydraulic pump supplying power for the conveyor and stacker.

Crew protection features include an automatic fire extinguisher; a nuclear, biological, and chemical protection system; and armored protection against small-arms fire

and artillery fragmentation. Future improvements will include a new conveyor that will permit ammunition transfer to the supported howitzer with all vehicle doors closed.

Type classification of the CAT, as the M992/M1050, occurred in the spring of 1986. The M992s will carry 155-mm ammunition. The 8-inch version—the M1050—will carry 48 complete rounds plus a 10 percent overage of propellants and fuzes.

Heavy Expanded Mobility Tactical Truck

The heavy expanded mobility tactical truck (HEMTT) is a 10-ton, 8-wheeled truck with 5 basic body styles that include ammunition; tractor; tanker; and recovery variants. The Field Artillery cannon ammunition

resupply variant is equipped with a 2,500-pound capacity materiel handling crane, while the multiple launch rocket system (MLRS) resupply version has a 5,400-pound capacity crane. All models have a normal operating range of 483 kilometers, are capable of fording water to a depth of 4 feet, and are air transportable in C130 and larger aircraft.



Heavy Expanded Mobility Ammunition Trailer

The heavy expanded mobility ammunition trailer (HEMAT) is a 4-wheeled ammunition trailer with a

10-ton carrying capacity. This trailer is 22-1/2 feet long and 8 feet wide. Towed by the 10-ton heavy expanded mobility tactical truck (HEMTT), the HEMAT is currently used in the MLRS resupply role. It will carry 2 launch pod containers.

High-Mobility Multipurpose Wheeled Vehicle

The high-mobility multipurpose wheeled vehicle (HMMWV) will replace selected M151, M561, and M880 tracks in the Field Artillery. This highly versatile, low-profile vehicle comes in 3 basic body types.

- Utility—The basic chassis is a 4x4 wheeled vehicle capable of transporting a payload of 2,500 pounds. The utility cargo bed will accommodate the S250 shelter, tactical fire direction systems equipment, position

and azimuth determining systems, as well as general cargo. The vehicle can tow the M102 howitzer and transport the crew and ammunition.

- Ambulance—Two versions of the ambulance will be available: A single 2-litter carrier with armor kit and another with a 4-litter capacity.

- Weapons Carrier—This configuration will provide a mounting station for the ground/vehicular laser locator designator (G/VLLD). The vehicle provides required G/VLLD mobility to light forces, and an associated armor kit provides ballistic protection for the G/VLLD and crew.

