

AIR DEFENSE ARTILLERY



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Avenger Rollout!



AIR DEFENSE ARTILLERY



Professional Bulletin of the United States Army Air Defense Branch

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The Army accepted the first two pedestal-mounted Stingers from Boeing Aerospace in November. Maj. Gen. Donald R. Infante, chief of Air Defense Artillery, described the PMSs as being "on time and under cost." See Intercept Point, next page.

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PMS On Time and Under Cost

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

Air Defense Artillery and our Army are the proud owners of a new weapon system — the pedestal-mounted Stinger (PMS).

Boeing delivered the first two production model Avenger PMSs in record time and under cost. The Army accepted delivery at a Nov. 1 rollout ceremony at Boeing's Huntsville, Ala., manufacturing facility. Television crews interviewed the crew members and did a wonderful job of displaying PMS capabilities, but three-minute news spots only scratch the surface.

New weapon systems don't come along often. PMS's entry into the air defense family of weapons merits some reminiscing and some visioning.

Before doing either, we need some background for the uninitiated. PMS is the line-of-sight rear (LOS-R) component of the five-part forward area air defense (FAAD) system. FAAD, a system-of-systems solution to the critical forward air defense void, was approved by former Secretary of Defense Casper Weinberger following the Sergeant York's demise in January 1986. The Secretary of Defense directed full speed ahead on FAAD because of the urgent need to fill the forward air defense

void. PMS, the first FAAD component to be fielded, is a reality 34 months following the Secretary's order. That's full speed ahead!

PMS's role in FAAD is primarily to defend against fixed-wing aircraft attacking our C³ centers and sustaining elements (e.g., ASPs, POL centers). Also, PMS will contribute to the destruction of transiting enemy aircraft targeted at our more rearward targets such as air bases and POMCUS sites. PMS's presence will certainly complicate the enemy's attack planning. To come low and fast brings destruction by PMS. To come high and fast brings destruction by Hawk and Patriot. The result — unattractive attack options.

PMS will usually be deployed no farther forward than the battalion rear boundary. 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.

With eight ready-to-fire missiles, PMS is to divisional air defense what the six-shooter was to the Old West. The "Texas Colt," as the first six-shooter was known, was a cumbersome affair. To reload, it had to be broken into three



Intercept Point

component parts, a tricky business, especially when mounted on horseback. But it fired six times. This was an important advantage in highly mobile Indian warfare, considering that a Plains Indian warrior could ride 100 yards and fire up to six arrows in the time required to reload.

The Texas Rangers, more Indian fighters than lawmen in those days, were understandably upset when Colt stopped making six-shooters. Ranger Capt. Sam Walker took a train to New York

The PMS has the potential to revolutionize air defense in much the same way. Add 24-hour, day and night and shoot-on-the-move capabilities for missions such as convoy protection — none of which exist in the manportable version — to PMS's multiple-shot capability and you begin to realize what a substantial contribution PMS can make to the AirLand battle.

Now for some reminiscing. PMS originated in the 9th Infantry Division as a non-developmental

the Department of the Army to buy PMS. That started things moving. When the FAAD concept was originated by Maj. Gen. Dave Maddox in late 1985, PMS became the NDI candidate to fill the LOS-R role.

Brig. Gen. Bill Fiorentino then picked up the development as the FAAD program executive officer. Under his leadership, we had a shoot-off. Boeing, the winner, built a plant in Huntsville, Ala., and — *voilà* — a new system! An integral part of all this was Col.



“PMS’s lead by example soldiers became media stars at the roll-out . . .

City, looked up Sam Colt, and persuaded the manufacturer to make some product improvements and resume production. Colt was hesitant at first. He had gone bankrupt trying to sell his six-shooter in the Eastern marketplace where people had little need for a revolver. Walker promised Colt that the Texas Rangers would supply the market if Colt would supply the weapons. There being fewer bureaucratic roadblocks in those days, the two sealed the agreement with a handshake. The six-shooter revolutionized plains warfare by putting mobile firepower in favor of the Indian fighter.

item (NDI) suggested by the Boeing Corporation. Boeing was also selected as the manufacturer after a tough, close competitive shoot-off conducted at Fort Bliss in the spring of 1987. Brig. Gen. Donald Lionetti, then a colonel in command of the 9th Infantry DIVADA, did some daring shots to include a nighttime shoot-on-the-move. He then showed this prototype to Gen. Max Thurman, then Army vice chief of staff, who immediately realized its battlefield potential.

Thurman, upon his return to the Pentagon in August 1985, ordered

Vinnie Tedesco, then FAAD TRADOC system manager, and — the real heroes in this saga — the soldiers of the PMS Platoon from A Battery, 2nd Battalion, 6th Air Defense Artillery Brigade. More on this theme later.

As you sort through what were the essential ingredients that caused this PMS miracle — and make no mistake, 34 months is a miracle in the weapon acquisition business (Patriot took 16 years to reach a comparable point!) — three come to the forefront.

Dedicated program management. Lt. Col. Jim Patterson, as the PMS program manager,

tenaciously overcame numerous bureaucratic roadblocks. Jim focused on making it happen and never took no for an answer. In this effort, he had an equal partner in Alex Henschel, the Boeing program manager. Alex pulled together the Boeing team and was as much or more a soldier as any green-suited member of the PMS shop.

Professional soldiers. User involvement early in the program brought to light many small items that needed improvement before

PMS Platoon

1st Lt. Balvin A. McKnight
SFC John W. Schutack
SSgt. Darris Ringold
Cpl. Edward L. Clark
Cpl. David A. McNeely
Spec. Jeffrey D. Arnett
Spec. Karl Wayne Ballantine
Spec. Bradley James Burnett
Spec. Robert S. Heier
Spec. Christopher Lewis
Spec. Jose M. Martinez
Spec. Gilbert Montano
Spec. Lynn C. Shafer
Spec. Charles Kenneth Shaffer
Spec. John W. White

system to go off. There's no way you can miss an approaching aircraft. It's going to be different in the air defense world," Ballantine predicted.

Leadership. Nothing great happens, especially in our profession, without leaders molding and building the greatest of soldiers like those who serve in the PMS platoon. The commanding officers of 2-6th ADA and A/2-6th ADA, Lt. Col. Mike Putnam and Capt. Mike McAllister respectively, deserve a share of the spotlight.



... but three-minute news spots only scratch the surface."

turning on production. You can't fool today's quality soldier. The PMS platoon's efforts heavily influenced the final design. So far they have successfully put PMS through two rigorous tests. These "lead-by-example" soldiers, named in the following list, became media stars during the PMS rollout. They earned the right to be the drivers at the PMS ceremonies. They were so effective in explaining the new system to television reporters that the Office, Chief of Air Defense Artillery, has compiled videotapes of the resulting broadcasts into an ADA promotional package.

Spec. Shaffer told reporters he was most impressed with the PMS remote unit, which has dropped from 75 to 35 pounds. "It used to be a two-man lift," he said. "This saves a lot of time. The gunner does not have to leave the turret during a stationary configuration. The team chief can carry the remote to its position."

"You have easy access to the missile pods and a better picture on the FLIR," added Spec. Montano.

"A daylight mission inside the turret is the easiest," said Spec. Ballantine. "You're sitting inside, waiting for the early warning

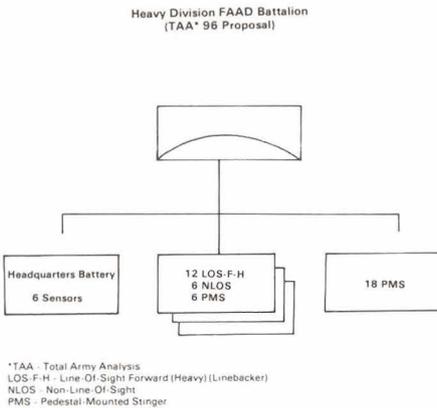
They kept the azimuth true and developed PMS warfighters.

Mike Putnam explained PMS advantages to newsmen covering the rollout. "It's a very sophisticated system that is simple to operate," he said. "The soldiers going through the training are coming right out of current weapon systems we already have — the Chaparral and Stinger systems — and they all convert very easily."

Some visioning about our new system now seems appropriate. Three major challenges in the form of operational and technical tests lay ahead in 1989. The two fire units that rolled off Boeing's

assembly lines are the first of 20 ordered by the Army as part of a \$16 million first production lot. These systems will be used in two operational tests that will take place in a combined arms environment at Fort Hunter Liggett, Calif. The technical test to verify production qualification will be at White Sands Missile Range, N.M. Both will involve the leaders and soldiers of the PMS platoon of A/2-6th ADA. Expect only super results.

PMS, at this time, is programmed for the division's air base defense units. The current projection for the divisional FAAD battalion contains 36 PMSs with 18 in a separate battery and six in each of the three composite line-of-sight forward (heavy) (LOS-F-H), non-line-of-sight (NLOS) and LOS-R platoons. The air base defense battalions will be pure PMS with three batteries of 18 each. My prediction is that, due to the combat capabilities and resource savings of this superb system, we will see two to



three times this number eventually fielded in U.S. and allied forces.

The U.S. Marine Corps is already testing PMS. Cpls. Michael A. Curlee, Christopher D. Jamison and Karl D. Wimbush; Lance Cpls. Gilbert Ayala and James E. Greiner; and PFC Robert J. Gipson are Leathernecks who have

been integrated into ADA's PMS. We have the potential to form corps ADA brigade PMS battalions and to make PMS part of the ongoing Army National Guard Modernization Program.

The weapons will also eventually be purchased by our allies. Reasons are three: firepower (see characteristics table), manpower (only two soldiers vs. four in most other comparable systems), and cost (about \$1 million driving into battle). PMS will multiply in numbers.

The FAAD system, not just PMS, is rapidly becoming a reality. In the spring of 1989 at Fort Bliss, Texas, we will see not only production PMSs but also production air defense/anti-tank systems (ADATS), the LOS-F-H component; prototype fiber-optic guided missiles (FOG-Ms), the NLOS component; and prototype components of the FAAD C³I system.

Exciting times for air defenders. Welcome aboard PMS!

First to Fire!



PMS Characteristics

- Mounted on HMMWV
- Uses highly successful Stinger missile
- Mounts machine gun for self-defense
- Day/night/adverse weather capability
- Integrated sensors and fire control
- Shoot on move
- Retains man-portable capability
- Eight ready-to-fire missiles
- Primary air defense for light division
- Projected buy 1207



Sergeants Training

by CSM Harry E. Hicks
U.S. Army Air Defense Artillery School



For many years we have heard that the "non-commissioned officer is the backbone of the Army." Any officer, especially those in command of a unit, will tell you that there is a lot of truth in these words.

After the officers give the orders and lay down the battle plan, it is the NCO who will make the mission a success or a failure.

Good NCOs can sometimes compensate for most company-level junior officers' lack of experience, but poor NCO leadership is difficult to overcome even with very good company-grade officers.

Senior NCOs must direct their efforts toward the development of young sergeants. From the first moment a specialist or corporal pins on the rank insignia of a sergeant, they enter a totally new environment. They are no longer one of the boys or girls. They are no longer John, Paul or Mary. They are Sergeant Jones, Sergeant Smith or Sergeant Johnson. Even the most junior NCOs must understand that they are different from the soldiers they lead.

The U.S. Army has placed an almost unbearable weight on the "Buck Sergeant." For it is this sergeant, the first-line supervisor, who must ensure that weapons get cleaned and that soldiers report punctually. It is this young sergeant who is responsible for knowing why a soldier failed to report for duty or why a soldier failed the physical fitness test or the skill qualification test.

Senior NCOs must prepare them for this —the young sergeant's most important role.

I hold each senior NCO, be he section NCOIC, platoon sergeant, first sergeant, or even directorate sergeant major or battalion command sergeant major, personally accountable for the development of our young sergeants.

It is our principal duty to train, supervise and, when needed, appropriately correct our young NCOs. Let me tell you older sergeants that the days of "do as I say, not as I do," are long over.

The young sergeants of today are smarter and better educated, both in civilian and military schooling. They are also more physically fit than we were at their age.

We, the senior NCOs, must make sure that our young sergeants don't learn their lessons at the "school of hard knocks." We also need to make sure that young sergeants fully understand what it means to be an NCO, and that they comprehend the reasons for and the extent of an NCO's authority.

The Uniform Code of Military Justice and Army Regulation 600-20 grant the NCO his authority; however, both of these documents also place certain responsibilities upon NCOs and hold them fully accountable for their actions.

Just as it is our duty to advise our officers, we also have the responsibility to develop our young NCOs.

After all, the young sergeants of today will be the first sergeants, sergeants major and command sergeants major of tomorrow. Tomorrow's NCOs will only be as good as their training is today.

NCO to NCO



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Stinger Shoot-Out

Imagine having only one shot at an aircraft moving at 280 mph — an aircraft you must identify as friend or foe before you can engage your weapon and fire.

The weapon you hold has the ability to locate a heat source and destroy it. It's awesome, efficient, portable and, yes, it has a "sting" to it.

The annual III Corps Stinger competition held at Fort Hood, Texas, featured Stinger teams from the 1st Infantry Division, Fort Riley, Kan.; 4th Infantry Division, Fort Carson, Colo.; 5th Infantry Division, Fort Polk, La.; Stinger Detachment, Fort Sill, Okla.; 2nd Battalion, 5th Air Defense Artillery, 2nd Armored Division; 3rd Battalion, 1st Air Defense Artillery, III Corps; and 1st

Battalion, 68th Air Defense Artillery, 1st Cavalry Division, Fort Hood, Texas.

Each team consisted of an NCO team chief and a soldier acting as a gunner.

The competition was divided into three phases. The first included a written test, performing preventive maintenance on the Stinger missile and common task testing. Next was an aircraft recognition test where soldiers had 10 seconds to identify an aircraft as friend or foe and give the NATO code name. Lastly teams, using a computerized engagement screen, had to correctly engage targets.

The competition determined who would be allowed to go to the range and participate in the live fire.



Winning team PFC Glen Olives and Sgt. Willie Crowder.

The top two spots went to the 1st Cavalry Division's air defenders. 1-68th ADA had the highest combined total scores of all participants. First place winners, both of C Battery, with a score of 196.20 out of 200.00, were Sgt. Willie Crowder, team chief, and PFC Glen Olives, gunner. Olives also won the title of "Top Gun" with the highest individual score of 99.1. Sgt. Jonathan Banyard, team chief, and Spec. Ernesto Comer, gunner, both of HHB, placed second with a score of 195.80.

3-43rd ADA Activates Three Batteries

The 11th Air Defense Artillery Brigade's 3rd Battalion, 43rd Air Defense Artillery, became the first Patriot battalion to receive its full complement of units when its three backfill batteries were activated at Fort Bliss, Texas, in September.

3-43rd ADA now consists of six firing batteries, a headquarters and headquarters battery and a maintenance company.

Capt. Arthur Almore assumed command of D Battery, Capt. Jay Lauber became E Battery commander and Capt. Alan Berry took the reins at F Battery.

The three units are currently attached to the 1st Battalion, 43rd ADA, 6th ADA Brigade, for the seven to 16 weeks of collective training which began in October. Upon completion, the units will re-join the 11th ADA Brigade.

5-52nd ADA Live Fire

In an annual service practice conducted by the 5th Battalion, 52nd Air Attack Artillery, Fort Bragg, N.C., battalion gunners demonstrated their ability to strike enemy aircraft from the sky.

The live-fire exercise increased the battalion's gunnery skills and provided practice for an upcoming Army training and evaluation program (ARTEP). During the exercise gunners in the battalion worked at detecting, identifying and, if appropriate, shooting down targets.

The battalion created a tactical scenario for the ASP in which each platoon supported a simulated task force from the brigade they



Top gunner PFC Glen Olives.

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will support in a wartime environment. As the task forces moved forward on the battlefield, the platoons also moved forward. Throughout the scenario the task forces participated in a series of battles. When the task forces called for fire support from the platoons, the gunners moved into position and prepared to fire their missiles.

Once the gunners were in position, an orange or black ballistic aerial target (BAT) was launched. If the launched BAT was orange, it represented an enemy aircraft. The gunners then had to detect, lock on, identify and determine whether or not to shoot the BAT.

"So far the ASP has gone great," said Capt. Kent Frederick, C Battery commander. "The service is really helping the gunners become proficient at firing missiles and hitting enemy aircraft. Out of a total of seven missiles fired, we had a miss and six direct or tactical kills."

SSgt. Issac Small, a C Battery Chaparral squad leader, said he found the exercise a real motivator for him as well as for his crew. "We only get to do this once a year, and when someone hits a target, the whole battalion cheers for him. This exercise helps us build confidence in our weapon system, so if we ever go to war, we know it will launch and kill hostile aircraft."

— Quinn Dora Jackson

62nd ADA Regimental March

The 62nd Air Defense Artillery Regimental March, titled "The Fortress of the Sky," received its premiere performance Aug. 2, 1988, at a concert by the U.S. Army Band on the Washington monument grounds in Washington, D.C. It is also programmed for a repeat performance there this fall.

Written by SSgt. James Hosay of the U.S. Army Band (Pershing's Own), the march is tuneful and spirited. A copy of Hosay's biography, his score and a cassette of a performance of his march by the U.S. Army Band are preserved for historical purposes in the 62nd ADA regimental archives at its home base in Schofield Barracks, Hawaii, under the control of the commander of the 1-62nd ADA.

— Col. (Ret) Adam S. Buynoski

2-44th ADA Boasts WOE Honorees

Week of the Eagles '88 was an enjoyable and rewarding week for the soldiers of 2nd Battalion, 44th Air Defense Artillery.

The week allowed the soldiers to concentrate on a number of activities that highlighted the battalion's pride, cohesiveness, competitiveness, individual and team skills, and combat capabilities.

2-44th ADA emphasized its commitment of celebrating WOE '88 and the division's prestigious history through its maximum participation in all activities. Every activity had the presence of a red and gold ADA T-shirt.

The week's competitions were intense and exciting. Only the best of the best survived. 2-44th ADA opened some eyes and demonstrated its will to win. The attitude of "We don't want much, we want it all," prevailed.

Though the battalion did not win it all, it gave its all. As a result of its vigorous efforts, 2-44th ADA received seven honors:

- 1st place (battalion participation in the Eagle Road Race).
- 1st place (PT competition — tug of war).
- 2nd place (company-level sports competition — basketball).
- 2nd place (PT competition — air assault obstacle course).

- 2nd place (military stakes competition — communications wire installation).

- 2nd place (soap box derby competition — likeness of HMMWV).

- 3rd place (military stakes competition — communications OE-254 antenna installation).

2-44th ADA placed first, second and third in the Vulcan and Stinger competitions. All and all, 2-44th ADA was pleased with its results.

WOE '88 permitted 2-44th ADA to show its esprit de corps, competitiveness and tactical capabilities with other units of the division and Fort Campbell. It provided memories that the soldiers who took part in the celebration will long cherish. Most importantly, WOE '88 was an entertaining and enlightening glimpse of the 101st Airborne Division (Air Assault) for all the battalion's soldiers, family members and civilian guests.

— Capt. Tantalous Smith

Cobra Gold '88

A Stinger section from B Battery, 1st Battalion, 62nd Air Defense Artillery, recently participated in Cobra Gold '88, a joint task force exercise in Thailand. The 12-man section was a part of more than 1,000 25th Infantry Division (Light) soldiers assigned to Task Force Lancer.

Even the extreme Thailand temperatures and humidity could not dull the Stinger missilemen's excitement when introduced to their Thai counterparts. After exchanging greetings and a few patches, they spent their first week cross-training the Thai soldiers on the new Stinger (POST) weapon system.

During the last days of the cross-training, the Thai's introduced the Stinger missilemen to

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their 40mm and .50-cal guns. Constant care and attention have kept these old weapon systems in mint condition.

After a successful week of training, the Stinger section rested before deploying to the field. Many chose a weekend trip to Bangkok, which included a tour of the Grand Palace and shopping in the center of Bangkok. The free trade atmosphere was a cultural experience that everyone seemed to enjoy.

Well rested and ready to roll, the Stinger missilemen deployed to the maneuver area, while the primary Army command remained to conduct a command post exercise (CPX) with the Thais, U.S. Air Force, Navy and Marines. The CPX provided open communications between Thailand and the United States, and ensured proper coordination for the joint training exercise (JTX).

The rice and tapioca fields provided unique and challenging terrain for maneuvers. Each day was a new experience as weather varied from unbearable heat to tropical rain storms.

During each phase, abundant enemy air gave each Stinger team more confidence and demonstrated how important air defense is to the maneuver forces. Designated enemy aircraft included F-16s, F-18s, A-37s, OV-10s, UH-1s, AH-1s and C-130s. Each sortie's diverse performance levels led to highly valuable training for the Stinger section. Battle scenarios for Task Force Lancer included movement to contact; air assaults; night, hasty and deliberate attacks; and passage of lines.

Cobra Gold '88 gave the Stinger soldiers a better understanding of how to employ in different cultural and geographical conditions. More importantly, it gave all units a chance to train together and receive a better awareness of how we

work as a combined arms team. Air defense in Cobra Gold '88 was a great success, both for the Stinger missilemen and Task Force Lancer.

— 2nd Lt. Gary R. Arnold

Illinois National Guard

During formal activation ceremonies last September, the 1st Battalion, 202nd Air Defense Artillery, became the newest battalion in the Illinois Army National Guard.

The battalion's colors and guidons were unfurled at the battalion's headquarters in Kewanee. Attendees at the activation ceremony included Maj. Gen. Harold G. Holesinger, Illinois Adjutant General; Maj. Gen. Robert E. Blevins, commander, 47th Infantry Division; Brig. Gen. John M. Paden, assistant commander, 47th Infantry Division; Col. James E. Miller, commander, 66th ADA Brigade; Lucian B. Johnson, civilian aide to the Secretary of the Army; local dignitaries; and past battalion members.

"This is a special and exciting day for the soldiers here and for the state of Illinois to offer more opportunities to serve in the National Guard," said Lt. Col. Randolph R. Harrison, commander of the new air defense artillery battalion.

Four separate Illinois units combined to form the new battalion: the Combat Support Company, 2-129th Infantry from Dixon; 258th Supply and Service Company from Kewanee; A Battery, 2-123rd Field Artillery from Galva; and 1st Detachment, HHB, 2-123rd Field Artillery from Galesburg.

"Converting four geographical separate units with different missions to an air defense mission will not be easy," said Sgt. Dennis

Hartz, the new battalion's NCO. "There is no such thing as free time in the training schedule."

Military occupational specialty (MOS) training and qualification for all Stinger missile crewmen and attached units are the battalion's primary training objectives — a process the battalion already has well underway.

Hartz said the battalion intends to have all of its members MOS-qualified by the end of the 1989 annual training period, an effort in which course managers provided by the U.S. Army Reserve will assist.

"We've sent people to Fort Bliss, Texas, who are now qualified not only as crew members, but also as trainers," said battalion SGM Robert E. Van Opdorp. "We have just begun to MOS-qualify our people here at the armory. This will be an ongoing process and take place on drill weekends."

"We're all extremely enthused about the change to an air defense mission," Van Opdorp continued. "Although as a new battalion we have a lot to learn, within two years we predict we will be the best battalion in the state."

The mission change, though difficult, has excited battalion members like Sgt. DeWaele, Stinger team leader and one of the Fort-Bliss-qualified trainers.

"The school was fascinating. Seven weeks at Fort Bliss taught me that this is a fantastic weapon, and to have an entire battalion of Stingers in Illinois is an honor," DeWaele said. "Training the battalion will be a really big challenge. We plan on intense training in aircraft identification and Stinger weapon training."

"I think air defense is probably one of the military's most important functions, and now it's even more effective because of the increased capability and range with modern weaponry like the Sting-

Army Awards FOG-M Contract

The U.S. Army announced in November that the industry team of the Boeing Military Airplane Co. and Hughes Aircraft Co. has been selected as the winner of a competition to begin full-scale development of the FOG-M, a new missile system that can shoot down enemy helicopters or destroy tanks and other vehicles.

FOG-M, for fiber-optic guided missile, is the non-line-of-sight (NLOS) component of the Army's forward area air defense (FAAD) system, a five-part, \$11-billion program to improve battlefield air defense for Army divisions. The system will be deployed with the Army's light and heavy divisions.

The Army intends to award a contract in late December 1988 subject to the availability of funds. Under the 43-month cost plus incentive fee contract, Boeing-Hughes will deliver eight fire units and 40 missiles in early 1991.

FOG-M gets its name from the spool of optical fiber that pays out behind when the missile is fired. The anti-helicopter and anti-tank system, initially developed and demonstrated by the U.S. Army

Missile Command, can attack targets from distances exceeding 10 kilometers. Launched vertically, the missile pitches over into level flight. Images from a tiny video camera in the nose are transmitted back to the gunner's station. The gunner, while hidden from the enemy's view, observes the scene on a TV-like screen, selects a target and directs the missile to the target by sending commands back over the fiber-optic link.

Boeing will develop the gunner's station while Hughes will develop the TV and imaging infrared versions of the missile. Boeing's work will largely be done near Redstone Arsenal at Huntsville, Ala. Hughes' portion of the development task will take place in its Missile Systems Group advanced design and development center in Canoga Park, Calif.

"By using existing technologies to develop the missile and combining them with man-in-the-loop target recognition skills, the Army has designed a system that is 'smart' but still low cost," said Duane Patten, the Hughes program manager.



Team Spirit '88



Team Spirit '88, the Free World's largest military exercise, was held not only to test the hard won skills of air defenders, but also to build unity and strengthen U.S. and Republic of Korea relations — a fitting goal during this year of the Summer Olympics.

ADA Brigade Rocks the ROK

by Capt. Kenneth Miller and 1st Lt. Delilah J. Parsons

Nearly 800 soldiers of the 35th Air Defense Artillery Brigade and its subordinate units, 1st Battalion, 52nd Air Defense Artillery (Hawk), from Fort Lewis, Wash., and 7th Battalion, 7th Air Defense Artillery (Chaparral), from Fort Ord, Calif., joined forces with I Corps and the Republic of Korea's (ROK) Third Army in a combined effort demonstrating U.S. resolve to support and defend the Korean peninsula.

The 35th ADA Brigade deployed the brigade headquarters, two battalion headquarters, three Hawk platoons and two Chaparral batteries. The U.S. units departed from two airfields and two seaports to participate in the 10-day field exercise.

An advance party of 50 soldiers arrived in Korea a month before the exercise to prepare for the arrival of the main body. The 1-52nd ADA, Headquarters and Headquarters Battery and the 35th Brigade's equipment from Fort Lewis, including 321 vehicles, arrived by sea at the port of Pusan, Korea, and were off-loaded by the advance party. The equipment was then loaded on railcars and shipped to Camp Carroll. The 7-7th ADA's equipment arrived after the main body and they off-loaded their own equipment at Pusan.

Team Spirit '88 provided an opportunity to conduct joint and combined ADA operations. I Corps and the U.S. 9th Infantry Division participated as part of the Third ROK

Field Army in the exercise. The 7-7th ADA task organized with a ROK Vulcan platoon in a combined joint operation. The 7-7th ADA's mission included the defense of corps critical assets and a general support-reinforcing mission to the 25th Infantry Division.

A ROK Hawk battalion and 1-52nd ADA exchanged Hawk platoons. The 2nd Platoon, B Battery, 1-52nd ADA joined the ROK battalion forces. The 1-52nd ADA integrated a ROK platoon into its fire distribution system by passing them tactical information through the battalion's AN/TSQ-73. An Air Force airborne warning and control system (AWACS) and the control and reporting center (CRC) provided early warning to firing units using the joint tactical information distribution system (JTIDS). A Hawk tactical control officer (TCO) was attached to Navy and Marine forces supporting amphibious operations during the exercise.

The demanding and challenging terrain offered very little off-road mobility and limited areas in which to emplace Hawk assault fire platoons (AFPs). In a training exercise designed to overcome such obstacles, C Battery, 1-52nd ADA, conducted an airmobile operation. CH-47 helicopters provided by Hawaii's B Company, 314th Aviation, airlifted C Battery's Hawk platoon's mission-essential equipment to a designated landing zone approximately 13 miles from their original site.

A Hawk live-fire exercise (LFX) conducted by batteries of the 1-52nd ADA at Chul Mae Range again featured the use of JTIDS using the battalion adaptable surface interface terminal (ASIT). The first missile launched used data from the AWACS. The battalion's pulse acquisition radar (PAR) acquired the second target and the AN/TSQ-73 assigned the target to the firing platoon. The third missile engaged a target using video information from the AWACS orbiting on station more than 100 kilometers from the firing range. AWACS information was supplemented by continuous-wave acquisition radar (CWAR) video.

The 1-52nd ADA's Army training and evaluation program (ARTEP) live fire marked the first live engagement of an AWACS-designated hostile aircraft during a LFX overseas.

By enabling a Hawk battalion to link directly with an E-3A AWACS aircraft, the ASIT has created quite a stir in the air defense community. However, the ASIT is nothing more than a communications system that links multiple users into the same net simultaneously. It operates in the JTIDS network and allows the Hawk unit to share data with other JTIDS users.

Current JTIDS users include Hawk battalions located at Fort Bragg, N.C., Fort Bliss, Texas, and Fort Lewis, Wash.; E-3A AWACS aircraft; certain U.S. fighter aircraft; and a number of U.S. Air Force command and control units. The 35th ADA Brigade, parent unit of 1-52nd ADA, as part of the Forward Area Air Defense Command, Control, and Intelligence (FAAD C²I) program, is also experimenting with a version of this equipment which will allow short-range air defense (SHORAD) units to share data in the JTIDS network.

For the Hawk battalion, the ASIT converts the interim JTIDS message standard (JTMS) format into a tactical data information link B (TADIL-B) message format that can be used by the AN/TSQ-73. The ideal situation for a Hawk battalion is to link to an early warning system and a command and control center as shown in the illustration.

The ASIT is a combat multiplier for the Hawk battalion. It enables the AN/TSQ-73 to receive more track data over a greater range and at the same time reduces its vulnerability to enemy intelligence gathering on the battlefield. In other words, Hawk radars will radiate less and actually see more!

With a planning range of more than 50 nautical miles, the ASIT gives air defenders increased flexibility in positioning Hawk units while still permitting them to communicate with a higher authority. The 50 nautical mile range is limited by the ASIT's line-of-sight requirement; however, this does not pose a problem when the AWACS is airborne. The shared data on the JTIDS link allows better command and control of both aircraft and missile assets on the air defense battlefield.

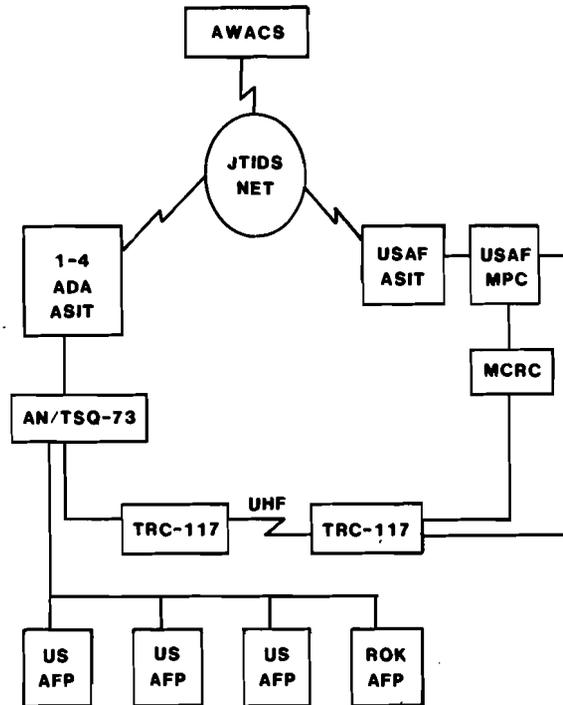
The 1-52nd ADA used several methods to obtain an expanded air picture. By positioning a liaison officer at the master control and reporting center (MCRC), the battalion kept abreast of current air intelligence and friendly missions. Using a direct UHF voice link to the AN/TSQ-73, the liaison officer provided early warning, helped to identify aircraft, prevented simultaneous engagements and provided air defense status to the tactical director in the AN/TSQ-73. Because the scope pictures were identical, there was never a track identification problem. The tactical control officers at the platoon command post received information such as altitude and identification, friend or foe (IFF) information they would otherwise have been forced to violate emission

control (EMCON) status to obtain. Obviously, the same information could be obtained over the UHF link, but the ASIT proved much easier to install, operate and maintain.

After a successful Team Spirit '88 and LFX, the battalion is sold on the capabilities of the ASIT. The advantages and the flexibility that the system brings to the battalion will no doubt affect how 1-52nd ADA air defenders think and how they employ Hawk units in the future.

The exercise in Korea demonstrated the capabilities the 35th ADA Brigade possesses to sustain and fight a war. The brigade accomplished its mission of supporting and defending critical I Corps assets against aggressor forces. The 35th ADA Brigade's actions restated their ability to successfully deploy ADA units from CONUS overseas, integrate and coordinate on a multi-national and interservice operational level and conduct a safe exercise.

Capt. Kenneth Miller is officer-in-charge of the fire direction center, 1st Battalion, 52nd Air Defense Artillery. 1st Lt. Delilah J. Parsons is the public affairs officer for the 35th Air Defense Artillery Brigade, Fort Lewis, Wash.



TS '88

Schemes of Maneuver

by Maj. William C. Bielefeld and Capt.(P) Virgil R. Priestly

Team Spirit '88 was a major milestone in understanding Air Defense Artillery in the light infantry division. The 1st Battalion, 62nd Air Defense Artillery, deployed to the Republic of Korea as part of the 25th Infantry Division (Light) to participate in Team Spirit '88. This was the first time the entire battalion participated in a division-size exercise since converting to the light configuration. We learned many lessons that will serve to improve the battalion's ability to perform its wartime mission of nullifying the enemy's ability to project air power in the 25th Infantry Division (Light) area of operation.

Light infantry divisions are designed for rapid air or sea deployment. Therefore, movement to the contingency area is always a major part of any light infantry division exercise. Team Spirit '88 gave the 1-62nd ADA an opportunity to conduct detailed planning for both strategic and tactical deployment. We gained valuable experience in moving personnel by air, shipping equipment by sea and transporting equipment by rail between the port and the exercise area. The battalion also conducted numerous ground tactical moves and air assault operations under simulated combat conditions.

The threat and the division's scheme of maneuver were the key elements considered in developing the battalion's air defense plan. Three key factors were considered in examining the threat for Team Spirit '88: air order of battle, effects of terrain and probable targets. The opposition or threat forces consisted of the 2nd Infantry Division, Korean forces and U.S. Air Force aircraft, so the threat air capabilities were very familiar and well understood by all air defenders. Terrain analysis, however, required much study since the battalion was operating overseas in an unfamiliar environment.

The battalion S-2 played the major role in the intelligence preparation of the battlefield (IPB). His hard work and in-depth analysis were key factors for the success the battalion's Vulcaneers and Stinger gunners later enjoyed. The terrain in the division's area of operation was rugged and constricting, which canalized low-level aircraft and ground forces. The countryside consisted of mountains bisected by a few valleys and the Nam Han River.

The S-2's analysis indicated the low-level air threat would be constrained to two major avenues of approach which closely followed the major road networks through

the mountains. One of the division's major concerns was the threat's ability to conduct air assault operations in the division's rear areas. To counter this, the S-2 identified probable enemy landing zones in the division's operations area. The integration of anticipated targets, landing zones and air avenues of approach allowed placing air defense assets in key positions that helped nullify enemy heliborne operations in the division rear. IPB proved invaluable in developing the division's active and passive air defense plan.

The general exercise scenario for Team Spirit '88 called for force-on-force operations. Initially the mission of the 25th ID (L) was defensive, delaying and defending back to the Nam Han River. After threat forces successfully crossed the Nam Han River, the division reverted to offensive operations, pushed the threat forces back across the Nam Han, successfully recrossed the river and conducted an out-of-sector airland/air assault mission. The 1-62nd ADA played a critical role in the division's success in all of these operations.

Integration of all air defense coverage was an element of the division's successful air defense plan. In addition to the 1-62nd ADA, other air defense assets contributed to the protection of the 25th ID (L). Corps air defense assets and air defense systems of adjacent units provided coverage in the division's area of operation. Coordination of this coverage was difficult, but critical to the success of the division's air defense mission. At various times the battalion's air defense fires were augmented by Hawk and Chaparral units from I Corps and ROK Vulcan units. The fires from these units, along with an exchange of information, contributed to an efficient use of assets and extremely effective air defense posture over the division's operations area.

Early warning was enhanced by the 35th ADA Brigade's early warning system, forward area alerting radars (FAARs) from adjacent units and the corps Chaparral battalion. Early warning was facilitated by exchanging liaison officers, frequencies and call signs. The battalion's air battle management operations center (ABMOC) became the focal point for early warning in the division area. Information from all these sources was received in the ABMOC, sanitized and rebroadcast over the division early warning net. The system proved effective down to the battalion level and served the fire units with essential alerting information to threat air attacks.

The mission of the 1-62nd ADA was determined through an analysis of the division's mission and threat plus the ancillary coverage provided by other air defense units and an analysis of the criticality, vulnerability and recuperability of the assets. During the initial phases of the exercise the battalion provided a balanced coverage of the division area, giving equal weight to rear and forward assets with

particular emphasis on river crossing sites to expedite rearward movement as the division was pressed back. Coverage by corps air defense assets was limited at this time and the battalion was forced to extend its coverage to as many of the division's critical assets as possible. Some Stinger sections were in direct support of the brigades in contact, but the majority of the battalion was in general support to the division to provide flexibility in the face of ever-changing missions.

The Vulcan platoon was credited with destroying the air assault

An example of this flexibility was demonstrated by a Vulcan platoon of A Battery. The division G-2's intelligence estimate indicated a potential air assault in the brigade's rear area. The S-2's IPB was used to identify potential landing zones and the Vulcan platoon was given the mission to conduct an airmobile operation to

set up air defense of the most likely landing zone. Within two hours of mission notification, the platoon was air lifted to the landing zone and commenced air defense operations. When the threat forces began their air assault into the same landing zone, the Vulcan platoon was there and credited with destroying the air assault. Their achievement was later recognized by the commanding general when he named them the "Tropic Lightning Wolfpack."

In later phases of the exercise, more and more air defense coverage was provided by corps Hawk and Chaparral assets. This freed the 1-62nd ADA from much of its responsibility in the division rear and allowed greater coverage for key forward assets. Daily missions changed in response to an ever-changing scenario. At times batteries were in direct support of maneuver brigades and at other times in general support to the division. Vulcan platoons and Stinger sections had to remain responsive and flexible to constant changes. Throughout the entire exercise coordination and flexibility were the keys to success. Junior leaders had to seek out supported unit commanders and synchronize operations to ensure they supported the scheme of maneuver and received the required guidance and logistical support.

Two successful operations are examples of the close coordination required. B Battery was required to support an ROK regimental combat team. Differences in languages and procedures and the fluidity of the offense operations being conducted could have led to a complete breakdown of air defense operations, but due to the aggressive actions of the battery commander and his key subordinates, coordination was established with the regimental commander, allowing the operation to proceed with minimal difficulties. Air defense coverage was maintained for a more mobile force and the operation was a resounding success.

During the final stages of Team Spirit '88, one of the division's infantry battalions was given an out-of-sector fly-away mission. A Stinger section was

attached to this battalion for the mission and the section sergeant acted as the battalion's air defense advisor. He did so in a superb manner, demonstrating the air defense technical expertise and understanding of supported unit tactics for which air defense artillerymen are known. Equally impressive was his section's ability to keep up with the infantry on foot marches even though they were carrying the much heavier loads required of Stinger missilemen. Once again, air defenders contributed to the success of a major infantry operation.

Team Spirit '88 was a great opportunity for the 1-62nd ADA. Chances for training with an entire division in the field are limited in a light infantry division, especially one stationed on a tropical island without adequate maneuver areas.

The main lesson learned was the need to economize when faced with a large task and a limited force structure. Hard decisions have to be made on what is

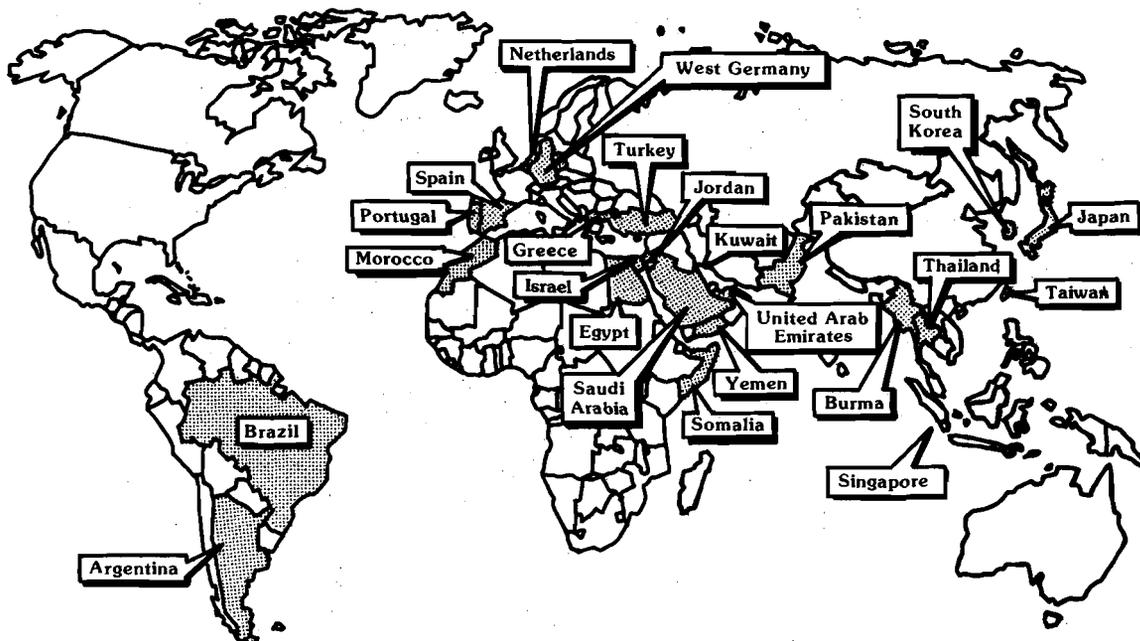
protected by air defense coverage and what goes without. Air defense coverage must be integrated and flexible. Coordination with other air defense units that provide coverage in the division's area of interest must be aggressive and effective. Supported unit plans must be understood and air defense coverage fully integrated with the scheme of maneuver.

Finally, the success of the air defense mission rests on the technical proficiency, including knowledge of the threat, and aggressiveness of air defenders at all levels from the gunner to the battalion commander. All air defenders must know their jobs, understand the supported unit's mission, and be untiring in protecting the division from threat air attack by denying them the use of the third dimension of the modern battlefield.

Maj. William C. Bielefeld is executive officer and Capt.(P) Virgil R. Priestly is S-4 of the 1st Battalion, 62nd Air Defense Artillery, Schofield Barracks, Hawaii.

Fort Bliss Trains Air Defenders Around the World

Team Spirit '88 exemplifies the spirit of cooperation between Air Defense Artillery and air defenders of allied nations around the world. The U.S. Army Air Defense Artillery Center, Fort Bliss, Texas, teaches air defense skills to students from 24 countries.



Seizing the counterair initiative

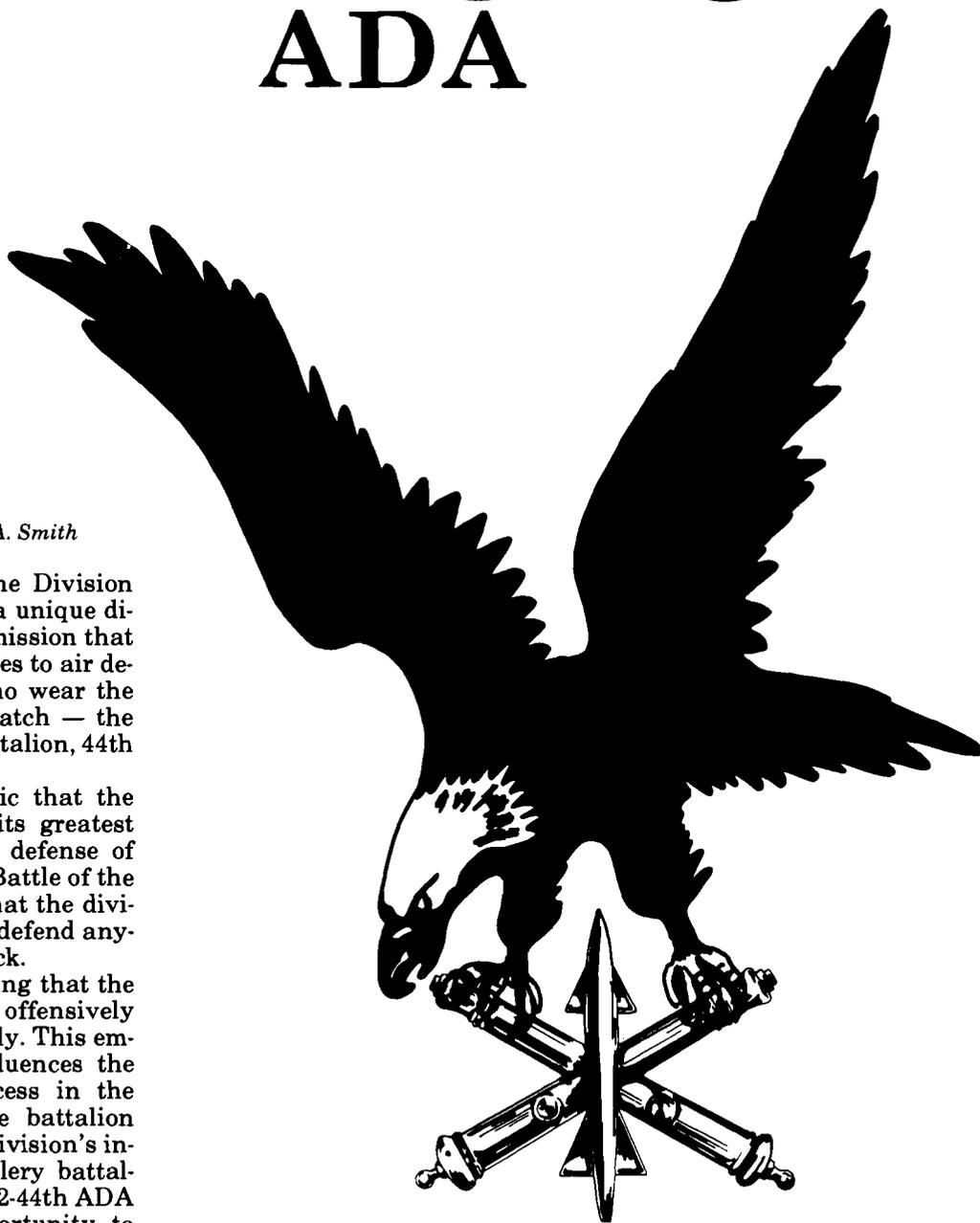
Screaming Eagle ADA

by Capt. Tantalous A. Smith

The 101st Airborne Division (Air Assault) is a unique division with a unique mission that poses unique challenges to air defense artillerymen who wear the "Screaming Eagle" patch — the soldiers of the 2nd Battalion, 44th Air Defense Artillery.

It's somewhat ironic that the 101st Airborne won its greatest glory with its heroic defense of Bastogne during the Battle of the Bulge. The irony is that the division isn't designed to defend anything; it exists to attack.

It goes without saying that the 101st Airborne thinks offensively rather than defensively. This emphasis on attack influences the decision-making process in the division's air defense battalion just as it does in the division's infantry and field artillery battalions. It has given the 2-44th ADA an unparalleled opportunity to develop strategies that employ air defense as an offensive rather than a defensive weapon.

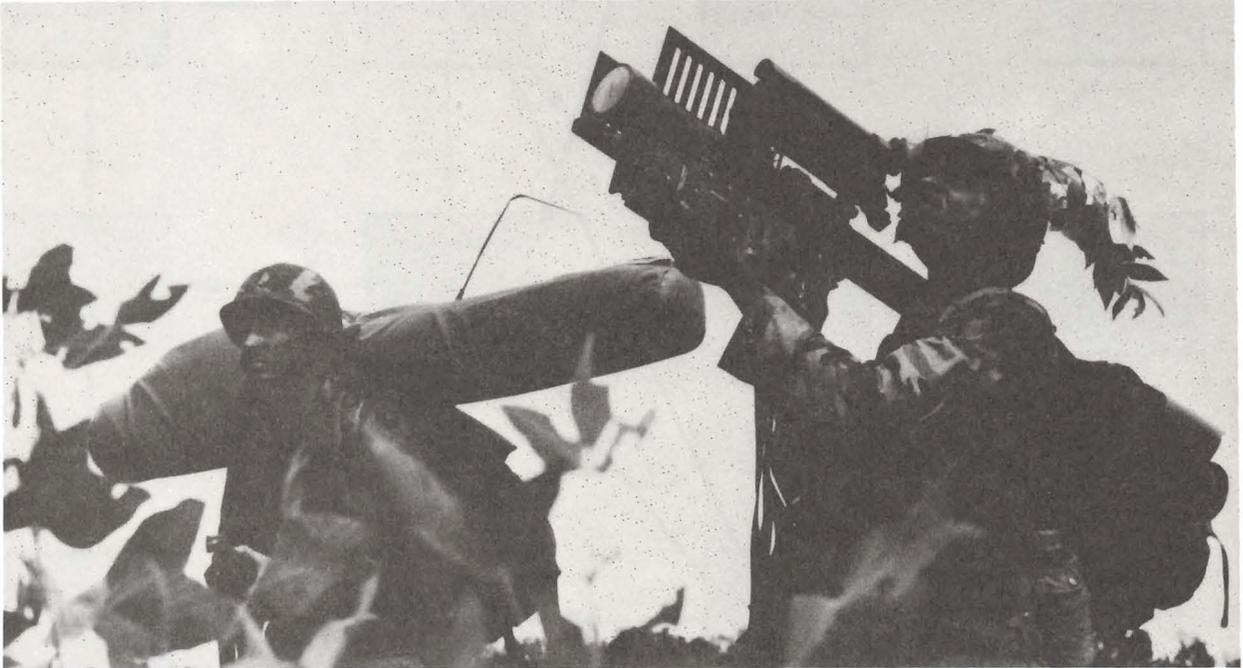


The 101st Airborne possesses unequalled tactical mobility. It can rapidly deploy forces and deliver firepower into an area of influence much larger than that of an armor or mechanized infantry division. The basic type of operation the division conducts is the air assault attack. This is a deliberate, precisely planned and vigorously executed operation that allows friendly forces to strike over extended distances and terrain barriers to hit the enemy when and where he is most vulnerable.

Since air assault attack operations cannot succeed unless local air superiority is achieved, air defenders play a key role. More than 90 percent of 2-44th ADA soldiers are Air Assault School qualified, and we have developed several initiatives designed to take

The *Mujahideen's* success cannot be explained by the extreme accuracy and lethality of the Stinger weapon system alone. Afghan rebels rely on accurate and timely intelligence to tactically deploy their Stinger gunners in and around expected attack areas, likely air avenues of approach and potential takeoff and landing zones. These tactics have blunted Soviet air operations. The Hind-Ds and Frogfoots now make quick entries and exits and release their ordnance from standoff ranges. Soviet bombers drop their bombs from higher altitudes and, as a result, miss their targets more often.

The Afghan experience proves that aggressive air defense tactics work. In the 101st Airborne Division, we plan to achieve results similar to those of the

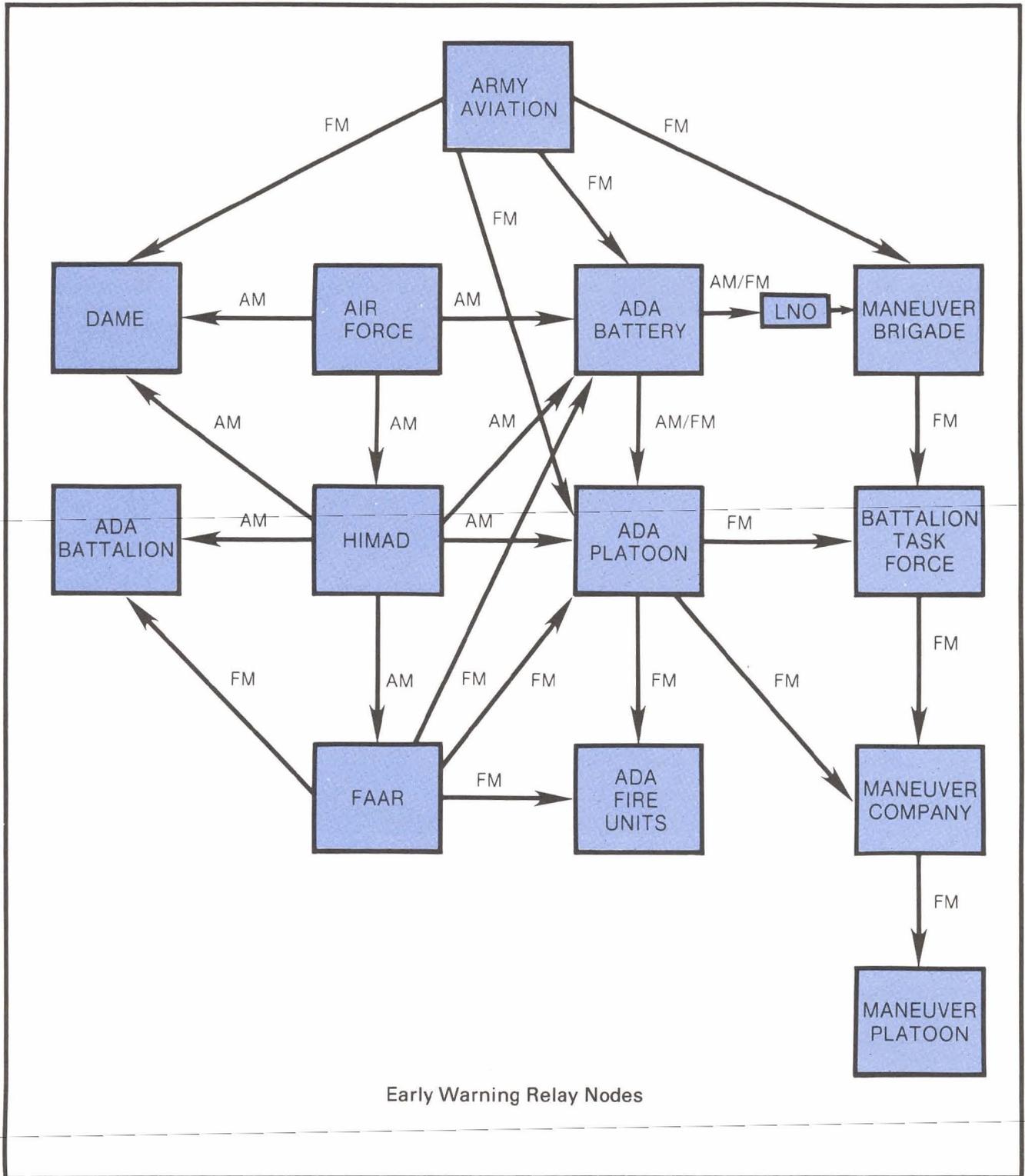


the counterair battle to the enemy, deploying, when necessary, across the forward edge of the battle area (FEBA). These initiatives include air ambushes across the FEBA, commando-style raids in concert with small-size infantry units and experimentation with early warning procedures. The key to their success is air intelligence preparation of the battlefield (air IPB), a process that should be one of Air Defense Artillery's major strengths but is, instead, often its Achilles' Heel.

The effectiveness of air ambushes, coupled with air IPB, was recently demonstrated in Afghanistan by *Mujahideen* rebels armed with Stinger air defense systems. Since Stingers were introduced to Afghanistan two years ago, they have been credited with bringing down more than 900 Soviet-built aircraft. Many observers credit the Stinger with hastening, or even precipitating, the ongoing Soviet withdrawal from Afghanistan. "There is no change of heart, there is no change of ideology," a *Mujahideen* leader said in October. "They are leaving because of Stinger."

Mujahideen by setting up air ambushes across the FEBA to engage threat helicopters and fixed-wing aircraft along air avenues of approach before they arrive in the battle area. We are also training our Stinger gunners for commando-style raids with the division's Long Range Surveillance Detachment, an organization of soldiers specially trained in a variety of skills including infiltration techniques via land, air and water; hand-to-hand combat; demolitions; and low-altitude mountaineering. These Stinger commandos could, in extreme circumstances, penetrate enemy air base perimeters to achieve in-range shots during vulnerable takeoffs and landings.

A third initiative is adapting early warning procedures to air assault operations. Early warning is a topic which concerns all air defenders, a fact made evident by the outpouring of new sensor devices and the publication of numerous articles in the branch journal. In the 101st Airborne Division, we've considered not only equipment availability but also mission eccentricities in formulating a sometimes unorthodox early warning system.



Air assault operations make AM radios an essential part of the 101st Airborne's early warning solution.

The 101st Airborne can air assault an entire battalion 60 or more kilometers in less than an hour. The distances involved render FM communications between forward and rear-area elements impossible and make AM radios an essential part of our early warning solution. The AM division early warning net can be monitored by all elements in the division area which have compatible receivers. The net is not presently secure, but equipment to make it so has been procured. Any element with an AM receiver and a manual short-range air defense control system (MSCS) overlay can use track data to determine aircraft locations.

The 101st Airborne Division is authorized four forward area alerting radars (FAARs). The 2-44th ADA has supplemented the modified table of organization and equipment for each FAAR by adding an AN/GRC-193 AM radio. These radios are primarily used as receivers, and FAAR personnel do not transmit on them for any reason. The FAARs receive early warning data from the battalion's high-to-medium air defense (HIMAD) coordination section. This section normally collocates with, or in close proximity to, the nearest long-range radar facility in the area of operations. The facility might be anything from a Hawk radar to a civilian airfield radar or even target acquisition radars aboard ships offshore.

The HIMAD coordination section uses normal short-range air defense track reports (initial, update, mass and scrub) to transmit early warning data. These tracks are relayed verbatim by the HIMAD section to the fire units and FAARs. Therefore, FAAR personnel do not merely provide organic early warning with their own radars; they also relay the track data from the HIMAD coordination section.

The critical points in the division's early warning system are the relay nodes. There are several relay nodes which have the potential to re-transmit early warning data from the division's AM early warning net to the FM early warning nets within the air defense battery areas of operations. Any element that has both an AM receiver capable of receiving transmissions from an AN/GRC-193 and an FM transmitter can be employed as a relay node. The FAAR platoons are trained to operate without radiating and even, if necessary, without their radar systems. In the absence of FAAR personnel, Stinger section sergeants perform the relay task, as could any element with the necessary equipment.

Training exercises have demonstrated that the early warning system works. The relay of the initial transmission from the radar facility to the fire units takes only two to five seconds.

The 2-44th ADA early warning system has many advantages. Every fire unit within a battery area of operations monitors the same net for early warning information. The FAARs are habitually deployed to support divisional mission areas as opposed to brigade areas of operations. The FAAR sections may be responsible for providing early warning to all units which can receive it as well as to individual batteries.

Any element operating within a FAAR's area of responsibility can monitor its FM net, and elements passing through a FAAR's area of responsibility may find the early warning information is valuable to them. The division's four FAARs can provide overlapping radar coverage and radio communications.

The division also takes advantage of other early warning sources, including airborne warning and control system (AWACS) planes and Army Aviation pilot reports. The division's early warning options, at any given time during an operation, are determined by METT-T and the availability of early warning resources. ADA liaison officers at all levels provide early warning tactical data reports to their supported command posts which identify the optimum early warning source.

Early warning is passed to maneuver units by "Skywatch" messages via the supported unit's FM command and control or operations and intelligence nets. The message format provides all of the data soldiers need to effectively engage hostile aircraft with small arms.

The 101st Airborne Division's schematic for air ambushes, air defense commando raids and early warning represents more than unorthodox solutions to unorthodox problems. It is part of a continuing effort to more fully realize Air Defense Artillery's potential as an offensive combat arm. The division's unique missions, extended boundaries and limited ADA assets present a definite challenge, but they also offer an opportunity to make Air Defense Artillery all it can be.

The same types of challenges and opportunities, in varying degrees, confront all ADA units. To meet the challenge and seize the opportunity we must never forget the adage: "The will of soldiers is three times more important than their weapons."

We must train ADA soldiers not only to epitomize military competence in the employment of their weapon systems, but also to be physically and mentally tough. Physical fitness, for example, is a prime requisite to placing Stinger teams across the FEBA. The Stinger gunners must carry personal equipment, four days of water and rations and a 35-pound Stinger on their backs. The will to "drive on" must be embedded in these soldiers.

Members of the ADA community must also work together as a team to overcome the traditional mindset that causes battlefield commanders to relegate air defense units to point defense and the protection of maneuver task forces. This failure of imagination not only surrenders the initiative in the air battle to the enemy, but explains why the full potential of Air Defense Artillery is so seldom realized. The combined arms team, through aggressive Army counter-air operations, can not only defend itself from air attack, but can also assume the offensive to engage the enemy and destroy his ability to wage the air war.

Capt. Tantalous A. Smith is the assistant operations officer of the 2nd Battalion, 44th Air Defense Artillery, Fort Campbell, Ky.

Stinger Initiatives

by Lt. Col. William L. Bond

The 2nd Battalion, 61st Air Defense Artillery, provides low-altitude air defense to the 2nd Infantry Division in the Republic of Korea. This mission presents unique training opportunities for the entire battalion, particularly 2-61st ADA's Stinger personnel. These training opportunities have developed into four Stinger initiatives within the battalion: Stinger on the demilitarized zone (DMZ), Stinger airmobile, Stinger firetraps and Stinger with special operation forces.

The 2nd Infantry Division provides security along a portion of the DMZ which separates South Korea from North



Korea. To fulfill this requirement, the division rotates infantry battalions through 10-week mission cycles. The battalions patrol, provide guard post security and serve as a ready reaction force in their assigned sector of the DMZ. Before deploying for this mission, the battalions undergo an extensive training program that prepares them for all requirements and any contingencies that may await them on the DMZ.

When these infantry battalions deploy, they take the Stinger section habitually associated with them to provide air defense. The Stinger teams participate in the train-up and in all three DMZ missions.

Both the Stinger personnel and the infantry battalion benefit from this relationship. The Stinger section benefits because it is confronted with the harsh reality of an armed enemy 50 meters away — a trigger-happy enemy that would more than welcome the chance to avenge what it perceives as past transgressions on the part of ROK and U.S. forces; an enemy that could launch an attack at a moment's notice. These air defenders quickly recognize the need for basic survival skills and knowledge of infantry tactics. They become very adept at patrolling techniques and building bunkers, and have no doubt in their minds why "stand to" is important.

The Stinger section also becomes thoroughly integrated as a combat multiplier for the infantry battalion during this time. They are important members of a team performing a critical mission. They are an elite unit. This helps build a sense of teamwork and esprit within the section and between the section and the supported unit. Besides providing the infantry battalion critical air defense, they teach the infantry personnel how to employ small arms for air defense, so both sides benefit from the experience. Instead of pushing air defenders on the infantry battalions, 2-61st ADA now has a constant demand for them. Soldiers return from this critical mission with renewed self-confidence and pride and provide excellent instruction on crucial combat skills to the rest of 2-61st ADA.

Airmobile Stinger is another 2nd Infantry Division initiative. Korea is a land characterized by rugged, steep mountains and narrow valleys that, if not totally inaccessible, make it very difficult to properly position Stingers in places where they can maximize their lethality. Helicopters are used to emplace Stingers on mountaintops and ridge lines that provide maximum observation and fields of fire on high-speed air avenues of approach.

These Stinger teams are well trained in air assault and airmobile operations, and are extensively trained in land navigation, escape and evasion and survival skills. The speed with which these Stingers

can be moved around the battlefield offers the air defense commander added agility and initiative on the AirLand battlefield.

A third initiative within the 2nd Infantry Division is Stinger firetraps, or air defense ambushes. The extensive Hawk belt in the ROK forces many aircraft to fly low, maximizing their use of Korea's many valleys for added protection and surprise. The 2-61st ADA does extensive terrain and threat analyses to identify routes the enemy will most likely use on a

... an enemy that could launch an attack at a moment's notice

given mission. The information garnered from comprehensive plans places Stinger along these likely attack routes and supports them with long-range early warning from the air force and short-range early warning from 2-61st ADA's forward area alerting radars. Once a predicted route is verified using long-range early warning, additional Stingers can be airlifted to positions along

that route for added strike capability. This type of "offensive" air defense seeks to get inside of and disrupt the enemy's decision cycle and is intended to destroy or dissuade him from his chosen mission route long before he is a threat to a defended asset.

A fourth initiative is the use of Stinger with special operations forces (SOF) in support of the deep battle. These Stingers can wreak havoc on the enemy's second and third echelon air assets and possibly desynchronize the attack enough in its initial stages to render it ineffective. Also, threat forces depend to a great extent on airborne command posts. The obliteration of a few which contain key leaders, such as division or corps commanders, by Stinger personnel would be a tremendous loss to the enemy and could provide friendly forces with a decisive advantage in the battle.

The support by SOF personnel is critical to the Stinger crews. They carry additional missiles for the air defenders and provide security, which is crucial since Stinger personnel become high priority targets once identified in the enemy rear.

The initiatives in the 2nd Infantry Division and 2-61st ADA are constantly evolving. Units around the world are undoubtedly developing variations of these and other unique ideas. We welcome comments from anyone who has additional insights into ways we can make ours a more dynamic, aggressive air defense battalion.

Lt. Col. William L. Bond is the commander of the 2nd Battalion, 61st Air Defense Artillery, Korea.

Quest for NATO Acceptance



How an ADA battalion used a common sense, building-block approach to training to win NATO accreditation

by Lt. Col. Arthur R. Kreutz, Jr.

The soldiers of the 6th Battalion (Patriot), 3rd Air Defense Artillery, listened apprehensively as the evaluation team chief — a German lieutenant colonel — read aloud the scores from their Allied Air Forces Central Europe (AAFCE) tactical evaluation (TACEVAL). As battalion executive officer, I shared their apprehension. The TACEVAL represented the final milestone in our quest for NATO acceptance — a quest that had begun nearly two years earlier and an ocean away.

To be more exact, our quest for NATO acceptance began some 20 months earlier in a dusty, unfurnished building on Fort Bliss, Texas. On that sunny, but chilled, January day, the battalion XO, S-3, S-4 and S-4 non-commissioned officer-in-charge began the arduous job of planning and organizing the multitude of tasks required to form and activate a new Patriot air defense battalion. It seemed improbable, at the time, that an effective fighting force capable of meeting NATO's exacting standards might somehow emerge from the stacks of paperwork that greeted us each morning.

A tally of the tasks numbered 115, some more important than others. One of the first tasks was to locate, occupy and furnish billets and offices. Next, we had to receive and in-process personnel. Then came obtaining, inventorying and signing for enough equipment to outfit an entire Patriot battalion — an exercise that makes it easy to understand why many ADA officers responding to a recent survey listed the multi-million dollar price tags attached to ADA equipment as a source of job stress.

The single most important task we performed during the initial planning and organization of the battalion, however, was a detailed analysis of what the battalion's training strategy should be. This allowed us to set in place the mechanics of a training program to support that strategy.

The battalion commander worked with the XO and S-3 to formulate the training strategy. He assimilated our input on major events that the unit collectively would have to master prior to certification as ready for European deployment, and merged them with his personal training philosophy. The following battalion training strategy emerged:

- Analyze the battalion's mission (modified table of organization and equipment and Army training and evaluation program [ARTEP]) to extract mission-essential tasks.
- Train the trainers (NCOs) in the tasks that comprise the mission-essential tasks.
- Allow trainers to train the soldiers.
- Assess training strengths and weaknesses through objective and subjective evaluations.
- Design definite objectives for each field training exercise (FTX) and keep them short (three to five days).
- Don't waste soldiers' time with meaningless training.
- Provide immediate feedback, both positive and negative, on training results.
- Sustain strengths; train weaknesses.

Armed with the commander's common sense, building-block training strategy, the battalion staff, specifically the S-3, began

preparing for Patriot collective training.

The S-3 focused his attention on the Patriot ARTEP, soldier common tasks and major evaluated events that would challenge the unit during its 18-week training period. He developed a list of critical tasks that became the foundation for the unit's mission essential tasks. Once these critical tasks were identified, programs of instruction were prepared and classes were scheduled. The battalion NCOs trained under the

and fire control crews, communication personnel and tactical control officers. As the battery autonomous field exercises drew to a close, the battalion staff finalized preparations for weekly battalion field training exercises (FTXs).

Battalion FTXs, which lasted three to five days, were the major training events that comprised the last 15 weeks of collective training. Adhering to the commander's building-block training strategy, the S-3 used battalion staff input to establish definitive

on concrete results. They proved to be one of our most valuable collective training tools.

Recovery maintenance operations, training assessments and a staff prep for the next week followed each FTX. The battalion XO supervised the recovery maintenance operations. During mandatory formations held each Friday and Saturday, I specified maintenance tasks for every piece of equipment, then inspected each completed task before granting a unit's release from duty. This



direction of the battalion command sergeant major. These "trainers" then proceeded to train the soldiers. As soon as the soldiers mastered the basic individual soldier tasks, collective unit training commenced.

The batteries operated autonomously in the field during the first couple of weeks. This allowed our battery commanders to get a "feel" for their new units, gave them a chance to hone small-unit collective tasks and allowed them to personally evaluate individual soldier training. We could sense the vital team building process beginning to take effect during this period. It was especially strong among Patriot launcher

goals and objectives for each weekly FTX. The input came from battalion staff briefings which preceded each FTX. These briefings served to create thoroughly efficient staff work and effective coordination.

We designed each weekly battalion FTX to sustain strengths and retrain weaknesses revealed during the previous week's FTX. Battalion staff members and battery commanders met each evening at the battalion tactical operations center to discuss daily events and assess strengths and weaknesses. These open, "bare your soul" meetings ensured that our training assessments were based not on fantasy or wishful thinking but

religious observance of standard procedures made recovery maintenance operations one of the battalion's major strengths.

The battalion staff conducted training assessments and incorporated strengths and weaknesses into the following week's operations order, which was briefed to commanders every Saturday morning.

The process continued without letup throughout collective training. The only deviations occurred prior to three Fort Bliss evaluations: "Quick Look", ARTEP and Center Certification. Prior to each of these training milestones, the battalion commander assembled the entire battalion to personally

brief soldiers on his assessment of their training and what they could expect during each subsequent evaluation.

A spectacular Patriot live fire at White Sands Missile Range, N.M., highlighted the battalion's 18 weeks of successful collective training. Our fire units, operating in the automatic firing mode with the computer in charge, launched three missiles at three targets simultaneously. Following the live fire exercise, the battalion packed for its deployment to the Federal Republic of Germany.

10 Months to TACEVAL

The proverbial "fast moving train" gathered even more momentum once the battalion arrived in West Germany. Our soldiers and their families occupied billets and became part of the Kaiserslautern community. Unit commanders meticulously inventoried and signed for their authorized Patriot equipment. We found

ourselves obsessed with quickly establishing daily operations so we could direct our full attention to training for the major European evaluations which awaited us.

Three European-unique evaluations confronted the battalion: Systems Integration Check Out (SICO), Site Certification and the ultimate AAFCE TACEVAL. Our performance in the first two evaluations would be graded by U.S. evaluators while West German, Belgian and Danish evaluators would grade our performance in the AAFCE TACEVAL. Regardless of the composition of the evaluation teams, each evaluation loomed as a major training event and each required the battalion commander to reevaluate his training strategy and program.

The training strategy and training program that had proven so successful at Fort Bliss continued to form the "fundamental" foundation for the battalion's European training methodology. Hav-

ing previously served with ADA battalions in Germany, the commander, XO and S-3 realized they would have to adjust the training due to the unique differences (charted below) which exist between the continental United States (CONUS) and European training environments.

With these differences in mind, the commander's guidance to the XO and S-3 was to continue the common sense, building-block training strategy with some changes in emphasis.

We were to analyze the battalion's European mission, focusing on applicable U.S. and NATO peacetime and wartime requirements while paying particular attention to the criteria required when switching from peacetime to wartime operations. We would concentrate on making tactical directors and tactical control officers familiar with, and proficient in, the application of NATO tactical airspace control measures and directives. We would have to train the trainers in European mission-essential tasks while focusing our energies on survival-to-operate (STO) skills and common task training (CTT).

We decided to conduct "key player" round-table mental exercises to war-game FTXs prior to field deployment. This allowed us to analyze the entire field problem from recall and load-up to march order and emplacement, ensuring the equitable distribution of all required tasks.

The XO and S-3 extracted all germane mission tasks from NATO and U.S. air defense doctrine, then prioritized and formatted these tasks into weekly training sessions. We "back-planned" the weekly training sessions from the anticipated date of the AAFCE TACEVAL, placing the more difficult tasks early in the training calendar while saving the less difficult tasks for later. We formulated lesson plans for the mission tasks. The battalion command sergeant major supervised the training of our NCO trainers just as he had at Fort Bliss. Once the trainers became well versed in their respective

Training Environment Differences

CONUS

Weekly FTXs with no training restrictions and unlimited land use.

No convoy clearance to field locations required. Desert ranges with few maneuver constraints.

Only one mission: successfully train for and complete collective training.

Tactical directors and tactical control officers must know basic ADA tactics. Minimal NATO tactics addressed.

European

Monthly FTXs with numerous training area constraints and restricted land use.

Two weeks lead time for convoy clearance to field locations. Small towns and farms impose maneuver constraints.

Multiple missions: perform normal daily operations, maintain air defense readiness postures and train for AAFCE TACEVAL.

Tactical directors and tactical control officers must master very difficult NATO tactics and doctrine.

disciplines, battalion-wide training commenced.

We received help from the 94th Air Defense Artillery, our parent brigade, and the 32nd Army Air Defense Command in training our battalion's tactical directors and tactical control officers for the NATO environment. These headquarters furnished air defense automatic operations experts to help our tactical officers form a basic understanding of NATO airspace doctrine, tactics, rules of engagement and control measures.

They worked out of their unit engagement control stations (ECSs), operating in both the semi-automatic air defense mode and the battery command post manual mode. Trained battalion evaluators observed the ADXs and provided either verbal or written observations at their conclusions.

On the second and fourth Tuesday mornings of every month, the entire battle staff participated in full-blown, scenario-driven command post exercises (CPXs). These CPXs integrated the battal-

STO skills required a considerable amount of training. We held "STO Half-Days" at least once a week. The chief STO trainers were the battalion NBC officer and NCO. Their goal was to ensure that all soldiers were trained, at a minimum, to meet NATO STO standards. This meant they had to be proficient in NBC individual tasks (masking and unmasking procedures, individual decontamination procedures, MOPP exchange, etc.) as well as team tasks (materiel decontamination, test-



Once the "baseline" of understanding was gained, the battalion maintained it by instituting weekly blocks of training and instruction called "Tactical Tuesdays" and "Tactical Seminars." These training blocks paid substantial dividends.

On the first and third Tuesday mornings of every month, the battalion conducted an air defense exercise (ADX). These ADXs required the battalion operations center tactical directors to operate live air trainers and tactical proficiency trainer programs from the Patriot information and coordination central (ICC).

These ADXs also involved all battery tactical control officers.

ion staff and battery command post personnel, allowing us to refine information flow within the battalion.

The battalion conducted "skull sessions," or tactical seminars, every Thursday morning. We used these seminars to discuss weaknesses revealed during the preceding Tactical Tuesday and devised appropriate corrective actions for the following Tactical Tuesday.

Tactical Tuesdays and tactical seminars were the training highlights for tactical directors, tactical control officers and members of the staff, while STO skills, CTT and battle drills were the mainstay for the soldiers who crewed the weapon systems.

ing and marking contaminated areas). They also had to be highly trained in reporting observed nuclear detonations; handling prisoners of war; preparing, manning and fighting from individual fighting positions; buddy aid; map reading; communications procedures; and equipment tone down.

Equipment tone down was one of several STO requirements that were standardized within the battalion. The XO and battalion motor officer designed canvas covers that, when cut to predetermined dimensions, fit over all vehicle, generator, radar and launcher reflective surfaces. We displayed these canvas covers to officers and NCOs during officer professional

development (OPD) and NCO professional development (NCOPD) classes and provided them with templates which showed the correct canvas dimensions. They were given two weeks to produce their own canvas cutouts and cover all reflective surfaces. During similar OPD and NCOPD classes, we showed how all bunkers, individual fighting positions, range cards, bunker books and field uniforms would be standardized. Officers and NCOs enforced these standardizations during battalion FTXs.

The battalion commander relied on the monthly battalion FTXs to assess the unit's "train-up" to the AAFCE TACEVAL. We incorporated the results of Tactical Tuesdays, tactical seminars, STO Half-Days and standardization training into these FTXs. While in the field, we held daily feedback meetings at the battalion tactical operations center just as we had at Fort Bliss. The candor displayed by the battery commanders, staff members and battalion commander, when it came to training strengths and weaknesses, again

proved one of our most valuable tools in preparing for the AAFCE TACEVAL.

The Final Milestone

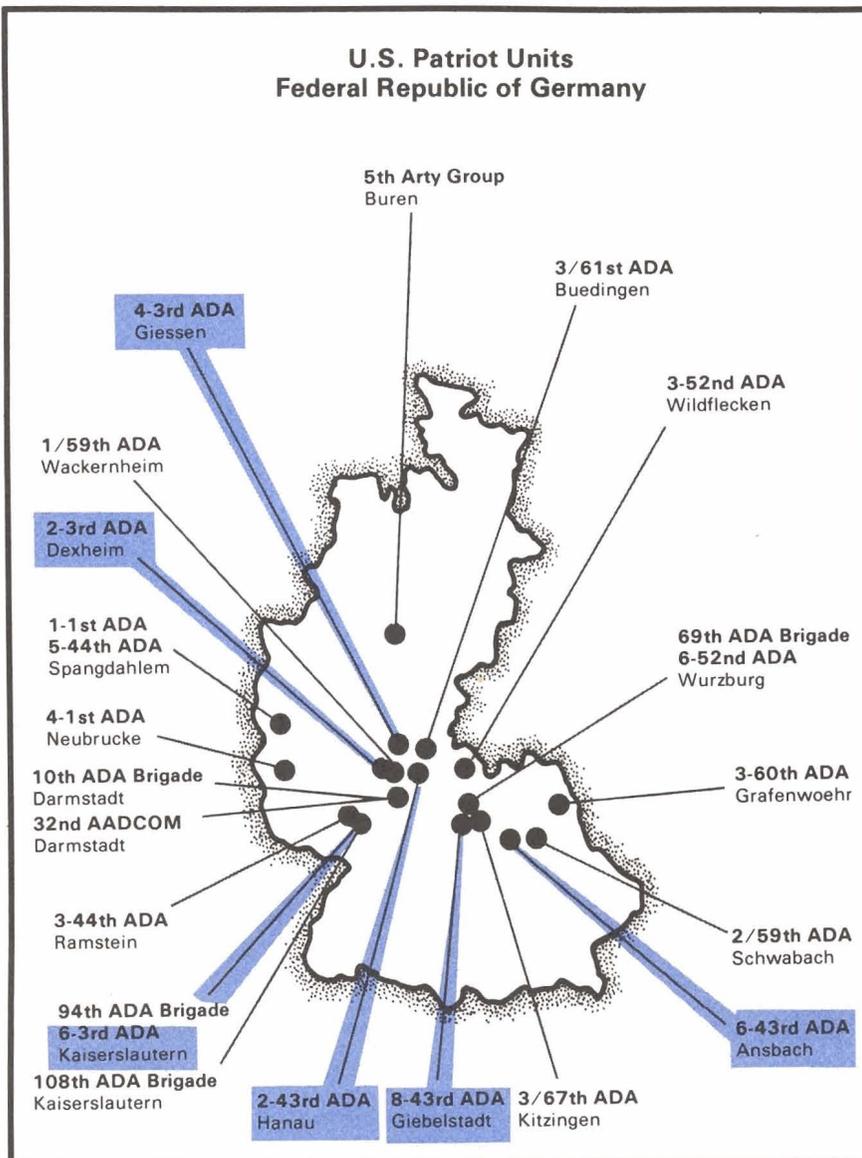
Ten months after its arrival in Germany the battalion, armed with knowledge gained from an outstanding training and maintenance program, deployed to the field for its AAFCE TACEVAL. After 60 grueling hours of continuous evaluation, it was over.

The soldiers of the 6th Battalion, 3rd Air Defense Artillery, had approached the TACEVAL with confidence but also with the knowledge that it never pays to be over confident. Physically and mentally exhausted, they awaited the results with the same attitude. As the scores were read aloud, their apprehension gave way to elation. They had not only passed the extremely difficult TACEVAL, they had received the best overall rating of any European Patriot air defense battalion to date.

Six U.S. Patriot battalions are presently deployed in the Federal Republic of Germany. One more Patriot battalion, the 5th Battalion, 7th Air Defense Artillery, will soon follow.

The soldiers of the 6-3rd ADA, their record of achievement and their faith in a common sense, building-block approach to training should serve as a source of inspiration for Patriot battalions destined to follow them on the long road to NATO accreditation. They are much on my mind today as I prepare to lead a newly activated battalion, the 5th Battalion, 7th Air Defense Artillery, along the same road to NATO accreditation. The 6-3rd ADA has left us a reliable road map, complete with warning signals and detour signs, to follow.

Lt. Col. Arthur R. Kreutz, Jr., then a major, served as the 6th Battalion, 3rd Air Defense Artillery, executive officer during the unit's successful quest for NATO acceptance. He will command the 5th Battalion, 7th Air Defense Artillery, scheduled for activation in December, as it begins its own quest for NATO acceptance.



*The 8th AAA Battalion at
Camp Lucas, Michigan*

Guardians of the Soo Locks

by Duane E. Miller

The date was June 25, 1950. America, just a few years removed from the chaos of World War II, was stunned by the news that troops of communist-dominated North Korea had launched an invasion of South Korea. Many at once feared — and not without justification — that a third world war was imminent.

That anxiety was never more visible than at Sault Sainte Marie (the Soo) in Michigan's upper peninsula on the Canadian border. Across the river is Sault Sainte Marie, Ontario. Here, on the Saint Marys River, were situated the Soo Locks — which, at the time, still saw the bulk of iron ore and the vast quantities of grain used in this country being transported from Lake Superior on to the other Great Lakes. The complex, consisting of five locks (four American and one Canadian), was especially vulnerable to air attack. Nearby Fort Brady, which had contributed large contingents of antiaircraft troops during World War II, had been disposed of and now was a state college campus.

Recognizing the potential danger, the Army ordered the 8th Antiaircraft Artillery Battalion, a self-propelled automatic weapons unit stationed at Fort Custer, Mich., as part of the 22nd AAA Group, to deploy immediately to the Soo.

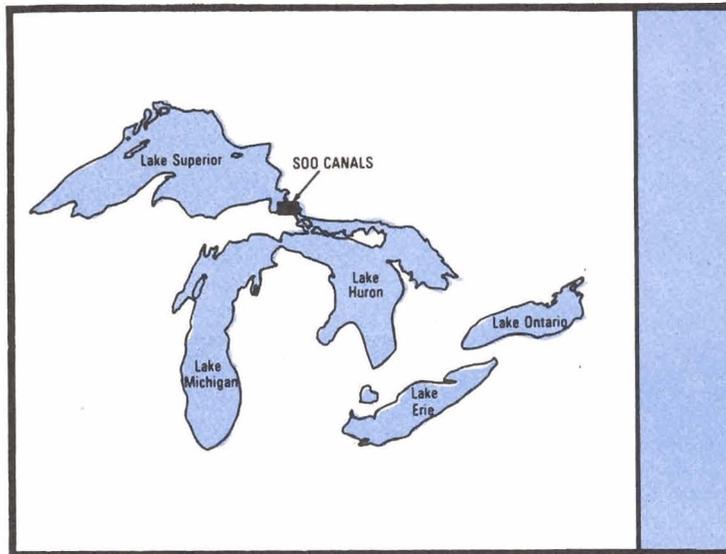
Some 600 men of the 8th Battalion arrived in Sault Sainte Marie during the afternoon of July 2. Roughly half of the battalion took up defensive positions in the locks area, while the remainder occupied buildings that had once served as the station hospital for Fort Brady. These buildings, which had been converted into a mental institution, were hastily evacuated by the state. Camp Lucas was about to be activated.

Enclosed corridors and roofed-over walkways connected many of the former hospital's buildings. This was welcome, especially when the frigid winter weather set in, but much work still needed to be done to make the camp habitable. By February 1951, one

million dollars had been appropriated for improvements at Camp Lucas.

On June 15, 1951, the widow of Maj. Gen. John Porter Lucas formally dedicated the new post. Lucas commanded the U.S. VI Army Corps during the early stages of the invasion at Anzio in 1944.

The camp grew into a collection of the usual administration buildings and barracks characteristic of all military installations. Camp Lucas was situated on about 27 acres of land in the southwest corner of Sault Sainte Marie. Because of its small size and temporary nature, Camp Lucas did not have on-post family quarters, but married men had no difficulty finding rental property at a reasonable cost in the Soo or in the surrounding area.



The Army Chief of Staff, Gen. J. Lawton Collins, visited the Soo in February to inspect its defenses. In an effort to ease the apprehension among the local citizens, Collins promised that the Army “will continue to take steps for the defense of the Sault Locks and the Sault defense area.”

The temporary positions taken up by the battalion's twin 40mm guns and quadruple .50-caliber machine guns on July 2, 1950, were rapidly improved. Pits were dug, telephone lines were installed and Jamesways (portable huts) were erected for the gun crews. With everything in place, the crews began their 10-year vigil of the sky around the Soo.

The 40mm guns (manufactured during World War II under license from Bofors of Sweden) could fire

two-pound shells at the rate of 120 rounds per minute to a generally effective height of 11,000 feet. The quadruple .50-caliber machine guns had a combined rate of fire of 1,600 to 2,000 rounds per minute.

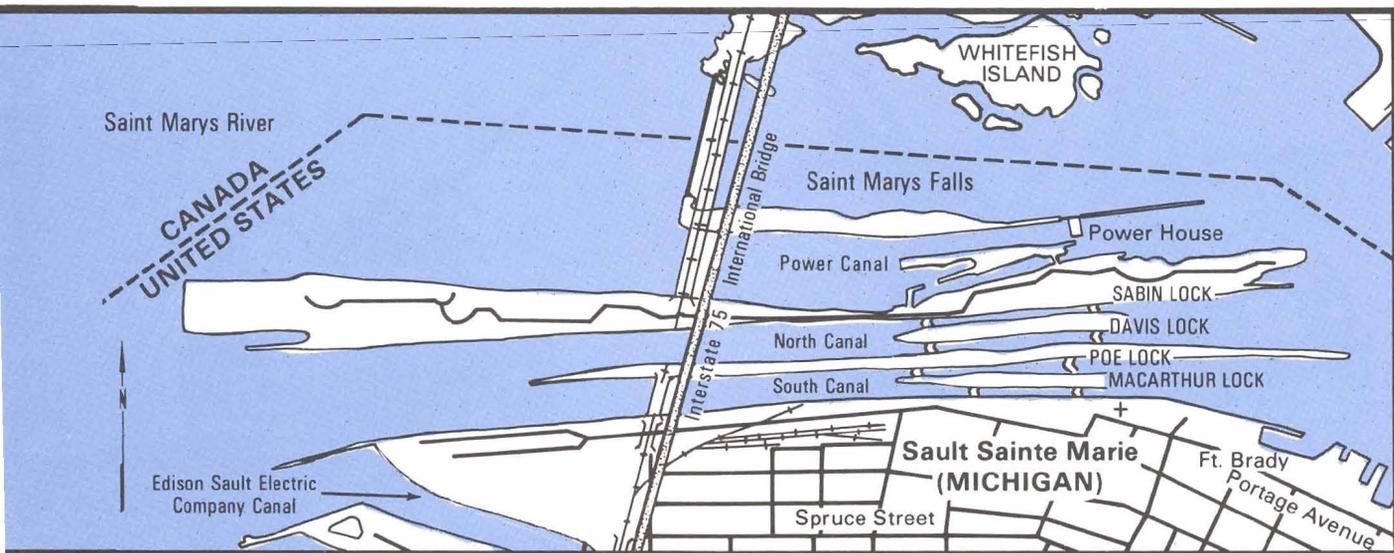
Intensive training of the 8th AAA Battalion began almost immediately after its arrival. The battalion used the ranges located at Point Mamainse, Ontario, for live firing exercises. This saved them a long road march to Camp Claybanks. Camp Claybanks' AAA firing site was 250 miles

The only other training area convenient for the Camp Lucas garrison's use was the inactive Raco Air Force Base, located south and west of the Soo adjacent to Michigan Highway 28 near Rexford. It was also used by the other armed forces, reserve components and the Canadian Army militia. Raco AFB had sufficient real estate to conduct small unit tactical exercises and firing ranges for small arms firing.

The 45th Radio Controlled Aerial Target (RCAT) Detachment

The 8th AAA Battalion underwent a major reorganization on Sept. 5, 1953. It was established as a light, mobile 75mm gun battalion. The unit turned in its automatic weapons and re-equipped with the M-51 Skysweeper gun system. This was a fully automatic 75mm gun that had been developed too late for service in World War II.

On the left side of the mount was a self-contained tracking radar system with an effective range of some 10,000 yards. Ammunition



away in Michigan's lower peninsula, 35 miles north of Muskegon on the shores of Lake Michigan.

Under a reciprocal agreement with the Canadian government, the 8th AAA Battalion trained on the Canadian shores of Lake Superior while units of the Canadian Army militia conducted summer training near the American Soo. The Canadian 49th Medium Antiaircraft Regiment of Sault Sainte Marie was the principal Canadian user under this arrangement.

supported the firing exercises at Point Mamainse. The radio-controlled target drones reached a speed of 140 mph as gunners of the 8th AAA Battalion sharpened their firing skills with the 40mm guns and quad .50 machine guns. At \$800 each, the RCATs were expensive — every effort was made to recover and repair those downed by gunfire. A nylon parachute, 24 feet in diameter, was electrically activated when a drone was hit, thus permitting the RCAT to float to earth.

was fed by two revolving magazines at the rear of the gun. It was thus possible to achieve a rate of fire of 45 rounds per minute. The Skysweeper, firing a 15-pound high explosive shell, could reach a maximum height of 30,000 feet. Optical sights were fitted to permit its use against ground targets out to 14,415 yards. Each weapon was completely mobile, mounted on a combination chassis and gun mount.

The 8th AAA Battalion was not subordinated to a group

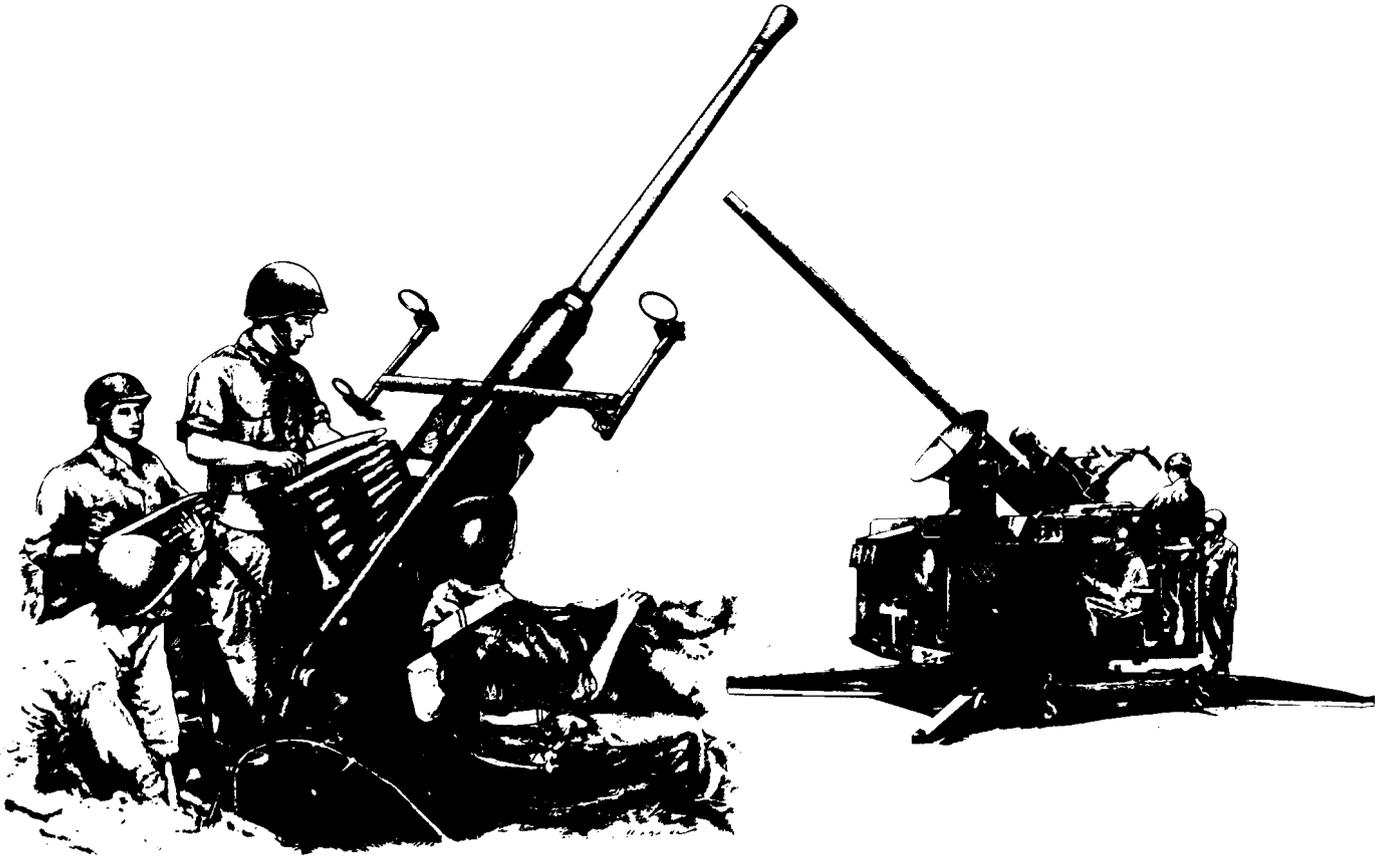
headquarters. In 1956, for example, it was under the operational control of the 5th AA Region, Fort Sheridan, Ill. That headquarters was responsible for the air defenses of Chicago, Detroit and Milwaukee as well as the Soo.

The nucleus of the air defense of the locks was the operations center. The center was staffed by the 363rd AAA Detachment (opera-

When the Combat Arms Regimental System was approved in early 1957, the 8th AAA Battalion passed into history. In its place, the 2nd Gun Battalion (Skysweeper), 68th Artillery, came into being. The new unit was part of a Coast Artillery Corps regiment that had been activated in 1918 and earned five battle honors.

Thus, the 2-68th, one of the Air Defense Command's last Skysweeper units, was inactivated on the post in June. The 75mm guns were ordered phased out of the air defense inventory and replaced by the more versatile and powerful Nike guided missiles.

Camp Lucas remained on standby until 1962, when it was discontinued as a military post



tions) and assisted by specialists from the battalion's headquarters and headquarters battery.

Guns were not the only weapons available for safeguarding the region. Some 22 miles south of the Soo was Kinross Air Force Base (later redesignated Kincheloe Air Force Base). Based here were elements of the USAF's Air Defense Command. In the mid-50s, F-89 Scorpion all-weather, turbo-jet interceptors provided round-the-clock air cover.

The debut of the surface-to-air missile had suddenly relegated the gun to a secondary role as an air defense weapon. The Department of the Army concluded that the possibility of an air attack on the Soo Locks was so remote that it was no longer a serious concern.

Washington announced on April 28, 1960, that Camp Lucas would go on a standby status the following July. A small civilian standby force would maintain the post.

and declared surplus to the needs of the Army.

While most citizens in the area have at least a brief recollection of Fort Brady, the number who recall Camp Lucas and its resident AAA gunners dwindles significantly with each passing year.

Duane E. Miller is a U.S. Army Reserve retired first sergeant and a free-lance writer living in Lansing, Mich.

The Last Duster Class



Class 36-88 fired the Duster for the last time at Fort Bliss in October.

The U.S. Army Training Center, Fort Bliss, Texas, has graduated its last “Duster” gunner. “You’re part of history; there will be no more after you,” Lt. Col. Daniel Ruiz, commander, 2nd Battalion, 56th ADA, told National Guardsmen of graduating Advanced Individual Training Class 36-88 at an October graduation ceremony. The ceremony marked the end of Duster training at Fort Bliss and the beginning of Air Defense Artillery’s farewell to a landmark weapon system.

“Fort Bliss has trained thousands of Duster gunners since the Korean War,” said Maj. Tony Demasi, Army National Guard Force Modernization Officer. “The instructors have been National Guard cadremen since the Duster was deleted from the Active Army inventory following Vietnam. Today, with Chaparral and Vulcan replacing Duster in the National Guard, there are no longer enough requirements to justify resident MOS training for Duster.”

The Guard still has two Duster/Stinger battalions: one in Virginia and one in South Carolina. New Duster gunners, however, will have little time to apply their skills. The Guard expects to convert the last two Duster/Stinger battalions to Vulcan/Stinger battalions within five years.

"The South Carolina battalion will be the last National Guard unit to have Duster," Demasi explained. "The battalion is scheduled to convert to Vulcan in FY 93. The last Duster firing will take place sometime during 1992, when the South Carolinians conduct their last annual service practice with Duster."

Duster got its nickname from the dust kicked up at the point of impact by its 40mm (240 rounds per minute) exploding projectiles. The ancestor of today's Duster was the M-19, which had turreted dual 40mm Bofors L-60 guns on a modified T-24 tank chassis. This was the "Flak Wagon" of the Korean War. The Army purchased 285 of them in the late 1940s. In Korea, they were chiefly used to support infantry assaults against fortified hill masses such as Heartbreak Ridge and Porkchop Hill.

The M-42 Duster, which had more power and more efficient sights, also had twin 40mm Bofors guns but was mounted on a modified T-41 chassis. Some 2,625 of them were produced and reached the Army inventory by 1954. A modified version of the Duster, called the M-42A1, had a fuel-injection engine. This was the Duster that saw action in the jungles of Southeast Asia.

The Army, in the belief that air defense missile systems had made anti-aircraft guns obsolete, first turned Duster over to the National Guard in 1959. The Army reconsidered in 1966 and briefly returned the Duster to active duty for redeployment to Vietnam. The Duster crewmen who went to Vietnam expecting to combat enemy aircraft took on enemy infantry instead. They called it "mowing grass." They fired more than four million rounds and won 450 medals for valor. Individual awards included one Congressional Medal of Honor, six Distinguished Service Crosses and 16 Silver Stars. They participated in every major American campaign during the conflict. Some reached the outskirts of Phnom Penh.

Duster was once again phased out of the Active Army inventory and turned over to the National Guard in the early 1970s. Today, it is being gradually phased out of the National Guard as its replacement — the Vulcan air defense gun — is turned over to the National Guard to make way for the forward area air defense system.

"The Active Army's and National Guard Bureau's decision to discontinue Duster training five years before the last Duster leaves the National Guard is based on the low density of MOS 16F [Duster Crew Member]," said Demasi. "There simply aren't enough weapon systems left to justify the expense.

"The U.S. Army Training and Doctrine Command isn't ignoring training requirements for the remaining National Guard Duster/Stinger battalions," Demasi continued. "The Air Defense Artillery School has prepared a Skill Level 10 exportable training package. Guard units will use the package to provide formal Duster training at the home station.

"As things stand now, National Guard ADA recruits assigned to the Virginia and South Carolina units will continue to come to Fort Bliss for basic and advanced individual training. Those destined for Duster units will receive advanced individual training in man-portable air defense systems. After graduation, their home units will train them, as necessary, on Duster."

Repetitive, thunderous booms stirred up dust downrange as Class 36-88 conducted its final live-fire exercise prior to graduation. The class consisted of guardsmen from Virginia, Ohio, Florida and the District of Columbia.

"The Duster has been around so long, and in the near future, it'll be gone; that's what they're saying, at least," remarked James P. Dessi of Virginia's 3rd Battalion, 111th Air Defense Artillery. "The barrels on the Dusters we're firing originally came from guns on Navy ships."

For the most part, the soldiers were disappointed the Duster is destined to be "canned." They all felt that the Duster is still a worthwhile weapon. "Its performance is outstanding, especially for its age," said Dessi. "I think we should keep it, just update it, you know — bring the technology up to today's standards."

MSgt. Larry M. Monroy, Duster section NCOIC, agreed — as do many veteran air defenders. Monroy thinks the only thing Duster needs is a diesel engine to make it compatible with other U.S. and NATO systems. "The Duster has no electrical system," said Monroy. "It's therefore hard to detect. It can also fire without any power whatsoever, and that's a powerful asset. No other system can do that."

Duster won't be forgotten: not by the soldiers who crewed it or by the infantrymen who watched it destroy a hostile machine gun nest or stop a wave of charging enemy infantrymen in its tracks. The graduation of Class 36-88, therefore, ranks as an important footnote to an important chapter in ADA history, the final pages of which are now being written.

— by John Brenci and Hubert Koker

Duster got its nickname from the dirt kicked up at the point of impact

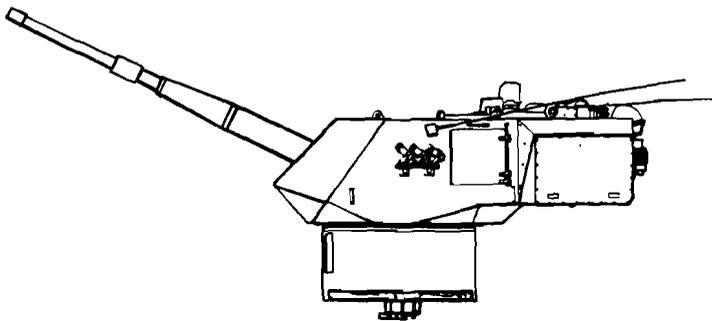
The Navy's Air Defense Anti-Tank System

by John Larry Baer

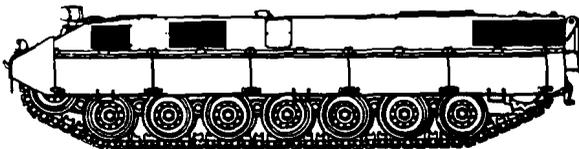
A Navy anti-tank system is not a contradiction in terms. The U.S. Navy has been using a 76mm gun system from a shipboard turret against attack boats and oil platforms that reportedly have been used to track American ships in the Persian Gulf. The shipboard turret with 76mm gun system could very easily be moved "lock, stock and barrel" (and automatic feeding and loading system) into a main battle tank (MBT) chassis.

The battle between missiles and cannons would not be solved by such an action; however, it would represent a bit of technology transfer. This system, developed by Oto Melara of Italy, provides the accuracy, lethality and sustainability of fire desired.

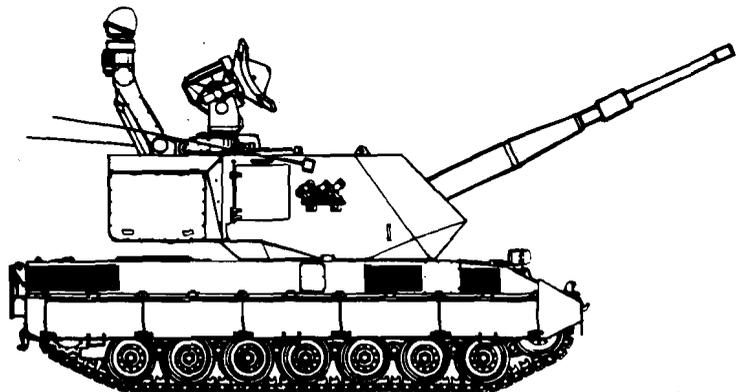
Unlike small caliber weapons (30, 35 or 40mm), this system would provide the Army with a stand-off capability against armored vehicles on the ground or against aircraft and helicopters coming in for a strike. It also provides the room for proximity or variable-time fuzes and a considerably greater high explosive (HE) payload than can be squeezed into



Otomatic Turret



MBT Chassis



Otomatic 76/62 AA Tank

smaller projectiles. Also, course correction technology can be adapted to a round of this size. In short, this U.S. Navy-proven 76mm gun system could provide the Army with the reliability that even the best of missiles seems to lack.

In terms of logistic support and efforts to reduce the number of combat systems in the three services, the Army's use of rounds already in the Navy's inventory would provide tangible savings. In terms of interoperability, the Army could use the same round that our allies in Europe use without worrying about their availability in pre-positioning of materiel configured in unit sets (POMCUS).

The 76mm guns and the turrets could be made at U.S. Army arsenals and tank plants and the ammunition and fuzes at our Army ammunition plants for our troops throughout the world. But in Europe there would be a built-in, reliable production capability just south of the Alps — close enough to the Fulda Gap by barge, rail or air transport to be in our troops' hands within hours.

The capability of firing 120 rounds per minute enables the 76mm system to cope with a high-density attack scenario. Its 16-kilometer range permits engagement at sufficient distances to counter the terminal effectiveness and high payload of current air-launched weapons. The 76mm gun system can achieve equivalent cumulative kill probability at three times the range of any other currently available point defense weapon system.

The search and track radars of the integrated fire control system are designed to minimize anti-radiation missile lock-on projectiles. The search radar, with identification, friend or foe (IFF) for detection of flying targets, is augmented by a tracking radar with an auxiliary television camera and an opto-electrical system (OES). The OES includes a low-light-level television camera, laser range finder and panoramic sight. It is designed to operate day and night under all weather

conditions, and it has a fully computer-aided command and control system and manual override.

The 76mm gun system currently has in inventory two types of ammunition that, by virtue of its size, can be augmented by other sources. The 6.3 kilogram (13.86 pound) pre-fragmented (PF)

John Larry Baer is a staff consultant for DGA International.

projectile carries an 0.73 kilogram (1.6 pound) HE charge and is proximity-fuzed. The 6.53 kilogram (14 pound) multi-option (MO) projectile can be fuzed for variable timed (VT), point detonated (PD) or time delay and carries a similar charge.

The Army is always on the lookout for a reliable and effective ammunition transfer and loading mechanism. The 76mm feeding, transfer and loading system is hydraulically driven. The technology is a direct outgrowth of the 80-round ready-to-fire turret that the Navy has used successfully for more than 10 years. The two transfer drums and rocker arms use hydraulic energy. The automatic feed system can be replenished manually.

The system has 360-degree engagement capability and gun elevation limits from -5 to +60 degrees. For optimum ammunition allocation, 26 anti-aircraft and three anti-tank rounds are ready to fire in the automatic feeding system. Twenty-six more accessible rounds are stowed in the turret, backed up by a reserve of 26 rounds stored in the hull and nine rounds in the turret.

The main elements of the proposed 76mm gun system are the turret and chassis.

The turret (housing the elevating mass and the gun feeding mechanisms) is a self-contained system of the armored rotating casemate type and comprises the

radar and opto-electronic search and tracking system, the gun electro-hydraulic servo-system, the ammunition automatic magazine and ammunition stowages, the data link and radio equipment.

The gun feeding system, fire control system (computer and console) and radar system (transmitter, receiver and junction boxes) are inside the turret. The sensors and their associated elevating and retracting mechanisms are arranged in the rear of the turret, protected by an armored shield when folded down.

The ammunition feeding system, consisting of a translator on the basket base, two rocking arms feeding the gun at any elevation and two transfer drums on the gun mount, is hydraulically operated and linked to the gun recoil movement. The spent case ejection system is hydraulically operated.

The fire control system, an integral part of the gun system, operates on the inputs from its own active and passive sensors. These are the search and tracking radars, the commander's search periscope and the gunner's optical tracking sight.

The OTO Melara system can be fitted on an M-1 tank chassis. Only small modifications to the chassis are required for stowage of rounds and the installation of the auxiliary power unit and navigator equipment.

It is not often that we have a non-development item (NDI) that can directly meet our needs without time-consuming and expensive research and development or even military adaptation. Nor do we often have the easy standardization, rationalization and interoperability that the adaptation of this Navy system to Army use offers.

The Army's use of this Italian technology, following time and battle-proven use by the U.S. Navy, could serve as an excellent example of technology transfer. It would also be a very effective demonstration of the value-added concept, which is increasingly demanded by the Department of Defense and Congress.

21st AAA Returns to Fort Bliss

by Hubert L. Koker

They came from all parts of the country, from Connecticut and Florida, from Oregon and Alabama. By bus and by train they came. They came to Fort Bliss, Texas, to learn to be soldiers. The horrors of World War II had ended while they were still in high school and the six-month camps of the Universal Military Act were over. In 1949 soldiering was easy, even when the bugler sounded reveille through the wind and sand that was forever filtering through their four-man huts at Logan Heights. Yes, soldiering was easy for the men of D Battery, 21st Antiaircraft Artillery Automatic Weapons Battalion (Self-Propelled). But in 1949 they had never heard of Korea.

When the 21st AAA received its orders to go to Korea in September 1950, soldiering was easy no longer. The battalion loaded its half-tracks on railcars and left Fort Bliss in November for the embarkation center at Camp Stoneman, Calif. They landed at Yokohama, Japan, Dec. 8, 1950.

Instead of spending holiday leave at home, the battalion spent Christmas 1950 firing their weapons systems at Katakai Range and

preparing their equipment for the combat they knew was inevitable.

The situation in Korea in the winter of 1950, although not hopeless, was far from promising. The war began when the Soviet-trained North Korean Army crossed the 38th parallel into South Korea on June 25, 1950, driving Republic of Korea and American units south into a small perimeter around the port of Pusan. In September the U.S. X Corps made an amphibious landing at Inchon on Korea's west coast to cut North Korean supply lines while the U.S. Eighth Army broke out of the Pusan perimeter. By the end of September the enemy had relinquished effective control of nearly all territory south of the 37th parallel, and by Nov. 24, U.N. troops were looking into Manchuria across the Yalu.

On Nov. 25, snatching the initiative from the U.N. command in a matter of hours, two Chinese communist field armies attacked across the Yalu. U.N. forces reeled southward. The two principal ground commands in Korea, the U.S. Eighth Army and U.S. X Corps, had been physically separated from each other when the Chinese

struck. The Eighth Army withdrew down the west side of the peninsula. General of the Army Douglas MacArthur's X Corps was evacuated from Hungnam on the east coast Christmas Eve and reinserted at Pohang-dong and Pusan. The capital city, Seoul, was evacuated Jan. 4, 1951, and on Jan. 10 Wonju fell.

Also on Jan. 10, a fully combat-loaded 21st AAA battalion from Japan landed at Pusan. The battalion quickly unloaded its vehicles from the ships in the freezing weather and started on the 300-mile road march to the 25th Infantry Division sector near Suwon on the west coast.

The 21st AAA was assigned to the 25th Division Artillery with one battery in support of each infantry regiment. D Battery was tasked to support the 24th Infantry Regiment, the last black infantry regiment in the Army. D Battery saw action for the first time on Feb. 16, 1951, in support of the 2nd and 3rd Battalions. They were credited with over 290 kills. During Operation Killer, which included the crossing of the Han River on March 7, D Battery was credited with 1,500 enemy kills with the loss of only one man.

At Fort Bliss, the 21st AAA had trained with the M-15, a half-track vehicle that mounted a 37mm cannon and two .50-caliber machine guns, and the M-16, a half-track vehicle that mounted a turret with four quadruple-mounted .50-caliber machine guns. Upon their arrival in Japan, the M-15s were turned in and replaced with M-16s for a total of 64 M-16 gun systems in the battalion. So successful were the M-16s in ground support combat in Korea that additional systems were acquired and all but replaced the heavy machine gun sections in the infantry heavy weapons companies.

D Battery continued to support the 24th Infantry through the summer and fall of 1951. On Nov. 8, 1951, 62 old-timers, the last of the original 122, with the exception of Capt. Raymond Snider and 1st Sgt. Leonard Higgins, rotated to the United States from their line position near Churwon. Snider and Higgins rotated in February.

Nothing now remained of the original D Battery except the memories. Memories of men who had made it an excellent fighting unit. Men who had trained, eaten, fought and, yes, even died together. (Three members of D Battery died in battle and a number were wounded.)

As the soldiers of D Battery rotated, some went home from Korea and from the Army and started civilian careers. Still others made the Army their career. Not all are still alive. All have aged. But in 1988 they came from all parts of the country, from Connecticut and Florida, from Oregon and Alabama. By plane and by car they came. They came to Fort Bliss, Texas, to join in a reunion of D Battery, 21st AAA AW Battalion (SP). Not only was the 21st AAA the first triple A battalion to leave Fort Bliss for

the Korean War, it was also the first to return for a reunion there.

Forty-four members of the original 21st AAA Battalion, mostly of D Battery, gathered in El Paso in June with their wives to spend three days reliving those war years and to tell about "being the best at what we were the best at doing." A few had kept in touch, but most had not seen each other in the intervening years. "Name tags helped," said Pappy Snider. "Most of these people were just kids back in

1950. I wouldn't recognize any of them if I passed them on the street." Raymond "Pappy" Snider was the battery commander during those years. He is a retired Army major and now resides in El Paso.

Staging the reunion at Fort Bliss allowed unit members to walk about the weed-overgrown area of Logan Heights that had been their home 37 years ago.

The only buildings remaining are part of what was then the motor park.

"The second platoon was located right about here," said Casey Higgins. "It's hard to tell! Even the company street is gone."

"I don't remember being so close to the mountains," said Stuart Lassetter. For Lassetter it was a double reunion. Besides the unit get-together, he and his wife, Martha, came from Angelfire, N.M., to meet with Jack Vanderbleek and his wife, Lou, who flew in from St. Petersburg, Fla. The women are sisters.

At the Air Defense Artillery Museum a quadruple-mounted .50-caliber machine gun turret attracted their attention. Most of the wives had not seen a "quad .50." To the men, their dreadful weapon of infantry ground support during the Korean War seemed smaller than they remembered. Some tried to sit in the tub (gunner's seat) again without much luck; age and weight were against them. Talk centered about "remember when" stories and technical training on the quad .50. The trip to Fort Bliss brought these old time air defenders in contact with modern air defense equipment. They were overwhelmed by the size and complexity of the systems.

Former sergeant and cadre member Alvin Jimenez took time out to demonstrate how he performed part of his old job as physical training instructor. Climbing on top of a PT platform, he ably demonstrated the proper way to do pushups and side-straddle hops.

The highlight of the reunion was a slide show presented during a luncheon at the NCO Club. As the group watched slides of the unit in Korea and reminisced about their war days, one member standing near the back of the group said, "Today we remember the good times, but there were bad times too. It was a hard, cold war to fight."

Jimenez summed up the feeling for the group when he said, "This has been a great reunion. I wouldn't have missed it for the world."

"The best at what we were the best at doing"

The fast lane

ROTC

by Lt. Col. Adrian A. Schiess

If I had to pick out the most rewarding assignment I've ever had, I would rank being a professor of military science right up there with commanding a Vulcan battery in Korea and a Hawk battery in Germany. My thoughts run counter to the opinions of many Army officers who think that reserve officer training corps (ROTC) duty is an out-to-pasture assignment or, at best, a necessary evil to complete in as short a time as possible.

Most officers believe a captain may do a little teaching on the platform, but never a major or lieutenant colonel, because ROTC is the kiss of death. Statistically speaking, officers on ROTC duty are not selected in large numbers for resident Command and General Staff College and have a minuscule chance for battalion command selection. However, I believe that ROTC is the best job you can have in the Army, despite the naysayers.

For those officers who have never had an ROTC assignment, including those officers who sit on all types of selection boards, let me set the record straight. First, ROTC duty isn't anything like you thought it was. If you're a Pentagon workaholic, this job will keep even you on the move.

Mondays, Wednesdays and Fridays, you'll get up at 0600, drive to the university and take physical training from 0700 to 0800 with the entire corps of cadets. A junior military science (MS III) cadet who is

getting ready to go to advanced camp takes charge of the entire corps of cadets and leads PT; and your teaching day has begun. A few warm-up drills and some stretching exercises, and you're out for a two- or three-mile run in formation: all cadre, all cadets. You'll take a quick shower and start the first of your three classes at 0830 (your other two are at 1030 and 1330).

Thursdays you'll teach from 1300 to 1600 at your university's extension center 50 miles away. You'll also conduct a hands-on, one-hour leadership laboratory, so you should get back by 1800. Add to this the time you spend preparing for your classes and how long you'll need to stay at the office to get ready for the upcoming instruction in the leadership laboratory the next morning.

Tuesday's leadership lab at 0700 entails everything from rappelling off the 100-foot high towers in the football stadium to assembly and disassembly of M-16s and M-60s, from survival swim tests to rope bridging and from first aid to rifle marksmanship. Who do you think does all the planning, organizing, technical training, coordinating and teaching? You!

The cadet staff, mostly seniors and juniors, work their tails off to assist you. They will make a thousand mistakes and, if there was ever a place for them to have the freedom to fail, this is it. You need to know FMs 22-5, 100-5 and 21-20, because the cadets are immersed in them and thrive on them.

Field training exercises run the gamut from one-day (usually Saturdays) land navigation and terrain orientation exercises to full-blown three-day FTXs with meals ready to eat (MREs), M-16s with blanks, National Guard support for vehicles, tactical situations, operation orders (OPORDs), night patrols, two-man tents and aggressors. Guess who gets down and dirty?

Remember, you're the role model and the cadets watch you like a hawk. Outstanding instruction is a must. You can plan on working 14 of the 19 Saturdays in a semester. Sundays are not sacred — cadre often use them to do routine work delayed because of cadet needs.

As a university instructor you will have university responsibilities. If the president has a dinner for all faculty and staff, you must go and show the flag. If the registrar needs counselors for registration, you must volunteer and serve. You will mix with the university administration and meet community people, and you will get involved with students and influence their choice of classes.

The coordination required to make things happen within the university infrastructure is tremendous. For example, in one day you may have to lay on the theater for the awards ceremony, have the color guard at the stadium for homecoming practice at 1600, and notify a family in town by 2100 that their son was killed in a deuce-and-a-half accident in Germany this morning.

Notification of next of kin (NOK) or survivor assistance duty is a sobering experience. You must coordinate the funeral detail, attend the wake, represent the Army at the burial and give the flag to the mother and father. Other cadre will take your classes and any extra duties you may have had. The family receives your complete support for as long as it takes. And some officers think ROTC duty only consists of teaching!

Different colleges within different universities have different procedures. One of your jobs is to convince college administrators

that the ROTC program offers a great deal to college students. You need to talk to them at registrations, set up information tables and become a university admissions expert.

You are a recruiter in every sense of the word. You're in the Army 24 hours a day and you're a recruiter 24 hours a day. You must

... a recruiter 24 hours a day

go find the quality students — they're there.

The extra duties will keep you hopping. You'll sit on about six to eight scholarship boards a year. You'll get involved in enough paperwork to make your head spin, stand a command inspection and coordinate two awards ceremonies. You'll plan and coordinate a military ball and dining-in, grade hundreds of tests and papers, moderate the Ranger Club and be responsible for the advertising and recruiting budgets.

You'll conduct at least six West Point physical aptitude evaluations, visit your eight high schools twice a year and make four or five ROTC scholarship presentations at high school awards nights. You'll attend at least five college nights at local high schools and coordinate physical examinations and paperwork for every student entertaining the thought of going into the advanced course, going to the advance camp or attending airborne, ranger, air assault or northern warfare training.

By the way, most assistant professors of military science go to one of the advanced camps (Fort Lewis, Wash., Fort Riley, Kan., or Fort Bragg, N.C.) for six to eight weeks in the summer to act as training cadre and evaluators for the juniors who are meeting the challenge and rites of passage to become senior ROTC cadets.

The advance camp is rigorous and stressful. Officers with weak stomachs, little drive and a lack of commitment to cadets need not apply. Maj. Gen. Robert E. Wagner, commanding general, U.S. ROTC Cadet Command, is putting teeth into the support for ROTC assignments and changing the image of ROTC duty. The nomination process to be selected for an ROTC assignment has been tightened.

In a nutshell, a normal day of ROTC duty is 12 to 14 hours long, and regular weekend work is a necessity to meet all of your commitments. You are always involved with students, families, educators, community representatives and university administrators. You represent the Army to the university and the community. If you look sloppy, the Army looks sloppy. But when you present a student with a four-year Army ROTC scholarship worth \$40,000 in front of 500 people at a high school awards night, you've sold some Army.

I've merely scratched the surface on what ROTC duty is like. The bottom line is that you almost immediately receive feedback and job satisfaction for your efforts. The flow of information from you to the student is staggering. The questions come hot and heavy. They begin to model themselves after you. You begin to see a change in them. The most notable change is an increase in confidence.

To commission outstanding young men and women as second lieutenants in the Army has got to be one of the most important jobs ever entrusted to an officer. I take my responsibility very seriously. I know of no officer performing ROTC duty now that does not think that his job has an impact on the future of the Army and its officer corps.

An ROTC assignment is in the fast lane — can you keep up?

Lt. Col. Adrian A. Schiess is the professor of Military Science at Xavier University, Cincinnati, Ohio. He was previously the air defense operations staff officer for the U.S. Army Concepts Analysis Agency, Bethesda, Md.

An Instructor's View

by Capt. Joseph B. McMullin

I am a team leader for the Air Defense Artillery Officers Basic Course at Fort Bliss, where I have a small group of 15 to 18 lieutenants whom I advise and teach. My goal is to highly motivate the students I work with and produce officers ready for their first assignment.

Formerly at USAADASCH we taught the entire class in one large group. Instructors lectured to as many as 50 students per class for the entire 10-week program. To better motivate students and prepare them for their first duty assignment, the director of the Combined Arms and Tactics Department, USAADASCH, significantly reduced the amount of large group lectures and substituted small group instruction. Now team leaders teach most classes to their group of students.

In the small group format, students cannot hide among the mass of their peers and decline to participate in discussion. Instructors call upon all students daily, requiring active participation by everyone. Further, team leaders teach their classes following the guidance in their instructor notes. This ensures that the learning objectives are met, but allows plenty of flexibility to meet group needs.

I begin my course by sharing with my group of students three primary goals of the course: academic excellence, communication skills and physical fitness.

Academic excellence enables students to acquire the knowledge and skills necessary to perform their first job as a platoon leader in an active duty unit. Students achieve academic excellence when

they fully comprehend performance standards and expectations. I make my students aware of the consequences of substandard performance, and they receive inspiration by my commitment to their success in the course.

I ensure my group achieves academic excellence through several methods. The small group process is the most important of these methods. The class discusses the terminal and enabling learning objectives several days prior to instruction. Students in one- to four-person groups receive assignments and instruct fellow students.

I then clarify and reinforce learning objectives. The standard for passing examinations is a score of at least 80 percent. The consequence of a failing score is to appear for an oral examination before a board of senior officers. Students who fail an examination could face separation from the course and, ultimately, from the service.

My other methods include daily quizzes to check the performance of the students, practical exercises which reinforce learning objectives, and reading assignments.

I accomplish the second goal of developing communications skills every day by giving students the opportunity to speak before the small group. Confidence, clarity and brevity in oral communication is vital, especially when young officers advise senior officers on highly technical subjects.

I also give briefing assignments for the next day at the end of each class. During the early weeks of the session, I provide personal feedback for each presentation. This helps students improve successive performances and teaches

students proper briefing techniques. Later in the course, I limit my participation in the critique. Then the students, having learned not only speaking skills, but also the finer points of constructive criticism, perform this task for me.

I attain the third goal of achieving and maintaining an outstanding level of physical fitness by conducting a mandatory physical training session each morning. The group does an additional 45 minutes of physical activity either during the lunch hour or at the end of the day.

Our group is motivated toward physical fitness first by understanding the importance of physical fitness to the mission of the Army. Secondly, the motto of our group is "Jock Platoon," which the group shouts each time they are in formation and snap to attention. This motto establishes the uniqueness and identity of our group, instilling in each individual the determination to live up to the motto. The group performs as the "Jock Platoon" by competing in a variety of endurance events such as 10-kilometer road races and triathlon competitions. By completing such events, individuals receive a T-shirt or other nominal prize which enhances their commitment to physical fitness.

Students receive positive feedback about their physical conditioning at the end of the course when they take the mandatory Army Physical Fitness Test. The results of the APFT are entered into the permanent personnel file of each individual.

This motivated group of students will leave the course at Fort Bliss better able to accomplish the task of motivating their own subordinates in their first duty assignment.

*Young Men's Christian
Association enhances
Fort Bliss lifestyle*

Fort Bliss YMCA

A "first-of-its-kind" Armed Services YMCA, nearing completion at Fort Bliss, Texas, will make the U.S. Army Air Defense Artillery Center and School a nicer place for air defenders stationed around the world to call home.

A Place to Stay

The \$2.5 million complex will include three buildings — the Residence Center, the Program Center and the Junior Enlisted Family Center — built on 3.3 acres of the Fort Bliss Army Base.

The first phase of the facility, the Residence Center, opened for reservations in October. The Residence Center has all the modern conveniences.

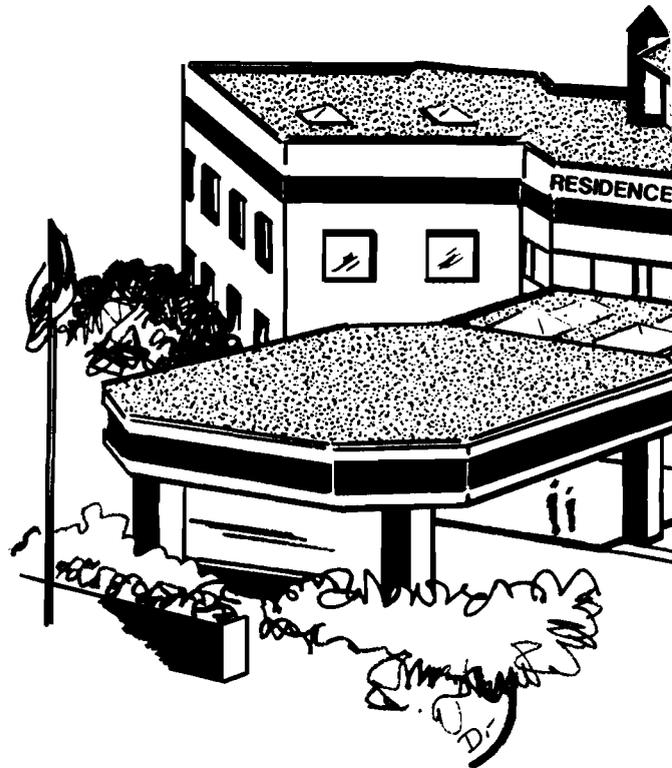
The 30,000-square-foot structure has 52 spacious rooms designed to make each soldier's stay as pleasant as possible. The rooms are furnished with two double beds (or a king-size bed), color television, private bath and telephone. Most rooms feature modern kitchenettes.

In addition to these inn-quality rooms, the new center also features free post shuttle service on weekdays, snack areas, a large meeting room, a 24-hour laundromat and a recreation area for children.

Everything about the Residence Center is designed to serve the special needs of military personnel and their families. Children 16 and under stay free when accompanied by a parent or guardian. The recreation area includes a well-equipped indoor play room with cribs, car seats and strollers, and will include a fenced outdoor playground.

The Residence Center is close to the PX, Commissary, U.S. Army Training Center and William Beaumont Army Medical Center. It's just minutes from the El Paso International Airport, downtown El Paso, major shopping malls and a variety of restaurants.

The Residence Center's welcome mat is always out for active, reserve and retired military and Department of the Army civilians and their families who need temporary quarters. Singles, families, and parents visiting relatives and friends in the military are all welcome guests. Families of patients at William Beaumont Army Medical Center are also welcome. YMCA membership is not required to be a guest at the Residence Center.



YMCA Capital Development Campaign leaders decided to complete the Residence Center, the largest and most expensive of the three buildings, to provide an income base for the completion of the next two buildings over the next several years.

The 8,000-square-foot YMCA Program Center will give off-duty military personnel a place to go to meet people, relax and just have a good time. It will have a small theatre, a fitness and workout area, pool tables, a snack bar, a library and much more. The center will coordinate community-sponsored activities to help make each soldier's stay in El Paso fun and friendly.

The 7,000-square-foot Junior Enlisted Family Center will reach out to young enlisted families to

provide them with a positive support system to make the change from civilian to military life a smooth, interesting process.

The young military wife often faces an array of complex problems. The Family Center will help these young women through many specially planned activities, including classes on sewing, cooking, child care, exercise, diet and nutrition, and many other subjects. Guest speakers will share information on military resources, medical care, coping with de-

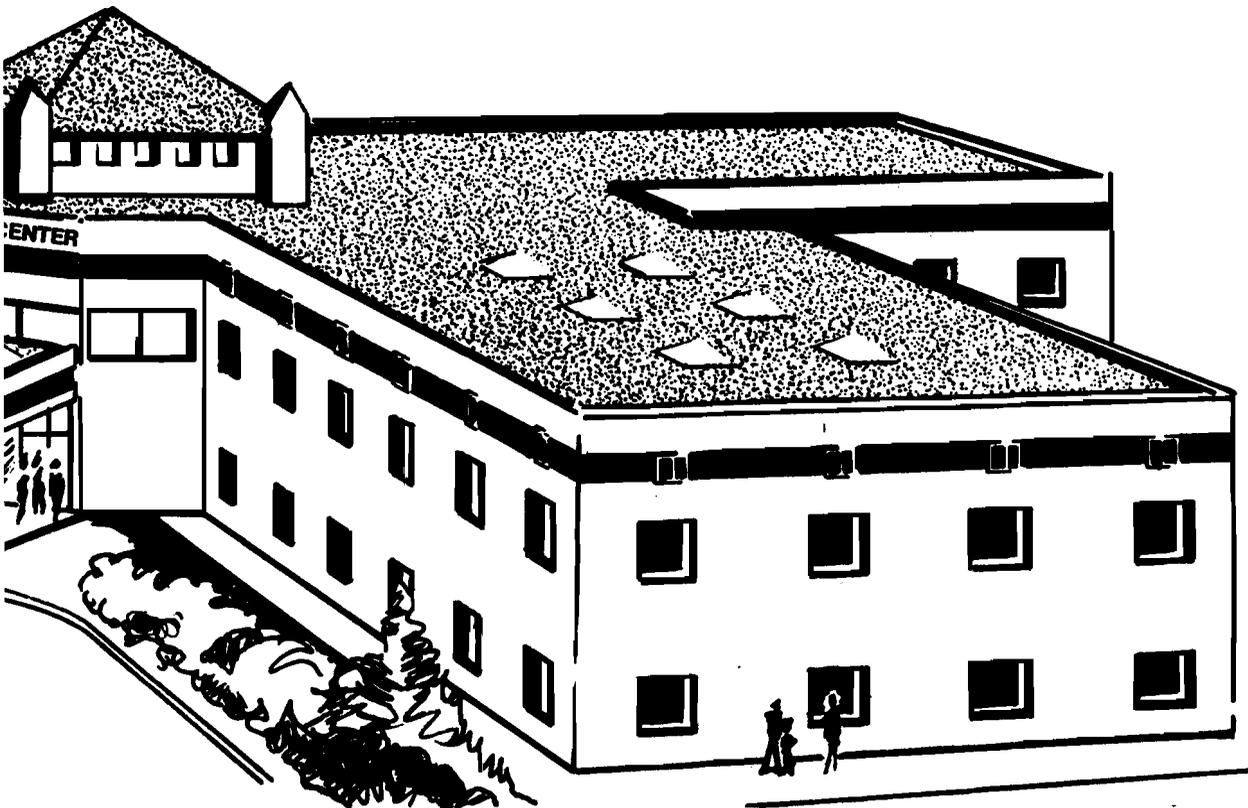
Today the Armed Services YMCA operates more than 50 units fanning out from 25 branches across the nation and overseas. Everyday the men and women of the U.S. Military have a place where they and their families can find support, recreation, learning opportunities or a place to spend the night.

President Ronald Reagan supported the YMCA's role with his comment, "For 125 years, in peace and war, YMCA volunteers have 'followed the flag' providing vital

percent of El Paso's economy comes from Fort Bliss.

When the Armed Services YMCA outgrew its World War II-era buildings and needed a new facility to continue supporting the men and women serving their country in the El Paso area, it depended on private donations from citizens of El Paso, businesses, local and national foundations, and soldiers at Fort Bliss.

The public portion of the YMCA Capital Development Campaign ended in July 1986. The campaign



ployment, and dozens of other topics important to the military family. Transportation, baby-sitting and group outings will help wives and dependents learn more about the El Paso area and aid them in establishing new friends and social contacts.

In 1861, when President Abraham Lincoln gave his support to 5,000 volunteers from the YMCA to minister to the medical, spiritual and social needs of Civil War soldiers, he gave momentum to a movement that never stopped.

services, resources and support to our young enlisted men and women and their families."

YMCA at Fort Bliss

The Armed Services YMCA opened its Fort Bliss branch in El Paso in 1916, and it has served the needs of the military in the El Paso community for the past 72 years.

The people of El Paso have benefited from the military presence economically, socially and culturally. For example, about 20

was a dedicated effort on the part of business and community leaders of El Paso and soldiers of Fort Bliss. This campaign raised a total of \$1,172,397 in cash and pledges scheduled over a three- to five-year span.

The soldiers of Fort Bliss held 18 special fund events during the summer of 1986 and raised an additional \$102,000. Then more help came through soldier events during the summer of 1987. The soldiers raised \$69,841 from events including the Armed Services

YMCA Run, Family Day at Magic Landing and Armed Services YMCA Nights at the El Paso Diablos baseball games.

An additional \$460,769 in capital funds was raised in 1987. Businesses and individuals of El Paso also contributed \$82,526 and foundations contributed \$58,402.

In May the leadership of the YMCA Capital Development Campaign sponsored a Time Cap-

sule Ceremony at the new building site. This unique event provided the opportunity for the command units at Fort Bliss to participate with other prominent leaders.

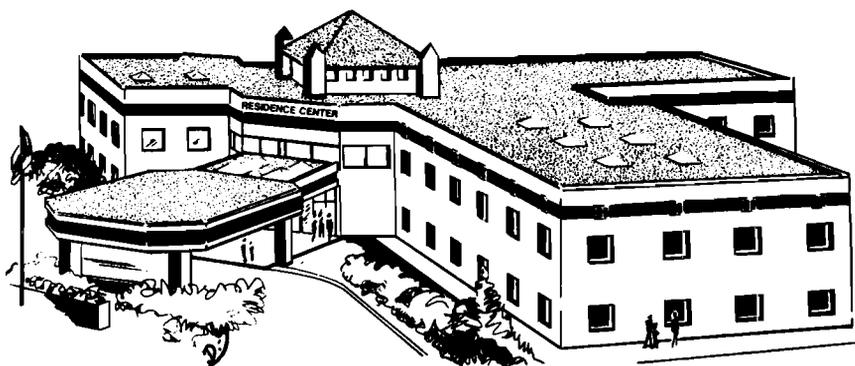
Historic memorabilia from the El Paso YMCA's 70-year history along with items from soldier units, the city and the campaign were placed in a time capsule specially designed by the Raytheon Corporation, a prime manufactur-

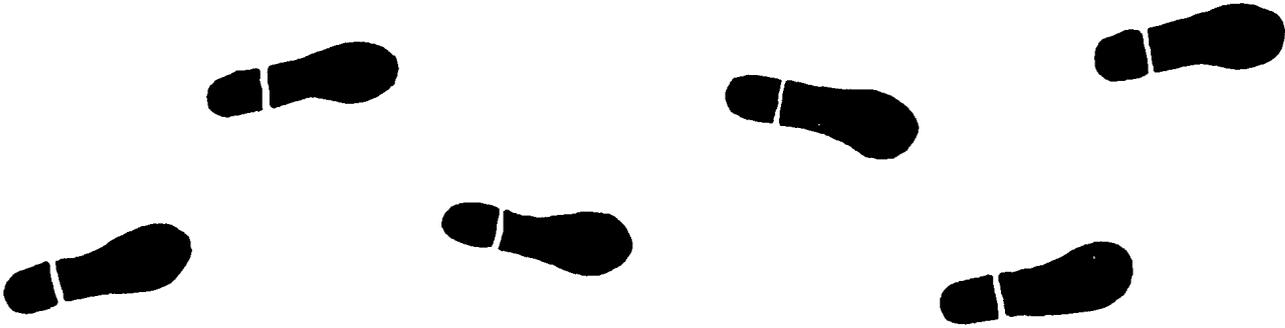
er of ADA weapon systems. A plaque was placed at the spot when the capsule was sealed, along with instructions to open it on May 19, 2038.

The efforts of the Armed Services YMCA are probably best summed up by Maj. Gen. Donald R. Infante, chief of Air Defense Artillery, who said, "When a soldier needs help, the Armed Services YMCA is always there."

RESERVATION INFORMATION

Armed Services YMCA
Residence Center
P.O. Box 640140
El Paso, TX 79904
(915) 562-8461





Six Steps to Operator Training

by Lt. Col. Lee Carr

What critical tasks must our soldiers perform to qualify as drivers or equipment operators?

This question, in this or similar form, is the most commonly asked question of U.S. Army Safety Center safety specialists who act on Army Regulation 600-55 issues. The question usually concerns driver training although occasionally callers address other equipment which requires licensed operators. The "AR" answer — the commander determines the critical tasks — is a simple one, but does not provide the needed information: the training standards that qualify soldiers to operate unit equipment. This article identifies current publications that recommend or imply training tasks, and suggests an approach for compiling a comprehensive set of training objectives that avoid duplicate training.

Defining Critical Operator Tasks

1. List unit equipment which requires licensed operators.
2. Identify training tasks for a commonly used, typical item of equipment.
3. Prepare a task-equipment spreadsheet.
4. Identify initial tasks that are applicable to each item.
5. Add equipment-specific tasks.
6. Add tasks for directed topics.

Training tasks are everywhere, but locating a perfect set requires either luck or a lot of hunting and searching. Ideally, the command guidance or regulations of a unit's higher headquarters or the directives of the installation or area headquarters contain a complete set of objectives ready for instant use with all required lesson plans and training aids. Unfortunately, hunting and sorting is usually required. The references below identify training requirements and may yield some or all of the desired objectives.

The prime reference for operator training requirements is Chapter 3, AR 600-55, whose title should actually be "Operator Training." The first paragraph directs units to include in their training program the course topics listed in the regulation's Appendix B as well as relevant information from nine other publications. The next four paragraphs refer readers to sources that prescribe training for various categories of equipment. This article addresses the most important of these documents, but units must search all of the references to determine if they contain any relevant information.

All units that train Army military vehicle operators will find in Paragraph B-4a, AR 385-55, a requirement to train drivers in accident avoidance. Often, installation or area headquarters conduct or sponsor this training.

Technical Bulletin 600-1 directs training for non-vehicular equipment. It implies training tasks by

identifying topics, and its appendices suggest qualifying procedures for equipment. These procedures, in written and performance test form, can be the basis for developing evaluation outlines.

The Transportation School published Field Circular 55-32 to serve as a job aid for all types of units. This circular contains guidance for preliminary driver training, a suggested phasing for operational training, a recommended training course and some task summaries. Neither the preliminary training nor the operational training identifies training tasks. The preliminary training does address some of the topics required by Appendix B, AR 600-55. The recommended training course identifies objectives, but does not contain evaluation outlines with performance measures for qualification feedback. The task summaries provide both training objectives and evaluation outlines, but do not match the lesson plans of the training course. In spite of its shortcomings, this FC is a good source of ideas for developing operator task lists for any type of equipment.

Field Manual 21-17 addresses the training of tracked combat vehicle operators, but implies, rather than specifies, training tasks. The manual's checklists provide a starting point for developing performance measures.

Use FC 55-34 to train those soldiers already licensed up to a 2 1/2-ton truck to operate the heavy expanded mobility tactical truck (HEMTT). Units with the HEMTT, such as Patriot battalions, may adapt the objectives directly, while other units may review the vehicle tasks as a guide for developing equipment task lists. Unfortunately, the training objectives do not contain evaluation outlines for determining whether or not the applicant has performed to standard.

Applicable soldier's manuals may identify operator tasks. Soldier's Training Publication 44-16R14-SM-TG, the Vulcaneer's manual, contains several tasks that address vehicle and equipment operation that units must include in unit training programs because the Army has designated these as critical tasks. However, the manual does not contain an objective for driving the self-propelled Vulcan.

STP 55-88M12-SM identifies 23 tasks for training soldiers in military occupational specialty (MOS) 88M. Twenty-two of these tasks may apply to drivers in any unit. Fourteen of these tasks are the same as those identified in FC 55-32, or as implied in FM 21-17, and the objectives contain evaluation guides with performance measures for qualification feedback.

STP 55-88M34-SM-TG, *Soldier's Manual, Skill Levels 3/4 and Trainer's Guide, MOS 88M, Motor Transport Operator*, May 27, 1987, identifies some driver supervisor tasks, convoy tasks and driver training management tasks.

Other soldier's manuals contain objectives that may not directly apply to a unit's equipment but may serve as a guide for task or evaluation outline development. For instance, the latest infantry soldier's manual contains tasks for the Bradley fighting vehi-

cle. A commander who did not find any performance measures for the Vulcan driving tasks in the Vulcaneer's manual might adapt the Bradley evaluation outlines. Similarly, Engineer branch soldier's manuals may identify operator tasks for non-vehicular equipment such as generators.

Equipment Operator Training Task Sources

AR 385-55, *Prevention of Motor Vehicle Accidents*, 12 Mar 87

AR 600-55, *Motor Vehicle Driver and Equipment Operator Selection, Training, Testing, and Licensing*, 27 Oct 86

TB 600-1, *Procedures for Selection, Training, Testing, and Qualifying Operators of Equipment/Systems, Excluding Selected Watercraft and Aircraft Managed/Supported by U.S. Army Troop Support and Aviation Materiel Readiness Command*, 25 Jul 77

FC 55-32, *Driver Selection, Training, and Tactical Wheeled Vehicle Operator*, Nov 85

FM 21-17, *Driver Selection, Training, and Supervision, Track Combat Vehicles*, 11 Nov 81

FC 55-34, *Heavy Expanded Mobility Tactical Truck Operator Training Manual*, Jan 87

Soldier's manuals of the unit's soldiers

STP 55-88M12-SM, *Soldier's Manual, Skill Levels 1/2, MOS 88M, Motor Transport Operator*, 27 May 87

STP 55-88M34-SM, *Soldier's Manual, Skill Levels 3/4 and Trainer's Guide, MOS 88M, Motor Transport Operator*, 27 May 87

Other branch's soldier's manuals which may address their branch's equipment.

Three field manuals and a technical bulletin I did not mention above are FMs 55-30, 21-305 and 21-306 and TB 600-2. Even though these are prime AR 600-55 references, their omission does not create any problems for ADA units in search of training objectives.

The Transportation School published FM 55-30, *Army Motor Transport Units and Operations*, for motor transport units, but it serves as a reference for wheeled-vehicle operator selecting, training, testing and licensing for all types of units because there is no other suitable official publication. FM 55-30 causes no problem as far as training tasks are concerned for two reasons: the manual does not prescribe any specific training program or objectives and the training objectives in FC 55-32 support FM 55-30.

FMs 21-305 and 21-306 are aids for the wheeled and tracked combat vehicle drivers. While they do not prescribe training objectives, they do provide useful information for drivers. TB 600-2 does not create problems because it has been rescinded.

Each of the relevant references contains many specified or implied training objectives, but they do not identify a unit's critical tasks. A lot of work must still be done, and an organized approach to the task-defining effort can reduce the training that the units must ultimately accomplish.

Use the six-step process below to compile operator training objectives.

- The first step in the task selection process is to list all of the equipment that requires licensed operators. Paragraph 6-1a, AR 600-55, identifies the equipment for which the Department of the Army requires licensed operators. Command directives of the unit may add additional equipment.
- From the composite equipment list select an item that is commonly used and requires typical training. In many units the 2 1/2-ton truck is a common, typical item. Using an appropriate reference, in this case FC 55-32, as a guide, develop a task list for this vehicle. Consider the unit's mission and its operating environment to include tasks that are beyond the basic list of the field circular. This list, once complete and approved by the commander, forms the nucleus for the rest of the unit's equipment.
- The Task Equipment Spreadsheet illustrates a simple example that demonstrates the next four steps of the task-defining process.
- Initially, the step-three spreadsheet contained only the first three tasks identified for 2 1/2-ton truck operators. The checkmarks for each type of equipment were added during the fourth process step. Note that all of the 2 1/2-ton truck tasks apply to the HEMTT, while only two tasks apply to all items.
- During step five, a review of FC 55-34, soldier's manuals and equipment manuals added equipment-specific tasks four through six. At this point all of the equipment performance tasks should be identified.

➤ Now the unit must include the topics that are directed by Chapter 3, AR 600-55, but not included in the listed performance tasks. Task seven addresses the Appendix B, AR 600-55 topics while task eight addresses the AR 385-55 requirement. These two topics could, of course, be defined by more than two tasks. In this example two tasks are sufficient. For the same reason, none of the other referenced documents contain training requirements relevant to this unit.

When the commander approves the task list that has been developed by all this hunting and searching, the unit has its critical tasks for qualifying operators.

All of the equipment has been considered, all source references have been reviewed and all regulatory topics have been addressed. Much work may remain to turn the tasks into objectives with clear, tough standards and measurable, fair evaluation outlines; to organize and resource a program; and, finally, to conduct the training. But the unit can focus its efforts with the knowledge that it will provide safe, capable operators.

This unit has answered the question, "What are the critical tasks?"

Lt. Col. Lee Carr is the ADA safety manager at the U.S. Army Safety Center, Fort Rucker, Ala.

Task-Equipment Spreadsheet

TASK	EQUIPMENT			
	2 1/2-ton Truck	HEMTT	5kw Generator	Air Compressor
1. Fill out DD Form 518.	X	X	X	X
2. Perform PMCS.	X	X	X	X
3. Operate vehicle.	X	X		
4. Operate HEMTT crane.		X		
5. Operate generator crane.			X	
6. Operate air compressor.				X
7. Demonstrate operator knowledge.	X	X	X	X
8. Avoid accidents.	X	X		

Tactical Gunnery

by Lt. Col. Milton A. Whitley Jr. and Capt. Bruce Hupe

From the woodline, the Chaparral and Stinger teams' tracked vehicles cross an empty drop zone at Fort Stewart, Ga. One by one the missile systems peel off to emplace in tactical firing positions. In less than 60 seconds, the Chaparral and Stinger crew members are scanning the skies and prepared to fire. Gunners intensely monitor the division early warning net, which abruptly comes alive with "Dynamite, Dynamite, Dynamite; bandit heading west!" Suddenly, an orange ballistic aerial target (BAT) races toward the open sky. All missile systems track, but one Chaparral system locks-on and engages — target destroyed and mission accomplished.

Several years ago the leadership of the 5th Battalion, 52nd Air "Attack" Artillery, decided to move away from the "Crete Style" annual service practice and practice tactical gunnery that emphasized realistic battlefield environments. The results have been a tremendous success.

We have replaced the blaring countdown to a BAT's launch with a tactically deployed target section that is just as liable to launch a black "friendly" BAT as an orange "hostile" — keeping the gunners alert and thinking like they would have to think in combat.

Instead of a command bunker, a camouflaged battalion tactical operations center (TOC) of M-577 command vehicles now serves to control the gunnery while forward area alerting radars (FAARs) help ensure the safe use of airspace. And just to make sure we train as we fight, at any given moment during a live-fire exercise (LFX) the low roar of a Vulcan platoon moving down-range may permeate the air as 20mm cannon and .50-caliber machine guns engage ground and aerial targets.

Of course, not all of the .50-caliber machine guns are on Vulcan platoon leaders' armored personnel carriers (APCs). In the 5-52nd, you are just as likely to see Stinger APCs engaging targets. Chaparrals, Vulcans and Stingers are all mechanized and are all incorporated into the same gunnery exercises. This is the Victory Division's idea of how to conduct an air defense gunnery.

Preparation for a semiannual tactical gunnery begins well in advance. Naturally, the battalion S-3 is the overall proponent for the exercise, but other staff sections get involved. The S-4 takes advantage of having most of the battalion on a week-long gunnery

by establishing efficient field logistics operations that push forward everything from ammunition to fuel. Planning prior to the exercise is crucial and guarantees that Vulcan and Chaparral headquarters and headquarters batteries all function as a team during firing week.

The actual range used for gunnery is an open drop zone at Fort Stewart that can accommodate aerial and ground fire and maneuver of tracked vehicles. A typical scenario would have the battalion S-3 issuing a fragmentary order (FRAGO) to a task organized Chaparral battery. The situation would call for a mix of air defense weapons at a specific mission place and time. The battery tactical operations center (TOC) then controls the alert and movement of the designated fire units to the range.

Before moving to the range, we load all missiles on the rails in tactical platoon assembly areas. Once the platoons arrive, the Vulcans might conduct a sweep of the range and engage ground targets and flying radio-controlled miniature aerial targets (RCMATs), while the Stingers provide overwatch and the Chaparrals conduct emergency emplacement drills.

After the engagements the AAA team moves back to its assembly area for detailed after-action reviews while the range is prepared for the next gun and missile team to fire. Our soldiers are more than ready for the next mission — it may be an airmobile live-fire with crews and launching stations deployed by CH-47 helicopters, or it may be a night fire.

In any challenging situation the soldiers of 5-52nd have learned to trust the strength of all the battalion's weapons employed in an integrated mix of massive firepower that stresses maneuver. The soldiers have practiced these employment principles and seen them work.

The old concrete launch pads and command post countdowns are gone forever. Tactical gunnery provides tough, realistic training under field conditions — and is the only acceptable standard for 5-52nd Air "Attack" Artillery.

Lt. Col. Milton A. Whitley Jr. is the commander of the 5th Battalion, 52nd Air Attack Artillery, 24th Infantry Division (Mechanized), Fort Stewart, Ga. Capt. Bruce Hupe, formerly the assistant division air defense officer, is the commander of Headquarters Battery, 5-52nd AAA.

ADA

Career News

Officer

ADA Assignments, U.S.TAPA

The summer changeover is complete and units are now busily preparing for the year ahead. TAPA is no exception.

Here at the ADA Assignments Branch, many changes have occurred, so I will give you the new lineup. I became the branch chief in June, taking over from Lt. Col. Fred Beauchamp. Maj.(P) Mike Penhallegon is now on the Lieutenant Colonels Desk, and Maj.(P) Stan Green moved upstairs to the Colonels Desk. Maj. Jeff Pinasco is working the Majors Desk, Capt. Mike Locke the Captains Desk and Capt. Kurt Lambert the Lieutenants Desk. Capt.(P) Bob Woods is the Branch Future Readiness Officer.

Official photos are important documents that we need for boards and other personnel actions. We must improve our files in this area and we need your help to do so. One of our primary responsibilities is to prepare your records for promotion, command and school boards. Each officer must have his photo in the file when it goes before the board. My goal for the ADA Branch is to ensure 100 percent of our officers' files going before the board contain a current photo. We need your help to reach this goal.

Where do we stand today? Over the past few months, the ADA Assignments Branch has prepared your files for promotion boards to lieutenant colonel, major and captain. We have also prepared files for senior service school and command and staff college (CSC) selection boards. In every instance, photos were missing, outdated or of poor quality. When we encounter a problem with your photo, your assignment officer will try to contact you and advise you of

the problem. We want to present your file to these boards in the most positive light possible.

Officers must have a new photo taken every three years or after a promotion; this is, however, only a minimum requirement. You may have one taken whenever you think your photo on file inaccurately represents your appearance.

If you need a new photo, start early. We get many calls from officers who are having difficulty getting an appointment to have a photo taken or who have not allowed themselves enough time to have a photo retaken. Starting six to nine months before your photo expires or before your board meets will usually allow you enough time to get a quality photo from the lab and get it to us for your file.

Make sure you review your photo before it is sent in. We continue to see poor-quality photos, photos showing poor haircuts, photos with ill-fitting or wrinkled uniforms, and photos with uniform problems such as the wrong brass (always wear your ADA brass) and improper awards. If you are fighting a weight problem, look at your photo — or have someone else look at it — very critically. If you look fat in your photo you are fat in the eyes of many board members! Don't send in a photo that makes you look overweight.

Now that you have a good photo, how does it get to the ADA Branch? At many installations, local procedures require the photo lab to deliver your photo to the MILPO. If you are allowed to pick up your photo, have it processed at your MILPO immediately. The MILPO will update your Officer Record Brief (ORB) and forward your photo to TAPA.

We also recommend that you ask for extra copies of your photo and send one directly to your assignment officer. This process serves two purposes. First, it ensures that at least one copy of your photo gets to the branch. Second, it gives us two copies of your

photo. Many personnel actions require us to include a photo as the action is processed. Having more than one photo on hand allows us to meet this requirement even while a board is in session.

During the next quarter your assignment officer will review our photo files. If your photo is missing, out of date or of poor quality, we will send you a letter recommending that you get another photo taken.

If you have any questions regarding any assignment or professional development issue, please call or write us. Our phone numbers are: commercial (202) 325-0025/0026, AV 221-0025/0026. Our mailing address is Commander, U.S. TAPA, 200 Stovall Street, DAPC-OPE-A, (ATTN: Your assignment officer), Alexandria, VA 22332-0412. Again, we look forward to hearing from you.

First to Fire!

Lt. Col. James F. Barber

From the Lieutenant Colonels Desk

The biggest change I've seen since my move from the Majors Desk to the Lieutenant Colonels Desk is the hesitancy of lieutenant colonels to "enter the net." If you are within 12 to 18 months of departing your present duty assignment, call or write me. The present permanent change of station (PCS) rules and the complexity of balancing command, functional area, joint and recruiting or ROTC assignments necessitates planning ahead. It's tough for me to plan ahead without your preferences concerning jobs and locations.

The assumption that if you call or write you will immediately go on orders is simply not true. If you don't want to move, or if you have personal concerns that warrant my consideration, tell me! The more I know about you the better I can match your preference with the Army's requirements. Matching people with positions is a result of timing and of knowing your situation.

I am not, nor am I going to become, a travel agency. The Army's needs will always take priority. But I will, whenever possible, match your personal and professional desires with the Army's requirements. Call or write at your earliest opportunity.

Maj.(P) William M. Penhallegon

From the Majors Desk

Questions continue to come in from the field concerning the requirements for joint duty assignments. Should I go joint before or after performing staff with troops as a major? Are joint assignments limited only to officers with Joint Professional Military Education (JPME) training? If I am not JPME trained, does that prevent my career progression?

The answers to these questions are maybe, no and no. Let me explain.

Title IV requirements provide that an officer must receive joint tour credit prior to reaching the zone of eligibility for selection to general officer. The statutory tour length is expected to be shortened in the near future from the current 42-month requirement to a 36-month requirement. The law specifies that an officer must serve the joint tour in one of the field grade ranks; technically, this means at the rank of major and above and does not extend to promotable captains.

As for timing of the joint assignment, each officer's case is different. If you attend a CSC or achieve other MEL 4 credits early enough, a joint tour may fit your career track prior to a staff with troops assignment. If you are further along in your majority, your joint tour may come after CSC and staff with troops assignment or later in the field grade ranks. Many opportunities exist for joint tour service at the lieutenant colonel rank.

Priority of assigning officers against joint requirements is given to those officers with JPME qualifications; however, a significant number of assignments are classified as joint non-critical. This translates into joint service opportunities for non-JPME trained officers.

The bottom line is that a lack of JPME training does not adversely impact on your career progress. The thing to remember is that air defenders are competing with the other branches for the 3,081 Army slots on the Joint Duty Assignment List. Some of these slots are specifically CMF 14 coded, but the majority of them are classified in functional areas. Your specific chances of getting a joint tour assignment will correlate to your career management field, your designated functional area and your overall manner of performance.

For further information on joint assignments and the overall impact of Title IV, refer to page 50 of the March-April 1988 issue of *Air Defense Artillery*.

Maj. Jeff Pinasco

From the Captains Desk

With the 1988 Majors Promotion Board fresh in our minds, I'd like to make a few points on how we can better prepare for next October's Majors Board. Year group 80 will be in the primary zone (PZ) and year group 81 will be going below the zone (BZ).

Order your microfiche now! Getting your fiche fixed can be a long process of reconstructing orders, certificates, awards and, of course, officer evaluation reports (OERs). We've got your OERs, but we may need your help to ensure the rest get posted. If you have more than six "See Next Frame" entries on your fiche, call me and we'll try to reshoot it. If you have any frames that you cannot read, call me and we'll have that frame reshot. To order your fiche write:

U.S. TAPA, ATTN: DAPC-MSR, 200 Stovall Street, Alexandria, VA 22332-0400.

Time your ORB corrections! Plan to have everything fixed six months prior to the board. That way, when your MILPO calls you in to sign your "promotion ORB," you will only have to make minor corrections and sign it. The MILPO will then forward your promotion ORB directly to the board.

Many officers on the 1988 board opted to bypass their MILPO and sent stacks of ORB corrections to their friendly Captains Desk assignment officer. This approach caused two problems: many fields on the ORB cannot be changed by me (preference statements, security clearances, dates of rank, ECUR, etc.) and the promotion ORB you sign goes "hard-copy" to the board, so any changes you send to me can usually be updated on the computer but will not get to the board except in extreme circumstances.

If you absolutely cannot get the MILPO to change certain entries for you, have the MILPO write to me explaining the problem and how the entry should read. Do this at least six months prior to the board! Promotion ORBs go out 60 to 90 days before the board starts, so changes submitted electronically after that are basically mute. We at TAPA are always available to discuss ORB problems, but the time to get hot for your Majors Board is six to 10 months out, not one.

Photos are a biggie! Most officers have indeed submitted photos for their PZ look, but 25 percent of the BZ officers have no photo and too many officers in both groups have old photos (some date back six to eight years). I recommend you do the following:

- Take a good, quality photo six to eight months before your BZ look. (That way you maximize your chances for BZ and still have a current photo in for the PZ board.)
- Call four months prior to the board and verify the photo got to us. (TAPA handles hundreds of thousands of photos every year, and it's important to check and make sure that yours is here.)
- Make sure we've got a current preference statement with a phone number, so we can track you down if we notice something wrong with your photo. (Yes, one officer spelled his name wrong last year!)

Finish CAS³! CAS³ is not an optional course. The school has been around for a few years now, so everyone should have had several opportunities to attend. TAPA has almost zero slots to send people now, so get with your G-1 and make sure he can get you there.

Avoid letters to the board! Don't send letters to the president of the board unless you talk to us first. Many letters are unnecessary — they may even damage your chances, because they may sound self-serving to the board members. There are certain cases where you should write, but please check with us first.

See how easy it is to get ready for a board? I strongly encourage you to start preparing your file now so

you won't have to spend sleepless nights next fall. Good luck!

Capt. Mike Locke

From the Lieutenants Desk

With the new system within the ADA Assignments Branch, I am the assignment officer for all officers until they are branch qualified. This covers OBC, initial assignments, OAC and assignments to battery commander.

I want to share with you some of my observations while preparing for the September 1988 Captains Board. The weeks before the board was to convene, I had less than 50 percent of the photos required. By the convening date, that figure rose to 99 percent. Unbelievable!

Upon your promotion to first lieutenant, get a photo! (See Lt. Col. James Barber's article.) Make sure you review your photo with your commander before sending it forward.

Ensure you know when your promotion board is to be held. All actions in preparation for the board take place in the field, and they are your responsibility.

Your MILPO should contact you to review and sign your promotion ORB. Remember, this is the ORB that is presented before the board. Ensure it is filled out correctly and completely. Key in on service data, assignments, military and civilian schooling, the date and results of your physical and your height and weight. That's two-thirds of the information presented before the board.

The other one-third, and the most important, is *performance!* Your OER is your key to success. Understand what it means and where your senior rater's profile puts you. Your senior rater's profile is not posted when you are outbriefed. Ask! All commanders know their profiles.

To assist you in preparing for the March 1989 board (unofficially), first lieutenants with a date of rank 871128 through 880331 need to send me a current photo and start preparing your ORB. Get it in early! In this day of low promotion rates there is a direct correlation between an unprepared file and non-select lieutenants. I review all files prior to the board, and I will assist you in your preparation for the board. Do it now!

You will be programmed in the next OAC after completion of your first assignment OCONUS or your 37-month CONUS tour. I also have slots in all the combat arms advanced courses. To apply, fill out a DA Form 483, Preference Statement, and send it in early.

I'm here to assist you in managing your career. If you have questions concerning your career assignments or your file, please do not hesitate to call.

Capt. Kurt G. Lambert

Future Readiness

The Air Defense Artillery Branch is currently engergizing a Year Group Management Program. The first question is, "Why do we need this new program?" The problem is that the Army has goals for each individual year group. During the last few years, the Army determined that career management branches have not properly planned for these long term needs. Therefore, we have developed a program whereby we identify these requirements and begin to track officers with these long-term goals in mind.

One of the tenets of the Year Group Management Program is to review the career management information file (CMIF) (branch working file) of air defenders at certain critical points in their careers. The first review takes place during the Functional Area Designation Process. This review sets up the basis for meeting the functional area demands of a year group.

The next review will be at the conclusion of an officer's battery command. At this point, the officer is reviewed to determine the best assignment for the years between battery command and CSC attendance.

While attending CSC, the officer's file is reviewed again. Each officer's professional development needs will largely determine his following assignment.

Subsequently, the periodic reviews required by the Year Group Management Program will allow us to professionally develop our officers and satisfy the long-term needs of each year group.

One of the management tools to be used by the Air Defense Branch will be a long-term career plan for each officer. This plan will only be stored in your CMIF. The plan will be a basic outline of the types of jobs that will satisfy both the professional and personal needs of each officer.

This plan is not a contract; however, it will serve as a guide for the assignment officer. For example, the plan can help outline the careers of officers who want to become battalion commanders, as well as those officers who desire to become project managers. You must remember that this is only a tool — it is not a guarantee of a particular assignment.

The Year Group Management Program also tasks us to monitor the status of these groups of officers: Acquisition Officers; Advanced Civil Schooling and Training with Industry graduates; Advanced Military Studies Program graduates; officers with NTC/JRTC/CMTC experience; and officers with Army Staff experience. We will assign officers with these qualifications to ensure the Army receives the maximum benefit of their education and experience.

This program is brand new. If you have any recommendations or questions, please give me a call.

Capt.(P) Bob Woods

Enlisted

During the last few months some personnel changes have occurred here in our branch, and at least one more change will occur in the near future. The list below will bring you up to date.

Branch chief	Capt.(P) Harry D. Bloomer
NCOIC	SFC(P) John G. Mead (PCS 8901)
CMF 16 NCO	SFC Gregory J. Filzen
CMF 23 NCO	MSgt. Robert H. Foy
Reclass NCO	SFC Robert A. Shelton
ANCOC Manager	Spec.(P) Michael R. Omiecinski (PCS 8812)
Branch Secretary	Mrs. Theresa G. Waldroup
Assignment Team Supervisor	Mrs. Shirley J. Mitchell
Assignment Manager	
CMF 23	Mrs. Helena A. Meyer
16P/16R	Mr. Howard Traphagen
16J/16H/16S	Mrs. Barbara J. Updike
16T/16D/16E/16Z	Vacant

MSgt. Gregory W. Diehl is inbound to replace Mead. The ANCOC manager position will revert to a civilian position, and Filzen is handling assignments for 16T/16D/16E/16Z soldiers until we can hire a new civilian. If you have a question, feel free to call your assignment manager or one of our NCOs at AV 221-8052/8053. You can also write us using the following address: Commander, U.S. TAPA, ATTN: DAPC-EPK-A, 2461 Eisenhower Avenue, Alexandria, VA 22331-0452.

Numerous activities occur daily here at TAPA which affect the lives and careers of ADA soldiers and their families. I will use this article to address some of the issues we get queried about often, as well as a few other items of interest.

First of all, the 48-month time-on-station (TOS) policy deserves some attention. During the past year, numerous PCS changes were enacted as a result of budgetary constraints. One of those changes was the 48-month TOS requirement.

Some soldiers believe that the 48-month TOS requirement means a 48-month stabilized CONUS tour. This is not the case. This requirement applies to CONUS-to-CONUS moves only. In short, to be eligible for a CONUS-to-CONUS move, the soldier must have 48 months TOS. We review exceptions to this requirement on a case-by-case basis. Some exceptions include: re-enlistment contract options, recruiting duty, drill sergeant duty and PCS-length service schools.

No requirement exists to be on station for 48 months prior to being eligible for an overseas assignment. Normally we do not assign career (beyond first term) soldiers overseas prior to them having served at least 24 months in CONUS; however, in some cases we have assigned career soldiers to an overseas assignment with less than 24 months in CONUS to meet overseas readiness requirements.

Another topic concerns pinpoint assignments. We get many calls from soldiers who want to know where in Germany they are going. Our branch issues pinpoint assignments on E-7(P) and E-8 soldiers. *E-8(P) and above are assigned via the Sergeants Major Branch.* We also issue pinpoint assignments on soldiers enrolled in the Married Army Couples Program (MACP) and the Exceptional Family Member Program (EFMP). Most other soldiers bound for Europe learn of their pinpoint assignment through the sponsorship program, through their levy section or upon arrival at the overseas replacement center.

The calendar year (CY) 88 E-8 selection board adjourned Aug. 12. Expect to see results this fall. The CY 88 E-7 board convenes Oct. 12 and is scheduled to adjourn Nov. 18.

One note of possible interest to 16J skill level one soldiers is that we are looking for volunteers for airborne training with a subsequent assignment to Fort Bragg, N.C. Interested soldiers, particularly those currently stationed in Korea or Germany, should

submit a DA Form 4187 requesting airborne training through their chain of command for consideration.

Finally, the status of 16H reclassification is of interest to many of our Air Defense Artillery soldiers. To date we have received 196 requests for reclassification. This represents about 40 percent of those soldiers eligible to reclassify. I urge you to submit your request (4187) as soon as possible if you have not yet done so. We are answering every request received through letters or messages.

Because this MOS is phasing out over a three-year period, all soldiers will not be reclassified in the near future. Starting in FY 90, this MOS will be closed for reenlistment in anticipation of the FY 91 target for phase-out of the MOS. In the meantime we will continue to make every effort to accommodate the desires of 16H soldiers in concert with meeting the future needs of our branch and the Army.

We are here to serve your needs as well as those of the Army. Contact us if we can be of assistance.

Capt.(P) Harry D. Bloomer

**Commander
U.S. TAPA
DAPC-OPE-A
(ATTN: Your assignment officer)
200 Stovall Street
Alexandria, VA 22332-0412**

**(202) 325-0025/0026
AV 221-0025/0026**



FAAD Sensors

The forward area air defense (FAAD) ground-based sensor program received a temporary setback when FY 89 budget cuts left funds to purchase only four systems. Eventual procurement is set for 127 radar units.

Hughes Aircraft Company's AN/TPQ-36A 3-D radar was the only entry in a candidate evaluation test which began last August and is scheduled to end in January 1989 at White Sands Missile Range, N.M. The Hughes radar was described in an article titled "FAAD Ground Sensor Candidate" which appeared in the November-December 1987 issue of *Air Defense Artillery*. A related article, "FAAD C²I: Resolving the 3-D Versus 2-D Debate," appeared in the July-August 1987 issue.

The Army hopes to award a contract in February for the purchase of four systems to support the testing and development of the FAAD command, control and intelligence (C²I) system. System software development by TRW is proceeding on schedule.

Work continued, meanwhile, on plans to acquire a FAAD masked target sensor to detect aircraft and ground vehicles that hide from ground-based, line-of-sight systems behind terrain masks and earth curvatures. The masked target sensor was originally known as the FAAD aerial sensor. The name was changed to better describe the system's function and to accommodate candidate systems using ground-based non-line-of-sight techniques.

Star Wars Not Enough

Defense officials told Congress to dramatically boost U.S. air defenses to counter a Soviet buildup of weapons that could elude the costly Star Wars shield.

The threat posed by low-flying Soviet bombers and cruise missiles is becoming so serious that the Pentagon says it may have to significantly increase spending for air defense. One estimate has put the cost as high as \$50 billion.

"The steadily increasing numbers and quality of Soviet long-range bombers and cruise missiles, coupled with advanced penetration technologies, have significantly increased the threat to North America," Lt. Gen James A. Abrahamson, who recently resigned as SDI research director, told the House Appropriations Committee's defense subcommittee, according to testimony released recently.

Bombers and cruise missiles launched from planes and submarines fly too low to be detected by the proposed Star Wars network of sensors and weapons. Abrahamson said the United States now must invent an "Air Defense Initiative" to thwart attacks that might be launched underneath the Star Wars umbrella.

ADATS Trainers

Cubic Defense Systems, San Diego, Calif., will build two maintenance trainers and test equipment for Martin Marietta's air defense anti-tank system (ADATS) under a recently awarded \$6 million contract.

Cubic will build a full-scale replica of the ADATS turret and interior in addition to a simulated display panel.

ADATS is the line-of-sight forward (heavy) air defense system for the new forward area air defense (FAAD) system.

Marine Corps Stinger

A new version of the Stinger man-portable surface-to-air missile will make its way into the Fleet Marine Force early next year. The new version has a reprogrammable microprocessor (RMP) that improves upon earlier models by adding a reprogrammable computer software package and an ultraviolet tracking mechanism in addition to the existing infrared seeker. Missile tracking solutions (the computations that determine the course a missile will take to its target) will now be based on two primary sources—the infrared and ultraviolet signature of the target—and will be processed through a reprogrammable software package that can be altered to defeat enemy countermeasures.

The Marine Corps will purchase 8,000 Stinger RMPs through FY 89. Stinger RMPs will be fielded in combination with older Stinger models in the low-altitude air defense (LAAD) battalions.

Also planned is a one-time procurement of commercially available night sights for Stinger teams while the Marine Corps awaits final work on the Army family of thermal weapons sights (TWS). TWSs will be purchased to equip each Stinger team in LAAD battalions. The one-time buy of some 50 commercially available sights is an interim measure until TWS is available. The Marine Corps is the only service with a requirement for a Stinger night sight.

The Army TWS project will create a family of thermal sights, each with a common thermal unit that can be adapted to a particular weapon system by changing the sight reticle, mounting hardware and other external parts. Each unit is expected to weigh about five pounds and will mount directly on the Stinger launcher. In addition to Stinger, TWS will have applications with M-60, Mk-19 and M-2HB machine guns, TOWs and Dragons.

TWS will be ready for fielding by the early 1990s, at which time the Marine Corps will purchase about 500 sets.

Red Star in the Desert

The Department of Defense is creating a rudimentary Red Army division in the desert at Kirtland Air Force Base, N.M., for use in tests of U.S. forces. The project, known as the Mobile Integrated Threat Test, signals a dramatic change from the normal testing exercises which pit U.S. troops against a variety of weapons, including threat aircraft, and sophisticated computers designed to simulate Soviet and Warsaw Pact equipment.

Instead of relying exclusively on simulators, testing officials are launching a multi-million dollar program to buy the real thing: hardware used by the armies of the Soviet Union, other Warsaw Pact nations and China. The equipment will give the United States a much better indication of potential enemy warpower than simulators and can be purchased at a fraction of the cost.

Because these weapons and communications gear are purchased commercially the project is largely unclassified, and soldiers will have a chance to study the weapons and test them against U.S. hardware in mock battles.

DTESA officials say they will have a representative cross-section of the hardware of a Red Army division in place by next March. At that time, testing officials plan to offer the mobile threat equipment to the military services and Pentagon agencies for operational tests and field exercises.

The DTESA crews and DoD officials at the site have gained a great respect for the Soviet hardware purchased. Although the equipment is based largely on the technology of the 1940s and 1950s, it is far easier to operate and maintain than comparable U.S. hardware. DoD officials say the Soviets generally modify and update weapons and communications gear, instead of designing and fielding all-new, state-of-the-art hardware.

One example is the An-2, a 1940s biplane used for special operations and deep strikes. The lightweight troop transport looks like a throwback to the early days of aviation, but DoD officials have found that its canvas wings make it difficult to spot on radar screens and its quiet engines allow it to sneak up on the command posts. DTESA officials say the An-2 is expected to remain in service in Warsaw Pact nations through the 1990s. The aircraft has been deployed around the world, including the Soviet Union, Afghanistan, North Korea, Iraq, Cuba, Angola and Nicaragua.

One Pentagon official knowledgeable about command, control and communications programs who examined a radar and the communications gear says the equipment "seemed to be very reliable, rugged and worked well while we were there."

The mobile threat force is expected to use the equipment initially to test U.S. weapons before they are allowed to enter the field. This check, known as operational testing, is supervised by a Pentagon office that reports only to the Defense Secretary and Congress.

Pentagon operational testers have purchased Warsaw Pact fighter aircraft, such as MiG-15s, MiG-17s and MiG-21s, an An-2 12-man troop transport, a Chinese early-warning radar station, a Hoplite helicopter and more than 20 types of communications equipment, ranging from portable radios to major communications stations. Although the desert arsenal does not include the most modern Soviet equipment, such as the MiG-29, the hardware assembled is in use in Warsaw Pact armies and in Third World nations.

Department of Defense officials say the task of recreating a Red Army command post in the New Mexico desert was easier than some expected because the government was able to buy complete sets of communications gear, such as an entire command and control post. Instead of buying radio transmitters and receivers piecemeal and assembling them in a station, DoD bought the entire post in the truck designed to carry it. Moreover, the command posts came complete with the Warsaw Pact chairs, lamps, headphones, teletype machines, operating manuals and generators used to power the equipment.

The Defense Test and Evaluation Support Agency (DTESA), a field office based at Kirtland Air Force Base that supports Pentagon testing exercises, assembled the Warsaw Pact and Chinese command and control gear. By using the Soviet operating manuals and intelligence reports, DTESA officials say they have been able to understand Soviet doctrine well enough to lay out the equipment in the hills of Kirtland as they think Warsaw Pact forces would use it.

Qatar Acquires Stingers

The *Los Angeles Times* reported that Qatar, a small country on the Persian gulf, has acquired 13 Stinger missiles from Iran. Apparently these are the remainder of 20 missiles confiscated from Afghan rebels by Iranian customs officials. The Iranians used some of the missiles, but ran out of the special power packs needed to cool the heat-seeking warheads. Qatar wanted the U.S.-built anti-aircraft missiles after the United States leased some Stingers to its neighbor, the tiny island country of Bahrain.

TMD Concept

Hughes Aircraft Company, a unit of GM Hughes Electronics, has been awarded a \$1.5 million option to continue studying a system that would defend Western Europe against a tactical ballistic missile threat.

The proposed system, called the Theater Missile Defense (TMD) Applications Project, will consist of sensors, command and control elements, communications and weapons to counter short-range and medium-range tactical ballistic missile threats.

These system elements, combined into a series of interconnected and overlapping networks, will create a defense umbrella for Western Europe and, potentially, for operational areas nearby.

Hughes recently completed a 10-month study that examined current and potential tactical ballistic missile threats to Western Europe and defined active and passive options. The program is sponsored by the Strategic Defense Initiative Organization (SDIO), Washington, D.C.

Hughes leads an international team of companies including EASAMS of the United Kingdom, MATRA of France, Krupp-Atlas Elektronik of West Germany, Selenia-Spazio of Italy, Tadiran of Israel, and Booz-Allen & Hamilton Loral and Vanguard Research of the United States.

Mujahideen Need Stingers

A shortage of Stinger antiaircraft missiles is hampering the efforts of Afghanistan's Islamic guerrillas to retake areas of their country vacated by withdrawing Soviet troops, according to a top resistance leader.

Because Soviet aircraft continue to support Afghan army units fighting the *Mujahideen*, the rebels need Stingers to keep Soviet planes at bay, Brigadier Rahmatullah Safi, head of intelligence for the National Islamic Front of Afghanistan, told *The Washington Times*.

"Since the U.S.-built Stingers were introduced into Afghanistan two years ago, they have brought down some 900 Soviet-built aircraft," said Safi. He credited the missiles as one of the major influences on Moscow's decision to withdraw from Afghanistan and said they still are needed to keep pressure on the Soviets to complete the withdrawal by the agreed Feb. 15 date.

"There is no change of heart, there is no change of ideology," he said. "They are leaving because of Stingers."

Stingers also could be used on the Afghanistan-Pakistan border to deter air raids on rebel camps and refugee centers in Pakistan, Safi said.

European Stinger

The Netherlands will buy 1,709 U.S. Stinger antiaircraft missiles for \$159 million, according to a Dutch release. The Stingers will be produced in Europe under license, giving the Netherlands access to new technology.

The Stinger is a low-altitude, shoulder-launched, fire-and-forget missile system.

HIMAD C³I

The ADA command post automation program continues at an accelerated pace with system design and configuration as well as a demonstration plan to test system capabilities nearing completion.

During the first quarter FY 89, the 3rd Battalion (Patriot), 43rd Air Defense Artillery, Fort Bliss, Texas, is scheduled to become the first ADA unit to receive the automated command post system. An automated command post system is also being developed for HIMAD brigades.

In a related development, Air Defense Artillery hopes to win approval in March to proceed with development of an ADA Command and Control System (ADAC²S). The ADAC²S, a spin-off of the automated command post system, will consist of a suite of hardware and software packages designed to provide ADA commanders with improved mission planning and automated information processing capabilities. System fielding is projected for FY 89 and 90. The ADAC²S will go to HIMAD as well as SHORAD units.

ADA Hotline

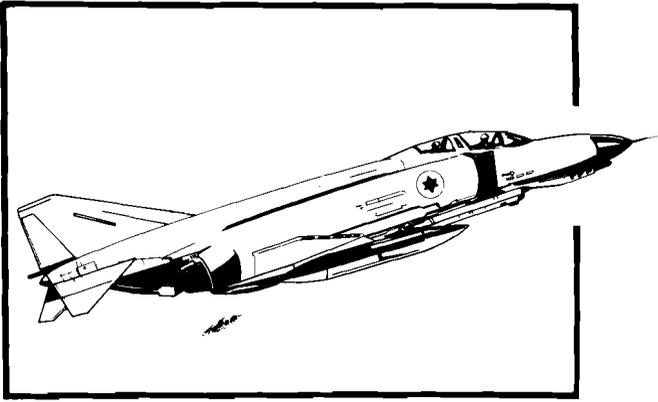
The Air Defense Artillery Hotline provides ADA soldiers in the field a way to communicate their problems or concerns about ADA proponent issues. By dialing AV 978-3159 or commercial (915) 568-3159, anyone can contact the Air Defense Artillery School's Directorate of Evaluation and Standardization. DOES acts as the quality assurance agency for all products and collects data from sources both inside and outside the school.

The hotline is connected with a telephone answering machine. DOES personnel will respond to all messages within five working days.

The school welcomes comments and issues on school products (courses, graduates, literature, training and equipment) as well as deficiencies and will help a caller with doctrinal and tactical questions.

The school wants to know what it is doing right, what it can improve upon and how it can best meet the needs of air defenders.

Freedom to Maneuver



The Yom Kippur War in October 1973 demonstrated that massed air defense systems can substantially diminish air superiority. It also illustrated the inherent weaknesses of static air defense.

When the Egyptians smashed across the Suez Canal on Oct. 6, 1973, the world expected an instant replay of past Arab-Israeli confrontations.

Things didn't go according to script.

The Egyptian troops who crashed through the Bar El Line were protected by an air defense umbrella composed of thousands of Soviet-made air defense weapon systems. These included the older SA-2 and newer SA-6 and SA-8 surface-to-air missile (SAM) systems and a lavish mix of gun systems. Israeli pilots rushing to attack the bridgehead were met with salvos of missiles. When they flew lower to escape the SAMs, they ran into a wall of fire from anti-aircraft gun systems.

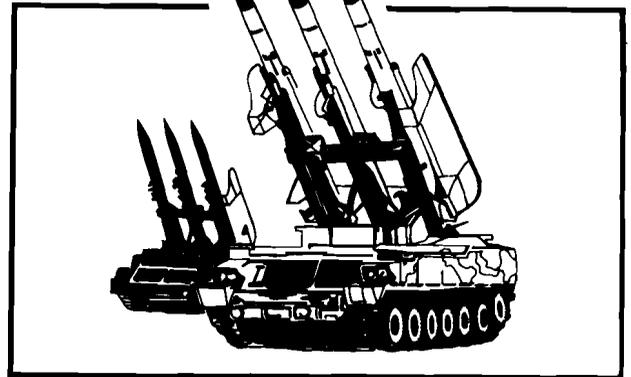
According to the authors of *The Fighting Israeli Air Force*, "Israeli ground forces, seeing the planes subjected to the shattering barrage of Arab missiles, refused to call for more air support." According to other narratives, Israeli Air Force commanders, realizing they were quickly running out of airplanes, suspended air operations against the bridgeheads. The Israeli Defense Force had been stripped of its strategic arm during the height of battle.

The Egyptians, however, faced their own dilemma. Egyptian ground commanders, eager to exploit their initial success, advocated launching armor spearheads across the desert to capture the passes leading out of Sinai. The problem was that the defense umbrella, which had so effectively countered air attacks against the bridgeheads, was not very mobile. It would not be able to protect the armored columns in their lunge for the passes. The Egyptian air defense commander advocated a "creeping-crawling" advance under a gradually extending air defense umbrella, but was ignored. Egyptian columns venturing out from beneath the air defense umbrella became easy prey for Israeli pilots and were defeated in set piece armor battles.

The Israelis, meanwhile, launched an armored brigade across the canal

in an encircling maneuver aimed specifically at destroying the Egyptian SAM sites or, as the Israeli ground commander put it, "to punch a hole in the sky." As Israeli armor overran the missile batteries, the Egyptian air defense umbrella quickly developed leaks. The war moved toward a political settlement.

That air defense batteries became the target of the decisive Israeli strategic maneuver of the Sinai campaign is a testament to the effectiveness of air defense artillery. The inability of air defense batteries to protect Egyptian armored columns as they attempted to break out of Sinai attests to the need for a strong, mobile air defense umbrella to cover maneuver forces — an air defense force such as the U.S. Army's forward area air defense system.



Air Defense Artillery ensures our AirLand battle commanders freedom to maneuver.



PORT SAID

MANSAURA

TIENSA

ISMALIA

ONE

ABU HAMED

KJASSASSIN

SINA

The Third Dimension

SUEZ

ISRAEL

RAS ZAFRANA

EGYPT

GULF OF SUEZ

