

AIR DEFENSE ARTILLERY



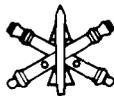
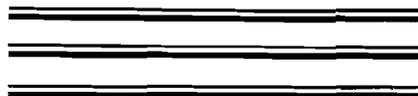
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JANUARY — FEBRUARY 1989



The men of the 197th Antiaircraft Battalion waded ashore at Omaha Beach and battled their way across Europe. Their story is told for the first time beginning on Page 10.

AIR DEFENSE ARTILLERY



Professional Bulletin of the United States Army Air Defense Branch

PB 44-89-1

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On the cover . . .

The six officers of A Battery, 197th AAA Battalion, who led their battery in WW II from D Day to the surrender of Germany without a casualty, joined together for a final picture during deactivation of the 197th in 1946. Thinking this would be their last time together any uniform was acceptable (note the Eisenhower jacket with enlisted insignia worn by Lt. Alarcon, top left). Friendships forged in mutual sacrifice and hardships are not easily terminated; memories etched in turmoil are not easily erased. Reunions of the 197th AAA Battalion are now held biennially, with A Battery reunions held between.

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By order of the Secretary of the Army
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The Year of the NCO

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

The 1989 Army theme — “The Year of the NCO.” What a super theme. One every soldier can identify with as every soldier has a sergeant. Additionally, what better theme to build on the 1988 Army theme — “The Year of Training.” Long overdue recognition for those whom every professional soldier knows are truly the backbone of the Army.

Other “Intercept Points” to be published during the Year of the NCO will address only the non-commissioned officer. This “Intercept Point” will focus on the division of responsibilities between the commanders and the Army’s top NCOs — the command sergeants major (CSMs). CSMs are special folks. They represent only .03 percent of the total Army. They are so special that little is written about their responsibilities. But you can’t talk about their responsibilities without also discussing commander (CO) responsibilities.

A good CO/CSM relationship is like a good marriage. And from this good marriage will come great organizations. A poor organization, at best mediocrity, is the result of a poor marriage.

I learned that while serving as a battalion CO. Early in my com-

mand, no matter how hard I worked, things just didn’t seem to happen fast enough. A series of events, which makes a good story over a beer, led me to dismiss my CSM. My words in firing him:

“This marriage is not working; I hereby declare us divorced.” After some gnashing of teeth and appeals all the way to the four-star level, he stayed fired, and I got the next CSM off the plane. Enter Joe Lupyak who taught me what a good CSM does and — more important — what a difference a good CSM makes.

As Joe got off the plane and I introduced myself, his first words were: “There must be some mistake.” You see, Joe was special forces. In fact, he had led the Sontang raid into North Vietnam which attempted to rescue our POWs. Never served a day in ADA. Wouldn’t have known a Hawk missile if it had bit him you know where. But he became a great ADA command sergeant major.

Early on in his tour, he spent every weekend with the “hot” battery learning system operator and mechanic checks and what TAC site life was all about. Inside of two months, he was among the most knowledgeable systems



Intercept Point

NCOs in the battalion. A great soldier. A great NCO. A great CSM. This one's for you, Joe, and all you taught me.

Before getting to specifics, let's paint the bigger picture. There are basically three things soldiers expect from their COs and CSMs.

Be good at their job. Technical and tactical proficiency (T²) — the reason Joe Lupyak was on the tactical site every weekend. Work hard on leader development to

gether for all the unit does or fails to do. Tell higher (respectfully) when it makes no sense and why.

In listing below what I consider the CO/CSM division of labor, let me first state there is no 100-percent rule. Both must know about the other's duties. At best, the duties listed below are a 70/30 to 60/40 division.

• **Tactician vs Technician.** The CO is the tactician, the CSM the technician. The CO must know

Training the Force, collective training is primarily officer business and individual training is primarily NCO business. Linkage is essential. But so is a focus. Without proficiency in individual tasks proficiency in collective tasks is not possible. The NCO — the backbone and foundation of our Army.

• **Planner vs Executor.** The commander's intent is his vision as to what needs done when. But

The Division of Labor (at the 70/30 to 60/40 level)

CO

Tactician
Collective Training
Planner
Officer and NCO
Leader Development

CSM

Technician
Individual Training
Executor
NCO Leader
Development

make subordinates all they can be. Make soldier and family care a reality.

Have a high sense of duty. Selfless, always doing what's best for the unit regardless of the personal price and continually looking for better ways. They must visibly show they love our Army, their unit and their soldiers.

Be courageous. Not just in a physical sense but also in a moral sense. Allow subordinates the freedom to fail without decapitation. Thus, establishing a command climate that permits innovation and development to full potential. Take responsibility to

enough about his weapons and where they fit into the AirLand Battle scheme to maximize his unit's combat power at the right time and place. The CSM must know all the things it takes to realize his weapon's full potential and — when they are not at full potential — how to get them to that state rapidly.

• **Collective vs Individual Training.** From the mission flows the mission essential task list, which drives collective tasks, which drives individual tasks. A separate "Intercept Point" topic. The point here is that, as stated in the recently published FM 25-100,

someone must execute that intent and bring it to reality — that's the role of the CSM. Sometimes the commander's vision may be a little cloudy. This calls for a closed door session between the two folks who care most about their unit — the CO and CSM. The azimuth to be followed is the CO's responsibility. Bringing the unit to that azimuth and keeping it there is the CSM's responsibility.

• **Officer vs NCO Leader Development.** The CO is responsible for executing officer leader development and for assisting as needed in NCO development. The CSM is responsible for executing



Sgt. Mitchell W. Stout

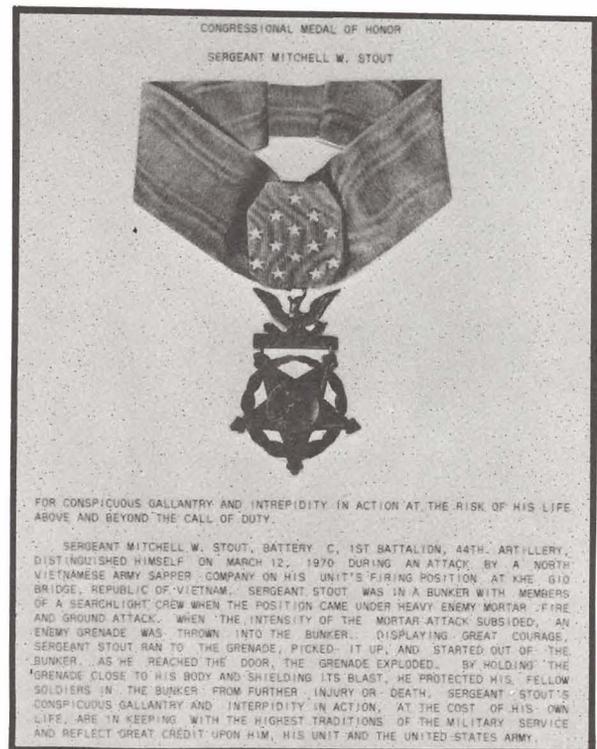
Throughout the Army "Year of the NCO," *Air Defense Artillery* will publish narrative accounts of air defense NCOs whose courage and dedication to duty won them the nation's top decorations for valor. The narratives are taken directly from plaques which hang in the U.S. Army Air Defense Artillery School's "NCO Hall of Fame."

Funded by the ADA Association, the NCO Hall of Fame display adorns the hallway of Headquarters Building, Fort Bliss, Texas. The hall is the brainchild of Air Defense Artillery School CSM James W. Landingham, who administers the display. SGM Allen Myers conducted the historical research while SFC Robert R. Lacasse constructed the display. They were assisted by Sam Hoyle, chief of the school's Museum Division, who advised them on display design.

ADA

NCO

Hall of Fame



NCO leader development. Both must be the role model for both corps. The CO teaches the officers "how to." The CSM teaches the NCOs "how to." The really good CSMs also actually share willingly in officer leader development.

The following are what I consider shared responsibilities, at least shared at the 51/49 percent level as the commander is always responsible and there can only be one commander.

• **Command Climate.** A place for soldiers to grow with the freedom to fail. The temperature will be as hot as the CO and CSM desire. Too hot stifles initiative. Too cold leads to no initiative. The secret is just the right temperature. Young officers and NCOs need to be taught, not submerged. Our doctrine asks for bold, audacious and daring leadership. Guarantee none of that with a smothering command climate. High prob-

discipline are equatable. A good safety record is a clear sign of unit cohesion. Unit cohesion is a shared CO and CSM responsibility, as is a top-rate safety program.

No better place to start the year of the NCO than by thinking about the Army's top NCOs — the CSMs. Teamwork between the "quarterback" and "halfback" remains an essential ingredient for a top-rate organization. Under-



Shared Responsibilities (51/49 percent level)

- Soldier and Family Care
- Discipline and Standards
- Command Climate
- Organization Balance
- Safety

• **Soldier and Family Care.** The business of all concerned leaders. Both the CO and CSM must have this at the top of their priorities. Which does not mean making life easy. There is no higher form of soldier care than tough, realistic training which will lead to the soldier surviving on a dangerous place — the battlefield.

• **Discipline and Standards.** And they go together. And both officers and NCOs follow the example of the CO and CSM. Whenever either one passes a wrong, a new standard is set because the CO and CSM are the standard setters for the unit.

ability of occurrence with a command climate that makes soldiers come to work smiling and looking for better ways.

• **Organization Balance.** A truly good unit is one that does all things excellent or better. Not just firing. Not just good barracks. Not just reenlistment. But a "B" or better wherever you look. Better to be straight "Bs" than failing in one critical area and being outstanding in the rest. The maintaining of this balance is a shared CO and CSM responsibility.

• **Safety.** Everyone's business. Soldiers care for soldiers on and off the battlefield. Unit safety and

standing the division of labor for both a start at building excellence with a warfighting focus.

Welcome to the Year of the NCO. Let's all make a New Year's resolution to make an already superb NCO Corps even better in 1989.

First to Fire!

NCOs

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

The 1989 Army theme, "The Year of the NCO," gives us a chance to tell the world where we came from, what we are and where we are going.

If generals provide the brain power and enlisted men provide the muscle, the noncommissioned officer must surely be the backbone. For it is the NCO who links policy decisions from the top with their ultimate execution at the lowest levels. The NCO has served proudly and effectively throughout the history of the United States Army. His distinctive rank insignia —the chevron — is as well known to the average American as the general's star.

The history of the United States Army and that of the noncommissioned officer began with the birth of the continental Army in 1775. The American NCO was not just a carbon copy of the British NCO. He, like the American Army itself, was a blend of traditions of the French, British and Prussian armies mixed with American ingenuity and know-how into a uniquely American institution. As the years progressed, the American political system, social attitudes and the westward expansion further removed the U.S. NCO from his European counterparts and created a truly American noncommissioned officer.

General Friedrich von Steuben, in 1779, standardized NCO duties and responsibilities in his book titled *Regulations for the Order and Discipline of the Troops of the United States*. Among other things this work (most commonly called the "Blue Book") set down the duties and responsibilities for corporals, sergeants, first sergeants, quartermaster sergeants and sergeants major, which were the NCO ranks of the period. The

Blue Book also emphasized the importance of selecting quality soldiers for NCO positions. The Blue Book served for 30 years as the primary regulations for the Army.

From the beginning it was necessary for NCOs to have some identifying insignia. NCOs at the time of the American Revolution wore a single epaulet to signify their rank; corporals wore green and sergeants wore red epaulets. After 1779 sergeants wore two epaulets. It was von Steuben who called the NCO the "backbone of the Army."

The American noncommissioned officer rank insignia has evolved over the past 150 years from a hodgepodge of sashes, epaulets, cockades and other displays to today's limited set of standardized, stylized chevrons.

In 1840, an effort was made to give the NCO Corps greater prestige by adopting a distinctive sword. The model 1840 NCO sword remains the sword of the NCO Corps and is still used in special ceremonial occasions.

New forms of technology shaped the Army during the Civil War: railroad, telegraph communications, steamships, balloons and other innovations. These innovations impacted on noncommissioned officer rank structure and pay.

Pay for U.S. troops during the Civil War varied according to branch and rank: from \$34 a month for master armorer, master carriage-maker and master blacksmith through \$21 a month for sergeant major to \$12 a month for musician.

Chevrons pointed up and down but basically remained pointed down from the Civil War until the regulation of 1902. The change in



NCO to NCO

direction also brought a reduction in the size of the 10-inch chevron.

The *Noncommissioned Officer Manual* written in 1909 took 417 pages to define the duties and responsibilities of NCOs; von Steuben had required only six in 1779.

World War I required the first massive training of men that the United States had seen. NCOs trained four million men, one million of whom would be sent overseas.

After viewing the difference in American and foreign NCO prestige, Gen. John Pershing suggested that special schools for sergeants and separate NCO messes be established. The performance of noncommissioned officers in the American Expeditionary Force seemed to validate these changes.

Prior to 1920 Congress had created each rank within the Army in such a way as to give each job a distinctive title and pay, and the Army then issued a unique chevron for each rank. The 1920 congressional overhaul of this cumbersome system created seven pay grades. Five NCO ranks were established: master sergeant, technical sergeant, staff sergeant, sergeant and corporal. First sergeant became a position comparable in rank to the technical sergeant. There were 231 vocational skills that could add \$3 to \$35 to a soldier's monthly pay.

During the late 1930s technicians were created in grades 3, 4 and 5 (staff sergeant, sergeant and corporal) with chevrons marked with a "T." This led to an increase in promotions among technical personnel. In 1948 the technical ranks were discontinued; they were replaced by specialist rating in 1955. It wasn't until 1940 that enlisted men could be transferred from one unit to another and retain their stripes.

Mobilization of the Army during World War II increased the numbers of Army noncommissioned officers from 20 percent of the enlisted ranks in 1941 to nearly 50 percent in 1945.

Coupled with this growth in numbers, there was a change from

an eight-man infantry squad to the 12-man squad, with the sergeant replacing the corporal as its leader. Thus the rank of corporal came to mean very little even though he was, in theory and by tradition, a combat leader.

Basic training in World War II centered on hands-on experience instead of the classroom. All training was conducted by NCOs. After basic training, a soldier was sent to his unit where training continued. The major problem was that the rapid expansion of the Army led to a decrease in experienced men in the noncommissioned officer ranks. If a man showed potential he was promoted, with privates becoming corporals, and corporals, sergeants.

In the post-World War II era there were two programs which affected NCOs: a Career Guidance Plan and professional schools for NCOs. The technical ratings were dropped and emphasis was placed on service-wide standards for NCO selection and training.

On December 17, 1949, the first class enrolled in the 2nd Constabulary Brigade's NCO school, located at Munich, Germany. Two years later, the U.S. Seventh Army took over the 2nd Constabulary functions and the school became the Seventh Army Noncommissioned Officers Academy. Eight years later AR 350-90 established Armywide standards for NCO academies. Emphasis on NCO education increased to the point that by 1959 more than 180,000 soldiers attended NCO academies in the United States.

In addition to NCO academies, the Army encouraged enlisted men to advance their education by other means. By 1952 the Army had developed the Army Education Program to allow soldiers to attain credits for academic education. This program provided a number of ways for the enlisted man to attain a high school or college diploma.

In 1958 two grades were added to the NCO ranks. It was stated that these grades, E-8 and E-9, would "provide for a better delineation of responsibilities in the enlisted structure." It was also hoped

that additional grades would help in obtaining and retaining good NCOs.

In 1966, Army Chief of Staff Harold K. Johnson chose SGM William D. Wooldridge as the first Sergeant Major of the Army. The SMA was to be an advisor and consultant to the Chief of Staff on enlisted matters. He would identify problems affecting enlisted personnel and recommend appropriate solutions.

During the following year, Johnson decided to establish the position of command sergeant major. This position served as the commander's enlisted assistant to commanders at and above the battalion level.

Vietnam proved to be a junior leader's war, with decentralized control. Much of the burden of combat leadership fell on the NCO. Needing large numbers of NCOs for combat, the Army created the Noncommissioned Officers Candidate Course. Three branches were established at Fort Benning, Fort Knox and Fort Sill. After a 10-week course, graduates were promoted to E-5; the top five percent to E-6. An additional 10 weeks of practice followed and then the NCO was sent to Vietnam for combat. This program was received with mixed feelings from senior NCOs, many of whom felt it undermined the prestige of the NCO Corps. Few of these senior NCOs, however, could say they actually knew an unqualified NCO from the NCO Candidate Course.

In 1971 the Army implemented the Noncommissioned Officer Education System (NCOES). This progressive system was designed to educate NCOs on subjects and skills needed by them to enhance their performance and abilities. The NCOES now consists of four levels of training: Primary Leadership Development Course, Basic Noncommissioned Officer Course, Advanced Noncommissioned Officer Course and the Sergeants Major Academy.

As the NCOES continues to grow, the NCO of today combines history and tradition with skill and ability to prepare for combat.

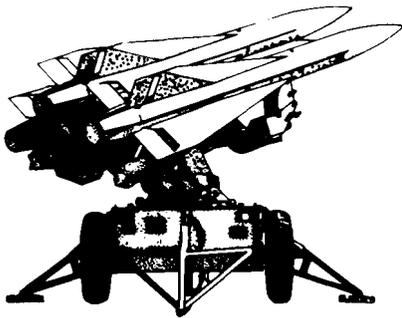


VAPOR TRAILS

Hawk at NTC

The huge, awesome surface-to-air missile systems of A Battery, 3rd Battalion, 1st Air Defense Artillery, 31st Air Defense Artillery Brigade, Fort Hood, Texas, provided early warning and air defense for the 1st "Tiger" Brigade, 2nd Armored Division, at the National Training Center, Fort Irwin, Calif., recently.

"We killed 18 opposing forces (OPFOR) aircraft," said 1st Lt. Michael McGinn, A Battery executive officer. "That's the most any Hawk unit has ever shot down at the NTC."



This was not the only first for the Hawk unit. "We are the first Hawk unit ever to deploy in full capacity and be evaluated at the NTC," McGinn said. "And this is the first rotation in which a Fort Hood Hawk unit has played a major part in the battle and actually supported the brigade going through the rotation."

"It was an experience but I kind of liked it," Spec. Roy Fain, radar maintenance specialist, said. "We really didn't have any problems that were caused by the desert. This could be attributed mostly to the fact that we moved from Fort Bliss, Texas, that is mostly desert,

to Fort Hood. We are used to this type of environment," Fain added. "The soldiers that really got the training were the operators, because they were the ones physically seeking out the targets and locking in on the aircraft."

— Jimmie Ferguson

3-111th ADA Launches First Missile

Three direct missile hits highlighted the 3rd Battalion, 111th Air Defense Artillery's first annual service practice at McGregor Range, N.M. The Virginia Army National Guard battalion failed to launch a fourth missile only because of an internal electrical system failure.

One team from each of the battalion's four batteries took part in the 3-111th ADA's first missile live-fire exercise since it began Stinger manportable air defense (MANPAD) training in February 1987.

The MANPAD systems' remarkable ability to reach out and destroy distant targets was amply demonstrated by even the aging Redeye as each missile launched by the 3-111th ADA struck its ballistic aerial target (BAT) at the extreme limits of effective range. The missile hits were so far distant that the explosion of each warhead was barely visible. This also says much for the skills of the gunner.

Three hits out of three launches was an especially noteworthy accomplishment because, before the ASP live-fire exercise, none of the selected gunners had any experience with the Redeye; all of their prior missile training had been with the more advanced Stinger. 1st Lt. Leland Lavoie, OIC of the exercise, noted, "As Guardsmen, this exercise was important be-

cause our very successful ASP demonstrated the ability of the 3-111th ADA to perform its forward area air defense mission with a relatively new system. It also showed that our soldiers are trained to standard."

The 3-111th ADA was strictly a Duster battalion until the spring of 1988, and is now at the midpoint of its transition to a new table of organization and equipment (TOE) and new weapons systems.

The 3-111th ADA also turned a recent routine equipment transfer into its first airmobile training exercise.

Eighteen personnel of the Headquarters and Headquarters Battery's Stinger platoon made a training flight in two UH-60 Black Hawk helicopters of the 227th Helicopter Company from Fort Pickett, Va., to Roanoke. At Roanoke they picked up 15 M-151A2s and convoyed them back to Fort Pickett with only one breakdown.

Upon arrival at Fort Pickett, Lavoie, the Stinger platoon leader, assigned the new vehicles to their proper batteries.

Maj. Jerry A. Pettersson, the battalion commander, says it won't be the last time that members of the battalion will move by air. "Because we have so few training days we must turn every activity, no matter how routine, into a training exercise if we are going to be truly capable of performing our wartime mission. As the battalion increasingly becomes a part of the 29th Infantry Division (Light), it will become more flexible and its personnel more accustomed to moving quickly by different modes of transportation to provide support to the light infantry."

— 1st Lt. Jimmie D. Starling

VAPOR TRAILS

Individual Training

New technologies have not lessened the need for air defenders to perfect their individual soldier fighting techniques; one reason the soldiers of the 2nd Battalion, 2nd Air Defense Artillery, 31st Air Defense Artillery Brigade, Fort Hood, Texas, recently initiated the new Bayonet Course at Fort Hood.

The course consists of two main sections — a bayonet court and an assault lane. The bayonet court is large enough to accommodate several soldiers and is equipped with dummies on which to practice. The assault lane is made to challenge both the strength and stamina of each soldier hustling through its winding path. The assault lane starts with a seven-foot wall followed by hurdles, ditches, dummies and low-crawl lanes covered with barbed wire.

— Luis Martinez

Allied Mobile Force (Land)

The hard-charging Stinger-tough soldiers of the 3rd Battalion, 44th Air Defense Artillery, Kaiserslautern, West Germany, are now a part of the SACEUR's Allied Command Europe Mobile Force (Land).

The AMF(L) is a unique, multinational force capable of rapidly deploying to the vital flanks of Allied Command Europe to demonstrate NATO solidarity in times of international tension.

The concept of an allied mobile force was developed at NATO during the late 1950s when it was considered that, although Central Europe was relatively secure and protected by a resident multinational NATO presence, the same situation did not exist on the flanks of NATO. Therefore, the purpose of the AMF is to make clear to any actual or potential aggressor that an attack against any nation in the AMF would con-

stitute an attack against all members of the NATO alliance.

Thus, the primary mission of the AMF is one of deterrence. However, if deterrence fails, the AMF is fully equipped and trained to fight alongside local forces in defense of the area concerned. The presence of Stinger in the force significantly adds to the capability and spirit of the AMF(L).



Spec. Clifford D. Waddell and Sgt. Ronald H. Nickelberry of the AMF(L)

The AMF(L) operates in several contingency areas encompassing the countries of Norway, Denmark, Italy, Greece and Turkey. As such, the 3-44th ADA Stinger platoon faces the problems of rapid deployment to remote areas; difference in languages, NATO procedures and equipment; and the extremes of climate and terrain. Therefore, the platoon relies on intensive training in areas not normally associated with the Central European region.

Throughout the year, the platoon participates in study periods, reconnaissances and full-scale deployment exercises to both the northern and southern contingen-

cy areas. The platoon's official presentation to the force in the AMF(L) Commander's Study Period in December was followed by winter warfare training in Italy and Canada with major field exercises in the northern and southern contingency areas later in the year. Although these exercises are valuable to the training of the force, they also show potential aggressors that the AMF is there to deter aggression or defend our allies.

The Stinger platoon's new mission with the AMF(L) requires them to be strategically mobile. They are held to a 72-hour deployment capability. Once directed by SACEUR to deploy, they assemble and fly to a contingency area, join the rest of the force units and come under the tactical command of AMF(L).

Deployment of the AMF(L) is, in itself, a political signal seen as the first deterrent activity. Once the AMF(L) and the Stinger platoon are in the deployment area, they must make both their presence and purpose known. This task is accomplished through deterrent patrolling, showing the flag by high visibility military activities, community relations programs and cross-training exercises with AMF(L) and the host nation's forces. The 3-44th ADA Stinger platoon augments the AMF(L) military elements from Belgium, Canada, West Germany, Italy, Luxembourg, the United Kingdom and the United States.

The Stinger soldiers eagerly await the training ahead and fully understand their mission. With the intensified mission-oriented training ahead and their new place in NATO's mobile force, these soldiers are the envy of their air defense peers. *Per ardua* is their unit motto, and "through difficulties" they can — and will — prevail.

— Capt. Leon W. Hojnicky

VAPOR TRAILS

Coronet Sentry

Approximately 200 11th Air Defense Artillery Brigade soldiers from Fort Bliss, Texas, and Fort Bragg, N.C., participated in Coronet Sentry '89. The training exercise, sponsored by the Tactical Air Command's 28th Air Division, was hosted by the 552nd AWAC Wing at Tinker Air Force Base, Okla.

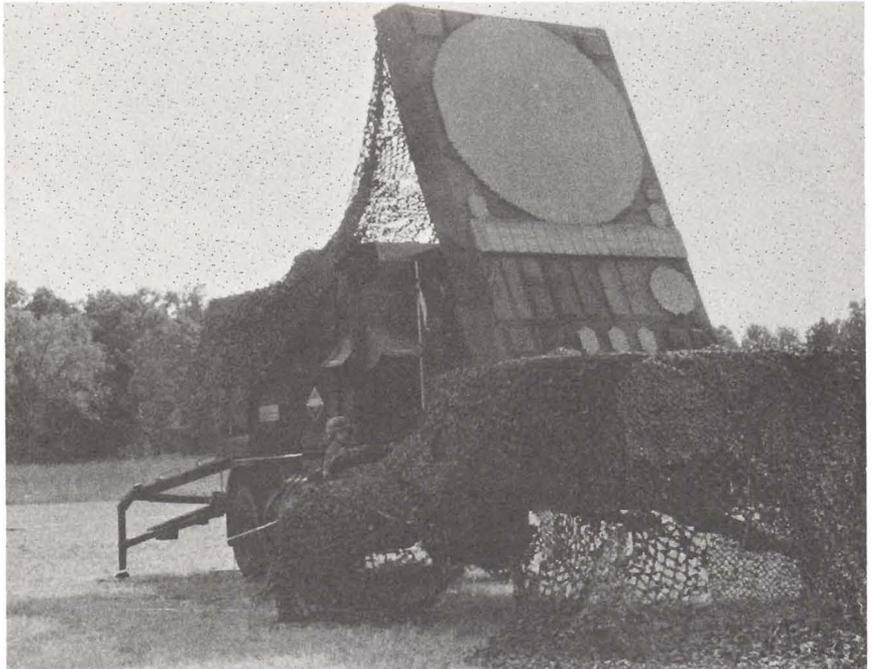
The annual Air Force readiness exercise held in, around and above Mena, Ark., tests the abilities of airborne warning and control system (AWACS) aircraft to detect and track a wide range of Air Force, Navy and Marine aircraft from various areas of the United States.

"Coronet Sentry is an excellent training exercise for air defenders," said Col. James L. Smith, 11th ADA Brigade commander. "We plan to take advantage of the tremendous training potential of the exercise by increasing our participation next year."

The most recent exercise marked the first participation in Coronet Sentry by a Patriot air defense artillery unit. It was also the first time Patriot had worked an exercise with AWACS in the United States.

The 2nd Battalion, 7th Air Defense Artillery, from McGregor Range, N.M., worked in conjunction with the 11th ADA Brigade fire direction center (FDC) during the exercise. The brigade FDC used its adaptable surface interface terminal (ASIT) to establish direct voice and data links with AWACS aircraft in the exercise.

The ASIT is a communications terminal normally used in conjunction with an FDC to establish secure communication links. However, during Coronet Sentry '89 the ASIT was used to establish communications between the Patriot information and coordination central and AWACS aircraft.



"This was an important exercise for us because we got an opportunity to work with the ASIT and the Air Force," said Lt. Col. Roy Gortney, commander of 2-7th ADA. "We learned a tremendous amount that will certainly help us do our jobs better in the future."

Also participating in the exercise was 2nd Battalion, 52nd Air Defense Artillery, an 11th ADA Brigade Hawk asset stationed at Fort Bragg, N.C.

"This kind of exercise, with its great amount of air play, really gives air defenders an opportunity to hone their skills," said Lt. Col. Jeff Petrucci, commander of 2-52nd ADA. "We really got a lot out of the time we spent there."

The citizens of Mena and Polk County really supported the military personnel participating in Coronet Sentry. Train loads of equipment and convoys of buses brought more than 300 soldiers to this little town of nearly 3,000. Huge trucks, radars, missile launchers and support equipment

dotted the surrounding farmland. Aircraft from all of the services constantly disturbed the quietude of Mena.

Maj. Len Tatum, 2-7th ADA operations officer, said, "Mena is a great town and the soldiers really appreciated everyone's friendliness and hospitality. The National Guard unit in Mena also provided us with a lot of support and we are grateful for their help."

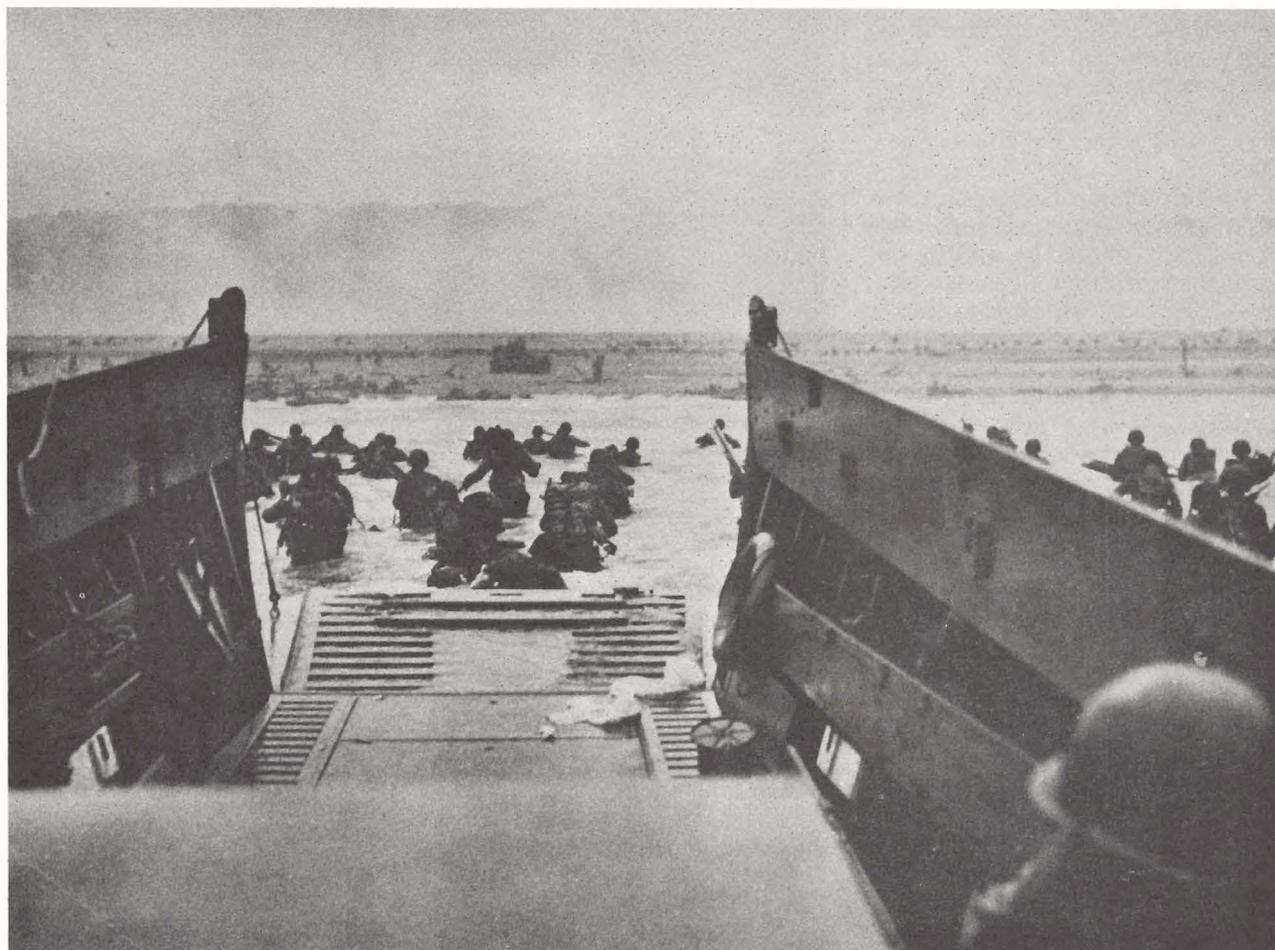
To demonstrate the brigade's gratitude, Smith presented Mena's mayor, Jerry Montgomery, with a plaque from all of the soldiers.

"Everyone is more than welcome to come back next year," Montgomery said. "We loved having you here and we look forward to seeing you again."

— 1st Lt. Elizabeth Linker

Submit items for this section to "Vapor Trails," Air Defense Artillery, ATSA-AC-FP, Fort Bliss, TX 79916-7004.

The 197th in WWII



Written as it happened more than 40 years ago, this history of the 197th AAA Battalion during World War II has never before been published.

The story begins simply. There is a hill in West Texas. It is called Logan Heights, and it is near Fort Bliss. And to the boxlike barracks atop this hill there came, in the early winter of 1942, a group of men to form another unit in the rapidly-expanding wartime Army of the United States.

They called it the 2nd Battalion of the 509th Coast Artillery (AA) Regiment when they activated it that tenth day of November 1942. But actually it was the 197th Antiaircraft Artillery (AAA) Automatic Weapons Battalion (Self-Propelled). It's best to get straight on that right at the start.

A number of things happened before the battalion assumed its proper name. The original cadre of five officers and 90 enlisted men arrived on Nov. 12. The commanding officer, Lt. Col. C. T. McEniry (then a major), took over on Dec. 12. Fillers from more than 40 different states arrived in large groups during December and January. The battalion received its initial training on the 40mm Bofors AA gun, and even spent some time in firing the weapon at the Camp Hueco range in the New Mexico desert north-east of Fort Bliss.

But on Feb. 13 the War Department decided that self-propelled weapons were to be among the most valuable in future AA operations and designated this battalion and one other to be the first self-propelled units established at Fort Bliss. From that day on, the organization went to work with the weapons it was to fight with from the beaches of Normandy to the heart of Germany. The 197th had been born!

The birth pains of a new battalion are not easy. There were 670 enlisted men and 38 officers. Many of them were new to the army. The basic weapons, the M-15 halftrack with 37mm gun and twin fifties and the M-16 halftrack with quadruple fifties in an electric turret, were unknown quantities for practically everyone.

So that meant hard work. It meant an 18-week training program replete with gun drill, extended field exercises, more firing at the Hueco ranges, and a never-to-be-forgotten 25-mile battalion hike in a sandstorm. It meant inspections and participation in a combat problem on May 10 for Undersecretary of War Robert E. Patterson. It meant parades, classes in fire control and tactics and backbreaking digging in preparation of positions during maneuvers.

But there was relaxation too. And there was fun. There was El Paso nearby; and Juarez just across the border. Old-timers in the battalion who spent many a Saturday night in Juarez will not require any additional discussion of the subject. Furloughs and leaves came up in July also. The first one, somehow, is especially important.

And training continued far beyond the original 18 weeks. The men of the battalion, meanwhile, were beginning to look and act like soldiers. The outfit came out with top honors in a mass parade of all units at the Antiaircraft Artillery Training Center on July 24.

Then, on Aug. 23, the battalion was alerted for its first permanent change of station. On Aug. 28 and 29, two troop trains, bearing all personnel, departed from Fort Bliss for Camp Pickett, Va., for amphibious training with the 31st Infantry Division.

The battalion easily became acclimated to the new post, although the prevalent rainfall constituted a radical change from El Paso's dry climate. After preliminary small boat and basic amphibious training, the outfit left Pickett for advanced amphibious training at Camp Bradford, near Norfolk. From Sept. 22 for a week, there followed intensive instruction and training in the use of all types of small landing craft, loading and unloading men and vehicles from everything from LCVPs to LSTs, assault tactics on beachheads, and practicing debarkation from the old Italian "YAG," when a number of troops got their initial touch of seasickness.

On Oct. 1, B, C and D Batteries returned to Camp Pickett, while Headquarters and A Battery embarked on a practice voyage and beach assaults on Upper Chesapeake Bay with special troops of the 31st Division. The voyage was made in LSTs and troop transports and three practice landings were made before the return trip to Pickett on Oct. 11. In the meantime, and up to Nov. 10, B, C and D Batteries each made a practice voyage and assault landings on the Upper Chesapeake with the three regimental combat teams of the division.

The battalion training back at Pickett during the ensuing weeks covered all types of small arms firing and a review of basic and advanced subjects. Two inspections were given the battalion by the Inspector General's Department during November, the final one eliciting the remark from Col. Lawrey, senior member of the team, that the 197th was one of the two best of 40 battalions he had seen.

November was also a month of leave and furloughs. But on Nov. 29, the battalion was alerted for movement to a port of embarkation staging area on Dec. 15. The next two weeks were spent in final preparation for overseas shipment, and turning in all weapons and vehicles. Then, on Dec. 15, the unit proceeded by train to Camp Kilmer. It had ceased to have a name or station. For now it was officially known as "Shipment No. 9169-C," with "APO No. 9115."

Overseas to England

Life at Camp Kilmer moved at a quickened pace.

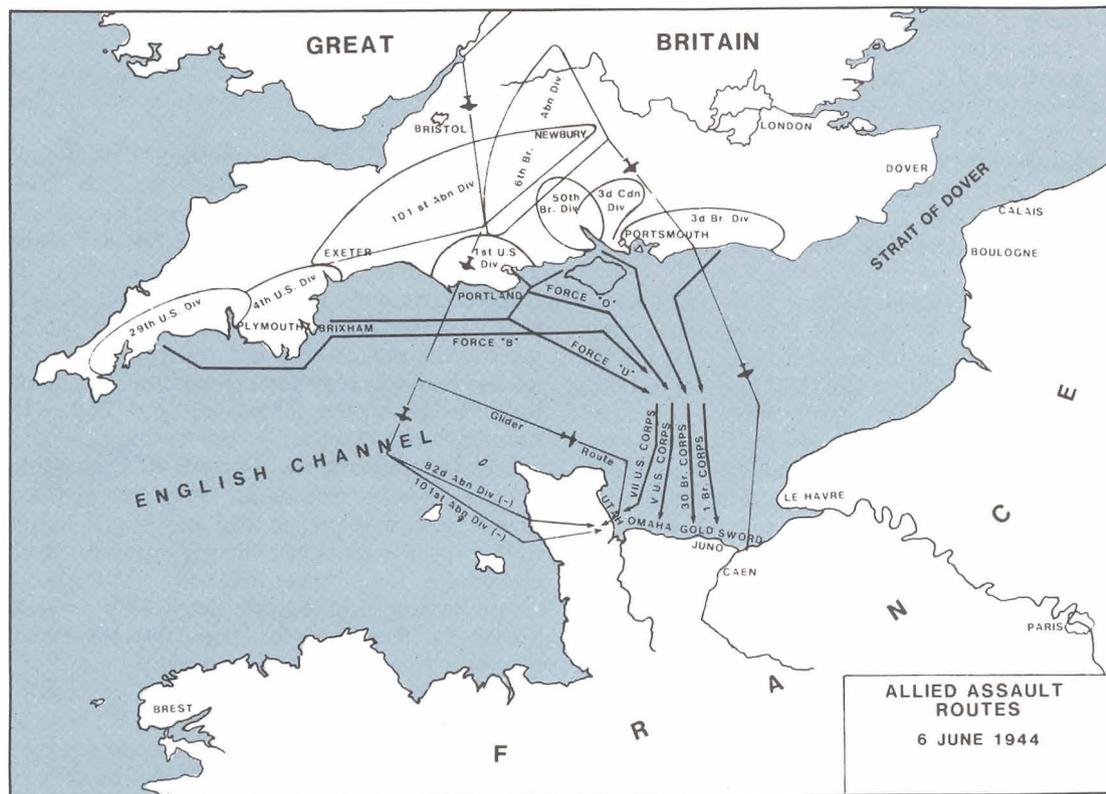
For three days the battalion was given a thorough processing and inspection of clothing and equipment. Final clearance by the post commander sent the unit, on Dec. 21, by train to Jersey City and by ferry up the Hudson River to Pier 90, North River Terminal, N.Y., where it boarded the passenger liner Ile de France. The battalion was designated as advance unit for some 10,000 troops to follow in 24 hours, and A Battery was assigned the mission of manning the ship's AA guns.

But it was a dry run. Engineers determined that the ship's machinery was in need of further repairs before undertaking the voyage, so — after four days — the personnel were disembarked, and the 197th went back to Camp Kilmer on Christmas Eve. It was not the best Christmas one could hope for that year. But during the following week 12-hour passes to New York City and other nearby places were plentiful.

New Years Day 1944 found the battalion again moving to Pier 90, where this time it boarded the world's largest ship, Britain's *Queen Elizabeth*. And at noon the following day, the *Queen Elizabeth* —

time there had been no enemy bombing during the unloading, and for the first time there had been no rain."

Unloading by tenders to Gourock, Scotland, the battalion boarded troop trains to the strains of Bing Crosby singing "The Funny Old Hills," emanating from the loudspeaker of a nearby Red Cross establishment. Red Cross girls served coffee, doughnuts, cigarettes and candy; and then, during the night, the trains moved through Glasgow, Edinburgh, Newcastle, York and Reading to the south of England. The battalion's new station was Upton Lovell Camp,



bearing 15,000 passengers — sailed past the Statue of Liberty and out into the Atlantic.

Life aboard ship was new to all, and interesting in spite of extreme congestion. Two meals a day and daily lifeboat drills broke the monotony. Except for one day of heavy seas, the weather was cold but good for the entire crossing. In mid-ocean the ship's course was changed because of reports of enemy submarines in the area. A detour north of several hundred miles added about 24 hours to the time of crossing. But there were no attacks.

About dusk on Jan. 6, after a voyage of six days, the *Queen Elizabeth* dropped anchor in the Firth of Clyde, Scotland. The night was spent aboard ship, and disembarking began the following morning. British and American officials came aboard to welcome the troops, and ship's officers remarked that the debarkation was a "first in two ways: for the first

Codford, Wiltshire.

Now assigned to the First U.S. Army, members of the battalion began to familiarize themselves with things typically British; i.e., Nissen huts, the black-out, pounds and shillings, "honey buckets," driving on the left side of the road and British weather. Numerous recreational convoys afforded opportunity to visit nearby cities such as Salisbury, Warminster and Bournemouth.

On Feb. 20, the battalion moved by convoy to the 10th Light AA Training and Practice Camp at St. Agnes Head, Cornwall, on the southwest coast of England. Here, for 10 days under British tutelage, the batteries fired at sleeve targets with all basic weapons. The British staff was pleased with the state of training of the unit and efficiency of the weapons, and firing results were highly satisfactory.

At the conclusion of firing the battalion was

ordered to another station, and moved on March 1 to Weston-Super-Mare, Somerset, 20 miles southwest of Bristol. A rather large resort city, Weston afforded ample facilities for amusement, and members of the battalion will long remember the amusement pier, the Winter Garden Pavilion, the Odeon cinema and many restaurants and hotel bars.

Then, on March 27, came the "baptism of fire." German bombers attacked the city during the night and, although the battalion suffered no casualties, it began to realize with greater force that the war was close at hand.

Two days later, two composite batteries of the battalion moved to the Assault Training Center at Woolacombe, Devon, for seven days amphibious and waterproofing training. Following this came preparations for actual channel operations. During April, the battalion was divided into an Assault Group (32 officers and about 500 enlisted men) and a Residue Group (5 officers and about 175 enlisted men). Many conferences were held with officers of the 16th Infantry Regiment of the First Division, to which the battalion had been attached for the channel movement.

Then, on April 23, the Assault Group moved to the marshalling area camps in the vicinity of Dorchester, Dorset, leaving the Residue Group behind in Weston. The period from April 24 to 29 was spent preparing for the Exercise Fabius, a practice full-scale amphibious assault landing. Because one of its assigned LCTs was damaged by enemy air action in Portland harbor, A Battery did not participate in the exercise, but on May 3 the balance of the battalion Assault Group, with the 16th Infantry, moved up the English Channel and made the practice assault at Slapton Sands.

The batteries landed, occupied their positions and accomplished their missions. But when, on May 4, the practice operation was concluded and the 16th Infantry departed, the battalion units were given the mission of remaining on the beach for several days to provide AA defense while other troops moved inland. This was the first real tactical mission of the 197th.

The units returned to the marshalling area on May 7 and occupied Camp D-12A. Here life reverted to a semi-garrison status. All vehicles were waterproofed and there was limited familiarization firing with the new Peca sight. The Residue Group moved from Weston to Bournemouth, Hampshire, on the Channel coast, on May 26, where it remained until about three weeks after D-Day.

Then things began to happen. Field orders were published. Troops were briefed regarding the Channel crossing and landing operations. Assault units were separated into craft loads; life preservers and other special equipment were issued. The battalion Assault Group moved out to Portland Harbors and loaded on LCTs. Operation Neptune was coming up!

Normandy

Omaha Beach was approximately three miles in length. Steep chalk cliffs rimmed the flat, sandy beach which was some 50 to 100 yards wide. These cliffs, slightly concave, were broken by three small corridors — the beach exits — and several small draws.

That's what the geography books might have said about the small strip of French coast in the vicinity of Colleville-sur-Mer and St. Laurent-sur-Mar.

What the men in the 197th learned about Omaha Beach on D-Day was a little different. But that's getting ahead of the story.

The loaded LCTs rode at anchor in Portland harbor for three days. During the night of June 4, the invasion fleet put out to sea, but bad weather forced a 24-hour postponement and they turned the craft back to Portland. Then, early on June 5, they took off again. At 0600, the huge fleet assembled off the coast of Normandy. H-Hour was 0630. And H-hour was on the "nose."

They went in — elements of the 197th did — at H plus 120 minutes. That was after the preliminary naval shelling and the landing of the assault infantry waves. And they learned a few more things about Omaha Beach. They learned that half in, half out of the water were hundreds of obstacles — pilings, hedgehogs, terrahedra, most of them mined. They learned that the passages through these obstacles were narrow and too often clogged with wrecked landing craft. They learned that they must debark with all their vehicles in deep water — that many of their vehicles drowned out.

They learned that maybe you didn't make it in your first try, so you tried again. And they learned that if an 88 round landed in your LCT you didn't make it at all. They learned that if you reached the beach, you were pinned down at the water's edge.

And the reason for that is this: The Germans had



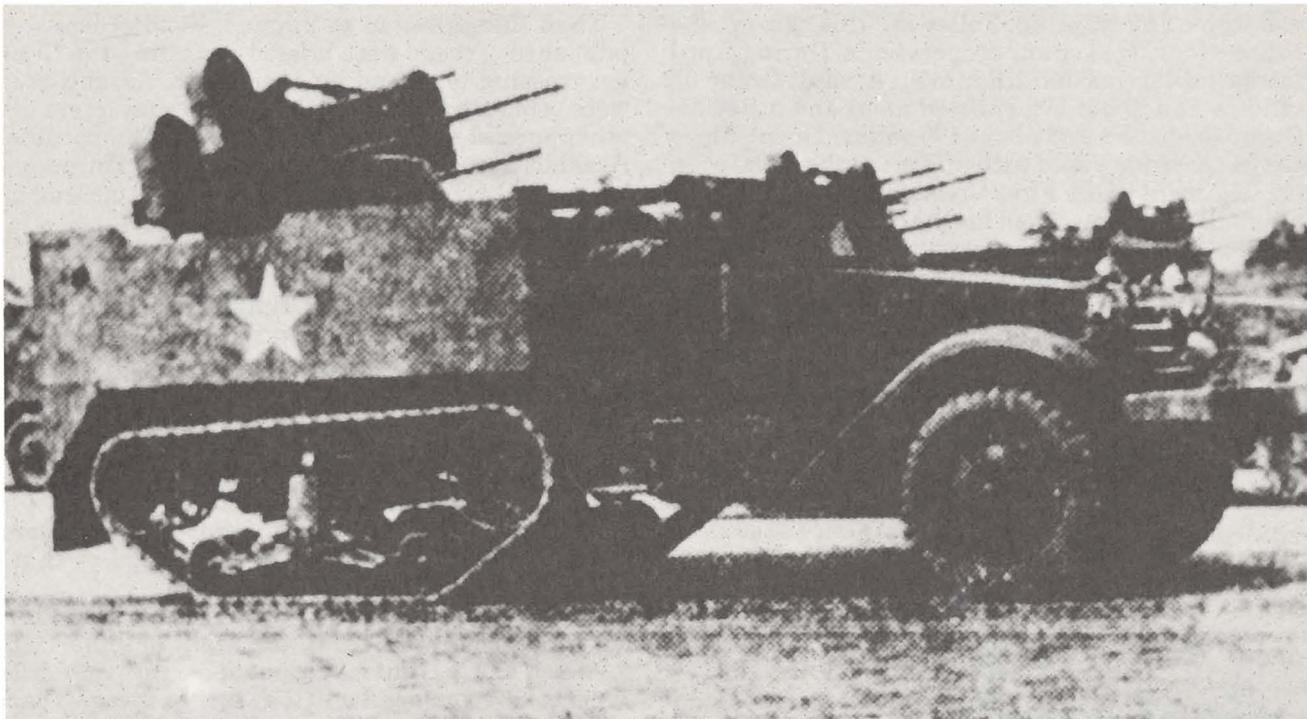
built heavy concrete emplacements into the brow of the cliffs overlooking the beach. But, because the Germans were smart and didn't want to expose their emplacements to direct fire from naval guns, they built them at angles so they faced down the beach. And their fire was interlocking. And they were very hard to knock out.

They learned that the beach and the beach exits were heavily mined. They learned that about midway between the water's edge and the cliffs ran a deep anti-tank ditch filled with water. All this they learned — at a price:

Killed: 1 officer, 4 enlisted men.

crews set up tactically. The first night was a tough one.

On D plus 1 the AA defenses were expanded slightly to the east and south to cover new territory taken in the advance of the First Division. On the same day the battalion was relieved from its attachment to the 16th Regimental Combat Team and continued a somewhat static defense of the beachhead area until June 25, with A Battery given the special mission of protecting Airstrip A.L.R. 9. Then the unit was given the mission of providing AA defense for the City of Cherbourg immediately upon its capitulation. Through battle-scarred Isigny, Carentan, St. Mere-



Seriously wounded: 1 officer, 11 enlisted men.

Lost material: 6 M-15 halftracks, 7 M-16 halftracks, 1 M-2 halftrack, 3 jeeps, 1 trailer.

Approximately 60 men lost all their personal belongings and equipment. The majority of them were in the 1st Platoon of B Battery, which lost all its vehicles when LCT No. 25 was hit by heavy artillery and burned.

Many gun crews, unable to bring their weapons to bear on German positions because of the slope of the beach at the water's edge, gave small arms support to the infantry and engineers. Others helped clear mines from the beach exits. Medics worked long hours under direct fire, aiding the wounded.

After many strenuous hours it became possible to move most of the men and vehicles off the beach and up onto the plateau above. Crews from disabled tracks dug in on infantry missions. Operational

Eglise, Montebourg and Valognes the convoy moved. Positions within the town were untenable, and most gun crews were actively engaged in small arms fire fights with snipers and patrols during their first day or two. Batteries began to bring in their first bags of prisoners.

On June 28, the battalion was relieved of its mission at Cherbourg and shifted to Air Strip A.L.R. 9, south of Omaha Beach. That same day, the battalion residue landed on Utah beach and joined the rest of the unit the following day. The main situation and tactical mission of the 197th remained unchanged from this time to July 15. Enemy air activity had been light throughout the period, and the battalion was credited with one Category I and one Category II.

On July 15 the battalion was moved farther south, this time to Air Strip A.L.G. 12, just east of Balloroy.

The battalion headquarters area was subjected to severe enemy shelling on the night of July 20, the medical detachment taking the principal casualties. Tree bursts riddled the aid tent and emphasized the necessity for digging in deep. The month of August was inaugurated by a rather severe bombing of the air strip; the battalion suffered a number of casualties and damage to equipment.

Northern France

The breakthrough at St. Lo and the resultant fluid situation was reflected in many changes of mission and station for the battalion. In the main, batteries were assigned to protect mobile ammunition supply points which during this period were encountering great difficulty keeping up with the rapidly moving front.

On Aug. 6 elements of the battalion began moving from Airstrip A.L.G. 12 to the area south of St. Lo for a defense of Vire River crossings. On Aug. 9 the entire unit moved to the Forest of St. Sever, near St. Sever, Calvados, where a First Army supply dump was to be established. A change of orders, however, sent A and B Batteries to Mobile ASP No. 108 near St. Hilaire du Harcourt and C and D Batteries to static defense of Depot No. 106 in the vicinity of Le Bourigny and Brecey.

A and B Batteries moved with their ASP steadily eastward, finally reverting to an airstrip defense role near Dreux at the end of the month. Remaining elements of the battalion did not leave the St. Sever area until Aug. 25, when C and D Batteries moved to the east, finally setting up with ASP No. 113 near Coubert, south of Paris. Enemy air activity was

extremely light during this period. However the battalion began to take a large number of prisoners.

Then came the move to Paris!

A Battery was first into the city. At least that battery, on Sept. 2, moved from Dreux to world-famous Le Bourget Field where it established an AA defense. B Battery moved to Le Bourget the next day, and battalion headquarters and headquarters battery established a CP in the Cuban House of the University of Paris.

Paris was, of course, out of this world! Newly liberated and excitingly beautiful, it afforded members of the battalion a wonderful respite from hardships of the previous months. Organized tours enabled the men to see the famous sights of the city, and there was a great deal of souvenir-buying — especially of perfume.

On Sept. 5 a major change in the tactical control of the battalion took place. The use of mobile ammunition supply points (ASPs) was discontinued, and in their place there were established three forward ammunition supply points — one for each corps in the First Army. The battalion was attached to the 71st Ordnance Group and given the mission of providing AA defense for these ASPs. As a result of this, A and B Batteries moved from Le Bourget Field to ASP No. 116 near Soissons, and set up their headquarters in the sumptuously furnished building formerly occupied by German Gen. Von Rundstedt during earlier campaigns. Movements with the ASPs continued during the next days until, on Sept. 9, in a move 100 miles to the northeast, battalion HHB crossed into Belgium for the first time.

During the remaining first half of September the outfit continued a series of moves in the vicinity of Liege. Air activity was light, and personnel had an opportunity to make many warm acquaintances among the friendly Belgian people.

Rhineland

A party from the maintenance section of Headquarters Battery became the first element of the 197th to cross over into Germany. Trying to locate an ordnance company the men progressed as far as Aldenburg, southwest of Aachen, on Sept. 17. It was not until three weeks later, however, that tactical positions were taken up in the Reich.

Much work, in the meantime, was concentrated on perfecting a ground defense plan for protection of the ASPs. On Sept. 29, by reason of various relocations, the battalion achieved the unique distinction of having elements operating in three different countries — Holland, Luxembourg and Belgium. Weather conditions were bad, and excessive mud made field conditions most uncomfortable for gun crews. Battalion personnel had their first opportunity to observe V-1 buzz bombs during this period. There were no casualties.

The first real action of October came on the 5th, when A Battery, in the vicinity of Heerlen, Holland, engaged five FW 190s flying low on a strafing mission. Claims for the action were: three Category I,



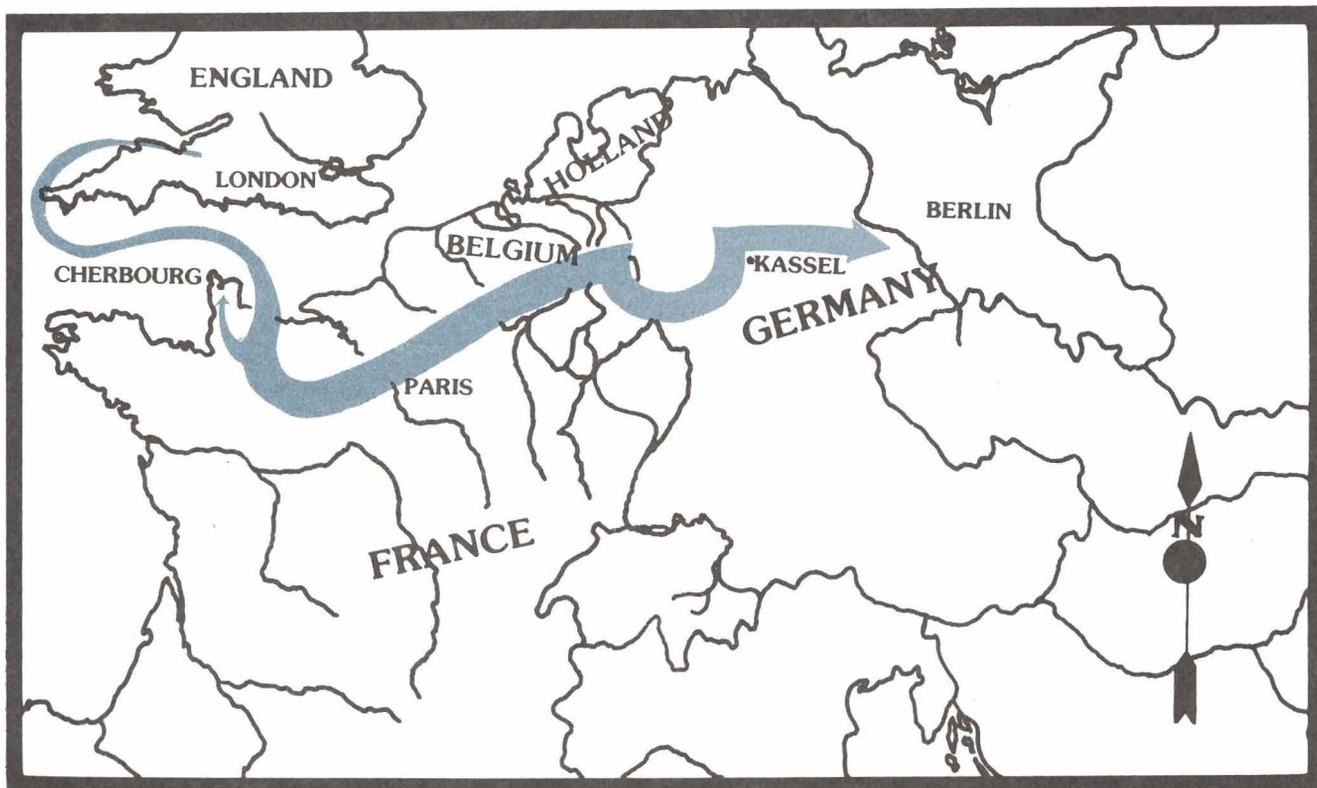
one Category II. D Battery became the first unit to move into Germany on Oct. 8, setting up a defense for ASP No. 127 in the vicinity of Sief.

AA action stepped up a little during October, and the number of buzz bombs increased likewise. Elements of the battalion, particularly D Battery in the vicinity of Aachen, received considerable enemy shellfire. When B Battery moved to Bourcy on Oct. 18, the battalion achieved a distinction not surpassed by any other unit of the First Army. It was operating in four countries: A Battery in Holland; B Battery in Belgium, with a few fire units in

almost continuous bad weather and the approach of winter. Real winter started on Nov. 8 with the season's first snowfall. Snow continued intermittently for several days, with a total of 10 to 12 inches reported in some places.

Under a new First Army policy, one-day passes were inaugurated to nearby cities, and it was possible for one officer and 14 enlisted men to visit places like Liege, Verviers, Arlon, Malmoo Eupen and Spa each day. It was the first opportunity for passes since D-Day. Thanksgiving brought turkey for all.

During the first part of December there was no



Luxembourg; C Battery in Belgium; D Battery in Germany; and Headquarters and Headquarters Battery in Belgium. A front of 120 miles.

The paralyzing hand which unfavorable weather clamped on the entire northern front during November had its effect also on the 197th. Not since D-Day had such a static condition lasted so long for the battalion. Only one move was made during the month, with B Battery moving to reinforce D Battery's defense of ASP No. 127, near Aachen.

A few brief bits of action were noted during the first week and hardly a day passed without a number of buzz bombs reported over the area. A few fell near some of the battalion installations but with the exception of a few windows knocked out by blast, no casualties or damage to equipment resulted.

Most all fire units completed the building of improved shelters to furnish protection against

movement by any of the batteries, and there was scattered air action. On Dec. 11, the operations section moved to assist B and D Batteries perfection of the air-ground defense plan near Aachen. On the night of Dec. 25 a "dry run" was held with all adjacent corps troops participating. The problem was concluded successfully.

Ardennes

There are some things you can't describe very well. There was Omaha Beach . . . and there was The Bulge.

You just had to be there, that's all.

The way it worked out, it was okay. But the 197th came very near losing three batteries in The Bulge. There was C Battery, for instance.

C Battery was set up at ASP No. 126 near Waimes when Von Rundstedt crashed through on his way to

Antwerp on Dec. 16. So on the next day, when German patrols began infiltrating, the ASP company blew up much of its stores and withdrew. So C Battery deployed in a ground defense role near the outskirts of Waimes and proceeded to hold the right flank of the German counter-offensive. When the First Division's 16th Infantry came up, they found this AA battery all alone, as Brig. Gen. Clift Andrus, division CO, said, "a source of inspiration" to doughboys of his crack outfit arriving on the scene.

C Battery sent a couple of boys to an ordnance company in Malmedy. They never came back. But their bodies were found a month later in the roadside snow, where they had been shot by the Germans.

On Dec. 18, word was received that the enemy had captured a field hospital unit in Waimes. So Capt. Olcott, the battery commander, organized a small task force and went into the town. The Germans were driven off after a short fire fight, and the hospital personnel were evacuated. And C Battery took over the town of Weimes.

Then there was A Battery.

It was at ASP No. 128, near Bourcy on the left flank of the penetration. Heavy enemy shelling of the battery's positions was the first signal that the big winter operation was underway. The unit moved into ground defense and established roadblocks to delay enemy armor reported approaching in the vicinity of Donnange.

American armor and artillery began to pull back, leaving A Battery as the only holding element in that sector. Finally, on receipt of orders to evacuate to ASP No. 128A, near Champlon, the unit began to pull out as German units were observed approaching



down the road. Back through Bastogne to Champlon went the battery, but the next day, Dec. 19, it became apparent that this position also was unsatisfactory and the battery moved with the ASP to Bellevaux. Further moves took them to Bertrix, to Florenville and to Virton. On the final move — probably for the first time in this war — AA guns protected a moving ammunition train as they moved down a road paralleling the tracks.

Then there was Headquarters and Headquarters Battery.

On the night of Dec. 16 these units were alerted to assist nearby elements in ground defense of the Sourbrodt-Camp Elsenborn area. The following day, reports of enemy paratroops in the area were confirmed. In the afternoon the tremendous blast of demolitions at ASP No. 126, a few miles away, broke many windows and caused minor injuries to a number of men. On Dec. 18, the headquarters units were ordered to an assembly area at Aywaille, and then to the vicinity of Werbomont.

However, the movement to Werbomont was interrupted by a "stand by" order, which indicated that the enemy was in the vicinity of that town. The convoy was halted at dark on a side road near Bosson and local security guards were posted. The following morning the commanding general of the 82nd Airborne Division informed the unit that he was to employ his infantry in the Bosson area, and the convoy was to pull back at least five miles to the northwest without delay. The order was complied with, the convoy moving to a new C.P. at Wegnez, but for many months personnel referred to the time that Headquarters Battery was relieved by the 82nd Airborne Division in the Battle of the Bulge!

B and D Batteries, stationed near Aachen, were north of the German penetration, but during the month of December saw an increasing amount of air action, underwent many paratroop alerts, were bombed and strafed, and fulfilled ground missions successfully.

After the intense action of the early days of the Bulge, the months of January and February were comparatively dull. C Battery was engaged in a mission of providing AA defense for First Army headquarters, and the other batteries made numerous moves on missions with ASPs and MSRs. There were scattered air engagements during the month, but the main personnel made up for a somewhat grim Christmas by catching up on rest and rehabilitating themselves and their equipment.

February was largely a repetition of January, although the weather began to improve considerably. On the 5th a buzz bomb landed in an orchard near battalion headquarters at Wegnez, causing a few minor casualties, and on the 22nd a terrific explosion in the captured enemy ammunition section of ASP No. 137 resulted in slight wounds to a few others.

Central Europe

The fortunate seizing and exploitation of the Remagen bridgehead was only the beginning of events

which were to make the months of March and April go down as among the most remarkable in the history of warfare. For on March 24, the entire front boiled into action — surging across the Rhine in its entire length to initiate the “rat race” to the heart of Germany and a junction with the Russians.

So March and April were months of movement for the 197th and for the entire Allied forces. They were months of fluidity in which German soldiers were picked up far behind our own lines. They were months in which beautiful and almost unscarred landscapes were covered in long road marches. They were months of changed missions for the battalion. They were months of victory!

The initial days of March saw the battalion’s elements closing up to the Roer at Duren. The latter days saw them closing to and crossing the Rhine near Bad Godesburg. An order on March 28 attaching the unit to the III Corps brought a significant change in combat missions. The batteries left their seven-month session of defending First Army forward ammunition supply points to take over the job of protecting field artillery, bridges and special corps installations.

On April 9 this mission was changed again, as the battalion reverted to First Army control and was assigned to protection of two airstrips, one near Fritzlar and one near Kassel. Air activity in April was practically nil, and on the 24th the 197th was attached to VIII Corps and moved some 150 miles to the Weimar area to protect supply dumps, airfields and bridges.



The sands in the hourglass of Hitler’s war were running out. As April ended and May began it became evident that tactical operations were reaching a standstill. A good deal of time was spent on maintenance of equipment and ordnance inspections. German planes began to land on our airstrips, their crews surrendering to men of the 197th.

On May 7 at 1120, the message of unconditional surrender of the Germans was received at battalion headquarters, the surrender to be effective at 0001 on the 9th. All offensive operations were ceased immediately, but the battalion continued its AA defense mission until 1630 hours on 10 May. On the following day the 197th was en route to Landkreis Eisenach to take over security guard and military government duties.

It was the end of combat for the battalion. The end of 339 operational days on the Continent; the end of a road 1,200 miles long from Omaha Beach to Weimar, Germany. In that time and in those travels, the 197th had 106 engagements with enemy aircraft. It had emerged with 23 and a half confirmed claims for craft shot down or damaged — 13 and a half Category Is and 10 Category IIs, or an average of 22.2 per cent “kills” per engagement.

And that is the end of the story. It began simply. It ends simply. The 197th AAA AW Battalion (SP) was born on a hill near El Paso, Texas. It came over 6,000 miles and worked for two and a half years to do a job. In the doing of that job, many brave men fell.

But the job was done. Magnificently! Gloriously!

Finale

After serving throughout the European Campaign of World War II with the First U.S. Army, the 197th was then respectively assigned to the Ninth, Seventh and Third U.S. Armies. It completed four and a half weeks of training for redeployment to the Pacific before V-J Day, and then engaged in occupational duties with its CP in Forcheim, Germany, until March 10, 1946. It was responsible throughout this period of occupation for the Landkreis Forcheim and during several months thereof for the additional Landkreises of Ebermonstadt, Erlangon and Lauf.

On March 18, 1946, the battalion left Forcheim for Bremerhaven, Germany, where it completed its processing at the Marine Compound and sailed for the United States on April 2, 1946, on the *Lewiston Victory*.

Deactivation of the 197th AAA AW Battalion (SP) took place on April 12, 1946, at Camp Kilmer, N.J.

The men of the 197th AAA AW Battalion are now scattered to the various parts of America from which they came. But friendships forged in mutual sacrifice and hardships are not easily terminated; memories etched in the turmoil are not easily erased.

Completed in 1945, the history of the 197th AAA Battalion became a war memento relegated to the military archives at Carlisle Barracks, Pa.

Alpha Battery Comes Home



Alpha Battery officers (f) Lt. Everet Youngs, Capt. William Heitz, Lt. C.A. Bridge, (r) Lt. Arthur E. Alarcon, Lt. Walter Clarke and Lt. Benedict Gleason in 1946.

Age, not battle casualties, has thinned the ranks of A Battery, 197th AAA (AW) Battalion. Not one of the battery's soldiers was killed in action — a remarkable statistic considering the unit's combat record.

The men of A Battery drove their M-16 tracks ashore on bloody Omaha Beach at H plus 120 minutes when the outcome was still very much in doubt. They battled German fighters, bombers, pillboxes and Buzz Bombs across Europe. They were caught up in the maelstrom of the Bulge. V-E Day found them deep inside Germany. They fought a war untainted

by controversy, took their share of risks, earned their share of glory, came home to prosper from the booming post-war economy and they paid a relatively small price.

"It's hard to explain. We had some wounded, but their wounds weren't the terrible sort of wounds," said Arthur Alarcon, an A Battery lieutenant. "We were lucky."

The unit cohesion first created during training at Fort Bliss, Texas, and later cemented in battle has lasted more than four decades. Most members of A Battery attend battery "mini-reunions" held at various locations during the years in between the 197th Battalion's biennial reunions. They came home to Fort Bliss for a mini-reunion after a four-decade long absence last summer.

The Fort Bliss reunion was hosted by Alarcon and his wife Mary. "I'm a native El Pasoan," Alarcon explained, "while most of A Battery came originally from Missouri, Indiana, Connecticut, Massachusetts, Maine and other New England states. Since I happened to be the only member of the battery living in El Paso, it was only natural that I was selected to take care of the arrangements when the battery decided to make El Paso the next mini-reunion site."

The reunion included visits to the U.S. Army Air Defense Artillery School, Fort Bliss' Logan Heights area where the battery underwent basic training, the Air Defense Artillery Museum and Juarez, Mexico. It was climaxed by a Saturday night dance at the El Paso Airport Holiday Inn which served as reunion headquarters.

Most of the World War II veterans singled out the Battle of the Bulge as A Battery's most memorable action, even though the unit's most desperate moments occurred on D Day, June 6, 1944, when the battery went ashore at Omaha Beach.

"D Day was probably the worst, but we were so green then we didn't know enough to be afraid," said Joseph Randazzo of St. Louis. "We were veterans when the Germans broke through the lines at the beginning of the Battle of the Bulge. By then, we knew enough to be afraid."

A Battery drove its M-16 halftracks ashore at 0805 in the Easy Red sector of Omaha Beach, a fire-swept beachhead upon which thousands of water-soaked men lay huddled, pinned to the rubble of the beach by small arms, mortar and 88mm fire. The fire, the rubble and mine fields blocked all units from advancing. In the ships off shore, American commanders were considering evacuating the beachhead.

As Alarcon guided one of two columns of battery vehicles off-loading from a landing craft through a maze of underwater obstacles and mines, he noticed that the Germans were laying down a barrage of artillery fire along the column's intended route to the beach. Amending operation orders staff officers had spent countless hours preparing during "D" Day planning, the lieutenant veered the column to the left, bringing it onto the beach hundreds of meters from its designated position.

"The beach we ended up on was much better than the beach we were supposed to land on. The captain congratulated me. He didn't realize I was merely dodging artillery rounds," Alarcon said.

Since the beach exits were impassable due to intense enemy small arms, automatic weapons, mortar and artillery fire, A Battery fire units at first dispersed along the beach. The low bluff at the edge of the beach made it impossible for most of the anti-aircraft guns to fire in a ground support role. At two places where the terrain was more suitable, an M-16 and an M15A1 were driven into the water and backed up the steep and rocky shale at the edge of the beach. The gunners on these tracks made every effort to direct fire at enemy strongpoints, but the slope of the beach was so steep that the mounts could not be leveled. Their fields of fire were limited to the highest points of the ridge overlooking the beach.

A Battery soldiers not actively occupied on the tracks directed small arms fire at pillboxes and at the origin of enemy tracers, pulled wounded and dead men from the surf and acted as litter bearers.

As artillery fire and sporadic machine gun fire swept the area, one M-16 squad crossed the beach and began clearing the first exit leading off Easy Red. Some crewmen filled in a deep trench across the exit and removed barbed wire to form a path for the vehicle while others probed for mines with bayonets. They then moved the halftrack through the exit and to a temporary position defending the beachhead. A bulldozer appeared later to complete the work. The M-16 was the first combat vehicle to leave Easy Red and the exit Easy One was the only exit used by V Corps during the first 48 hours of the invasion.

During its first 24 hours on the continent, A Battery had one officer and two enlisted men wounded and evacuated, and two officers and eight enlisted men wounded but not evacuated. One M-16 halftrack was destroyed by artillery fire while three vehicles sank in the rough surf. By comparison, one unit not far away suffered 50 percent casualties.

A Battery's good luck was to hold throughout the European campaign, even through the Battle of the Bulge.

"I walked out of our battery CP — a tavern in Bourcy, Belgium — and heard a big loud boom. It was incoming German artillery and the start of the Battle of the Bulge," recalled William Gray of St. Louis. "We started out defending an ammo supply dump in Belgium and ended up defending an ammo supply dump in Verdun, France."

The German breakthrough in the Ardennes triggered a series of confused withdrawals that kept A Battery and the ammunition supply dumps (ASPs) they defended just ahead of the approaching panzers. The field artillery was the first to pull out of Bourcy, leaving A Battery and a single Sherman tank "holding the fort." Corporal Alexis Chubka, in command of Squad 221, was ordered to evacuate by the departing field artillery commander. He steadfastly refused to move until he had received orders from his own commanding officer. When the tank withdrew, only A Battery fire units remained to

protect the ASP. They stayed until the ASP was packed up and moved to a new location. They became the last American unit holding a position in the Bourcy sector.

Alarcon remembers riding into the Battle of the Bulge in command of a truckload full of soldiers returning from a four-day pass in Paris. "We were still in our dress uniforms, and most of the men were too hungover to appreciate the seriousness of the situation," Alarcon recalled. For hours, they skirted the edge of the battle in search of their battery, often stopped at roadblocks by suspicious soldiers who had been warned to look out for Germans dressed in American uniforms.

Passing through Bastogne on the way to the new ASP site, the battery observed paratroopers of the 101st Airborne Division coming into positions in large trailers. During the next hectic days, A Battery fire units set up roadblocks, guarded hastily established ASPs and defended ammunition trains. Battery officers with drawn pistols rode in the cabs of locomotives to make sure the civilian engineers did not turn back. At stops en route, the ammunition trains were protected by halftracks which halted when the train did. It was probably the first time in history that a railroad train was given anti-aircraft defense by a battery moving by road.

The men of A Battery who assembled at last summer's reunion agreed that the war is "a lot more fun to talk about than to fight." The youngest veteran was 63; the oldest 77. Their conversation centered on events since the last reunion rather than on World War II.

None of them found much resemblance between the Fort Bliss they left more than 45 years ago and the Fort Bliss of today. Jake Schmidt of Barnhart, Mo., said even the mountains seemed different. "I could never have found my way around by myself. We recognized a few of the old buildings at Logan Heights, but everything else is completely changed," he said.

Randazzo remembered that El Paso in the '40s was still a short bus ride from the post. "On weekends, we'd get on the bus and go downtown. There was a dance parlor just off the plaza where you could buy dances for a dime a dance. But the main attraction was the plaza. They had a small zoo there, and we would watch the animals and try to meet girls."

Most of the veterans brought their wives to last summer's reunion. Some brought their children and grandchildren.

"My grandfather told me you don't ever want to be in a war," said seven-year-old Tim Finley of Cape Dorado, Mo. "You might get killed."

Wanda Hyde of Pawtucket, R.I., wanted to see if El Paso and Fort Bliss matched the descriptions Sgt. William Hyde wrote in his letters home. "I wrote every day," she said. "We became engaged to be married while he was on leave just before going overseas. We were married when he came home from the war."

The band played "I'll Be Seeing You," "In the Mood" and "String of Pearls." The men of A Battery danced with their war brides.

Operations Overview

Salty Hammer

by Capt. Harry E. Pecotte

A Patriot/Hawk task force consisting of 2nd Battalion (Patriot), 3rd Air Defense Artillery and A Battery, 1st Battalion (Hawk), 1st Air Defense Artillery, conducted surface-to-air missile defense of the rugged terrain of northern England during Exercise Salty Hammer 88-2, the latest in the series of Hammer exercises. This exercise was a 3rd Air Force sponsored flying exercise that portrayed a mass raid attack on a narrow front, providing 32nd Army Air Defense Command (AADCOM) units and British Royal Air Force interceptors the opportunity to battle approximately 100 ingressing F-16s, F-111s, F-15s and F-4s (Wild Weasels). Other support aircraft used to sustain the attacks included EF-111s, KC-135s and jammer aircraft.

The basic concept of operations placed the task force in an area attrition role, replicating a typical NATO forward air defense mission. Defended assets were the fire units themselves. The terrain was a significant exercise limitation, but not an overriding factor. Although the area provided only a limited number of acceptable field sites, the unit was able nonetheless to procure satisfactory locations that provided acceptable coverage and mutual support.

All of the fire units deployed directly in the path of the mass wave attack. Patriot battalions deployed in a wedge toward the enemy, with a lateral dispersal of less than 30 kilometers and a depth greater than 15 kilometers. Hawk assault fire units (AFUs) were in the forward belt of the defense within mutual support range of each other, giving them the capability to cover two of

the Patriot fire units and the task force information and coordination central (ICC).

After completion of any required air-to-air refueling, hostile aircraft were to move out of their combat air patrols, perform necessary air-to-air engagements and proceed down one of two preplanned raid corridors until reaching the timing reference line (TRL), approximately five kilometers from the coast. After crossing the TRL, aircraft were free to fly at tactical levels not lower than 250 feet and at speeds of less than 450 knots. The exercise times were based on aircraft crossing the TRL at 1300Z.

Based on an analysis of the Orange raid plan and calculating for approximately one minute of exposure time in the missile engagement zone, a tactical time line was developed to meet exercise objectives. These objectives were to —

- demonstrate the effectiveness of the ICC in automatic engagement,
- test Hawk's ability to engage in an electronic warfare environment and
- demonstrate the effectiveness of Patriot track down-tell to Hawk.

Although priority of engagements initially went to Hawk, pitting it against the initial threat, I must stress that engagements were passed to Hawk throughout the exercise. As the bulk of the aircraft approached, Patriot was brought into full play.

Excluding aircraft that had the potential to remain constant throughout the exercise (specifically the F-15s, Wild Weasels and EF-111s), aircraft attacked in two distinct blocks: F-111s followed by F-16s. These aircraft flew in sorties of four against their designated

targets, which included two of the Patriot batteries. During peak activity the ICC was placed in the automatic engagement mode, triggering a wave of launch commands at the firing batteries.

Unique and highly significant to this "Hammer" was the fact that 2-3rd ADA had been recently equipped with Post-Deployment Build (PDB) II software. This allowed for Patriot/Hawk interoperability under the control of the Patriot ICC, eliminated the need for the Hawk AN/TSQ-73 and allowed the deployment of a true task force under the organic command and control of the Patriot battalion. Exercise Hammer 88-2 was PDB-II's baptism under fire.

Using PDB-II interoperability, the ICC successfully retained centralized control over both Hawk AFUs while simultaneously directing Patriot engagements and providing friendly protection. This was done with the tactical director directing Hawk engagements while monitoring friendly protect.

Given foreknowledge of the attack plan and start time, the decision was made to employ the task force in the full radiate mode and take advantage of the total air picture (except for the forward-most AFU, which was kept silent to test track down-tell capabilities from the ICC). To assist in accurate radar emplacement for the two systems, both Hawk AFUs

were surveyed using the positioning azimuth determination system. This survey resulted in no correlation problems and excellent down-tell capabilities to the silent Hawk AFU from the ICC.

The task force also practiced countering communications jamming. Knowing that communications jamming was a distinct possibility, the task force used the enhanced electronic counter-countermeasures capabilities of the Patriot UHF system. They experimented by hard-wiring the forward-most Hawk AFU into a Patriot communications relay group (CRG), strengthening its UHF through the CRG. The other AFU operated using its organic UHF equipment. Neither UHF voice nor data capabilities suffered interference.

During the 15-minute battle we simulated a total of 78 Patriot and 18 Hawk missiles fired and observed no overflights of defended assets. The 2-3rd ADA task force soldiers used this ideal opportunity to display their everyday skills of providing effective air defense and to demonstrate the newfound interoperability possible with PDB-II.

Harry E. Pecotte is a tactical director with the 2nd Battalion, 3rd Air Defense Artillery, 32nd Army Air Defense Command, Dexheim, Germany.

The Staff Effort

The opportunity to take a battalion task force to England to participate in one of Europe's largest live-fly exercises is an event that every battalion staff seeks. And such an event is the stuff that good staffs handle with ease.

For the 2nd Battalion, 3rd Air Defense Artillery, staff, the movement of a Patriot/Hawk task force to northern England to participate in the 3rd U.S. Air Force's Exercise Salty Hammer 88-2 was a true test of its mettle.

The battalion organized, coordinated and executed a complex plan that sent a Patriot battalion (-) from Dexheim, Federal Republic of Germany (FRG), and a Hawk battery from Wittlich, FRG, to Otterburn Training Area in the wilds of northern England. The success the task force enjoyed on this exercise is a true measure of the battalion's efforts in this complex undertaking.

Planning by the battalion staff for Exercise Salty Hammer 88-2 began in earnest in April 1988. Previous Hammer exercise after-action reviews provided the staff with valuable background information on the nature of the effort required to take U.S. air defense units to England, but from the outset, the

differences in this year's exercise outweighed the similarities. Previous Hammer exercises were supported by U.S. Air Force aviation assets, airlifting Patriot and Hawk equipment to an aerial port of debarkation near the exercise area.

This year's Hammer, in contrast, was slated for the Otterburn Training Area, a British live-fire artillery range near Newcastle (300 miles north of the nearest major U.S. air base). Airlifting equipment and soldiers to the training area was not an option. At Otterburn the task force found only austere support in terms of billets, rations, dining facilities and petroleum, oil and lubricants. An initial task the staff had to complete involved finding acceptable locations for the fire control elements of the task force. A coordination visit early on developed a number of suitable alternative sites, but most of these sites were on private or government (other than the British Ministry of Defense) land. The process of contracting for these sites was complicated by the absence of a local government contracting office. This task was a virtual "war stopper" until nearly the execution point for the movement phases of equipment to England.

Another coordination challenge was moving men

and equipment from different locations in Germany. The ability to move the equipment by air was ruled out immediately, as mentioned previously. The remaining option included a complex plan involving rail movement from railheads near the Patriot and Hawk unit locations, transocean shipment of equipment to the port of Newcastle, England, and road march over an exceptionally difficult road network to the exercise area.

Solving these problems involved extensive coordination with the Movement Control Team in Bad Kreuznach and the Movement Control Center in Wiesbaden. The final movement request dictated a requirement to move 193 pieces of equipment, including Patriot radars, antenna mast groups, Hawk platoon command posts, continuous-wave acquisition radars and non-tactical data collection vans.

The Military Traffic Management Command, in conjunction with the Military Sealift Command (MSC), confirmed the shipping arrangements for the task force on September 28. MSC contracted for two ships, one a roll-on/roll-off, to move the equipment from Bremerhaven to Newcastle. Backward planning determined the need for the trains with equipment and soldiers to reach Bremerhaven eight hours

before sailing time.

Main body deployment began October 5 with one train carrying A/1-1st ADA's equipment and soldiers departing from Wittlich and three trains carrying 2-3rd ADA's equipment and soldiers departing from Nierstein. The trains arrived in Bremerhaven late on the 5th and early on the 6th; shipment of the equipment began almost immediately. Rough seas delayed arrival of both ships in Newcastle by almost 14 hours, but the off-loading operation and movement to Otterburn was accomplished without loss of time. All equipment, despite the delays, was in place and ready for the start of the exercise well in advance of the attackers' time over target.

The return of equipment and personnel was largely the same exercise replayed and, perhaps as a result of the staff's experience on the trip to England, the return sailing and rail movement to Wittlich and Nierstein was almost perfect. From the movement of the advance party to the return of the last piece of equipment to Dexheim took 18 days. All objectives for the exercise were accomplished, but for individual members of the staff the training value will last long after the after-action reports and briefings on Salty Hammer 88-2 are complete.

PIVAD Run-Away Turret

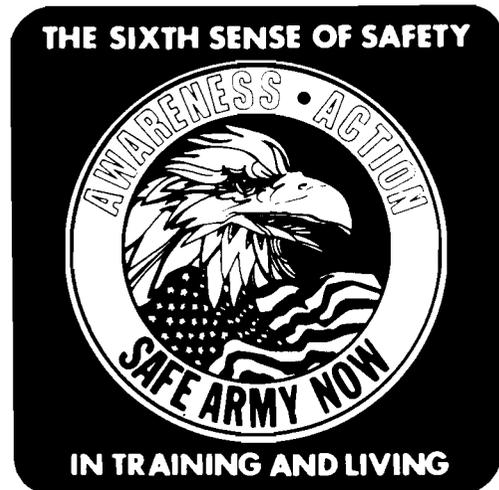
The product improved Vulcan air defense system (PIVADS) will get a hardware modification beginning in June 1989 designed to eliminate a potential runaway turret safety hazard.

A runaway M-163A2 or M-167A2 turret condition is possible if power is applied to the gun when the MODE switch is set to MAN for manual operation, the NORM/STATIC TEST switch is set to NORM and the action switches on the elevation control assembly are pressed. This causes the fire control processor (FCP) to attempt to insert a solution which could cause the turret to rotate uncontrollably. Turning the hand controls in the opposite direction will not stop the turret. To stop the turret, release the action switches or de-energize the system.

This condition is prevented when the operator remembers to push the acquisition/track (ACQ/TRK) push button switch. This causes the FCP to dump the solution and tracking would be normal (operator driven).

Ensure that your operators disable the servo-drive system by keeping the NORM/STATIC/TEST switch in STATIC except when slewing to prevent any unintentional movement of the turret.

A silicon control rectifier will be installed to make it impossible for Vulcaneers to activate the mount circuit before pressing the ACQ/TRK switch.



Marine Corps Air Defense



The first ground-based air defense units in the objective area will be Stinger teams.

by Lt. Col. Kenneth B. Levan, USMC

Most soldiers know that Marines receive air defense training at the U.S. Army Air Defense Artillery School, Fort Bliss, Texas. But beyond that knowledge and the logical assumption that the Marine Corps must have some sort of air defense capability, few Army air defenders know much about Marine Corps air defense doctrine or organization for combat. The purpose of this article is to shed some light on Marine Corps air defense.

What sets the Marine Corps apart from the U.S. Army and other military service is Marine Aviation. The Marine Corps enters the battlefield as a combined arms team called a Marine air-ground task force (MAGTF). Each MAGTF includes a command element, a ground combat element, an air combat element and a combat service support element. The air combat element is task organized and equipped to support and defend the ground combat element. One of the missions of the air combat element is anti-air warfare.

The Marine Corps divides the anti-air warfare mission into two parts: offense and defense. Offensive anti-air warfare is the destruction or degradation of the enemy's air force before it can be employed against the MAGTF. When offensive anti-air warfare is well planned and properly executed, the pulverizing destructive power of Marine Corps fixed-wing air attack is brought to bear on enemy airfields, command and control agencies, communications facilities, munitions dumps and fuel storage areas before these assets can be used against the MAGTF.

The second element of anti-air warfare is air defense. The Marine Corps incorporates its own fighter aircraft and ground-based air defense weapons to provide integrated air defense of the MAGTF. This is possible because all fighter aircraft and surface-to-air weapons systems come under the command of a Marine tactical air commander who leads the entire air combat element of the MAGTF. The tactical air commander plans and coordinates these integrated air defense operations through an automated Marine air command and control system (MACCS).

The MACCS is built upon the concept of centralized command and decentralized control. This means that air defense planning is centralized at the tactical air command center; however, execution of air defense operations is decentralized to the subordinate air defense agencies and units.

The MACCS agency responsible for coordinating the employment of interceptor aircraft and surface-to-air weapons is the tactical air operations center (TAOC). The TAOC has a suite of surveillance radars with detection ranges up to 300 miles. It can establish data links with U.S. Navy and U.S. Air Force airborne early warning systems to further extend its surveillance of the battlefield. Air defense control officers in the TAOC conduct ground-controlled intercepts of enemy aircraft as soon as they begin to penetrate the MAGTF airspace. These air defense control officers also coordinate the use of surface-to-air weapons; however, actual control of these weapons is further decentralized to the fire

units of the light anti-aircraft missile (LAAM) battalion and the low-altitude air defense (LAAD) battalion.

The LAAM battalion presently has three Hawk firing batteries in the triad configuration; however, this will change with the fielding of the Phase III product improvement program equipment. As Phase III is fielded, the LAAM battalion will be reorganized into two "square" firing batteries. Each square battery will have two mirror image firing platoons. Each platoon has a pulse acquisition radar, a continuous-wave acquisition radar and two firing sections.

The LAAD battalion is also organized into two firing batteries. Each firing battery has three platoons further organized into three sections. Each

including two to five infantry battalions, a reinforced artillery battalion, a tank company, a reconnaissance company, an assault amphibious vehicle company, a light assault infantry company and a TOW platoon. The air combat element is a Marine aircraft group with a significant air defense capability. Twenty-four F/A-18 and 20 AV-8B aircraft are available for air defense missions. Depending on the mission and the anticipated air threat, an MEB is equipped with a tactical air command center, a TAOC, a LAAM battery and a LAAD battery. This equates to four Hawk firing sections and 45 Stinger teams.

The largest MAGTF is the 15,000-man Marine expeditionary force (MEF). An MEF combines a



LAAD section has five teams equipped with high-mobility multipurpose wheeled vehicles (HMMWVs) and four Stinger missiles.

The size of a particular MAGTF and its mission determine the level and mix of air defense weapons. The smallest MAGTF is a Marine expeditionary unit (MEU). The ground combat element of the MEU is a Marine infantry battalion reinforced by tank, anti-armor, artillery, reconnaissance, assault amphibious vehicles and combat engineer units that form a battalion landing team. The air combat element is a composite helicopter squadron that may be reinforced with fixed-wing, vertical or short-field takeoff and landing aircraft such as the AV-8B Harrier. The air defense capability of an MEU is a single LAAD platoon of 15 Stinger teams.

The next larger MAGTF is a Marine expeditionary brigade (MEB) which has a regimental landing team

Marine division supported by a Marine aircraft wing. The tactical air commander is a major general. He commands more than 300 fixed-wing aircraft and helicopters, including 48 F/A-18s and 40 AV-8Bs, that can fulfill air defense missions. There is a fully automated tactical air command center, two TAOCs, a LAAM battalion and a LAAD battalion.

Active air defense of the MAGTF begins during the assault phase of an amphibious landing or any other forcible entry into an objective area defended by an enemy force. Air defense begins with a fighter sweep to clear the airspace and establish air superiority above the objective area. When the sweep is completed, fighter aircraft maintain combat air patrols in the skies above the objective area as the assault continues.

The first ground-based air defense units in the objective area will be Stinger teams from the LAAD

battalion in direct support of the infantry units in the assault force. Properly employed, these teams coordinate their movements from one position to the next to provide overwatch for the infantry. Control of air defense fires is decentralized to platoon and section. Stinger teams engage any enemy aircraft which threaten the unit or position they are defending.

As the assault continues, more LAAD teams land to provide point defense of critical assets within the vital area. Hawk units from the LAAM battalion are introduced as soon as suitable firing positions have been uncovered and secured by the assault force. As these Hawk units are emplaced, they establish area air defense coverage of the expanding vital area and critical assets therein.

The integrated air defense of the MAGTF becomes complete as the TAOC is established. The long-range surveillance radars of the TAOC expand the air picture and data links are established with the Hawk units. LAAD platoon commanders may position

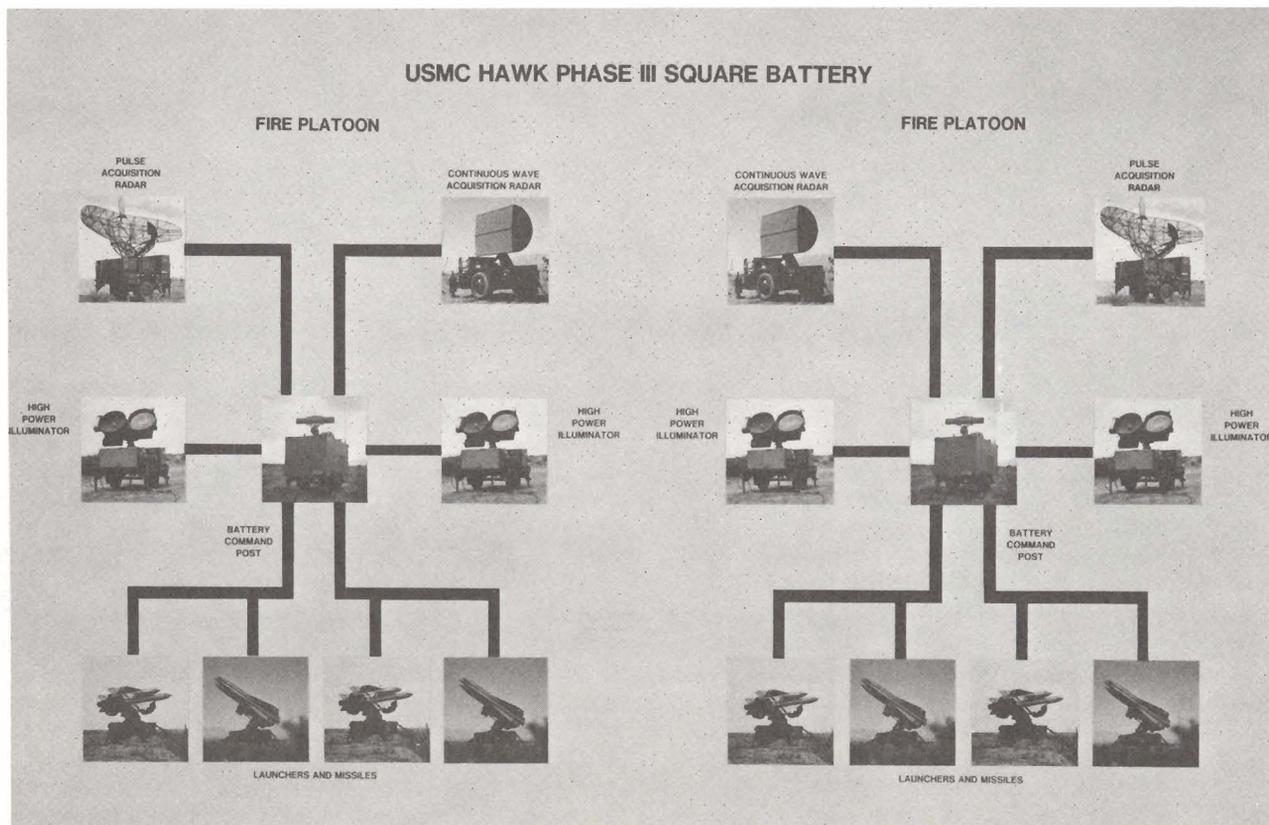
themselves in the TAOC to pass pertinent early warning information to their subordinate Stinger sections. In turn, these Stinger sections relay information to the Hawk fire units and the TAOC regarding any low flyers that may escape radar detection.

During the mid-1990s, an additional air defense weapon system will be added to the Marine Corps: the air defense variant of the light armored vehicle family (LAV-AD). LAV-AD will give the ground combat element an organic air defense capability. LAV-AD will provide dedicated air defense of the LAV-equipped force involved in deep reconnaissance and screening missions.

All in all, Marine Corps air defense can be tailored to support any mission and defeat any threat which may oppose the MAGTF.

Lt. Col. Kenneth B. Levan is the Marine Corps liaison officer to the U.S. Army Air Defense Artillery School, Fort Bliss, Texas.

LAAM Battalion



ADA National Guard



Photo by SSgt. Don Isler

Air Defense Artillery keeps its Guard up!

by Maj. Tony Demasi

Air Defense Artillery's role in the Army National Guard (ARNG) is one of the most extensive modernization efforts in the Total Force today. ARNG ADA is growing rapidly, from eight battalions and one corps headquarters and headquarters battery (HHB) in 1983 to 18 battalions and four corps HHBs by the first quarter of FY 91.

The Total Army Analysis (TAA) of 93 and 96 attempted to resolve shortfalls identified by the various commanders in chief with respect to ADA mission requirements. This modernization process is the response to noted deficiencies. The ARNG expects to have 23 ADA battalions and as many as 19 separate ADA batteries for separate brigades and armored cavalry regiments by the late 1990s.

Keep in mind that the rate of ARNG modernization is dependent upon air defense systems replaced in the Active Component by the new forward area air defense (FAAD) systems and upon an increase in the ARNG ADA force structure. Only if FAAD systems are produced as presently projected and if the ARNG force structure for ADA is found either through space savings in the Army of Excellence reorganization or an increase in the authorizations can we hope to arrive at the modernization plan discussed in the following paragraphs.

Since 1983 the ADA role within the Guard has expanded from a "Duster only" ARNG division short-range air defense (SHORAD) mission to missions that now encompass both the Active Component and ARNG divisions. The new

missions include corps high-to-medium altitude air defense (HIMAD) missions with Hawk, SHORAD missions with Chaparral missile systems, and corps ADA brigade headquarters missions.

ADA weapons systems have proliferated from the Duster 40mm gun system to Redeye, Stinger, Chaparral and Hawk missile systems and the Vulcan gun system.

Fielding of modern ADA weapon systems to the ARNG is not new. For many years the ARNG, along with the Active Component, shared in the defense of the continent with the Nike Hercules missile system. However, for nearly 10 years, since the demise of the Nike Hercules missile continental defense, the ARNG had only the Korean vintage 40mm Duster ADA gun and some Redeye and its primary mission was ARNG division air defense. Though the path to modernization is not easy, we are moving forward rapidly. We have met all challenges with a "can do" attitude and succeeded in enhancing the capability of the Total Army.

Modernization of the ARNG ADA program began in 1983 when New Mexico accepted the U.S. Roland, one of the most advanced SHORAD systems in the world. This marked the first time the ARNG received a modern air defense system that was not part of the Active Component inventory. The men of the 5th Battalion, 200th Air Defense Artillery, accepted the challenge with zeal and enthusiasm.

Only a few months after the first ARNG unit was equipped with



Photo by SFC Richard Strode

National Guard Sgt. Ralph DeWaeley instructs Brig. Gen. John M. Paden on Stinger missile.

Roland, the first battery passed certification standards and was declared operationally capable. This transformation of a group of men, mostly from Duster backgrounds, to a state-of-the-art missile system did not go unnoticed. They were observed from every level — the U.S. Army Air Defense Artillery School (USAADASCH), U.S. Army Missile Command (MICOM), Department of the Army (DA), Office of the Secretary of Defense and members of Congress. Soon they were described as a unit to emulate, for they had earned a reputation as one of the best trained units in Air Defense Artillery.

The 5-200th ADA's role to fulfill a rapid deployment mission with an Active Component unit, the 11th ADA Brigade of Fort Bliss, Texas, was a highly visible one for the ARNG. The unit met its mission requirements and constantly received praise from its Active Component headquarters. The unit's hard-won reputation, however, did not save it from inevitable budget cuts. The Roland "Road Runner" battalion was inactivated in September 1988.

AirLand Battle doctrine sti-

plulates that corps commanders fight the battle. Corps ADA brigade headquarters and corps air defense battalions have been activated in both the Active Component and ARNG. They give the commander needed ADA firepower assets and ensure corps air defense requirements are integrated into the theater air defense plan. The ARNG currently has three corps ADA brigade headquarters: the 111th of New Mexico, 164th of Florida and 263rd of South Carolina. If current plans are followed, a fourth brigade headquarters will activate in New Mexico. Guard ADA brigades have missions to Third U.S. Army, Europe and Pacific theaters.

ARNG Hawk units, as an integral part of these corps air defense brigades, have a rapid deployment mission. Today, only New Mexico's 7-200th ADA (Hawk) is fielded. Florida's 2-265th ADA and Ohio's 2-174th ADA will receive Hawk in 1990 and South Carolina's 1-263rd ADA will receive Hawk in 1991.

The Hawk battalions are staffed at a much higher full-time manning (FTM) level than the

SHORAD battalions in the ARNG. Maintenance and training readiness requirements are the reasons for this higher level of FTM. Since Hawk units deploy from home stations to the area of operations, there is little time to conduct maintenance or refresher training at a mobilization site, as is the procedure with most ARNG SHORAD units.

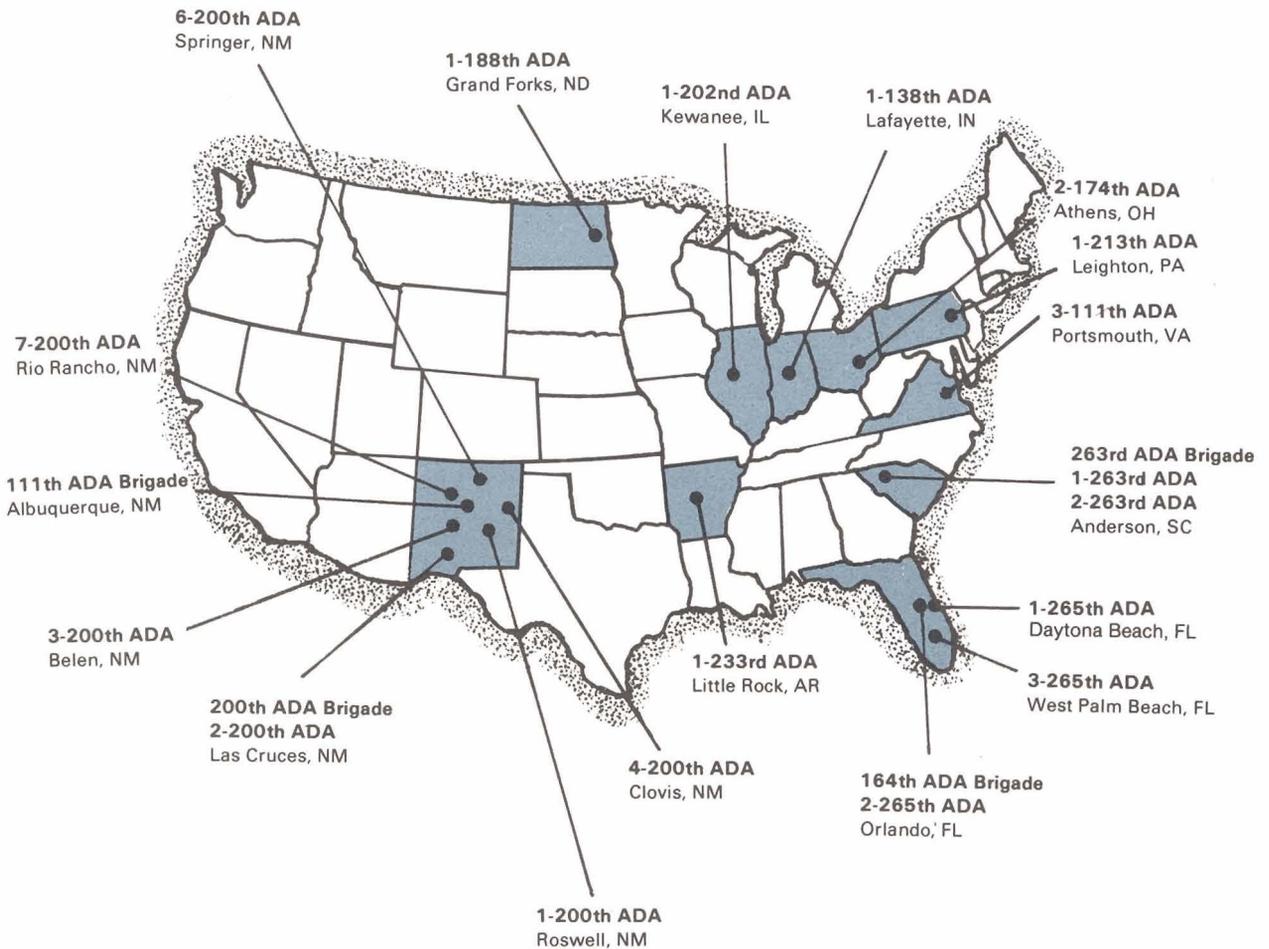
Hawk is not the only missile system in the corps air defense brigade. To meet the projected SHORAD threat to the corps, USAADASCH presented a plan to DA in 1984 to give Chaparral to the ARNG, thus creating the Army's first corps Chaparral battalion.

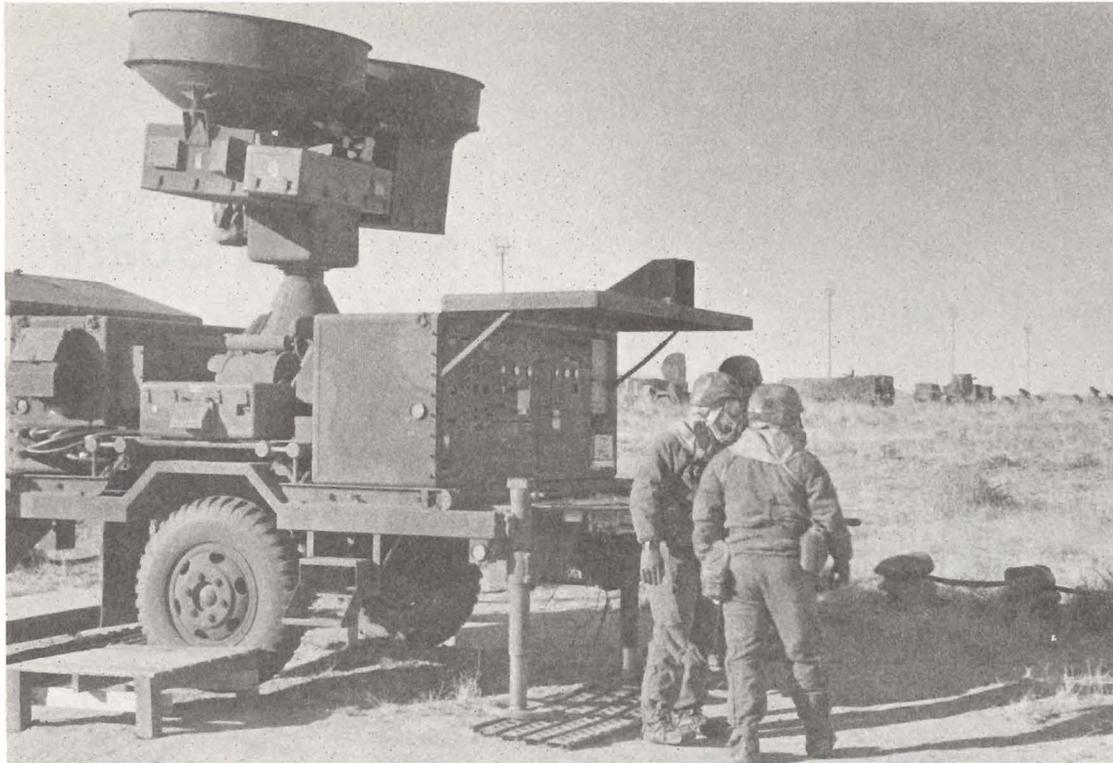
Once again, New Mexico took the lead. The 1-200th ADA was converted to a corps Chaparral battalion late in 1984. Doctrine to fight a corps Chaparral battalion was not completely developed and the troops were not familiar with the weapon system, but with its positive training spirit, the 1-200th ADA was conducting collective training by late 1985.

The New Mexico ARNG has five corps Chaparral battalions with



National Guard Air Defense Artillery Modernization 1989 to 1991





various levels of equipment on-hand and at various levels of training. Four of these battalions have both a division and a corps mission. This may seem strange, but sufficient assets are not yet available to fulfill both obligations. However, in most cases the divisions they support are also part of the corps they support. Additionally, the corps Chaparral battalions must maintain an active training status with the division and corps.

New Mexico is not the only state that "basks in the glory" of ADA modernization. In 1983 only five states had ADA units larger than Redeye sections. Today our branch motto of "First to Fire" is present in 10 states. If equipment and personnel authorizations are allocated as planned, ADA units will soon be present in nearly half of our states.

Florida, which had only a Duster battalion two years ago, now has a corps ADA brigade headquarters and two Chaparral battalions. One of these battalions, the 1-265th ADA, will retain its division support mission while also assuming a corps mission.

This dual mission role will re-

main with five of eight ARNG corps Chaparral battalions until the supported divisions can acquire the equipment and force structure to "grow" their own ADA battalions.

Of all ARNG Chaparral units, the 3-265th ADA of Florida is unique. It activated in October 1988 with a HHB and one firing battery. Its other two firing batteries belong to the Active Component and are attached to the 5-5th ADA, the Vulcan/Stinger battalion of the 2nd Infantry Division, Eighth U.S. Army, Korea. Upon mobilization and deployment, the Korean firing batteries will revert to the control of the 3-265th ADA. Only after 5-5th ADA receives the pedestal-mounted Stinger, the first of the FAAD systems, will the Chaparral fire units be transferred to and manned in Florida.

The eighth corps Chaparral battalion, the 1-233rd ADA of Arkansas, is planned for activation in 1990. The "Razorback" battalion will have a corps mission.

The TAA 96 for ADA recommends two additional corps Chaparral battalions, but space authorizations, not fire units, are the "stumbling block" to their

formation.

As it stands today, ARNG Chaparral battalions to support corps ADA brigades look "healthy." But, as mentioned earlier, the status of our ARNG divisions with respect to ADA is not good. All 10 ARNG divisions require modernization of their division ADA units. In fact, one of the 10, the 29th Infantry Division (Light), has no ADA umbrella at all. How long will it be before our divisional units can be made well?

A USAADASCH study of the years beyond the TAA 96 proposal reveal that ARNG ADA can be made "well" with fire units for Vulcan/Stinger battalions by the mid to late '90s. Vulcan/Stinger batteries can also be provided for all ARNG separate brigades, armored cavalry regiments and U.S. Army Reserve separate brigades by the late '90s. However, the successful procurement and fielding of FAAD systems to the Active Component and increased ARNG space authorizations for ADA are the keys to this modernization for the ARNG.

Our objective is to ultimately "Mirror" the Active Component, but the high cost of equipment

preclude this within 10 years.

A first for the ARNG ADA is the mission of the 1-188th ADA (Vulcan/Stinger) of the North Dakota ARNG located in Grand Forks. Its mission is to rapidly mobilize to deploy with the 6th Infantry Division (Light), an Active Component division stationed in Alaska. The "Straight Arrow" battalion activated in October 1988.

The ARNG still has two ADA battalions with Duster weapon systems, but not for long. Both the 3-111th ADA of Virginia and the 2-263rd ADA of South Carolina are organized as Duster/Stinger battalions to support the 28th and 26th Infantry Divisions respectively. However, South Carolina will turn in its Dusters in 1990 and convert to a pure manportable air defense (MANPAD) system battalion.

The ARNG MANPAD battalions do not appear in the Active Component structure. They are an interim measure until sufficient Vulcans or product-improved Vulcan air defense systems can be released to the ARNG to form Gun/Stinger battalions.

If the Active Component modernization proceeds as planned, the 3-111th ADA will trade in its Dusters in 1991 for the towed Vulcan air defense system. Its mission will change to support of the 29th Infantry Division (Light). This will mark the end of the Duster in the inventory.

The 28th Infantry Division will then be supported by the 1-213th ADA (MANPAD) "First Defenders" of the Pennsylvania ARNG, which activates in 1990. The 38th and 47th Infantry Divisions are supported by MANPAD battalions of the 1-138th ADA of Indiana and the 1-202nd ADA "Killer Bees" of Illinois respectively. Both units activated in September 1988.

Still, the 35th, 40th, 42nd, 49th and 50th ARNG divisions, half of our Guard divisions, do not have dedicated ADA battalions. They share corps Chaparral battalions with their respective corps ADA brigades. Presently, all Reserve Component separate brigades and Armored Cavalry Regiments have

only Redeye platoons as their ADA element. Plans are to replace these platoons with Vulcan/Stinger batteries. Once again, the key to the projected Gun/Stinger battalions and separate batteries is the successful FAAD system fielding and an increase in ARNG ADA space authorizations.

1991 marks the end of the Duster

There are 18 ADA battalions active or soon to be active in the ARNG. The biggest challenge to these battalions is not receiving the new equipment, it is transition training for the individual soldier. Training former engineers, infantrymen, signalmen, et cetera, within the constraints of the unique ARNG environment, to become proficient air defense artillerymen, is a demanding task.

The ARNG soldier is authorized 39 days of training each year including 15 days annual training (AT). However, not all of these days can be used exclusively for critical mission-essential task list training. Movement to and from AT sites, civil disturbance training, administrative requirements and common tasks training consume a portion of these 39 days. Conflicts with civilian employment and the availability of funds preclude many transitioning soldiers from attending resident training at active component schools.

Newly enlisted ARNG soldiers without prior training are still required to attend resident active component basic combat training and advanced individual training. Advanced individual training qualifies soldiers for a military occupational specialty (MOS). In ADA units, this is either an ADA operator or maintenance MOS. In addition, USAADASCH has developed exportable training packages (ETPs) for several ADA weapons system operator MOSs.

No ETPs for maintainers are developed since all air defense weapon system maintainers must currently attend resident instruction at Active Component schools due to the technology and lab equipment hands-on instruction required.

ETPs furnish the material used to teach ADA operators at the armory and the AT site. ETP subjects are taught by unit cadre members trained at active component residence courses. ETP programs of instruction (POIs) conform to U.S. Army Training and Doctrine Command guidance and are configured for the active component POIs to suit the needs of the Reserve Components.

In most cases, 12 weekends and one AT period is sufficient for an individual to achieve Skill Level 10 proficiency. Once 80 percent of a unit's personnel have achieved Skill Level 10 proficiency or are MOS qualified, the unit will begin collective training in hopes of achieving operational status within two to three years. Keep in mind that unit members "come and go;" therefore, not all individuals will be at the same level of training at a given point in time. This means that individual training is always ongoing, regardless of the status of collective training. This is a significant training challenge!

The modernization of the ARNG ADA is a critical component of the combined arms team to meet the needs of the Total Army. Its accomplishment is not easy, but it is exciting and within our grasp. Through the outstanding cooperation of the National Guard Bureau, USAADASCH, MICOM and others these problems are being addressed with optimism and solved.

Maj. Tony Demasi is the Army National Guard Organization Integration Officer, U.S. Army Air Defense Artillery school, Fort Bliss, Texas.

An ADA Brigade is Born

Florida Army
National Guard

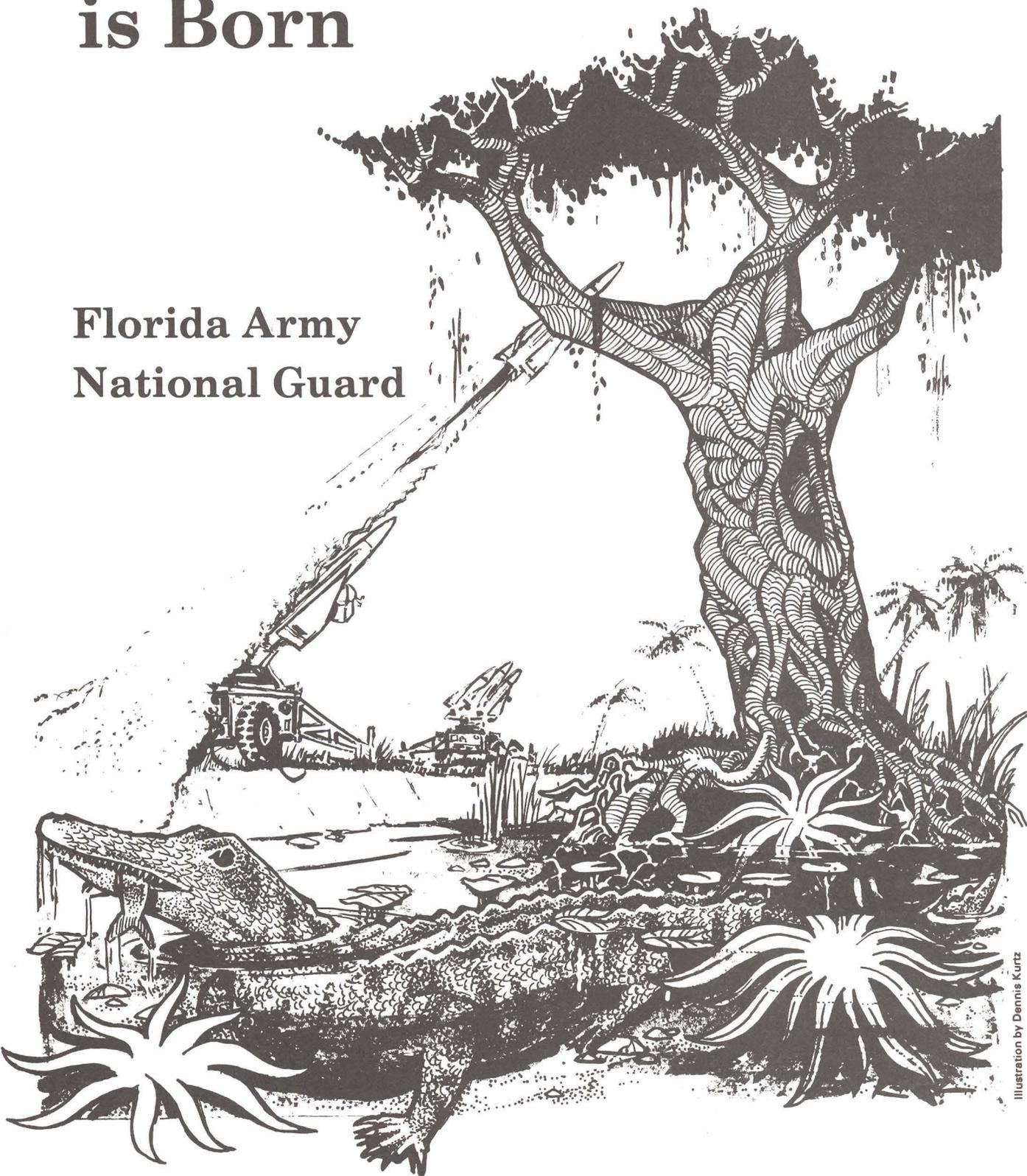


Illustration by Dennis Kurtz

by 2nd Lt. Yolanda R. Williams

The 164th Air Defense Artillery Brigade, Florida's newest brigade, was born in 1987 in a National Guard Armory on Ferncreek Avenue in Orlando, Fla.

Col.(P) Richard G. Capps, the original brigade commander, and seven principal participants met in one room to establish goals for the newly formed brigade. Capps started the session by projecting the brigade's mission and stating his expectations. He discussed milestones that covered acquiring typewriters and word processors to establishing a sponsorship program for M-Day and Active Guard/Reserve (AGR) soldiers, enrolling NCOs and officers in Chaparral courses, bringing a recruiter for the Orlando area on-line, publishing a training guidance plan, and developing the 2nd and 3rd Battalions.

Gen. Robert F. Ensslin Jr., Florida's State Adjutant General, made bringing the 164th ADA on line the state's top priority. He participated in training meetings and the annual ADA Commanders Conference at Fort Bliss, Texas, to establish the 164th ADA Brigade's identity within the ADA family.

Through Ensslin's support and assistance the brigade received two initial AGR positions (vacant or excess slots taken from other major commands). Because the 164th ADA Brigade received no allocations from the National Guard Bureau, all of its AGR slots were acquired through an "in house" method. After the brigade received its initial slots, Ensslin continued to allocate vacant slots to the 164th ADA.

The brigade headquarters started with a total of two full-time people: Capt. Monty Hayes and SFC Roger Williams. Hayes described the early days: "In the beginning SFC Williams and I had to perform many functions to keep the organization working to come on line. We were the S-1, the S-3 and the S-4. We required a working knowledge of all aspects so that we could get the job done."

In 1988 the 1-265th ADA split into two Chaparral battalions: the 1-265th ADA, commanded by Lt. Col. Dan Randall; and the 3-265th ADA, commanded by Maj. Douglas Evaul.

Encompassed within the 164th ADA Brigade is the 2-265th ADA (Hawk) battalion. This battalion, commanded by Lt. Col. John C. Spencer, is unique in that 48 percent of its strength will be full-time (AGR) soldiers.

Maj. Gen. Donald R. Infante, chief of Air Defense Artillery, and the staff at the U.S. Army Air Defense Artillery School saved the 164th ADA Brigade from suffering large quantities of untrained soldiers. By taking more than 100 of our soldiers, instructing them, tailoring some of the courses of instruction specifically for them, training them and, most importantly, making them feel a part of Air Defense Artillery, Infante and the entire Fort Bliss staff were extremely instrumental to the success of the 164th ADA Brigade. The one Army concept truly works!

More than a year has passed since the 164th ADA Brigade was born, and the initial shock of

forming a new entity is beginning to wear off. The brigade now has approximately 90 M-Day and 10 AGR soldiers on board, and stands at 72 percent strength. Fifty percent of the soldiers are MOS qualified.

How did the brigade attain a 72 percent strength level in such a short time period?

SSG Jeff Nelson, unit recruiter, said, "The Orlando area has a large prior service and individual ready reserve market. The 164th offers the prior service members the opportunity for upward mobility that they probably would not experience anywhere else."

Incredibly, after only one year, the 164th ADA has two Chaparral battalions whose priority is no longer MOS qualification. Training staffs are now concentrating their efforts on collective (squad) training. Additionally, the Hawk battalion has recruited successfully and its MOS qualification level is above 50 percent.

Capps reflected on the past year: "Other than being honored and privileged to have been selected for the position of brigade commander, it has been hard but challenging work. We were very successful in recruiting good qualified people. Knowing that the brigade started with only three people, and seeing how it stands now, is a feeling that will always make me proud."

SFC Roger Williams, the first enlisted soldier on board, feels that, "This has been a very re-

warding year. Starting the S-1 section from the ground up has been an interesting, challenging experience. I feel very privileged to have had the opportunity to work with the most professional officers and enlisted soldiers I have ever seen."

One of the brigade's goals is becoming fully deployable and attaining an operational readiness status within two years of equip-

The shock of forming a new entity is wearing off

ment fielding. During the 1991-1992 timeframe, the 3-265th ADA's Active Components, B and C Batteries (currently stationed in Korea), will commence settling and staffing in the areas of Stuart

Another goal is to bring the 2-265th ADA (Hawk) Battalion on line and deployable within two years after equipment fielding.

One of the hottest new topics in the Florida National Guard is

family support. This is an extremely important issue with the Guard because of our dual (state and federal) mobilization role. The brigade is now using a program to establish a mutual support system for the Guard members and their families. The support group planned its first organizational meeting during the October drill. During the meeting the spouses were informed of the goals of the family support program, the benefits they are entitled to as dependents, and ways to introduce and integrate new members into our Guard family.

New priorities include bringing the unit to 100 percent staffing and attaining MOS qualification. The future looks promising as each month brings marked improvements in meeting that challenge.

The 164th ADA Brigade, now under the command of Col. Fred Campbell, is well on its way to success. The assistance and support from Ensslin and Infante have given us the capability to progress as we have. The original members' enthusiasm and level of expertise were key to the organization and success of the unit. We have put together a "winning team," and we shall meet the challenge and accomplish the mission to the highest ADA standards.

2nd Lt. Yolanda R. Williams is a full time Army National Guard communications-electronics staff officer with Headquarters and Headquarters Battery, 2nd Battalion, 265th Air Defense Artillery, Orlando, Fla.

C³ Study Group

By the year 2000, a single intertwined computer network could give targeting data to fire control personnel and air traffic reports to air defense officers while providing the U.S. Army commander with a comprehensive picture of all battlefield activities.

Radios and digital communications gear could contain built-in capabilities to translate data and voice messages from one language to another instantaneously, thereby ensuring that allied forces could work together anywhere in Europe.

These potential applications of high technology are the focus of an ongoing Army study to identify tactical command, control and communications (C³) requirements in the 21st century — and the systems

required to meet those needs.

A team of industry representatives from 25 U.S. defense companies plans to present the Army with a comprehensive study identifying effective technology to meet Army C³ requirements in the 21st century, according to industry officials.

When completed in August 1989, the study will identify futuristic C³ systems "which are envisioned to stem from new technology." They are defined in terms of requirements satisfied and or new capabilities provided.

In addition, a separate industry group is reviewing systems integration technology required to tie these future C³ components together.

Branch Journal Celebrates Anniversary

This issue of *Air Defense Artillery* marks the 20th Anniversary of the rebirth of the branch's professional journal. *Air Defense Artillery* magazine traces its lineage back to the *Journal of the United States Artillery*. First published in 1892, the *Artillery Journal* was preceded only by the *Cavalry Journal*, the predecessor of *Armor*. It was followed by the *Military Surgeon* in 1901, the *Infantry Journal* in 1904, the magazine that was to become the *Military Engineer* in 1909, and the *Field Artillery Journal* in 1910. Others appeared after World War I, notably *Army Ordnance* and the *Quartermaster Review*.

The lineage, however, is a broken one.

The *Artillery Journal* was founded nine years before the Artillery Corps was organized in 1901 and 15 years before its separation into the Coast Artillery Corps and the Field Artillery in 1907. From the beginning, however, it was essentially the *Coast Artillery Journal*, a name it did not adopt until 1922.

In 1931, Gen. Frank S. Clark, chief of Coast Artillery, responded to intimations that the magazine served as a "house organ" for the chief of branch by appointing an advisory council of senior Coast Artillery officers to guarantee the magazine's editorial freedom. From this grew a committee of six officers, one the magazine's editor, which drafted, in August 1930, a constitution for the U.S. Coast Artillery Association, forerunner of the Antiaircraft Association and today's Air Defense Artillery Association. The constitution was adopted on January 10, 1931, and the Army turned over publication of the journal to the newly formed association.

By the time Coast Artillery ceased to exist in 1950, the *Journal* had become the *Antiaircraft Journal* and continued to appear throughout the Korean War. The Antiaircraft Association merged with the Association of the United States Army (AUSA) at about the same time the Antiaircraft force was absorbed into Field Artillery. The *Antiaircraft Journal* was discontinued and contributors were encouraged to submit their manuscripts to AUSA's *Combat Forces Journal*, the predecessor of today's *Army* magazine.

The branch journal was reborn in 1968 when the air defense elements of the Field Artillery were designated the Air Defense Artillery. The new combat arms branch came equipped with many things:

tradition, esprit de corps and its own branch insignia. But it lacked one thing the other combat arms branches possessed — a professional journal.

This is an account of the rebirth and development of the *Air Defense Artillery* branch journal.

If any individual can be credited with supplying the spark that ignited the action to develop an air defense journal, it was Brig. Gen. Jack Rogers, then the assistant commandant of the U.S. Army Air Defense School (USAADS). In the summer of 1968, he sent a note to the Director of the Doctrine Development, Literature and Plans (DDL&P) Department, USAADS, expressing his desire that an air defense artillery journal be developed.

The person who turned Roger's wishes into reality, however, was the journal's founding editor, Wilbur Sanford, a retired warrant officer who had become a DDL&P civilian employee.

"The first step in compliance was to get letters out to ADA commanders, from battalion up, announcing our intention and seeking commitments for support in the form of notes, articles and other useful unclassified information," Sanford recalled. "The positive response was virtually overwhelming — a burning pride in the new combat arm was instantly obvious. So, with an assigned staff of one, myself, the noble venture began."

Stimulated by the enthusiasm from the field and elements of the ADA School and Fort Bliss, people concerned with producing a journal pitched into the task with vigor. Meetings were called to establish the fundamentals essential to publication. The decision to name it *Air Defense Trends* was influenced by *Field Artillery Trends*. Format and general content were decided and a decision to circulate a new issue every four months was made.

"From the beginning, we determined that information coverage would be broad," Sanford said, "encompassing something for all ranks. In that connection, ideas for initial contacts were explored and a list of commands, schools and agencies was compiled."

The fledgling journal faced many obstacles. Labor would have to be borrowed, since resources of this nature were limited in DDL&P. Names of local illustrators were considered as possible sources of support. Printing would have to be done at the Fort Bliss Field

Printing Plant and paid for from USAADS funds. Lead times, layout, proofreading, et cetera, was worked out between the editor and the printing plant director.

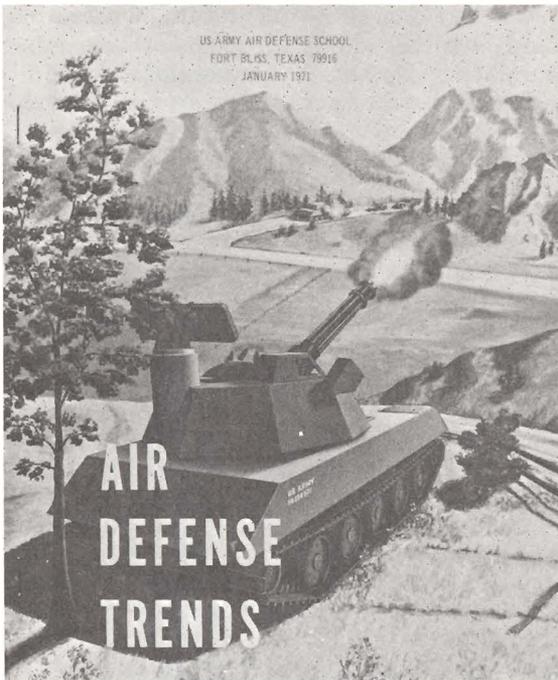
Circulation arrangements fit in comfortably with the school's Nonresident Instruction Department's mailing section. A comprehensive circulation list was developed and provided to that section.

"Once all preparations were in place and contacts activated," Sanford said, "the process of gathering and processing material began in earnest. However, response from contacts in supplying materials was lean at first, as expected. Everyone was feeling his way and was somewhat hesitant. In fact, some local skeptics were ready to bet that the magazine would

goal was never neglected, and new ideas and innovations were evident in each issue to those who thought to observe.

"Improvements included format changes and addition of departments and feature articles," Sanford recalls. We began running authors' pictures along with their biographical sketches and increased the number of pictures and illustrations relating to the articles. Another popular addition was the use of several attractive models whose pictures sparked attention to important information. The 'History of Air Defense' was introduced as a serial article and continued as a very popular element for several years."

Certainly, the biggest boost affecting the maga-



"Renee Rockett," attracted readers to the pages of the branch journal during its pre-feminist days.

"dry up" after one or two publications. Prevailing upon local writers for articles and energetic pursuit of ideas for gathering material proved them wrong.

The first issue, which rolled off the press 20 years ago, was something of an ugly duckling. Printed in black and white, it featured columns running all the way across thick rough paper and stapled, open-edged binding.

Growth and Development

Despite its original "ugly duckling" appearance, *Air Defense Trends* captured the interest of a rather wide assortment of readers. The number of productive contacts grew rapidly and included editors of other military and civilian publications, commanders and staff members of other combat arms as well as other branches of the service and various departments in the Pentagon.

The founding editor set a goal to make each issue in some way an improvement over the one before. That

zine came in 1973 when the Adjutant General authorized funds for commercial printing.

"The door was opened to all sorts of improvements — things required for a first-class publication," Sanford said. "Thus freed from the limitations inherent in the facilities of the local Field Printing Plant, we realigned the entire process of publishing the magazine. It meant more work, but the excitement of the new possibilities made it all a labor of love."

Two members were immediately added to the staff and additional support was established involving artwork, editing, proofreading and circulation.

Format changes were numerous but probably the most welcome was switching to two or three column pages — a great relief for the readers who had been forced to follow line after line of copy across eight-inch pages. A more readable type was selected, slick paper replaced the semi-pulp pages and several colors in various shades (artistically applied) produced

a resplendent publication. The magazine switched from triannual to quarterly publication.

Along with the approval to go commercial came the requirement for negotiating contracts with civilian printing companies. That meant going out for bids under the auspices of the Government Printing Office in Washington — every year a new contract and usually a new company. Funding justification reports were required annually for the scrutiny of the Adjutant General and a Congressional-Military Committee on publications. Readership samplings and an annual readership survey also were required. The annual publisher's report to the U.S. Postal Service added more red tape to the publication process. It was a matter of pride for staff members that from then on copies of every future issue of the journal would become part of the Library of Congress.

"The new look for *Air Defense Trends*, along with cumulative improvements in the quality and breadth of the articles, features and departments, created a surge in interest from many directions," Sanford said. "We were soon doing business with major military contractors, NATO countries, allies, non-aligned countries, service schools of all branches, colleges and universities, intelligence agencies, Congressmen, governors, national committees, defense attaches, international marketing companies, major publishing houses, historians, science and technology centers and national research laboratories, and the list goes on.

"For some time," he continued, "we had been uncomfortable with the title, *Air Defense Trends*, but we had misgivings about changing the name. Some felt it might engender confusion among the readership who looked forward to future publications. But the magazine's content far transcended mere trends in air defense. Each issue covered a broad spectrum of information, some of it in depth. So in 1976 we took the plunge and changed the title to *Air Defense Magazine*. The feared unfavorable consequences failed to materialize."

About this time, the staff learned from the Central Pacific Commander that the country of Bangladesh had begun translating the entire magazine into the native tongue and republishing it for the consumption of her troops. Argentina had been translating the magazine for her officers for several years and mailed a copy of each translation to our office. Along this line, the Japan Air Defense School required student officers to translate and report on articles from *Air Defense Magazine* as part of their English language training.

By this time, the magazine staff had been further augmented. The six-member staff now included the editor, two assistant editors, an art director, an administrative assistant and a secretary.

As the publication grew in quality and circulation — and commensurate favorable comment (and sometimes praise) persisted — there was solid evidence that the "ugly duckling" had matured and taken its place among the top contemporary military journals.

Sanford retired in 1981 and was replaced by Blair Case, a former civilian newspaperman. A year later, when the U.S. Army Air Defense School became the U.S. Army Air Defense Artillery School, the magazine followed suit by changing its name from *Air Defense Magazine* to *Air Defense Artillery Magazine*.

The 1980s was to prove a difficult decade not only for Air Defense Artillery but for the branch journal. For every step the branch journal took forward, it seemed to take one step back.

"Branch morale hit bottom in the mid-1980s with the termination of the Sergeant York Gun," Case recalled. "Submissions dwindled to practically zero. Manuscripts submitted by weapons contractors and allied officers outnumbered those submitted by ADA soldiers. The drop in submissions was particularly frustrating because it came at a time when we were making a concentrated effort to make the magazine more a branch-oriented publication than a school publication."

It was during this period, the magazine published an article by Lt. Col. V.J. Tedesco titled "The Death of ADA." Tedesco predicted that, if current trends continued, ADA soldiers should prepare to don Air Force blue. Today Tedesco, a full colonel, is president of the ADA Association and one of the driving forces behind the restoration of branch morale. He says he wrote the article merely to "shake things up," but in 1985, his gloomy forecast didn't seem wildly pessimistic. It caught the mood of the times.

ADA Editors

Lt. John W. Ruckman	1893 - 1895
Capt. John P. Wiser	1896 - 1902
Capt. Erasmus M. Weaver	1902
Capt. John D. Barette	1902 - 1907
Capt. Andrew Hero Jr.	1902 - 1907
Maj. Thomas W. Winston	1907 - 1912
Maj. James M. Williams	1912 - 1915
Col. Henry D. Todd Jr.	1915 - 1917
Col. John A. Lundeen	1915 - 1917
Col. Robert R. Welshmer	1919
Lt. Col. Frank S. Clark	1919 - 1923
Maj. Joseph A. Green	1923 - 1925
Maj. Robert Arthur	1925 - 1929
Maj. Stewart A. Giffin	1929 - 1933
Lt. Col. Eli E. Bennet	1933 - 1936
Maj. Aaron Bradshaw Jr.	1936 - 1940
Col. Chas. Thomas-Stahle	1940 - 1941
Col. Wilmer S. Phillips	1941 - 1942
Col. Frederick A. Price	1942 - 1943
Col. Eugene B. Walker	1944 - 1945
Col. William I. Brady	1946 - 1950
Col. Charles S. Harris	1950 - 1954
Wilbur E. Sanford	1969 - 1980
William Blair Case	1980 -

The staff also shrank in size, even as the work load multiplied, from a high of six in the mid-1970s to three in 1987.

"On the bright side, we've made some gains in technology," Case said. "When I first arrived at Fort Bliss, I was surprised to discover that the magazine staff had only one typewriter — the secretary's. There had been no attempt to adapt new electronic publishing technology to magazine production. Staff writers and editors produced handwritten manuscripts which were typed on the typewriter and then re-keyboarded by phototypesetters."

Today, the staff composes or edits articles on a computer screen and transmits the copy directly to a phototypesetter. The staff hopes to produce the March-April 1989 edition of the journal on a new electronic publishing system that will eliminate phototypesetting and allow staff members to design pages directly on a computer screen.

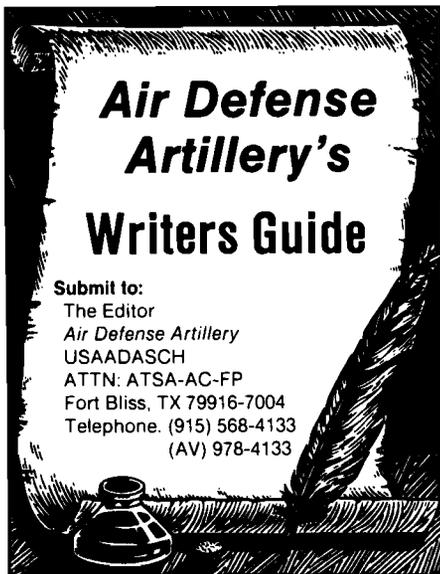
In June 1988, the magazine staff moved from the Directorate of Training and Doctrine to the Office, Chief of Air Defense Artillery. The move has put the

magazine in closer touch with ADA units around the world.

The future of the branch journal continues to depend on the active participation of ADA soldiers and the willingness of the ADA school to provide manpower resources and printing funds during a period of budget shortfalls.

"The magazine still suffers somewhat from its image as a house organ," Case said. "There's a perception that we don't like to publish controversial articles or opinions that clash with the 'school solution.' We haven't succeeded, as a result, in making the publication a forum for serious debate. There's very little debated on the pages of *Air Defense Artillery*," he continued. "Too many articles submitted by ADA soldiers tend to be self-serving public relations pieces about how wonderful the brigade, battalion or battery did in the latest FTX. Everything works. No one writes about how they got clobbered at the NTC."

"We've made sparking a significant dialogue on ADA issues priority No. 1," Case said.



Air Defense Artillery's Writers Guide

Submit to:
The Editor
Air Defense Artillery
USAADASCH
ATTN: ATSA-AC-FP
Fort Bliss, TX 79916-7004
Telephone: (915) 568-4133
(AV) 978-4133

Subjects: We are interested in all subjects relating to the diverse field of air defense artillery (ADA), including —

- Army doctrine and policies,
- tactics and strategy,
- leadership,
- lessons learned,
- weapons and equipment and
- foreign forces.

Historical articles should have contemporary value. If you have an idea for an article, contact us and explain your theme, scope and organization. It will save both of us time and will help in our planning.

Style: *Air Defense Artillery* prefers concise and direct wording in the active voice. Every article should have a beginning that catches the reader's attention, a body containing the crux of the article and an ending which concludes or summarizes. Keep the article as simple as possible. Write with your audience in mind. We edit all articles, but appreciate a polished submission. We do not normally have writers review their articles after they have been edited, but we do make it a practice to consult with authors on any significant changes made.

Acceptance: We make no commitment on acceptance until we have thoroughly studied each manuscript. Manuscripts should be original, previously unpublished works. Authors submitting articles are responsible for informing the staff of *Air Defense Artillery* of simultaneous submission and/or acceptance by other publications.

Format: We prefer articles from 1,000 to 2,500 words in length. We will publish shorter or longer articles depending on subject and quality. Send clean, double-spaced manuscripts typed on one side of the sheet. Your name, address and phone number (Autovon preferred) should be typed on the first page. Cite your references and enclose all quoted material in quotation marks. If possible, credit should be given within the article, as footnotes are burdensome and use valuable space.

Graphics: Artwork in the form of photographs, maps, sketches or line drawings can enhance the effectiveness of your article. If you have an idea for artwork or know where we can get it, let us know.

Clearance: All service members and Department of Defense civilians must clear articles through their local security office prior to submission. A signed statement of clearance must accompany the article.

Biography: Enclose a brief biographical sketch, including important positions and assignments, experience or education which establishes your knowledge of the subject, and your current position and title. Photos of authors are no longer used in *Air Defense Artillery*.

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If you are interested in a particular subject, chances are that others will be too. Pick a subject, thoroughly research it and think all your ideas through. Write with enthusiasm, but be natural.



32nd AADCOM Year of Training

by Maj. Gen. James C. Cercy

The 32nd Army Air Defense Command heartily embraced training, the Army theme for 1988. The past year was an exceptionally busy training year for the command.

Each of our four brigades experienced significant training challenges in addition to the recurring requirements of NATO tactical evaluations and annual service practices. We achieved training proficiency at all levels through rigorous field training exercises focusing first on individual, then small unit, and finally battalion- and brigade-level participation. Each major exercise significantly enhanced the air defense capability of each unit and provided our soldiers the opportunity to hone their basic skills.

Let me quickly highlight some of the major unit training exercises that 32nd AADCOM soldiers have undertaken during the past 12 months.

The 10th and 69th ADA Brigades participated extensively in Reforger '88. During Reforger's Operation Certain Challenge, a fast-paced, corps-on-corps battle, both brigades supplemented their usual

mission of NATO central region air defense by providing air defense of corps elements with assigned Patriot and Hawk units. The 14-day exercise required daily unit moves and the lessons learned were outstanding. Both brigades are working hard to incorporate these lessons learned into their operating procedures and general defense plans (GDPs).

The 108th ADA Brigade, on the other hand, was tasked to support the continuing Hammer series of live-fly exercises sponsored by the 3rd U.S. Air Force. This year's exercise was conducted at a remote training area in northern England, which presented an interesting logistics challenge. The exercise featured Patriot and Hawk working together in a battalion task force configuration using the new capabilities provided by Patriot software, Post Deployment Build II (PDB-II).

Finally, the 94th ADA Brigade took to the field this past October for an extensive composite brigade Army training and evaluation program (ARTEP) that was the first of its kind in 32nd AADCOM. The ARTEP included the opportunity

the opportunity for each of the brigade's subordinate battalions to accomplish section, platoon and battery training objectives with Patriot, Hawk and Chaparral/Vulcan working together in the field to provide air defense of key assets in the rear combat zone. These exercises provided 32nd AADCOM the challenging training necessary to achieve significant gains in combat readiness, leadership skills and improved contributions to the air defense of the NATO Central Region.

As I mentioned earlier, for the first time in the Reforger series, 32nd AADCOM provided air defense support to the V and VII U.S. Corps during the corps-on-corps battle conducted during Certain Challenge. The 10th ADA Brigade provided general support fires to V Corps with Patriot and Hawk units.

The 10th ADA Brigade's major training objective was to establish communications with the V Corps divisional Chaparral/Vulcan units and provide them

69th ADA Brigade's experience with composite unit operations has been the foundation for the command's review of how to fight Patriot with Hawk.

Working directly with the U.S. Corps during Reforger gave both brigades valuable experience. The brigade operations were integrated into corps' operations through direct interface with the corps staff provided by the brigade's air defense operations liaison team (ADOLT). This direct interface gave the brigade an immediate,



Our 1988 NATO Tactical Evaluation schedule was extremely demanding. These evaluations continue to be an exceptionally tough, compressed test of each unit's plans and training programs. The new Patriot battalions, 8-43rd ADA and 6-43rd ADA, were successful in their initial evaluations and are now contributing to the command's NATO air defense mission. Tactical evaluations for the other 32nd AADCOM units were similarly successful, reflecting the high state of mission readiness maintained by the command's units. Areas of particular strength during the past year were brigade and battalion operations and survival to operate (STO) skills.

with early warning from airborne warning and control system (AWACS) aircraft participating in the exercise. The communications equipment support for this endeavor was understandably austere because all assets had to come from internal brigade resources. Nonetheless, the brigade was successful in forwarding the information provided by AWACS to the divisional air defense tactical operations centers, thus providing timely and useful early warning to the divisional battalion's fire units.

A major training objective for the 69th ADA Brigade during Reforger was the employment of a composite Patriot/Hawk task force in a field environment. The

clear idea of the corps commander's priorities while providing the corps staff real experience with air defense unit capabilities. Needless to say, the lessons learned during Reforger '88 have proven enormously important.

This past October a composite Patriot/Hawk task force from the 108th ADA Brigade participated in the 3rd U.S. Air Force's Exercise Hammer in Otterburn, England. As I said before, the task force employed a Patriot and Hawk composite defense using PDB-II software. The results of the exercise, based on preliminary analyses, appear to be extremely impressive as Patriot and Hawk worked together in engaging a mass raid of nearly 100 aircraft.

The training value of Exercise Hammer, however, did not come exclusively from the air battle phase of the operation. The support requirements to move air defense elements of two battalions from different locations in the Federal Republic of Germany to England demanded extraordinary effort and detailed planning. Logistical demands involved the rail movement of Patriot and Hawk equipment to a seaport point of embarkation (SPOE), trans-ocean shipment of this equipment on a seagoing vessel, and a road march of 30 miles over an extremely difficult road network to the training site.

Detailed air defense planning ensured that the unit's GDPs were replicated to the greatest degree possible. This exercise included tactical planning for a composite force based on the use of the new PDB-II software. In both of these areas, the 2-3rd ADA with A/1-1st ADA did an absolutely outstanding job. The staff derived unique training benefits from the exercise, as did the unit soldiers who participated.

The 94th ADA Brigade conducted the first brigade composite ARTEP in 32nd AADCOR during October 1988. This evaluation involved each of the brigade's subordinate battalions (Patriot, Hawk and Chaparral/Vulcan) in a five-day test of the brigade's GDP. The exercise was a particularly well orchestrated training event, incorporating frequent unit moves for all the brigade's subordinate units, use of Patriot/Hawk cluster operations, an air assault operation for Hawk elements of the brigade and a river crossing of the Rhine.

Throughout the ARTEP, 94th ADA Brigade soldiers tackled each mission with tremendous spirit. The brigade thoroughly demonstrated its ability to provide integrated air defense fires in support of its NATO wartime mission in the Central Region rear combat zone.

Excellent training opportunities were not the 32nd AADCOR soldiers' only achievements this past year. 32nd AADCOR

soldiers throughout Germany successfully competed in local military community sporting events and activities.

One example of soldier participation in a NATO competitive program was the annual Nijmegen March in July 1988. Five 32nd AADCOR marching teams took part in this event, which annually attracts marching teams from many NATO military units and has been sponsored by the Royal Netherlands League for Physical Culture since 1908.

The object of the Nijmegen March is to encourage partici-



pants to train so that they are able to cover a considerable distance daily without impairing their health. This year's march required Nijmegen participants to cover 160 kilometers (100 miles) in four days. Each day's march for the 18-man march team began before 0500, and the 25 miles had to be covered in less than nine hours.

Each 32nd AADCOR unit completed the march in exceptional fashion. Our participants cited the opportunity to meet and march with soldiers and civilians from other NATO countries as the outstanding feature of this exercise.

Soldier training through education also continued to receive important emphasis during 1988. Although USAREUR, in a drive

for better operating economies, closed the 32nd AADCOR Non-commissioned Officers' Academy at Landstuhl in October 1988, 32nd AADCOR soldiers continued to receive Primary Leadership Development Course (PLDC) training through the VII Corps Non-commissioned Officers' Academy in Augsburg, Germany.

A significant change in the Non-Commissioned Officer Education System (NCOES) for our sergeants will occur in FY 89 with the procurement of 50 classroom seats per year in the Basic Non-commissioned Officers' Course (BNCOC) at Fort Bliss, Texas, for staff sergeants in MOSs 16D, E, T and J. This program offers BNCOC training to 32nd AADCOR soldiers in these MOS' for the first time on a CONUS TDY and return basis. We are expecting significant dividends from this program.

As I highlighted in my article a year ago, the soldiers in 32nd AADCOR are strong, tough, smart and fully capable of meeting the challenges posed by their demanding mission. The results of every endeavor by these soldiers in 1988 underscores this perception. 32nd AADCOR soldiers have excelled in every task given them during the past year, and each soldier has demonstrated enormous professionalism in the pursuit of each assigned mission.

I am extremely pleased to report that never has the air defense of the NATO Central Region been in the hands of such skilled, trained soldiers and units. Every day 32nd AADCOR soldiers help deter war by providing combat-ready air defense forces to NATO.

First to fire!

Maj. Gen. James C. Cerce is the commanding general, 32nd Army Air Defense Command, Darmstadt, Federal Republic of Germany.

Patriot and Hawk in Reforger

by Lt. Col. Joseph Romito

Each year much of the Army participates in Exercise Reforger (Return of Forces to Germany). Most of the major units in United States Army, Europe (USAREUR) participate, as do selected units from the Continental United States. For the first time, during Reforger '88, the Army's state-of-the-art Patriot and Hawk air defense weapon systems deployed on both sides of the battlefield.

With virtually all of USAREUR actively participating, the exercise gave air defenders a unique opportunity to integrate themselves into the operations of major ground forces and to practice the planning and operational tasks essential in wartime.

The 69th ADA Brigade participated in the exercise with its brigade headquarters; 8th Battalion (Patriot), 43rd ADA; and B Battery, 3rd Battalion (Hawk), 60th ADA. The brigade deployed in the area of VII U.S. Corps, whose mission was defending the fictional nation of Southland. A similar air defense force from 10th ADA Brigade deployed with V U.S. Corps, the military force defending the country of Northland.

The Reforger '88 scenario called for two separate periods of exercise, each lasting approximately three days, separated by a three-day period during which ground operations stopped but the planning cycle continued. From the initial deployment to field sites until the final return to home stations in Wuerzburg, Giebelstadt and Grafenwoehr, brigade units were in the field for 15 days and logged more than 50,000 miles on their vehicles.

Besides marking the first time that Patriot and Hawk took part in Reforger, this exercise was also the first opportunity for 32nd AADCOR's two forward-area brigades, the 10th and the 69th, to bring significant numbers of subordinate units into an exercise with two corps. Key exercise objectives for the 69th ADA Brigade headquarters and its subordinate units included —

- exercise the brigade's air defense operations liaison team (ADOLT) with VII Corps Headquarters,
- design and continually update an integrated Patriot/Hawk defense,
- use active and passive measures to avoid detection,
- provide effective air defense command and control of Patriot and Hawk units, and
- plan for and obtain administrative and logistic support for combat operations.

In addition to his role in the NATO air defense chain of command, the 69th ADA Brigade commander also holds the key position of ADOLT commander (COMADOLT) for VII Corps. In this role, he serves as the senior air defense adviser to the corps commander and is responsible for ensuring that the corps commander's air defense priorities are taken into account during the NATO planning process. With limited air defense assets available to counter the sizeable threat from Warsaw Pact forces, the allocation of ADA units to satisfy competing priorities will be a critical factor in wartime.

To carry out its tasks, the brigade staffed the ADOLT with officers from its air defense element and its

S-3 section, and positioned the ADOLT with the main element of the corps headquarters. The ADOLT kept itself apprised of the friendly and enemy situation, provided air defense advice to the corps commander and his staff and received the corps commander's air defense priorities on a regular basis throughout the simulated war.

Acknowledging that no exercise is perfect, I must point out that one of the drawbacks of Reforger '88 was that exercise plans called for only limited participation by the NATO "blue suit" air defense chain of command. The lack of full and active participation by such echelons of command as Allied Air Forces Central Europe (AAFCE) and 4th Allied Tactical Air Force (4ATAF) limited training opportunities. For example, it was impossible to exercise how air defense prioritization decisions would be made in wartime, since the commanders of AAFCE and 4ATAF would play a major role in the decision process in an actual combat environment.

At battalion level, the deployed forces consisted of the battalion headquarters and all three Patriot firing batteries from 8-43rd ADA, and two Hawk assault fire platoons from B/3-60th ADA, all under the command of the Patriot battalion commander. This deployment replicated the type of force that might exist several days after the outbreak of hostilities, when combat losses would cause the brigade commander to reconstitute his available forces. This reconstituted defense was made more effective by the 8-43rd's recent fielding of the latest Patriot operational software, Post-Deployment Build (PDB) II, which provided greater capability to integrate the Hawk assault fire platoons into the battalion's command and control structure.

The ADOLT was fully integrated into the planning cycle at corps headquarters. As part of the planning cycle, on at least a daily basis and often more frequently in response to the ebb and flow of the ground battle, the ADOLT directed the battalion to plan redeploy-

ments of its fire units. Based on the tactical situation, COMADOLT's guidance sometimes required only short-distance survivability moves and sometimes something more complex, such as a complete repositioning of the defense to significantly change the air defense coverage.

The battalion commander and

Polish and practice the tactics and procedures

his staff took this guidance and selected general areas for new unit positions to meet the coverage requirements in COMADOLT's guidance. Then began the difficult, time-consuming tasks of reconnaissance and selection of positions and staff planning to develop the detailed supporting plans for the new deployment.

At battery level the pace of combat operations, combined with the difficulty of finding suitable terrain that would support battery emplacement and simultaneously provide good air defense coverage, demanded that units spend a great deal of time on reconnaissance of positions. The battery reconnaissance party could not rest after locating a suitable position, for each new position required the identification of additional operating positions.

A similar situation existed on the battalion staff. Key staff planners were in a constant cycle of developing one set of plans to support future operations while simultaneously using their plans for current operations. This proved to be especially challenging in the area of communications. The requirements to perform profiles on new communications plans and to de-conflict frequencies throughout the corps area were particularly time-consuming. At the end of the exercise, the 69th ADA Brigade air defenders who participated agreed that Reforger '88 was a consider-

able success. The brigade headquarters, 8-43rd ADA and B/3-60th ADA all returned with a wealth of lessons learned that either validated war plans or identified areas needing improvement. Some of the more important observations included the following:

- In a realistic combat environment, reconnaissance and selection of positions will be a virtually full-time job.
- Frequently, the air defense coverage desired by higher headquarters cannot be achieved because of terrain limitations which can only be discovered on the ground.
- Key air defenders who specialize in one weapon system must be knowledgeable in other systems to do the best possible job of defense design and employment.
- The corps commander has significant air defense requirements that are not always compatible with the missions U.S. air defense units receive from their NATO chain of command. (Exercises with participation from all echelons of ground and air defense units are needed to aid in fine-tuning the mission assignment process. Such exercises are planned for the near future.)
- PDB-II software allowed more complete integration of Patriot and Hawk fire units.
- Even with the frequent moves demanded by a realistic scenario, the Army's area-based logistical support system works effectively.

Having seen the tremendous benefits of participation in Reforger '88, the Patriot and Hawk soldiers of the 69th ADA Brigade eagerly look forward to similar exercises, for the overarching lesson learned is that exercises involving all major combat units are essential if we are to refine, polish and practice the tactics and procedures that will lead to success in combat.

Lt. Col. Joseph Romito is the commander of the 8th Battalion, 43rd Air Defense Artillery. His previous air defense assignments include command and staff positions in Nike-Hercules, Hawk and forward area weapons units, with service in Germany, Korea, Vietnam and the United States.

Airmobile Early Warning

by Maj. Thomas J. Allen

Exercise Caravan Guard '88 provided the U.S. V Corps with the unique opportunity to exercise NATO airborne warning and control system (AWACS) assets in an early warning role to its forward divisions. The V Corps commander, Lt. Gen. John W. Woodmansee, wanted to test the AWACS' capability to provide early warning of enemy airmobile operations as well as aid in the command and control of friendly airborne operations.

Caravan Guard '88's purpose was to integrate AWACS into the command and control process to launch friendly aircraft across the forward line of own troops (FLOT) and to use AWACS early warning radar to detect enemy air assault or airmobile operations.

While the concept seemed simple, the number of joint players involved required extensive coordination. Among them were the 12th Combat Aviation Brigade; 3rd Battalion, 61st Air Defense Artillery, 3rd Armored Division; 1st Battalion, 59th Air Defense Artillery (C/V), 8th Infantry Division (Mechanized); 4th Battalion, 3rd Air Defense Artillery and 2nd Battalion, 43rd Air Defense Artillery (Patriot battalions from 10th Air Defense Artillery Brigade, 32nd Army Air Defense Command); and the NATO Airborne Early Warning station at Geilinkirchen, Federal Republic of Germany.

The stage was set. The scenario — a deep strike operation into enemy-held territory. The Blue Force's mission was to fly across the FLOT to an objective, destroy the target and return. The Orange Force would attempt to spot the aggressors using the AWACS air picture and alert its ground forces and

short-range air defenses (SHORAD) of the enemy's position.

The 12th Aviation Brigade, flying six Black Hawk helicopters in a tactical replication of the Apache, conducted the corps across FLOT operation. The corps G-2 provided updated intelligence concerning the enemy air and ground situation to the flight leader via the AWACS. The flight path had various aviation obstacles, including a surface-to-air missile site, through which Blue Force operators guided the helicopters. The flight path also allowed the flight commander to practice ambush procedures, dropping into a hide area and popping up to engage surprised approaching enemy aircraft.

The entire mission was conducted under strict radio silence. The flight leader used only his transponder and Morse code to signal checkpoints passed and objectives accomplished to his Blue Force controllers.

While the Blue Force conducted its airmobile operation, the Orange Force was exercising its early warning system and testing the AWACS' capability to detect approaching helicopters.

An air defense operator on board the AWACS aircraft (provided by the 3rd Armored Division's airspace management element) reported hostile aircraft observed by the electronic radar consoles to the division airspace management element (DAME) air liaison officer by UHF radio. The DAME then converted this information to the manual SHORAD control system matrix format and disseminated it via FM radio to the SHORAD battalions, forward area alerting radar (FAAR) sections, and Chaparral,

Vulcan and Stinger gunners.

Meanwhile, the Patriot tactical control officers were seeing the approaching helicopters as track targets via the air picture provided by the AWACS by automatic data link through the NATO sector operations center and control and reporting center. A Patriot tactical control officer passed this track information to the C/V battalions via FM radio. Targets were correlated and passed to SHORAD gunners with adequate speed to allow for simulated engagements.

The ability of the Patriot system to display the targets presented by the AWACS gave the Orange Force a heads-up on the enemy airmobile insertion. Also, Patriot was able to engage some of the targets once the tactical situation made it appropriate.

The early warning diagram graphically explains the electronic and voice communications process from AWACS to the Stinger gunner on the ground. Both exercises were highly successful and once again demonstrated the innovativeness of the American soldier on the battlefield and the capability of today's air defenders to counter the enemy threat.

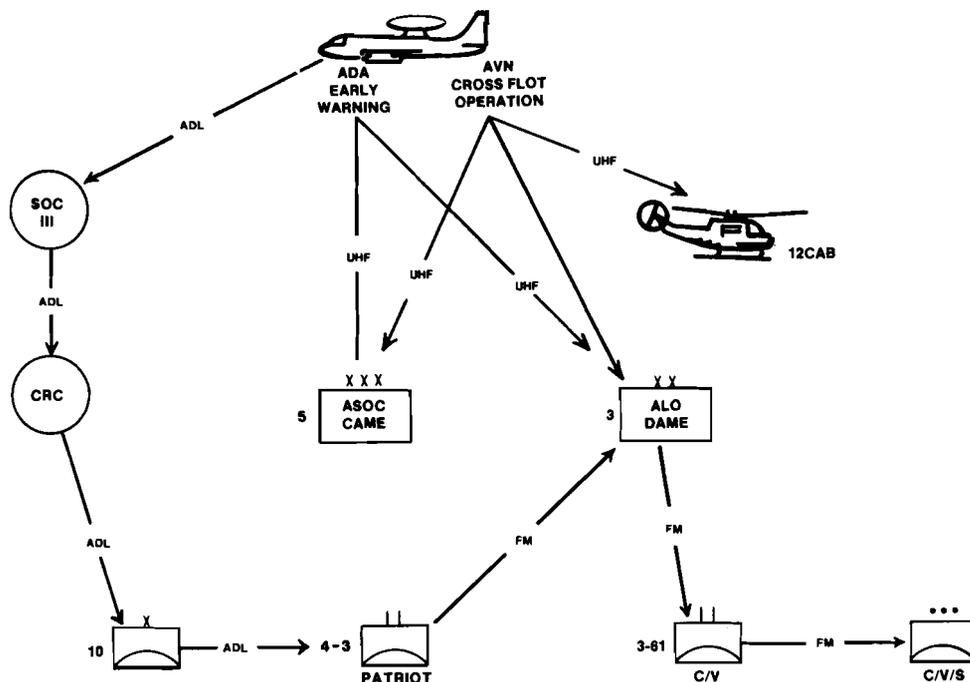
While the air defense early warning system has been around

for years, this was the first time the NATO AWACS was used to guide an airmobile mission to a target area. The early warning system now being recommended used a dedicated voice communications system designed to provide rapid dissemination of hostile and unidentified aircraft information to SHORAD gun and missile crew members and to warn other units of impending air attack. It also performs a secondary function of integrating near real time air battle management information.

This early warning system further reinforced the need to use the new air battle management operations centers (ABMOCs) in each division and the corps. Each ABMOC is designed to plot, correlate and disseminate target data received from FAARs and Air Force, Hawk and Patriot radars as well as actual sightings collected from units in the field. This data is transmitted over an early warning net using a simple common reference matrix to help receiving units rapidly plot target information. Once organized and staffed at the division and corps, the ABMOC will be equipped with necessary equipment to be compatible with the AWACS.

Also, the air defense officer (ADO) and his staff section will be an element of the ABMOC assigned to the Chaparral/Vulcan battalion of each division. This section will collocate a member with the nearest long-range radar facility that can provide the division with optimum area coverage. The ADO during Caravan Guard '88 was actually positioned on the AWACS and provided long-range target acquisition, target location and heading to the air liaison officer or DAME via his early warning net. The DAME then retransmitted the information to gunners on the ground. As air defenders we must be innovative and aggressive in pursuing new ways to get the most out of our equipment. Our limited assets, coupled with our mission to cover large areas over masked terrain, makes the airmobile operation a realistic threat to V Corps. The AWACS can give us an extensive view of the battlefield, reducing the hiding places available to the enemy. It can stand off and provide our soldiers with the decisive edge on the field of battle.

Maj. Thomas J. Allen, now assigned to the Pentagon, was the 10th Air Defense Artillery Brigade air defense liaison to V Corps when he wrote this article.



ADA Live Fire at NTC

By Maj. James R. Wilson

As the early morning light began to penetrate the haze and dust of the desert, reconnaissance elements of Task Force 1-66, 2nd (St. Lo) Brigade, 2nd Armored Division, searched for the approaching enemy. Behind them the remainder of the task force was dug in, awaiting the onslaught of the enemy forces expected in the area. The desert was quiet, as were the radios of the task force. Soldiers scanned the terrain and skies to detect and identify any vehicle or aircraft.

Suddenly the division early warning net broke the silence, broadcasting a warning that enemy aircraft appeared to be heading for the reconnaissance elements. The command nets repeated the warning and elements of the task force began to prepare for a possible air attack.

The warning was repeated. Two approaching aircraft were identified as hostile. Gunners from the 2nd Battalion, 5th Air Defense Artillery, scanned the skies in the direction of the approaching aircraft. Stinger gunners from B and D Batteries and Chaparral gunners from D Battery were on full alert and prepared to engage.

The Stinger team chief spotted a fast moving target heading toward the reconnaissance elements in front of the task force. The aircraft was definitely hostile. The command to engage was given and Spec. Joel Freeman, the Stinger gunner, began tracking the target. The clear desert morning was split by the smoke from the rocket motor of a Redeye missile as it streaked toward the target. The enemy pilot seemed unaware that he had been engaged, and soon it was too late. The Redeye missile exploded and the target was destroyed.

The early warning net continued to broadcast warnings of the second aircraft, and SSgt. McKnight, Chaparral squad leader, D Battery, spotted it. Commands to the senior gunner were given and engagement procedures initiated as the gunner tracked the target. The engagement command was given and the Chaparral missile streaked to the target. A direct hit! Metal fragments from the hostile target floated to the desert floor.

Relieved by the success of the air defenders, the reconnaissance elements moved forward and discovered the enemy. The morning calm was broken as artillery pounded the enemy forces and the reconnaissance elements fell back to the protection of the task force defensive lines.

This same scenario was repeated by elements of Task Force 3-41, 2nd (St. Lo) Brigade later during NTC Rotation 88-7. The Redeye team and Chaparral squad recorded two more direct hits. The gunners of the "Shoot 'Em Down" battalion had scored another first. They were the "First to Fire" live Redeye and Chaparral missiles as part of the task force live-fire phase at the National Training Center, Fort Irwin, Calif.

The integration of air defense weapons into the live-fire scenario at the NTC began with a visit to 2-5th ADA by Maj. Larry Newman, senior ADA officer at the NTC. Lt. Col. Barry E. Cardwell, commander of 2-5th ADA, and Maj. James R. Wilson, the battalion S-3, proposed the concept. As Cardwell explained, "It has long been a problem to provide the maneuver elements, be they infantry or armor, with confidence in our abilities and role as a member of the combined arms team. We felt that if we could fire our weapons along with theirs in a combined effort that it would demonstrate the importance of planning and integrating air defense into the overall operation."

Following the meeting, coordination efforts between the battalion and NTC Operations Group began. Despite initial concerns that the safety fan might adversely impact on the Task Force battle positions, problems were resolved and permission was given to integrate the Redeye and Chaparral into each task force live fire.

Coordination efforts continued and were finalized by Capt. Todd Fraysier, assistant S-3, upon his arrival at the NTC. The cooperation between air defenders at the NTC and the battalion ensured the success of the operation. Fraysier stated, "Several last minute changes occurred due to concern for the safety of the troops in battle positions, and several

decisions had to be made. But the ADA officers of the battalion and the NTC worked hard to finalize arrangements. The results justified our efforts."

The targets were the familiar ballistic aerial targets (BATs), which were shipped with the Chaparral and Redeye missiles from the unit's annual allocation at Fort Hood, Texas. The BAT launch team was made up of members of the battalion S-3 section who deployed to the NTC as part of B Battery's rotation. Fraysier said, "The BAT crew, headed by SFC James Payne, worked extremely hard in getting the target mount correctly positioned and functioning. The targets were built and fired without any problems."

Fraysier and other members of the battalion S-3 section were also part of another first at the NTC. According to NTC officials, Rotation 88-7 was the first time an air defense battalion tactical operations center (TOC) was deployed as part of the command and control elements.

Wilson explained the reason for deploying the TOC. "This was the first time we had the opportunity to work with a Hawk assault fire unit at the NTC," he said. "We wanted to do it right and according to ADA doctrine."

"During past rotations the Hawk platoon has been in direct support of the maneuver brigade. This is not the way we would fight if Hawk was in the division area. We wanted to train as we would fight, so we gave the Hawk platoon from B Battery, 2-1st ADA, a mission of general support-reinforcing (GS-R) to the 2nd Armored Division, and deployed the TOC to provide the appropriate interface between the high to medium air defense (HIMAD) and short-range air defense (SHORAD) elements, which is the responsibility of the division air defense officer or organic air defense battalion commander. We wanted to continue the success of the training we had experienced during Reforger '87 when we utilized this concept with Patriot and Hawk."

The deployment of the TOC proved successful. Captain William Woosy, commander, B Battery, 2-5th ADA, was able to concentrate his efforts as the brigade air defense officer on his SHORAD assets and provide the battalion TOC with the brigade commander's priorities which could be better covered by Hawk. Placing a Hawk liaison officer at the battalion TOC and the air defense fire coordination officer from the battalion in the Hawk

control center also paid dividends. They were able to plan and synchronize the site selection and placement of Hawk and other brigade assets to most effectively use the capabilities of Hawk, forward area alerting radar (FAAR) and the air defense weapons systems.

Early warning was enhanced through the coordinated efforts of the Hawk, ADFCO, battalion TOC and the brigade ADA LNO personnel. Enhanced radar coverage provided by Hawk radar and FAAR systems overcame terrain masking and allowed earlier and more effective acquisition of approaching enemy aircraft.

Maj. Gen. Roger J. Price, commanding general, 2nd Armored Division, commented to Cardwell following one of the daily after-action reviews, "Early warning was the best I've seen in all my years in the Army."

Maj. James R. Wilson is S-3, 2nd Battalion, 5th Air Defense Artillery, Fort Hood, Texas.

FY 89 NATIONAL TRAINING CENTER ROTATIONS

89-1	7 Oct — 30 Oct	89-8	9 Apr — 2 May
89-2	31 Oct — 23 Nov	89-9	3 May — 26 May
89-3	24 Nov — 17 Dec	89-10	27 May — 19 Jun
89-4	3 Jan — 26 Jan	89-11	4 May — 27 May
89-5	27 Jan — 19 Feb	89-12	28 Jul — 20 Aug
89-7	16 Mar — 8 Apr	89-14	14 Sep — 7 Oct

ORB Apathy

by Brig. Gen.(P) Travis N. Dyer

Most officers mistakenly believe that selection boards are not interested in the mundane such as photos, officer record briefs (ORBs), et cetera. These mundane tools are, in reality, the important "first impression" selection board members get of each officer. This article is not about selection boards or how they work. It is about the apathy in much of our officer corps when it comes to ORBs, official photos and weight control.

We all know that selection boards are an integral part of the officer promotion system. Officers selected to sit on a selection board will find it a gut-wrenching and frustrating experience — gut-wrenching because of the professional commitment to comply with the board's instructions and give every officer his just due, and frustrating because of the apathy or poor first impression created by the files of so many officers.

I have been privileged to sit on at least six selection boards, the most recent being Senior Service College selections for FY 89. My following observations are common to every board on which I have served. I should point out that these are just one officer's observations intended to assist officers in creating a favorable "first impression." I offer them in no particular order of priority.

Photos. Photos must be current (within three years). Board members view an individual's official photograph with these questions in mind: What is the offi-

cer's appearance? Does he appear overweight? Is his hair cut to standard? Does his uniform fit properly?

Although the OER narrative often justifies being overweight as "meets body fat content criteria," it seldom discusses military appearance. As one general officer said, "Up close or at a distance, this officer is fat." Military photographs significantly influence board members.

PT test results, height and weight. If your OER has a NO in the PT test block, board members look at your file unfavorably. In fact, board members may annotate files with a NO in the PT test block for a possible "show cause." Often PT NO files are officers who are marginal performers. Board members specifically look at height and weight statistics to tie together the photo, PT results and other military-specific attributes.

Duty assignment (current). Board members consider the complexity of the job, the level of command and, often, the location. They may frown on repeated assignments in the Washington, D.C., area or at Fort Bliss if the officer has not had real "dirty boot time."

Duty performance. The duty performance narrative (as written by the rater) is important, but only to explain the complexity of the job and to justify the "potential" block remarks.

Job performance and promote blocks. These blocks are important if not top blocked. Checking

of the second or third block is usually explained in the performance narrative or on the front side of the OER in the "professional attributes" block.

Senior rater profile. The senior rater's comments and profile are probably the most important section of the OER (see "Senior Rater Guide"). Unfortunately, some senior raters negate the power of their written comments by having all or most top block profiles. In those cases where the senior rater top blocked all, or most, officers, board members review the rater comments and previous OERs to try to establish a pattern.

The observations mentioned above are things that individual officers control or can influence. Too often complacency, laziness, et cetera cause officers to disregard these items that directly affect their careers.

Based on my experience of sitting on several selection boards, I have tried to synthesize pertinent points that are either overlooked or forgotten. The following points

emphasize those things I believe every officer must make a concerted, conscious effort to influence.

The most important factor in an officer's career is to do well in each assignment. There is no substitute for quality performance.

The official file maintained by TAPA is yours. *Do not* believe that assignment officers maintain your files — they just do not have the time. Before each major board, review your file (microfiche) and add or correct anything that will *materially* support your performance. Letters of commendation are good, but do not clutter your file with those that do not materially make a difference. Some examples of good ones to send to the file would be letters or citations from *very* senior military and civilian leaders. Certifications such as 6T program completion and professional designations are also important.

Your official photograph is a critical part of your file. Keep it current and ask another person to look at it. The keys to success here

are: military appearance and bearing, awards, decorations and a neat haircut — no sideburns. If you have a mustache, trim it!

Female officers, wear the skirt, *not* the trousers. Do not wear unauthorized earrings or let your hair be too long. Remember, a female officer is on every board.

Do not flunk a PT test and do not grow in height over the years. From my observations, board members do not believe the comment "meets body fat content criteria," especially when the officer is considerably overweight and the photo shows it. If you are "chunky," ensure your uniform does not highlight it. Buy and wear a uniform that fits.

Senior rater profiles are the most important, most studied portion of the OER. It is not necessary to be placed in the top block all of the time. Center of mass is very acceptable. Board members read comments by the senior rater and usually clearly see where you place in the profile mass. Below center of mass is not favorable, but it *will not* kill you if subsequent reports indicate an improvement in your performance. Board members recognize the degree of difficulty of jobs and consider locations and personalities. These factors influence the way a particular OER is viewed.

Perhaps there is nothing new in these comments since they have been stated several times in various forums. My most recent experience on the Senior Service College selection board, however, renewed my frustration over the obvious lack of attention individuals pay to their own records of service. Each officer in the United States Army has an absolute requirement to ensure that his service record reflects his quality of service and his commitment to Army standards. It is my sincere hope that this discussion will serve as a reminder of that requirement.

"... and how long have you had this feeling of being manipulated?"



Brig. Gen.(P) Travis N. Dyer is deputy commanding general, 32nd Army Air Defense Command, Federal Republic of Germany.

E-6 Promotions Reach 6,000

Good news for staff sergeants awaiting results of the recently adjourned E-7 promotion board, according to Army personnel officials.

More than 6,000 NCOs were recommended for promotion — a selection rate near that of previous boards. Every specialty in the Army inventory had at least one soldier recommended for promotion, despite the fact that 38 were “zero objective” MOSs which had no projected need for E-7 promotions.

Congressionally directed budget limitations in personnel funds has forced the Army to reduce the NCO corps. This move increased the number of specialties for which no promotion requirement could be projected. This means that more and more NCOs are facing the prospect of not being selected for promotion because they're in a zero objective MOS.

The board was directed by Lt. Gen Allen K. Ono, the deputy chief of staff for personnel, to find a way — if possible — to offer the top soldiers in the zero objective MOSs a chance for promotion.

The board voted the files of soldiers in those MOSs, then searched the best NCOs' records for a secondary or additional MOS or job performance that might qualify them for promotion in another MOS.

The soldiers identified this way were then measured against the standards in the alternate MOS and, if qualified by those standards, were recommended for promotion.

The board recommended 62 soldiers in 38 zero-objective MOSs. Their promotions will be based upon their willingness to reclassify to the MOS in which they were recommended.

Senior Rater Guide

by Lt. Col. Robert B. Clarke

So now you're a senior rater! Well, then, this buzz is for you.

Serving on a promotion board can give you a unique perspective — something some of us wait years to get. Before time melts away the best of my learnings, I'll use this opportunity to pass my perspective on to you. It's simple: it's a senior-rater world out there, and we senior raters need to know how to build those OERs for speed. And lest I forget, that does not mean sacrificing quality.

There's not a lot new here. Col. Dave Heebner described the system in *Air Defense Artillery* July — August 1987. Lt. Col. Al Hasbrouck offered his analysis in a memo for the Chief of ADA, subject: The Captain/CVI Selection Board — September 1987, circulated in “ADA Highlights” 4-87 dated Jan. 5, 1988. Quality official photos, ORB accuracy and solid performance in all jobs remain the keys to selection by any board. Rates know this stuff. And I saw no change from the Heebner-Hasbrouck observations.

Boards take on the personality of those who sit on them. But in the larger sense, the truisms of a

“quality file” remain constant within the framework of the current OER system. It appears that the system we've got is going to stay for a while.

So what's to learn?

With all that's been said, we senior raters often fall short of our purpose. We persist in creating wordy, marshmellowy and, in many cases, inconsistent pictures of our younger officers. Before my promotion board experience, I used to be very proud that I could fill the senior rater block to the very limit. I knew that it took me 115 words to fill the box — and I massaged, trimmed and padded until I got there. Now, having been on the “action end” of the system, I know better. I know what's important, and I feel I know what to write so that I can convey to a hurried, nonetheless dedicated, board member the essence of the officer he's about to score. I learned how to build an OER for speed.

The rule is simple. Be succinct: say what has to be said where it should be said, and say no more.

Let me be specific.

Job title: Avoid acronyms and branch jargon. Put the rated officer's job title into words anyone

from any branch can understand. Be specific. Some examples are: Vulcan Platoon Leader, Hawk Assault Platoon Leader, Battery Executive Officer, Battalion Executive Officer, S-1/Adjutant or Patriot Battery Commander.

Job description: State numbers of people, equipment and dollars involved. List major extra duties such as supply officer, motor officer or security officer. Avoid a list or explanation of leadership platitudes such as “responsible for the training, maintenance, morale and well being of . . .” Doing so clouds the essence of the job.

PT and overweight status: PT failures and overweight officers are in trouble, but if they have a reason, state it in exact terms in block IVb. If an officer needs the “tape test” to meet the standard, explain why. Simply stating that the officer meets the standards of AR 600-9 isn't enough — unless you want it to be. If the officer is a body builder, say it.

Rater's narrative: Don't state what the officer did, describe how well he did it. Cut the marshmellow padding. Hit the highlights of the rated period. Use active verbs; avoid passive, FM-like language.

Bad: Capt. Doright developed a plan for the battalion's commitment during Reforger '86. The battalion's sterling performance during the exercise was a direct result of his brilliantly designed and coordinated document.

Better: Capt. Doright's brilliant plan for Reforger '86 led his battalion to a super performance.

Potential: Be precise. State the officer's potential in terms of grade, schooling and job position. Be specific about the grade, the particular school and the type of position or organizational level. Avoid statements like: "promote and select for school ahead of contemporaries. Has the potential for duty in positions of greater responsibility."

Senior rater narrative: It's been said before: focus on potential. Never state "I concur with the rater" — that says you're too lazy to be original. I recommend you touch briefly on the rated officer's performance. This tells the board that you personally know how the officer performed. Then go directly to specific potential statements. Key to the specific future of the officer: if he or she is headed for the CVI decision, state your opinion directly; if he or she is in that career period when selection for command is important, give your opinion on the officer's potential for that specific responsibility. Here are a few guidelines:

- If you're new as a senior rater or if you're starting your profile over, place the officer with words (e.g., "a pack officer," "best of the 25 lieutenants I senior rate," etc.).
- If the officer has jumped from one rating group to another (he or she is a promotable lieutenant, rated first as a platoon leader then as an S-4 and therefore now compared with captains), explain any relative drop in block position.
- If you've restarted your profile and you've rated this officer before, state simply that you restarted your profile. This will explain any apparent shift in the officer's block position.
- Don't write much; only write what's necessary. Don't try to fill the box.

Senior rater potential evaluation (the block check): We all know it's the most important part of the OER; some people believe it can carry nearly 85 percent of the weight of a normal OER. This may be a dangerous generalization, but when put into the context of a promotion board which must review a large number of reports, papers and photos, the importance of a "quick summary" of an officer's performance relative to his or her peers should never be underestimated. I suppose the real value in the block evaluation is that it probably delivers the unadulterated truth. In a world where senior raters often are prone to use inflated, glowing narratives to describe the performance of even their worst officers, the block evaluation becomes "the rest of the story." As sad as it may seem, many of us senior raters just don't have the guts to tell an officer just how bad he or she is — we let DA do the dirty work. We write the narrative in glowing terms, then block them below center-of-mass. Good news turns to bad, and the opportunity for some good counseling is lost.

It's beyond my charter here to describe the center-of-mass concept. There are, however, a few suggestions which may help you convey the right message:

- If you're a new senior rater, decide your profile before you do your first OER. Then put your officers on it true to your feelings from the beginning.
- Be very careful with your first few ratings. Use the words of the narrative to explain where they "will" be when your profile rounds out.
- Discipline yourself to avoid upward creep in your profile. Over time you'll tend to do this as your officers take on the performance that you demand of them.
- Don't allow yourself to put your center-of-mass in the top block. You may think you're doing your officers a favor, but you're not; you're just making them all average.
- Be careful with promotable officers. If they're promotable and

servicing in a TOE or TDA position which is for the higher grade, they will be profiled with officers of the higher grade.

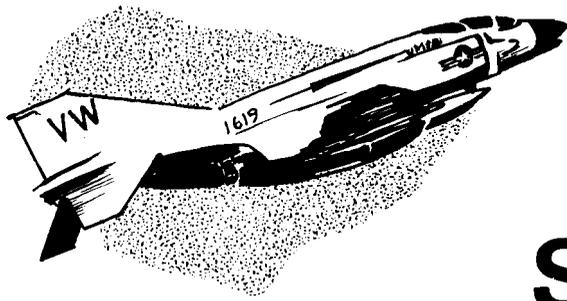
- Restart your profile when it gets out of whack, but don't do it too often. This is called "gaming the system." Every time you restart you may hurt the first few officers you senior rate because the profile is too weak to say anything. You may protect the bad officer, but you will hurt the good one.
- Don't be afraid to use words (succinct words) to explain anything that could be misunderstood about your "blocking" of the rated officer.

The bottom line: Call the officer like he or she is, make the narrative parallel the block check, and be consistent from one officer to the next and from one rating to the next on the same officer.

We have some very dedicated, professional young officers out there who are busting their buns to do a good job for us. It's so very important, then, that we convey the right message to the promotion selection boards. As competitive as things are these days, we certainly want to keep the best of them and send away those who don't possess the potential. And there's the rub: deciding which of these young officers has the potential and which do not — with so little time to judge them. I offer you nothing but professional judgment, common sense and, most importantly, personal contact as the tools to make that determination.

Well, there you have it: an easy cookbook on how to build your OERs for speed. Your words must convey an accurate picture of the officer's performance and potential in such a way that the story virtually leaps off the page for any reader, regardless of that reader's branch or years of experience. Our officers deserve nothing less.

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The Third Dimension

“The Five-Second Twitch”

You might expect air defense artillerymen to be the world's strongest advocates of a strong gun-missile air defense mix. You would be wrong. Pilots who have flown against coordinated air defense are the more persuasive spokesmen.

While U.S. air defenders were relegated to a ground-support role in Vietnam, their North Vietnamese counterparts filled the skies over Hanoi with flak and surface-to-air missiles. U.S. pilots who flew north across the DMZ encountered air defense systems of unprecedented strength.

Jack Broughton, who flew U.S. Air Force F-105 Thunderchiefs, described the combat arena in his book, *Thud Ridge*, as "... the center of Hell with Hanoi as its hub. The area that was defended with three times the force and vigor that protected Berlin during World War II. The home of the SAM and the MiG, the filthy orange-black barking 100mm and 85mm guns, the 57 and 37mm gun batteries that spit like a snake and could rip you to shreds before you knew it, the staccato red-balled automatic weapons that stalked the straggler who strayed too low on pullout from a bomb run, and the backyard

of the holders of rifles and pistols who lay on their backs and fired straight up at anyone foolish or unfortunate enough to stumble into view."

The gun-missile mix, Broughton wrote, left pilots no attractive attack options.

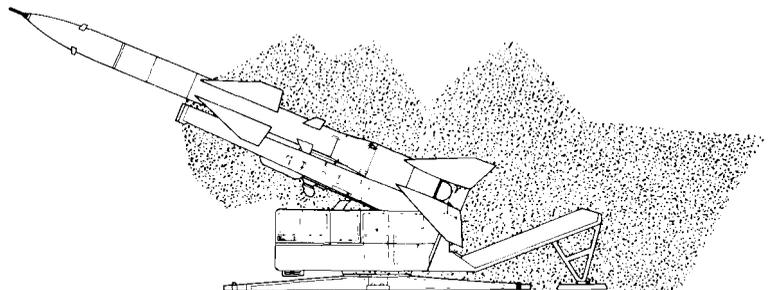
"Whether you stayed above the clouds, went below them, or tried to hide inside them, you were in for trouble. . . . If you stay on top on the way to the target you can look for MiGs, but you cannot see the ground for the extra double check on your approach, nor can you see the SAMs as they kick up a boiling cauldron of dust when they leap from their launch sites. If you can't see them on the way up when they are relatively slow and struggling both to accelerate and to guide, you are in trouble, for by the time they come bursting up through the undercast, accelerated and guiding on course for you, your chances of evading them are slim.

Ex-Marine Corps pilot John Trotti joined the chorus in his

book, *Phanton over Vietnam*, when he described the "five-second twitch."

"The 57mm fire was the spookiest. Even on a clear day, you might not know that it was coming until you were in the midst of a bunch of grayish-brown smudges with pig-tails. It amazed me how accurately the stuff could sneak up from behind — when you saw it rippling off at your altitude, it was a gut-grabber. . . . You developed the 'five-second twitch,' where you made fairly abrupt and random changes in altitude and airspeed on an almost continuous basis. About every third jink, it was a good ideal to reef the plane far enough around to take a good look at where you'd been."

The testimony of pilots who have flown into the teeth of integrated air defenses provide convincing proof of air defense artillery's capability to accomplish its mission by destroying hostile aircraft or minimizing their effectiveness.



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

The Third Dimension

PEOPLES REPUBLIC OF CHINA

NORTH VIETNAM

LAOS

THAILAND

