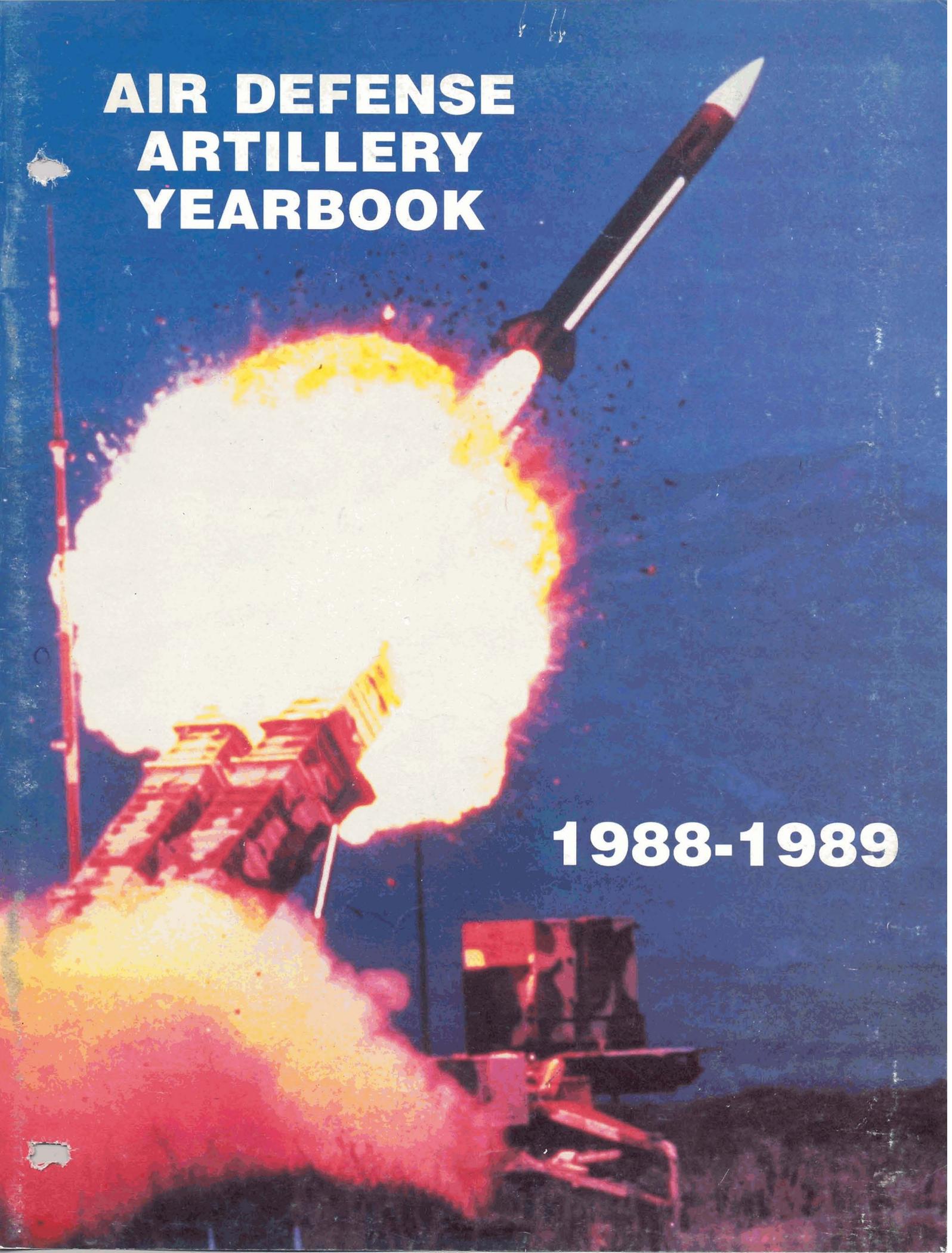


AIR DEFENSE ARTILLERY YEARBOOK

1988-1989





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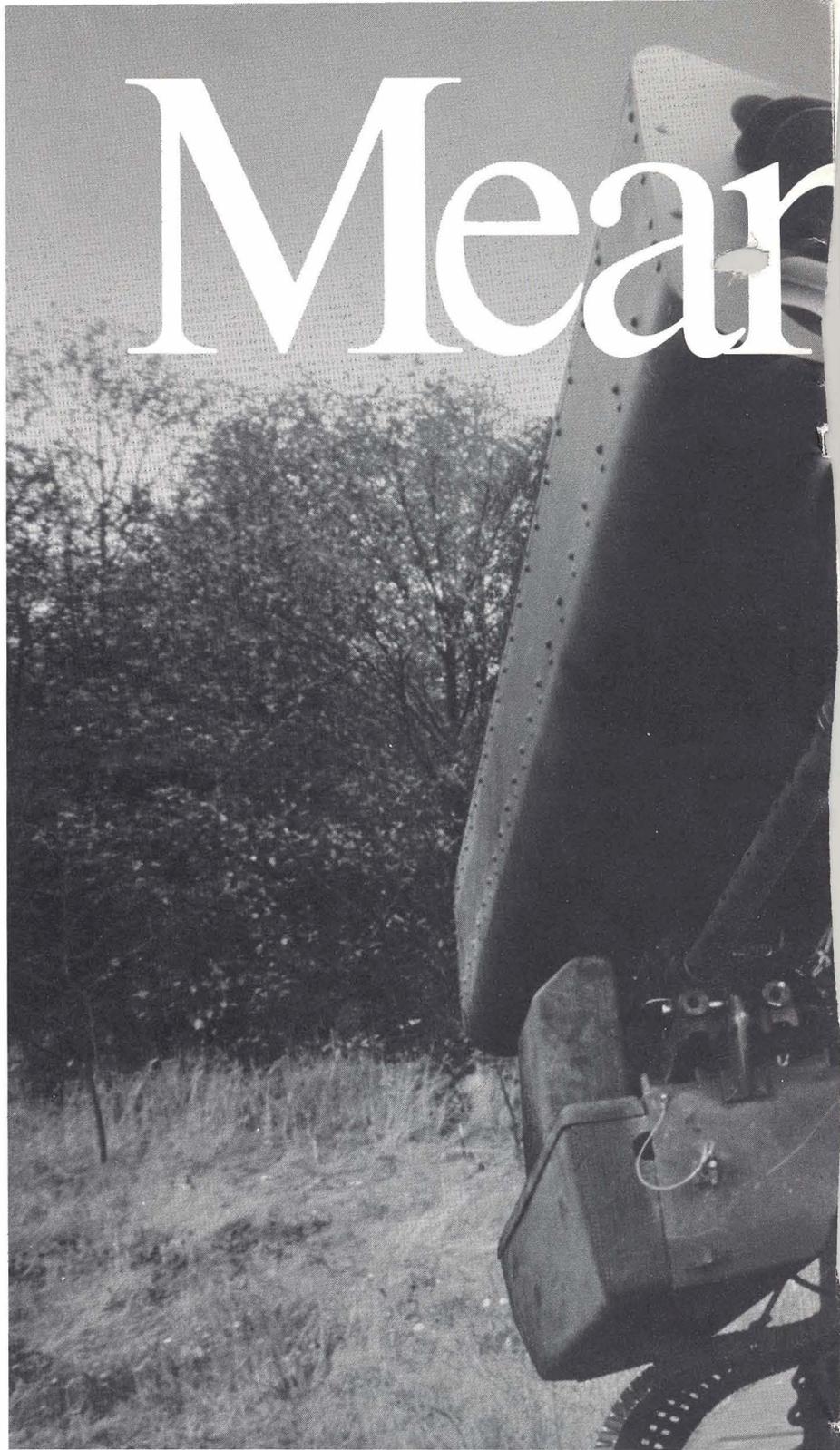
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BOEING

This edition of the ADA Yearbook celebrates a very good year for Air Defense Artillery. We have plenty of reasons to hold our heads high.

The continued fielding of Patriot, the matamorphosis of FAAD weapon systems from prototypes to production models and Stinger's performance in Afghanistan has built confidence in ADA firepower. The realistic simulation of the air threat in combined arms training has had an even more dramatic impact. After action reviews from combined arms training centers share a common theme: the battle can't be won without Air Defense Artillery.

The past year was also a good year for the ADA Association. Col. Sam Liberatoro formed the first association chapter away from Fort Bliss at Redstone Arsenal, Ala. The chapter already has nearly 100 members. Total ADA Association membership, meanwhile, grew to more than 3,300 soldiers. That's more than a brigade of air defenders who are now working to uphold the traditions and prestige of Air Defense Artillery.

The ADA Yearbook is published by the ADA Association and Capital Publishing Corp. of Austin, Texas, on behalf of air defense artillerymen around the world. Many people contributed to the success of the second edition. Maj. Gen. Donald R. Infante, chief of Air Defense Artillery, lent his personal support to the project. Brig. Gen. Jay Garner, assistant commandant of the U.S. Army Air Defense Artillery School, provided subject-matter experts to help with manuscripts. Writers and editors under the guidance of Col. Russ Moore at the Office, Chief of Air Defense Artillery, wrote articles, edited manuscripts and designed the yearbook. Training Support Division artists directed by Graphics Branch Chief Paul Mayfield prepared the illustrations.

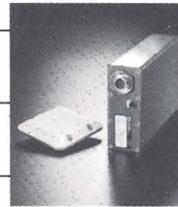
We are once again indebted to our allies in the defense industry who proved willing to support Air Defense Artillery with their advertising dollars as well as the finest air defense weaponry and technology in the world.

To all of you, my personal thanks.
First to Fire!

Col. V. J. Tedesco Jr.
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Not yet perfect but improving

The State of ADA

by Maj. Gen. Donald R. Infante

For more than three-and-a-half years I've had the privilege and honor of being the chief of Air Defense Artillery. Because of the selflessness and dedication of many air defenders worldwide, exciting and great things have happened to our branch. This article summarizes the state of the branch and includes a vision of the future. As you can see by the title, we've done well — but we're still improving!

When evaluating branch health and setting branch goals, consider these six essential areas:

- Branch pride.
- Combined arms focus.
- Doctrinal foundation.
- ADA schoolhouse.
- Equipment modernization.
- ADA soldier care.

Let's walk our way through each area.

Branch Pride

Pride is the soul of any organization. Without pride, true greatness is never achieved. I'm proud to say that pride is back!

A quick check of ADA Association Gift Shop revenues reveals that the sales of ADA memorabilia have almost doubled. This is a clear indication of resurgent pride. Most importantly, you can see it in the eyes of our youngsters (and those not so young).

Our standing in the eyes of our combat arms brethren also improved. Clearly, the U.S. Army has rediscovered they can't win the war without us. Equally important, we know we can't win it alone: we must fight as a member of the combined arms team.

There are some tangible things each of you can do to further ADA branch pride.

Belong to the ADA Association. Cost for a lifetime membership is \$30.00. Absolutely no reason why all officers and noncommissioned officers should not join. Gifts that go with the membership are valued

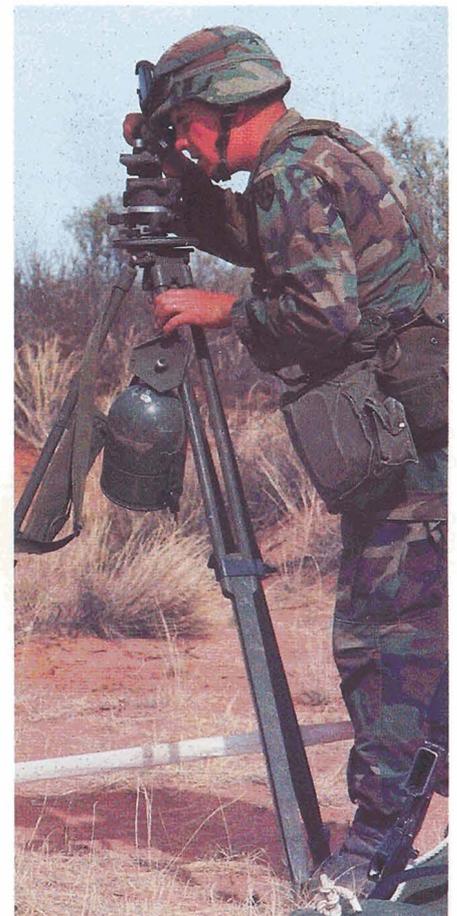


Maj. Gen. Donald R. Infante
Chief of Air Defense Artillery

AIR DEFENSE ARTILLERY

FIRST ★ TO ★ FIRE

Clockwise from left: Vulcan gunners link ammunition belts; an ADA lieutenant; a Patriot assistant section chief orients the launchers.



at \$15.00. A reasonable goal for membership is about 9,000. Our present membership is about 3,250. We have a ways to go. Encourage soldiers to join. ADA Association membership is leader business.

Display the "First to Fire" decal. In your office, your study, your room and even its intended place — your bumper. The "First to Fire" motto reminds us of the reality that, in time of war, we will be the first to engage. This reality has with it a concomitant responsibility to be especially vigilant and ready to fight and win.

Play the "ADA March" at all functions. At Fort Bliss, when you get the band, you get the "ADA March"! A reminder of who we are and what we stand for. Each unit up to battalion level has a complete score. Get on your colonels — guarantee I will. No excuse accepted for not playing the "ADA March." At a recent Fort Leavenworth ball, Capt. (P) Earl Sutton — with minimal warning — played the march on the piano with only fragments of the score.

Salute with the "First to Fire" motto. The response is "On Target." Helps to remind us that we are not only soldiers but soldiers with a special mission.

Hold pride-building events. Dining ins and dining outs, St. Barbara's Day ceremonies and organization days to name a few. Tradition is good. Tradition builds cohesion and belonging. Stand up for and display your branch. A proud past, a bright future!.

Combined Arms Focus

Air Defense Artillery is an essential member of the combined arms team. For others to recognize this requires first that we recognize it ourselves!

Being a combined arms team air defender carries with it a responsibility to understand the AirLand Battle (ALB) and how our Army fights. Absolutely impossible for air defenders to realize their full contribution to ALB without knowledge of the bigger set of objectives. A Vulcan platoon leader must be inside the mind of the task force commander. A brigade commander must be inside the mind of the corps commanding general. Heady stuff! Big responsibilities! Air defenders must know much more than just air defense.

ADA AND THE COMBINED ARMS ALB



When determining your METL, begin with the mission of ADA which is applicable at every level through echelon above corps (EAC) for every ADA weapon. The mission of each of our units is much more than killing aircraft. This, as the figure above indicates, is only an inferred mission.

The logic that holds FM 100-5 together is the freedom to maneuver. Superior enemy ground or air power can rob us of this freedom. The prime mission of Air Defense Artillery is to prevent loss of the freedom to maneuver due to enemy air. Because beans and bullets and airplanes and secure airfields must be available throughout the war, ADA sustains the battle. ADA also protects key C² nodes to ensure commanders do the right thing at the right time. These are our missions — engrave them in your mind.

I see much progress in our combined arms focus. Division folks especially doing good in most places. Corps and EAC units batting about 50 percent . . . need to do better.

Doctrinal Foundation

Our business is warfighting. Warfighting has as its foundation the doctrine which tells us how we must fight.

We've made good progress in doctrine with a giant leap ahead in publishing FM 44-100. This manual is the ADA "Bible." Every air defender should be intimately familiar with the contents of this manual — no exceptions! Every ADA "household" must have at least one copy (preferably two). When reading, pay special attention to the appendix titled Intelligence Preparation of the Battlefield (IPB). Good stuff!

ADA doctrine evolves and changes just as our Army ALB doctrine evolves and changes. Three shifts in ADA doctrine merit mention as they will impact on future force structure and equipment requirements.

Deep Operations. Our Army will fight deep in enemy territory. ADA must support that fight. Killing standoff jammers, whether they be HIP-J and Ks or Cubs, is an ADA mission associated with deep operations.

Tactical Ballistic Missile (TBM) Defense. Since ALB is a strategy that depends heavily on POMCUS stocks, we must mount a high-confidence defense against all means of attack — including TBMs. At this time, an enemy TBM targeted against our valuable assets is almost guaranteed success. This must change, and the responsibility for making it change belongs to ADA.

(Continued on page 5)



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THE SENSIBLE SOLUTION

The FAAD system maintains momentum

FAAD Update

by Col. Glenn A. McLeod

Since the secretary of defense approved the Army's forward area air defense (FAAD) concept in January 1986, the FAAD program has enjoyed three-and-a-half years of spectacular progress. Thanks to the hard work and dedication of FAAD crewmen, system managers, program administrators and civilian contractor personnel, the FAAD train has continued to maintain momentum despite some steep uphill grades.

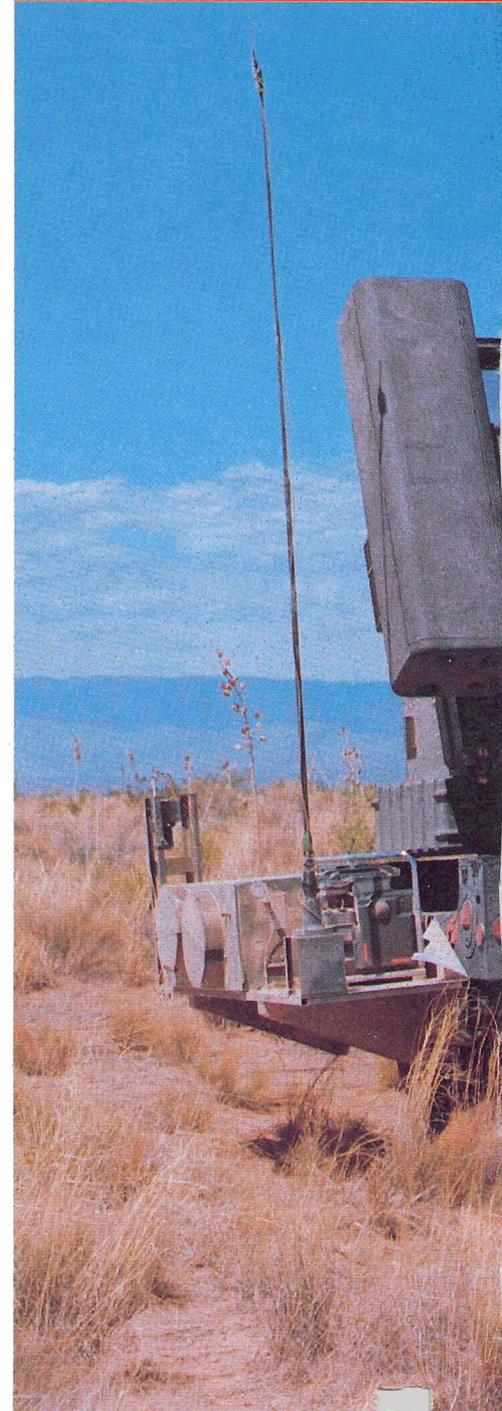
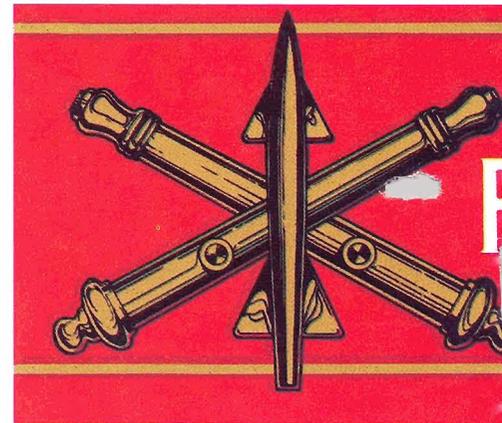
The FAAD system is a "system of systems." Most air defenders are, by now, familiar with the five components. These include the line-of-sight forward (heavy) (LOS-F-H),

non-line-of-sight (NLOS), line-of-sight rear (LOS-R), command, control, communications and intelligence (C³I) and the combined arms initiative (CAI). Contracts have been signed for all major FAAD weapon components. Production models are replacing prototypes and FAAD systems will soon be in the hands of ADA units in the field.

The dark clouds on the FAAD horizon are proposed budget cuts. The Department of Defense and the Department of the Army remain firmly committed to the fielding of a strong FAAD force. However, the FAAD system cannot be expected to maintain complete immunity to the consequences of operating in

3+ YEARS OF PROGRESS

FAADS CONCEPT APPROVED BY SECRETARY OF DEFENSE 8 JANUARY 1986					
COMPONENT	ROC APPROVED	RFP RELEASED	CONTRACT AWARD	HARDWARE TO TROOPS	FUE
LOS-F-H	MAR 87	MAR 87	FEB 88	MAY 89	FY 92
NLOS	OCT 87	NOV 87	DEC 88	AUG 89	FY 93
LOS-R	MAR 86	JUL 86	AUG 87	NOV 88	APR 89
C ³ I	MAR 86	JUL 86	SEP 86	OCT 91	FY 93
• GROUND SENSOR	JAN 88	APR 88	AUG 89	JAN 92	FY 93
• MASKED TARGET SENSOR	JUL 89	SEP 89			FY 94
CAI	DRAFT				
• AIR-TO-AIR STINGER		OCT 86	DEC 86	JUN 89	SEP 89
• BFV SIGHT		PRODUCTION MODIFICATION	AUG 87		OCT 87
• TANK RND (MULTIPURPOSE ANTI-TANK)		NOV 86	MAR 88		FY 92
NOTE:	CIRCLE DENOTES EVENT COMPLETED				



AIR DEFENSE ARTILLERY FIRST ★ TO ★ FIRE

FAAD systems undergoing operational tests and evaluation are Boeing's pedestal-mounted Stinger (left), Martin Marietta/Oerlikon Buhle's air defense/anti-tank system (ADATS) (top), and Boeing-Hughes' FOG-M (middle). The TPQ-36A radar (bottom) is a FAAD C³I ground-based sensor candidate.



today's resource-constrained environment. The probable effect of FAAD budget cuts, if they do occur, would not be cancellation of FAAD systems but rather a disruption of the FAAD timetable. The Army, for example, might slow the fielding of FAAD weapons systems to spread the costs over more fiscal years. The worst-case scenario would be a fielding slowdown accompanied by a reduction in the number of FAAD systems to be fielded.

The timetables presented in this article, therefore, are based on the premise that FAAD funding will continue at or near planned levels.

The FAAD acquisition and fielding battle is fought with ROCs, RFPs, IOTEs and other acronyms that may be foreign to readers unaccustomed to the world of materiel acquisition. The brief glossary below should make the charts detailing the progress of each FAAD weapon more comprehensible.

- FDTE = Force Development Test & Experimentation
- FUE = First Unit Equipped
- FSD = Full Scale Development
- IOTE = Initial Operational Test & Evaluation
- RFP = Request for Proposal
- ROC = Required Operational Capability

LOS-F-H

A former U.S. Army Training and Doctrine Command commander once said, "I'd give every fifth



ADATS, the LOS-F-H component, carries eight laser-beam-riding missiles that travel at more than three times the speed of sound.

tank for an air defense gun." The United States has long been the only major power lacking a mobile air defense system that can fight and survive alongside main battle tanks at or near the forward edge of

the battlefield. The LOS-F-H component, a gun-missile system, corrects this glaring deficiency.

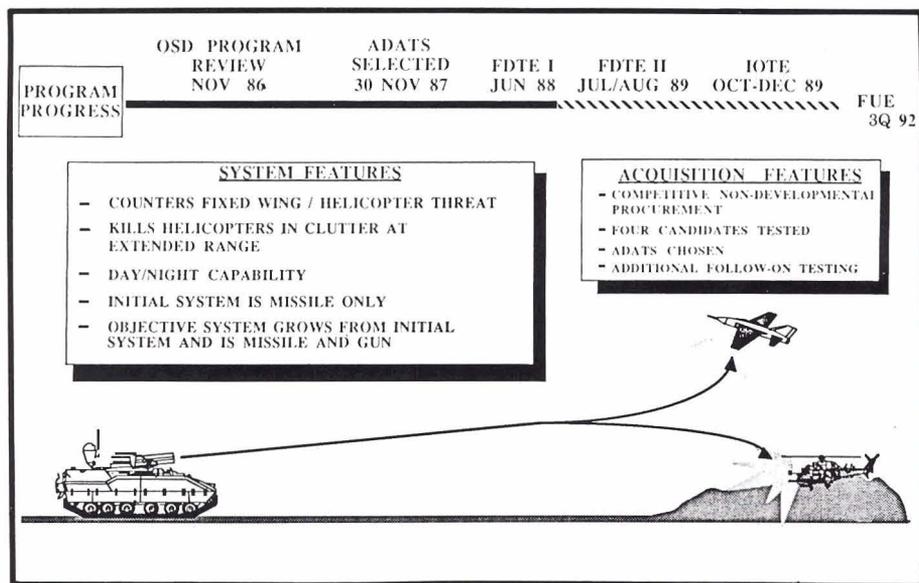
The LOS-F-H system is the Martin Marietta/Oerlikon-Buhrle Air Defense/Anti-Tank System (ADATS). An ADATS prototype completed FDTE Phase I last year. Martin Marietta Missile System, Orlando, Fla., met an important FAAD milestone in February 1989 with its delivery of the first pre-production model LOS-F-H. Three more are to be delivered in time for the start of FDTE II in July.

Oerlikon Aerospace assembles the pre-production units in Canada. The Canadian facility also produces the M-113 version of ADATS which has been selected as the Low Level Air Defense System for the Canadian armed forces.

The LOS-F-H carries eight laser-beam-riding missiles which travel at more than three times the speed of sound at ranges in excess of six kilometers. Target acquisition and tracking is handled by a volume-search radar and two passive systems, a TV sensor and forward-looking infrared system.

(Continued on page 15)

LINE-OF-SIGHT FORWARD (HEAVY)



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LOS-F-H will provide the U.S. Army with a highly effective front-line air defense against enemy aircraft.

The Dawn of a New Era in Mobile Air Defense

by Fred Marion

Within the next few years, U.S. troops will be protected by the most modern mobile, front-line air defense system in the world; one that will destroy enemy helicopters and fixed-wing aircraft before they can return fire.

This air defense system, which fulfills the Army's line of sight-forward-heavy (LOS-F-H) requirement, introduces laser-beamriding missiles to the battlefield, combining precision targeting with virtual immunity to countermeasures.

Mounted on a Bradley fighting vehicle, LOS-F-H is operated by a three-soldier crew that includes a driver, a fire unit commander, and a gunner.

The commander monitors the volume-search radar to detect, identify, and prioritize multiple targets at ranges in excess of 20 kilometers. Once a high-priority target is selected, it is handed off to the gunner, sitting at a separate console, who tracks the target using passive TV and infrared sensors. As the target moves within the missile's range of more than 8 kilometers, the gunner launches the missile. Traveling at more than three times the speed of sound, the missile destroys the target within seconds.

Battlefield simulations have shown these air defense capabilities to be major contributors to force effectiveness. The system has

undergone extensive testing in a wide range of environmental conditions, and has demonstrated its technical and operational superiority in competitive evaluations in the U.S. and Canada.



Technology for the 1990s and beyond.

By early 1990, troops will have put LOS-F-H through the paces of one of the most comprehensive test programs ever performed for a weapon system by the U.S. Army. Production of initial systems is under way, aiming towards deployment starting in 1992. Martin Marietta is dedicated to the success of the LOS-F-H program, one that ushers in the dawn of a new era in effective front-line air defense.

□ □ □

(Mr. Marion is vice president of Air Defense for Martin Marietta Missile Systems in Orlando, FL)

The future has arrived

HIMAD Update

by Col. Jeffrey L. Ellis

While the air defense community's attention has been focused on the testing, acquisition and future fielding of forward area air defense (FAAD) weapons, the continuing deployment of Patriot battalions has, virtually overnight, transformed an aging but capable high-to medium-altitude air defense (HIMAD) force into a force of previously unimagined potency. For HIMAD soldiers the future has arrived, and the door into an even brighter future stands open.

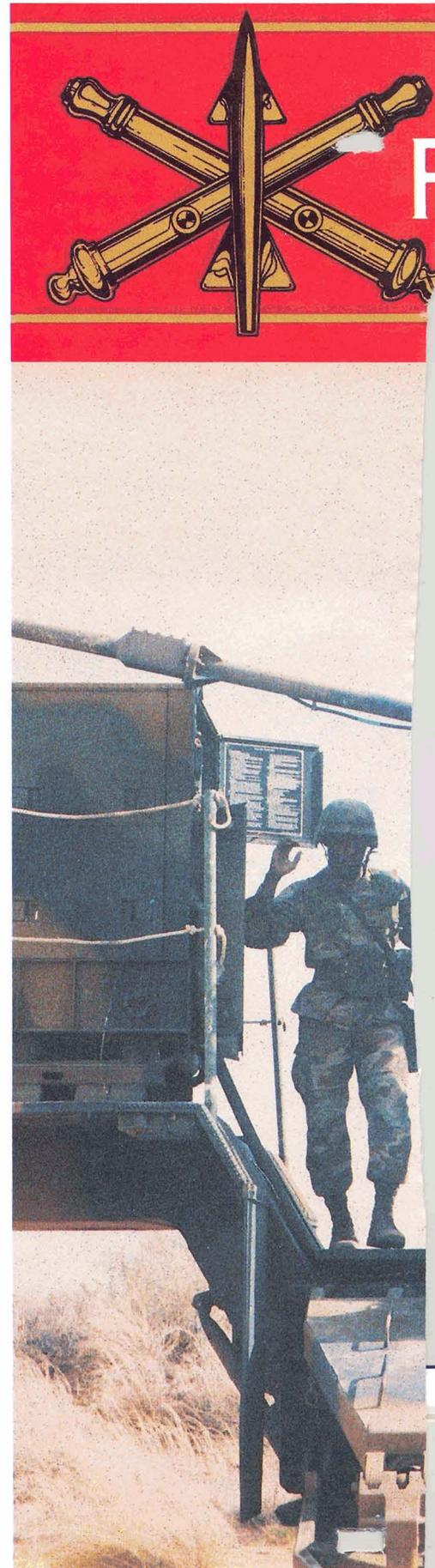
The testing, acquisition and fielding of Patriot is often termed the "Army's biggest success story" and, today, Patriot is commonly referred to as the "world's best air defense system." Despite the accolades, few people outside Air Defense Artillery fully appreciate the significance of Patriot as a combat multiplier. Instead, there's a tendency to think of Patriot as a better Hawk — an analogy akin to thinking of the hydrogen bomb as a better high explosive. To appreciate Patriot, consider this: the firepower of a single Patriot battalion equals the firepower that could be supplied by all the Hawk batteries assigned to 32nd Army Air Defense Command at the time the first Patriot battalion was deployed to West Germany.

Patriot is more than an evolutionary step forward in air defense technology — it's a quantum leap forward.

The United States plans to deploy a total of 60 Patriot fire units (42 in West Germany and 18 within the continental United States). Six Patriot battalions are currently deployed in West Germany. The last planned Patriot battalion, the 5th Battalion, 7th Air Defense Artillery, is now conducting collective training at Fort Bliss, Texas, and is scheduled to deploy to West Germany in August 1989.

A full-strength Patriot battalion consists of six firing batteries, each of which has eight launchers. However, to rush Patriot firepower to potential battlefields, the Army decided to initially field Patriot battalions with only three batteries. The first "backfill" batteries were deployed this year with the 3-43rd ADA at Fort Bliss, Texas. While the Patriot timetable may be thrown off schedule by budget cuts, our present goal is to bring all European Patriot battalions to full strength by mid-1990.

That won't be the extent of Patriot's combat power. Patriot, like Hawk, is becoming a truly international weapon system. The number of systems fielded by allied and friendly nations may one day equal or surpass the number of Patriot systems fielded by the U.S. Army. West Germany, the Netherlands and Japan are deploying, or are in the process of acquiring, Patriot fire units. Italy has signed an initial agreement to purchase fire units and Korea has indicated serious



AIR DEFENSE ARTILLERY

FIRST ★ TO ★ FIRE

Scenes from the 5-7th ADA collective training, Fort Bliss, Texas. The battalion is the last Patriot battalion scheduled for deployment to Europe. (Photos by Sandra Miranda)



interest. Among European powers which have expressed interest in Patriot are Greece, Denmark, France, Switzerland, Spain and the United Kingdom. Other prospective buyers are Israel, Australia, Turkey, Saudi Arabia, Singapore, Bahrain and the United Arab Emirates.

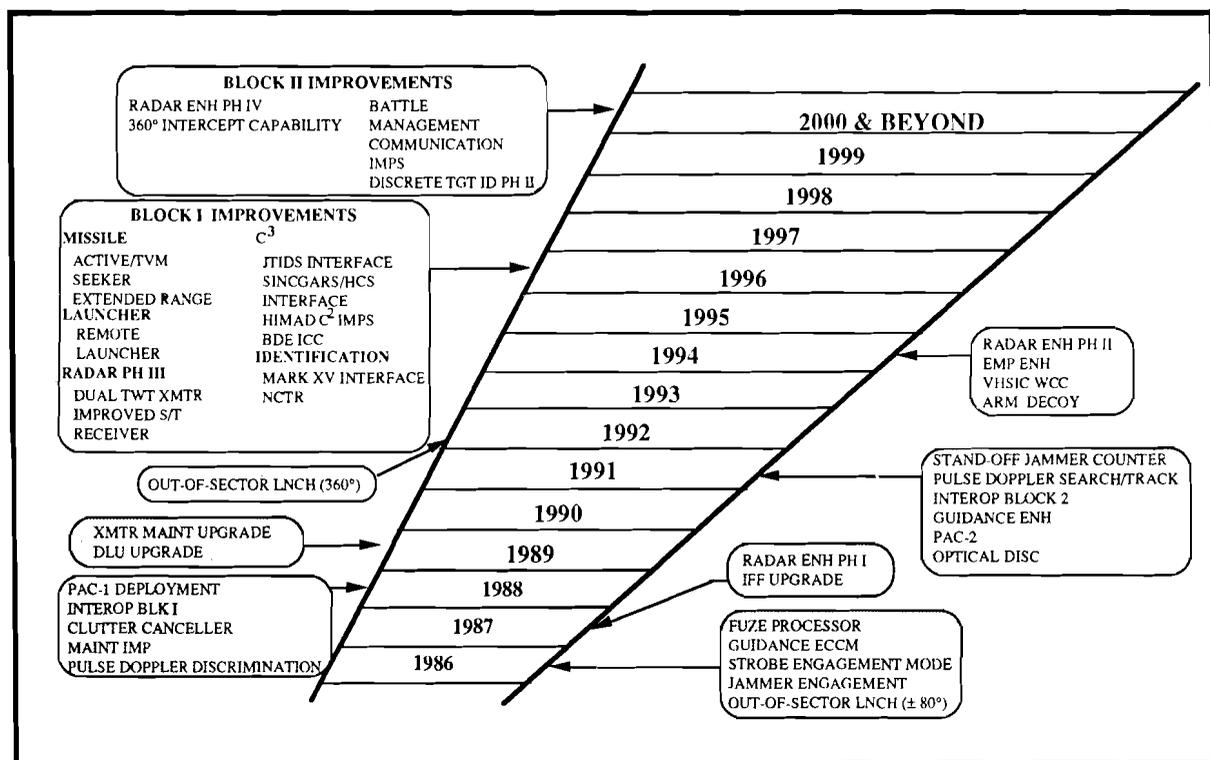
The proliferation of Patriot puts air defense firepower into friendly hands and gives the threat more to

developed to allow HIMAD units to put their increased firepower to best effect. The Standardized Command and Control (C²) System, an important step toward HIMAD interoperability, is incorporated into Patriot Post Deployment Builds (PDB) III, IV and V. The standardized system will replace the TSQ-73 with an enhanced FDC to provide a common fire direction and command system for use at Hawk and

battlefield demands quick reflexes and unerring accuracy.

The 10th Air Defense Artillery Brigade, Darmstadt, Federal Republic of Germany, will receive an interim Patriot command post automation system (PCPAS) this summer. The Army will use the experience gained from this initial fielding to refine requirements for PCPAS throughout Air Defense Artillery.

PATRIOT — WHAT THE FUTURE HOLDS



worry about. At the same time, it helps pay the bill for future Patriot developments.

We've only just begun to tap Patriot's potential. An ongoing product improvement program will allow Patriot to match anticipated threat technological evolution into the year 2000 and beyond.

HIMAD C²

Standardized fire direction centers (FDCs) and automated command post (CP) systems are being

Patriot battalions, mixed HIMAD battalions and HIMAD brigades.

The need for HIMAD automated CPs has long been recognized. Today, CP functions, including the generation of air battle support data, defense design, communication planning, movement schemes, intelligence gathering, personnel actions and logistics are accomplished manually without computer assistance. Information is passed by voice and recorded manually. The process is much too slow and too inaccurate. The AirLand

Hawk Evolution

We haven't neglected Hawk. The three-decade old Hawk missile system, with its potential multiplied by its interface with Patriot, remains, and will continue to remain, a potent force on the AirLand battlefield. Hawk was first fielded in 1960 and, today, more than 400 Hawk batteries are deployed by 21 allied nations. Since the first major Hawk modernization (Improved Hawk) was fielded in 1972, the system has

(Continued on page 52)

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(Continued from page 14)

LOS-F-H has fired more than 60 missiles in various test environments with a better than 80 percent success rate. It remains, however, the most controversial of FAAD systems. ADATS faces a formidable assignment. It must fight and survive alongside our main battle tanks at or near the forward edge of the battlefield. It must detect, acquire and kill attack helicopters operating at stand-off ranges or "popping up" from behind terrain masking in the brief seconds they require to release their munitions. And it must kill highly sophisticated close combat support aircraft operating at treetop levels. The LOS-F-H has demonstrated the capability to accomplish these tasks in severe countermeasures environments.

OPFOR pilots who have flown against LOS-F-Hs or LOS-F-H simulators in recent exercises have been impressed. "The FAAD LOS-F-H was a complete success . . .," said one. "The LOS-F-H proved to be an effective threat to rotary-wing aircraft. Their ability to move at the pace of battle and engage with both radar-guided missiles and cannon enable them to provide a strong air defense network for the blue force to operate under."

NLOS

The U.S. Army Missile Command's fiber-optic guided missile (FOG-M) is the NLOS component of



Soldiers who crewed the NLOS prototype through early testing and evaluation are, from left to right, SSgt. Angel Monsanto (kneeling), PFC Jon Keller, PFC Erik Turrell, PFC Nicholas Goloso and Spec. Gary Rankins.

the five-part FAAD system. Boeing and Hughes Aircraft's adaptation of FOG-M technology places the Army's best target recognition system — an air defense soldier — in control and out of harm's reach.

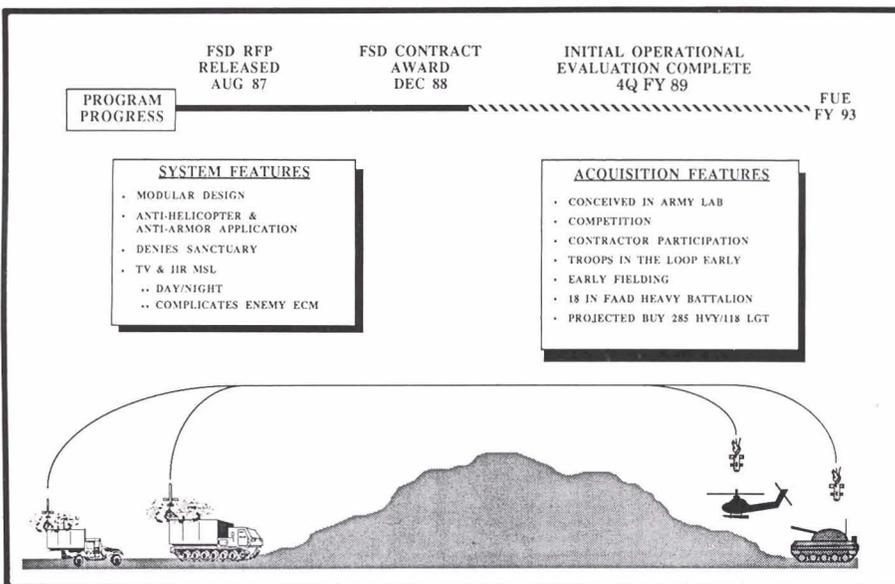
The NLOS consists of missiles, an on-board target acquisition device, a ground target gunner's station and fiber-optic cables which link each missile to a ground control station. Launched from the back of a wheeled or tracked vehicle, the missile levels out for flight. Pulses of light, which are virtually immune to jamming, are transmitted to the gunner station via a hair-thin optical fiber paid out behind the missile. This allows the gunner to remotely view the battlefield on a TV monitor at ranges greater than 10 kilometers. The gunner assesses the scenario, selects a target and enters commands that send the missile precisely on its way to intercept.

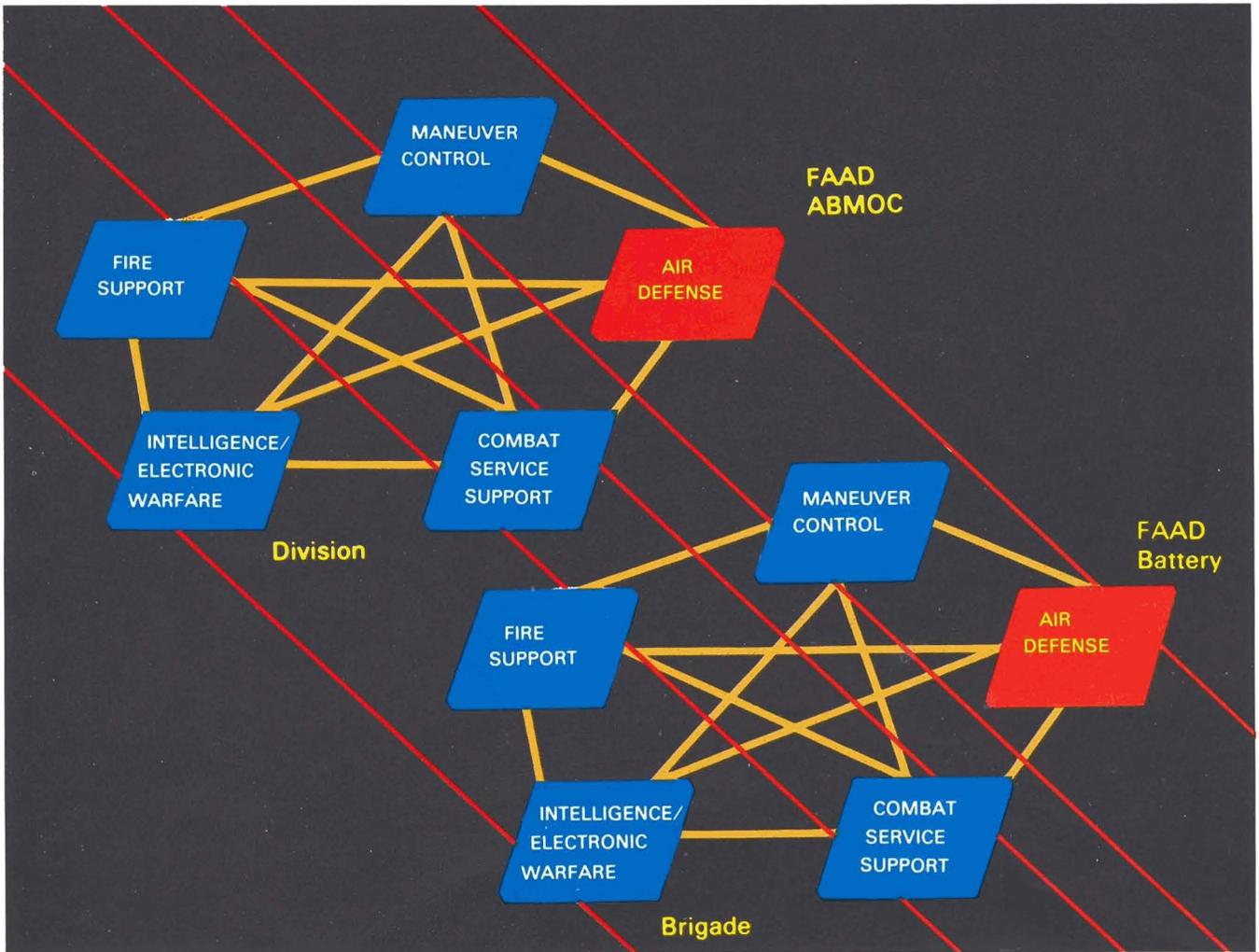
The light version of NLOS is mounted on the HMMWV while the heavy version will be mounted on a multiple launch rocket system (MLRS) chassis.

The conversion of FOG-M technology into a fighting air defense system is an excellent example of the often maligned military-industrial partnership working at peak performance. The Miss

(Continued on page 64)

NON-LINE-OF-SIGHT





FAAD C³I provides tactical support to ground forces for protection against enemy attack. FAAD will ensure freedom of action for maneuver elements and protect critical division command, control and intelligence, fire support and combat support elements on the AirLand battlefield. C³I ties FAAD together with real-time command capability, giving force commanders the right stuff to win on today's battlefield.

MCDONNELL DOUGLAS. SUPPORTING SDI—WORKING TO ERASE THE THREAT.

The need is twofold: Transform near-term technologies into systems which can neutralize the currently projected threat. Even a relatively modest level of defense can so complicate hostile first-strike planning as to make its success impossible. For the long term, the need is to develop and deploy the more advanced defenses required to defeat future threats.

At McDonnell Douglas, we're conducting ground- and space-based development and testing of critical SDI technologies:

With systems we designed, and using our Delta rocket, we've gathered sensor data vital to the detection and tracking of hostile missiles.

We're working on validating missile flight technology for the ground-launched High Endoatmospheric Defense Interceptor (HEDI). Our HEDI technology also can be applied to the short-range ballistic missile threat to our allies.

We're developing concepts for a ground-based surveillance and tracking system (GSTS) which will use missile-launched, long-wavelength infrared sensors to identify and track hostile re-entry vehicles while they're still in space.

We're directing experiments to demonstrate the feasibility of using neutral particle beam technology in space.

We're focusing on the development of laser technology for space and space-to-ground communication systems.

We're providing space transportation systems for SDI experiments and evaluating new space transportation systems.

McDonnell Douglas SDI engineers and technicians are pressing ahead toward the goal: Give America its money's worth in the development of those technologies which prove most cost-effective in deterring—and eventually erasing—the nuclear threat.

MCDONNELL DOUGLAS

STATE SIDE ADA



Soldiers of the 2nd Battalion, 62nd Air Defense Artillery, Fort Ord, Calif., prepare a towed Vulcan for a road march.

6th Air Defense Artillery Brigade



Col.
V. J. Tedesco Jr.



CSM
T. C. Waters

The 6th Air Defense Artillery Brigade, with more than 3,000 soldiers, is truly unique in that it has four TDA and two TOE battalions: 1-6th ADA, 2-6th ADA, 3-6th ADA, 4-6th ADA, 5-7th ADA and 1-43rd ADA. The 6th ADA brigade and its battalions are located at Fort Bliss, Texas.

Our TRADOC missions include planning and conducting new air defense weapon systems training, providing support to the U.S. Army Air Defense Artillery Center and School, and supporting mobilization operations by acting as the host unit for the 4150th U.S. Army Reserve School. Our primary FORSCOM mission entails activating, training and deploying Patriot missile battalions.

We had many major accomplishments during 1988. Since December 1986, the 6th ADA Brigade has conducted the collective training (18 weeks) and certification (live-fire) of nine Patriot battalions (-). The final Patriot battalion (-), 5-7th ADA, began their collective training in February and will deploy to Germany in July. The 6th ADA Brigade has already begun the mission of bringing the Patriot battalions (-) up to full strength (six firing batteries) by activating what have been designated as "backfill units." 3-43rd ADA, the first backfill unit, began training in October. Training of the remaining

backfill units will be completed by 1993.

From the 2-6th ADA, we provided trained soldiers to operate candidate weapon systems competing for the forward area air defense (FAAD) system. Through the outstanding support efforts of 2-6th ADA soldiers, the Army has now selected a pedestal-mounted Stinger (PMS) candidate, the "Avenger" built by Boeing; a line-of-sight forward (heavy) candidate, the air defense anti-tank system (ADATS) built by Oerlikon-Buhrle of Canada and its U.S. teammate Martin-Marietta; and a non-line-of-sight (NLOS) candidate, the FOG-M mounted on a high mobility multipurpose wheeled vehicle (HMMWV), built by the team of Boeing Military Aircraft and Hughes Aircraft. The command, control and intelligence (C²I) ground sensor component tests are underway at this time.

All in all, 1988 was a fantastic year for the 6th ADA Brigade. We look forward to an even greater 1989.

1st Battalion, 6th Air Defense Artillery



Lt. Col.
T. L. Scott



CSM
A. Moulton

The 1st Battalion, 6th Air Defense Artillery, provides administrative and logistical support for U.S. officer and enlisted students assigned to USAADASCH. Our battalion provides soldierization and reinforcement training for those soldiers enrolled in professional development courses within USAADASCH and soldierization training for initial entry ADA officers. We also provide professional development training for all battalion permanent party personnel.

During 1988 the Combined Arms and Tactics and Leadership Devel-

opment Department and the NCO Academy became part of our battalion. We developed and used light fighter field training exercises for the officer basic and advanced courses (OBC and OAC) and included weapons qualification for all new second lieutenants. The Professional Growth Seminar we sponsor has been so successful we now offer it post wide.

Our goals for 1989 include establishing a mentor program for the warrant officer candidates and developing a communicative skills seminar for the spouses of senior NCOs and OBC and WOC students.

2nd Battalion, 6th Air Defense Artillery



Lt. Col.
M. B. Putnam



CSM
C. L. Coon

The 2nd Battalion, 6th Air Defense Artillery, supports the U.S. Army Air Defense Artillery School with FAAD system testing personnel and equipment and with Chaparral/Vulcan/Stinger and Hawk batteries, executing numerous field training exercises. We have a contingency mission with 5-62nd ADA (Vulcan/Stinger) and provide other personnel and equipment as required to support the school.

We train all SHORAD and Hawk OBC students in field and tactical procedures. We provide all operators and maintainers as needed in the

FAAD system development.

Last year we activated A and B Batteries and completed squad-level testing on both the LOS-R and LOS-F-H systems. We trained and tested the C²I and NLOS systems, certified C Battery and supported 3rd ACR in Reforger '88.

This year we will develop and test the platoon-level tactics and doctrine for the LOS-R and LOS-F-H systems. We will also equip and certify the school's showcase Hawk battery.

3rd Battalion, 6th Air Defense Artillery



Lt. Col.
D. A. Inge



CSM
C. Spencer Jr.

The 3rd Battalion, 6th Air Defense Artillery, is the ADA School battalion. Our soldiers are the administrators of the school: they do combat development, teach in technical training departments and work in the Office, Chief of Air Defense Artillery. 3-6th ADA soldiers are responsible for personnel actions, supply, individual training, financial management and esprit de corps while supporting accomplishment of departmental missions.

This battalion has had an excellent year. During the past Year of Training, with no immediate resources

available, 3-6th ADA qualified more than 700 soldiers with the M-16. As one of the soldier care programs, we sponsored a series of baseball nights that raised more than \$7,000 for the new Armed Services YMCA. During the fourth quarter FY 88, 3-6th ADA received the commanding general's award for best large dining facility on Fort Bliss and was home to the Fort Bliss Soldier of the Year.

The 3-6th ADA has adopted "Enabling Victory" as its motto. We do this by providing the best ADA new equipment, tactics and training to maintain peace worldwide.

4th Battalion, 6th Air Defense Artillery



Lt. Col.
P. C. Rusciorelli



CSM
J. L. Mitchell

The 4th Battalion, 6th Air Defense Artillery, provides administrative and limited logistical support to foreign military students and their families while they are attending the U.S. Army Air Defense Artillery School at Fort Bliss.

We orient soldiers from 24 different countries to develop a better understanding of the U.S. Government, the judicial system, the political system and the American press. We emphasize the diversity of life in the United States and explore the American agricultural, economic and educational systems.

Last year our dining facility received second place in TRADOC in the Phillip A. Connelly Competition. We were also named the 6th Air Defense Artillery Brigade Best Dining Facility for the second quarter, and the commanding general's best garrison dining facility for the third quarter.

5th Battalion, 7th Air Defense Artillery



Lt. Col.
A. E. Kreutz Jr.



CSM
G. Gleason

The 5th Battalion, 7th Air Defense Artillery, is a Patriot battalion. Our mission is to successfully activate; collectively train and deploy to Bitburg, Federal Republic of Germany; and then assume a NATO air defense mission.

The 5-7th ADA is the tenth and last U.S. Army Patriot battalion. It will be the seventh and last Patriot battalion to deploy to Germany, where it will provide very low- to very high-altitude air defense of the rear combat zone.

Our unit activated in December 1988 and began a 16-week collective

training period, which will culminate with a post certification and live-fire exercise in June.

The 5-7th ADA will deploy to Bitburg in August and become a member of the 108th ADA Brigade. At Bitburg we will accept a complete set of tactical equipment and peacetime garrison facilities. We will then train to NATO standards with our sights on successfully completing an AAFCE Phase II tactical evaluation in 1990.

1st Battalion, 43rd Air Defense Artillery



Lt. Col.
S. Diebler



CSM
M. Mitchell

The 1st Battalion, 43rd Air Defense Artillery, has two primary missions: be prepared to deploy to support contingency operations and train Patriot backfill batteries.

We began last year by deploying 250 personnel and 115 vehicles more than 1,000 miles by rail/convoy to Nevada to participate in Exercise Green Flag. The six-week exercise included a test of the European joint engagement zone concept.

Shortly after the battalion returned, we underwent a change of command and began the ramp-up to begin training Patriot batteries for

backfill. The first three batteries, designated for the 3-43rd ADA, activated in September 1988. In December we conducted the first six-battery Patriot battalion field training exercise.

Simultaneously, 1-43rd ADA finished rebuilding the Patriot equipment used by the 6th ADA Brigade to train activated battalions and handed it off to 5-7th ADA. We also conducted the User/Maker live-fire exercise at McGregor Range, N.M., for the benefit of Raytheon Corp.

Next year we look forward to collective training of the first OCONUS backfill batteries.

11th Air Defense Artillery Brigade



Col.
J. L. Smith



CSM
G. H. Heibich

The 11th Air Defense Artillery Brigade is a FORSCOM unit located at Fort Bliss, Texas. Under our mission to Third U.S. Army and XVIII Airborne Corps, we support EUCOM, CENTCOM, PACOM, LANTCOM and SOUTHCOM for various far-fighting contingencies.

Last year saw us take part in numerous training exercises. One of these was Gallant Eagle/Gallant Knight, a joint exercise at Twenty-nine Palms, Calif. We participated in another joint exercise, Coronet Sentry, in Arkansas. Some of our other exercises include Caper Dragon (Fort

Bragg), Green Flag (Nevada), Bright Star (a deployment to the mid east) and Northern Viking (Iceland).

During the past year the 3-1st ADA (Hawk) relocated to Fort Hood, the 2-1st ADA (Hawk) converted from PIP II to PIP III and the 3-43rd ADA (Patriot) activated three more batteries. The 2-7th ADA joined the brigade in August 1988, and the 5-62nd ADA (V/S) changed from Chaparral/Vulcan to Vulcan/Stinger. The 1-2nd ADA (Chaparral) and 2-52nd ADA (Hawk) joined the brigade's force list.

2nd Battalion, 1st Air Defense Artillery



Lt. Col.
E. G. Hagewood



CSM
C. A. Stepney

The 2nd Battalion, 1st Air Defense Artillery, located at Fort Bliss, Texas, is a Hawk battalion under the 11th Air Defense Artillery Brigade. The 2-1st ADA has a U.S. CENTCOM contingency mission to Southwest Asia. We also provide mission support to the U.S. Army Air Defense Center and School.

Last year, we took part in numerous training exercises including Gallant Eagle/Gallant Knight at Twenty-nine Palms, Calif.; First Fire II; and two rotations at the NTC. We also completed two live-fire exercises, successfully firing five missiles.

We recorded 100-percent participation in AER and CFC. We are again the Fort Bliss representatives for the Connelly Award for the Best Field Dining facility. We also began the initial phase of our Product Improvement Program (PIP) III designed to enhance firepower and mobility of the Hawk system.

This year we will complete our Phase III PIP and plan for First Fire III, the integrated air defense live-fire exercise. We look forward to again winning the Connelly Award for the Best Field Dining Facility!

1st Battalion, 2nd Air Defense Artillery



Lt. Col.
R. M. Maggio



CSM
L. Frowner

The 1st Battalion, 2nd Air Defense Artillery, is located in Fort Stewart, Ga. The 1-2nd ADA activated this past March as the XVIII Airborne Corps Chaparral battalion. We received two Chaparral batteries from the reorganizing Chaparral/Vulcan battalion in the 24th Infantry Division (Mechanized) and one Chaparral battery from the 4th Infantry Division (Mechanized). We are still in the process of forming a Headquarters and Headquarters Battery.

The challenges presented to any activating unit are substantial, and those facing the 1-2nd ADA are no

exception, particularly our role in supporting the Corps, Third U.S. Army, 11th ADA Brigade and the 24th Infantry Division (Mechanized).

Each of our Chaparrals have gone through the rebuild program and our individual and collective training is geared to support our battalion METL. Batteries from this battalion will deploy to Fort Bliss, Texas, and Mena, Ark., to train with 11th ADA Brigade units.

We are proud to rejoin the air defense community and we will soon be establishing the 2nd ADA Regimental Headquarters.

2nd Battalion, 7th Air Defense Artillery



Lt. Col.
R. C. Gortney



CSM
W. F. Mays

The 2nd Battalion, 7th Air Defense Artillery, located at Fort Bliss, Texas, is a Patriot battalion under the 11th Air Defense Artillery Brigade. The 2-7th provides very low- to very high-altitude air defense for ground forces and high value assets.

Last year we participated in Exercise Green Flag/Red Flag in Nevada and Coronet Sentry in Arkansas. We also deployed to Egypt to take part in Bright Star and to Jordan to join in Shadow Hawk.

Not only did the 2-7th ADA join the 11th ADA Brigade, we also completed collective training, center certifica-

tion and a live-fire. We completed our PDB-II training and, for the first time during Coronet Sentry '88, Patriot had a direct AWACS link.

This year we will activate and train backfill batteries and develop joint air defense procedures with the U.S. Air Force. We will also develop and integrate interoperability (Hawk/Patriot) doctrine and tactics.

3rd Battalion, 43rd Air Defense Artillery



Lt. Col.
M. DeShazer



CSM
F. L. White

The 3rd Battalion, 43rd Air Defense Artillery, located at Fort Bliss, Texas, is a Patriot battalion under the 11th ADA Brigade. The 3-43rd ADA strategically deploys to the Federal Republic of Germany to provide air defense for critical assets in support of the 94th ADA Brigade. As a member of the combined arms team, 3-43rd ADA provides low- to high-altitude air defense of friendly forces and high value assets. The battalion also provides mission support to the U.S. Army Air Defense Center and School to train soldiers and execute developmental testing.

During a recent major field training exercise, the battalion conducted the first successful Patriot/Hawk interoperability test by firing a Hawk missile via the Patriot information command and control center.

In September 1988, we activated D, E and F batteries, making the battalion the first fully manned and equipped Patriot firing unit. With six firing units, 3-43rd is the largest Patriot battalion in the world.

Plans are underway to test the new command post automation system and for participation in Green Flag '89.

2nd Battalion, 52nd Air Defense Artillery



Lt. Col.
M. J. Petrucci



CSM
W. Lee

The 2nd Battalion, 52nd Air Defense Artillery, is a Hawk battalion located at Fort Bragg, N.C. The 2-52nd ADA provides low- to medium-altitude air defense in support of the XVIII Airborne Corps.

The 2-52nd ADA has pursued a vigorous training program. Platoon and battalion FTXs culminated in a successful ARTEP. As a member of the contingency corps we participated in Sea Lion (Shaw Air Force Base) and Coronet Sentry (Mena, Ark.).

We conducted the first totally integrated Marine/Army Hawk live-fire, during which our battalion controlled

the fires and the Marines used acquisition from Army radars.

We sent our organic Stinger sections to Reforger '88 in support of the 10th Mountain Division. We also set up displays and demonstrations for the ROTC camps at Fort Bragg, N.C., and Fort Knox, Ky.

1989 will be marked by continued joint operations, a planned live-fire at Fort Bliss, Texas, and two NTC rotations. We are also scheduled for conversion to PIP III.

5th Battalion, 62nd Air Defense Artillery



Lt. Col.
J. W. Carter Jr.



CSM
E. Calhoun

The 5th Battalion, 62nd Air Defense Artillery, located at Fort Bliss, Texas, is a Vulcan/Stinger battalion under the 11th Air Defense Artillery Brigade. The 5-62nd ADA trains and sustains an air defense fighting force prepared to deploy and fight anywhere in the world as an integral part of FORSCOM. The 5-62nd ADA also provides assistance and support to the U.S. Army Air Defense Artillery School and Center for SHORAD-peculiar requirements and air defense systems tests.

During 1988, we completed NTC rotations with the 194th Armored Bri-

gade, 197th Infantry Brigade and the 3rd ACR. Annual swim operations and participation in First Fire II were highlights of the year's training events.

We conducted our final Chaparral live-fire last August and scored three for three, and we won the Commander's Cup for sporting events.

The 5-62nd ADA is scheduled for two NTC rotations in the spring, one with the 197th Infantry Brigade and another with the 3rd ACR. We also plan to conduct an OCONUS exercise to Canada with the 194th Armored Brigade and two Canadian brigades.

Congratulations To The U.S. Army Air Defense Artillery



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31st Air Defense Artillery Brigade



Col.
R. G. Kurtz



CSM
M. Speight Jr.

The 31st Air Defense Artillery Brigade, Fort Hood, Texas, provides low-to medium-altitude air defense protection for the Third (U.S.) Mobile Armored Corps and its combat maneuver units.

Our brigade has had a very busy training year since our official activation in April 1988. April saw us involved in Golden Saber 15, a command post exercise simulating corps movement from the staging area to tactical assembly areas. In September we took part in a 2nd Armored Division NTC rotation supported by Hawk and Chaparral platoons. Sa-

bers West and Cactus Jack, both exercises supported by Hawk and Chaparral platoons, kept us busy in October. Last December we took part in Ready Phantom, a corps-level CPX rehearsal for Road Runner '89.

One of our battalions, the 2-2nd ADA, officially activated in June. Our other battalion, the 3-1st ADA, completed its move from Fort Bliss to Fort Hood in August.

We look forward to participating in WINTEX, a NATO-sponsored CPX, and to supporting active duty training of the 1-200th ADA, New Mexico Army National Guard, at Fort Hood.

3rd Battalion, 1st Air Defense Artillery



Lt. Col.
C. G. Roe



CSM
E. Golwitzer

The 3rd Battalion, 1st Air Defense Artillery, is a Hawk battalion under the 31st Air Defense Artillery Brigade. The 3-1st ADA deploys with III (U.S.) Corps to Europe by sea and air, moves to occupy specified mission areas and provides integrated air defense and early warning to maneuver units and critical assets.

The battalion completed its move from Fort Bliss to Fort Hood in August. Rebuilding with 60 percent new personnel, the battalion quickly assumed its new mission as the center of defense for the corps. Fighting Hawk in the offense offers the battal-

ion many new and exciting challenges.

During the past year the battalion participated in NTC rotations in support of the 2nd Armored Division and the 1st Cavalry Division. We had numerous on-post exercises and supported the 6th Combat Aviation Brigade during its off-post ARTEP.

The upcoming year will see continued training in the integrative aspect of air defense in the corps area of operation and support to the III Mobile Armored Corps maneuver units during their exercises.

2nd Battalion, 2nd Air Defense Artillery



Lt. Col.
H. J. Withycombe Jr.



CSM
E. L. Waters

The 2nd Battalion, 2nd Air Defense Artillery, a Chaparral battalion located at Fort Hood, Texas, activated as part of the 31st Air Defense Artillery Brigade in June 1988.

The 2-2nd ADA has been very busy since its activation. We developed the three-man Chaparral crew drill and the hide-and-shoot Chaparral employment technique. We also introduced the Chaparral lane training concept and refined Chaparral/Hawk battery TM operations.

Last year we supported a 2nd Armored Division NTC rotation and completed battery ARTEPs. We suc-

cessfully underwent a 31st ADA Brigade command inspection in October. Our battalion won the Fort Hood ADA NCO Football Trophy.

We plan to field M-48A3 Chaparrals during the third quarter of this year. We will support 1-200th and 3-200th New Mexico Army National Guard training requirements and III Corps NTC rotations. We also plan to conduct Chaparral live fires at Fort Hood.

35th Air Defense Artillery Brigade



Col.
J. Costello



CSM
L. J. Gunnels

The 35th Air Defense Artillery Brigade, Fort Lewis, Wash., provides low- to medium-altitude air defense coverage to give I Corps protection and freedom of maneuver in a variety of worldwide contingencies.

1988 saw the battalion take part in Team Spirit in Korea; Pacific Defender at Yakima, Wash.; Cascade Peak at Fort Lewis, Wash.; and Yama Sakura in Japan. We also conducted a Redeye live-fire.

During Team Spirit '88 we conducted a Hawk live fire — our first successful AWACS directed engagement — and a Hawk platoon exchange

with the Republic of Korea. Our units helped fight the fires at Yellowstone National Park.

We look forward to a training year filled with exercises: Team Spirit '89, Pacific Defender and Cascade Peak. We will also have both Chaparral and Redeye live fires and we will host the commanding general's marksmanship matches.

3rd Battalion, 2nd Air Defense Artillery



Lt. Col.
C. R. Simmons



CSM
E. R. Arnold

The 7th Battalion, 7th Air Defense Artillery, was redesignated the 3-2nd ADA in January. We relocated from Fort Ord, Calif., to Fort Lewis, Wash., the home station of the 35th ADA Brigade, in October. This Chaparral battalion provides low-altitude air defense for I Corps priority assets.

We trained heavily throughout 1988: Team Spirit '88 in March, a Chaparral live-fire exercise at Vandenberg Air Force Base in May, Pacific Defender II (a brigade-level field training exercise) and a live-fire exercise in October and November, and another field training exercise at Fort

Hunter Liggett with the 40th Infantry Division.

We added a towed Chaparral battery last year. Our battalion won the 7th Infantry Division Gold Streamer for PT excellence and C/3-2nd ADA won the Humanitarian Service Award for firefighting at Yellowstone National Park.

Our goals for 1989 include recertification of the battalion in June and modification of Chaparrals from M-48A1 to M-48A2E1. We also look forward to taking part in Team Spirit '89, Pacific Defender III, Cascade Peak VI and Yama Sakura XV.

1st Battalion, 52nd Air Defense Artillery



Lt. Col.
V. W. Hatley



CSM
P. E. Felker

The 1st Battalion, 52nd Air Defense Artillery, a Hawk battalion located at Fort Lewis, Wash., is part of the 35th Air Defense Artillery Brigade. We provide low- to medium-altitude air defense protection to I Corps.

Last August, our unit assisted the U.S. Forestry Service in battling one of the largest forest fires in our history. With one week's notice and a few hours of training, we sent more than 500 soldiers by air to Yellowstone National Park as part of Task Force 1st Brigade, 9th Infantry Division. During 28 days of fire fighting operations, we constructed over 50 miles of

firebreak and mopped up more than 10 million square meters of forest. Our participating soldiers won the Humanitarian Service Award.

Upcoming events this year include Team Spirit in the Republic of Korea, Fortress Gale in the Aleutians and the 35th ADA Brigade exercise, Pacific Defender, at the Yakima Firing Center. This year's Hawk live-fire exercises will again occur during Team Spirit and will include emission control silent engagements using target acquisition from the fire direction center and from an airborne warning and control system.

56th Air Defense Artillery Brigade



Col.
R. W. Tate



CSM
H. Green

The 56th Air Defense Artillery Brigade (U.S. Army Training Center) conducts branch immaterial basic combat training (BCT) and advanced individual training (AIT) for air defense operator MOSs for initial entry training (IET) soldiers. We support the ADA school trainees in maintenance MOSs and provide resident training to foreign students. We are dedicated to producing the finest basic and ADA soldier possible.

During 1988 we graduated 5,695 BCT students and 4,044 ADA operator AIT soldiers. In July 1988, the ADA School, in conjunction with the

56th ADA Brigade, began using the Fast Track and Top Gun programs for IET. These programs give outstanding soldiers the opportunity for enhanced AIT in ADA courses and award exceptional soldiers with accelerated advancements during IET.

This year we will enjoy the rewards of two years' planning with the Directorate of Plans, Mobilization and Training (Fort Bliss) and our reserve counterpart from the 85th Division (Arlington, Ill.). 1988 will see the 85th Division conduct AIT at Fort Bliss for 19D MOS soldiers.

1st Battalion, 56th Air Defense Artillery



Lt. Col.
J. S. Kay



CSM
W. Doctor

The 1st Battalion, 56th Air Defense Artillery, USATC, provides the Active Army, Army Reserve and National Guard with well-disciplined, physically fit, highly motivated soldiers trained in basic soldier skills and six ADA mechanic MOSs.

1988 was an exciting year for the 1-56th ADA. We graduated approximately 2,700 soldiers from basic combat and advanced individual training. We won the Fort Bliss 21st Annual Phillip A. Connelly Competition for large category dining facility. We also established a battalion hand-to-hand combat range.

Our basic trainees spend two weeks at McGregor Range, N.M., learning basic rifle marksmanship and the tactical application of basic soldier skills. The two weeks culminates with a field training exercise where the soldiers demonstrate their proficiency in small unit tactics, small arms for air defense and basic soldier skills.

This year we are using the Fast Track program in our AIT batteries. Fast Track should have a positive impact on the training and retention of outstanding soldiers by challenging them beyond the current programs of instruction.

2nd Battalion, 56th Air Defense Artillery



Lt. Col.
D. Ruiz



CSM
E. Bailey

The 2nd Battalion, 56th Air Defense Artillery, USATC, was inactivated in April. Our mission of training the SHORAD AIT soldiers was then assigned to the 3-56th ADA. Prior to our inactivation we had a very rewarding year.

We graduated 2,000 motivated, disciplined soldiers well-trained in basic skills. We also graduated 1,100 AIT soldiers in MOSs 16F, 16P, 16R and 16S.

The 2-56th ADA was known as the "Warrior Battalion," a name that captured the theme of our training philosophy. We instilled a "Warrior

Ethic" within new soldiers from the first day of training. Using the four soldierly values of courage, candor, commitment and competence, and the spirit of physical and mental toughness, we graduated soldiers who believed in themselves and the need for teamwork.

We hope that the "warrior spirit," outstanding attitude and soldierly values exhibited by our soldiers during basic training and AIT will carry over into their new units.

3rd Battalion, 56th Air Defense Artillery



Lt. Col.
J. C. Yeisley



CSM
W. O. Morgan

The 3rd Battalion, 56th Air Defense Artillery, USATC, provides administrative, logistical, billeting and food service support for assigned cadre and trainees.

We provide training in combat survivability, basic soldiering and MOS skills. We qualify initial entry soldiers in basic combat training and qualify ADA operator MOSs in advanced individual training.

Last year we graduated more than 3,000 physically fit, technically proficient basic combat training soldiers and 700 AIT soldiers in the HIMAD operator MOSs. We accomplished

this through effective platoon-level training, challenging standards and a safety conscious environment that allowed no fatalities and no disabling injuries.

This year, with the inactivation of the 2-56th ADA, we added the mission of training the SHORAD operator MOSs. We will continue to train soldiers to standard in an accident free, yet physically challenging, environment.

4th Battalion, 56th Air Defense Artillery



Lt. Col.
R. E. Mason



CSM
C. L. Kemp

The 4th Battalion, 56th Air Defense Artillery, USATC, trains initial entry soldiers in basic soldier skills and AIT for ADA operator MOSs. We also train soldiers transiting into ADA operator MOSs and allied students on selected air defense weapon systems. We provide maintenance support to USATC and USAADASCH.

Last year we trained more than 7,500 soldiers in basic training skills and more than 2,300 air defenders in AIT. We made extensive improvements in our qualification and familiarization ranges through a self-help program.

We were the first ever to integrate our FTX with BNCOC and OBC students for SHORAD weapon systems. We also had the first integrated Hawk FTX (AIT and BNCOC) and SHORAD systems FTX on Fort Bliss.

This year we expect our training load to increase to 5,500 soldiers in basic training and 4,000 in AIT. Air defense modernization will play a key role as we train soldiers to operate the new weapon systems being developed. We will begin instruction on pedestal-mounted Stinger and Hawk Phase III in the next fiscal year.

67th Adjutant General Battalion



Lt. Col.
M. Mayer-Kielmann



CSM
D. W. Kelley

The 67th Adjutant General Battalion, USATC, has the capability to induct more than 10,000 recruits yearly into the U.S. Army. The battalion accomplishes all necessary personnel, medical and dental processing of new soldiers prior to entry into basic training.

1988 proved an exciting year for the 67th AG Battalion. Last summer, for the very first time, we took annual training with the 85th Reception Battalion (Arlington Heights, Ill.). We installed the reception battalion automated support system (RECBASS) — a system now used by all reception

battalions Armywide. Not only was our installation successful, we also completed installation ahead of schedule.

This year we will fully expand upon and refine mobilization plans including Reserve unit linkage, facility usage and mission modifications. We will also begin drug and alcohol testing for all accessions.

Range Command



Maj. (P)
T. E. Corcoran



CSM
I. Jones

The Range Command provides operational and training support on range to all users for readiness, RDT&E, and schoolhouse missions. We maintain a safe environment for operations and training activities on ranges and maneuver areas. We provide logistical support, up to direct support level, to all users of the range. We control all agreements with the Bureau of Land Management; New Mexico State Game, Fish and Wildlife Commission; and U.S. Forestry Service. We maintain quality-of-life activities and base operations for soldier and family care.

During 1988 we finalized and used the CARE program, designed to establish memorandums of understanding between commanders and support facilities. We modernized 15 barracks buildings at McGregor Range, and McGregor Range soldiers built a new day room under the "Self Help" program.

This year we will continue providing training support to units and organizations so that they can effectively accomplish their missions.

Divisional Air Defense Artillery

3rd Battalion, 4th Air Defense Artillery



Lt. Col.
R. F. Alley Jr.



CSM
C. H. Kendrick

The 3rd Battalion, 4th Air Defense Artillery, is a Vulcan/Stinger battalion located at Fort Bragg, N.C. The 3-4th ADA deploys worldwide within 18 hours of notification and provides low-altitude air defense to the 82nd Airborne Division.

1988 saw our battalion deploy OCONUS for Ocean Venture '88 in Puerto Rico, Operation Golden Pheasant in Honduras and Operation Prime Chance in the Middle East. Our CONUS exercises included Gallant Knight/Gallant Eagle (Twenty-nine Palms, Calif.) and Market Square II (a division-level FTX and

battalion ARTEP). We also provided ADA elements to the 10th Mountain Division for combined arms training.

Last year we fielded the tactical defense alerting radar (TDAR), giving the 82nd Airborne Division its first ever capability for early warning beginning with the airborne assault. We also conducted joint training exercises with the U.S. Air Force at Shaw Air Force Base, S.C., to develop and refine joint service doctrine for forced entry operations.

This year we look forward to participating in Solid Shield '89 and Market Square III.

1st Battalion, 5th Air Defense Artillery



Lt. Col.
J. W. Jeffrey Jr.



CSM
R. E. Hall

The 5th Battalion, 52nd Air Defense Artillery, was redesignated the 1-5th ADA in November 1988. Located at Fort Stewart, Ga., this Vulcan/Stinger battalion attacks and kills enemy aircraft while providing air defense coverage for maneuver forces, march columns and critical assets within the Victory Division.

We remain at the leading edge of innovative air defense tactics at every 24th Infantry Division (Mechanized) rotation to the NTC at Fort Irwin, Calif. We use advanced battle skills such as forward deployment of Chaparral, Stinger under armor, and

heavily massed gunfire. This assures us ultimate victory as we clear the skies over Fort Irwin.

Last year we became the first unit in the 24th Infantry Division (Mechanized) to field the HMMWV. We conducted numerous Vulcan tactical live-fire exercises and two joint Chaparral, Stinger/Redeye ASPs. In February we reorganized into a Vulcan/Stinger battalion.

This year we look forward to many challenging objectives for the battalion as we execute our missions without our Chaparral comrades.

2nd Battalion, 5th Air Defense Artillery



Lt. Col.
B. E. Cardwell



CSM
A. P. Gies

The 2nd Battalion, 5th Air Defense Artillery, a Vulcan/Stinger battalion located at Fort Hood, Texas, provides short-range air defense for the 2nd Armored Division.

Our soldiers have set the standard in training excellence: winning two consecutive semiannual NBC team competitions; winning FM and RATT team competitions; and leading the way in marksmanship, physical fitness and reenlistment programs. In April, the battalion reorganized under the Vulcan/Stinger MTOE.

We were the "First to Fire" at the National Training Center during two

extremely successful rotations. During the NTC 88-7 task force live-fire exercise we fired two Chaparral and two Redeye missiles. During rotation 88-14 we again fired two Redeyes from actual battle positions within the task force line of defense. All engagements were confirmed kills; the combined and integrated fires from Vulcan, Stinger, Chaparral and Hawk cleared the skies of OPFOR air.

During the coming year we will continue to improve our warfighting skills through combined arms training.

4th Battalion, 5th Air Defense Artillery



Lt. Col.
K. B. Wells



CSM
V. C. Strebe

The 1st Battalion, 68th Air Defense Artillery, a Chaparral/Vulcan battalion located at Fort Hood, Texas, was redesignated the 4-5th ADA in November 1988. Although the battalion has a new designation, we will continue to carry on the fine tradition of 1-68th ADA as being one of the best disciplined battalions in the 1st Cavalry Division. The battalion's new motto is "Renegade!"

In 1988, we participated in one rotation to the NTC, conducted our annual service practice with the Streaker, and hosted the III Corps Stinger competition. Our battalion took 1st,

2nd and 5th place in the competition — an outstanding achievement when more than 385 Stinger teams participated.

We also participated in numerous division CPXs to test and evaluate the mobile subscriber equipment (MSE), the Army's newest communication equipment.

This year we will participate in two rotations at the NTC and will continue to improve our HIMAD early warning system link with the improved high frequency radios.

1st Battalion, 44th Air Defense Artillery



Lt. Col.
H. R. Leonard Jr.



CSM
P. Feacher

The 1st Battalion, 44th Air Defense Artillery, a Chaparral/Vulcan battalion located in Fort Lewis, Wash., provides ADA support to the 9th Infantry Division (Motorized).

1-44th ADA units support 9ID (MTZ) combined arms training more than 32 weeks each year. Additionally, the battalion headquarters participates in numerous division and corps CPXs exercising its node of the Army's computerized maneuver control system. Vulcan gunnery is conducted semiannually and an annual Stinger live-fire is held at Yakima Firing Center, Wash. 1-44th ADA pro-

vides training support to the 2-174th ADA (Ohio Army National Guard) and 2-263rd ADA (South Carolina Army National Guard).

Last year the battalion was an active participant in the Army effort to gain control of the huge forest fires at Yellowstone National Park. C/1-44th ADA deployed 80 soldiers for 30 days while HHB and B Battery were deployed for seven days.

A Battery will participate with the 81st Separate Infantry Brigade (SIB) during Team Spirit '89 in Korea and B Battery will support the 3rd Brigade NTC rotation in October.

2nd Battalion, 44th Air Defense Artillery



Lt. Col.
D. F. Kwist



CSM
R. K. Amerson

The 2nd Battalion, 44th Air Defense Artillery, is a Vulcan/Stinger battalion. Located at Fort Campbell, Ky., the 2-44th ADA provides low-altitude air defense for the 101st Airborne Division (Air Assault).

In 1988 we had two live-fire deployments to Fort Bliss, Texas; a JRTC deployment to Fort Chaffee, Ark.; and an antiaircraft warfare exercise with the U.S. Marine Corps in Beaufort, S.C. We also underwent jungle operations training in Panama.

Our battalion achieved a 95 percent air assault qualification rate — the

highest in the 101st Airborne Division.

During 1988 we continued to experiment with new strategies for air ambushes, commando-style ADA raids and early warning procedures.

We look forward to upcoming NTC and JRTC rotations and a First Fire exercise at Fort Bliss, Texas.

1st Battalion, 55th Air Defense Artillery



Lt. Col.
D. K. Workman



CSM
L. R. Brooks

The 1st Battalion, 55th Air Defense Artillery, is a Vulcan/Stinger battalion located at Fort Polk, La. The 1-55th ADA provides short-range air defense and early warning for the 5th Infantry Division (M).

Last year 1-55th ADA sent a battery to provide air defense for a brigade task force during an NTC rotation. In August, HHB's Stinger platoon deployed to Fort Chaffee, providing excellent air defense for a light infantry task force during a JRTC rotation.

In successfully reorganizing to the L-Series MTOE, our battalion was the

first to turn in its Chaparrals. Our new MTOE placed a Stinger crew member in each Vulcan squad and added 15 Stinger teams to the Headquarters Battery. During two highly successful NTC rotations, we developed and tested new employment doctrine that takes advantage of Stinger under armor and proved to be deadly to the OPFOR air.

During two upcoming NTC rotations we look forward to deploying with Hawk and Chaparral attached. The battalion will also conduct three battery-level ARTEPs and four Vulcan qualification firings.

4th Battalion, 61st Air Defense Artillery



Lt. Col.
O. A. Nagel



CSM
O. D. Davis

The 4th Battalion, 61st Air Defense Artillery, is a Chaparral/Vulcan battalion located at Fort Carson, Colo. The 4-61st ADA provides low-altitude air defense for the 4th Infantry Division (Mechanized) to allow its combat elements the freedom to maneuver throughout the battlefield.

Last year we conducted two superb Chaparral live fires, quarterly Vulcan service practices and a Redeye live fire. We conducted our Redeye live fire with a Chaparral live fire, during which the Redeyes and Chaparrals engaged multiple targets simultaneously while in MOPP IV.

We conducted four battery external evaluations and participated in quarterly division CPXs. Additionally, D Battery and its 12 Chaparrals moved to Fort Stewart to complete our L-series MTOE transition.

Our training agenda includes Vulcan and Stinger quarterly service practices, four battery external evaluations and one NTC rotation. Our battalion will continue to lead the way in clearing the skies for the 4th Infantry Division.

2nd Battalion, 62nd Air Defense Artillery



Lt. Col.
P. C. Franklin



CSM
C. L. Jackson

The 2nd Battalion, 62nd Air Defense Artillery, is a Vulcan/Stinger battalion located at Fort Ord, Calif. The 2-62nd ADA ensures that the 7th Infantry Division (Light) retains the freedom to maneuver and command and control by killing aircraft the first time. We provide early warning for the division and are constantly prepared to support our rapid deployment force (RDF) mission.

1988 saw us participate in more than 12 exercises and live-fires, the most notable being our deployment to Honduras for Golden Pheasant and Cabannas '88. Our other achieve-

ments include testing the M-1069 as the prime mover for the Vulcan and receiving the I Corps Maintenance Award (HHB). In addition, all of our batteries were awarded the commanding general's gold streamer for APFT excellence.

This year we look forward to taking part in Red Flag, Celtic Cross VII, the Light Fighter Course and a Stinger/Redeye live-fire. We will also deploy for a rotation at the NTC, Fort Irwin, Calif., and the JRTC, Fort Chaffee, Ark.

3rd Battalion, 62nd Air Defense Artillery



Lt. Col.
H. L. Van Brederode



CSM
E. Fishburne

The 3rd Battalion, 62nd Air Defense Artillery, a Vulcan/Stinger battalion, provides short-range air defense as part of the 10th Mountain Division's (Light Infantry) combined arms team.

Newly organized under the L-series MTOE, the 3-62nd ADA was activated at Fort Drum, N.Y., last December. We received sufficient equipment to support initiation of collective training last January. We also became the first CONUS SHORAD unit to field PIVADS.

Our training program for 1989 is ambitious and varied. Prior to a bat-

talion ARTEP planned for September and October, 3-62nd ADA will complete training and evaluation of Vulcan and Stinger platoons, conduct battery ARTEPs and plan for and execute the first Vulcan and missile live-fire exercise at Fort Drum. We will then deploy elements of the battalion to the JRTC and the NTC. We must also accomplish the remaining training and growth required to support full combat readiness. We will close out the year with sustainment training.

2nd Battalion, 67th Air Defense Artillery



Lt. Col.
C. G. Willis



CSM
J. R. Barber

The 2nd Battalion, 67th Air Defense Artillery, is a Vulcan/Stinger battalion. Located in Fort Riley, Kan., the 2-67th ADA provides short-range air defense to elements of the "The Big Red One," the 1st Infantry Division (Mechanized).

This year we conducted quarterly Vulcan live-fires with the Streaker. During Reforger '88, we worked with the 89th ADA Brigade for early warning and HIMAD integration. Our B Battery attended the NTC, Fort Irwin, Calif., in February, and A Battery is scheduled for an NTC rotation in September.



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El Paso Electric

OVERSEAS ADA



Mike Wallace of CBS' "Sixty Minutes" put 32nd AADCOM female soldiers in the spotlight. The CBS segment titled "Women in the Military" aired in January 1989.

32nd Army Air Defense Command



Maj. Gen.
J. C. Cercy



CSM
R. W. Harman

The 32nd Army Air Defense Command is headquartered in Darmstadt, Federal Republic of Germany. 32nd AADCOM soldiers daily provide combat ready air defense forces to NATO, helping to deter war.

1988 was an exceptionally busy year for 32nd AADCOM. Each of our four brigades experienced significant training challenges in addition to the recurring requirements of NATO tactical evaluations and annual service practices.

The 10th and 69th ADA Brigades participated extensively in Reforger '88. During this fast-paced corps-on-corps battle, both brigades provided air defense of corps elements.

The 108th ADA Brigade supported the Hammer series of live-fly exercises sponsored by the 3rd U.S. Air Force. This year's exercise, conducted at a remote training area in northern England, presented an interesting logistics challenge. The exercise featured Patriot and Hawk working together in battalion task force configuration using capabilities provided by new Patriot software.

The 94th ADA Brigade took to the field for an extensive composite brigade ARTEP — the first of its kind in 32nd AADCOM. During the ARTEP Patriot, Hawk and Chaparral/Vulcan worked together to provide air defense

of key assets in the rear combat zone.

Our NATO tactical evaluation schedule during 1988 was extremely demanding. 8-43rd ADA and 6-43rd ADA, the new Patriot battalions, were successful in their initial evaluations and are now contributing to the command's NATO air defense mission.

32nd AADCOM soldiers throughout Germany have successfully competed in local sporting events and activities. Last July, five 32nd AADCOM marching teams participated in the annual Nijmegen March. The march required participants to cover 100 miles in four days. Each 32nd AADCOM team completed the march in exceptional fashion.

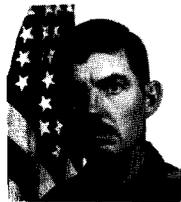
Soldier training through education continued to receive emphasis during 1988. Although the 32nd AADCOM NCO Academy closed last October, our soldiers will continue to receive Primary Leadership Development Course training through the VII Corps NCO Academy in Augsburg.

32nd AADCOM soldiers have excelled in every task given to them the past year, and each soldier has demonstrated enormous professionalism. We are pleased to report that never has the air defense of the NATO Central Region been in the hands of such skilled, trained soldiers and units.

10th Air Defense Artillery Brigade



Col.
D. K. Heebner



CSM
J. E. Walthes

The 10th Air Defense Artillery Brigade is a composite Patriot/Hawk brigade located in Darmstadt, Federal Republic of Germany. The brigade provides area air defense coverage in the central region of Germany and forward area air defense coverage to units located in the V Corps area of operations.

Last year we took part in Able Archer, WINTEX and Reforger. We achieved the highest scores ever received by a brigade headquarters on an Allied Air Forces Central Europe (AAFCE) Phase II tactical evaluation. We were nominated for the

AAFCE "Scroll of Honor."

Throughout the year, soldiers of the 10th ADA Brigade continued to write new chapters to the Patriot success story. The brigade also demonstrated the effectiveness of the Patriot/Hawk mix in helping make 32nd AADCOM the best air defense network in the world.

2nd Battalion, 43rd Air Defense Artillery



Lt. Col.
C. M. Rankin



CSM
J. D. Kimbrell

The 2nd Battalion, 43rd Air Defense Artillery, located at Hanau, Federal Republic of Germany, is a Patriot unit under the 10th Air Defense Artillery Brigade. The 2-43rd ADA provides air defense in the central region of the Federal Republic of Germany.

Last August we took part in our Army training and evaluation program and we participated in Certain Challenge, a Reforger '88 exercise, in September. The battalion also underwent an ADOT in October and an AAFCE Phase I tactical evaluation in November.

The 2-43rd ADA received the Holger N. Toftoy award for missile maintenance readiness performance and completed PDB-II fielding and training.

4th Battalion, 43rd Air Defense Artillery



Lt. Col.
J. M. Hutchison



CSM
S. L. Shepherd

The 4th Battalion, 3rd Air Defense Artillery, was redesignated the 4-43rd ADA in March. Located at Giessen, Federal Republic of Germany, the 4-43rd ADA is a Patriot unit under the 10th Air Defense Artillery Brigade. The 4-43rd ADA provides low- to high-altitude air defense coverage in the forward missile deployment zone of the central region of the Federal Republic of Germany.

During 1988 we participated in Able Archer and supported the fall conduct of Reforger '88. We met the challenge of an AAFCE Phase II (Battle Phase) tactical evaluation by

successfully demonstrating the battalion's fighting capability in an intense tactical environment.

We were the first battalion to train with the newly acquired 32nd AADCOM Patriot conduct of fire trainer and plan to keep it in our battalion tactical training plan. Our battalion also received its post-deployment build (PDB) enhancement of Patriot, which greatly improved our air-battle capabilities.

This year we look forward to a battalion ARTEP and an AAFCE Phase I evaluation.

3rd Battalion, 52nd Air Defense Artillery



Lt. Col.
R. S. Lusey



CSM
H. Collins

The 3rd Battalion, 52nd Air Defense Artillery, located in Wildflecken, Federal Republic of Germany, is a Hawk battalion under the 10th Air Defense Artillery Brigade. The 3-52nd ADA is deployed along a 100-kilometer front of the IGB with a 24-hour air defense mission under operational control of NATO.

January to March 1988 saw us take part in AAFCE Phase I and II tactical evaluations. Last September we participated in Certain Challenge, a Reforger '88 exercise, in addition to our annual service practice and an ARTEP. 3-52nd ADA's B and D Bat-

teries were named the annual service practice Honor Battery.

This year we look forward to successfully completing AAFCE Phase I and II tactical evaluations. We plan to complete another rewarding training year without any serious injury to personnel or damage to equipment.

69th Air Defense Artillery Brigade



Col.
N. Delisanti



CSM
R. C. Burton

The 69th Air Defense Artillery Brigade is located in Wurzburg, Federal Republic of Germany. We are responsible for low- to high-altitude air defense coverage with four battalions (6-43rd ADA, 8-43rd ADA, 6-52nd ADA and 3-60th ADA) in VII U.S. Corps and part of the 2nd German Corps area of responsibility.

Our major exercises last year were Reforger '88 and Crested Eagle '88. Our outstanding achievements include receiving the highest rating for a brigade on an AAFCE Phase II tactical evaluation, winning the 32nd AADCOR military platoon competi-

tion and winning the 32nd AADCOR softball tournament.

Also in 1988 we deployed 6-43rd ADA and certified two Patriot battalions for inclusion in the NATO mission. All four of our battalions successfully completed tactical evaluations.

Our goals for 1989 include interoperability training between Patriot and Hawk, Central Enterprise '89, AAFCE tactical evaluations, ASPs and deactivation of a battalion.

6th Battalion, 43rd Air Defense Artillery



Lt. Col.
G. A. Rountree



CSM
R. M. Folmar

The 6th Battalion, 43rd Air Defense Artillery, is located in Ansbach, Federal Republic of Germany. This Patriot battalion provides air defense over the NATO European airspace.

We began 1988 by deploying to Ansbach in January. Numerous 32nd AADCOR readiness tests and evaluations followed our arrival. In July 1988 we had a ground defense plan evaluation, and in November we passed our first AAFCE tactical evaluation.

This year we look forward to participating in Reforger, WINTEX and Central Enterprise. We will also

undergo an AAFCE Phase I tactical evaluation.

8th Battalion, 43rd Air Defense Artillery



Lt. Col.
J. Romito



CSM
R. P. Newark

The 8th Battalion, 43rd Air Defense Artillery, a Patriot battalion located at Giebelstadt, Federal Republic of Germany, conducts a 24-hour very low- to very high-altitude air defense mission in the NATO forward missile deployment zone within the VII U.S. Corps area of responsibility.

We were fully integrated into the NATO air defense force when we successfully completed our initial AAFCE tactical evaluation in April 1988 and assumed our full-time readiness mission of providing air defense coverage in the forward area.

Our battalion, one of the first two

Patriot battalions to take part in Reforger, underwent an important force modernization with the fielding of Post Deployment Build (PDB) II software. Our battalion was selected as the test unit for the user software evaluation, giving our soldiers the opportunity to participate directly in the force modernization effort.

With its reinforcing battalion, 6-52nd ADA, 8-43rd ADA will refine and develop its ground defense plan by applying the new features of PDB-II software and by building upon the lessons learned during Reforger '88.

6th Battalion, 52nd Air Defense Artillery



Lt. Col.
J. E. Paige



CSM
W. H. Lowie

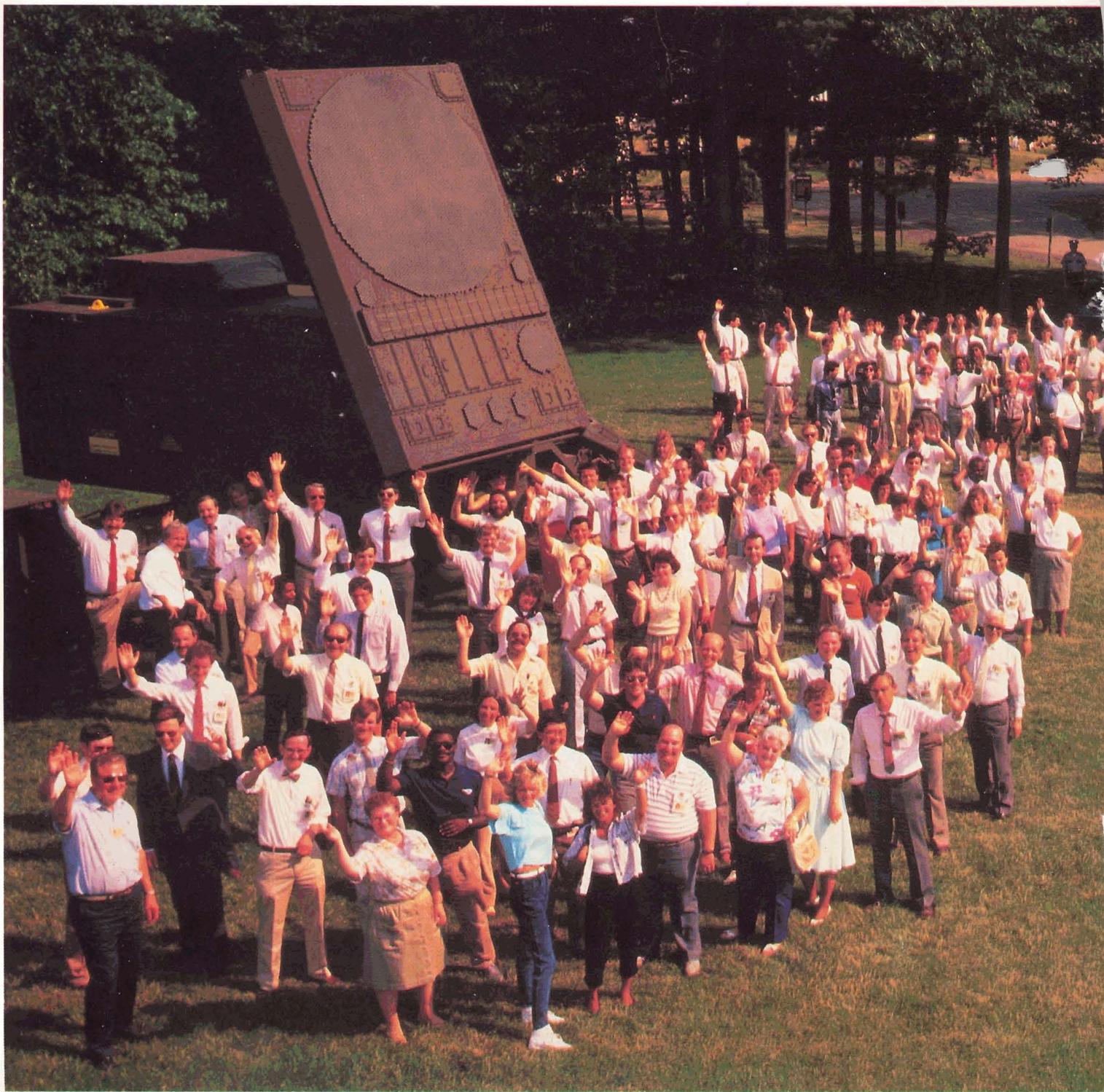
The 6th Battalion, 52nd Air Defense Artillery, a Hawk battalion located in Wurzburg, Federal Republic of Germany, conducts a 24-hour low- to medium-altitude air defense mission in the NATO forward missile deployment zone within the VII U.S. Corps area of responsibility.

1988 proved a busy year for our battalion: Crested Eagle in February, a multinational evaluation in March, an ADOT in April, an AAFCE tactical evaluation in June, another ADOT and D Battery's ASP in July, C Battery's ASP in August, another tactical evaluation in September and,

to close out the year, A Battery's ASP in November.

During our APSs, the battalion had several honor batteries. The battalion as a whole received excellent ratings during the September tactical evaluation, and ours was the first American unit to receive all excellents in NBC control and reporting.

1989 will be a busy year: WINTEX in February, an ARTEP in May, an ADOT in September and a tactical evaluation in November. This year will also give all of our batteries a chance to return to Crete for their ASPs.



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3rd Battalion, 60th Air Defense Artillery



Lt. Col.
H. A. Zimon



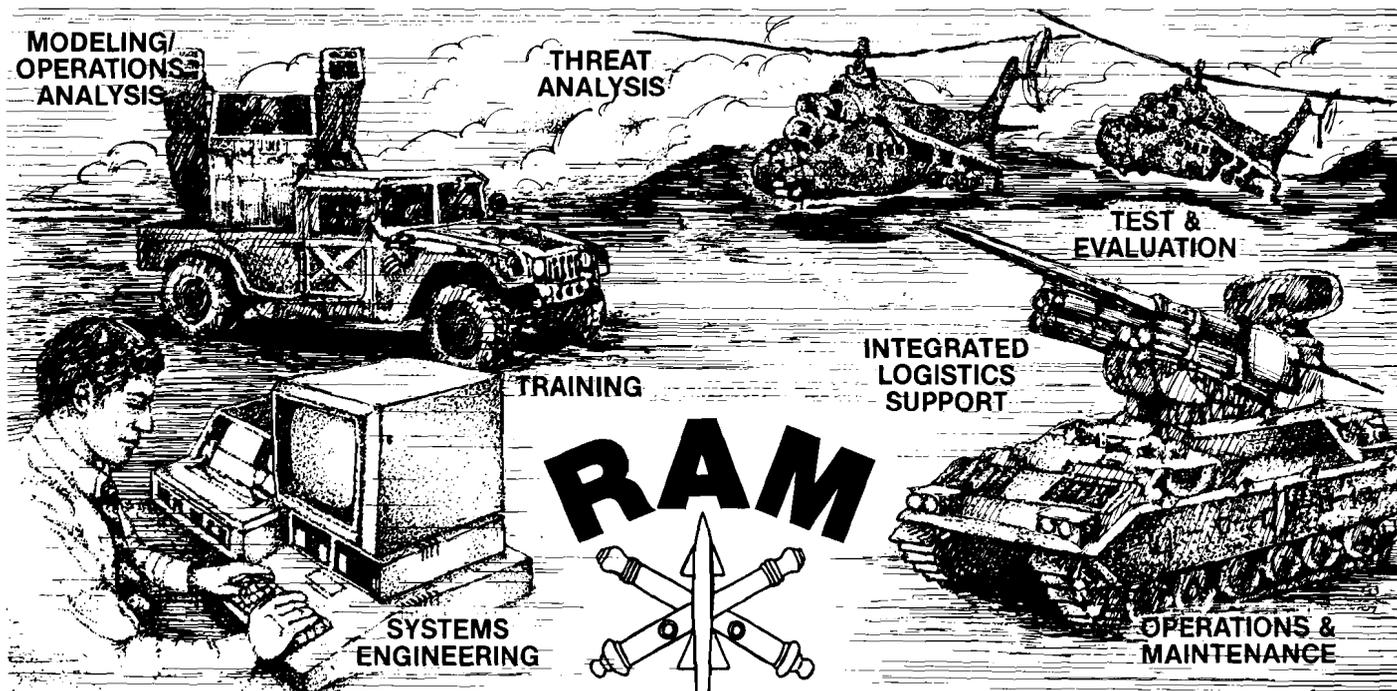
CSM
V. D. Stevens

The 3rd Battalion, 60th Air Defense Artillery, is located in Grafenwoehr, Federal Republic of Germany. This Hawk battalion provides low- to medium-altitude air defense coverage in the forward weapons engagement zone. Under the operational control of NATO, the 3-60th ADA conducts a 24-hour mission along a 100-kilometer front less than 15 kilometers from the Czechoslovakian border.

During 1988 we took part in Re-forged and Able Archer. We received the highest rating of any American air defense battalion during our

AAFCE Phase II tactical evaluation.

This year we look forward to our last successful AAFCE Phase I tactical evaluation prior to our inactivation.



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94th Air Defense Artillery Brigade



Col.
V. L. Conner



CSM
R. Robinson

The 94th Air Defense Artillery Brigade, headquartered in Kaiserslautern, Federal Republic of Germany, provides air defense to critical assets in the southern defense zone.

The 94th ADA Brigade and our battalions (4-1st ADA, 1-7th ADA and 3-44th ADA) took part in a Phase II AAFCE tactical evaluation in June, a Phase I AAFCE tactical evaluation in August and a brigade ARTEP in October. We also conducted an ASP in Crete and our biannual Vulcan gunnery and ASP at Todendorf.

94th ADA Brigade soldiers did themselves proud this year: the 6-3rd

ADA took first place in the 32nd AADCOM M-60 competition, the 3-44th ADA took second in the 32nd AADCOM platoon competition and the brigade took the first place 32nd AADCOM Commander's Cup. We also executed the first composite brigade ARTEP in air defense history.

This year we look forward to the integration of CONUS augmentation into our war plans.

4th Battalion, 1st Air Defense Artillery



Lt. Col.
J. W. Gault



CSM
R. A. Davison

The 4th Battalion, 1st Air Defense Artillery, is a Hawk battalion located in Neubruecke, Federal Republic of Germany. The 4-1st ADA provides 24-hour low- to medium-altitude air defense coverage in protection of vital assets in the NATO rear combat zone in Germany.

Last year our major training exercises included the 1988 biennial AAFCE tactical evaluation, a battalion ARTEP, an ASP in Crete, exercise WINTEX, and several exercises to practice and demonstrate interoperability between the Hawk and Patriot systems.

Our performance on the AAFCE tactical evaluation was superb; in fact, our unit was cited as the "finest U.S. Hawk battalion" evaluated by AAFCE in over four years by the head of the AAFCE Tactical Evaluation Division. We successfully accomplished the Block VII system modification. We also achieved exceptional results on our ASP in Crete, with B Battery earning the highest score in NATO for 1988.

In 1989 the battalion will undergo an annual ARTEP and participate in a NATO ASP in Crete.

1st Battalion, 7th Air Defense Artillery



Lt. Col.
R. F. Stuart



CSM
T. Carrington

The 6th Battalion, 3rd Air Defense Artillery, redesignated the 1-7th ADA last December, is a Patriot battalion located in Kaiserslautern, Federal Republic of Germany. The 1-7th ADA provides very low- to very high-altitude air defense of selected rear area critical assets and areas.

Last year we took part in Crested Eagle, Central Enterprise, Able Archer and Reforger. In October we had an AAFCE Phase I tactical evaluation and a brigade ARTEP — the first USAREUR brigade ARTEP that integrated the Hawk, Patriot and Chaparral/Vulcan weapon systems.

This year we are preparing to accept the first USAREUR backfill batteries. We will also apply the Patriot system block MWO and undergo PCOFT training and evaluation.

3rd Battalion, 44th Air Defense Artillery



Lt. Col.
D. L. Morreale



CSM
M. T. Graham Jr.

The 3rd Battalion, 44th Air Defense Artillery, is a composite Chaparral/Vulcan/Stinger battalion located in Ramstein, Federal Republic of Germany. The 3-44th ADA provides short-range air defense for three Air Force tactical air bases and critical assets in the rear combat zone. We also provide Stinger support to SACEUR's Allied Command Europe Mobile Force (Land).

Last year we reorganized our Stinger assets to support the brigade's general defense plan and SACEUR's AMF(L). We then deployed to Turkey for an AMF(L) exercise.

We conducted our Chaparral/Stinger annual service practice at Crete, Greece. Our team scored the highest of any team in USAREUR. We also completed our biannual Vulcan gunnery and ASP at Todendorf.

This year we plan to conduct winter warfare training in Canada and in Vicenza, Italy. We will also take part in SACEUR AMF(L) deployments and in two AAFCE tactical evaluations.

108th Air Defense Artillery Brigade



Col.
J. J. Cravens Jr.



CSM
H. Jackson Jr.

The 108th Air Defense Artillery Brigade, located at Kaiserslautern, Federal Republic of Germany, is comprised of Patriot, Hawk and SHORAD units. The 108th ADA Brigade provides air defense within the rear combat zone of the Federal Republic of Germany, air surveillance support to 4th Allied Tactical Air Force command and control elements and early warning to divisional SHORAD units as directed.

During 1988 the brigade headquarters and all battalions completed a successful ARTEP and AAFCE tactical evaluation. The brigade's Hawk

and Chaparral/Stinger crews demonstrated additional weapon system proficiency during the annual service practice at Crete.

Our major goal for 1989 is the successful orchestration of a composite brigade ARTEP. The brigade is also planning for the arrival of 5-7th ADA (Patriot) in August. The addition of this new battalion will not only solidify the brigade's overall defense plan, it will also provide additional maneuver and other training challenges for all leaders.

1st Battalion, 1st Air Defense Artillery



Lt. Col.
E. C. Spiceland



CSM
J. W. Bradshaw

The 1st Battalion, 1st Air Defense Artillery, Spangdahlem Air Base, Federal Republic of Germany, is a Hawk battalion under the 108th Air Defense Artillery Brigade. The 1-1st ADA provides 24-hour very low- to medium-altitude air defense coverage for critical assets in the rear combat zone of western Europe.

In 1988, the 1-1st ADA completed Phases I and II of the NATO tactical evaluation with great success. The battalion earned the distinction "Honor Battalion" while posting the highest battalion composite score for Hawk annual service practice within

32nd AADCOM. A Battery deployed to England as part of an air defense task force participating in Operation Hammer. The battalion hosted a Swedish Exchange Officer and will reciprocate by sending U.S. officers to Sweden in early 1989.

AAFCE Phase I and II tactical evaluations will again be key events in 1989, along with a brigade ARTEP, annual service practice and participation in Reforger. During all of these, we will refine and expand the biad Hawk doctrine, incorporating evolving tactics, equipment and support concepts.

4th Battalion, 7th Air Defense Artillery



Lt. Col.
D. C. Hawkins



CSM
J. H. Hughes

The 2nd Battalion, 3rd Air Defense Artillery, was redesignated the 4th Battalion, 7th Air Defense Artillery, in December. Located in Dexheim, Federal Republic of Germany, the 4-7th ADA is a Patriot battalion under the 108th Air Defense Artillery Brigade. The 4-7th ADA provides low- to high-altitude air defense of critical assets and ground forces in the 4th Allied Tactical Air Force area of operation.

Last July we took part in an AAFCE Phase II tactical evaluation and last October we participated in Exercise Hammer 88-2.

This year we look forward to a composite brigade ARTEP and assisting with the integration of the 5-7th ADA into the 108th Air Defense Artillery Brigade.

5th Battalion, 44th Air Defense Artillery



Lt. Col.
W. P. Fackner



CSM
C. Harvey

The 5th Battalion, 44th Air Defense Artillery, located in Spangdahlem, Federal Republic of Germany, is a Chaparral/Vulcan battalion under the 108th ADA Brigade. The 5-44th ADA provides short-range air defense for three U.S. Air Force tactical fighter bases in the northern defensive zone of the rear combat zone.

During 1988 the 5-44th ADA participated in one ARTEP, two AAFCE tactical evaluations and several air base exercises. Our battalion joined in the annual Nijmegen March for the fourth straight year. We hosted the 20th Royal Air Force Rapier

Squadron for the second year, to include support during Central Enterprise '87.

Our three firing batteries conducted Chaparral/Stinger system qualification at Crete and scored 11 out of 12 direct Chaparral hits. We established a Top Gun honor which evaluates aerial gunnery through competition during the spring and summer Vulcan ASPs at Todendorf.

Our goals for 1989 are to train for sustained operations and to further develop our fighting capability through improved joint interoperability with the Air Force.

Divisional Air Defense Artillery

3rd Battalion, 5th Air Defense Artillery



Lt. Col.
G. H. Selden Jr.



CSM
R. M. Bacion

The 3rd Battalion, 5th Air Defense Artillery, recently redesignated from the 3rd Battalion, 61st Air Defense Artillery, is located in Buedingen, Federal Republic of Germany. This forward-deployed Chaparral/Vulcan/Stinger battalion defends 3rd Armored Division maneuver forces in the historic Fulda Gap.

During the past year the battalion has been a part of some extraordinary training events, including Reforger, Caravan Guard (a corps-level, force-on-force CFX), ASPs at both Crete and Todendorf, and FTXs at Hohenfels Training Area. Through training

initiatives our battalion boasts true combined arms air defense — one Bradley in every platoon now has the primary mission of platoon air guard.

This year will see the passing of an era, as it will probably be the battalion's last Todendorf gunnery. The battalion has completed Vulcan/Stinger tables and the Grafenwoehr Training Area can now support aerial gunnery using RCMATs. This was the last step in our plan to fully integrate ADA into our supported division's training. Wherever they go, ADA is there, ensuring their freedom to maneuver.

5th Battalion, 5th Air Defense Artillery



Lt. Col.
W. E. Greenawald



CSM
W. P. Hampton

The 2nd Battalion, 61st Air Defense Artillery, was redesignated the 5-5th ADA in November 1988. Located in Camp Stanton, Korea, the "Dragonslayers" of this Chaparral/Vulcan battalion provide low-altitude air defense for the forward deployed 2nd Infantry Division's maneuver units and critical assets. With two Chaparral batteries attached, it is the largest low-altitude air defense battalion in the U.S. Army.

Last year the battalion participated in exercises Autumn Haze, Brisk Spirit, Dragonslayer, Ulchi-Focus Lens and Team Spirit. Additionally,

the Dragonslayers deployed twice to Chul-Mae Firing Range for semi-annual service practices.

1988 saw the battalion complete its conversion to the Army of Excellence organization, further develop the habitual association of batteries with major subordinate commands, implement Stinger under armor in each Vulcan battery, provide extensive support for the 1988 Olympics, and initiate an intensive Lieutenant Development Program.

During 1989 the Dragonslayer battalion will continue to focus on its warfighting mission.

1st Battalion, 59th Air Defense Artillery



Lt. Col.
K. E. Fess



CSM
J. P. Halligan

The 1st Battalion, 59th Air Defense Artillery, a Chaparral/Vulcan battalion located in Wackernheim, Federal Republic of Germany, provides short-range air defense to the 8th Infantry Division.

Last year we conducted the first Vulcan gunnery with PIVADS in Europe and held an extremely successful Chaparral/MANPAD annual service practice in Crete, Greece. The battalion's Stinger teams won top honors in USAREUR. The battalion participated in numerous training exercises, culminating the training year by participating in Exercise

Certain Challenge (Reforger '88), the largest Army field training exercise since World War II.

We joined in some significant community and German-American activities, including an installation Open House and a troop-augmented grape-picking program which received international attention.

This year we look forward to continuing our combined arms training with the 8th Infantry Division (Mechanized), increasing our partnership and community programs, and participating in the next Reforger.

2nd Battalion, 59th Air Defense Artillery



Lt. Col.
E. J. Murphy III



CSM
J. L. Brown

The 2nd Battalion, 59th Air Defense Artillery, a Chaparral/Vulcan battalion located at Schwabach, Federal Republic of Germany, provides short-range air defense for elements of the 1st Armored Division.

We conducted our 1988 Chaparral/Stinger live-fire in Crete and conducted aerial and ground Vulcan gunnery at Grafenwoehr instead of Todendorf as in previous years. We had our battalion ARTEP during the 1st Armored Division exercise Iron Forge III in February 1988.

Over the past year we successfully completed Vulcan PIVADS installa-

tion. During Certain Challenge '88, a Reforger exercise, 2-59th ADA had the opportunity to umpire two other USAREUR ADA SHORAD battalions.

Community service remains one of our highest priorities. Last year our battalion, as part of the Nurnberg Subcommunity, did its part in helping the Nurnberg Community win the energy conservation award for the second straight year.

1st Battalion, 62nd Air Defense Artillery



Lt. Col.
R. A. Wright



CSM
G. B. Cabato

The 1st Battalion, 62nd Air Defense Artillery, is a Vulcan/Stinger battalion located at Schofield Barracks, Hawaii. The 1-62nd ADA provides air defense to the 25th Infantry Division (Light).

Our Stinger missilemen and Vulcaneers receive some of the most intense and realistic combat training in the U.S. Army. Last year elements of the battalion deployed to Japan for Orient Shield and Yama Sakura, Korea for Team Spirit, Australia for Pitch Black, Thailand for Cobra Gold and the Philippines for Cope Thunder and Balikatan.

One of our Vulcan platoons received credit for shooting down the 2nd Infantry Division commanding general's helicopter during an "enemy" air assault. The commanding general subsequently named the platoon "The Tropic Lightning Wolfpack."

During 1989 we will continue our intense deployment schedule, intensify training during our Vulcan and Redeye shoots and march on to our ultimate goal of being the best battalion in the 25th Infantry Division (L) and Air Defense Artillery.

3rd Battalion, 67th Air Defense Artillery



Lt. Col.
J. R. Ward



CSM
B. P. Haimovitz

The 3rd Battalion, 67th Air Defense Artillery, is located in Kitzingen, Federal Republic of Germany. This Chaparral/Vulcan/Stinger battalion supports the 3rd Infantry Division (Mechanized) and VII (U.S.) Corps.

The 3-67th ADA deployed to the Reforger '88 exercise Certain Challenge last September. We supported battalion task force ARTEPs during the Marne Battle I exercise, Hohenfels Training Area, last October, November and December. In January we deployed for FTX Winter Warrior III.

We have completed modification of all Vulcan systems to the PIVADS variant, Chaparral Block VI and Chaparral optical improvement.

A Chaparral/Stinger gunnery at Namfi, Crete and a Vulcan gunnery at Todendorf will be the highlights of the year.

Range Command



Lt. Col.
J. G. Girlando Jr.

The U.S. Army Kwajalein Atoll Range Command was activated in September 1987. This element of the Strategic Defense Command manages and operates the National Test Range on the Kwajalein Atoll in the Marshall Islands. The location of the Range is ideal in relationship to the launch facilities in California for testing of land- and submarine-based ICBMs, to observe new launches of foreign satellites and to conduct intercept tests of re-entry vehicles by other missiles.

Kwajalein is one of two treaty-approved test launch sites for ABMs.

It is the only site capable of supporting a complete launch and intercept test.

In 1988 we made over 450,000 deep space tracks of orbiting satellites and recorded over 90 new foreign launches. We provide 24-hour radar coverage to the Unified Space Command's Space Surveillance Network.

This October we will begin the Airborne Optical Adjunct Program. With this program an infrared optical sensor, mounted on a Boeing 767, is designed to discriminate re-entry vehicles and hand off the information to a ground-based radar.

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ADA at the READY



Modern-day Minuteman Sgt. Ralph DeWaeley of the Indiana National Guard's 1-202nd ADA demonstrates Stinger firing procedures to Brig. Gen. John Paden.

111th Air Defense Artillery Brigade



Col.
V. R. Stevens



CSM
C. Gallegos

The 111th Air Defense Artillery Brigade, New Mexico Army National Guard, is headquartered in Albuquerque, N.M. We provide air defense for the V U.S. Army Corps. Upon mobilization, the brigade will have two Chaparral battalions capstone to it: 3-200th ADA New Mexico Army National Guard and the forward deployed 4-2nd ADA which will activate in 1991.

Following our transition from an echelon above corps ADA brigade last October, we have begun developing our mobilization and general defense plans for our V Corps mission.

Our peacetime mission includes command of five Chaparral battalions, one Hawk battalion and one ADA Signal Operations company. We are preparing the 1-200th ADA (Roswell, N.M.) and the 4-200th ADA (Clovis, N.M.) for operational readiness status (ORS) certification and an external ARTEP in 1989. We are also assisting the 6-200th ADA (Springer, N.M.) in beginning Chaparral collective training. We will assist 7-200th ADA (Rio Rancho, N.M.) as they begin their collective training in preparation for ORS.

Last year we participated in numerous training exercises. Our overseas exercises took us to Europe for Reforger and WINTEX, Japan for Yama Sakura, Korea for Team Spirit

and the Aleutian Islands for Fortress Gale. Some of our stateside exercises included Green Flag 88-6 in Nevada, Cascade Peak in Washington and Brim Frost in Alaska. During Green Flag, we deployed a Hawk battery with an AN/TSQ-73 to the Nevada desert for joint training with the U.S. Air Force and the 1-43rd ADA, a Patriot battalion. This JTX demonstrated the interoperability of active and reserve component ADA units in joint operations.

Our goals for this year include developing the brigade's warfighting capability in support of the V U.S. Corps. This includes coordination with the 10th ADA Brigade to develop joint transition of high- to medium-altitude air defense into the Corps scheme of maneuver.

We will conduct a 10-day field training exercise during annual training to hone our collective and multi-echelon capabilities in preparation for an external ARTEP and ORS. We will participate in Crested Eagle and overseas deployment training with V U.S. Corps. We will also prepare for the 1990 mobilization exercise El Paseo Al Sur II.

1st Battalion, 200th Air Defense Artillery



Lt. Col.
R. R. Van Winkle



CSM
J. D. Lowe

The 1st Battalion, 200th Air Defense Artillery, New Mexico Army National Guard, is located in Roswell, N.M. Our capstone mission is to the 31st ADA Brigade, III U.S. Corps, at Fort Hood, Texas. We have initiated close training and tactical ties with 2-2nd ADA and the 31st ADA Brigade through several CPXs, FTXs and KPUP opportunities which have enhanced our warfighting skills.

Under the dual capstone alignment, we have trained extensively with elements of the 49th Armored Division, Texas Army National Guard, providing air defense for

combat elements, areas and installations. We also conducted numerous FTXs this year in preparation for our ARTEP at Fort Hood, Texas. We have emphasized squad-, platoon- and battery-level training and have integrated NBC at all levels.

Our battalion, the first pure Chaparral battalion in the Army National Guard, was also the first pure corps Chaparral battalion in the Army structure. We will achieve operational readiness status this year with the M-48A1. In 1990, we begin transition training on the M-48A3 Chaparral missile system.

2nd Battalion, 200th Air Defense Artillery



Lt. Col.
A. J. Trottier



CSM
A. Hernandez

The 2nd Battalion, 200th Air Defense Artillery, New Mexico Army National Guard, is a pure Chaparral battalion located in Las Cruces, N.M. We provide corps level air defense. Currently we have an association with VII Corps and a training affiliation with the 35th Infantry Division (Mechanized).

During 1988 we took part in several training exercises with the 35th ID. We began fielding our Chaparral weapon systems and training on the M-48A1 Chaparral at the Dona Ana Range Camp, N.M. We also attended annual training at Fort Bliss, Texas.

Although we have only the M-48A1 Chaparral on hand, January 1990 should see the fielding of the Chaparral M-48A3 with forward-looking infrared and the RISE power train modification.

Our training goals include completing training in MOS 16P and developing a new TSOP to reflect our corps Chaparral mission.

We currently boast 119 percent strength — the highest in the New Mexico Army National Guard. By the end of annual training this year, 80 percent of our personnel will be MOS qualified.

3rd Battalion, 200th Air Defense Artillery



Lt. Col.
S. W. Johnston Jr.



CSM
G. Lucero

The 3rd Battalion, 200th Air Defense Artillery, New Mexico Army National Guard, is a corps Chaparral unit that provides low-altitude air defense for the 50th Armored Division and V Corps. The battalion is headquartered in Belen, N.M., with units in Socorro, Gallup, Grants and Farmington.

Last year the battalion conducted transition training from 16F (Duster) to 16P (Chaparral). We received our new Chaparral weapon systems in October and were the first National Guard unit to receive the M-48A2. We will progress into squad and platoon

collective training this training year and reach operational readiness status in the near future.

We have just opened a new armory and training facility in Gallup and new construction has been programmed for Grants, Farmington and Belen.

We will conduct our annual training at McGregor Range, N.M. We will also conduct a Chaparral live-fire exercise.

Local community support, one of our strongest suits, enables our battalion to maintain close to 100 percent strength.

4th Battalion, 200th Air Defense Artillery



Lt. Col.
R. N. Bouffard



CSM
G. S. Lawrence

The 4th Battalion, 200th Air Defense Artillery, New Mexico Army National Guard, is a Chaparral battalion located in Clovis, N.M. We provide air defense for combat elements against low-altitude hostile aircraft.

We have been very active with our affiliated units and have participated in numerous exercises, including Yama Sakura and Team Spirit. Our individual training programs are starting to bear fruit — they have created a higher MOS qualification rate and assisted in retaining our soldiers. The total force concept has worked extremely well and continues

to be a driving force in preparation of our mission.

We are now directing our efforts toward preparation for an external ARTEP and achieving operational readiness status during 1989 annual training at Fort Bliss, Texas.

As the second corps Chaparral battalion equipped with M-48A1 fire units, we will begin transition training on the M-48A3 system in 1990. With the improved Chaparral missile system, we will be prepared to provide enhanced short-range air defense to the I U.S. Corps' units.

6th Battalion, 200th Air Defense Artillery



Lt. Col.
G. Sisneros



CSM
F. Arellano

The 6th Battalion, 200th Air Defense Artillery, New Mexico Army National Guard, is a Chaparral battalion headquartered in Springer, N.M. We have units in Raton, Clayton, Taos and Espanola. Our mission is to provide air defense for combat elements against low-altitude hostile aircraft as part of the 11th ADA Brigade supporting XVIII Airborne Corps.

We have directed our efforts toward fielding the Chaparral weapon system and 16P transition training. MOS qualification has vastly improved throughout the battalion,

allowing the units to concentrate their efforts on collective training this year.

We ensure that our soldiers are gainfully employed with realistic mission training, which creates a team atmosphere within the unit and enhances our recruiting and retention programs. The leadership training programs we started for our officers and NCOs have immensely improved their efficiency and capabilities.

Collective training is our priority this year, specifically squad- and platoon-level mission-related tasks.

7th Battalion, 200th Air Defense Artillery



Lt. Col.
G. Mendoza Jr.

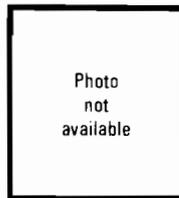


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CSM
R. Gonzalez

The 7th Battalion, 200th Air Defense Artillery, New Mexico Army National Guard, located in Rio Rancho, N.M., is the first Hawk battalion in the Reserve Component structure. Our mission is to provide air defense against low- to medium-altitude hostile aircraft. We presently have three firing batteries and the 804th Maintenance Company (DS).

In 1988, we participated in Green Flag exercises at Nellis AFB, Nev., with the 1-43rd ADA. This exercise demonstrated the interoperability of a Reserve Component ADA unit with a sister Active Component HIMAD

unit and the U.S. Air Force. We also conducted extensive individual training in preparation for MOS qualification.

In 1989, our primary training objectives are maintenance training, completing individual MOS qualification and beginning collective training in preparation for operational readiness status and an external ARTEP.

During our 1989 annual training we will conduct extensive collective training in a field environment at Fort Bliss, Texas, emphasizing maneuver, emplacement, integration and multi-echelon training.

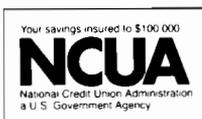
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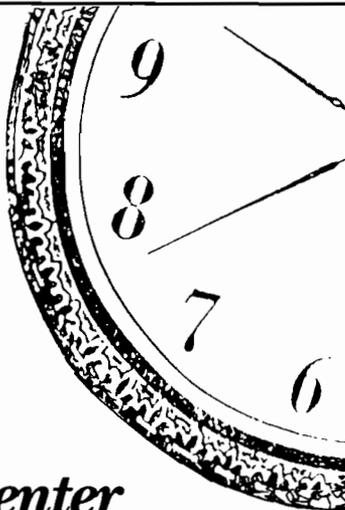
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164th Air Defense Artillery Brigade



Col.(P)
J. F. Campbell Jr.



CSM
J. L. Calkins

The 164th Air Defense Artillery Brigade, headquartered in Orlando, Fla., commands and coordinates the operations of subordinate ADA battalions and other assigned and attached units.

1988 was a productive year for our brigade. We oversaw the activation and reorganization of two Chaparral battalions (1-265th ADA and 3-265th ADA) and one Hawk battalion (2-265th ADA). This included the activation of the brigade Headquarters and Headquarters Battery.

Our goal for this year is to receive the equipment fielding for the two

Chaparral battalions and the 1265th Maintenance Company.

1st Battalion, 265th Air Defense Artillery



Lt. Col.
H. D. Randall



CSM
D. M. Rich

The 1st Battalion, 265th Air Defense Artillery, a Chaparral battalion in Daytona Beach, Fla., supports the 42nd Infantry Division. We provide air defense for forward combat elements, areas or installations against low- to medium-altitude hostile aircraft.

Last year we deployed with Chaparral fire units of the New Mexico National Guard to complete the last phase of our weapon system training prior to receiving the Chaparral this year.

Our unit strength is over 75 percent in the new headquarters, and our to-

tal battalion strength stands at 98 percent.

This year we look forward to receiving 36 Chaparral fire units and to our first missile firing with the new system.

2nd Battalion, 265th Air Defense Artillery



Lt. Col.
J. C. Spencer



CSM
W. E. Russell

The 2nd Battalion, 265th Air Defense Artillery, located in Orlando, Fla., supports the Third U.S. Army. We defend forward combat elements, areas or installations against low- to medium-altitude hostile aircraft and reinforce the air defense elements of committed divisions.

Operating under a carrier unit identification code, we are continuing to work toward equipping, manning and training the battalion. We presently have 158 soldiers attending resident Active Component and professional education courses comprised of Hawk track (14D), BNCOC and OAC.

We have intensified our recruiting efforts to obtain our strength goal of 75 percent by no later than the end of this fiscal year. We will finalize the material/fielding plan with MICOM/NGB in August, and have begun planning the actual transfer and acceptance of equipment.

We have embarked on an intensive training program designed to achieve our battalion goal — activating a Hawk battalion capable of effectively and efficiently performing wartime and state missions.

3rd Battalion, 265th Air Defense Artillery



Lt. Col.
D. S. Eval



CSM
C. L. Doss Jr.

The 3rd Battalion, 265th Air Defense Artillery, is a corps Chaparral battalion located in West Palm Beach, Fla. The 3-265th ADA provides low- to medium-altitude air defense for corps level assets with the possible additional mission of reinforcing the air defense elements of committed divisions.

We are undergoing transition training from 16F (Duster crewman) to 16P (Chaparral crewman). We achieved last year's goal of 90 percent MOS qualification; thus, for this year, our goal is to not only sustain this level of individual training but also to devel-

op collective training at the squad level. We will schedule our non-MOS qualified personnel for attendance at an MOS-producing school.

Our other goals for 1989 include staff coordination, NBC, visual aircraft recognition and physical training. Recruiting and retention are also primary battalion goals to get to our 125 percent mandated strength.

263rd Air Defense Artillery Brigade



Lt. Col.
H. E. Thompson

The 263rd Air Defense Artillery Brigade, located in Anderson, S.C., is a VII U.S. Corps asset. Our mission is to command and coordinate the operations of subordinate ADA battalions and other assigned and attached units.

The brigade activated in July 1988 under a carrier unit identification code, which authorized us to recruit and train. By March 1989 we had attained a strength status of 58 percent, with a goal of 100 percent by October 1989.

We are very fortunate to have extremely qualified brigade staff com-

prised of ADA professionals whose selection was based upon their outstanding qualifications and accomplishments. Likewise, our National Guard warriors, our talented and professional NCOs, were selected and assigned in the same manner.

In October we will assist in activating the 1-263rd ADA Hawk battalion.

We are extremely proud to be a part of the ADA revolution and a member of the combined arms team. As air defenders in the Army of Excellence we are committed to providing our very best effort to be ready to accomplish our mission.

2nd Battalion, 263rd Air Defense Artillery



Lt. Col.
W. G. Butts Jr.



CSM
T. A. O'Dell

The 2nd Battalion, 263rd Air Defense Artillery, located in Anderson, S.C., is a National Guard Duster/Stinger battalion whose mission is to provide air defense for the 26th (Yankee) Infantry Division.

During FY 88, we conducted our annual training at Camp Blanding, Fla., where we underwent battery-level ARTEPs. We also provided a battery in support of the 218th HSB at Fort Stewart, Ga., and a Stinger platoon in support of the 26th Infantry Division at Gagetown, Canada.

We continued a reorganization and train-up under a new MTOE that

converted us to a Gun/Stinger battalion, and conducted intensive training in staff organization and procedures, Stinger MOS qualification and tactical deployment. Many soldiers participated in KPUP training with active component counterparts in Korea, Germany, Italy, Ecuador and CONUS assignments.

During 1989 we will participate in exercises at Camp Blanding, Fla.; Fort Stewart, Ga.; Fort Devens, Mass.; and Fort Bliss, Texas.

3rd Battalion, 111th Air Defense Artillery



Lt. Col.
J. A. Petterson



CSM
D. L. Hoover

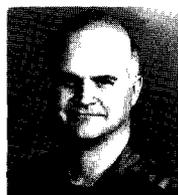
The 3rd Battalion, 111th Air Defense Artillery, is a Duster/Stinger battalion located in Portsmouth, Va. The 3-111th ADA supports the 28th Infantry Division but is under the administrative control of the 29th Infantry Division (Light). The 28th Infantry Division is currently forming its own air defense battalion and, as this progresses, we will form an increasingly close relationship with the 29th Infantry Division.

During 1988 we took part in the 29th Infantry Division's first JRTC rotation at Fort Chaffee, Ark., by providing a Stinger section for the

1-115th Infantry. We also conducted a successful external aerial ARTEP and our first ASP with missiles — we launched three Redeyes and scored three direct hits. All 36 Duster crews qualified. In addition, for the first time with the 29th ID, we participated in a division CPX.

In coming years this battalion will become a more integral part of the 29th Infantry Division. We plan to be fully capable, through attendance at the Light Leader Course and joint exercises, of "fighting light" alongside the rest of the "Blue and Gray."

1st Battalion, 138th Air Defense Artillery



Lt. Col.
G. D. Dix



CSM
M. H. Bush

The 1st Battalion, 138th Air Defense Artillery, was awarded a carrier unit identification code in Lafayette, Ind., in October 1987. The battalion federally activated in October 1988.

The battalion headquarters, Headquarters Battery and A Battery are in Lafayette. B Battery is in Boswell, 1st Detachment, B Battery is in Attica, and C Battery is in Rensselaer.

We spent our first year of training on introductory air defense doctrine and tactics. We had three training periods at Fort Stewart, Ga., and also had annual training at Fort Bliss, Texas, and Fort Campbell, Ky.

Our current emphasis is on MOS qualification for our 16S soldiers.

This year we look forward to annual training at Fort Campbell. We will also complete the 16S training we began last year.

2nd Battalion, 174th Air Defense Artillery



Lt. Col.
J. C. Wilder



CSM
D. E. Scott

The 2nd Battalion, 174th Air Defense Artillery, is a National Guard battalion located in Athens, Ohio. The 2-174th ADA supports the 38th Infantry Division as an organic air defense battalion in the VII Corps region of southwestern Germany.

Our battalion is beginning its transition to a Hawk battalion, which will officially activate in October. We expect to begin receiving Hawk equipment the same month.

Our new mission will be to organize, identify and slot key personnel. We will then begin to train personnel in Hawk MOS training schools.

We have an ongoing recruitment effort in McConnellsville, where our battalion will move in the future.

We look forward to training with Active Component Hawk units of the 11th ADA Brigade, Fort Bliss, Texas, and the 35th Brigade, Fort Lewis, Wash. We will also train with the 2-52nd ADA at Fort Bragg, N.C., and with the New Mexico Army National Guard.

1st Battalion, 188th Air Defense Artillery



Lt. Col.
A. W. Perleberg



CSM
P. M. Wang Jr.

The 1st Battalion, 188th Air Defense Artillery, is prepared for worldwide rapid deployment to provide short-range air defense coverage for critical assets of the 6th Infantry Division(L). We also provide air defense in support of the defense of Alaska and the initial defense of the Aleutian Islands.

Our battalion officially activated in October 1988. We are a new unit in the North Dakota Army National Guard and also the roundout ADA battalion for the 6th ID(L) in Alaska.

We conducted our first annual training as an ADA battalion in June

1988, when we traveled from our home base of Grand Forks, N.D., to Grafton, N.D. The 2-62nd ADA from Fort Ord, Calif., assisted us with Vulcan and Stinger training. Our other achievements include participation in Calm Wind, Cascade Peak and Callous Warrior with the 6th Infantry Division(L).

MOS qualification for our soldiers is our number one goal for 1989. We intend to participate in Brim Frost in Alaska and attend AT 89 at Fort Bliss, Texas.

1st Battalion, 202nd Air Defense Artillery



Lt. Col.
R. R. Harrison



CSM
R. E. Van Opdorp

The 1st Battalion (Stinger), 202nd Air Defense Artillery, is the 47th Infantry Division's air defense battalion. The unit's logo is "The Killer Bees." Units are located in Kewanee (HHB), Galesburg (A Battery), Galva (B Battery) and Dixon (C Battery), Ill.

Our unit, which reactivated in September 1988, has a long and proud history of air defense from Coast Artillery to Nike Ajax to Nike Hercules and now to pure Stinger. Our Active Component training association is with the 2-62nd ADA, 7th Infantry Division(L), Fort Ord, Calif.

During our initial year the warriors

of the Killer Bee battalion are undergoing an intense 16S MANPAD conversion as well as honing leader air defense tactics in support of the 47th Infantry Division in AirLand battle. To round out our first year we will perform annual training at Fort Bliss, Texas, where we will complete our 16S conversion.

1st Battalion, 213th Air Defense Artillery



Lt. Col.
J. E. Stevens



CSM
E. R. Fenstermaker

HHD, 164th MP Battalion, the 723rd MP Company and the 1068th MP Company will inactivate this July. These units will form the nucleus of an ADA (Stinger) battalion which will organize under a carrier unit identification code this August. The battalion will activate in October 1990 as the 1st Battalion, 213th Air Defense Artillery. The battalion's headquarters will be in Leighton, Pa.

We will conduct annual training at Fort Indiantown Gap in July and August. Our primary goal is to begin MOS training for MANPAD system crewmen.

Several of our staff members will participate in a battle command training program (Warfighter) exercise with the 28th Infantry Division.

During training year 1990, we will continue MOS training for MANPAD system crewmen with the objective of qualifying Stinger gunners at the completion of the training. We hope to conduct our 1990 annual training at Fort Stewart, Ga. This will allow our battalion to use the moving target simulator and to establish a training relationship with the 1-5th ADA.

HAWK EVOLUTION



Photo by James H. Dean

- MOBILITY (1994)**
- DIGITAL LAUNCHER
 - INDEPENDENT ORIENTATION/ALIGNMENT
 - DELETE LOADER
 - INCREASED SURVIVABILITY

- PHASE III (1989)**
- INCREASE FIRE POWER (LASHE)
 - IMPROVED ECCM
 - IMPROVED TRACKING
 - IMPROVED DETECTION
 - IOT
 - CPE

- PHASE IV (1998)**
- NEW SENSOR
 - MSL ADVANCE GUIDANCE (MULTI-MODE)
 - INITIAL ATBM CAPABILITIES
 - INSTITUTIONAL TRAINER
 - IMPROVED/DEDICATED COMMUNICATION
 - ARM DECOYS
 - STANDARDIZED FDC
 - TAS UPGRADE
 - ROCKET MOTOR PERFORMANCE UPGRADE

- PHASE V (200x)**
- COMMON HIMAD FIRE AND FORGET MSL
 - SENSOR UPGRADES
 - REMOTE LAUNCH
 - NETTED/DISTRIBUTED FIRES
 - HIMAD/FAADS C2 INTERFACE

been continually updated with state-of-the-art technology.

The Patriot-Hawk interoperability mix, which allows Hawk to share Patriot's advance target acquisition technology, has proven effective in numerous training exercises.

The three-decade-old Hawk continues to be the West's only combat-proven medium-range, land-based, surface-to-air missile. Hawk's amazing adaptability to new technology indicates that it may remain in the Army inventory for decades to come. Although Hawk's continued evolution may be slowed by budget cuts, its growth potential is virtually unlimited.

ATBM

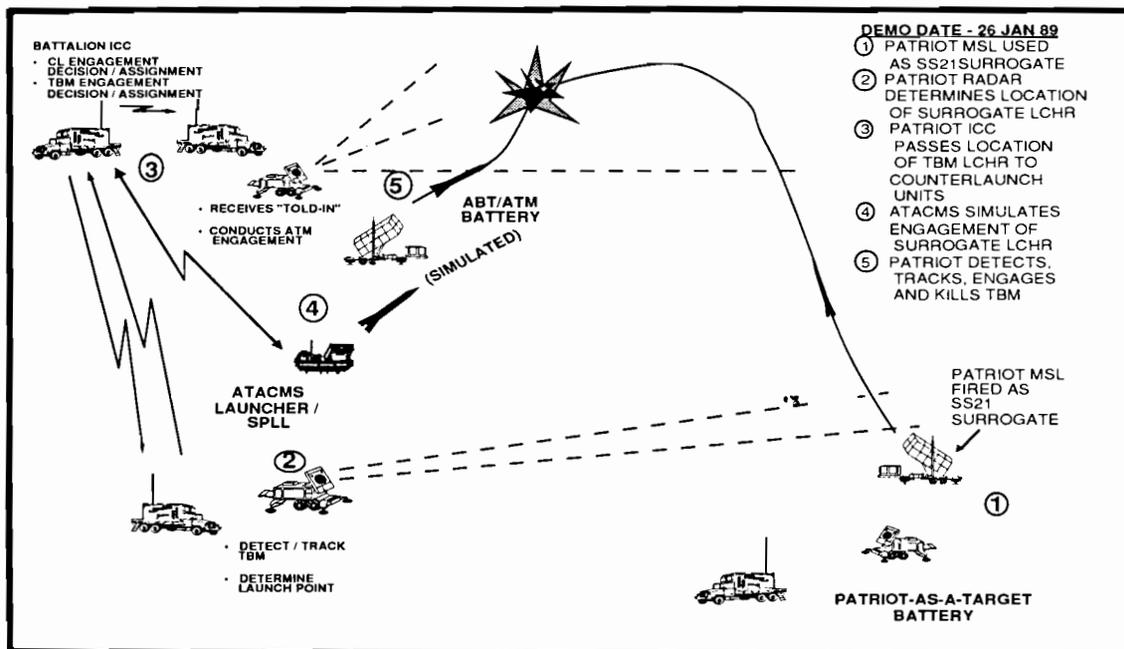
Patriot's anti-tactical ballistic missile (ATBM) capability is, perhaps, the most exciting HIMAD development. The ATBM challenge is widely misunderstood. The problem is not hitting the target. Since TBM trajectories, unlike those of jinking aircraft, are easy to compute, TBMs are much easier to hit than piloted planes. Both Patriot and Hawk have demonstrated pinpoint accuracy against TBMs. The most difficult challenge lies in detecting the TBM launch in time to take countermeasures.

Patriot Anti-tactical Ballistic Missile Capability (PAC) I improvements consisted of software modifications which included a new search mode, a new search waveform and revised detection criteria. They gave Patriot a self-defense capability against tactical ballistic missiles (TBMs) and growth potential for limited asset defense. PAC II improvements, scheduled for fielding in 1991, will include both warhead and software modifications to provide more effective self-defense as well as limited asset defense against TBMs.

The TBM problem, however, is far from solved. The Patriot Growth program is intended to give Patriot the capability to do more than defend critical assets and provide self-defense against TBMs. Radar enhancements, an advanced tactical Patriot missile or alternative/adjunct missiles plus a remote launcher capability will one day allow Patriot to provide area air defense against TBMs.

While there's no plan to turn Patriot into an offensive weapon that

COUNTERLAUNCH EXPERIMENT CONCEPT



could actively engage TBM launch sites, a recent experiment demonstrated Patriot's ability to relay timely target data. A Patriot fire unit recently teamed with an anti-tactical missile system (ATACMS) for a counterlaunch experiment that proved extremely successful. The Patriot detected a TBM launch, successfully engaged the TBM and, at the same time, determined the TBM launch site and relayed target information to the ATACMS in

time for the ATACMS to engage the TBM launcher.

Anti-Satellite Warfare

As work continues to counter the threat inside the atmosphere, planning is underway to give Air Defense Artillery the capability to accomplish a future mission: anti-satellite (ASAT) warfare. To control the battlefield, U.S. forces must control the space above the battlefield. This includes outer space.

Threat satellites are priority targets for obvious reasons. They allow the threat to detect massing or massed forces, thus eliminating the element of surprise. Satellites also allow the threat to degrade counterair effectiveness by analyzing air force strengths and capabilities and by detecting and targeting air defense sites. They afford the threat an opportunity to disrupt our combat operations by locating and targeting command links.

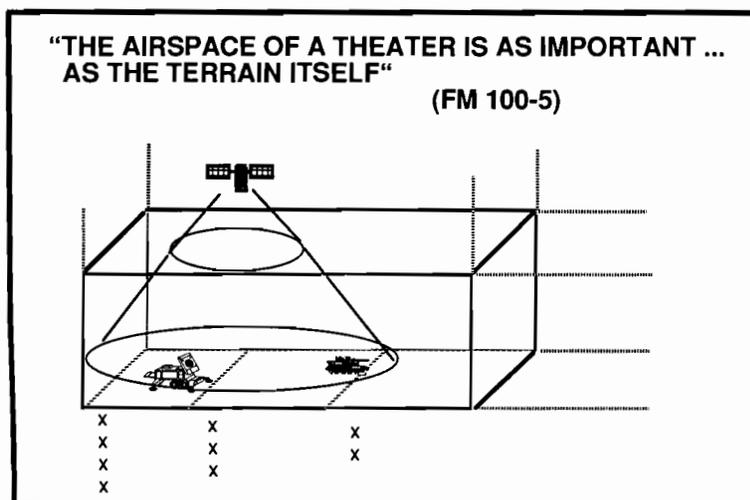
ASAT warfare, once the stuff of science fiction, is no longer considered futuristic. Consistent with historical ground-based air defense missions, the ground-based ASAT mission is expected to be assigned to Air Defense Artillery.

To accomplish the ASAT mission, air defense planners must not only develop sensors and warheads to detect, acquire and kill satellites; they must also create command and control and battle management centers capable of making decisions based on entirely new rules of engagement.

These are, in short, exciting times to be an air defender — particularly a HIMAD air defender. ✨

Col. Jeffrey L. Ellis is the HIMAD TRADOC System Manager, U.S. Army Air Defense Artillery School, Fort Bliss, Texas.

AIRLAND BATTLE AND SPACE CONTROL



(Continued from page 8)

Anti-Satellite (ASAT) Mission. While potentially a long way off and a political hot potato, the Army was recently assigned the ASAT mission, which will in turn be assigned to ADA. At the minimum, ADA links to what is commonly called "Star Wars" will pick up in tempo. Good linkage for technology transfer to a high-tech branch.

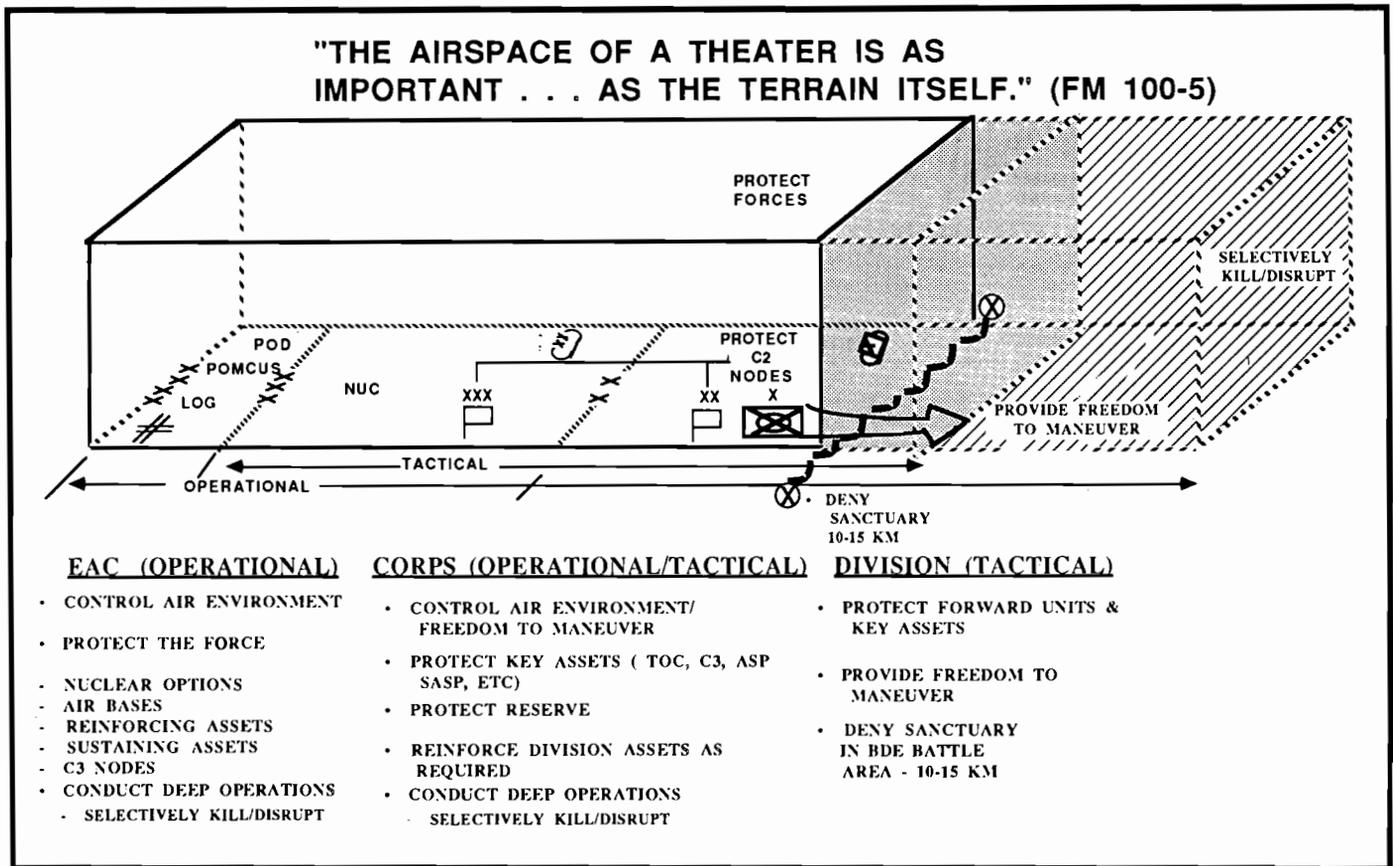
ADA Schoolhouse

Your schoolhouse at your home, Fort Bliss, exudes excellence! And it should and must, as it is the foundation of our future.

Even in times of diminishing resources, there are some things to which we must hang on. Small group instruction in your school-

vide more than a sound foundation. Equipment shortages in Patriot have become especially aggravating. We need to buy additional training devices for both the operator and maintenance courses. The expected large influx of allied Patriot students may help solve this problem. FAAD equipment shortages early on will also complicate

ADA MISSIONS FOCUS



Notice that these new missions are in addition to those missions we discussed in previous paragraphs. Notice also that ADA is the only combat arm that has a mission from the FLOT to EAC (and perhaps soon a strategic mission). Exciting times!

As you read this, FM 44-100 is being modified to reflect these changes. The figure above is a good summary of all these missions.

Doctrinal proficiency is everyone's business. We are doing better, but can get better.

house is one those non-negotiables. The reasons for which your schoolhouse exists and the grades I give the results are shown below.

Tactical Proficiency = "B." Across the board from OAC to ANCOG, good warfighting focus. Super understanding of ALB and the role of ADA. The tactical problems in our branch are caused by our field grades who are not as knowledgeable as our youngsters. Homework time for the field grades!

Technical Proficiency = "A+." Not enough time on equipment to pro-

training. But through dedication and good management, things will come out pretty good in the end.

Leader Development = "A+." No one in the Army is doing better in the area of leader development. Look into the eyes of lieutenants and captains leaving officer basic and officer advanced courses. Talk to your ANCOG graduates. These are leaders with high standards who know how to make things happen. From PT in the morning to the last class at night, they are ultimate role models teaching by "Do

as I do." Students selected as OBC or ANCOC small group leaders or for student battery command obtain a high honor reserved for a select few. The dividends far exceed the investment.

Your schoolhouse has no walls. We publish the branch's professional journal, *Air Defense Artillery*, six times a year. The publication invites field input. Share with others your great ideas. Share others' great ideas by reading *Air Defense Artillery*.

In short, be proud of your schoolhouse. The foundation for our future is secure.

Modernization

ADA has more new equipment under contract for delivery than any other branch. As we move into the 1990s, we will have quality equipment for integration with our quality soldiers.

Gen. Carl E. Vuono has clearly articulated our Army's priorities for the next decade:

- Retention of quality soldiers.
- Ensuring a trained and ready Army.

AIR DEFENSE MODERNIZATION AZIMUTH

- CONTINUE TO PROCURE AND FIELD CURRENT SYSTEMS
- EMPHASIZE CURRENT SYSTEMS P3I
 - PROVIDE CAPABILITY REQUIREMENTS TO MATERIEL DEVELOPER - PEO
 - FOCUS TECH BASE TO 2000+THREAT AND DOCTRINE - LABS
- MODERNIZE FORCE BY THIRDS (FORCE PACKAGES)
 - DEPLOYED
 - D + 30
 - FOLLOW ON FORCES
- TRADE OFF CAPABILITIES ASSUMING HISTORICALLY BASED LEVEL FUNDING (NO GROWTH IN ADA\$\$)
- ENSURE CONSISTENCY WITH COMPETITIVE STRATEGY CONCEPT
 - LEVERAGE TECHNOLOGY TO COUNTER SOVIET AIR STRENGTHS
 - FIELD WITHIN SOVIET MODERNIZATION CYCLE

- Modernization of the force.
Note that modernization is No. 3. This does not mean that moderni-

zation will not occur. This *does* mean that, with the budget decreasing, force modernization will occur at a slower rate than planned. ADA will need to pay its share of the decrease. "It ain't over 'til it's over," so we can all watch the defense budget battles and the resultant impact on ADA modernization. We have a lot of new systems coming and the progress within each one has been good. Thus, the ADA force modernization azimuth is summarized in the figure above.

Note our emphasis. Field what is now coming along. We must continue fielding Patriot and Hawk Phase III, and we must complete the testing and deployment of our new forward area air defense (FAAD) systems which include PMS, FOG-M, ADATS and FAAD C³I. Emphasize product improvement of these systems. This means large new system starts, such as the medium surface-to-air missile (M-SAM), will be delayed. Deploy our new systems to the highest threat area and to those who will fight first. Recognize that in the next decade ADA can expect only the dollar level established in the past decade.

An overview of what we must do given this azimuth is shown on the following page. Threat trends such

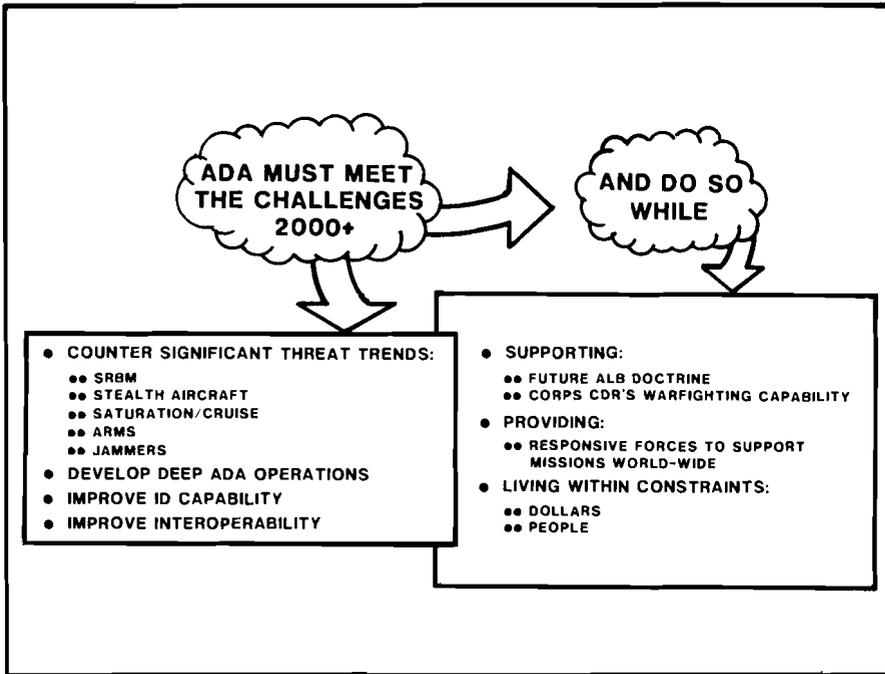
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ADA OVERVIEW



as small RCS/stealth aircraft will make our job more difficult. Note also the increased emphasis on the new mission areas mentioned above and our ability to support the corps commander.

FAAD, as we know, is a system of systems. Each system within this family has been progressing well. "FAAD Update" on Page 12 offers details on each system; however, here's an overview.

Pedestal-Mounted Stinger. Undergoing final operational tests prior to full-scale production and deployment to the field. A real success story.

ADATS. Initial production systems are now on hand at Fort Bliss. Scheduled for a series of technical tests leading to a full-scale operational test this fall at Fort Hunter Liggett. As this is the system that in some minds succeeded Sergeant York, expect a lot of media attention on this test.

FOG-M. Three prototypes are already at Fort Bliss. Learning is proceeding at an exponential rate! Exciting to watch a weapon that will revolutionize how we fight in the hands of air defense soldiers.

The Army success story, Patriot, continues to exceed expectations. The last planned battalion (the tenth) is training at Fort Bliss and will deploy to Europe this fall. The

first "roundout" batteries (which expand the firing batteries per battalion from three to six) are now training at Fort Bliss. Even more exciting is the tremendous potential growth remaining in Patriot. Patriot will remain the cornerstone of ADA into the year 2000 and will continue to send the threat back to the drawing board.

Caring for ADA Warriors

Officer promotion and career development continues to be about as

good or better than the remainder of the Army. Thus, officerwise, ADA is healthy.

What needs our overall attention is noncommissioned officer career and professional development. NCO promotions for a few MOSs will be far in excess of Army averages. However, for about one-half the force, promotion rates will be no better than equal to the Army averages. This imbalance remains by far the most serious problem in our branch. We must all address this imbalance.

The chain of command must insist on officer involvement. Anticipate boards and make sure record EERs are completed on time and with the same care given OERs. Develop a logical rating scheme that rewards your good soldiers. Have a plan for file reviews. Push the true "below the zone." Remember, soldiers are our most important asset.

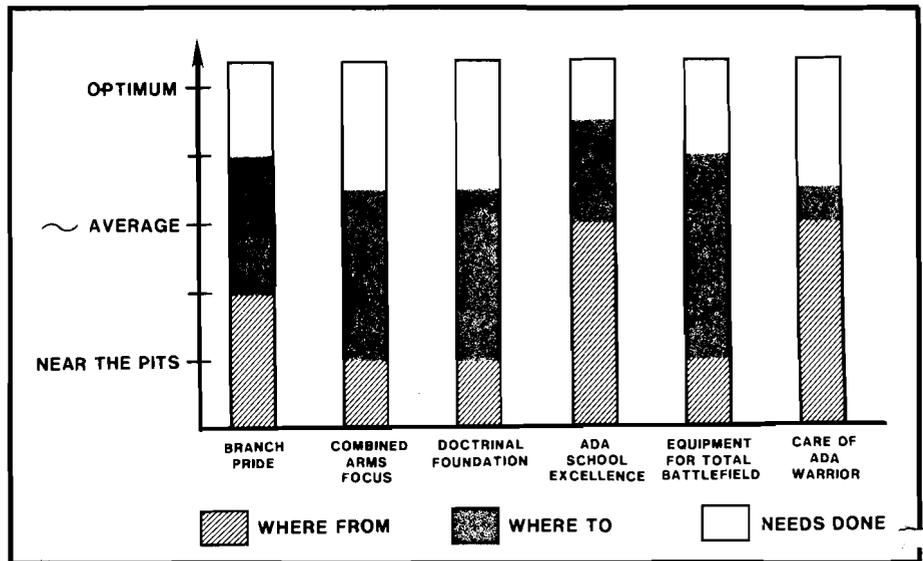
In summary, much progress over the past few years. Thanks to each of you for your great support. However, much remains to be done. Know you're up to the challenge. We'll make it happen. There is nothing air defenders can't do with class and style!

ADA — not yet perfect but improving.

First to Fire! ✨

OKI

ADA BRANCH REPORT CARD



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Government Electronics Group

Aggressive product improvement programs have rehoned the fighting edges of older SHORAD weapons

SHORAD Update

by Lt. Col. Michael Rosebeary

The objective of the Army's AirLand Battle doctrine is to seize the initiative, go on the attack and win the battle. The objective of Air Defense Artillery is to give the commander freedom to maneuver without the threat of enemy air attack. Short-range air defense (SHORAD) weapon systems accomplish this mission within the low-altitude boundary of the battlefield.

Stinger

The Stinger, designed to counter high-speed, low-level ground attack aircraft, proved its worth in the hands of the *Muhajideen* in Afghanistan. Reports of Stinger in Afghanistan began to appear in the U.S. press in January 1987. Today, almost any article to be found on Afghanistan mentions the Stinger's contribution.

Many observers credit the Stinger with forcing, or at least hastening, the Red Army's exit from Afghanistan. "They are leaving because of Stinger," said one rebel leader.

The *Muhajideen*, unable to counter Soviet Hind-Ds and Frogfoots, had failed to mount effective campaigns until the arrival of Stinger. The Stinger's arrival forced the Soviet and Afghan air forces to adopt ineffectual tactics. The advent of Stinger was akin to a rebirth for the *Muhajideen*, who quickly became expert at air ambushes.

According to the State Department, the *Muhajideen* shot down an

average of more than one aircraft per day — a success rate guaranteed to leave a lasting impression on the receiving party. "For nine years the dragon ruled the skies over Afghanistan," one rebel leader told *Time* magazine. "Now the dragon is dead."

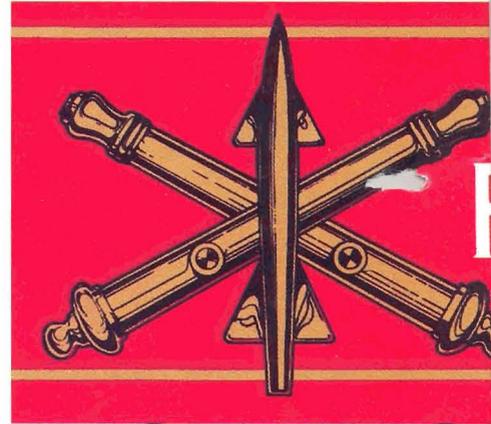
The U.S. Army is not as quick to credit Stinger with ousting the Soviets from Afghanistan. The Army's praise, however, is just as invaluable to the Stinger's budding reputation as a weapon of war:

- Required small investment; yielded large returns.
- Denied freedom of helicopter maneuverability.
- Complicated air support to ground forces.
- Forced a change in enemy tactics; increased risk calculations.
- Broke synchronization and tempo of enemy operations.

Since its entry into the Army in 1981, the Stinger has been criticized as an example of faulty human engineering: too heavy to carry across the modern battlefield and too light to knock anything out of the air. Critics stated the weapon was too complicated for the average American soldier to operate.

Stinger's performance in Afghanistan silenced the critics.

Let's look at the characteristics of the system that changed the course of war. The Stinger is a man-portable, shoulder-fired, infrared guided missile system. The Stinger is a fire-and-forget system with a range of more than two miles.



AIR DEFENSE ARTILLERY

FIRST ★ TO ★ FIRE

Clockwise from left: Product improvements have rehone the fighting edges of the Vulcan, Stinger and Chaparral short-range air defense systems.



A typical Stinger team includes a gunner and a team chief. The gunner aims the weapon and visually tracks a target using a sight assembly. The Stinger's separable gripstock assembly contains all the necessary circuits and assemblies that allow the gunner to interrogate aircraft and to prepare and launch missiles. Once the missile is launched, the gunner removes the gripstock assembly and reuses it on another launch tube.

There have been three versions of the Stinger. The second version of the guidance system used what was known as the Rosette image scan seeker. This technique, called passive optical scanning technique (POST), employed both infrared and ultraviolet detectors.

The current version is called the Stinger RMP, which stands for reprogrammable microprocessor. The RMP configuration is more computerized than previous models. It makes provisions for external programming, allowing the missile to be updated for new countermeasure developments or guidance enhancement without modifying the missile.

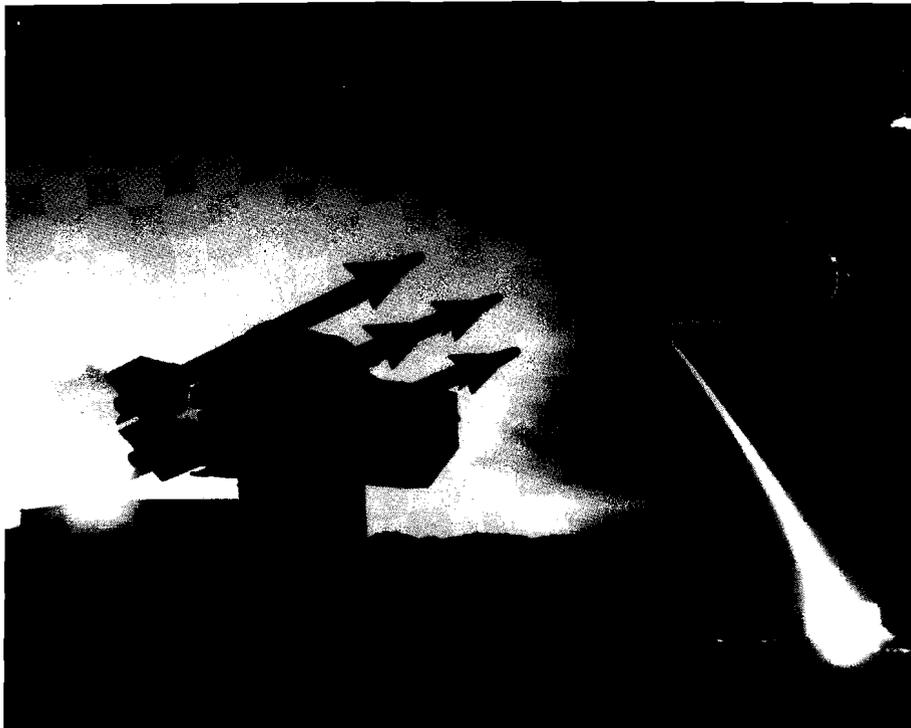
Almost 16,000 of the basic Stingers and less than 600 of the Stinger-POST missiles were produced. Officials expect to produce more than 60,000 of the RMP version.

Chaparral

The Chaparral, a self-propelled, surface-to-air guided missile system, joined the U.S. Army in the early 1960s. It is effective against aircraft and helicopters at ranges to about five miles. The system consists of a launching station, tactical missiles and a carrier.

The Chaparral launching station is an independent weapon system that can launch missiles when mated to or separated from the tracked carrier vehicle. This stand-alone system has its own power supply, communications, missile resupply and controls necessary for complete autonomous operation.

Twelve missiles make up the Chaparral's basic load — four on the launch rails and eight in the two missile storage compartments. These lightweight, supersonic, passive homing missiles use infrared radiation from the target for tracking.



The fuze consists of two units. The target detecting device senses the target and causes the warhead detonation. The safety-arming device prevents the detonation of the missile warhead during assembly, handling and the first 1,000 feet of missile flight. It also arms the missile so that detonation occurs after the missile has traveled a specific distance.

The Chaparral must remain a viable air defense weapon system past the year 2000. To accomplish this, continuous improvements are making the Chaparral system better able to cope with the future threat.

Recent modifications to the Chaparral, such as a forward looking infrared (FLIR) subsystem and missile improvements, have added a 24-hour all-weather tracking and engagement capability.

One improvement will be the repouring of the rocket motors with smokeless propellant to decrease the fire unit's detectability and susceptibility and to decrease the lag time between subsequent firings.

Changes in the master control indicator panel will reduce system downtime, maintenance and repair costs, improve overall system availability and improve operational readiness.

Chaparral is one of the air defense systems being replaced in the Active Component by the new FAAD systems. In 1984, the U.S. Army Air Defense Artillery School presented a plan to the Department of the Army to give Chaparral to the Army National Guard, thus creating the Army's first corps Chaparral battalion. New Mexico took the lead. The 1-200th ADA converted from a division Duster battalion to a corps Chaparral battalion late in 1984.

The New Mexico Army National Guard now has five corps Chaparral battalions at various levels of training and with varying levels of equipment on-hand.

Florida, which had only a Duster Army National Guard battalion two years ago, now has a corps ADA brigade headquarters and two Chaparral battalions.

Of all ARNG Chaparral units, the 3-265th ADA of Florida is unique. It activated in October 1988 with an HHB and one firing battery. Its other two firing batteries belong to the Active Component and are attached to the 5-5th ADA in Korea. Upon mobilization and deployment, the firing batteries will revert to the control of the 3-265th ADA. Only after the 5-5th ADA receives the pedestal-mounted

Stinger, the first of the FAAD systems, will the Chaparral fire units be transferred to Florida.

Chaparral will join the state of Arkansas when the 1-233rd ADA activates as a corps Chaparral battalion in FY 90.

Although Chaparral will end its days in the Reserve Component, it still stands ready to serve in the Active Component. Chaparral has moved out of heavy divisions into newly formed corps Chaparral battalions. The Active Component now has three corps Chaparral battalions: Fort Lewis, Wash., Fort Hood, Texas, and Fort Stewart, Ga. The more distant future will see additional corps Chaparral battalions activating in Europe.

Vulcan

Antiaircraft guns were considered obsolete prior to the American escalation in Vietnam. The Army had turned its antiaircraft guns over to the Army National Guard and air defense artillerymen were already being called missilemen. The Army was forced to scrounge M-42 "Dusters" and Quad 50s from the National Guard to equip automatic weapon battalions for Vietnam. The automatic weapon battalions began arriving in Vietnam during 1966.

The realization that gun systems might not be obsolete after all explains Vulcan's appearance alongside weapon systems from Air Defense Artillery's past, the Dusters and the Quad 50s. Even though the air threat never put in an appearance over the southern portion of the battlefield during the American involvement, Vietnam played an important role in shaping our branch by ensuring that gun systems would continue to be a part of the Air Defense Artillery weapons mix.

The 1st Vulcan Combat Team deployed to Vietnam for combat evaluation in November 1968. Scheduled to leave in March 1969, it stayed an additional 45 days to finish mopping up after the 1968 Tet Offensive. The team consisted of five squad leaders, two officers and 21 enlisted men.

The Vulcan joined the battle in Vietnam on Highway 13 near Quan Loi. Six armored cavalry assault vehicles and one Vulcan were clearing the road when they were ambushed by the NVA. During the

first critical minutes of the ambush, the Vulcan was the only weapon delivering effective fire against the ambush.

"Without the single Vulcan the unit would have been annihilated," said the cavalry commander. "The survival of my unit during the first critical minutes of the ambush can be attributed to the Vulcan's ability to engage the enemy quickly and place a high volume of fire on the target."

Vulcan had passed its combat test.

The Vulcan gun system has two configurations: self-propelled and towed. The self-propelled Vulcan is a track-mounted system normally deployed with mechanized infantry and armored divisions. The Vulcan is effective against aircraft and helicopters at ranges to about one mile. The Vulcan also provides effective ground fire.

The 12-ton self-propelled Vulcan consists of a 20mm cannon mounted on a full-tracked modified M-113 armored personnel carrier. The carrier provides space for a crew of

four, auxiliary equipment and the crew's personal gear.

The Vulcan's six-barrel, 20mm gatling-type gun has a low firing rate of 1,000 rounds per minute and a high firing rate of 3,000 rounds per minute. The gun may fire in bursts of 10, 30, 60 or 100 rounds. The self-propelled Vulcan can be fired on the move, but the fire is much more accurate when the weapon is emplaced.

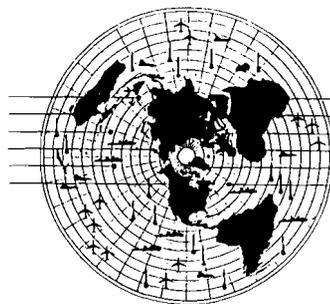
The towed Vulcan consists of a 20mm cannon and a fire control system mounted on a trailer carriage. The prime mover can be any of several types of vehicles, including a two-and-a-half ton truck. The towed Vulcan is air-portable and can be air dropped.

Since the towed Vulcan uses the same cannon, radar and ammunition as the self-propelled version, the weapons' characteristics are similar. The towed Vulcan is used in non-divisional Chaparral/Vulcan battalions and Vulcan battalions organic to airborne, air assault, motorized and light infantry divisions.

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The original Vulcan air defense gun cannot engage with total success today's high-performance aircraft. With its disturbed line-of-sight and the need for more gunner involvement, Vulcan is at a disadvantage in a high-technology environment. The Army's solution to Vulcan's problem is PIVADS.

PIVADS, or product improved Vulcan air defense system, is a modification that improves effectiveness and reliability.

The PIVADS kit is being installed in both the towed and the self-propelled versions of the Vulcan. The towed and self-propelled configurations of the PIVADS are

called the M-167A2 and M-163A2 respectively.

The PIVADS kit modifies the gunner sight, target-tracking computer, turret drive gears and fire control system. The kit also includes a built-in test capability that automatically identifies and isolates failures.

PIVADS improves the Vulcan's probability of hit by accurately predicting target lead angle. This is done by modifying the existing optical sight to a director-type sight, by replacing the Vulcan's azimuth gearbox system with a harmonic drive assembly and by replacing the existing analog computer with a digital microprocessor.

The Army began the PIVADS modification at Redstone Arsenal, Ala., in February 1988. March 1988 saw the PIVADS making its move: it joined four European battalions and it also joined the ranks at the U.S. Army Air Defense Artillery School, Fort Bliss, Texas. To date, the school and the U.S. Army Training Center, also at Fort Bliss, share a total of 17 PIVADS.

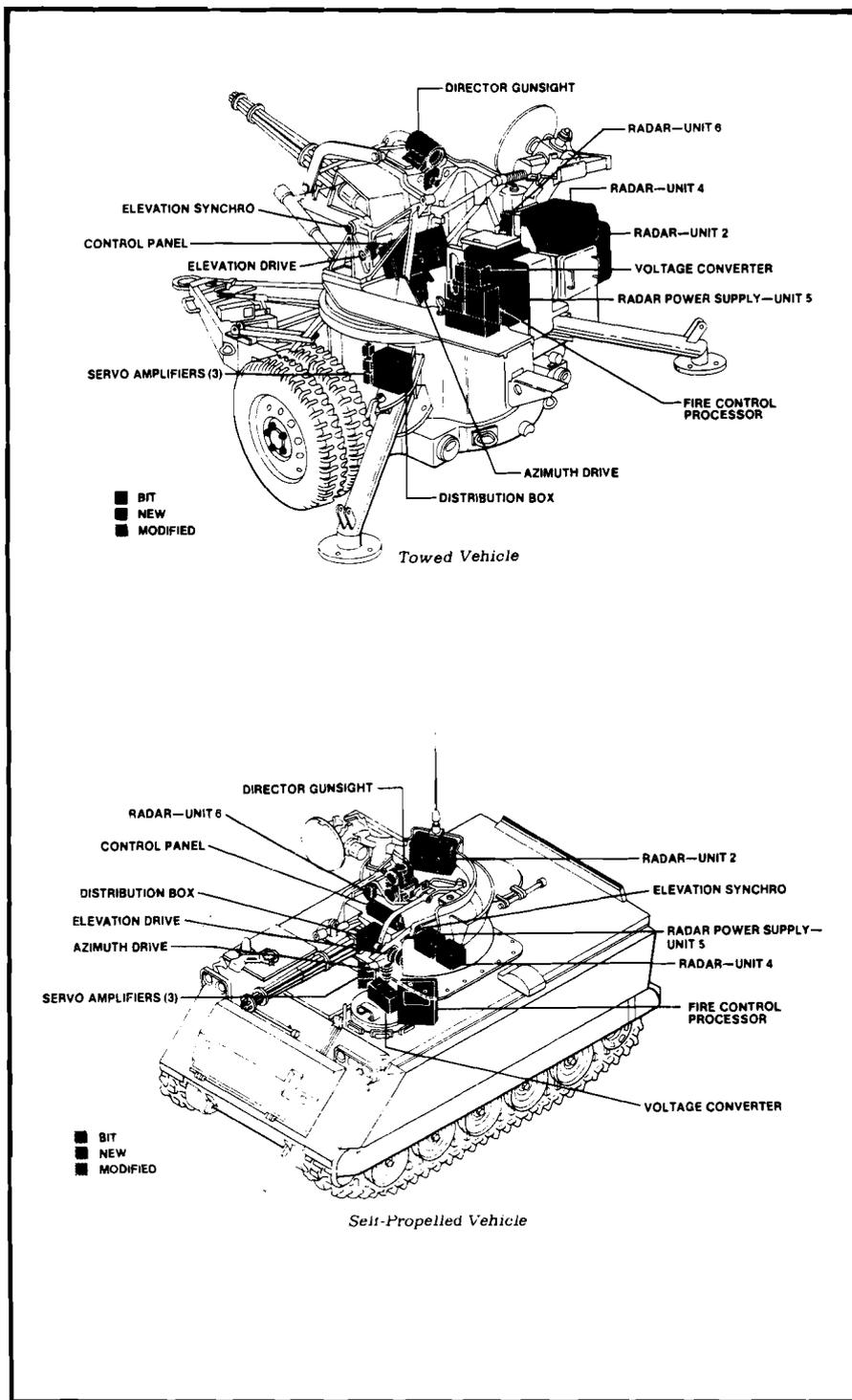
The Army has purchased 285 kits, and six prototypes have already been converted to production models. PIVADS is presently being applied at the 3-4th ADA, Fort Bragg, N.C.

If FAAD system fielding is successful, Vulcan air defense gun systems will be fielded to Army National Guard units by the mid to late 1990s. The towed Vulcan is already with the 1-188th ADA of the North Dakota National Guard, supporting the 6th Infantry Division (Light). If the Active Component modernization proceeds as planned, the 3-111th ADA, Virginia Army National Guard, will trade in its Dusters between 1991 and 1993.

As SHORAD weapons join the ranks of the Reserve Component, Active Component SHORAD soldiers eagerly anticipate the resultant changes.

Air Defense Artillery plans to convert SHORAD soldiers to FAAD MOSs. The soldiers that have manned the Chaparrals, Vulcans and Stingers of the past will man the forward area air defense weapons of the future.

THE PIVADS ADVANTAGE



Lt. Col. Michael Rosebeary is the director of the SHORAD Department, U.S. Army Air Defense Artillery School, Fort Bliss, Texas.

FAAD C²I... A new capability for Air Defense

TRW



(Continued from page 20)

Command's Research, Development and Engineering Center, Redstone Arsenal, Ala., first demonstrated fiber-optic guidance systems in 1979. Several aerospace contractors, among them Boeing and Hughes Aircraft, gathered vital data on fiber-optic guidance technologies and began to focus on FOG-M's high-tech battlefield potential. In November 1985, the FOG-M, after successful missions against armored targets, hit a stationary helicopter. The following February, it hit a moving helicopter. In December 1986, the Army released a draft RFP to industry.

In November 1988, the Army selected Boeing Military Airplanes and Hughes Aircraft Co. to begin full-scale development. Boeing is responsible for the gunner's station and system integration while Hughes is responsible for training devices and missiles.

A full-scale development contract was awarded in December 1988. Air defense soldiers are currently putting a prototype NLOS through an initial operational evaluation at White Sands Missile Range, N.M. Boeing-Hughes is scheduled to deliver eight prototypes (four light and four heavy) and 40 missiles (20 TV and 20 IIR) in early 1991 for further evaluation.

LOS-R

Tentatively nicknamed the "Avenger," the Pedestal Mounted



Pedestal-Mounted Stinger is the Free World's first shoot-on-the-move air defense weapon.

Stinger (PMS), as the LOS-R component is known, is destined to become the most common ADA weapon. Boeing delivered the first production model PMS in November 1988 — just 34 months after

the secretary of defense approved the FAAD concept. The Army hopes to eventually purchase 1,207 PMS fire units.

The PMS is the Free World's first shoot-on-the-move air defense weapon. Its role in FAAD is primarily to defend against fixed-wing aircraft attacking our command, control and communications centers or other critical assets such as ammunition supply dumps. It will normally be deployed no farther forward than the battalion rear boundary. Mounted on a high-mobility multipurpose wheeled vehicle, the PMS packs eight ready-to-fire Stinger missiles. An M-3P 50-caliber machine gun covers the Stinger dead zone and provides close-in self-defense. Manned by a two-man crew but fully integrated into the FAAD C³I network, PMS yields optimum savings in manpower while maximizing the Stinger missile's potential.

The proven effectiveness of Stinger missiles against threat aircraft in Afghanistan, PMS' extreme versatility and its relatively low cost combine to make the system a winner.

PEDESTAL-MOUNTED STINGER

PROGRAM PROGRESS	CANDIDATE EVALUATION COMPLETED	CONTRACT AWARD	FDTE I	FDTE II	IOTE	FUE
	JUL 87	AUG 87	JUN 88	FEB 89	MAY 89	APR 89

<p>SYSTEM FEATURES</p> <ul style="list-style-type: none"> • MOUNTED ON HMMWV • USES HIGHLY SUCCESSFUL STINGER MISSILE • MOUNTS MACHINE GUN FOR SELF DEFENSE • DAY/NIGHT & ADVERSE WEATHER • RETAINS MAN PORTABLE CAPABILITY • SHOOT ON MOVE • SIMPLIFIES GUNNER TASKS • 8 READY-TO-FIRE MISSILES 	<p>ACQUISITION FEATURES</p> <ul style="list-style-type: none"> • BOEING AVENGER SELECTED AUG 87 • TOTAL BUY 1207 • 36 IN FAAD HEAVY BATTALION • PRINCIPLE ADA WEAPON FOR LT/SP DIV
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Perfect in the field.

Six missile hits out of six firings. That's the field-proven record of Hughes Aircraft Company's TPQ-36A air defense surveillance radar.

Tests show that accuracy is only one reason to deploy this highly advanced radar system. In a HAWK application, the TPQ-36A radar provides for significant reduction in system reaction time while supporting a significant reduction in required force structure.

Other tests have demonstrated the TPQ-36A's ability to track as many as 64 aircraft while continuing to operate effectively.

Behind the system's enviable performance is state-of-the-art technology, much of it based on the U.S. Army's highly successful battlefield tested AN/TPQ-36 radar.

Low sidelobe pencil beams sweep the skies from treetops to cloud tops, making the TPQ-36A a formidable opponent for aircraft flying anywhere from 15 to 45,000 feet. And once it detects a target, the TPQ-36A supplies three dimensional tracking data for faster track and lock and classification of fixed and rotary wing aircraft. The software and hardware are

jammer resistant and designed for a high level of survivability against anti-radiation missiles.

Most important, this highly accurate battlefield radar is ready to go.

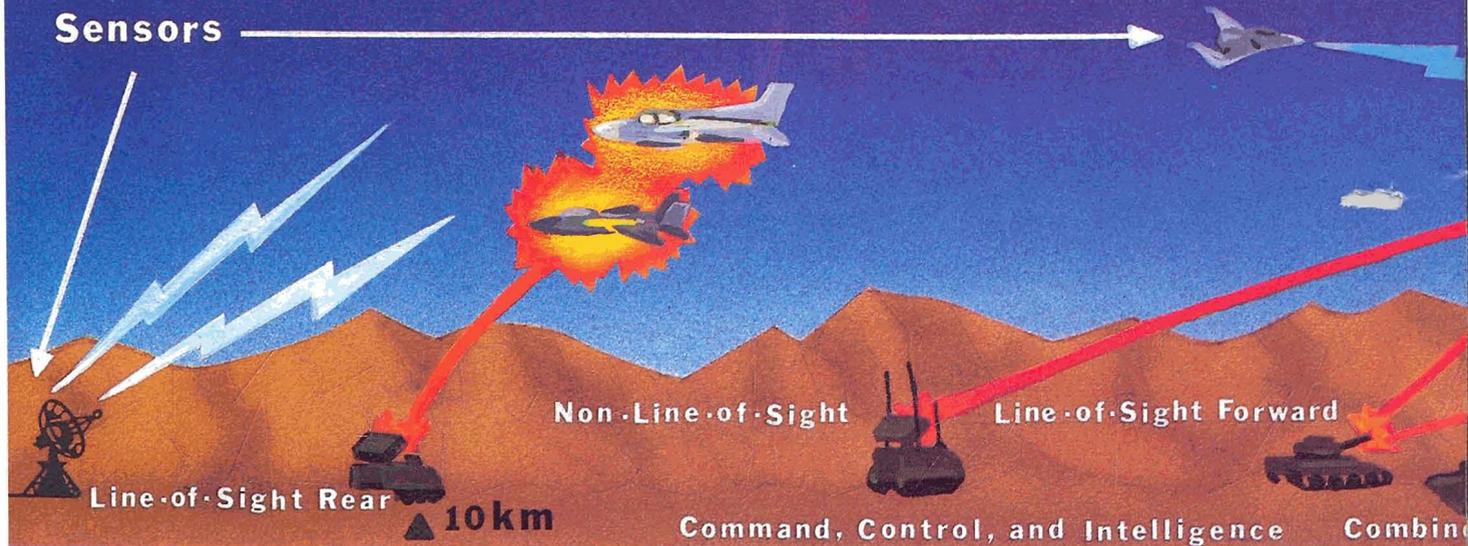
Now.

With the TPQ-36A in the field, as part of the Forward Area Air Defense System, the U.S. Army just can't miss.

HUGHES

Subsidiary of GM Hughes Electronics

FAAD ENGAGEMENT



C³I

The C³I element consists of computer software and hardware, communications equipment, identification devices, ground-based sensors and, eventually, aerial sensors (referred to, in FAAD

terminology, as masked target sensors).

The software component of FAAD C³I has been under contract to TRW since 1986. A restructuring of the software development program is currently underway, and TRW is scheduled to deliver initial

software for testing in FY 91. TRW is also responsible for integrating all hardware components to form the C³I systems which will be fielded in FY 93.

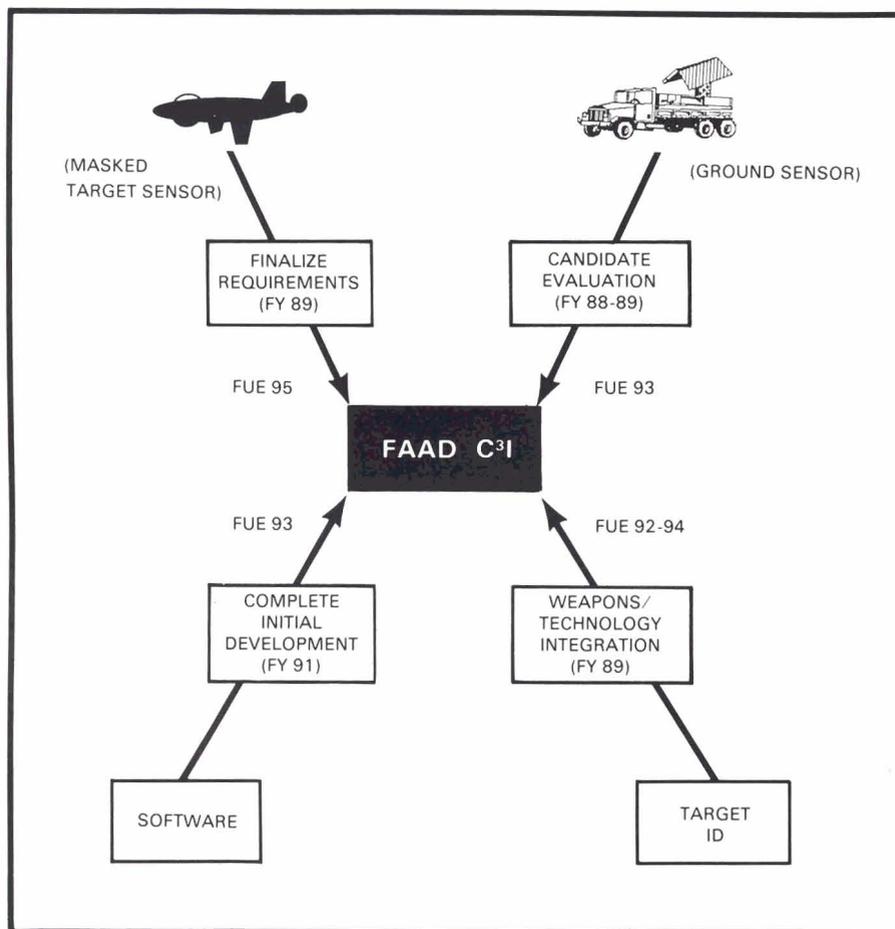
Computer hardware (processors, displays, printers and input/output devices) is being provided by the program manager for common hardware and software under a contract to MILTOPE awarded in August 1988. This hardware is the nucleus of the C³I network.

Communications for FAAD C³I consists of voice and digital radio systems. The voice radios will be from the family of new radios currently being added to the Army inventory. Data communications radios which allow C³I information to be distributed throughout the network in real-time are being provided under a program called the Army Data Distribution System managed by the Program Executive Office for Communications. The digital radios are the Enhanced Position Location Reporting System (EPLRS) and the Joint Tactical Information Distribution System (JTIDS).

In August 1989, the Army plans to award a contract for the initial four pre-production sensors needed to support C³I testing. Awarding of additional contracts to purchase the remaining 123 ground-based sensors required for FAAD depends on the outcome of further technical and operational testing.

The FAAD C³I system will receive and process air target identification information from both cooperative (identification, friend or foe [IFF]) and non-cooperative target recognition (NCTR) devices.

C³I — THE FAAD CENTRAL NERVE SYSTEM





The C³I system will incorporate a new technologically advanced IFF system, the Mark XV, as a means for identifying friendly aircraft. However, the new technology NCTR devices being developed for sensors and weapon systems will become the primary means for distinguishing between friendly and enemy aircraft due to their ability to passively acquire identification information. The capability provided by the identification devices will allow FAAD weapon systems to engage hostile aircraft beyond visual identification ranges and, more importantly, will protect friendly aircraft in the area from friendly fire.

The masked target sensor (MTS) component of C³I will provide surveillance of the airspace beyond the forward line of troops (FLOT) and acquire targets hidden from the ground-based sensor due to terrain masking. The Army hopes to finalize MTS requirements and release a request for proposal this summer. The first MTS is scheduled for fielding in FY 95.

C³I, with its numerous components, is commonly referred to as the "glue" that binds the FAAD system into a system of systems. It integrates all FAAD weapon systems, providing them, as well as the combined arms team, all data necessary to ensure a maximum effective defense against enemy air in the forward area.

CAI

CAI is the least publicized FAAD component, but this combined arms component is a vital part of the FAAD concept. The major ingre-

dients are the Air-to-Air Stinger system (ATAS), an improved sight for the Bradley Fighting Vehicle and improved tank main gun rounds.

ATAS will, for the first time, give our helicopter pilots a counterair punch. This means air defenders will receive badly needed reinforcements in any battle against the threat's formidable array of attack helicopters. Plans call for ATAS to be mounted on AH-64s, OH-58s, AH-1s and UH-60s.

The ATAS was mounted on the OH-58C/D Kiowa during ATAS Phase I testing. Phase II is now underway. McDonnell Douglas support personnel and General Dynamics missile technicians converged on Yuma Proving Ground, Ariz., in March 1989 to test the integration of ATAS with the AH-64 Apache.

The Apache's wingtips were modified to accept launcher racks. The Stinger missile tubes mount on the launcher rack with virtually no modifications. A General Dynamics electronic interface links missile information to the crew by generating ATAS symbology to the appropriate display. The black box also incorporates the Apache's integrated helmet and display sight system and target acquisition and designator sight — a significant improvement over Phase I ATAS integration.

The Bradley Fighting Vehicle recently was fitted with a new optical sight that makes it easier for Bradley gunners to engage aircraft. The funding for further sight reticle engineering improvements, however, has been eliminated. The Army has

awarded a contract for the development of improved tank main gun rounds that will increase their effectiveness against aircraft.

FAAD Esprit

Although they have yet to be fielded, the FAAD systems, along with the fielding of Patriot, have already done much to restore the pride and confidence all of us feel in being a part of Air Defense Artillery. Our enhanced capabilities, emerging as they are at a time when the simulation of the third dimension of combat in combined arms training has been vastly improved, are changing the way other branches feel about Air Defense Artillery.

For example, a task force commander recently stated that it would be pointless to deploy blue forces at combined arms training centers without adequate air defense coverage because the result would be pre-ordained: the blue forces would be quickly destroyed by the red force's airpower. OPFOR pilots are also eloquent in their support of FAAD. "If we did not get shot down by a FAAD system missile," said a rotary-wing pilot, "it should be noted that the constant maneuvering and low altitudes we had to fly to survive often precluded us from reaching our assigned objective with a valid targeting solution. This act in itself is ultimately the objective of the air defense units whose job it is to protect the maneuver force." ✪

Col. Glenn A. McLeod is the FAAD TRADOC System Manager, U.S. Army Air Defense Artillery School, Fort Bliss, Texas.

Battle Focus

by Brig. Gen. Jay M. Garner

Our capstone doctrinal manual, FM 100-5, *U.S. Army Operations*, says that the most essential element of combat power is competent and confident leadership:

"In the final analysis and once the force is engaged, superior combat power derives from the courage and competence of soldiers, the excellence of their training, the capability of their equipment, the soundness of their combined arms doctrine and, above all, the quality of their leadership."

This excerpt from FM 100-5 touches upon everything your Air Defense Artillery School does. If leadership is the most essential element of combat power, then competent and confident leadership at all levels is our most essential product.

New leadership doctrine, soon to be published, will describe the type of leader the Army needs to execute the warfighting doctrine across the conflict spectrum. The ADA doctrinal capstone manual, FM 44-100, changes, clarifies and focuses the role of the air defense battlefield operating system on the AirLand battlefield. The ADA leader must then be full able to fulfill his or her role and perform the mission of Air De-

fense Artillery in support of combined arms operations.

Because of the need for this AirLand battle leader, the ADA school began two years ago to change the way we train ADA leaders. The pace of change is accelerating. We are capitalizing upon new and refined training strategies, lessons learned from our battlefield laboratories, the combat training centers and a battle-focused approach to training challenges to bring the smell of battle into the classroom. We extensively use history such as the great air defense battles of Corregidor, Kasserine Pass, Normandy and Remagen as well as the real-life experiences of those air defenders who fought those battles to transport the smell and feel of the battlefield to the classroom.

Battle-focused training is derived from the Army's capstone manual for training, FM 25-11, *Training the Force*. Essentially, battle focus is realizing that we cannot hope to achieve an acceptable level of proficiency in everything we and our soldiers are supposed to know from the totality of the Army's requirements. There are simply not enough resources, especially in an era of declining budgets with its adverse impact on time, equipment and money. Battle focus forces us to reflect upon our assigned wartime

missions as stated in mission essential task lists (METLs) and supporting tasks which allow us to concentrate resources to training that directly supports our ability to successfully execute wartime missions.

This is more revolutionary than it sounds. Service schools are something like universities. The illusion has been that, by cramming soldiers' heads full of every conceivable detail, we produce more capable soldiers. The reality is that we produce soldiers with a smattering of knowledge in many skills but real expertise in none. Battle focus recognizes that we cannot do a good job while teaching everything, so we should instead concentrate our efforts on training soldiers in those skills they will need to fight, win and survive on the battlefield.

Battle focus is also an attitude; a winning attitude toward training. History demonstrates that combat tends to disintegrate into chaos and confusion. Battle focus contends that we can equip our soldiers with the tactics, techniques, weapons, skills and the mind set required to cope with contingencies of warfare. Our soldiers will enter the "fog of battle" not with a sense of bewilderment, but of confidence in their ability to turn the chaos and confusion of the battlefield to their

USAADASCH



Maj. Gen.
D. R. Infante
Commandant



Brig. Gen.
J. M. Garner
Asst. Comdt.



Col.
D. C. Ingram
Dep. Asst. Comdt.

Produce fightable, combined arms oriented doctrine, tactics and techniques.

Produce ADA officers, NCOs and soldiers who are tactically and technically proficient.

Produce ADA leaders who realize the primacy of their roles as leaders and give them the tools to train their soldiers into a force that can survive and win in combat.

Produce ADA warriors educated in the art of war and prepared to execute the ADA battlefield operating system in AirLand battle.

Produce an effective ADA concept that results in the future fielding of effective equipment and organization.

Office, Chief of Air Defense Artillery



Col.
R. I. Moore

Develop soldier life-cycle programs that produce skilled soldiers to lead and man the ADA force.

Provide forums to foster branch pride and cohesion.

Challenge the ADA Force Integration to excellence as an honest broker.

Publish periodicals, pamphlets and newsletters providing coverage of ADA issues, developments and activities.

Ensure timely and thorough responses to field requests for assistance and information.

Directorate of Evaluation, Standardization, Concepts, Studies & Doctrine



Col.
L. A. Palumbo

Develop and disseminate air defense concepts for future warfighting.

Prepare operational and organizational plans for potential future ADA systems.

Represent ADA to the combined arms team.

Develop and disseminate ADA doctrine and tactics, techniques and procedures.

Develop and disseminate ADA field lessons learned to the force.

Conduct air defense studies and analyses in support of combat developments for ADA.

Directorate of Combat Developments



Col.
J. L. Starkey

Formulate future ADA material requirements and their logistical support.

Formulate test and evaluation concepts procedures for current and future ADA systems and associated materials.

Formulate tactical software requirements and provide guidance for its application.

Formulate future ADA systems organizational requirements.

Formulate battlefield architecture and field-user representative functions for ADA command, control, communications, interoperability and intelligence systems.

Directorate of Training Developments



Col.
W. H. Miller

Design and edit publications that promote fightable, combined arms doctrine, tactics and techniques.

Determine training capabilities and resource requirements.

Provide latest TRADOC guidance, doctrine, philosophy and other policy applicable to staff and faculty training, development training and other training support.

Cause training software for all computer driven training devices to remain current tools for training soldiers into a force that survives and wins in combat.

Analyze, design and develop Air Defense Artillery School staff and faculty training programs.

Develop ADA training concepts and strategies.

Conduct ADA training assessment and evaluation.

Initiate corrective action for training deficiencies identified through the concepts-based requirements system.

Prepare training device needs statements and training device requirements documents.

Prepare training support products.

Develop new aerial targets to support ADA training.

Manage the USAADASCH mobilization plan.

Create education techniques that help ADA warriors train to execute the AirLand battle air defense battlefield operating system.

Prepare Standards in Training Commission training programs.

Manage instructional support.

Schedule training.

SHORAD Department



Lt. Col.
M. L. Rosebeary

Develop and conduct SHORAD/FAAD resident courses.

Provide SHORAD/FAAD leaders with individual and collective training materials.

Train SHORAD/FAAD officers, NCOs and soldiers who are tactically and technically proficient.

Assist in developing the ADA concept for the future fielding of effective SHORAD/FAAD personnel, weapons and equipments.

Develop SHORAD/FAAD exportable training materials and products.

Patriot Department



Lt. Col.(P)
A. M. Kassim

Produce ADA warriors who are tactically and technically proficient in the Patriot air defense system.

Produce Patriot officers and warrant officers trained and prepared to support the AirLand battle.

Provide training devices that emulate the tactical system.

Coordinate and expedite supply and repair actions.

Produce Patriot warrant officers technically trained and proficient in maintaining Patriot in a combat-ready status.

Provide operational equipment for MOS and SSI training.

Hawk Department



Lt. Col.
R. M. Walker

Produce technically proficient Hawk system mechanics.

Produce proficient AN/TSQ-73 system operators/maintainers.

Produce technically proficient Hawk system maintenance officers.

Produce technically proficient AN/TSQ-37 system maintenance officers.

Tactics & Leader Development Department



Col.
E. P. Semmens

Produce ADA officers and NCOs of the Total Army who are tactically and technically proficient.

Be the center for ADA warfighting excellence.

Integrate tactical lessons learned from combined arms training centers into all leader instruction.

Furnish technically and tactically qualified officers to the other combat arms schools.

Prepare tactically proficient observers/controllers for the Army combined arms training centers.

Prepare ADA officers and NCO leaders for duty or command at their appropriate levels.

Produce leaders who realize the primacy of their roles as teachers and give them the tools to train their soldiers.

advantage.

The hard part of making battle focus work is maintaining the discipline required to keep the irrelevant and the superfluous — the “nice to have” rather than the truly essential — from creeping into the training process during day-to-day operations. This means saying “no” to even good ideas that are not derived from the METL. Newly articulated USAADASCH mission-essential tasks and the supporting METLs of its subordinate directorates and departments are shown on pages 69 and 70.

The ADA School has made tremendous strides toward reaching the goals implicit in the METL. Some of the progress made has been highly visible. The publication of FM 44-100 gives us fightable, combined-arms-oriented ADA doctrine. The continuing deployment of Patriot battalions and the metamorphosis of forward area air defense systems from concept paper to hardware are revolutionizing Air Defense Artillery. These new weapon systems give us a fully capable air defense system that complements our superbly trained leaders who fight the battle.

Leader Development

A less visible, but no less dramatic, revolution is occurring in the ADA classroom where the “fielding” of new ADA leaders will bear far greater consequences than the fielding of new weapon systems. To produce ADA leaders with “combat reflexes” who are capable of making the right decision at the right time under the stress of combat, we are bringing the “smell of battle” into the ADA classroom. Small group instruction, with its emphasis on how to think rather than what to think, its frequent field exercises, its study of military history and its careful analyses of lessons learned from our combined arms training centers, has done just that. We are producing confident and capable leaders able to instill their confidence in the soldiers they lead.

Our goals, in keeping with FM 25-100, are derived from the school’s METL. Our purpose is to produce, through battle-focused training and extensive wargaming, leaders instilled with the warrior spirit and skilled in the conduct of battle. Our philosophy is to teach

fundamental skills using multi-echeloned, combined-arms, challenging and performance-oriented tasks.

How We Execute

FM 25-100 training methodology applies to the ADA School as well as ADA field units. Our Tactics and Leader Development Department (TLDD) sets the azimuth for ADA leader development by making sure training stays aligned with the school’s METL-based mission training plan. The department provides both a front-end analysis of training needs and a follow-up assessment of training effectiveness. TLDD instructors teach leadership skills, embed the training methodology ordained by FM 25-100 and infuse doctrine set forth by FM 44-100.

TLDD also handpicks quality instructors. The staff consists of Officer Advanced Course graduates who have served successfully as commanders of company- or battery-size units. A new “Warrior Spirit” exchange program sends USAADASCH instructors to combined arms training centers as observers/controllers and brings observers/controllers into the ADA classroom. This elite cadre guides students through the basic USAADASCH curriculum — Pre-Command Course, Officer Advanced Course, Officer Basic Course, Senior Warrant Officer Course and the Noncommissioned Officer Education System — that makes up USAADASCH leader development.

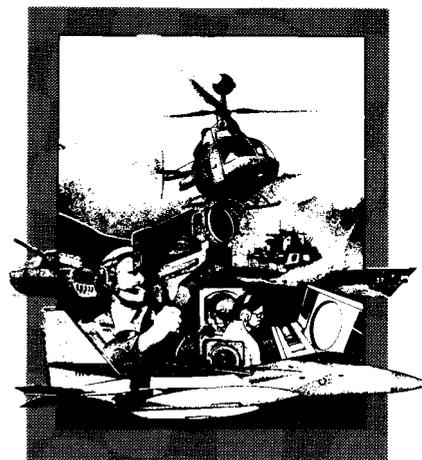
Pre-Command Course

The Pre-Command Course (PCC), designed for ADA officers about to assume battalion or brigade commands, involves an “unlearning” as well as a learning process. By conducting corps through task force wargaming exercises based on the the National Training Center terrain board, instructors face up to the challenging tasks of teaching new field command philosophies, unit METL methodology and new tactical standing operating procedures to highly successful ADA officers who have been “doing it different” for decades.

Officer Advanced Course

The revised Officer Advanced Course (OAC) places new emphasis

Kollsman, recognized worldwide as a supplier of electro-optic, trainer, and fire control systems



Vulcan Trainer

Stinger Missile
Trainer

CO₂ Laser
Rangefinders

FLIR Imaging
Systems

Pedestal-Mounted
Stinger (Infrared
Zoom Telescope)



Kollsman

Military Systems Division

Kollsman
Military Systems Marketing
220 D.W. Highway
Merrimack, N.H. 03054-4809
(603) 889-2500

on military history (currently students fight and refight the Battle of Kasserine Pass and then apply the lessons learned in wargaming modern and futuristic battle scenarios). Students also drill in the conduct of battle, intelligence preparation of the battlefield and the art of developing battery METLs based on battalion METLs.

The three-day "light fighter" field training exercise exemplifies the new battle-focused "hands-on" approach to leader development.

Officer Basic Course

The "new look" Officer Basic Course (OBC) is designed to produce enthusiastic leaders trained in tactical and technical skills prerequisite to their first assignment. Platoon sergeants serve as trainers and role models. OBC students are now required to complete the Army Writing Program. Today's OBC students live and study in a "martial" environment and much of the training takes place "out there" on Fort Bliss training ranges rather than inside the classroom.

The "warfighting" OBC is producing highly motivated, better prepared lieutenants. Their impact on Air Defense Artillery will be of far greater consequence than the fielding of new weapon systems.

Senior Warrant Officer Course

The Senior Warrant Officer Course (SWOC) enhances leadership skills, improves tactical proficiency, develops staff skills, prepares the WO for his or her wartime role and strengthens the WO's role as logistician and special adviser to the commander. The revised SWOC features extensive senior officer involvement, a heavy emphasis on leadership and a comprehensive physical training program. Today's SWOC students learn to use computers as management tools and to vigorously apply Army Writing Program skills.

A sharp focus on the role of the WO as a "Master of Reconstitution" sets the USAADASCH SWOC course apart from similar U.S. Army Training and Doctrine Command SWOC courses. We are producing WOs who will be able to keep ADA fire units in action amid the debris and devastation of combat.

NCOES

NCOES training conducted at the ADA School is undergoing tremendous change. These changes begin with the move of the Advanced NCO Course (ANCOC) and all Basic NCO Courses (BNCOC)/CS (maintainer) courses from the schoolhouse to the Fort Bliss NCO Academy. All ADA BNCOC will eventually be centralized at the NCO Academy, eliminating ADA training conducted at Fort Bragg, Fort Campbell, Fort Carson and Fort Lewis and in USAREUR. The purpose is to place all ADA NCO training in an ADA NCO Academy environment and standardize common training for all ADA NCOs. System maintenance, meanwhile, continues to be taught by the USAADASCH weapons departments. Other ongoing changes and initiatives include —

- small group instruction,
- small group mentors,
- FTXs in both ANCOC and BNCOC/CS,
- leadership development assessment,
- battle competency leader tasks and
- shared OBC/NCO FTXs.

The focus of our NCO training continues to be the graduation of battle-competent leaders, qualified to lead, train and direct subordinates to maintain, operate and deploy weapons and equipment.

Assessment

The ADA School completes the FM 25-100 training cycle by assessing the effects of leader development training in various ways. These include field surveys, light fighter and weapon track FTXs and lessons learned from the combined arms training centers. USAADASCH hosts periodic combined arms training center observer/controller conferences and periodic course after action reviews. Students provide their own evaluation of courses during "student sensing" sessions, typically personal interviews with the TLDD director. Graduates complete questionnaires mailed to them at their unit designations. This final link in the analysis and assessment chain enables USAADASCH to ascertain whether or not training within the schoolhouse meets field requirements.

School Values

While in the process of refocusing training on mission-essential tasks, which is another way of saying getting back to basics, we've rededicated ourselves to a set of values. These "ADA School Values" are shown below.

Excellence. Knowing your job and your duties and doing them to the best of your ability. Always seeking the highest achievable standards in quality service and products.

Professionalism. Demonstrating excellence in work, products and relationships at all levels. Forcibly arguing your position and then loyally supporting the boss' decision. Supporting warfighting focus. Dealing fairly with people. Setting the example.

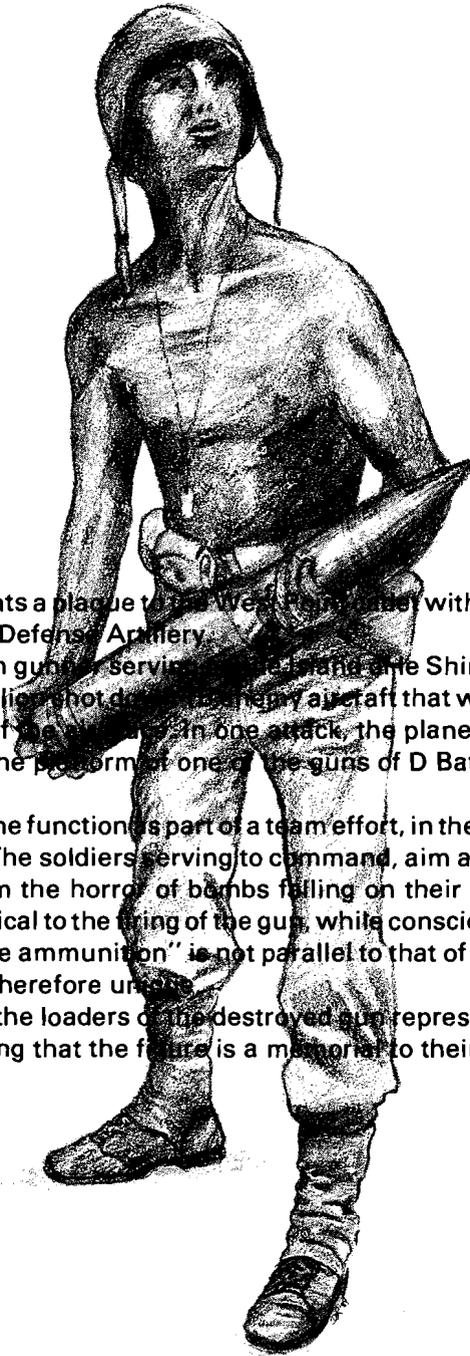
Integrity. Making integrity a non-negotiable item. Behaving honestly, loyally and ethically. Choosing the harder right over the easier wrong — moral courage. Accepting responsibility for your words and deeds. Being truthful.

Commitment. Giving selfless service. Dedicating yourself to soldiers, units and mission. Being responsive and giving priority to the soldier and his or her unit.

Concomitant with the school restructuring, the soldiers and "civilian soldiers" throughout USAADASCH have made a commitment to making USAADASCH the type of organization that ADA soldiers deserve. Our resolution is to maintain a battle focus attitude — a commitment to excellence we jointly share with units in the field. Battle focus implies a proactive Air Defense Artillery School, encourages us to set our sights on lofty goals and presumes the tenacity to pursue the greatest challenges because they are right for Air Defense Artillery. Battle focus demands that we reserve no energy in training ADA warriors and in creating for them the best possible doctrine, organizations, tactics and weaponry. Battle focus means we are not satisfied with just meeting requirements... rather we strive to do the best possible in all our endeavors.

Brig. Gen. Jay M. Garner is the assistant commandant of the U.S. Army Air Defense Artillery School, Fort Bliss, Texas.

ADA Association



Each year the ADA Association presents a plaque to the West Point cadet with the highest standing in his or her graduating class who accesses into Air Defense Artillery.

The plaque bears the figure of a 90mm gunner serving in the 93rd ADA Gun Battalion on Okinawa during the assault on Okinawa June 24, 1945. The 93rd ADA Gun Battalion shot down several enemy aircraft that were specifically attacking the AAA positions in an effort to regain control of the island. In one attack, the planes were diving on the gun pits and dropped a 60k naval bomb that struck the position of one of the guns of D Battery, killing all 12 men who were serving their piece under open fire.

The act of passively performing a routine function as part of a team effort, in the actual peril of one's life, calls for a peculiar and unusual form of courage. The soldiers serving to command, aim and fire the gun have some form of concentration to divert their minds from the horror of bombs falling on their heads. The loaders and handlers, however, must perform a menial act, critical to the firing of the gun, while consciously ignoring the threat. The spirit of the song "Praise the Lord and pass the ammunition" is not parallel to that of other heroes who have performed some aggressive act of heroism and is therefore unheroic.

For these reasons it seems to us that the loaders of the destroyed gun represent the most heroic soldiers in the history of Air Defense Artillery. It is fitting that the figure is a memorial to their courageous sacrifice.

Courage and Duty!
The Spirit of the ADA Soldier

New ADA Association chapter forms in Huntsville, Alabama

It was a ball that started things rolling for the formation of the first ADA Association chapter outside of Fort Bliss, says Col. Samuel N. Liboratore, Deputy for Operations, Strategic Defense Command, Huntsville, Ala.

"It started as an idea we had while planning an Anti-Ordnance party and ball," he said.

"Someone suggested we form a local chapter of the ADA Association and we wound up doing just that in February. We've been accepted as the Huntsville Chapter on Redstone Arsenal.

"We now have close to 100 members locally and that number grows daily. We had our first business meeting March 31 and over 71 persons attended."

Becoming an association member offers a variety of benefits that explain why membership continues to grow at such a tremendous rate. From 1,871 names at the beginning of 1987 to about 3,300 today, the growth rate testifies to the proof that ADA members like the pudding being served by their association.

During 1988 the Association arranged for Capital Publishing Corporation of Austin, Texas, the same firm which published the first issue of the *Air Defense Artillery Yearbook*, to publish and distribute the publication again this year.

The yearbook contains full-color photography, now banned in almost all official Army publications, and photographs of each ADA commander down to battalion level, something also forbidden by Army regulations that govern official Army publications.

Each association member receives a free personal copy of the yearbook, and thousands of free copies will be distributed to ADA units throughout the world.

The Association continues to publish the ADA Association "First to Fire" newsletter, which is distributed free to members. The

newsletter provides information and esprit de corps material which Army publications can no longer print.

The Association continues to recognize distinguished ADA graduates of the Basic and Advanced NCO courses and awards the ADA Association plaque to the United States Military Academy graduate who ranks highest among cadets

ADA Association Gift Shop

The ADA "company store," the Gift Shop, offers a full inventory of items, including a variety of logo items featuring the legendary design work of the late Col. Robert Matlick.

Among the new items are golf umbrellas with "First to Fire" legends, a complete set of miniature crests for tie tacs, and bandanas, aprons and tote bags emblazoned with "ADA, Hottest Brand in the Army."

The inventory also includes the familiar ADA T-shirts, baseball caps, bumper stickers, patches, aprons and coffee mugs. Smaller items perfect for party favors include spoons, bookmarks, paperweights and letter openers, all with the ADA logo.

Prestige items include solid walnut boxes, plaques and pen sets topped with brass and red ADA insignia. Pewter beer mugs, playing cards, brass logos, brass door knockers and the popular ADA belt buckle are included in the shop's displays.

Units may have their own unit designation printed on T-shirts if the order is large enough and advance notice is given. Larger items may be ordered through the shop and sent directly to any address.

Located in the ADA Museum, Fort Bliss, Texas, the store is open weekdays from 10 a.m. to 4 p.m. For more information, call (915) 568-5412 or write to: ADA Association Gift Shop, Bldg. 5000, Pleasanton Road, Fort Bliss, Texas 79916.

selecting Air Defense Artillery as their branch of service. We plan to expand this program to recognize excellence in other areas of the ADA profession.

This year the Association will also present a plaque to the most outstanding ADA soldier (E-1 through E-7) in each Active and Reserve Component battalion. Battalion commanders will handle this program.

We also continue to perform our duties as the sole ADA manager for the Order of Saint Barbara. The Association, through the commanding general, U.S. Army Air Defense Artillery Center and Fort Bliss, is registered with the Field Artillery Association as the single approving authority for all ADA accessions to the Order of Saint Barbara. The order is now open to more air defenders.

Two levels of the Order of Saint Barbara are now open to ADA soldiers. The Ancient Order is the top level, designed only for those who have made contributions to the branch as a whole. The Honorable Order is the second level, designed to recognize the achievements of those outstanding soldiers who have greatly improved the ADA units in which they have served.

Nominations for the Ancient Order may be submitted for anyone at any time; however, a nomination requires substantial supporting data, a review by a board of colonels and personal approval by the chief of Air Defense Artillery. A nomination for the Honorable Order requires only the endorsement of an O5 or higher commander.

The ADA Association exists to serve all soldiers—enlisted and officers—as the organization that supports the professional development of its membership.

Our goals? Support the Air Defense Artillery Museum, promote the history and traditions of Air Defense Artillery, build a sense of pride in the branch and direct the activities of the Order of Saint Barbara. Numerous unit and individual incentives exist for joining. The \$30 lifetime membership fee is the absolute lowest of any organization associated with Army units and branches. The \$15 gift pack that every new member receives is unique to our association; no one else offers such gratuities. We also offer corporate memberships.

ADA Association Council



Col. James L. Smith



Col. V. J. Tedesco
President



Lt. Col. Thomas Haller



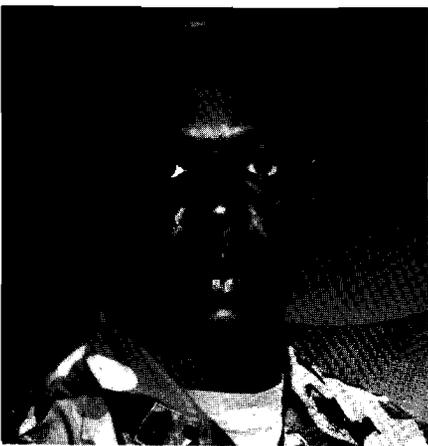
Lt. Col. Cruz Sedillo



Col. (Ret.) Michael DiGennaro



Maj. Conrad Crane



CSM William Doctor



SGM (Ret.) Thomas Barrett



SGM James W. Landingham



Stinger-RMP Makes Obsolescence a Thing of the Past

General Dynamics Valley Systems Division is incorporating a Reprogrammable Microprocessor (RMP) into the U.S. Army's Stinger Weapon System that makes it possible to counter new threats without building a new weapon.

Fielded Stinger-RMP systems can be rapidly upgraded to defeat advanced countermeasures. Stinger-RMP's digital processing can also be used to improve guidance control and extend tactical range.

This innovative approach to evolving weapons systems counters both obsolescence and the high cost of defense.

GENERAL DYNAMICS
Valley Systems Division

One view of Starstreak you'll never see.

Travelling at many times the speed of sound, Starstreak isn't easy to spot. Impossible, in fact.

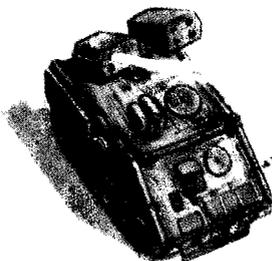
And as it travels, three guided darts separate out in formation to strike the target. Greatly increasing the hit area.

Too bad if it's you.

Fast, lethal and accurate — Starstreak has no challengers. It's highly immune to countermeasures.

This innovative weapon system was designed by Shorts and is currently under development for production and delivery soon to the British Army.

Its power is awesome. Incorporating the very latest missile technology advances, Starstreak has



completely redefined the state-of-the-art in close air defense. No other system provides such devastating speed and accuracy. The British Ministry of Defence has contracted for the early deployment of Starstreak in Western Europe.

Shorts is teamed with Boeing Aerospace to adapt Starstreak to the Avenger as an upgraded pedestal-mounted air defense system for the U.S. military. McDonnell Douglas Helicopter Company and Martin Marietta Electronics Systems are working together with Shorts to integrate Starstreak as an air-to-air missile on the Apache Helicopter.

Blowpipe, Javelin and Seacat are also produced by Shorts, so Starstreak is only the latest in a succession of proven and technically excellent weapons. But much faster and more lethal than anything that's gone before. Which is good to know. Providing it's not pointing in your direction.

SHORTS

For more information, contact Short Brothers (USA), Inc.,
2011 Crystal Drive, Suite 713, Arlington, VA 22202-3719.
Or call (703) 769-8700.

