AIR DEFENSE ARTILLERY NOVEMBER-DECEMBER 1991

ADA Gets Bradleys!

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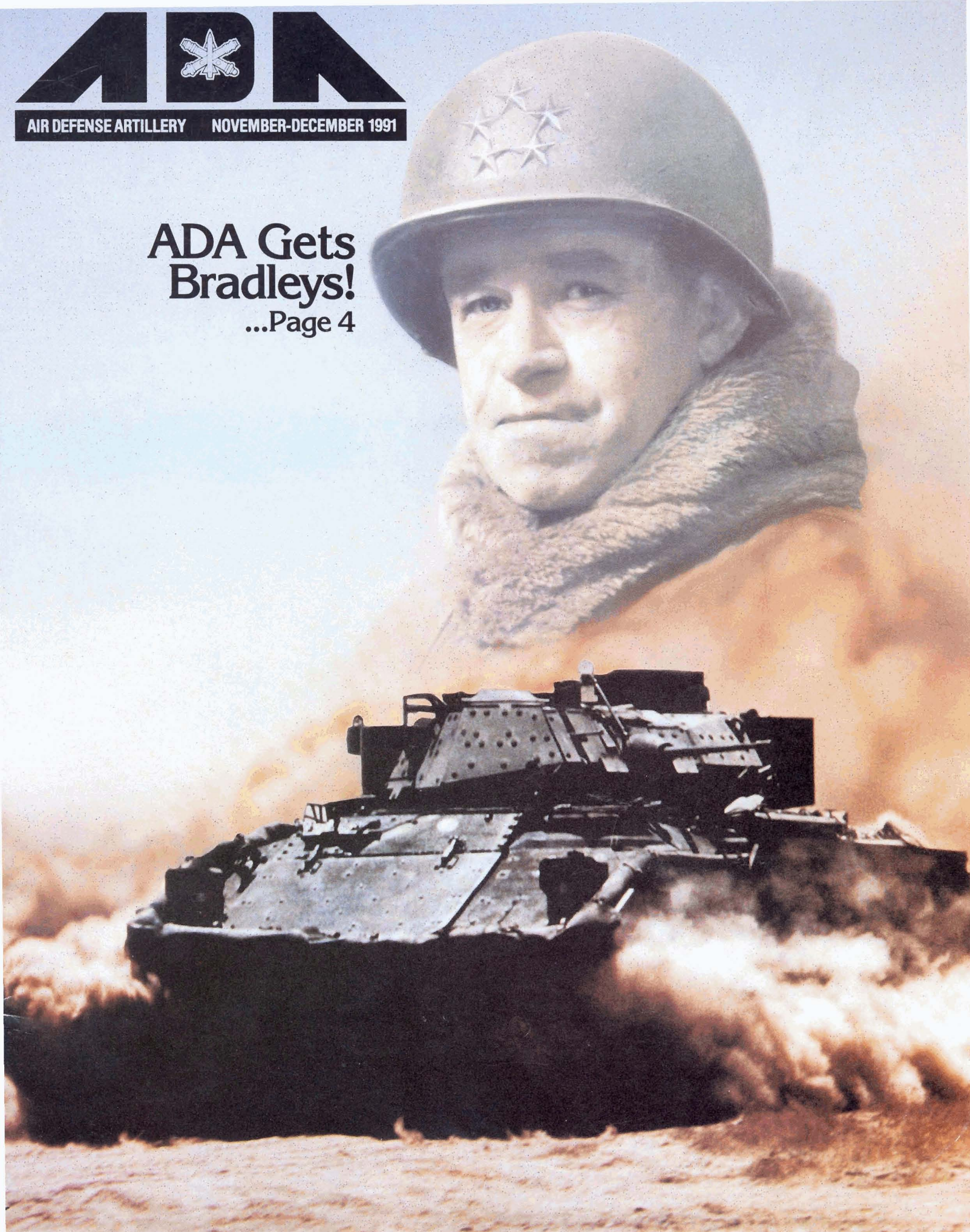

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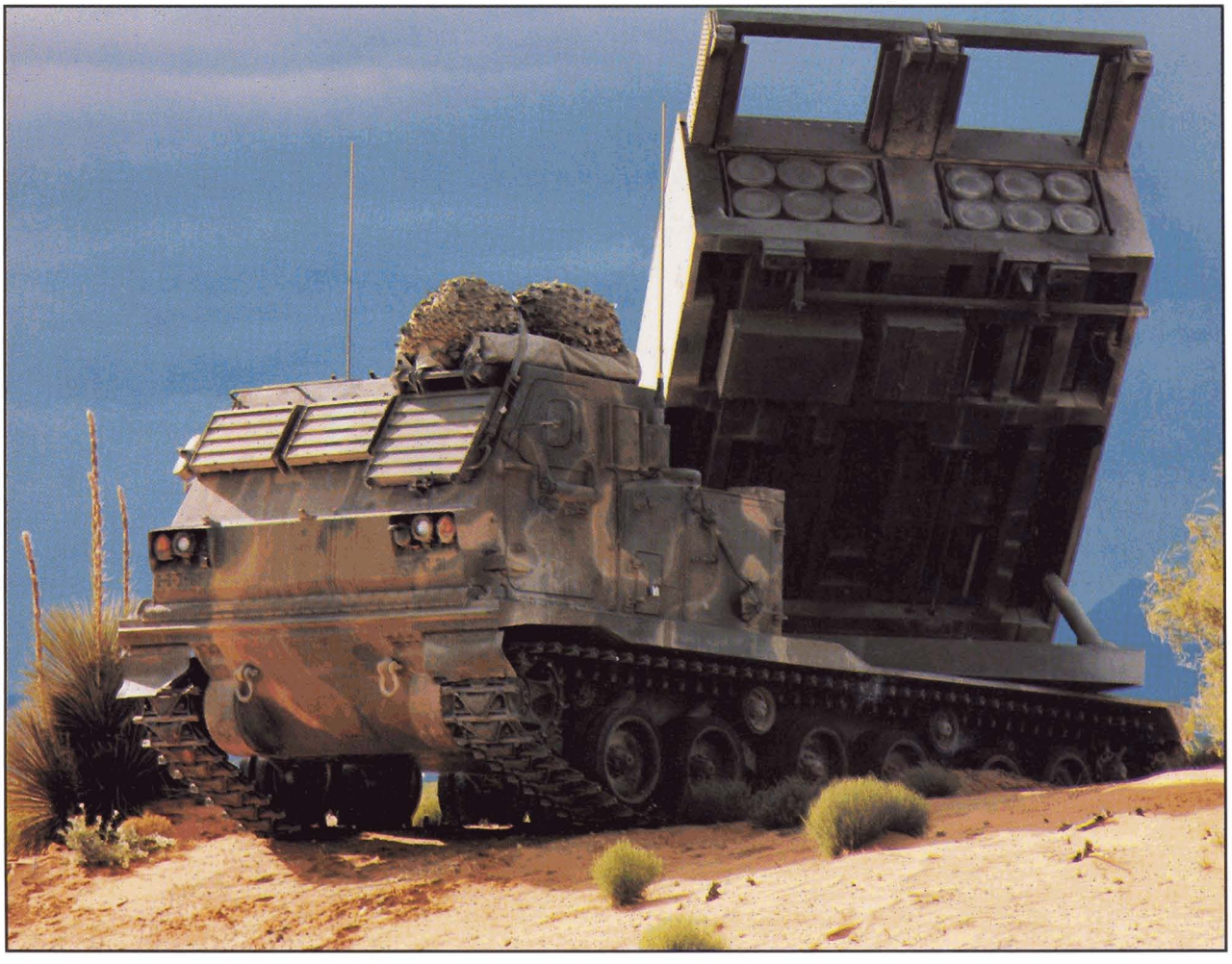

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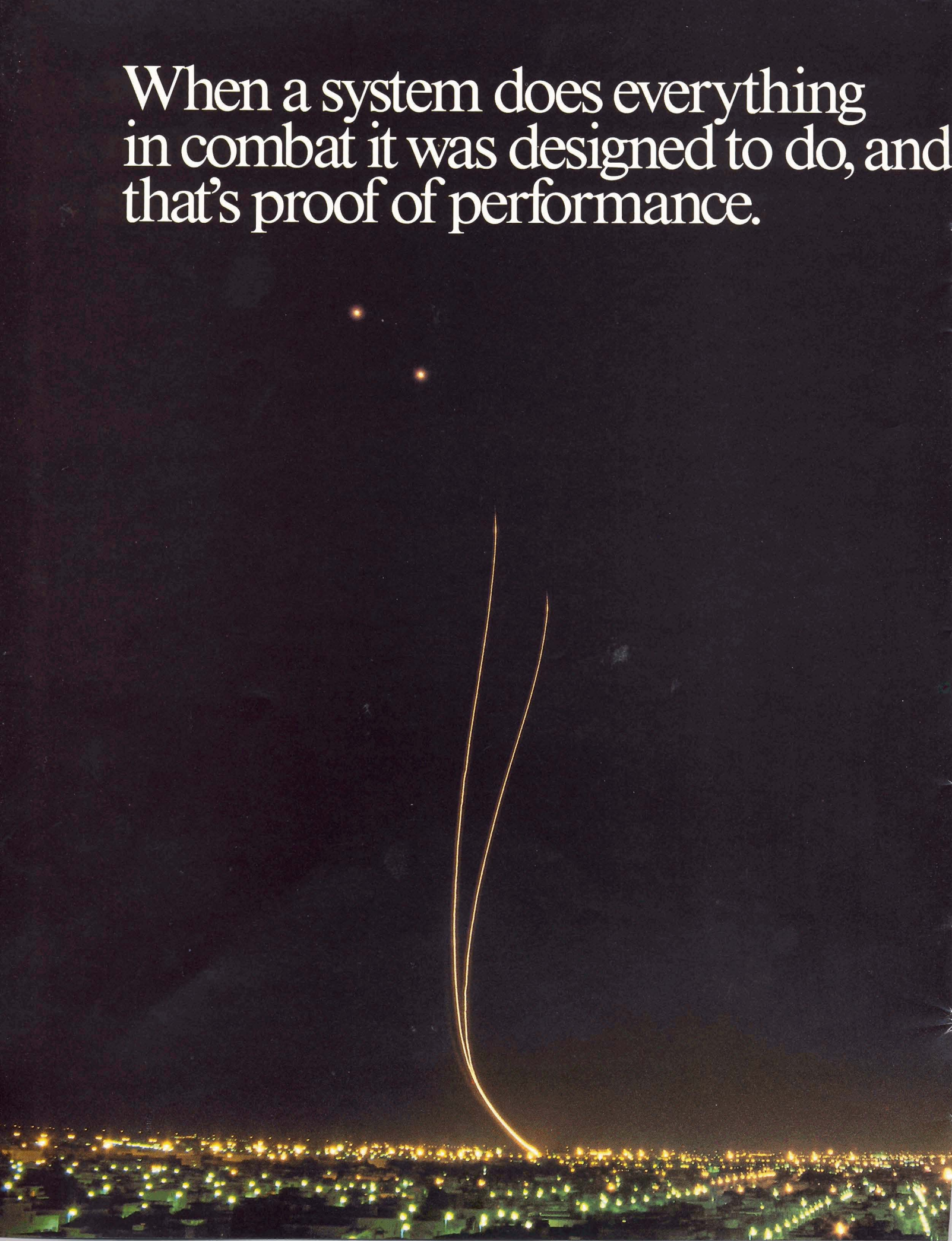

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AIR DEFENSE ARTILLERY NOVEMBER-DECEMBER 1991

FEATURES

DEPARTMENTS

Front Cover Art Courtesy of FMC Corporation

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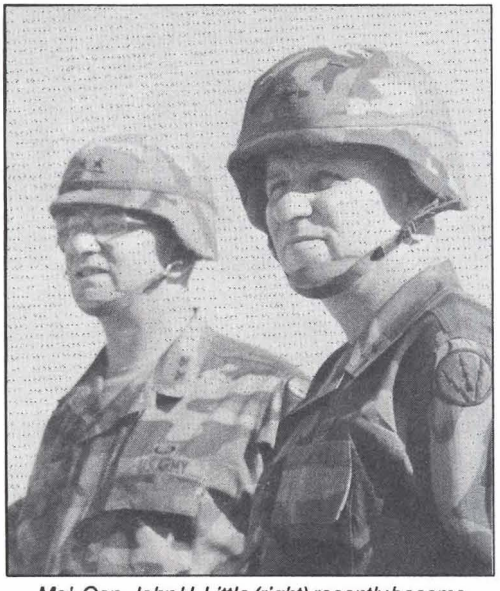
Intercept Point

I am very proud and pleased to have been selected as chief of the ADA branch. As I said in my change of command speech, "I will do everything in my power to make our branch the best air defense force in the world."

Our newspapers and professional journals are full of articles discussing the drawdown of the Army. Much of the debate in Congress centers around cuts to defense programs. As a result, the question I am most asked by members of the branch is, "What is the future of the ADA branch?"

The next few years will be challenging for Air Defense Artillery as we go from an active Army of 760,000 to 535,000 or less. We will share in those cuts, but due to our successes in Desert Storm, we are in a good position to defend our portion of dwindling resources. While other branches fight to hang on to what they have, Air Defense Artillery has a congressional mandate to execute exciting new missions: Theater Missile Defense (TMD) and Anti-Ballistic Missile Defense of the continental United States.

As a direct result of the performance of Patriot in Southwest Asia, Congress increased TMD funding in the FY92 appropriations bill. Congress also mandated the fielding of a land-based anti-ballistic missile shield for the continental United States. Some of these new systems will have a dual capability against the air-breathing threat that will strengthen our high- to medium-altitude air defense capabilities. Funding for these systems has been "fenced" from budget cuts that affect other programs. However, our Forward Area Air Defense (FAAD) systems are not immune to cuts. Fielding these systems will be a difficult but not impossible task. Although there is a perception that the air-breathing threat has diminished, the Army has not assigned FAAD a lower priority. The Association of the U.S. Army recently called for continued ADATS funding and singled out air defense in the forward area as one of the Army's two most glaring operational deficiencies.



Maj. Gen. John H. Little (right) recently became the new chief of Air Defense Artillery.

As AirLand Battle evolves into AirLand Operations, arguments for a stronger air defense grow even more persuasive. Maneuver-oriented AirLand Operations Doctrine depends on air superiority. Lack of it will produce the kind of devastation we saw along the road from Kuwait City to Basrah at the end of Desert Storm. However, we cannot pretend the Air Force does not exist. Instead, we must focus on building a synergism that avoids duplicating capabilities. Since the Air Force cannot intercept missiles and has great difficulty in destroying missile launchers, TMD systems are examples of effective synergism. We must make an equally strong case for ADATS by arguing that it can do something the Air Force cannot do — counter attack helicopters, unmanned aerial vehicles and remotely piloted vehicles.

The FAAD outlook is far from gloomy. Avenger debuted in the Persian Gulf, and the ADATS issue is no longer reliability but affordability. Once funds already spent are subtracted from the ADATS cost-per-unit equation, production models become affordable. Meanwhile, Bradleys (see "SHORAD Fighting Vehicles," page 4) will carry Stinger teams into battle.

The branch's future is bright. The challenges ahead demand top-notch people and will test our leadership. We have the talent and leaders to prevail. I am proud to serve as branch chief as we prepare the "First to Fire" branch for the 21st Century.

MAJ. GEN. JOHN H. LITTLE

ADATS fire units strike a group pose during a break in reliability testing at White Sands Missile Range, New Mexico.

ADATS Aces Reliability Test

ADATS, the centerpiece of the Army's Forward Area Air Defense (FAAD) system, roared past its latest reliability goal during November in a dazzling performance that leaves little doubt the system will meet Army criteria.

In 1,014 hours at White Sands Missile Range, New Mexico, two Martin Marietta ADATS fire units averaged more than 92 hours between mission-related hardware failures, exceeding by 70 percent the 54-hour test requirements.

That was enough to convince the Army to bring the test, originally scheduled for 1,500 hours, to an early conclusion.

"There are a lot of smiles around here lately," said Fred Marion, vice president for Air Defense at Martin Marietta. "ADATS may have made it look easy, but this achievement is the result of long hours and painstaking attention to detail by the ADATS team. They should be proud. It's significant that this was the first test in the current series to take place in the unforgiving desert environment at White Sands."

One more reliability growth test, requiring an average of 85 hours between mission failures, is still scheduled along with several other milestones in the current phase of the program.

In the summer, ADATS will take its "final exam," an initial operational test follow-on evaluation, which is expected to lead to an Army production decision later in the year.

ADATS was selected by the Army in 1987 to serve as the FAAD line-of-sight forward (heavy) component. Mounted on a derivative of the Bradley Fighting Vehicle, the system carries eight laser beam riding missiles. It is designed to protect forces in the forward area from attack by advanced enemy rotary- and fixed-wing aircraft.

ADATS more than doubled its reliability target during an earlier test in July and August. Martin Marietta spokesmen said that successes to date are a good indication that reliability growth is back on track and that Army goals will be met. The Army, however, has never seriously doubted Martin Marietta's ability to correct ADATS' reliability problems. The system has excelled in all other phases of the program, including missile firings.

"The issue for ADATS is no longer reliability but affordability," said Maj. Gen. John H. Little, chief of Air Defense Artillery. In pushing for ADATS funding despite shrinking resources, Air Defense Artillery will argue that only ADATS can counter attack helicopters and that ADATS fire units are affordable once system development costs that can no longer be recovered are subtracted from the cost-per-unit price tag.

Tops in TRADOC

FORT BLISS
TEXAS

1991

COMMUNITY OF EXCELLENCE

Gen. Phil Sheridan wasn't terrifically impressed with Fort Bliss, Texas, when he inspected the desert outpost following the Civil War. Brushing the Texas dust from his boots, the hell-for-leather cavalry leader declared, "If I owned both Hell and Texas, I would rent out Texas and live in Hell." Fort Bliss, the home of the U.S. Army Air Defense Artillery Center and School, has improved since Civil War days; so much, in fact, that the post was recently awarded first place in the U.S. Army Training and Doctrine Command's (TRADOC) Community of Excellence competition for 1991.

As the winner of the TRADOC competition, Fort Bliss will now compete with Army installations around the world for the Department of the Army's $1.5 million first place award.

The Community of Excellence Program began in 1985 to help retain soldiers by providing an ideal living and working environment. In selecting a winner, Community of Excellence Program officials evaluated services and construction projects at Army installations. Fort Bliss was named tops in TRADOC based upon its own documentation of achievements and the reports of a Army Community of Excellence Program evaluator team that visited the post.

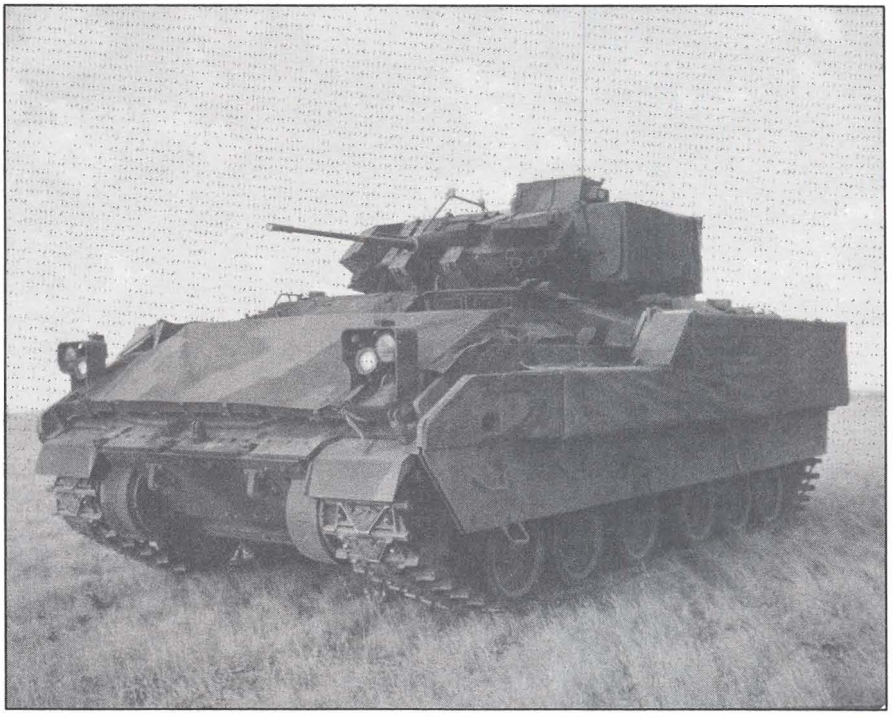
"The Fort Bliss Community of Excellence initiatives are based on the principle that a superb living and working environment and responsive services foster enthusiastic excellence everywhere," wrote former post commander, Maj. Gen. Donald M. Lionetti, in the preface to Fort Bliss' entry documentation. "They strengthen the military unit by producing higher readiness, retention and improved quality. The Fort Bliss community takes pride in providing services and facilities that exceed established standards. Our people's caring attitude, imagination and initiative in developing new services and improving old facilities have set new standards of quality."

"We have made tremendous strides," said Maj. Gen. John H. Little, who recently replaced Lionetti as post commander and chief of Air Defense Artillery. "The Air Defense Artillery Center and Fort Bliss has been transformed over the past several years. Today, it is a wonderful place to be stationed, and it is a place that air defenders stationed away from Fort Bliss can proudly call home. It's nice to see Fort Bliss on top. Our task for the future is to keep Fort Bliss at the pinnacle of excellence."

SHORAD Fighting Vehicles

Bradley fighting vehicles adapted for the air defense role will carry Stinger teams into battle

by Maj. Andrew Akers



The Army will adapt the Bradley fighting vehicle for an air defense role.

The Army's decision to immediately remove the self-propelled Vulcan from Air Defense Artillery's arsenal threatened to leave our heavy divisions with a chasmal void: *no* short-range air defense (SHORAD) while we await the fielding of the ADATS line-of-sight forward (heavy) weapon system. On Sept. 9, 1991, after being briefed by the Commandant, U.S. Army Air Defense Artillery School, the Army's Assistant Chief of Staff for Operations and Plans, Force Development, gave tentative approval to resource this interim requirement with M-3 "basic" Bradley Fighting Vehicles. Air Defense Artillery received final approval on Nov. 8, 1991, to implement this concept and retire the Vulcans.

Since the Army introduced Vulcan into the jungles of Vietnam 23 years ago, it and Stinger have remained as Air Defense Artillery's only weapon systems dedicated to protecting forward deployed combined arms maneuver elements from threat attack helicopters and ground attack aircraft. The Vulcan has never had the opportunity to prove itself as an air defense weapon in combat. In Vietnam, Panama and Southwest Asia, the Vulcan exclusively battled enemy ground targets due to the lack of a credible air threat during those campaigns. In its missions against ground targets, however, Vulcan has always proven to be a very lethal and effective weapon system.

Despite Vulcan's illustrious combat service record, the air defense community has long recognized the self-propelled Vulcan's inherent shortcomings as a viable weapon system against the increasingly capable array of threat fixed-wing aircraft and attack helicopters. The gun's limited range against air targets degrades its effectiveness against a potentially modern threat that possesses a substantial standoff capability. Also, the Vulcan's M-741A1 carrier's well-noted lack of speed, mobility and survivability adversely limit the Vulcan's effectiveness on the modern battlefield. The after action reviews of Operation Desert Storm's Vulcan units only serve to highlight these deficiencies.

These shortcomings, combined with the system's relatively high operating and sustainment costs, nominated Vulcan as a prime candidate for early elimination from the Army. For these reasons, our Army leadership has decided to remove the self-propelled Vulcan beginning in FY92 (see "Vulcan to Get Discharge Papers," page 8). Additionally, Avengers will supplant the towed Vulcans currently fielded in ADA battalions in all light divisions, and Vulcan, in both configurations, will completely clear the inventory by the end of FY94.

ADATS is being developed to replace the self-propelled Vulcan, but its fielding will not begin until late FY96 and will not be complete until FY04. Early removal of the Vulcan, then, leaves a prolonged gap in air defense protection for the maneuver forces. Protecting the combined arms task force and its ability to maneuver on the nonlinear battlefield is vital to fighting and winning in future conflicts and, therefore, a low-cost, effective, *interim* ADA capability was required.

This article, and the ADA School, refer to the Army's *interim* concept as MUA (also known previously as Stinger Under Armor and the Interim SHORAD Concept). MUA is not a new concept. Its value has been proven time and again at the National Training Center, where maneuver commanders found it difficult, ofttimes impossible, to win a battle in the face of a substantial "Red Air" threat without the benefit of Stingers forward on the battlefield. Some units moved Stinger forward by mounting them on Humvees, but teams in Humvees are too vulnerable to enemy fire to be effective in the forward area of the battlefield.

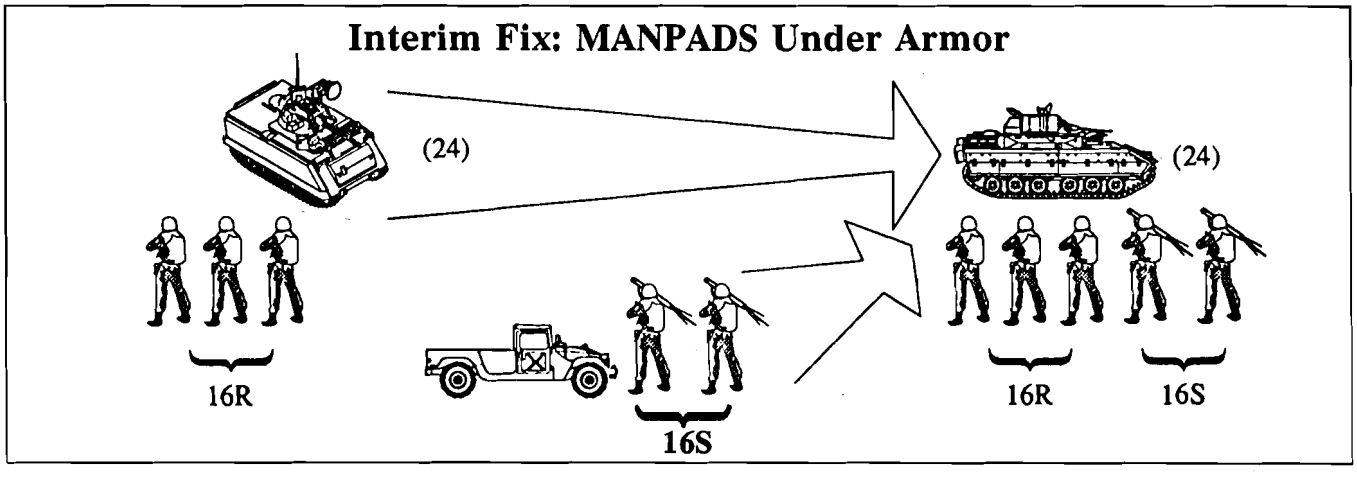
Other units adopted the widespread practice of placing a Stinger team or gunner, and as many missiles as would fit, into an M-113 armored personnel carrier. The M-113, however, was normally not dedicated to this role, which often caused Stinger teams to be ineffectively employed. A temporary solution suggested by the field, and later implemented throughout the force, was to put a single Stinger gunner into a Vulcan as the fourth crewman. This concept employed the Stinger gunner in a position to support the maneuver force, but the gunner's limited capability (one gunner and a maximum of two missiles) and the M-741A1 carrier's inherent weaknesses (previously discussed) proved to be serious disadvantages.

The ADA School's interim solution to bridge the gap while awaiting the fielding of ADATS is the SHORAD Fighting Vehicle (SFV). The SFV is based upon an M-3 "basic" Cavalry Fighting Vehicle that will have a new missile rack capable of safely transporting both Stinger and tube-launched, optically tracked, wire-guided (TOW) missiles. MOS 16R Vulcan soldiers will man the SFV driver, gunner and squad leader (or track commander) positions. Two 16S Stinger gunners will join these three crewmen to round out the SFV's five-man crew.

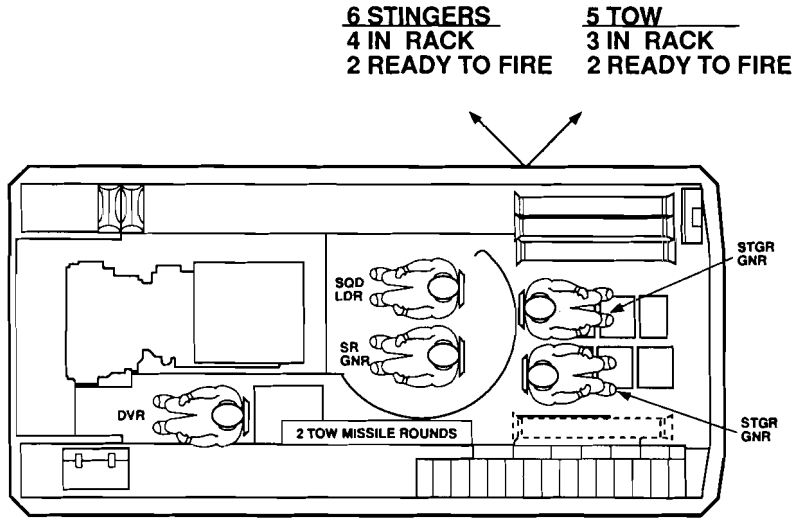
The SFV will be capable of carrying the Stinger team's basic load of six Stinger missiles, a smaller number of TOW antitank missiles, and the M-3's normal basic load of 25mm and 7.62mm ammunition for the turret's cannon and coaxial machine gun. Vehicle and on-board weapon system performance will be identical to the M-3 capabilities. The primary difference is how the SFV will be employed and fought as a dedicated air defense platform.

Tactics

The SFV platoon's basic mission is to maneuver with, and provide air defense for, combined arms task forces. The primary and most capable air defense weapon the SFV carries is the Stinger missile, thus its principal role in providing air defense is to safely deliver and effectively employ the squad's own two-man Stinger team. The squad will use the vehicle's 25mm chain gun and TOW missile launcher as additional air defense weapon systems. The SFV's internal weapon systems also provide the squad with a substantial self-defense capability against ground target threats. Because of the substantial improvements the SFV brings in maneuverability and survivability, the divisional ADA battalion will be able to provide a dramatic increase in air defense protection to the supported force.The Combined Arms and Tactics Department, Fort Bliss, Texas, is writing complete "how-to-fight" doctrine for the SFV battery, platoon and squad levels.



SFV Internal Arrangement



Organization

As an interim concept, MUA will only be implemented in the eight active component heavy divisions. The SFV divisional air defense battalion will be organized into a Headquarters and Headquarters Battery, three SFV/MANPADS batteries and a fourth battery of either pure Avengers or HMMWV-mounted Stinger teams (depending on Avenger fielding schedule).

SFV batteries will be organized into a headquarters section, two SFV platoons, a MANPADS platoon and a maintenance platoon. The SFV platoon will have four SFVs and a fifth M-3 for the platoon leader. The platoon sergeant will have an M-113 armored personnel carrier.

Personnel

Although the overall personnel strength of the battalion will not change until MUA implementation, a number of MOS changes will occur within the battalion. MOS 16R soldiers who successfully complete SFV new equipment training will be awarded a primary MOS of 14R, *SFV Crewman*. Soldiers who will become the SFV's Stinger team will retain MOS 16S. The major change in "faces" will result from integration of soldiers with Bradley maintenance MOSs 63T and 45T. In addition, soldiers with Vulcan mechanic MOS 24M will be transferred to other units or be reclassified into another MOS.

Air Defense Artillery, as a branch, cannot afford to lose the knowledge and experience these valuable MOS 24M soldiers have attained over the past years. Because of their tremendous value to the battalions and to the branch, MOS 24M soldiers may be offered a number of career options. The first is to remain in their divisional ADA battalions and take the SFV new equipment training or a transition course at Fort Bliss. Upon successful completion of either, they will be awarded a primary MOS of 14R and retain 24M as a secondary MOS. A second option will be to transfer the soldiers to a unit that still requires MOS 24M, although by 1995 all ADA battalions will have turned in their Vulcans. The third option will be to reclassify into another MOS.

Training

Although it is always exciting for a branch of the Army to field a new weapon system, the training implications and requirements are immense. Fort Bliss, led by the Directorate of Training Developments, is working diligently to establish the SFV training base and prepare all required documentation. Course developers, mobile training team members and initial school instructors will attend initial Bradley training at the Infantry School, Fort Benning, Ga. Tapping into the Infantry's 10 years of Bradley experience will be critical to the initial success of the MUA concept.

Fort Bliss will establish a new advanced individual training course (MOS 14R, *SFV Crewman*) in time to support the first fielding of MUA. This course will replace the current 16R advanced individual training, which will be gradually phased out. Fort Bliss will also establish transition courses for those MOS 16R and selected MOS 24M soldiers who are in transition to SFV battalions.

The eight battalions receiving SFVs will be fielded using total package fielding (TPF). The training will include approximately six weeks of standard Bradley training, conducted by the Bradley new equipment training team, and a special two-week course on air defense tactics, techniques and procedures conducted by mobile training teams from Fort Bliss.

The unit will then progress into unit-conducted collective training and Army training and evaluation programs, at the conclusion of

which the SFV battalion's parent division will certify the unit.

Materiel

Air Defense Artillery will require no major modifications to the M-3 Bradleys. A new missile rack will be engineered, produced and installed to replace the current TOW missile rack. The new rack, by design, will carry five Stinger and three TOW missiles and will interchange with the old rack using a "bolt in, bolt out" concept. A sixth Stinger missile will ride in its own rack on the vehicle's opposite side. The Project Manager, Bradley Fighting Vehicle Systems, in concert with the Project Manager, Air-to-Air Missile, will manage development, production and fielding of the new racks.

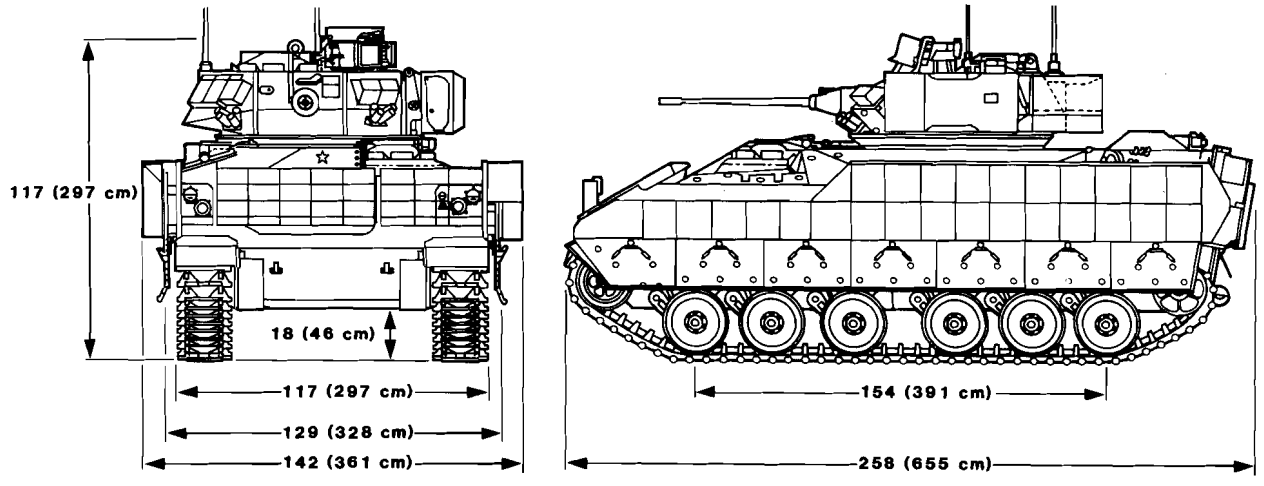
Total Package Fielding

As stated previously, fielding to the ADA battalions will be through the TPF concept, managed and coordinated by the Project Manager, Bradley Fighting Vehicle Systems. TPF attempts to take much of the administrative burden off the receiving command so that they may concentrate on training with their new equipment. This means that prior to hand off to the units, a team of depot and contractor personnel will completely deprocess the vehicles. In addition, complete battalion-level sets of organizational updated technical manuals, prescribed load lists, ammunition supply lists and test, measurement and diagnostic equipment will be provided along with the vehicles.

The fielding plan is being fine-tuned, but plans are to equip the first USAREUR unit during the third quarter of FY92 and the last of eight Armywide battalions by the fourth quarter of FY93.

This schedule allows us to field a new weapon system in less than one and a half years. Implementing the SFV, an effective and essential element of the Army's modernization of mechanized active component divisions, will take the concentrated effort of all those involved.

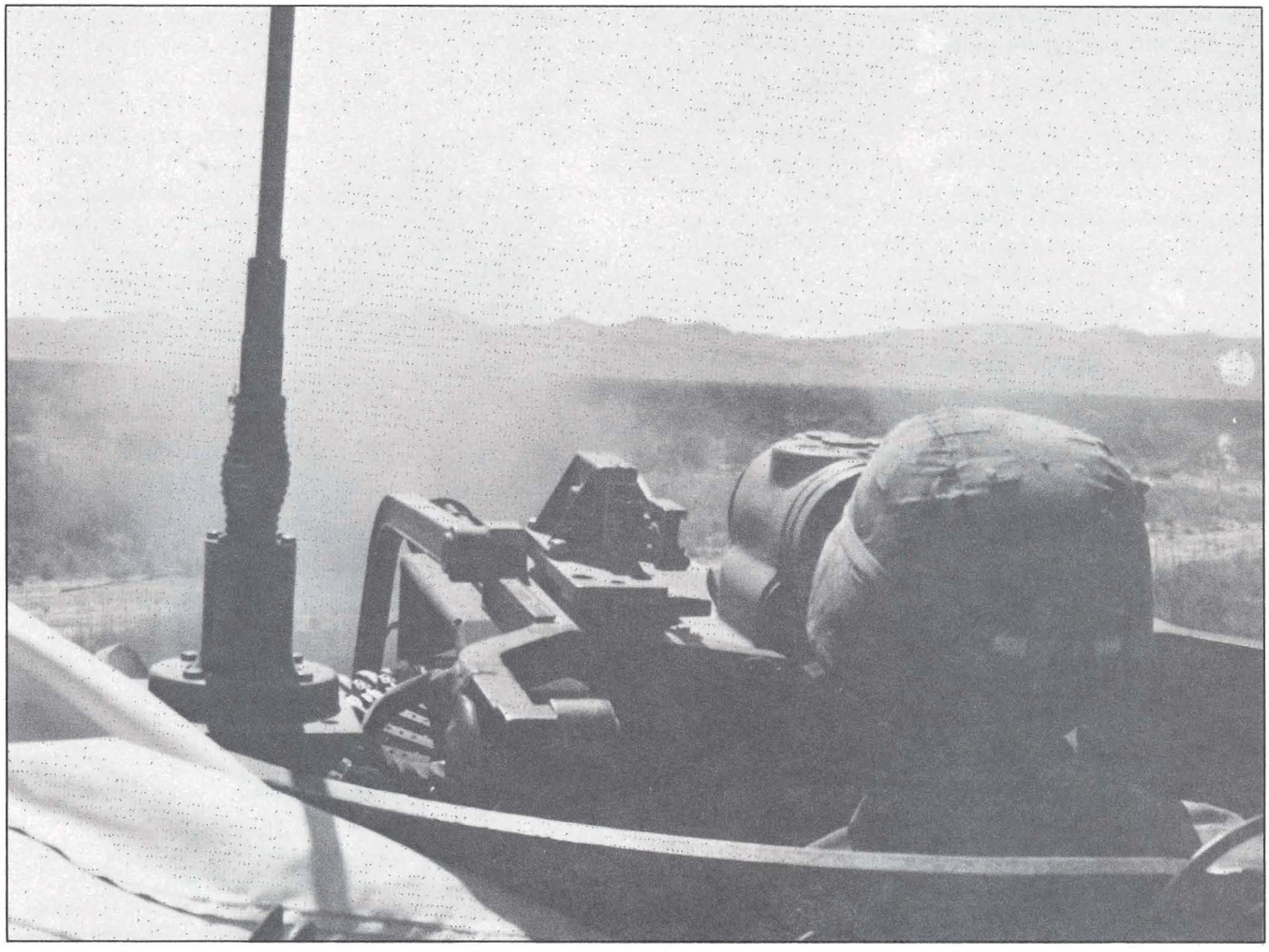
Maj. Andrew Akers is the SFV project manager for Forward Area Air Defense, U.S. Army Training and Doctrine Command System Management Office, Fort Bliss, Texas.



The Bradley Fighting Vehicle was designed to satisfy the Army's requirement for a fast, agile armored personnel carrier able to keep pace with the M-1 Abrams tank. Since production began in 1981, the Bradley has surpassed all performance and reliability requirements.

The Bradley silenced its critics with a superb performance during Operation Desert Storm.

The Infantry and Cavalry Fighting Vehicles are the best known BFV variants, but the BFV is the chassis for several other systems. These include the Multiple Launch Rocket System, Army Tactical Missile System, Electronic Fighting Vehicle system, Firefinder and the Armored Maintenance Vehicle. ADATS, the line-of-sight forward (heavy) component of Air Defense Artillery's forward area air defense system, is also mounted on a Bradley chassis.



Vulcan to Get Discharge Papers

Operation Desert Storm seems almost certain to be Vulcan's swan song. Air Defense Artillery is fielding a new family of forward area air defense (FAAD) weapon systems designed to provide high-tech air defense for the maneuver force. Avenger, which made its combat debut during the Gulf War, will supplant the towed Vulcans currently fielded in ADA battalions in all light divisions. Although the fielding of ADATS, the FAAD line-of-sight forward (heavy) component, will not begin until late FY96 and will not be complete until FY04, Vulcan, in both its towed and self-propelled configurations, will completely clear the inventory by the end of FY94. The Army plans to plug the interim gap between Vulcan's discharge and ADATS' fielding by converting Bradley fighting vehicles into short-range air defense vehicles that will carry Stinger gunners into battle (see story, page 4).

During Vulcan's decades of service, gunners never engaged a single hostile aircraft. The absence of aerial targets, however, didn't make Vulcan crews noncombatants.

Prior to the crisis in the Persian Gulf, towed Vulcan gunners from the 3rd Battalion, 4th Air Defense Artillery (82nd Airborne Division) and the 2nd Battalion, 62nd Air Defense Artillery (7th Light Infantry Division) participated in Operation Just Cause, the expulsion of dictator Manuel Noriega and the restoration of democracy to Panama. With the Panamanian air force destroyed on the ground, the Vulcan gunners lowered their sights, shooting up, among assorted targets, the Panamanian Defense Force 8th Combat Infantry District

Headquarters at Fort Espinar, the Naval Infantry Headquarters at Coco Rico and two 118-foot Vosper gunships.

During the War in the Gulf, Vulcan crews established an ADA monopoly on Purple Hearts while Patriot crews grabbed most of the headlines. Vulcan tracks provided air defense for coalition units probing through the Iraqi berm line prior to the launching of the Operation Desert Storm ground offensive, then roared into Iraq alongside the avalanche of armor and mechanized infantry that crushed the Iraqi army in a breathtakingly short 100 hours.

Maneuvering just behind the lead battle tanks, Vulcan gunners engaged Iraqi infantry, bunkers, light armored vehicles and trucks. A Bravo Battery, 4th Battalion, 5th Air Defense Artillery after-action report described Vulcan crews in action during the final hours of Operation Desert Storm's ground campaign: "Attacking with cannons blazing and crews firing small arms, the Vulcans destroyed numerous light armored vehicles, killed several hundred Iraqi infantry and reduced bunkers to piles of broken concrete and sand."

When the cease-fire was announced, one Vulcan crewman, the victim of an Iraqi anti-tank round, had been killed in action and four Vulcan crewmen had been seriously wounded. They were Air Defense Artillery's only combat casualties.

The Vulcan combat saga that seems to have ended in the desert sands of Iraq began 23 years ago in the jungles of Vietnam. Then, as now, the soldiers on the Vulcan tracks shared with their counterparts on the ubiquitous Duster a disdain for missile air defense artillery. When in a mood to be polite, they referred to soldiers manning Hawk and Chaparral batteries assigned to protect Saigon, Cahm Rahn Bay and other huge base camps against a North Vietnamese air threat that never put in an appearance over South Vietnam as "rear echelon types."

Stunned by its awesome firepower, Vietnam-era GIs who saw the new air defense system in action thought Vulcan was sexy, almost as glamorous as a Spooky or Cobra gunship. Its very presence in South Vietnam was classified, and when it was withdrawn from the battlefield following a short but dramatic combat debut, some GIs took it as a signal that the United States, while willing to place the lives of its soldiers on the line, was unwilling to risk losing a very popular new weapon system in a very unpopular war. Shelby L. Stanton describes Vulcan's baptism of fire in *The Rise and Fall of an American Army*:

> **When Troop A of the "Blackhorse" 11th Armored Cavalry's 1st Squadron prepared to make a sweep down Route 13 past An Loc on January 11, 1969, its six armored personnel carriers were secretly reinforced by a seventh machine just introduced to Vietnam: the Vulcan. This particular stretch of road was well known as an ambush alley, but this time the regiment intended to unleash a surprise of its own if the column was bushwhacked.**

Midway down the highway, the troop's vehicles were suddenly hit by a storm of automatic weapons fire from both sides of the lane. Within the first 15 seconds, rocket-propelled grenades slammed into five of the square-hulled carriers. They skidded to uncontrolled stops under the onslaught of rapid fire and detonations hammering against their tracks and armor-plated sides. Several burst into flames, and none was firing back. The entire column was pinned by the gauntlet of the VC attack.

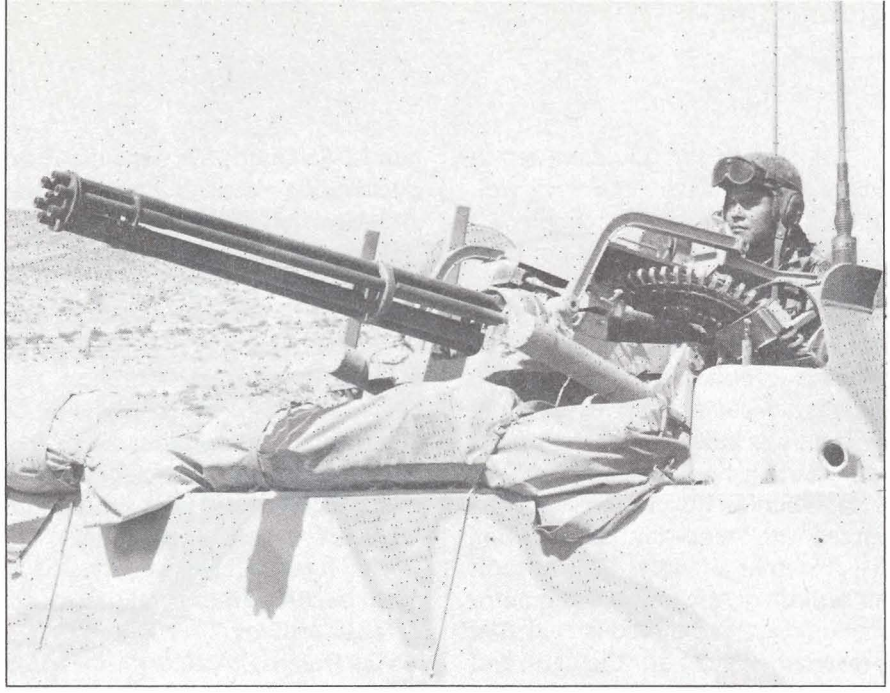
The third vehicle in line started churning jerkily around its immobilized sisters. It stopped to spin its sinister six-barreled gun to the rear. Aiming back down a drainage ditch, the weapon flashed continuously with devastating bursts of concentrated 20mm cannon fire. Inside the beleaguered armored personnel carrier, Lieutenant Wright radioed headquarters that they were under attack. He knew another Vulcan was stationed there and could provide timely ammunition resupply. The ultimate fate of the stranded column depended on the singular ability of his weapon to break the ambush.

He continued to fire the new Vulcan, designed for antiaircraft work, at the "slow" rate of one thousand rounds per minute, the recommended dosage for ground work. Within 15 minutes, the other Vulcan appeared down the road. Already Viet Cong fire from the ambush positions along the ditch had ceased. Other fire peppering the stricken column was becoming sporadic. Both Vulcan carriers moved back to back. The Vulcan gun turret on Wright's vehicle was elevated to 45 degrees and traversed over the driver's hatch, silent for the first time. As the second Vulcan flared into action and spat out a constant stream of packed steel, rear ramps were dropped and spare ammunition belts were rushed over to Wright.

The Viet Cong ambush was silent. Crippled and shocked by the intense volume of fire from a previously unknown weapon system, it had fled. Stanton goes on to add:

> The innovative weapon system had promising convoy security potential, since the introduction of the powerful Vulcan rapid-fire antiaircraft gun could ensure a high degree of vehicular firepower . . . Its slow and tedious development seemed worth the wait, but it remained strictly experimental and was never made available for general use in Vietnam. The soldiers angrily suspected that the Army was simply using the battlefield as a testing ground, afraid to expose critical weapons to possible loss or capture in a war which, by 1969, was obviously dwindling in national importance.

The soldiers were right about the Army using the Vietnam battlefield as a testing ground, and correct about its fear of exposing Vulcan to capture. The Army avoided sending Vulcan to South Vietnam's northernmost provinces where the risk of capture was greater than in the southern provinces. However, they



were wrong in suspecting that the Army limited Vulcan to a short tour because of an unwillingness to expose critical weapons systems in a war of dwindling importance. Vulcan had yet to enter full-scale production when the Viet Cong sprung the 1969 ambush on Route 13. The Vulcans that rescued the cavalry that day were initial production models. They belonged to the 1st Vulcan Combat Test Team, a contingent of five Vulcan fire units manned by hand-picked crews whose mission was to evaluate the new system's combat effectiveness. Testing was to continue into the 1970s before Vulcan went into full production.

Prior to America's intervention in Vietnam, the Army had abandoned its antiaircraft guns in favor of new surface-to-air missiles (it was forced to borrow Dusters and Quad .50s from the Army National Guard to equip the automatic weapons battalions it began deploying to Vietnam in the mid-1960s). The decision to develop and field Vulcan was based on the Army's realization that the Hawk, its newest surface-to-air missile, could no longer intercept, at low altitudes, the new breed of high performance fighter rolling off Soviet assembly lines. At the same time, North Vietnamese antiaircraft gunners had demonstrated the effectiveness of a gun-missile mix in the skies over Hanoi. To avoid the high-altitude Soviet surface-to-air missiles, U.S. pilots were forced to take evasive actions that brought them within the range of the communist's low-altitude air defense guns.

Air Defense Artillery combat developers were enthused with the first limited production model Vulcans that began rolling off Ford Aerospace assembly lines in 1967. Vietnam seemed to offer a logical place to test Vulcan's combat effectiveness. The 1st Vulcan Combat Test Team was deployed to Vietnam for combat evaluation in November 1968. The team consisted of five self-propelled Vulcans, two officers and 21 enlisted men led by Capt. John S. Wilson. They were scheduled to leave Vietnam in March 1969, but stayed an additional 45 days to finish mopping up after the Tet Offensive.

The self-propelled Vulcan (the towed version being developed simultaneously saw no service in Vietnam) had a 20mm Gatling-type gun mounted on a modified M-113 tracked vehicle chassis. With the turn of a dial on the control panel, the Vulcan gunner could select 10-, 30-, 60- or 100-round shot bursts at a rate of 3,000 rounds per minute, or he could select continuous fire at a rate of 1,000 rounds per minute. Since the Vulcan carried 1,200 rounds ready to fire and an additional 800 rounds ready to load, the gunners obviously had to carefully conserve their ammunition.

The Vulcan's computer-driven, solid-state, range-only radar, designed to track aircraft, was of little use in Vietnam, but a six-power scope allowed the gunner to place effective fire out to approximately 3,000 meters. Using indirect fire techniques, the Vulcan's maximum range was 4,500 meters. Each Vulcan fire unit had a seven-power, crew-served night scope.

SSgt. Vincent De Santis, who won a Silver Star as a Duster squad leader and track commander during his first tour in Vietnam, was one of the squad leaders hand-picked to put Vulcan through its baptism of fire.

"When I got back to Bliss, they were putting together a Vulcan team for combat evaluation in Vietnam," De Santis said. "I volunteered. They hand-picked five squad leaders and five crews. The squad leaders were all Vietnam vets like me. The crews were about half professionals and half draftees.

"The tracks went by rail and then by sea to Saigon. We flew over and picked them up. We stayed down south. The Army didn't want to risk sending Vulcan up north. They were afraid one might be captured. We had two sections with two guns to a section. The fifth Vulcan was used as a backup. One gun per section had a working radar. I asked for one of the guns without a radar because I knew the radar wasn't going to be of any use in Vietnam," he continued.

"We did a lot of different things. We pulled convoy security, check-

point security, a lot of perimeter duty and conducted a lot of sweeps with the Cav. We had only four guns to a track and we fired H&I [harassment and interdiction] fires through the night. At places where they had engineer equipment, we buried the track in a hull-down firing position so only the turret was showing. Other times, we set up for the night covered-wagon style. We also fired a lot of demonstrations. The gun was new and it attracted a lot of attention. We fired one demonstration for General [Creighton] Abrams.

"The team did really well. We were there to test the effectiveness and durability of the gun and the gun's performance was excellent. It always worked. There wasn't any mechanical jamming like you get with the Duster. I think the team did a super job," De Santis continued.

"Captain Wilson, the leader of the team, was killed and the lieutenant lost a leg when a rocket hit a bunker in one of the base camps. We had a support team that went around with us for awhile in an APC [armored personnel carrier] with a mini-gun, but it was hit by a mortar. None of the guys on the Vulcan tracks were hit," he said.

In 1971, with Vulcan entering full production, Maj. Gen. H. A. Rasmussen, of the U.S. Army Weapons Command, decided to use the Route 13 ambush described by Stanton to promote the new weapon system. He presented Capt. Harold Fritz, the commander of the ambushed cavalry troop, with a photograph plaque of Vulcan.

Although seriously wounded at the very outset, Fritz, who was awarded the Congressional Medal of Honor for his performance, used the breathing space provided by the Vulcan to regroup his unit, remove machine guns from the destroyed armored cavalry vehicles and set up a defensive perimeter.

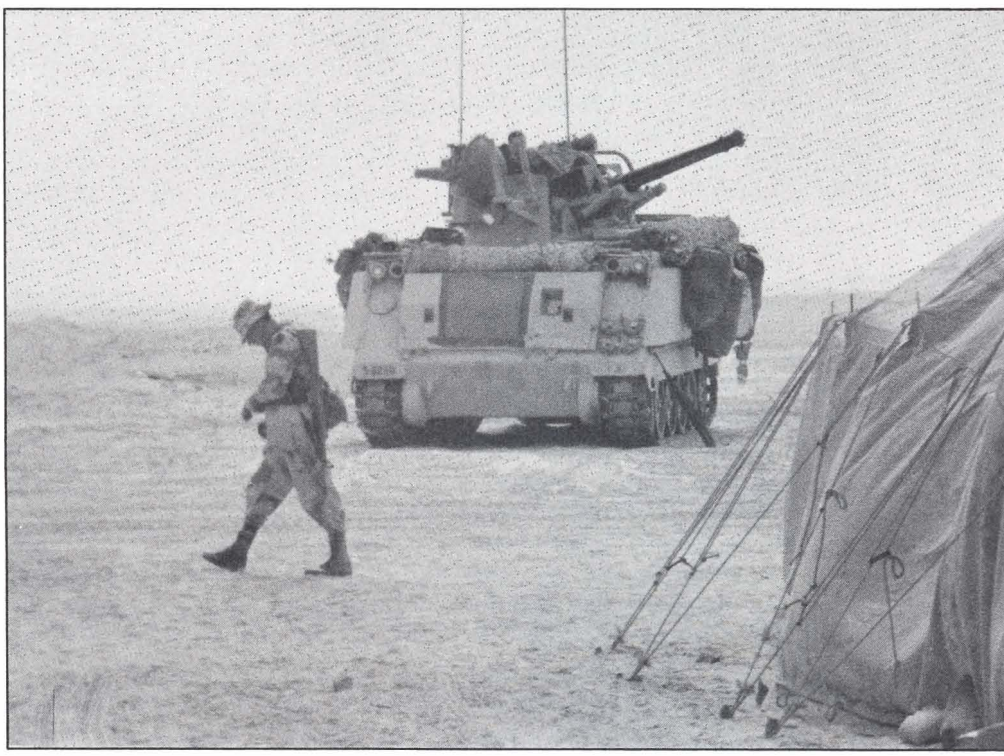
"On that day in Vietnam, it was just a case of having the right gun, at the right time, in the right place," Fritz said. "We just would not have made it without the Vulcan."

The 1st Vulcan Combat Test Team traveled more than 13,000 miles and fired more than 170,000 rounds. Its commander, Capt. John Wilson, was killed during the rocket attack when he gave up his spot in a safe bunker to civilians. Having served with Duster battalions during his first tour of duty, Wilson took an almost mystic view of the automatic weapons battalions that had preceded Vulcan to Vietnam and their impact on a combat arm often denigrated as the "concrete artillery."

"Since 1966, air defense artillerymen have been distinguishing themselves in close combat with the enemy," Wilson wrote shortly before his death. "Operating with front line infantry, armor and mechanized infantry, the artillerymen who man the twin 40mm M-42 Dusters and the multiple machine gun M-55 Quad .50s have made an outstanding contribution to the American effort in Vietnam.

"The fighting spirit born with the Coast Artillery in the War of 1812 (brought to maturity through the Civil War, World War I, World War II and the Korean Conflict) has been reborn on the battlefields of Vietnam," he continued. "After being buried for over a decade in the concrete of Hawk and Nike Hercules sites throughout the world, forward area weapons have again become an integral part of air defense artillery."

Air Defense Artillery's "warrior image" won't vanish with Vulcan. Today's Hawk and Patriot systems can hardly be considered "concrete artillery." Organized into composite task forces, they demonstrated their "fire and maneuver" capabilities during the Gulf War. And today's Vulcan crewmen are destined to become tomorrow's Avenger and ADATS crewmen, carrying ADA firepower to the forward edge of the battlefield.



ADA Forum

Be All You Can Be

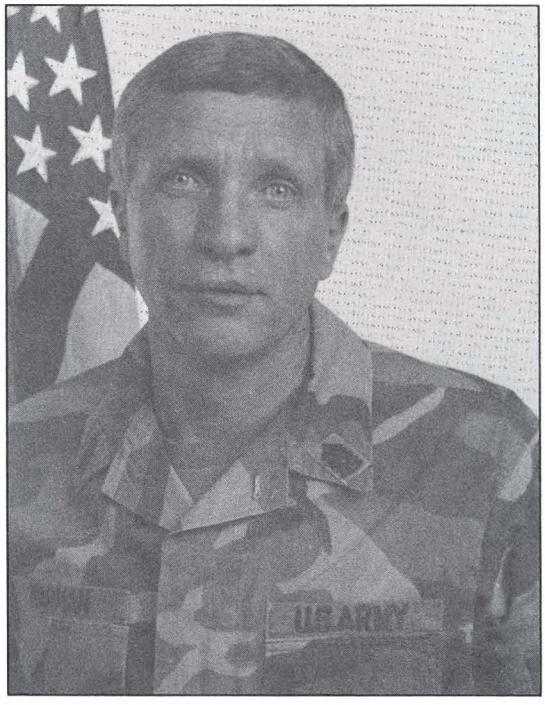
"Be all you can be" is a catchy recruiting phrase the Army is solidly behind — so much so that now it is a must. If you are not "all you can be," your future in the Army may be in jeopardy. I am not trying to scare you, but let's face facts. The Army is in the process of downsizing. Some of you will not survive the cutbacks.

We must get our priorities straight. You are the best trained soldiers in the history of the Army, but if you have shortcomings in civilian education or physical fitness that you are not correcting, you will not survive the cut.

When you came into the Army, you were trained in a military occupational specialty (MOS). Since then you have probably attended advanced schooling in this MOS as well as on-the-job training. But this will not be enough. In the future, civilian education must keep pace with your military training. You cannot just sit still. For you to best apply the technical training and leadership skills taught in the Army, you must develop a solid base in other subjects, such as English, writing, speaking, mathematics, computer technology and management. This is considered self-development and is each soldier's responsibility.

If you entered the Army just out of high school and haven't started your self-development program, now is the time. Civilian education must parallel professional development.

In the past you set your own goals. A new program, titled NCO Leadership Self-Development Career Map, will soon provide a series of education goals that parallel not only your leadership training but also your rank and time in service applicable to your career management field. The Army's NCO Leadership Self-Development Career Map will guide you in making many of these decisions. Facilities and the time required to accomplish your goals will be made available, but you must put forth some effort.



U.S. Army Air Defense Artillery School CSM Robert W. Harman endorses the NCO Leadership Self-Development Career Map for ADA soldiers.

Again, I cannot overstress the need for physical fitness. The newer, smaller Army cannot and will not tolerate soldiers who are physically unfit. Are you falling out on the morning runs, overweight or too physically exhausted to go that extra mile? Remember someone else out there can and will. Have you put off going to the Primary Leadership Development Course (PLDC), Basic Noncommissioned Officers Course (BNCOC) or Advanced Noncommissioned Officers Course (ANCOC) because you could not pass the Army Physical Fitness Test (APFT) or meet the weight limitations? Beginning in January, if you cannot pass the PLDC, ANCOC or BNCOC APFT, or "fat test," you will be returned to your unit and you could be subject to a bar to reenlistment. Remember, PLDC, BNCOC and ANCOC are prerequisites for promotion, and no promotion equates to no retention.

Don't forget to ensure that the correct data on all completed courses and your APFT scores are entered on your records.

Do not fall into the wait-and-see syndrome. Take charge of your career now: get in shape, seek those leadership positions, attend those professional development schools, follow your self-development career map and always keep your records up to date.

BY CSM ROBERT W. HARMAN

"AA fire was so thick in places you could almost walk on it," said bomber pilot Sub. Lt. Iyozo Fujita.

Air Raid Pearl Harbor! This is No Drill!

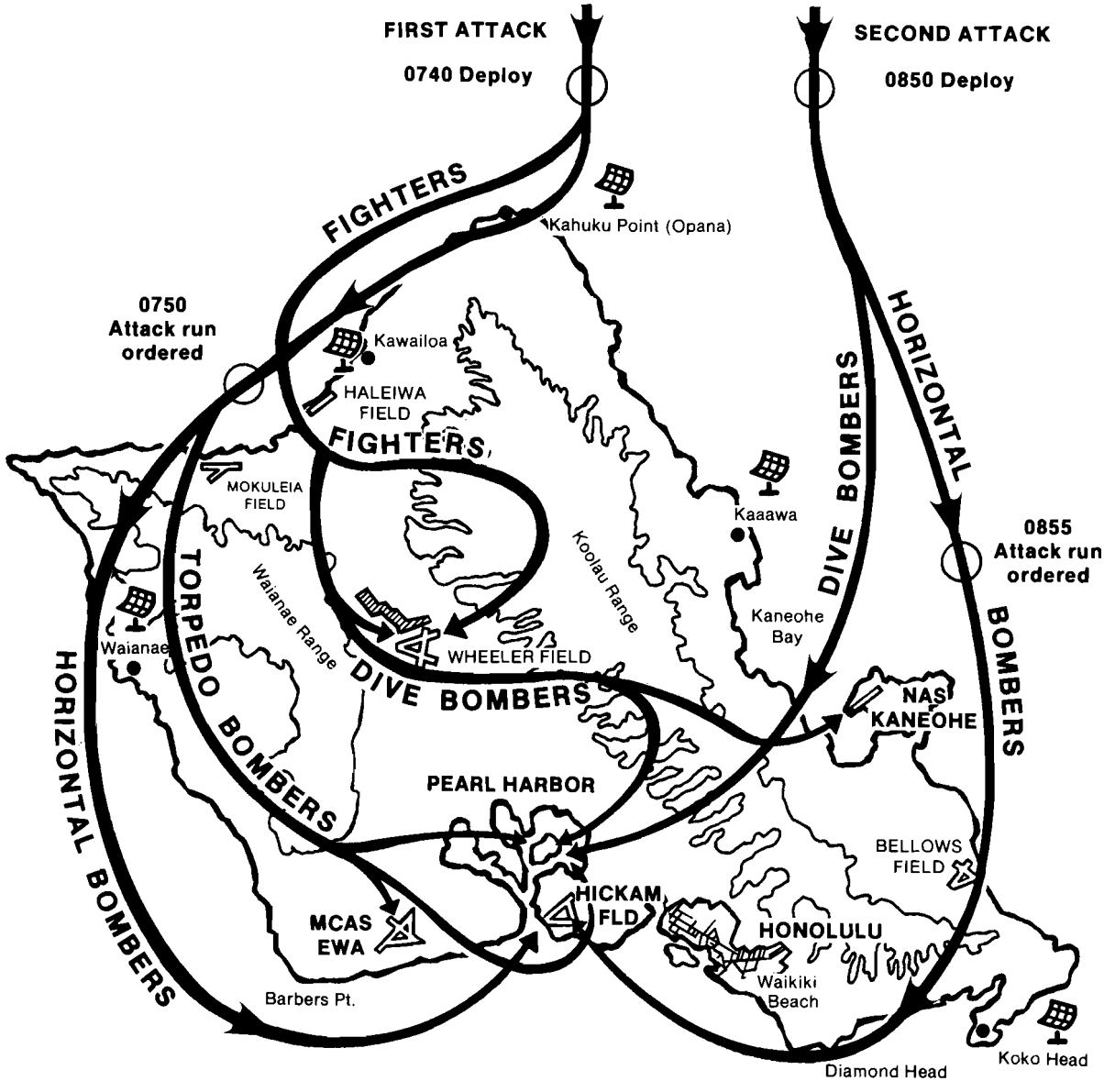
by Hubert L. Koker

During one hour and 40 minutes on the morning of Dec. 7, 1941, Japanese naval air forces, in a surprise attack on American military installations on the Hawaiian island of Oahu, achieved the seemingly impossible: they destroyed 165 aircraft, sunk or damaged eight battleships and killed 2,403 Americans.

When the Japanese struck Pearl Harbor on that fateful Sunday morning, the Army had four coast artillery antiaircraft gun battalions and 140 fighter aircraft on the island. In addition to armed Navy patrol aircraft, there were literally hundreds of five-inch antiaircraft guns and many hundreds more 1.1-inch and .50-caliber automatic weapons on the ships being attacked. Yet of the 324 planes taking part in the attack, only 29 were shot down. What's amazing is not that so many planes were shot down but that, given the surprise and size of the attack, *any* planes were shot down.

In 1940 the War Department, showing concern over the aggression of Japan and the strength of its navy, reinforced Oahu. Among the arrivals was the 251st Antiaircraft Artillery Regiment, the first National Guard unit to leave the United States for overseas duty in World War II. Additional troops manned antiaircraft artillery guns already there, but this was still not enough. By September 1941, the Hawaiian Department had an impressive allotment of antiaircraft artillery guns; further, the department had four antiaircraft artillery regiments on Oahu and was scheduled to receive a fifth before the end of the year. Unfortunately, three of the four regiments were at little more than half strength, and the equipment on hand was considerably less than authorized: 60 mobile and 26 fixed three-inch guns, 109 anti-

Tora! Tora! Tora!



Commander Mitsuo Fuchida was able to signal the code words Tora! Tora! Tora! *(Tiger! Tiger! Tiger!), indicating that the Japanese had achieved complete surprise, because U.S. commanders doubted the Japanese Imperial Navy possessed the skill or audacity to launch a strike so far across the Pacific. However, both sides had underestimated the other. The Japanese failed to appreciate the strength of American resolve that the surprise attack would evoke. For both sides, the results were tragic.*

aircraft machine guns and 20 37mm automatic weapons.

According to the Joint Army and Navy Coastal Frontier Defense Plan of April 11, 1941, the Army was responsible for the inshore air patrol and the installation of a radar net, and the Navy for inshore ship patrols and distant reconnaissance. On that morning no Army aircraft were in the air, and the few Navy aircraft airborne were only flying in areas of Navy operations.

Army antiaircraft artillery on Oahu had the ability, when deployed, to give some protection against high-flying bombers along the south coast (from Diamond Head to west of Pearl Harbor) and around Schofield Barracks and Wheeler Field. The 37mm guns had been in Hawaii for almost 10 months before ammunition for them arrived on Dec. 5. Ammunition was so limited for the antiaircraft machine guns that firing practice was out of the question. About half of the mobile three-inch guns were located on private property and, during the months before the Japanese attack, the crews were carefully kept from trespassing except during practice sessions with the guns. The regiments manning the guns were billeted some distance from their battle stations. After May 1941 ammunition for the guns remained in the Ordnance Depot at all times. However, only the fixed three-inch guns, with boxed ammunition close at hand, were ready for immediate action. The rest depended on getting several hours advance warning of an impending attack.

The possibility of advance warning was dubious. Installation of the Aircraft Warning Service's center and detectors was already delayed. Six fixed radar sets were authorized; of these, three had not arrived and the other three were in different stages of installation and not in service on Dec. 7. The six authorized mobile sets were on hand, but in service for only a few hours each day. Five of these were out of service on the morning of Dec. 7. The sixth detected the approach of enemy aircraft, but higher headquarters never received the warning it relayed.

Communications between the radar operators and the information center was by commercial telephone. There were no communication lines from the Aircraft Warning Service information centers to the various operating centers, except for one telephone line to Wheeler Field. The Army's antiaircraft gun sites were not manned, nor was there a system of ground observers anywhere on the island.

Security at Wheeler Field, where the fighters were stationed, was practically nonexistent. Wheeler had no antiaircraft guns, no air raid shelters and no trenches. As a result of a Dec. 3 sabotage alert, aircraft were parked wingtip to wingtip, with the ammunition removed to make them easier to guard.

At Pearl Harbor, 96 ships of the Pacific Fleet rode quietly at anchor in the morning sun. Fortunately, the aircraft carriers were at sea. Although submarine nets protected the entrance to Pearl Harbor, no torpedo nets protected the warships.

Except for necessary guards and details to man the physical plant, servicemen in Hawaii were at home, in their bunks or slowly beginning a quiet Sunday morning. There was no sense of urgency or fear of an air attack anywhere on the island.

Not so with the Japanese Navy. At 0600, in heavy seas 200 miles north of Oahu, the Japanese carriers *Akagi, Kaga, Soryu, Hiryu, Shokaku* and *Zuikaku* began launching a seaborne air armada the likes of which the world had never before seen: 324 torpedo bombers, level bombers, dive bombers and fighters. The first wave of 103 aircraft began its flight to the sleeping island at 0620. Still undetected as an enemy force, Commander Mitsuo Fuchida gave the word to his flight leaders to attack at 0749. Convinced they had caught the American fleet by surprise, Fuchida ordered his radio operator, Petty Officer Tokunobu Mizuki, to tap out the now famous *Tora! Tora! Tora!* code word to Tokyo. The war had begun.

The attacking planes buzzed like maddened bees in the warm morning air. Fighters and some dive bombers peeled off to attack Wheeler and Schofield. Others split into groups, turned east and struck Kaneohe from the northwest. Still others proceeded south until they were northeast of Hickam and attacked from the east. Within minutes the planes had attacked every major military airfield on the island. They all met at Pearl.

The reality of enemy planes attacking without warning was hard to believe. Many servicemen, surprised at seeing planes flying so low, watched in a stupor until the noise of impacting bombs or bullets jarred them into action. Once the reality of the attack became apparent, training and anger took over their actions. In most cases there was no warning or alarm given or even the command to commence firing. The rule of self-defense was paramount.

The antiaircraft artillery defenses in Hawaii never got the advance warning they needed. None of the mobile three-inch batteries were in position. When they did reach their field positions, ammunition had to be requisitioned from the Ordnance Depot. The Hawaiian Coast Artillery Command alerted units of the 53rd Coast Artillery Brigade (Antiaircraft) at 0810, at least 20 minutes after the raids began. However, within three or four minutes, antiaircraft batteries at Fort Kamehameha (next to Hickam) and at Fort Weaver (on the other side of the

Pearl Harbor entrance) opened fire with small arms. At 0830 a fixed three-inch battery at Weaver began to fire, and similar batteries at Kamehameha and Sand Island (in Honolulu Harbor) opened up against Japanese planes. The Sand Island battery claimed two kills.

Lts. George S. Welch and Kenneth M. Taylor, whose P-40 squadron had spent the night on a dirt strip near Wheeler Field, managed to get their P-40s airborne. They were the only U.S. fighters airborne during the attack. They accounted for four of the Japanese fighters shot down. Theirs were the only two P-40s to survive the attack.

Lt. Fred McKinstry, duty officer of the 98th Coast Artillery (Antiaircraft), was leaving his building at Schofield Barracks when the Japanese planes came through Kolekole Pass on their way to Wheeler Field, the P-40 fighter base.

"They were very low. As a matter of fact, I was actually shooting at them with my pistol with some hopes of hitting them. A two-seater came in very low, strafing the parade field. Staff Sergeant Lowell V. Klatt and Second Lieutenant Stephen G. Saltzman had Browning automatic rifles and both fired at this plane. One of them shot the pilot through the head and the plane bellied into our regimental area where it caught fire. That was supposedly the first Japanese plane shot down in World War II," said McKinstry.

At the main part of Schofield Barracks, where the 24th Division was sleeping after returning from maneuvers the day before, men ran from the barracks and began firing at the planes. They shot down five fighters during the raid — a very good record for small arms.

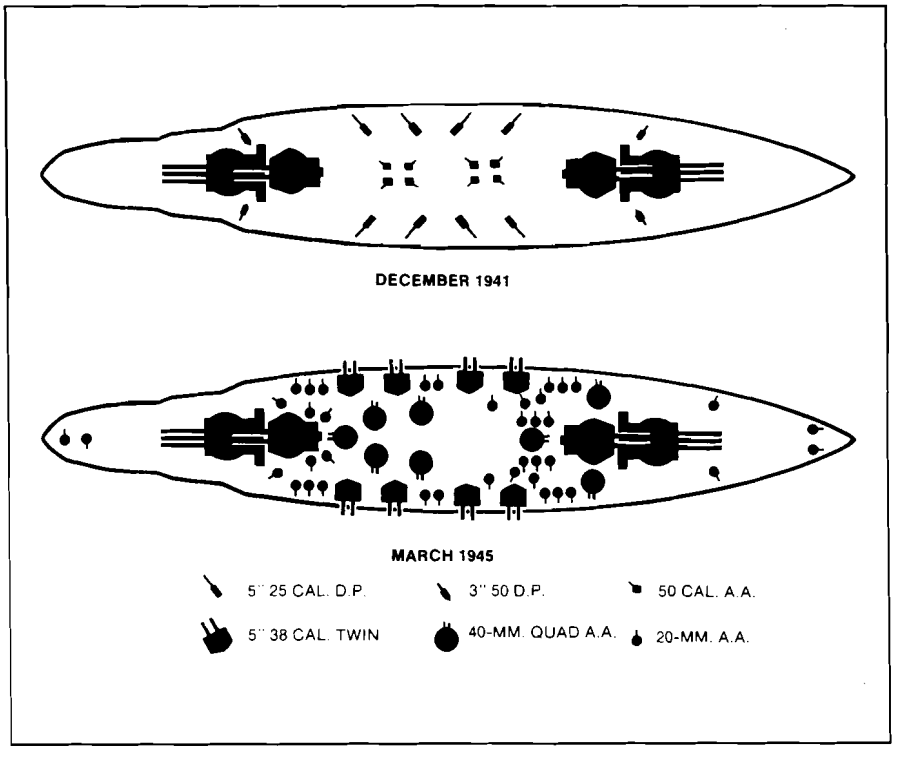
At the Marine Barracks, a change of guard was taking place when the Japanese attacked. The men laid on their backs on the parade field and began firing their rifles at the planes. They shot down one enemy plane.

Although air defense at Pearl Harbor was the responsibility of the Army, no story of the air defense of Pearl Harbor can be told without including the air defense of the fleet by the ships themselves.

Within four minutes after the alarm, "AIR RAID PEARL HARBOR! THIS IS NO DRILL!" went out to all the ships in the harbor, the fleet's guns went into action. The fleet's rapid-fire antiaircraft guns, assisted by Lewis machine guns, automatic rifles and pistols, sent up a formidable, lethal umbrella barrage. However, the battleships were immobile and anchored closely together. Torpedo planes came in so close to the water that guns on the ships were often masked by other ships and shore installations. Still, by 0802, the ships in Pearl Harbor had shot down five of the torpedo bombers. By the time the level bombers came over, the sky was filled with antiaircraft shell bursts. With each passing minute, Pearl Harbor became a more perilous death trap for Japanese airmen.

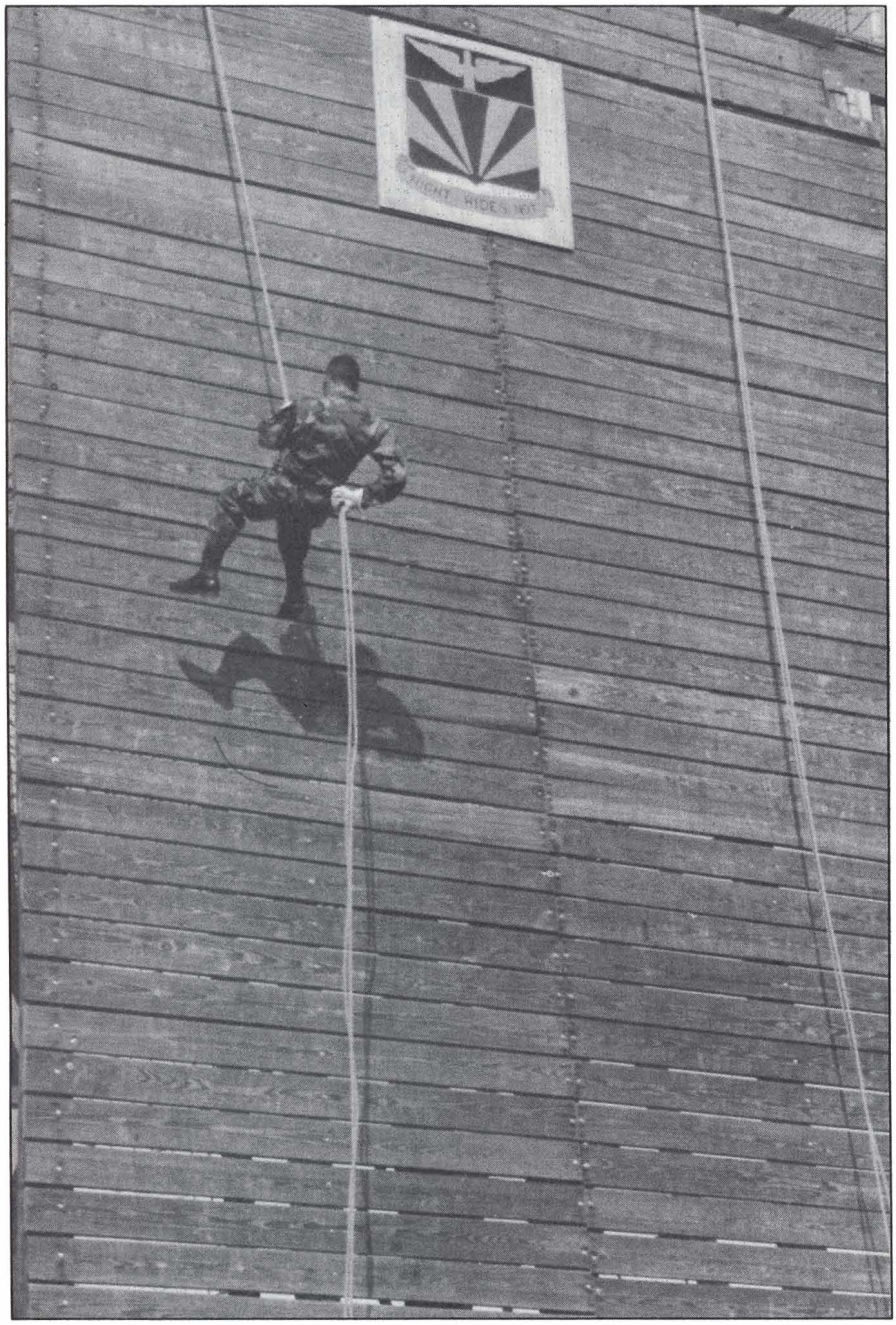
"AA fire was so thick in places you could almost walk on it," said bomber pilot Sub. Lt. Iyozo Fujita. One bomber, which crashed in the Naval Hospital grounds during the second attack about 0900, was struck by shells and machine gun bullets from as many as 14 different ships.

By 1000 it was over, and the Japanese returned to their carriers. Only a small fraction of the Army's antiaircraft artillery had been brought into play that fateful morning, so its contribution, when needed most, was insignificant. For the Navy, the addition of more air defense guns to battleships after Pearl Harbor made a difference. Not a single U.S. battleship was lost during the remainder of the war.



Hubert L. Koker is a member of the *ADA* magazine editorial staff.

Air Defense Artillery's



An advanced individual training student rappels down Fort Bliss' Victory Tower.

by CW0 3 David Westfall
Photos by Tom Cooper

The U.S. Army Air Defense Artillery School, Fort Bliss, Texas, has designed a situational training exercise (STX) to cut training costs, compressing critical task training (CTT) and the advanced individual training (AIT) common task requirements test (CTRT) for Stinger gunners and Avenger crew members into a single, one-day training extravaganza.

The revised end of course comprehensive training course is destined to become the standard for all air defense MOS training, and may one day be adapted throughout the U.S. Army Training and Doctrine Command's combat arms service schools as the Army contends with shrinking training funds.

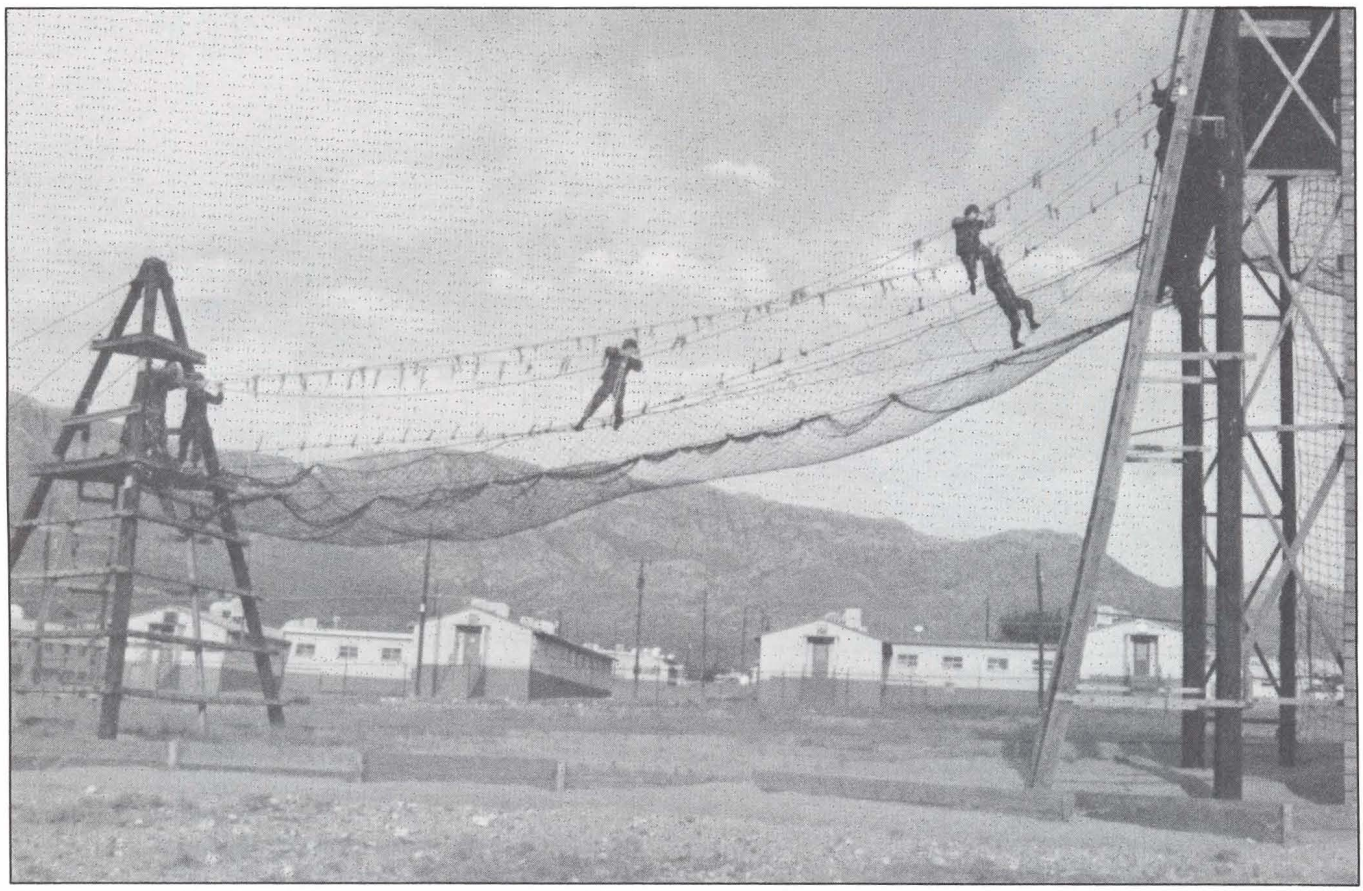
The STX day of reckoning begins when student soldiers, clad in battle dress uniforms and equipped with Kevlar helmets, load bearing equipment, rucksacks, full canteens, one meal ready to eat, protective masks with M-8 paper and M-58 kits, black gloves, MOPP suits, mask inserts, M-16 rifles and first aid pouches, arrive at Victory Tower, the STX course's dominant terrain feature. Instructors from the 2nd Battalion, 6th Air Defense Artillery, and drill sergeants from the 1st Battalion, 56th Air Defense Artillery, brief the students on the challenges that await them, break them into teams of two and pass out scoresheets, maps and a protractor to each team.

New 'Day of Reckoning'

Under the watchful eyes of four safety NCOs, the students, by teams, traverse the Victory Tower's three rope bridges and rappelling wall. As each team completes its turn on the tower, four drill sergeant evaluators, positioned off to the side of the tower with four first aid dummies, test the students' first aid competence. Told that an individual has just fallen off the tower and fractured a leg, the students must successfully splint the fracture and treat the dummy for shock. Each team member is issued a magazine and three dummy rounds which they must properly load in their M-16s. The evaluators mark and sign the scoresheets and send the two-man teams to the motor pool.

At the motor pool, the two-man teams are evaluated on their ability to perform preventive maintenance checks and services on the M-998 truck and communications equipment, enter a radio net and send a radio message.

One team member enters the net while the other sends the message. Both tasks require the students to properly use alphanumerics. An evaluator acts as the net control station operator, providing the proper responses. The evaluator signs the scoresheets as teams complete the final task, and gives them the grid coordinates of the ammunition supply point (ASP).



Advanced idividual training student soldiers negotiate one of the Fort Bliss, Texas, Confidence Training Course's three rope bridges.

Another evaluator meets the teams at the ASP, signs them in and evaluates each team member on the clearing of their M-16 rifles, a task that simulates the clearing of weapons before entering an ASP. The teams then enter the ASP where instructors evaluate them as they perform critical checks on a Stinger missile, convert missile rounds to weapon rounds by attaching the gripstock and perform a polar plot leading them to the next station.

The teams leave the ASP with one weapon round and cross Dyer Street, the chief avenue through Fort Bliss' AIT area, on their way to the Map Reading and Identification, Friend or Foe (IFF) Site. They are met by drill sergeants who require them, individually, to apply a field dressing, a pressure dressing and a tourniquet to first aid dummies. Having completed these tasks, the student soldiers continue to the Map Reading and IFF site behind Soldier's Hall. Once logged in, they are evaluated on their ability to identify terrain features, determine grid coordinates, convert meters to miles and program the IFF.

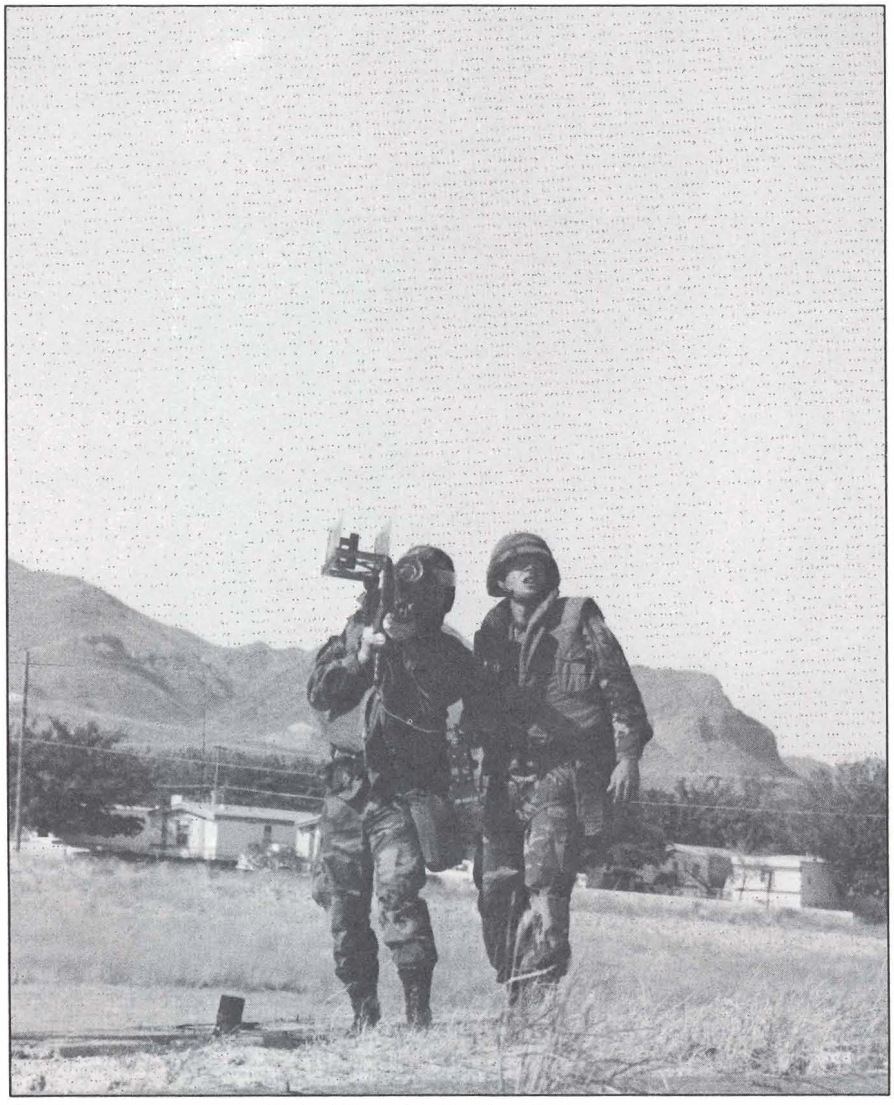
Leaving their weapon rounds behind, the students move to a covered dining area to take a break and eat their MREs prior to moving to the Primary Site.

To reach the Primary Site, teams must cross Patriot Freeway — a highway renamed to honor the performance of Patriot battalions during the Gulf War — on an overpass. An evaluator waits at the far side of the overpass with four AT-4s. He tells the students that they have just come under fire from a silhouette positioned at 200 meters and instructs them to return fire. The students prepare the AT-4s for firing and, upon the command not to fire, restore them to the original carrying configuration. The students then continue to the Primary Site.

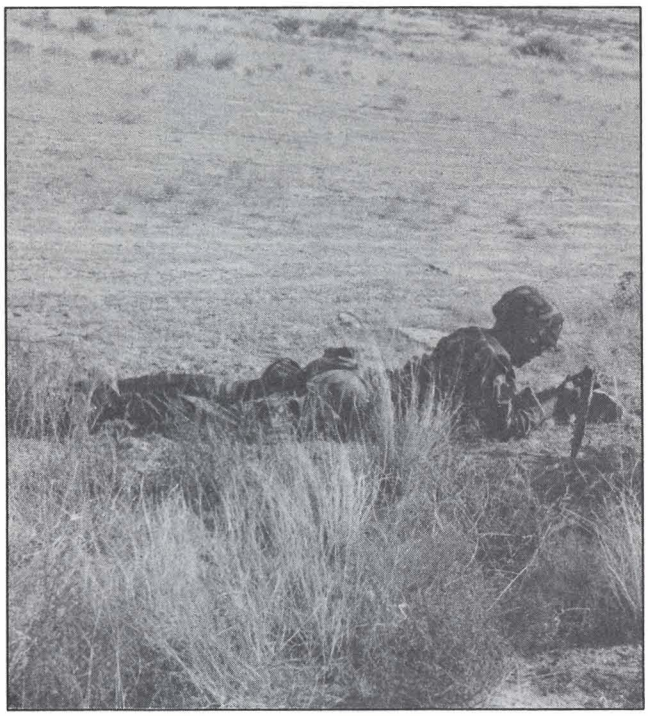
As teams reach the Primary Site, six evaluators grade them on eight CTT and CTRT tasks. The students determine a magnetic azimuth and primary target line, prepare their weapons for firing, engage remotely controlled aerial targets and perform hangfire and misfire procedures. They also employ and recover M-18A1 Claymore mines and encode messages. Having completed the Primary Site evaluation, the students move toward the Alternate Site.

As teams approach the Alternate Site, a pre-positioned evaluator yells "Gas!" The evaluator rates the students on their ability to don and wear their protective mask and tests their ability to recognize and properly react to NBC markers representing chemical or biological hazards by donning their MOPP suits.

The students, clad in their MOPP suits, perform self-aid against nerve agents and decontaminate their skin and equipment. They are also evaluated on manual short-range air defense control system plotting and visual aircraft recognition. Finally, the students must properly store their mask in its carrier. Removing their MOPP suits, the students move to the Basic Skills Test (BST) Site.



Students engage targets with the Stinger tracking head trainer.



Clockwise from top left, students set up a Claymore mine, demonstrate visual aircraft recognition skills and encode messages.

At the BST site, a drill sergeant rates students as they perform a safety check on a hand grenade and employ a grenade by tossing it into a pit. The students proceed to the Move Under Fire Lanes, where they simulate clearing a jammed M-16 while under fire. Moving to their last stop, the arms room, the students demonstrate how to maintain an M-16 and perform functional checks.

The teams turn in scoresheets and move to a classroom where they await the arrival of other teams. Evaluators tabulate team scores and select a winning team.

After three STX iterations, AIT instructors are convinced the STX ensures AIT graduates arrive at their first duty station possessing the skills they need to perform collective training tasks.

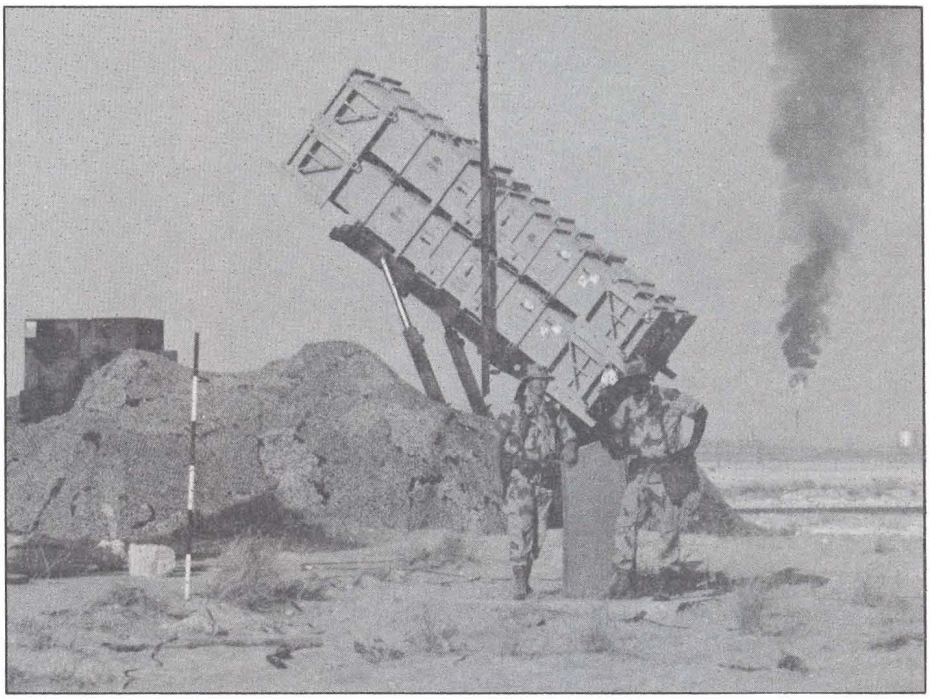
CWO 3 David Westfall is the Stinger Branch Chief, Forward Area Air Defense System Training Division, 2nd Battalion, 6th Air Defense Artillery, Fort Bliss, Texas.

Vapor Trails

Patriot Diplomacy

In past eras, whenever heightened tensions threatened to boil over into active hostilities, the United States dispatched gunboats to demonstrate U.S. resolve, but today "Patriot Diplomacy" seems to have replaced "Gunboat Diplomacy."

U.S. Patriot units deployed from Germany to Saudi Arabia in September 1991 following a series of tense standoffs between Iraqi soldiers and United Nations inspection teams. More than 1,250 soldiers and 24 Patriot launchers drawn from the 1st and 5th Battalions, 7th Air Defense Artillery, deployed as part of Operation Determined Resolve, an operation designed to ensure Iraqi compliance with UN resolutions that call for the destruction of Saddam Hussein's ballistic missiles and nuclear, biological and chemical capabilities.



During the Gulf War, Patriot units deployed to Saudi Arabia, Israel and Turkey played a major geopolitical role by defending population centers against Iraqi Scuds. More than 1,250 soldiers and 24 Patriot launchers again deployed to Saudi Arabia following the war when tense standoffs between UN inspection teams and Iraqi soldiers threatened to rekindle hostilities.

Deployed to Saudi Arabia, Israel and Turkey during the War in the Gulf, Patriot battalions played both a tactical-strategic and geopolitical role. The encore appearance of Patriot fire units in Southwest Asia seems to validate post-war speculations that Air Defense Artillery, due to the defensive nature of its systems, may become the combat arm the nation will most often call upon to "show the flag" in trouble spots around the world.

Located at three sites in Saudi Arabia, the Patriot units come under the command of Headquarters, 94th ADA Brigade, formerly based in Kaiserslautern, Germany. The 108th ADA Brigade has taken over administrative tasks for the brigade's soldiers remaining in Germany.

Lt. Col. Frank Machi, deputy commander for air transportation at Rhein Main Air Base, called the deployment a "tremendous joint service effort." A total of 89 C-5 missions and 27 C-141 missions from Rhein Main and Ramstein Air Bases moved the

Sergeant York Reincarnated

The cancellation of the Sergeant York Gun program may have been a traumatic experience for Air Defense Artillery but, it turns out, the money spent on the ill-fated system wasn't entirely wasted. Today, U.S. Navy pilots train against Sergeant York fire units to learn how to defeat enemy air defenses.

When the Sergeant York program was canceled, the U.S. Naval War Strike Warfare Center, located at Naval Air Station, Fallon, Nev., purchased several prototype Sergeant York fire units to track and "engage" attacking aircraft in training exercises. When a pilot does not believe he has been shot down, the center rolls the videotapes made by cameras mounted alongside the Sergeant York gun sights.

soldiers and more than 6,000 tons of cargo for the two Patriot battalions in less than five days. The first deployed unit achieved minimum launch capability within 40 hours of notification. The deployment was a joint effort at Bitburg Air Base as well.

According to Maj. Kevin L. Silvia, 5-7 ADA's rear detachment commander, the first 5-7 ADA unit left the air base only four hours after final notification, the quickest deployment of a Patriot element to date.

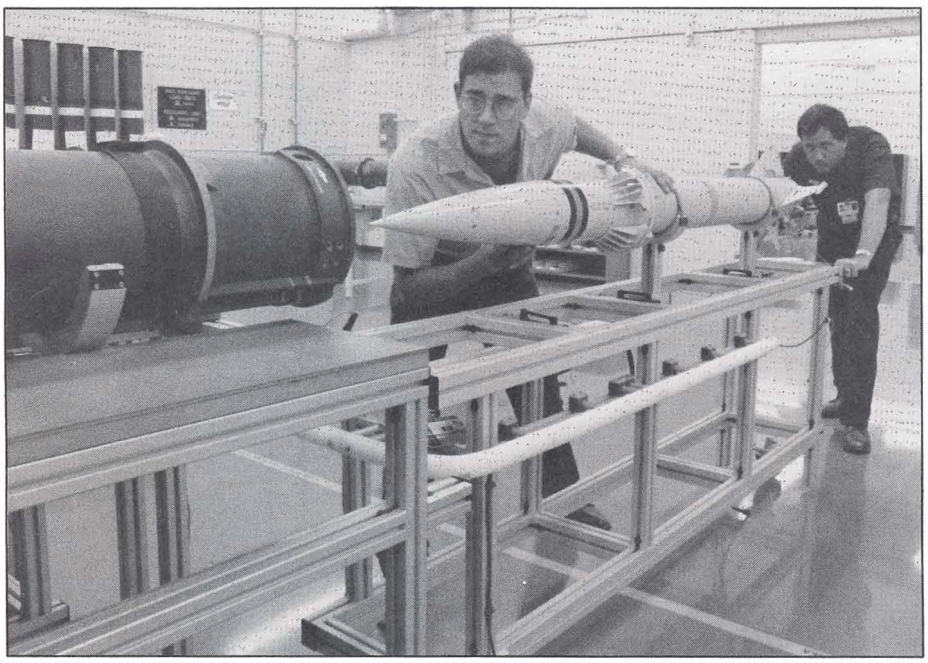
It was the first time around for 5-7 ADA, which did not deploy during the Gulf War. Capt. Norma Combs, 5-7 ADA rear detachment operations officer, said, "everybody wanted to go. Morale was high . . . the hardest part was trying to POM [prepare for overseas movement] everyone so quickly. When we began to deplete our transportation, the air base stepped in and helped us out. We had never done this before, so I was surprised everything went so smoothly."

Orders to deploy brought the 1-7 ADA, which deployed units to both Turkey and Saudi Arabia during the Gulf War, a sense of deja vu. According to 1st Lt. Lori K. Tompos, rear operations personnel officer, 1-7 ADA's prior deployment during the war made the redeployment go smoothly. "It really helped us to have had an established plan from Desert Storm," she said. "The data base just needed updating; we already knew how much you could load on an aircraft and the things we needed to take."

Hardest hit by the sudden deployment were soldiers of D/E/F/5-7 ADA and their families. These soldiers, from 4-7 ADA, had just been reassigned to 5-7 ADA following a reorganization of Patriot battalions. Many had left families behind in Dexheim until they could find housing in Bitburg. Other 4-7 ADA soldiers who were guarding Patriot equipment in Turkey were pulled back to Germany and redeployed to Saudi Arabia.

Frequent communications with deployed soldiers has helped families cope. 5-7 ADA has set up a mail system to send letters directly to the unit.

BY KATHY CUTFORTH



Martin Marietta technicians load the first missile, delivered Oct. 1, for the Canadian Forces' Low-level Air Defense system. The Canadian ADATS is almost identical to the line-of-sight forward (heavy) mobile air defense system developed by Martin Marietta for the U.S. Army's forward area air defense system.

4-7 ADA Comes Home

The 4th Battalion, 7th Air Defense Artillery, has become the first Enhanced Continental U.S. Contingency Capability (EC^3) unit to redeploy from Germany to the United States.

The EC^3 program is designed to strengthen combat capability and deployment flexibility at the corps level. 4-7 ADA will be assigned three new batteries from Fort Bliss, Texas, to form a new Patriot battalion under the 35th ADA Brigade at Fort Lewis, Wash.

The battalion was informed of its deployment to the United States shortly after their return to Germany from their Gulf War deployment in Turkey. A/B/C/4-7 ADA were reassigned to 5-7 ADA at Bitburg, Germany, in August. The 4-7 ADA advance party arrived at Fort Lewis in September and was followed by the remainder of the unit in October.

New Launcher For Patriot

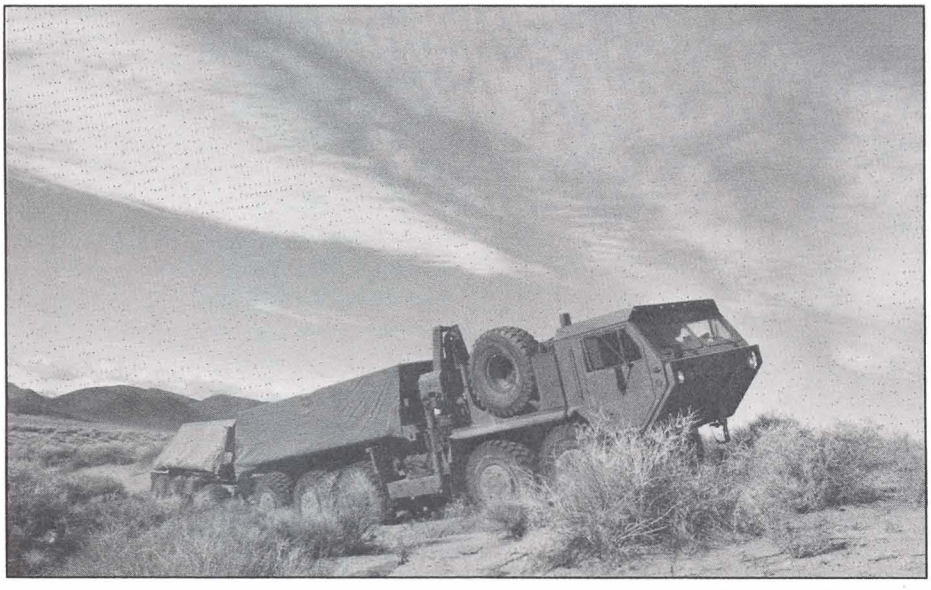
What if competition for space aboard U.S. C-5 Galaxies, the largest transports in the Air Force inventory, had restricted deployment of Patriot missile batteries during the Gulf War? Martin Marietta Corp. has begun work on a new Patriot launcher that will make the system easier to airlift and more mobile once it is on the ground.

In October, the company's Electronics, Information & Missile Group received a contract from Raytheon, the Patriot's prime contractor, to develop a launcher that will upgrade the system's transportability and mobility. The new launcher, almost 20 feet shorter and about 18,000 pounds lighter than the current one, can be transported aboard any of the Air Force's 247 C-141 Starlifters. This more than triples the number of aircraft able to deploy Patriot. Presently, fully assembled air shipment is limited to 115 C-5 Galaxies.

Jack Black, a Martin Marietta packaging engineer, puts the finishing touches on his scale model of the improved Patriot launcher.

The new launcher configuration will signficantly reduce reload time. The new launcher fits Oshkosh Truck Corp.'s M-1704 palletized loading system (PLS) truck. The PLS allows fast, automated loading while its all-wheel-drive improves mobility. The current launcher requires a separate transport and crane for reloading operations. The contract calls for design, fabrication and testing of two prototype launchers and two additional units for transition to production. The contract may lead to a production contract for 120 launchers starting in 1994.

"The new launcher will increase the Patriot's value to the nation as an air defense system that can be moved quickly and deployed rapidly anywhere in the world," said Dick Howell, Martin Marietta's Patriot program director.

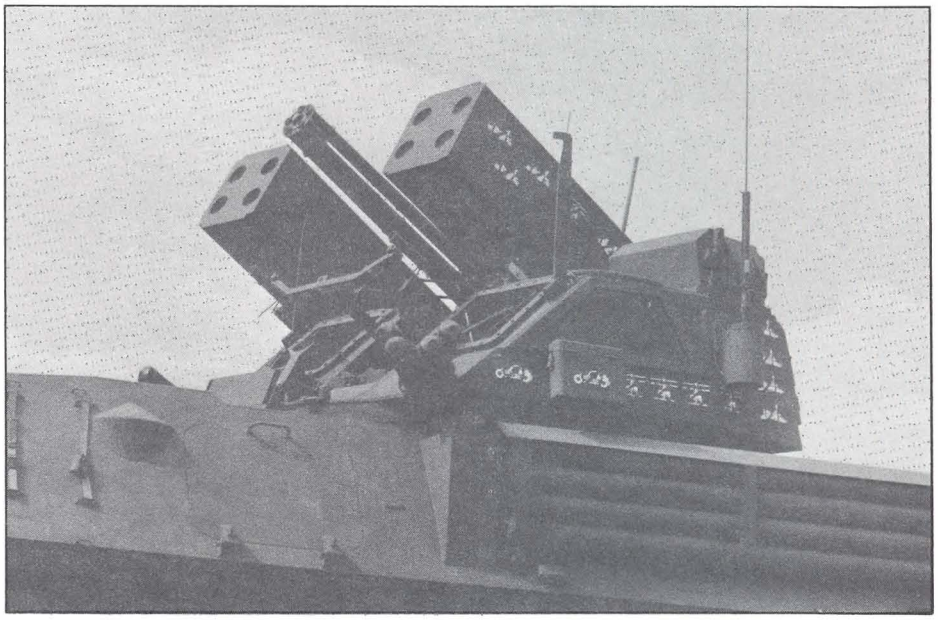


The redesigned Patriot launcher will fit the Oshkosh Truck Company's M-1704 PLS Truck.

LAV-AD Competition

The U.S. Army's Avenger will lose its status as America's only shoot-on-the-move air defense system when the U.S. Marine Corps selects either General Electric's Blazer or FMC's Guardian air defense system as its Light Armored Vehicle – Air Defense (LAV-AD). The LAV-AD will defend maneuvering Marine Corps combat forces from airborne attack and provide ground defenses against light armored mechanized forces.

The LAV-AD is a ground-based, low-altitude, antiaircraft weapon platform featuring a stabilized turret with a shoot-on-the-move capability mounted on an LAV chassis. The system integrates a rapid-fire 25mm automatic gun and four to eight Stinger surface-to-air missiles. The LAV-AD turret will also have the capability to incorprate the 2.75 Hydra rocket system.



The Blazer air defense system is the General Electric entry in the Marine Corps' light armored vehicle competition.

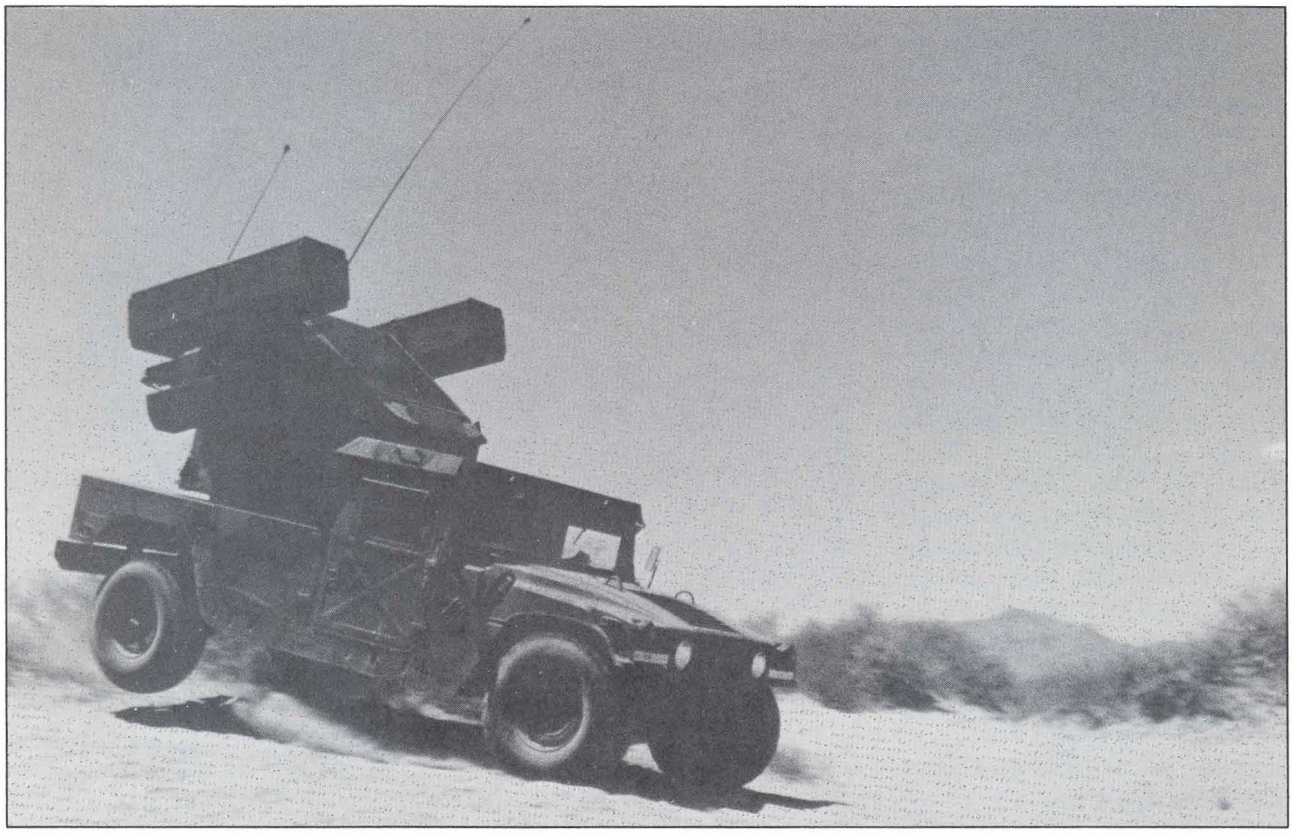
The LAV-AD is being developed as a member of the Marine Corps' LAV family of vehicles. The LAV family consists of 8x8 wheeled, light-armored vehicles that provide significant improvements in firepower and tactical mobility for combat units.

Marine Corps doctrine requires other LAV configurations or mission role variants, such as the LAV-AD, to perform mission roles in an integrated combined arms team. Therefore, all LAVs have the same power plant, drive train and steering assemblies and similar ballistic hulls.

The LAV-AD fire control system consists of a forward-looking infrared sight, a laser range finder, a contrast autotracker, a vehicle navigation system, a fire control computer and various sensors. Target acquisition and tracking feature visual, sensor and external sources integrated into manual and automatic modes.

The Marine Corps expects to award a production contract for 125 systems sometime early next year.

FMC has entered the Guardian in the Marine Corps' light armored vehicle competition.



The Avenger air defense weapon system was recently fielded to the 5th Battalion, 5th Air Defense Artillery, in the Republic of Korea.

Korean Avenger

In October the 5th Battalion, 5th Air Defense Artillery, 2nd Infantry Division, became the third Army Forces Command unit equipped with Avenger when the Boeing Company delivered an undisclosed number of fire units to Camp Stanton, Republic of Korea.

Arriving just behind the Avengers were eight Boeing Defense & Space Group employees from Huntsville, Ala., to train the battalion's soldiers and adapt the fire units for secure voice communications.

"Plans to field units in Korea were in the original contract we signed back in 1988," said Bill Clark, Boeing logistics manager for the Avenger program. "The only change has been the order we are fielding the Avengers. First we fielded Avengers at Fort Bliss [3rd Armored Cavalry Regiment] and Fort Hood [4-5 ADA], Texas, as originally planned. These were the units that used Avenger in Saudi Arabia.

"Then, plans called for us to field Avengers in Europe second and in Korea third," he continued. "But with the new situation in Europe, that was changed, and we are now fielding in Korea second.

"This is a joint operation between us and Fort Bliss," Clark continued. "At the same time we are fielding Avenger, Fort Bliss will be fielding the newest Stinger missile — the Stinger RMP [reprogrammable microprocessor] — that provides improved engagement capability."

The Boeing instructors are conducting Avenger and Stinger RMP new equipment training. The Fort Bliss instructors will then teach soldiers how to use the Avenger in combat situations.

The Boeing Company has delivered 150 of 325 Avengers that are currently under contract with the U.S. Army Missile Command. The delivery of the last Avenger is scheduled for late 1992. The Army may exercise options to field 1,779 Avengers. U.S. Marine Corps and foreign sales would up the total number of fire units to more than 2,000.

Army Leaders Debate Doctrine

"Should we maintain in our doctrine that land power is ultimately decisive?" To generations of soldiers who earned their stripes before the collapse of the Soviet Union and the dissolution of the Warsaw Pact, that might seem like a rhetorical question, but it's one of the questions the Army's top generals, engaged in a year-long doctrinal debate that will determine how the Army will fight battles of the 21st Century, are asking themselves.

That such a question could be seriously contemplated, much less debated, is a clear indication that the Army that emerges from the ongoing force restructuring won't simply be a smaller replica of the Army that went before; it will be an Army that views the world and its role on future battlefields in an entirely new light.

AirLand Battle Doctrine, devised in 1986, achieved spectacular results during the War in Gulf, and the U.S. Army isn't scrapping its central warfighting doctrine. But the Army is revising AirLand Battle Doctrine. The new doctrine, AirLand Operations, will tailor the Army to defend the national interests in a new world order and a global environment in which the threat the Army must defend against is no longer easily definable.

Army Chief of Staff Gen. Gordon R. Sullivan set the stage for a yearlong doctrinal debate in October with his article, "Maintaining Momentum While Accommodating Change," that appeared in the *1991 Army Green Book*. "The new doctrine," wrote Sullivan, "will reflect the shift away from reliance on forward deployment and become the catalyst for adjusting our training, modernization and force design. We must orient our training and equipment for deployability and versatility to meet the challenges of the uncertain, unstable future.

"The design of our units, too, will flow from the requirements of the new doctrine," he continued. "I expect the doctrine development process to be an informed debate over the next year that will yield recommendations on the size and composition of our formations from company to corps."

Speaking at the Association of the U.S. Army Annual Meeting in November, Sullivan warned that those "who believe the future Army will be simply a smaller version of the Cold War Army" are wrong.

"The Army," he said, "is not merely anticipating change, we are not just thinking about it, we are already executing change in very

Doctrinal Comparison

	AirLand Battle	AirLand Operations
Strategy	Deterrence via forward deployment and forward defense	Deterrence via forward presence and power projection
Continuum	War	Peace - Crisis - War
Service Orientation	Army - Air Force	Joint - Interagency - Combined
Levels of War	Tactical/Operational	Strategic Link Operational Focus Tactical Insights
Threat	Soviet	Regional
Intelligence	Preparation of the Battlefield	Preparation of the Theater
Logistics	Tactical/Operational	Operational/Tactical
Campaign Plans	Hostilities	Pre- through Post-Hostilities
Environment	Conventional Battle	All Inclusive

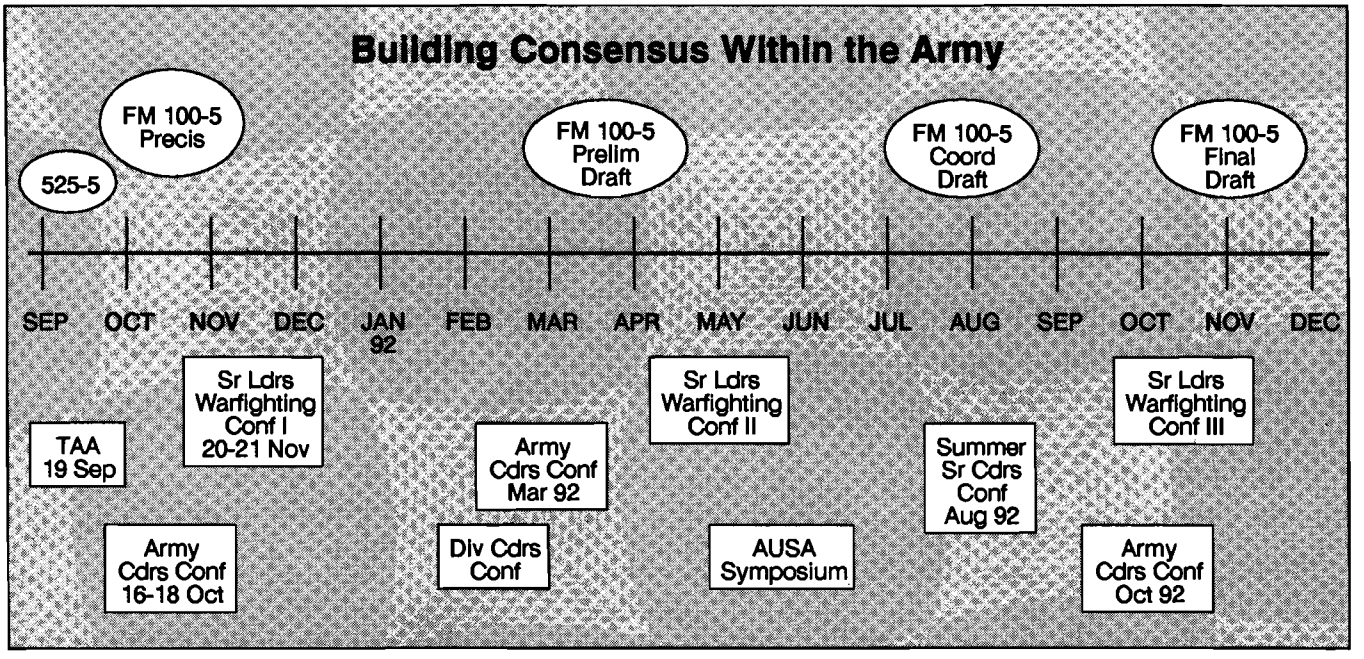
fundamental ways. We are living in a world that has changed more broadly and more fundamentally in the last two years than at any other time since the end of World War II. The Soviet Union, the focus of our defense efforts for 40 years, is no longer a measurable threat. A new national military strategy focuses on regional threats and response to crises primarily with forces based in the United States. Resources previously committed to defense are being redistributed to other national priorities. So, in addition to a shift in strategy, we have a diminishing resource base. Technology, as evidenced in the deserts of the Gulf War and in the display halls of this convention, shift us away from the attrition warfare of the past 100 years and usher in a new era of warfare.

"The Army has faced similar challenges before," Sullivan continued. "In fact, after every major conflict in our history — all the way back to the Revolutionary War — pressures on the Army to decrease in size have also resulted in decreases in effectiveness. The result has been tragic defeats when the Army was not ready for the last war. The decline after World War I led to failure at Kasserine Pass. The loss of effectiveness after World War II led to the defeat of Task Force Smith in Korea in June of 1950. Today we again find ourselves in the wake of great success on the battlefield. We are at peak effectiveness. Victories in the Cold War, Panama and the Gulf War demonstrate that today's Army holds a warfighting edge — an effectiveness advantage — over our opponents. As in the past, we now face a changing environment and the mandate to decrease the size of the Army. This time, however, we must break the historical pattern. We must maintain our warfighting effectiveness as we reshape for the future. My theme as chief of staff is 'No more Task Force Smiths'."

"Today's superb Army," Sullivan continued, "can be fractured if we are saddled now with arbitrary and well-meaning constraints that often produce unintended adverse consequences. The Army has a plan; we must be allowed to execute it without unwarranted fine-tuning and restrictive guidance."

The sidelines of the playing field for the doctrinal debate that will ultimately determine force structure for the Army's individual branches are formed by 1986's FM 100-5, *AirLand Battle Operations*, and U.S. Army Training and Doctrine Command PAM 525-5, *AirLand Operations*, published in August 1991. The debate is expected to produce the first draft of FM 100-5, *AirLand Operations*, in March 1992.

In hopes of heading off outside interference, the chief of staff has launched an Armywide campaign and built upon conferences, articles and speeches to build a consensus for emerging doctrine even as it's debated. The Army's top leaders, including its chiefs of branch, gathered at Fort Leavenworth, Kan., in November for the first of three Senior Leaders Warfighting Conferences. The goals of the November conference were to agree on the scope of doctrinal revision, surface issues for resolution and develop a strategy to build a consensus for the new doctrine throughout the Army, DoD, Congress, industry, the U.S. public and other nations.



The Air Threat in A New World Order

An accurate portrayal of the perceived threat has always been the key to successful weapon system acquisition and procurement bargaining, and for decades the threat has worn a Soviet uniform. The specter of Soviet military power and President Ronald Reagan's frequent allusions to the "Evil Empire" fueled the military buildup of the 1980s, producing the high-tech Army that, during the War in the Gulf, required only 100 hours to reduce the vaunted Iraqi army to a fleeing rabble.

During the Cold War, members of the threat community — the population of military and civilian experts whose job it is to assess threats to the national interest — concentrated their energies almost entirely on the Soviet colossus in the belief that whatever could beat the Soviets could handle any other threat that might come along. They produced the hard evidence the military used to justify spending billions of taxpayer dollars on M-1A1 battle tanks, Apache attack helicopters, Patriot air defense missile systems, Tomahawk cruise missiles and other items of expensive military hardware.

Today, as a result, the collapse of the Soviet Union and the dissolution of the Warsaw Pact has left the once neatly ordered world of the threat community in serious disarray. The Soviet threat scenario no longer plays before the Defense Acquisition Board, and the military is having a tough time producing a credible threat scenario to replace the Red Menace. The absence of a clearly defined threat has already snagged some weapon development programs and threatens to kill others outright. These are programs that military leaders, faced with draconian force reductions, are convinced they need as much, perhaps more, than ever.

The threat community began rebuilding its world in October at the two-day Air Threat in a New World Order Conference. Speakers and panelists from a variety of military organizations and federal agencies, including the Central Intelligence Agency, Defense Intelligence Agency and Military Intelligence Branch, drew more than 300 military and industry experts to Fort Bliss, Texas.

During a series of classified briefings, the threat analysts painted a picture of a world that has grown less perilous, but in which the proliferation of high-tech weaponry has increased the likelihood of regional conflicts. While some of the briefings focused on technological details of existing or proposed individual weapon systems, much of what the analysts said could have been drawn from the pages of *The New York Times* or *Washington Post*.

Soviet President Mikhail Gorbachev, said conference analysts, may succeed in salvaging a loose, or even close, federation from the chaos within the Soviet Union, but the Red Army can no longer be considered an offensive threat. The Soviets, in turn, no longer perceive the West as a threat, but the Soviet Union, or its independent republics, will continue to maintain a strong defensive posture. It's doubtful that the republics, some of which have indicated their intention of building their own armies, would cooperate in any military action outside their borders. Soviet strategic nuclear capabilities are intact.

Soviet weapon industries have not significantly slowed production lines, the analysts said, though this may change as effects of reform percolate throughout the Soviet bureaucracy or as economic pressures mount during the transition to a free economy.

The analysts also predicted that force reductions resulting from the Cold War thaw and the merger of East and West German military forces following the German unification will free mountains of munitions and thousands of weapons for sale to Third World countries at bargain basement prices.

The Gulf War, the analysts said, has already jump-started a new worldwide arms race. A variety of countries, reacting to increased demand, have stepped up the exportation of military technology and hardware, including tactical ballistic and cruise missiles, to Third World countries. Some of the military hardware is sold on the open market, while some of it reaches the

clientele in the hulls of black market freighters with covert itineraries.

The analysts also predicted that the world's nuclear arms club, despite efforts to limit its membership, will continue to grow as the "have-nots" (countries that lack nuclear capability) strive to offset the advantage of the "haves" (countries that already possess, acknowledged or unacknowledged, nuclear stockpiles).

The ease with which coalition pilots obliterated Iraq's air defenses and command and control centers during the Gulf War, the analysts predicted, will motivate existing and aspiring military powers to improve their air defense forces, while the massacre of Iraqi armor formations by fighter-bombers and Apache attack helicopters will motivate them to improve their air forces.

Maj. Gen. Donald M. Lionetti, the outgoing chief of Air Defense Artillery, and Maj. Gen. John H. Little, the new chief of branch, served as keynote speakers at the conference's two luncheons.

Lionetti conceded that "the world might be a safer place," but argued that "it is still a dangerous place." The Soviets may no longer be the enemy, he contended, but their products available for export are the enemy. "With so many high-tech weapons available for export at bargain basement prices, how could we not be worried. I submit we are worried."

He predicted that much of the technology used by and against coalition forces during Operation Desert Storm, particularly attack helicopters, tactical ballistic missiles and cruise missiles, will become standard issue around the globe. "The tactical ballistic missile genie is out of the bottle," Lionetti said. "There's no putting it back in. After what we saw during the Gulf War, can you conceive of any future war in which they won't be used?"

Lionetti predicted "a scramble for resources with the process influenced by doctrinal revision" as the Army adjusts to force reductions and relaxed world tensions. "It's a smaller force but the same geography," he said. The Army's efforts to continue modernization programs and respond to emerging threats, he predicted, will be threatened by shrinking resources and the perception that the threat, rather than having merely grown less ominous, has altogether disappeared. "That's the danger," he said. "There are people who want to listen to that kind of rhetoric."

Little predicted the construction of threat scenarios will grow more difficult as "regional threats around the world" replace the "single, dominant threat" once posed by the Soviet Union, making intelligence-gathering efforts much harder to focus. Warning that emerging threats are likely to be covert in nature, as evidenced by Saddam Hussein's much larger than imagined nuclear potential, he said the threat community can no longer depend on potential adversaries to parade their military hardware; nor can they rely, as in the past, on the hard evidence of overhead photography to lend credibility to threat scenarios. Instead, Little conjectured, future threat scenarios are more likely to feature countries that, rather than possessing significant military capabilities, exhibit the potential to develop those capabilities.

"For example," Little said, "if 'Country X' has an existing light industry, a moderate electronics industry and the ability to import, it can probably build cruise missiles." He warned that once an adversary reveals hidden military capabilities, it will be too late for the United States to develop and field counter systems. "If I had had to build Patriot PAC-2 against the Third World threat instead of the Warsaw Pact, it never would have happened," he continued.

"It will take a world-class threat organization and contractual help to project the threat," Little said. "I'm willing to be the guy to get that started. It's still a dangerous world. We can't get caught behind the eight ball. We can't wait for them to demonstrate a capability and then try to counter it. The American people aren't dumb; they know there are a lot of crazies out there."

Persuading Congress that the future threat may, in many ways, turn out to be a mirror image of U.S. capabilities displayed in the Persian Gulf promises to be difficult. The duel between Patriots and Scuds reawakened the world to the tactical ballistic missile threat and produced a sense of urgency that has put the development of the theater high-altitude air defense system on a fast track. However, the branch may face a tougher challenge in portraying an air threat to justify continued fielding of its forward area air defense (FAAD) systems.

The dismal performance of the Iraqi air force has left the branch little choice but to point to the performance of U.S. cruise missiles, attack helicopters and fighters during the conflict as examples of the air threat it might face on future battlefields. No one, of course, is completely comfortable with such an analogy — it's something like quoting Pogo: "We have met the enemy, and it is us."

The branch, at least, enjoys Armywide support for ADATS, the FAAD line-of-sight forward (heavy) component. The Association of the U.S. Army, stating that "the Army's two most immediate battlefield deficiencies are the inability of the infantryman to defeat armored systems and the lack of adequate air defense for armored forces in the forward area," passed a resolution in November calling for continued ADATS funding.

Career News

The Assignment Process

How does the branch plan an officer's next assignment? Generally, we start work on requests for orders (RFOs) to OCONUS areas approximately nine months from the projected report date, and to CONUS areas about six months out. This means assignment officers start looking "hard" at officers who are about one year out from their date of availability (DTAV) or date of expected return from overseas (DEROS).

Officers who have been counseled by their commanders and have an idea of what they want to do before talking to their assignment officer are usually more comfortable with this process. Since the overall assignment process can start as early as a year out, counseling sessions are most useful when commanders initiate them prior to that time. In some cases, officers who are currently in branch-qualifying jobs may have to move earlier than their DEROS or DTAV.

We can best manage the assignment process by assigning officers *after* their counseling session. We can't always change assignments, but we try hard to assign the right officer to the right job by considering the Army's needs, the officer's professional development and special qualifications, functional area, other considerations and the officer's preference.

We use the requisition schedule at right to support our assignment procedures. We can best explain the requisition schedule using the generic examples below.

May 1991. You are stationed at Fort Bliss, Texas, and are due to rotate OCONUS in May 1992. From the schedule, you see that you are in the 04 cycle (OCONUS). In June 1991, when the 04 cycle begins, your assignment officer begins to look at your file. You should have a preference statement either on file with us or sent to us no later than July 1991. Between July 28 and Aug. 10, your assignment officer will work to match your desires with Army requirements. Normally, you should receive your RFO no later than October 1991.

July 1991. You are stationed in Germany and are due to DEROS in June 1992. Using the same procedure as in the first example, your assignment officer will start looking at your new assignment in January 1992, and will work on your assignment between Feb. 28 and March 10. You should receive your RFO by the end of March 1992.

These generic examples should give you an idea of how we plan your next assignment and the gates we must meet during that process. Operation Desert Storm significantly impacted on the branch's routine administrative procedures, so the assignment process is not exactly following this plan. We expect, however, that personnel actions will return to pre-war levels very quickly.

Assignment Requisition Schedule

CYCLE #	REPORT MONTH	MONTH BRANCH STARTS WORK	WORKING WINDOW	RFO DATE
TO CONUS				
01	JAN/FEB	JUL	28 AUG - 10 SEP	30 SEP
03	MAR/APR	SEP	28 OCT - 10 NOV	30 NOV
05	MAY/JUN	NOV	28 DEC - 10 JAN	30 JAN
07	JUL/AUG	JAN	28 FEB - 10 MAR	30 MAR
09	SEP/OCT	MAR	28 APR - 10 MAY	30 MAY
11	NOV/DEC	MAY	28 JUN - 10 JUL	30 JUL
TO OCONUS				
02	FEB/MAR	APR	28 MAY - 10 JUN	30 JUL
04	APR/MAY	JUN	28 JUL - 10 AUG	30 SEP
06	JUN/JUL	AUG	28 SEP - 10 OCT	30 NOV
08	AUG/SEP	OCT	28 NOV - 10 DEC	30 JAN
10	OCT/NOV	DEC	28 JAN - 10 FEB	30 MAR
12	DEC/JAN	FEB	28 MAR - 10 APR	30 MAY

New Course Schedule

The Battalion Motor Officer Course prepares officers for assignment to positions that have directly related maintenance responsibilities at the unit level (battalion/squadron and below) with emphasis on management and supervisory operations. This course encompasses maintenance management, repair parts supply, troubleshooting, recovery operations and scheduled maintenance services.

The Battalion Motor Officer Course is open to Active Army and Reserve Component captains, first lieutenants, second lieutenants (who have completed the Basic Course and been in the field more than six months), warrant officers and officers of Allied nations.

The four-week course is held 19 times each fiscal year at Fort Knox, Ky. The class quotas are available through all normal U.S. Army Training and Doctrine Command channels. The schedule for all remaining FY92 classes is at right.

Call 502-624-8119/8510 or AV 464 for more information.

BMOC FY92 Schedule

CLASS	REPORT DATE	START DATE	END DATE
003	08 JAN 92	10 JAN 92	07 FEB 92
004	30 JAN 92	03 FEB 92	03 MAR 92
005	13 FEB 92	18 FEB 92	17 MAR 92
006	28 FEB 92	03 MAR 92	31 MAR 92
007	13 MAR 92	17 MAR 92	14 APR 92
008	27 MAR 92	31 MAR 92	28 APR 92
009	10 APR 92	14 APR 92	12 MAY 92
010	23 APR 92	27 APR 92	22 MAY 92
011	07 MAY 92	11 MAY 92	09 JUN 92
012	20 MAY 92	22 MAY 92	19 JUN 92
013	04 JUN 92	08 JUN 92	07 JUL 92
014	18 JUN 92	22 JUN 92	21 JUL 92
015	17 JUL 92	21 JUL 92	18 AUG 92
016	06 AUG 92	10 AUG 92	04 SEP 92
502	20 AUG 92	24 AUG 92	22 SEP 92
503	10 SEP 92	14 SEP 92	09 OCT 92

CY91 Master Sergeant Selection Board

The CY91 selection panel consisted of one colonel (Field Artillery), one lieutenant colonel (Air Defense), two command sergeants major (Air Defense and Field Artillery), and one sergeant major (Air Defense). The panel identified the "best qualified" sergeants first class (SFCs) for promotion from a pool of 64 24T, 88 24R and 339 16Z SFCs. The panel also reviewed 1,303 SFCs with at least one year time in grade, who were not yet in the secondary zone, for the qualitative management program.

The panel used the "whole soldier" concept to select the sergeants, using determining factors such as MOS qualification, physical fitness, leadership training, military appearance, AR 600-9 standards, disciplinary reviews and evidence of potential. The panel specifically looked for NCOs who had taken on tough leadership jobs and demonstrated the potential to deal with training, maintenance and soldier care issues at the next higher level.

The average "fully qualified" soldier's file reflected an NCO of high moral and ethical standards, a hard worker with civilian education beyond high school, and a soldier who spent the majority of his time in troop units.

The panel made several specific recommendations for soldiers approaching a promotion window:

- Seek demanding leadership jobs as platoon sergeants or first sergeants.
- Obtain professional qualification through job performance and SQT validation.
- Get college credits to become more competitive; the Army's goal for enlisted soldiers is an associate degree.

MOS 24T Changes

Implementation guidance for changes to the Standard of Grade Authorization for MOS 24T, *Patriot Operator/System Mechanic*, will appear in the April 1992 DA Circular 611 series. The revision provides grading guidance for positions in tables of distribution and allowances and tables of organization and equipment to bring the MOS 24T grade structure in line with the Army average.

This revision will not cause MOS 24T to become space imbalanced, nor will it affect the current career progression. MOS 24T will remain open to both male and female soldiers.

To the Troops of Desert Storm, Thank You for a job well done.

As the brave men and women of our armed forces leave the hostile desert sand behind, we wish to add our thanks to what has become a unanimous cry. Return safe, and return soon.

FMC takes great pride in the success of our troops and the success of the equipment we produce. The Bradley Fighting Vehicle was there, in support of the courageous soldiers that made the vehicles perform. The grueling test of soldier and machine proved that both have what it takes.

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On March 1st, Army Major Marie Rossi died in the call of duty in Operation Desert Storm. Like the hundreds of thousands of women before her, she answered America's call. From the Revolutionary War to the Persian Gulf, servicewomen have served, healed and died. They have also gone unrecognized—until now. The Women In Military Service for America Memorial, to be built at the main gateway to Arlington National Cemetery in Washington DC, will publicly enshrine the achievements of servicewomen, past, present and future. This important national memorial will be a place of honor; where stories of service and sacrifice are recognized, and serve as an inspiration for all. For information about how you can help build the Women in Military Service for America Memorial, please call us at 1-800-I-SALUTE. The American Servicewoman has always recognized her duty—now it's time we recognized her. She's earned it.

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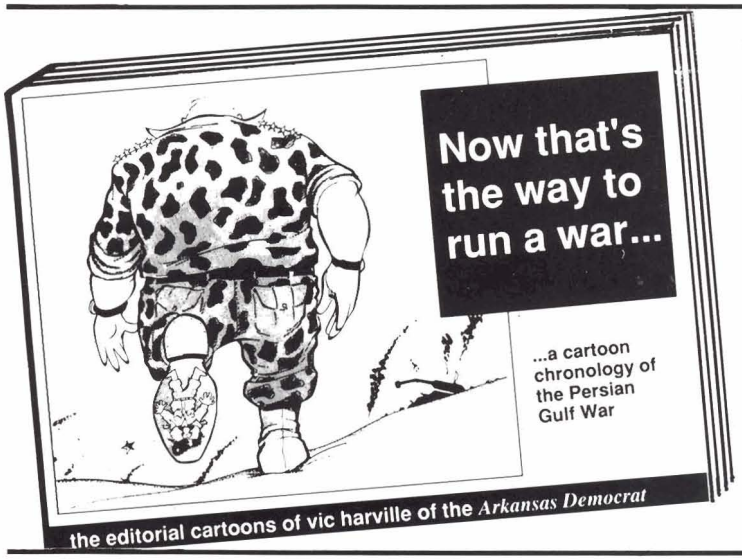

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