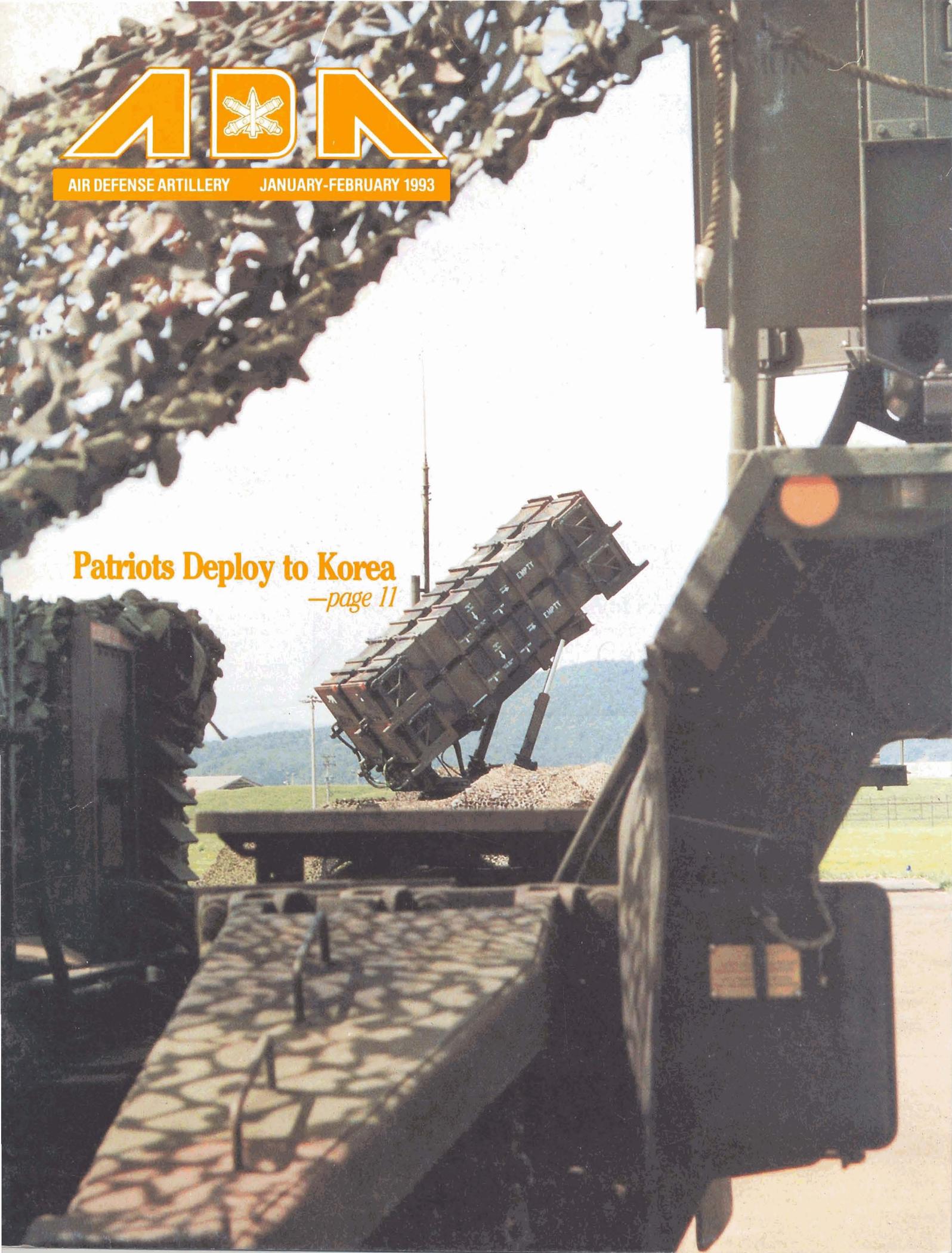




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ADA DIGEST

PERSONNEL

RESHAPING THE BRANCH

The Army and Air Defense Artillery are reshaping themselves. The future ADA enlisted force will be a smaller, high-quality force that is well-trained, confident and competent. For the individual soldier, performance is, as it has always been, the key to career achievement. The ADA Branch and the U.S. Army Personnel Command (PERSCOM) remain committed to keeping quality soldiers in the branch and in the Army. We will continue to emphasize professional development and promotion.

New equipment fieldings, MOS conversions, unit inactivations and unit activations have a definite effect on the ADA enlisted force. Often, the turbulence involved with reshaping actions causes uncertainty for soldiers. The two most common questions are, "Do I have a future in Air Defense Artillery and the Army?" and "What is going to happen to me?"

The answer to the first question is YES! The opportunity for career achievement remains high. Answering the second question and further explaining the first one requires prior explanation of several programs that we use in the reshaping process: the Excellence in Retention Program (ERP), Fast Track Program, Voluntary Early Transition (VET) Program and Voluntary Separation Incentive/Selective Separation Benefit (VSI/SSB) Program.

The purpose of the ERP is to retain the highest quality soldiers within an overstrength MOS and to deny reenlistment to non-competitive soldiers. The ERP applies to specialists and sergeants in selected ADA overstrength MOSs. When these soldiers apply for reenlistment, PERSCOM has the authority to retain them in their current primary MOS, retain them in another ADA or Army MOS or deny them reenlistment. Requests are coordinated with the ADA Branch and approved or denied by the Retention Management Division. Each request is reviewed by a general officer and is subject to a commander's request for override. The decision to retain, retrain or deny is based on several quality factors, which include the commander's comments, disciplinary actions, date of rank, time in service, promotion points, education (civilian and military), skill qualification test scores, ADA Branch recommendation and the MOS profile. MOSs 16D (E-4, E-5), 16E (E-4, E-5) 16T (E-4, E-5), 24G (E-4, E-5), 24M (E-4, E-5), 24T (E-4) and 25L (E-4) are currently in the ERP Program. Some soldiers who are denied reenlistment may qualify for VSI/SSB.

The enhanced Fast Track Program realigns overstrength MOSs through reenlistment and reclassification. The ADA Branch develops and staffs a plan for the Fast Track Program when an MOS is overstrength. The

plan outlines the overstrength by MOS and skill level. When the plan is approved, PERSCOM's Reclassification Branch sends a memorandum to each soldier within the overstrength MOS. The memorandum asks each soldier to voluntarily choose three understrength MOSs that they wish to reclassify into and to respond within 60 days. If the number of volunteers eliminates the overstrength target, then only those soldiers are DA-directed for reclassification. However, if the number of volunteers *does not* meet the overstrength target, then soldiers within the MOS will be involuntarily reclassified to meet the needs of the Army.

Under the Fast Track Program, the priorities for reclassification are another understrength ADA MOS, another understrength combat arms MOS and another Army MOS. In all cases, soldiers must qualify for the new MOS and will receive formal training. The Fast Track Program maintains quality in both losing and gaining MOSs.

Under the VET Program, Regular Army enlisted soldiers in selected grades and MOSs, with a minimum of three years active federal service on the date of separation and without regard to expiration term of service, may request voluntary separation during FY93. Only soldiers in the grades and MOSs listed in the VET message are eligible to apply for separation under this program. PERSCOM is the approving authority. Also, this program offers no monetary incentive. MOSs 16D (E-4, E-5), 16E (E-4, E-5), 16T (E-4), 24C (E-4, E-5), 24G (E-4, E-5), 24T (E-4) and

25L (E-4) are currently in the VET program.

The VSI/SSB Program separates personnel voluntarily, with incentives, during FY93. Under the FY93 program, PERSCOM approves all categories. In Category 3, soldiers are given the opportunity to submit DA Forms 4187 during an open-ended window. The window closes whenever the MOS target is reached, regardless of the date of the application. There is no change in time-in-service requirements, computation of VSI/SSB, reserve commitment or eligibility for benefits. MOSs 16D (E-5, E-6, E-7), 16E (E-5, E-6), 16P (E-6), 16T (E-6, E-7), 24C (E-4, E-5, E-6), 24R (E-3 through E-7), 24M (E-4 through E-7), 24T (E-4, E-7) and 25L (E-4, E-6, E-7) are currently in the VSI/SSB program.

What is going to happen to you? If you are a soldier in an overstrength MOS (MOS conversion/unit inactivation), your MOS will probably be placed in some or all of the preceding programs. The Fast Track Program is the foremost program for realignment of overstrengths. Remember, the first priority of this program is to maintain soldiers within an Army MOS that affords the soldier the opportunity for promotion and career achievement.

Another aspect of reshaping the ADA Branch is new equipment training (NET) team visits. NET team visits are the primary means of fielding new equipment and converting ADA MOSs. Currently a NET team is scheduled to visit every divisional ADA and Corps Chaparral battalion, with the exception of Fort Lewis. At those visited installations, MOS 14R or 14S ADA soldiers who do not receive NET training when their installations are visited should request reclassification. Commanders and soldiers are encouraged to take maxi-

mum advantage of the reclassification opportunity when a NET team is in your area. Furthermore, a soldier can voluntarily submit a request for reclassification (4187) at any time.

Recently, an ADA Branch reclassification team visited 1-52 ADA (Hawk) at Fort Lewis. That unit is due to inactivate in the near future. The purposes of this visit, in order of priority, were to afford soldiers the opportunity to achieve an Army career, keep as many soldiers in Air Defense Artillery as possible, discuss and explain career options and the reclassification process, and answer questions. Soldiers selected three MOSs for which they qualified and into which they wished to reclassify. Their choices were given first priority in the reclassification process. Four of every five soldiers received one of their three choices. While the availability of MOSs may change, the branch's effort to coordinate one of a soldier's three choices will not.

A reclassification team visit is planned for the Chaparral battalion at Fort Lewis that will not receive a NET team visit. The ADA Branch will reserve some training seats in other ADA MOSs to afford these sol-

diers an opportunity to remain in Air Defense Artillery. Like installations that receive a NET team visit, not every soldier will be reclassified into another ADA MOS. Some will be reclassified into another Army MOS.

Reclassification team visits are currently planned for inactivating units. ADA Branch will coordinate with units on specific dates and times.

Overall, the potential for success within Air Defense Artillery and the Army is still high during the reshaping process. Performance remains the key to a successful career. To alleviate uncertainty, all soldiers should stay abreast of transition programs within the Army.

The officers, NCOs and civilian personnel at ADA Branch, Enlisted Personnel Management Division, remain committed to the success of the soldiers within the branch. Along with accessions, training and distribution, keeping quality soldiers in Air Defense Artillery and developing soldiers' careers are our primary focus. First to Fire!!!

CAPT. CARL W. RICHARDSON

ADA CONFERENCE

The U.S. Army Air Defense Artillery School will host the 1993 ADA Commanders Conference June 7 through 11 at Fort Bliss, Texas. The theme of this year's conference is "Air Defense Artillery: A Strategic Force for Decisive Victory."

Guest speakers scheduled at the four-day conference include Lt. Gen. Donald M. Lionetti, Space and Strategic Defense Command commander; Lt. Gen. Wilson A. Shoff-

ner, U.S. Army Combined Arms Center commander; Maj. Gen. Gerald Putnam, U.S. Army Personnel Command commander; and Maj. Gen. Jay M. Garner, U.S. Army Deputy Chief of Staff for Operations-Force Development.

Approximately 500 ADA officers and NCOs are expected to attend. Conference points of contact are Maj. Thomas C. Lemon and SFC Anthony Greene, DSN 978-4811.

JOHNSON BECOMES FIRST ADA CWO 5

Master Warrant Officer Carl H. Johnson Sr. became Air Defense Artillery's first CWO 5 on Oct. 1, 1992. Designated on the first promotion list for the newly established rank, Johnson was among the top candidates recognized for their expertise and years of dedicated service.

"I actually worked on the Army's Total Warrant Officer Study, which proposed the creation of a new CWO 5 grade, eight years ago, but didn't think I would be around to actually see it, let alone be selected," Johnson said. "I'm surprised that I did. It's like winning the Publisher's Clearinghouse Sweepstakes. It just goes to show, where there is life, there is hope. There were a lot of exemplary ADA candidates, and I hope they too will be selected for CWO 5 soon."

Although Johnson likened being promoted to winning a game of chance, his promotion was no luck of the draw. A high school dropout, he worked endlessly to better himself and become a source of pride to his wife of 34 years, Barbara, and their three children. He also wanted to be an example his superiors, contemporaries and subordinates would respect and want to emulate.

"If it had not been for a hard-nosed company commander I once served under, I don't know where I would be today," Johnson reflected. "He made it his personal policy to ensure his soldiers had a high school diploma or a GED, long before the Army really pushed it. He actually mapped out courses for us to take and pushed us hard. If he hadn't had the insight to stress the importance of education, I probably wouldn't have been retained in the Army long enough to be eligible for this promotion."



Barbara Johnson stands by her man as Chief of Air Defense Artillery Maj. Gen. John H. Little presents a certificate of promotion to CWO 5 Carl H. Johnson.

Assigned to the Security Assistance Training Management Office, Fort Bragg, N.C., Johnson is serving a six-month tour as an advisor in the United Arab Emirates.

"I appreciate what the Army has offered me — a challenge at every turn, new and diverse people and the chance to visit places I never imagined I would see," said Johnson, who credits others, particularly his wife and the Corps of NCOs, for his success. "Never forget that every ADA warrant officer was once an NCO. NCOs are the backbone of the Army; we depend on them heavily, as well we should, because they always come through."

"I have been very fortunate to serve with some of the finest tactical control officers in the Army, both male and female. I would have to say that female soldiers have earned their place," said Johnson as he challenged all soldiers to live up to their full po-

tential and encouraged female soldiers to apply for membership in the warrant officer corps.

"The Army is downsizing, but soldiers should not be discouraged. Set your goals and follow them through. The Army still has many rewards to offer. Take a good look at your long-range plans and make sure they include education, both military and civilian. The two are of equal importance. The emphasis ADA places on warrant officers is changing career dynamics; warrant officers should take advantage of the changes. Don't become stagnant."

"It is not hard to fathom why Carl H. Johnson was selected as ADA's first CWO 5," said Maj. Gen. John H. Little as he pinned on Johnson's new rank insignia. "He is a rare breed of soldier, a soldier Air Defense Artillery is lucky to call one of its own."

KATHLEEN COATS

OFFICER EDUCATION DOOR STILL OPEN

The Army is adjusting Military Education Level 4 (MEL 4) requirements and class sizes to ensure force reductions don't erode officer education and professional development opportunities.

"With the Army's drawdown progressing as planned, I asked that a study of MEL 4 requirements be conducted," said Army Chief of Staff Gen. Gordon R. Sullivan in a message addressed to chiefs of branches. "I consider the study essential to ensure that, as we draw down the Army, we balance optimum fill of MEL 4 schools with filling major positions throughout the Army, and providing the personnel and funding necessary to do both correctly. The study's findings underscore what the Officer Corps probably already knew, that during peacetime we send more of our officers, as many as we can afford to send, to school. One of the study's recommendations, and my intent, is to continue to do just that.

"I have directed the U.S. Army Training and Doctrine Command, Command and General Staff College and Personnel Command to plan MEL 4 schooling for academic year 93-94 with an Officer Military Professional Development class size just over 900 officers," he continued. "Approximately 800 OPMD officers will attend school at Fort Leavenworth; an additional 109 will attend MEL 4 schooling at sister service schools, foreign command and staff colleges, and the School of the Americas. This translates to a selection rate for each cohort year group of between 57 to 60 percent. The student load at Fort Leavenworth will be set at 1,200 officers, which includes our sister services, the Army's spe-

cial branches and international officers. The Army's special branches' participation in resident command and staff colleges will remain unchanged.

"This plan accomplishes many things for us," Sullivan concluded. "It maintains our commitment to the Officer Corps to enhance professional development and schooling opportunities. It sustains sufficient resident MEL 4 trained officers in the inventory, but not at the expense of filling foxholes. It provides a 'bridge' during the transition period until requirements are more clearly defined in the steady-state Army. It trains almost 60 percent of the Army's total projected MEL 4 requirements, pro-

viding a class mix that is consistent with the future composition of the Officer Corps."

Chief of Air Defense Artillery Maj. Gen. John H. Little encourages ADA officers to take full advantage of the new MEL 4 policy. "Air Defense Artillery will continue to receive its fair share of quotas for the Command and General Staff College," he said. "A selection rate of 57 to 60 percent for each cohort year group means there is ample opportunity for those who are competitive to attend the resident course. I encourage each officer of the branch to review the qualification requirements outlined in DA Pam 600-3 to ensure you maximize your chances."

BLIMEY!

BRITISH ARMY TARGET OF FORCE REDUCTION

British soldiers are sharing the pain of force reductions along with their American cousins. According to the *London Times*, 500 army officers will be made "compulsorily redundant," the British equivalent of "laid off" or "unemployed," because there are not enough lieutenant colonels and majors volunteering to leave under the government's Options for Change program.

The British army is to be cut by 40,000, or 25 percent, by 1995. Army manpower has to be reduced by 6,500 officers and enlisted soldiers during 1993. The Options for Change offers generous financial in-

centives for soldiers to leave the army, but only 688 of the target figure of 1,311 officers have volunteered to join the civilian world.

"The 47 percent shortfall is in marked contrast to the first round of cuts, when about 90 percent of the officers required to leave were volunteers, and in the end, fewer than 150 were made compulsorily redundant. With widespread civilian redundancies," the *Times* noted, "the latest figures for the army cutbacks highlighted a growing reluctance among experienced officers to swap the security of a job in the services for an unknown life outside the forces."

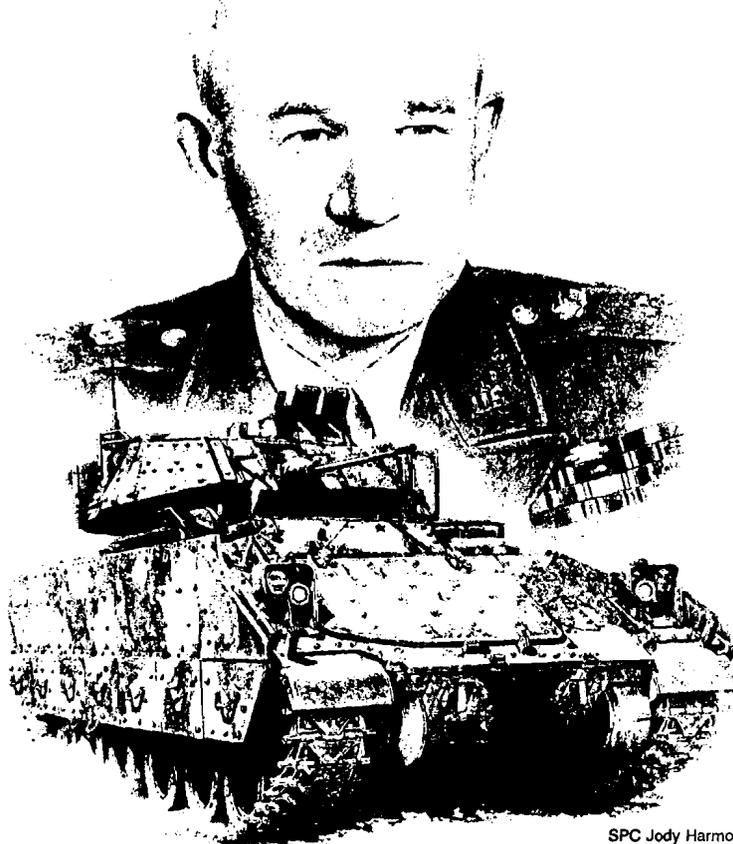
STINGER FIGHTING VEHICLE FIELDING

The U.S. Army recently fielded M-2A2 Bradley Stinger Fighting Vehicles (BSFVs) to two ADA battalions (4th Battalion, 3rd Air Defense Artillery, and 5th Battalion, 3rd Air Defense Artillery) supporting our heavy divisions in Europe.

Mobile training teams from the U.S. Army Air Defense Artillery School's Directorate of Training Developments and Combined Arms and Tactics Department trained and, using draft crew and battle drills, evaluated the BSFV units in tactics, techniques and procedures. Team members reported high morale and esprit among the BSFV crews who they said fully embrace the new air defense system and take pride in the contributions they can now make to the combined arms mission.

In other BSFV developments, a critical task selection board added BSFV and associated command, control, communications and intelligence tasks to warrant officer MOS 140B, and the Army approved \$1.2 million to engineer the BSFV Stinger missile rack. The Bradley Program Management Office and Air-to-Air Missile Program Management Office are working with FMC Corporation under an existing contract to develop the rack design. Meanwhile, units equipped with BSFVs are using an interim rack that allows them to mount two ready rounds in brackets on the roadside and curbside walls of the Bradley.

The Army will field BSFVs to the 24th Mechanized Division and 4th Infantry Division this year. The 1st Cavalry Division and 1st Mechanized Division are scheduled to receive BSFVs in January 1994.



SPC Jody Harmon

AVENGER NET TRAINING

The U.S. Army Air Defense Artillery School (USAADASCH) recently assumed Avenger new equipment training (NET) responsibilities. The USAADASCH NET teams will train 2-62 ADA, 7th Infantry Division; 2-44 ADA, 101st Airborne Division (Air Assault); and 2-2 ADA, III Corps, soldiers in 1993.

System experts employed by the Boeing Company (the Avenger contractor) have already completed Avenger NET training for the 1-2 ADA, XVIII Corps; 1-5 ADA, 24th

Infantry Division; 4-5 ADA, 1st Cavalry Division; 5-5 ADA, 2nd Infantry Division; and the 3rd Armored Cavalry Regiment's air defense platoon.

The Avenger Program Manager is investigating the feasibility of adapting the Stinger multiple integrated laser engagement system (MILES) as an interim training device for the Avenger. Fielding of the objective Avenger Force-on-Force Trainer and Avenger MILES device is scheduled to begin in early 1996.

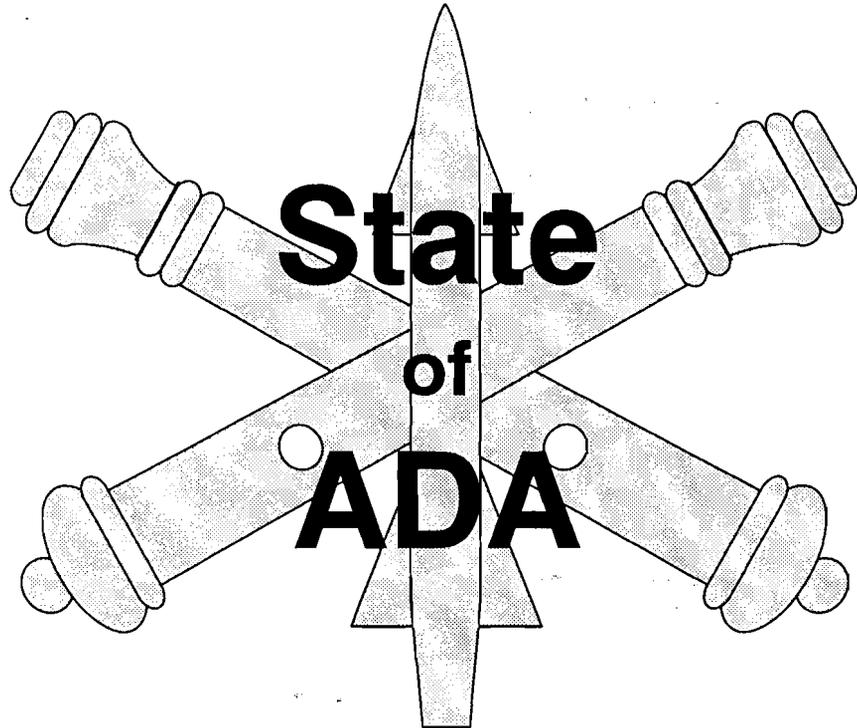
(Digest continues on page 29)

And ye shall hear of wars and rumours of wars: see that ye be not troubled: for all these things must come to pass, but the end is not yet.

— Matthew, 24:6

The Cold War's conclusion has dramatically improved prospects for international peace and prosperity. The Soviet threat, the basis of our nation's defense planning for decades, is gone. While the sum of global changes is overwhelmingly positive, the high degree of uncertainty about the emerging international security environment and the continuing threats to U.S. interests are cause for prudent concern.

— Army Focus 1992:
The Army in Transition



by Maj. Gen. John H. Little

More than ever before, Air Defense Artillery is a vital part of the Army and the combined arms team. Both a tactical and strategic force that contributes to decisive victory, Air Defense Artillery has crossed the threshold of the post-Cold War world, firmly confident of successfully executing its force protection role and armed with a vision and plan for the future.

Like the Army, the branch faces profound changes in 1993. These changes are driven by the post-Cold War strategic environment, a changed threat and subsequent refinements to the national military strategy.

Like the Army, future ADA units will be based predominantly in the continental United States, highly mobile and structured to support commanders in chief worldwide in missions spanning the continuum of military operations. Despite the magnitude of this refocusing, there is no "time out" to accommodate change. We must remain battle ready throughout the period of transition between the Cold War Army and the Army of the 21st Century. Our forces must be cohesive, trained and equipped to go to war anywhere in the world on short notice.

As the world changes, our national military strategy is changing with it. The goal of that strategy, forged and validated in the Gulf War, is *decisive victory*. We envision decisive victory as a rapid victory at minimum cost in lives and national resources. To minimize the cost in lives, we must maximize our efforts to protect the force. The performance of our armed forces in Operation Desert Storm will serve as our standard for the future. Just as Air Defense Artillery made crucial contributions to our victory in Operation Desert Storm, it will play a vital role in ensuring decisive victory for our future Army.

The world is still an extremely dangerous place. Even small nations have the capability of acquiring technologically advanced, highly lethal weapons that could threaten American forces. Ballistic missiles, cruise missiles, manned aircraft, armed helicopters, unconventional munitions, unmanned aerial vehicles (UAVs), remotely piloted vehicles (RPVs), anti-radiation missiles, standoff munitions and stealth technology each present a threat to ground forces that Air Defense Artillery must counter.

Uncertainty abounds. Events in Eastern Europe, the Middle East and other parts of the world can rapidly alter our strategic posture. The danger from a monolithic enemy has passed; now regional conflicts pose the greatest threat to peace and stability.

The proliferation of advanced military technology is real. It increased with the implosion of the USSR and is unlikely to abate in the near term. The threat of mass destruction weapons remains. If anything, that threat grows greater day by day as more nations develop the capability to produce and deliver these weapons. The bottom line is that regional threats are more diverse, increasingly sophisticated and of real concern to the United States.

Every war is unique, yet every war provides some experience that is indicative of the future. In the Gulf War, Iraq let the tactical ballistic missile (TBM) genie out of the bottle. We can never put it back again. Iraq's performance demonstrated the usefulness of TBMs as a strategic asset for our potential enemies. It also demonstrated the ability of a Third World nation to modify and refine the capabilities of "export version" weapons. Iraq used its missiles in an attempt to accomplish geopolitical aims. Had the United States not had an effective counter weapon, the Patriot, Iraq might well have achieved those aims to a limited extent, despite the overwhelming superiority of the allied coalition.

In Desert Storm, the U.S. Army validated the effectiveness of synchronized ground and air warfare. We used technology embodied in cruise missiles, stealth aircraft, close air support, helicopters, national surveillance assets and standoff munitions to win decisively on the battlefield.

What Desert Storm taught air defenders is that we must be prepared to accomplish theater and strategic missions, that we must retain a credible tactical capability throughout the battlefield and that air defense must be coordinated and synchronized with joint and combined forces.

Air Defense Artillery supports the Army throughout the battle. During the *early entry* stage of operations, we protect the lodgement, defend air and sea ports of debarkation, support expansion of the lodgement and protect geopolitical assets. We support

reconnaissance and counter-reconnaissance operations and defend the deep shooters in the *depth and simultaneous attack* stage of operations. In *battle space*, we protect the close-combat force and its associated command and control (C²) structure. Supporting *battle command*, we protect critical C² and intelligence nodes. Finally, Air Defense Artillery ensures effective combat service support by protecting logistics operations. The bottom line across all dynamics is force protection.

As we prepare for the next war, we must be sure we are not preparing to fight the last one. The Gulf War gave us insights into the future. We must be prepared to defeat TBMs equipped with mass casualty warheads. We must defeat cruise missiles with similar warheads. We must defeat UAVs, RPVs and attack helicopters. And we must maintain a capability to kill high-performance, manned aircraft.

Air Defense Artillery will defeat these threats through a "system of systems" approach. We will develop and field systems with capabilities to defeat threats to troops on the ground — from mud to space. This system of systems will generate a synergism that will allow us to better execute our force protection mission.

As we develop and field these systems to protect the forces of the future, Air Defense Artillery faces doctrinal, organizational, personnel, materiel, leader development and soldier care challenges.

We have several major doctrinal challenges in the near term. Our first challenge is to synchronize air defense doctrine encompassing a range of missions from that of an ADA battery in support of a maneuver force to that of theater missile defense with emerging Army doctrine in FM 100-5. As we field the Theater High Altitude Area Defense (THAAD) system and Corps Surface-to-Air Missile (SAM) while improving Patriot, we must develop and refine how-to-fight doctrine for these systems. Simultaneously, we must refine how-to-fight doctrine for the Bradley Stinger Fighting Vehicle (BSFV).

Our organizational challenge is to manage the changes in ADA force structure associated with restructuring the Army, cope with new weapon systems and prepare to

The new national military strategy is an unclassified document. Anyone can read it. It is short, to the point and unambiguous. The central idea in that strategy is the change from a focus of global warfighting to a focus on regional contingencies. No communist hordes threaten Western Europe today and, by extension, the rest of the world. So our new strategy emphasizes being able to deal with individual crises without their escalating to global or thermonuclear war.

— Gen. Colin Powell

A nation that does not prepare for all the forms of war should then renounce the use of war in national policy. A people that does not prepare to fight should then be morally prepared to surrender. To fail to prepare soldiers and citizens for limited bloody ground action, and then to engage in it, is folly verging on the criminal.

— T. R. Fehrenbach,
This Kind of War

By remaining uncompromising in our readiness standards while moving forward on the azimuths of change to shape the force, the Army will remain a trained and ready force, capable of fighting and winning our nation's wars. When we are needed, we will be there to answer the call.

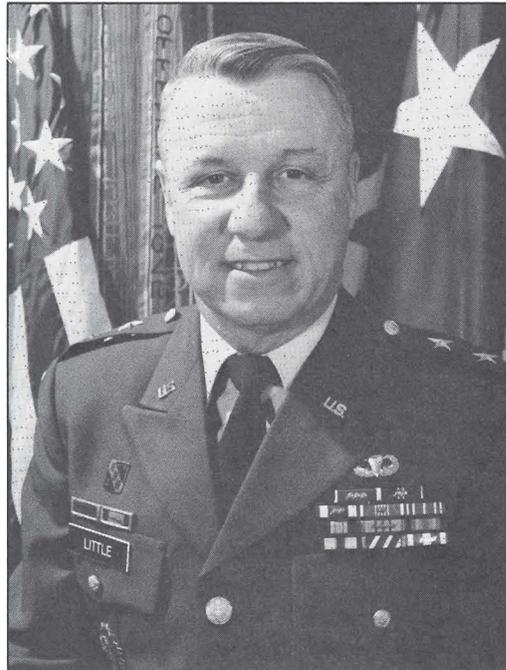
— Army Focus 1992:
The Army in Transition

The day I left Riyadh, my counterpart, Prince Khalid bin Sultan, said something that really surprised me because he had been admittedly somewhat anti-American at the beginning of the war. He said, "If the world is only going to have one superpower, thank God it's the United States of America." Stop and think about that. Stop and think in the last 100 years of the nations that could have been the world's only superpower — Hitler's Germany, Tojo's Japan, Stalin's Russia, Mao's China — and think of the darkness that would have fallen across the face of this earth had any of those nations emerged as the world's only superpower. But they did not. And the United States of America did. This places an awesome responsibility on us as a nation: what we will be to ourselves and to the rest of the world as a nation, and the role we will play in the world today as the only superpower. Because we are the leader, we cannot duck that responsibility.

— Gen. Norman Schwarzkopf

The Peoples Republic of China is in the midst of an unprecedented economic boom, thanks to a series of free-market economic reforms. But China's new wealth is being used in a dangerous way, namely for a massive military buildup that poses a threat to the nations of Southeast Asia and puts China on a possible collision course with the United States.

— Heritage Foundation



“Air Defense Artillery has crossed the threshold of the post-Cold War world, firmly confident of successfully executing its force protection role and armed with a vision and plan for the future.”

— Maj. Gen. John H. Little

assume new missions. Although Air Defense Artillery will indeed cut the active force, we will simultaneously double the number of units in the Reserve Component (RC). We cannot ignore modernization. We must determine the best structure for THAAD and for national missile defense.

Personnel challenges will accompany organizational changes. We must carefully and compassionately execute the transition from active duty of more than 37 percent of our active air defense force. We must also increase our Army National Guard air defense force by more than 118 percent, recruiting skilled and dedicated RC soldiers who will constitute nearly 50 percent of the Total Army ADA force.

Our military and civilian leaders understand and appreciate the need for a strong national defense force and for improved air defenses against an increasingly diversified air threat. At the same time they are sensitive to the need to shift Cold War defense dollars to programs designed to cut the deficit and rebuild the nation's aging and deteriorating infrastructure. The downsizing and restructuring of the armed forces begun by a Republican administration will be completed by a Democratic administration.

During his campaign, candidate Bill Clinton promised deeper force reductions, addi-

tional spending cuts and a rearrangement of the services' roles and missions. But following the election, President-elect Clinton also pledged to “make sure we still have the strongest and most appropriate defense forces to meet the missions of this nation at the end of the Cold War.”

Significant materiel challenges also lay ahead. High costs, limited resources and the perception of a reduced threat have delayed the full fielding of a forward area air defense capability to support maneuver forces. This delay poses the greatest threat, in terms of air defense, to our maneuver forces today. It is an intolerable gap that *must* be filled. We must refocus the forward area air defense program, both in the near and long term. The BSFV offers the best near-term solution, but we must develop a long-term solution.

Patriot, the ADA hero of the Gulf War, was stretched to the limit in that conflict. We must continue to upgrade the capability of the world's only fielded TBM killer to protect our early entry forces and vital facilities from missile attack.

THAAD is well on its way to becoming a reality. It will significantly extend the air defense umbrella over deployed forces and further counter a growing TBM threat. It will give us the capability to have a sustained geopolitical impact in future conflicts, much

like Patriot's incidental impact in the Gulf War. The contract for THAAD was awarded in September 1992. The contract for the ground-based sensor that will serve as the eyes of the system will be awarded soon.

We need Corps SAM to protect corps forces from short-range ballistic missiles, cruise missiles, UAVs, RPVs and low observable platforms. Corps SAM will deny preferred attack options to the enemy, reduce the threat of mass casualties in the maneuver area, incorporate a high degree of mobility to support the type of rapid corps movements seen in Desert Storm and augment the Patriot and THAAD combination.

The assumption of a national missile defense mission, a part of Global Protection Against Limited Strikes, is perhaps the greatest materiel change. Much of the technology for such a system exists, but many hurdles lie ahead before it is fielded at the turn of the century.

Each of the previous challenges complicates the challenge of leadership development. The leaders in the branch today are the

finest we have ever had. During the Army's drawdown, we must sustain our training and leader development programs, both in the Air Defense Artillery School and in ADA units. We must divest those functions that add little or no value to the system, or which may be better executed elsewhere. Concurrently, as Air Defense Artillery grows in the RC, we must strengthen the leader development programs available to RC soldiers. These programs must be innovative to meet the needs of these citizen soldiers, yet demanding and appropriate to meet the needs of a deployable force.

Our final and most important challenge is that of soldier care. Today, we face a situation not seen since the post-Vietnam drawdown. We must be honest with ourselves and our troops. We must take bold steps to dispel rumor, counter uncertainty and reassure soldiers that there is still a viable career for quality soldiers who desire it.

We must retain quality soldiers, reclassify quality soldiers for whom we have no space in Air Defense Artillery and assist those sol-

One of the thorniest issues in the post-Soviet era is the debate over the use of U.S. military forces. Clinton made strong statements during the campaign about the Bush administration's hesitancy to intervene in the crisis in Bosnia, calling for air strikes and a naval blockade against Serbia. And in a recent speech, [House Armed Services Committee Chairman] Les Aspin made a more formal argument for the need to intervene in such crises. "If we . . . walk away from the use of force in the Balkans, we are sending a signal to other places that there is no downside to ethnic cleansing. We are not deterring anybody."

— Navy Times

Avenger adds new ADA firepower.



Since the dawn of time, men have competed with each other — with clubs, crossbows, or cannon, dollars, ballots and trading stamps. Much of mankind, of course, abhors competition, and these remain the acted upon, not the actors. Anyone who says there will be no competition in the future simply does not understand the nature of men.

— T. R. Fehrenbach,
This Kind of War

DATE: 08 JAN 1993
TO: CDR32DAADCOM
FROM: COMUSARCENT

I want to commend the 32d AADCOM for the outstanding performance of the two Patriot batteries that recently completed very important missions in both Kuwait and Bahrain that was directed by our command authority.

CPT Smith, Cdr of D Btry, 1-7th ADA deployed to Kuwait and CPT Dorn, Cdr of B Btry, 1-7th ADA deployed to Bahrain. Both have accomplished very demanding missions in an austere environment in a truly magnificent manner. Your troops are to be commended.

I also take this opportunity to thank you for the 32d AADCOM's continuing contribution to the readiness of Patriot units in SWA through repair parts support. Your response to ARCENT's requirements have been both essential and timely. We greatly appreciate the past contributions that 32d AADCOM has made to ARCENT mission requirements and look forward to your continued support.

Today, a generation raised in the shadows of the Cold War assumes new responsibilities in a world warmed by the sunshine of freedom but threatened still by ancient hatreds and new plagues.

— from Pres. Bill Clinton's inaugural speech



ADA soldiers are proud and ready.

diers who must leave the service in a caring, compassionate manner. We must also take advantage of the talent leaving active duty and channel some of it into RC ADA units. It's certain we will need their services.

"From time to time, when you least expect it, when everyone thinks the world is quiet, someone tugs on Superman's cape," said Gen. Colin Powell. A few days later, Iraq shocked the world by invading Kuwait. Despite the end of the Cold War, the world is still full of trouble spots, and duty's call may come at any time.

In December, the call came for the 3rd Battalion, 62nd Air Defense Artillery. Members of the 10th Mountain Division's air defense unit spent Christmas in Somalia where the enemy is not hostile aircraft or missiles but famine, tribal hatred and banditry.

As the second anniversary of Operation Desert Storm approaches, ADA soldiers of 1-43 ADA continue their lonely vigil beside Patriot fire units in Southwest Asia.

Soldiers from Headquarters and Headquarters Battery, 35th ADA Brigade and the 4th Battalion (Patriot), 7th Air Defense Artillery deployed the first Patriot systems to the Republic of Korea. Their mission: interface with Korean air defense units and estab-

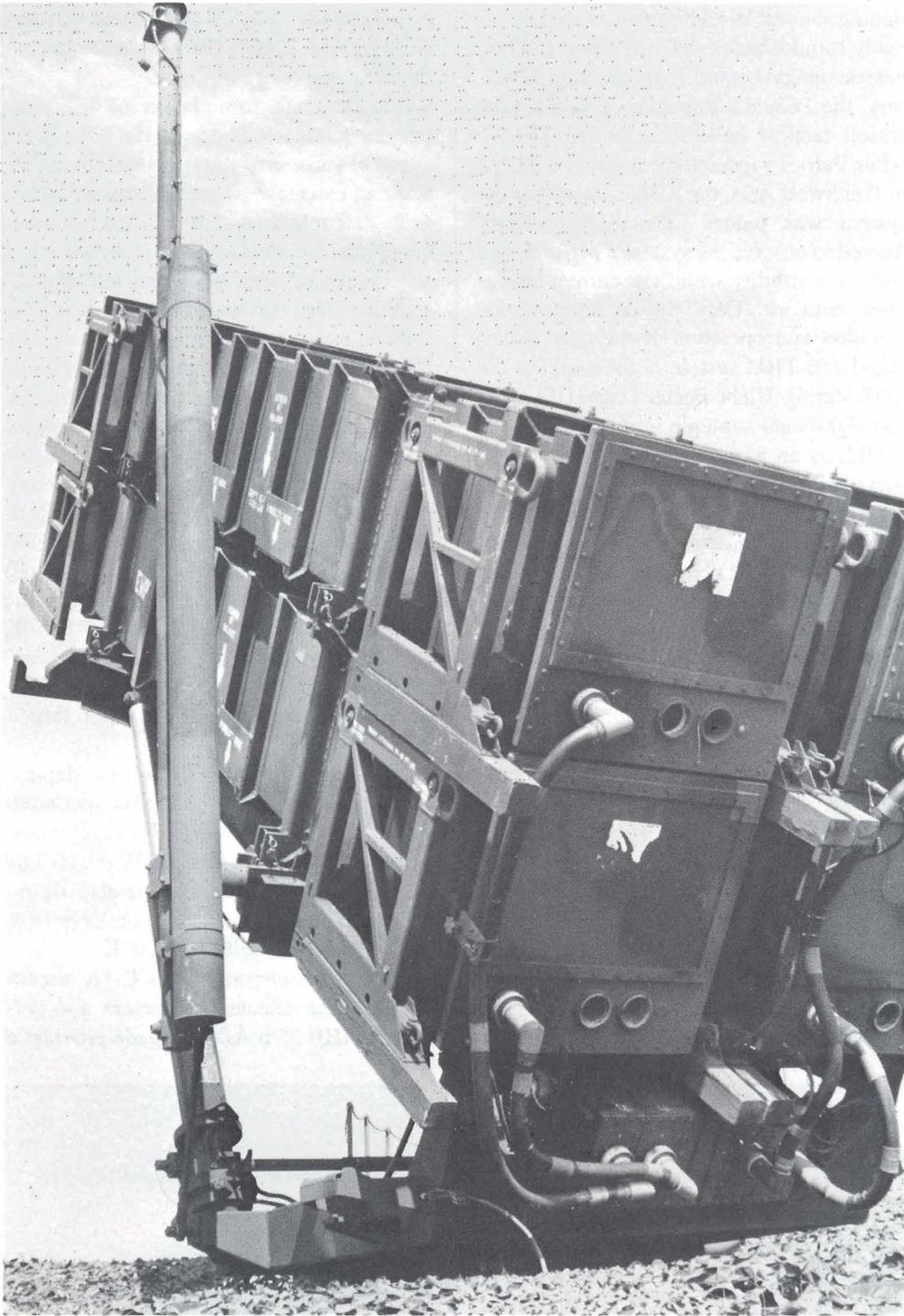
lish procedures that could facilitate a redeployment under combat conditions.

At home, ADA units are extensively employed in America's war against drugs. And the Florida Army National Guard's 164th Air Defense Artillery Brigade is helping to repair the damage caused by Hurricane Andrew.

The new world order is off to a shaky start. And the commitment of U.S. forces to Somalia on purely humanitarian grounds establishes new ground rules for intervention. Who knows when the next nation, beleaguered by famine, earthquakes, hurricanes, volcanic eruptions or ethnic strife, will dial 911?

But today's Air Defense Artillery faces the future proud and ready. Its soldiers, weapon systems and institutional base are the best they have ever been. The challenges are great, but we are determined to overcome those challenges so that when the nation next calls us to fight its wars, we will be again . . . First to Fire.

Maj. Gen. John H. Little is the chief of Air Defense Artillery.



Eighth Army PAO

The first C-5A touched down at Osan Air Base on Aug. 2, 1992. After the normal administrative delay, personnel and equipment of Task Force Eagle (TFE) disembarked. This marked the first deployment of the Patriot air defense missile system to the Republic of Korea (ROK).

The two Koreas continue to maintain two of the larger standing armies in the world on the last Cold War border — more than one million men in the north and 600,000 in the south. North Korea's increasing political isolation and suspected effort to build a nuclear bomb continue as Asia's biggest headache.

— Chicago Tribune,
November 1992

In Asia and the Pacific, communist states still obstruct the path to progress. The rapid economic modernization in the past decades is quickly being matched by strengthened democratic institutions. Japan's recognition of its increased political and regional security obligations is another positive development. Still, the necessity for change may generate instability and lead to conflict. China's modest economic reforms have not been matched by essential political freedoms. North Korea's xenophobic leadership, militarized society and quest for nuclear weapons are critical factors in the regional threat equation.

— Army Focus, 1992

The ROK government had expressed continuing interest in adding Patriot to their already formidable air defense network. Their nearest neighbor and long standing adversary, the People's Republic of Korea, possessed tactical ballistic missiles (TBMs). After Patriot successfully destroyed TBMs in Southwest Asia, the ROK's interest in the system was piqued. The ROK military wanted to observe the system's performance and compatibility with their current air defense network. Thus, the deployment, integration and operation of the only battle-tested anti-TBM system in the world to the ROK during Ulchi Focus Lens (UFL) '92 had significant strategic implications.

UFL is an annual ROK-U.S. command post exercise (CPX). The ROK government conducted the first Ulchi exercise in 1968 to train its forces for defense against a possible North Korean attack. That same year the U.N. Command conducted the first Focus Lens exercise. The subsequent combination of these two exercises produced UFL. UFL '92 was the seventeenth in the series of regularly scheduled exercises. Though deployed during UFL '92, TFE did not participate in the CPX; its operation had different purposes as described in the operations plan (OPLAN).

Operations Plan

Responding to a request from the ROK Combined Forces Command (CFC), the U.S. Forces Command tasked the U.S. I Corps of Fort Lewis, Wash., to deploy a Patriot element to the ROK. The 35th ADA

Brigade formed TFE from the brigade's Headquarters and Headquarters Battery (HHB) and 4-7 ADA (Patriot) to accomplish the mission.

The accurate formulation of the commander's intent was one of the keys to the eventual success of the operation. In the absence of extensive written guidance, the brigade staff relied on staff drills to formulate the intent statements (see box). These intent statements and some additional verbal guidance provided the basis for formulating the mission statements. TFE had four missions. First, demonstrate I Corps' ability to rapidly deploy an air defense minimum launch capability and command and control systems into a contingency theater of operations. Second, demonstrate Patriot's ability to conduct joint or combined operations with ROK air defense forces. Third, provide the CFC Combined/Joint Visitors Bureau (C/JVB) with a Patriot orientation briefing and static equipment displays and briefings. Fourth, demonstrate Patriot's capabilities in conjunction with a test of the Joint Over the Horizon Targeting (JOTH-T) Joint Targeting Network (JTN).

The operation has four phases: deployment, joint/combined air defense operations and the C/JVB display, JOTH-T JTN test and redeployment. The operation began on July 31 and ended on Sept. 15. The staff developed the following OPLAN phases prior to the coordination visit to the ROK.

Phase I, Deployment. Six C-5A aircraft transport the selected equipment and personnel. HHB 35th ADA Brigade provides a

Intent Statements

Gen. Robert W. RisCassi, Commander in Chief, Combined Forces Command, ROK

- Deploy air defense assets to the ROK.
- Integrate into the existing air defense command and control systems.
- Provide TBM coverage.
- Demonstrate high-tech air defense capabilities.

Lt. Gen. Carmen J. Cavezza, Commander, I Corps, Fort Lewis, Wash.

- Deploy corps Patriot assets to the ROK.
- Integrate into the ROK command and control systems.
- Conduct air defense missions.

Maj. Gen. Chang Kyu Park, Commander, ROK ADA Command, ROK

- Deploy Patriot systems to the ROK.
- Integrate with ROK air defense systems with minimal modifications to the ROK systems.
- Complement ROK air defense coverage.



Sgt. Timothy Albrecht

Maj. Gen. Guy A. Laboa, commander of the 4th Infantry Division (Mechanized), visits the Patriot display.

tactical operations center (TOC) and a fire direction center, including a TSQ-73 Missile Minder, an adaptable surface interface terminal, a joint tactical data information link-A distribution system (JTADS), three TRC-145 multi-channel communications terminals and one TRC-113 multichannel communications relay terminal. HHB/4-7 ADA furnishes a battalion fire direction center including the information and coordination central (ICC) and a communications relay group. A/4-7 ADA provides a minimum launch capability including an engagement control station, a radar station, an electric power plant, two launching stations and an antenna mast group. 178th Maintenance Company, 4-7 ADA's intermediate support maintenance company, supplies system maintenance capabilities and a support package. Each participating unit provides the personnel to operate and maintain their equipment. A total of 161 personnel deploy. The equipment deployed is limited by the number of air sorties.

The C-5As stage out of McChord Air Force Base, located near Fort Lewis, and

land at Osan Air Base, ROK. Personnel and equipment then convoy north approximately 18 kilometers to Suwon Air Base, an ROK facility that is the site of the operation. Phase I concludes when the last equipment arrives at Suwon Air Base.

Phase II, Interoperability. The interoperability portion begins as soon as sufficient equipment arrives to establish an integrated system. The ROK ADA Command initially requests the implementation of four different system configurations, designated Configurations I-IV, during the interoperability exercise. These configurations include most of the reasonable options available for the integration of the TFE command and control and Patriot systems into the ROK air defense network. The configurations are sequenced in order of increasing technical difficulty.

The implementation of the configurations poses several interesting system challenges. First, during Team Spirit '89, the brigade's TSQ-73 deployed to the ROK and failed to integrate with the Master Control and Reporting Command (MCRC), a combined fa-

Something new had happened. The United States has gone to war, not under enemy attack, nor to protect the lives or property of American citizens. Nor was the action taken in crusading spirit, as in World Wars I and II, to save the world. The American people had entered a war, not by the roaring demand of Congress — which alone could constitutionally declare a state of war — or the public, but by executive action, at the urging of an American proconsul, to maintain the balance of power across the sea. Many Americans, who have never adjusted to their country's changed position in the world, would never understand.

Harry Truman had ordered troops into action on the far frontier. This was the kind of order Disraeli might have given, sending Her Majesty's regiments against the disturbers of Her Majesty's peace. Or the emperor in Rome might have given such a command to the legions when his governor in Britain sent word the Picts were over the border. This was the kind of war that had bleached the bones of countless legionnaires on the marches of the empire and had dug the graves of numberless Britons, wherever the sun shone.

In 1950 there was only one power and one people in the world who could prevent chaos and a new, barbarian tyranny from sweeping the earth. The United States had become a vast world power, like it or not. And liking it or not, Americans would find that if a nation desires to remain a great and moral power there is a game it must play, and some of its people must pay the price. Truman, sending the divisions into Korea, was trying to emulate the Roman legions and Her Majesty's regiments — for whether the American people have accepted it or not, there have always been tigers in the world, which can be contained only by force.

— T. R. Fehrenbach,
This Kind of War

Americans paid a high price for President Truman's decision to "draw the line" in South Korea: 54,246 dead (33,629 killed on the battlefield; 20,617 military dead from other causes and 103,284 wounded).

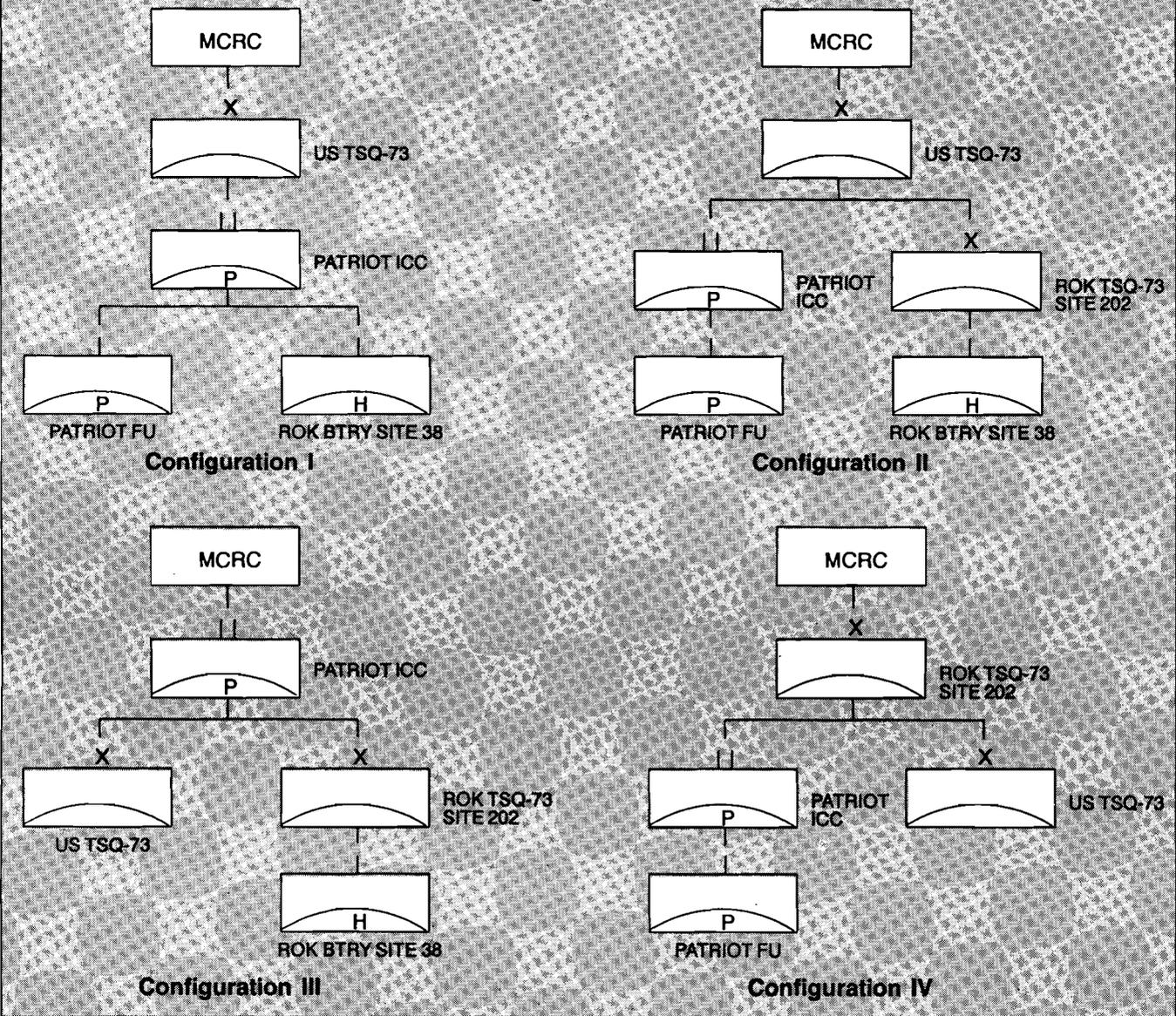
— Clay Blair,
The Forgotten War

cility located in the Hardened Tactical Air Control Center at Osan Air Base that controls all air defense elements within the Korean theater of operation. TFE personnel could not determine the causes for the earlier failure to integrate. Second, the ROK Hawk battery at Tactical Site 38, one of the units identified for interoperability, is a product improvement program (PIP) I Hawk battery, as are most of the Hawk units in the ROK. U.S. Patriot and PIP II and III Hawks have successfully interoperated, but PIP I Hawk and Patriot have not. Third, all ROK TSQ-73s use Version 30 software, while

U.S. TSQ-73s use Version 34 software. Operations between TSQ-73s using the two different software versions have never been conducted. Fourth, an ICC has never conducted integrated operations with a TSQ-73 using Version 30 software, which was produced prior to the fielding of Patriot, and not designed to interoperate specifically with Patriot.

The second portion of Phase II is a Patriot system orientation briefing and the static equipment display and briefings delivered in support of the CFC C/JVB. Equipment is arrayed tactically and fully camouflaged.

Configurations I - IV



TFE expects numerous high ranking visitors to attend.

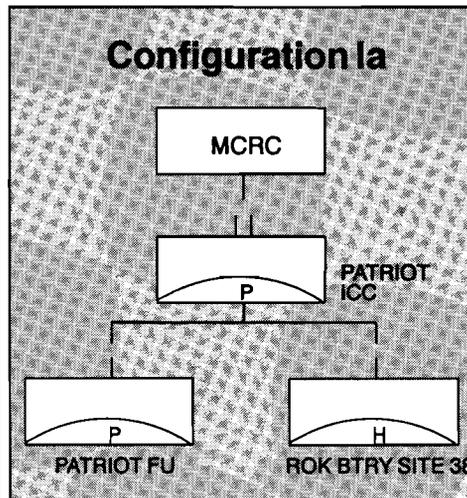
Phase III, JOTH-T JTN Test. The Office of the Secretary of Defense sponsors this particular exercise, which tests a conceptual solution to a problem in the linkage between intelligence sources and the tactical users. Often a specific intelligence source provides targeting information to a single- or closed-loop weapons system with little lateral transfer of information to other potential users. JOTH-T JTN plans to link different intelligence collection sources and weapons systems to maximize total system effectiveness by providing a validated product to a variety of users. The test intends to verify a concept, but not a specific system.

Phase IV, Redeployment. Preparations for return begin as soon as JOTH-T JTN concludes. Personnel prepare equipment and vehicles for departure or return to the supporting units. Aircraft begin departing from Osan Air Base on Sept. 10. The last chalk arrives at McChord Air Force Base on Sept. 15.

Coordination Visit

Representatives from the TFE staff visited the ROK from May 10 through 20, 1992. They conducted OPLAN briefings and effected further coordination. They briefed Gen. (then Lt. Gen.) Ronald R. Fogleman (commander of 7th Air Force and the Air Component Command), Maj. Gen. Stephen Silvasy Jr. (assistant chief of staff, Combined-3 CFC), and Maj. Gen. Chang Kyu Park (commander of the ROK ADA Command). Each verified the accuracy of the intent statements and approved the OPLAN. Col. Peter C. Franklin, commander, 35th ADA Brigade, briefed Maj. Gen. William M. Matz Jr., deputy commanding general, I Corps, prior to the group's departure. The group conducted additional briefings for various staff members and their sections. Discussions and working sessions followed these briefings.

Discussions with the ROK ADA Command staff helped to clarify the plans for Phase II. Lt. Col. Hyung-Yul Ju, the plans and exercise officer for the ROK ADA Command, and one of his assistants, WO Han Yong Son, played an important role in these meetings. Their superlative tactical and



technical abilities as well as their mastery of English were key factors in the success of the discussions as well as the future operation. The interoperability exercise expanded to include a fifth system configuration (Ia). The plan allotted four days each to accomplish configurations II, III and IV, but provided only four days for the accomplishment of both I and Ia. The shift from one configuration to the next occurred with joint concurrence. The staffs agreed that it was more important to implement one configuration completely and successfully rather than five configurations partially or unsuccessfully.

To facilitate the initial system integration, the ROK ADA Command planned to locate a PIP I Hawk battery near Suwon Air Base at the beginning of the exercise. They also agreed to try to provide a dedicated console at the MCRC for the duration of the exercise.

Expanded operations included a series of four communications plans to be employed with each system configuration. In the first plan, U.S. communications assets link the systems, with U.S. TRC-145s and TRC-113s deployed to the ROK tactical sites. The ROK ADA Command agreed to provide billeting and messing for the personnel and fuel and electrical power for the equipment. In this first communications plan, the Message Processing Center (MPC) serves as an interface between TFE and the MCRC. The MPC is a U.S. Air Force system that receives and transmits data to and from different sources. In the ROK, it is the interface between U.S. subscribers and the MCRC. In the second plan, U.S. communications assets link the

To say the Cold War is over is to ignore a potentially dangerous reality: the final chapter is still being played out on the divided, heavily armed Korean peninsula. Korea, one of the true flashpoints of the post-Cold War world, is approaching a momentous juncture — one comparable to the partition of 1945 or the terrible war of 1950-53. For Korea is now heading toward reunification. The question is no longer whether the peninsula will be reunited, but when?

— Nicholas Eberstadt

The U.S. role on the peninsula has always been one of deterrence. The North Koreans recognize that they cannot prevail on the peninsula as long as the U.S. commitment is in place; meanwhile, the balance is shifting against the North. Inevitably, as in the case of Eastern Europe, pressure for economic and political improvement will prevail in North Korea.

— William T. Pendley,
Asst Secretary of Defense
for East Asia and the Pacific

systems without the MPC interface to the MCRC. ROK tactical communications link the systems in the third plan, and ROK cable communications link the systems in the last plan. In neither the third nor the fourth communications plan does the MPC interface with the MCRC.

Terrain studies conducted at Fort Lewis on a portable all source analysis system work station prior to the visit indicated that one or two relays were necessary to establish the communications links between the systems for several of the configurations. The ROK ADA Command agreed to conduct a communications exercise to physically verify the equipment required to establish these links.

In addition to the interoperability between the various levels of control, the staffs planned combined operations at each level. ROK and U.S. participants simultaneously operated each piece of equipment, providing fully integrated combined crews during continuous operations. This provided the ROK participants an opportunity to become more familiar with the Patriot system and to observe the system's function within their air defense network from a variety of vantage points. To assist in initial familiarization, TFE planned to design and conduct a Patriot familiarization course. The ROK ADA Command planned to select exercise participants with a working knowledge of both written and spoken English to facilitate the familiarization process and the interoperability exercise.

Discussions also clarified the concept for the Patriot display in support of the C/JVB display. When a visitor arrived, officers delivered the Patriot orientation briefing in the TOC in both English and Korean. A tour of the site followed. Dual language signboards provided a short description of each piece of equipment and its capabilities. Visitors also received a bilingual briefing at each piece of equipment. They inspected the equipment and talked with the operators at each display site. A complete tour took about one hour. The emplacement of equipment on the hardstand minimized the inconvenience caused by rain and mud to the visitors. An adjacent hangar housed the TOC. The interoperability exercise continued unabated during the visits.

Selected members of the TFE staff visited ROK Tactical Sites 38 and 202. Both sites would participate in the interoperability exercise. These visits revealed exceptionally well maintained equipment configured in the same manner as similar U.S. equipment. The group then visited Suwon Air Base to check the location of the future deployment.

The staff later met with elements of the C-staff and the 7th Air Force staff. One of the key issues discussed was logistical support. Theater assets supplied as much logistical support as possible. The executive agent for logistical support was the assistant chief of staff, C-4, CFC. The 19th Support Command, the major Army logistical subordinate command, tasked 23rd Area Support Group located at Camp Humphreys to provide much of the support for TFE. The 23rd Area Support Group tasked the 194th Maintenance Battalion to supply Class II (self service supply centers), Class III (package) and Class IV through the 348th Quartermaster Company. The 194th also furnished Class IX (common), organizational tools, direct support contact teams and organizational conventional maintenance through the 520th Maintenance Company. The 51st Air Squadron, Fuel Operations Section, dispensed Class III (bulk) at Suwon Air Base. No Class V was used. Army Air Force Exchange System and Morale, Welfare and Recreation services provided Class VI. The 2nd Infantry Division hand receipted Class VII items, including 24 vehicles, nine generators and 63 camouflage nets and support systems. The 7th Air Force opened a clinic at Suwon Air Base to provide medical support and Class VIII. Class IX (system) came from Fort Lewis. The Material Support Center, ROK, provided communications maintenance and Class IX less communications security equipment. The 257th Signal Battalion provided maintenance and Class IX for the communications security equipment. The 7th Air Force furnished billeting on Suwon Air Base. A Korean firm operated the dining facility under 7th Air Force supervision. The 25th Transportation Movement Control Agency transported pallets to and from Suwon Air Base.

By the completion of the trip, the staff had briefed most personnel connected with the operation. Joint discussions resolved most



Sgt. Timothy Albrecht

Korean VIPs tour the Patriot missile system static display.

issues. However, three major issues remained. First, the scope of the TFE participation in the JOTH-T JTN was not clearly defined. Second, the ROK ADA Command requested a set of the unclassified operators manuals for the various pieces of equipment. Their personnel needed these manuals to prepare for the interoperability exercise. However, the release of sensitive information to a foreign government required approval through appropriate channels. Third, the ROK ADA Command requested that the interoperability exercise continue into Phase III, the JOTH-T JTN exercise. With only limited information available on the architecture of this exercise and its classification unknown, joint participation remained an issue.

Final Preparation

Returning to Fort Lewis from the coordination visit, TFE began the final preparations. The published OPLAN provided the framework. Weekly in-progress reviews provided the focal point and served as a forum to review the accomplishment of milestones, to resolve issues and to disseminate information.

Training constituted an important part of the final preparations. Beginning in June,

TFE conducted weekly interoperability exercises. These exercises implemented only configurations I and III. (TFE could not implement the other configurations because only one TSQ-73 was located at Fort Lewis.) 1-52 ADA (Hawk) provided a PIP II assault firing platoon to support the exercises.

The weekly exercises also practiced establishing the communications links. Neither the 35th ADA Brigade nor 4-7 ADA had enough multichannel communications assets to completely equip TFE. The brigade's TRC-113/145s had Band II GRC-103 multichannel radios and KG-27 electronic key generators, while the battalion's ICC, communications relay group and engagement control station had Band III GRC-103 radios and KG-94 electronic key generators. Neither the radios nor the electronic key generators could intercommunicate.

This generated a communications challenge. The signal officers drafted, implemented and modified several communications plans before achieving the best solution. This plan produced conductivity throughout the system. It also provided a number of equipment spares in case of system failure.

Staff members briefed personnel in the Patriot Project Office (PPO) on June 22. By

For every time a nation or a people commits its sons to combat, it inevitably commits its full prestige, its hopes for the future, and the continuance of its way of life, whatever it may be. If the United States ground forces had not eventually held in Korea, Americans would have been faced with two choices: holocaust or humiliation. General, atomic war, in a last desperate attempt to win the game, would have gained Americans none of the things they seek in the world; humiliating defeat and withdrawal from Korea would inevitably have surrendered Asia to a Communist surge, destroying forever American hopes for a free and ordered society across the world.

— T. R. Fehrenbach,
This Kind of War

But they fought, to the bitter end, a war they did not particularly believe in, to an armistice they have little faith in, and they will fight again automatically if the armistice should fail. They have done all this without the moral whippings of any political commissars. They have bled and died in the mud and stones of that bleak, incomprehensible land, in full knowledge that half their countrymen at home were too bored with it all to give the daily casualty lists a second glance. . . . They knew it was too much effort for many of their countrymen to walk to the nearest blood donation center, so they gave their own blood to their wounded comrades. And they fought on in no particular bitterness that this was all so.

They fought right ahead at the time military men of great authority were publicly arguing that they were being handled tragically wrong, while politicians divided their countrymen about the very purpose of their fight, . . . and knowing that although allied nations were cheering them on, allied soldiers were not coming to help them in any numbers.

None among us can unravel all the threads of why these youths behaved so magnificently. It has to do with their parents, their teachers and their ministers, their 4-H clubs, their scout troops and neighborhood centers. It has to do with the sense of belonging to a team with the honor of upholding it, the shame of letting it down. But it also had to do with their implicit, unreasoned belief in their country and their natural belief in themselves as individual men upon the earth.

Whatever is responsible, their behavior in this war out-matches, it seems to me, the behavior of those Americans who fought the definable wars of certainty and victory. For this is a new thing in the American story, and for those of us who write the story, as they live it, this is a thing to be put down with respect and some humility.

— Eric Sevareid,
CBS Radio, 1953

this date, the PPO had already approved the request for the loan of selected operators manuals to the ROK ADA Command. Proper safeguards of both sensitive and classified material during the exercise remained a concern. PPO representatives agreed to come to Fort Lewis in July and brief TFE members on the rules and procedures covering the safeguarding of sensitive material and to delineate what classified material is currently cleared for release to the ROK personnel. They also provided copies of a classified briefing previously released to the ROK. This served as a basis for developing the TFE Patriot orientation briefing. The PPO representatives agreed to review and approve TFE's briefing during their July visit and volunteered to conduct a feasibility test of the five proposed system configurations.

The Software Engineering Division at Redstone Arsenal, Ala., conducted the feasibility test from July 6 to 10. They found that the operational softwares of the participants were compatible for configurations I, Ia and II with minor exceptions. Configuration IV encountered problems with the flow of data and commands between the systems and was the least satisfactory. Configuration III also

encountered some problems, although less severe than those experienced in configuration IV. The PPO provided detailed descriptions of the anticipated problems and limitations. The staff sent copies of these results to the ROK ADA Command.

Training continued during July. By now the weekly interoperability exercises were a familiar routine, and TFE added rehearsals for the Patriot orientation briefing and static equipment displays and briefings. Personnel emplaced and camouflaged equipment on the Gray Army Airfield hardstand, erecting the TOC in a nearby hangar. They practiced the briefings. Personnel expended every effort to replicate as closely as possible the anticipated situation at Suwon Air Base.

Although units at Fort Lewis habitually conduct emergency deployment readiness exercises, TFE conducted additional exercises during July in preparation for deployment. During each exercise, TFE personnel prepared and inspected the vehicles to ensure compliance with U.S. Air Force standards for air movement. They moved the equipment to the scales, weighed the equipment and determined the center of gravity. Then they moved the equipment to the tech-

Task Force Eagle emplaced the Patriot (below and right) at Suwon Air Base, ROK.



Eighth Army PAC

nical inspection point. Here, trained personnel conducted technical inspections of the vehicles to verify their readiness for loading on the aircraft.

During both June and July staff members were in almost daily contact with their counterparts in the ROK to work out the final details. The staff forwarded the design of the 10 signboards for the equipment displays to the air defense liaison officer, C-3, CFC, who ensured the signboards, identical in both format and content, were produced in both Korean and English. Additionally, the staff completed the Patriot orientation briefing. The PPO approved it for release to the ROK. The staff sent it to the air defense liaison officer to be forwarded to the ROK ADA Command for review and approval.

By the end of July, TFE soldiers were ready and eager to deploy. As a result of their training, they were confident of their ability to execute all phases of the operation.

Execution

Phase I began on Aug. 1 with the departure of the first C-5A from McChord Air Force Base. It landed at Osan Air Base on Aug. 2. The equipment convoyed to Suwon Air Base. On Aug. 3 the TSQ-73 was energized and established a data link with the MPC.

As previously planned, the ROK ADA Command hosted a final joint coordination meeting on Aug. 3. Discussions produced some modifications to the original plan. First, continuous operations were replaced by operations during the normal duty day. Second, a PIP I Hawk battery would not deploy to Suwon Air Base at the beginning of the exercise, but rather a PIP II Hawk battery would collocate at the base from Aug. 20 to 22 to participate in the exercise. Third, based on additional information, the interoperability exercise was extended to include the JOTH-T JTN test. Fourth, the ROK ADA Command requested (and TFE agreed) that TFE personnel conduct a reconnaissance, selection and occupation of position on Aug. 20 of several ROK tactical sites to determine their suitability for occupation by a Patriot battery.

By Aug. 4 commands and data were flowing between the MCRC, the TSQ-73 and the ICC. On Aug. 5 the engagement control station arrived and integrated into the system.

On Aug. 7 and 8 the Raytheon civilian technical representatives, who habitually support 4-7 ADA, conducted a Patriot familiarization course for the ROK participants in the interoperability exercise. All ROK personnel proved to be technical experts on either the Hawk or the TSQ-73 systems. They

What Vietnam demonstrated was merely that it is as hard for a democratic country to maintain domestic support for an expensive limited war overseas as it is for a comparable counterinsurgency campaign, if the country's own vital interests are not clearly involved in the outcome. This had already been demonstrated in the other American limited war: Korea, which President Eisenhower only managed to conclude more or less satisfactorily, before the homefront's patience ran out in 1953, by threatening to escalate to the use of nuclear weapons. The one advantage of total war is that the government doesn't have to worry much about the home front, since national survival is involved; with anything less, in a democracy, the government has problems pretty soon, as it gets caught between those who want to quit and those who want to "solve" the problem by escalating the war.

— Gwynne Dyer, *War*



Eighth Army PAO

North Korea is clearly the most destabilizing proliferation threat in East Asia. Lingering uncertainty about North Korea's nuclear intentions could lead both the Japanese and South Korean governments to reevaluate their renunciation of nuclear weapons, based on the assumption that a diminished U.S. commitment might no longer deter a nuclear-armed Korea.

— Sara S. Doyle and
James E. Doyle,
Science Applications
International Corp.

had obviously devoted much time and effort to studying the available Patriot manuals.

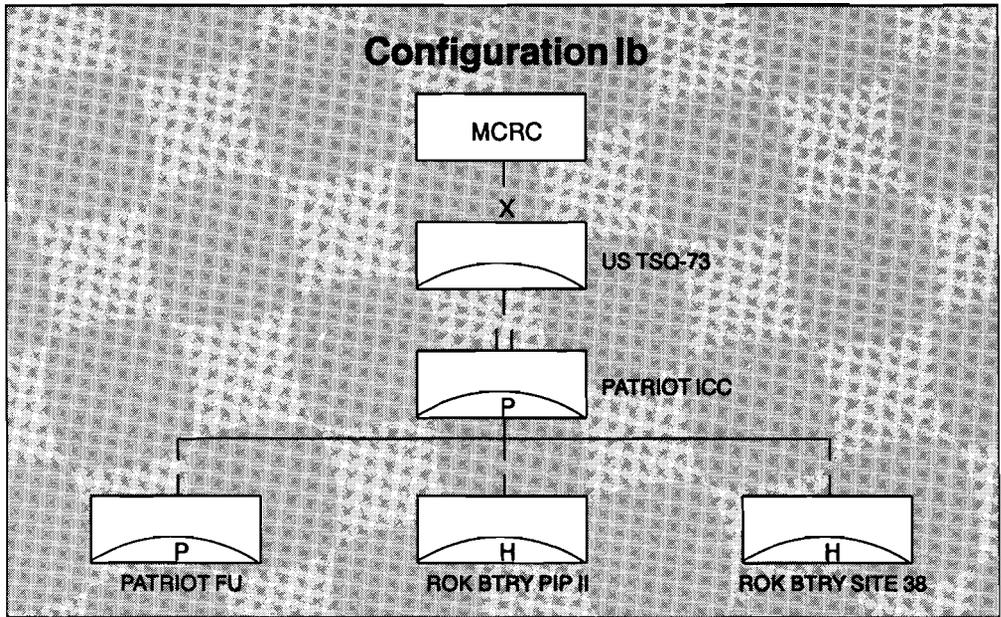
On Aug. 9, the last C-5A landed at Osan Air Base and the equipment convoyed to Suwon Air Base. Phase I was complete. On this day, the JTADS established a tactical data information link-A with the MCRC over high frequency radios, providing both a voice and a data link. This was the first time units from Fort Lewis had used a JTADS. While not an integral part of the interoperability exercise, it was opportunity training and an important accomplishment for TFE.

Phase II began on Aug. 10. Participants conducted the first combined dress rehearsal of the Patriot orientation briefing and equipment displays and briefings. Minor changes produced more effective presentations. Briefings conducted in both English and Ko-

rean took too long. As a result, each nationality briefed only their counterparts following a short welcome by the commander of TFE, Lt. Col. Michael Leeper. Additionally, the TOC in the hangar did not provide a satisfactory environment for briefing ROK dignitaries, so these briefings shifted to the C/JVB building. Following the orientation, the dignitaries visited the site for the equipment displays and briefings, which were also conducted only in Korean. U.S. visitors received the orientation briefings in the TOC followed by similar tours of the site.

The interoperability portion of Phase II began on Aug. 11. The ROK personnel developed a checklist for integration checks and procedures (see box), which they diligently applied to each configuration. The ROK ADA Command suggested that rather than devoting four days to each configura-

Integration Checks/Procedures	
Configuration #	
Step 1	Prepare system for operation (all locations) Power on checks Power off checks
Step 2	Initialize system for operation (all locations)
Step 3	Establish communications (all locations) Voice communications Data communications
Step 4	Data link operations MCRC: Display site locations for TSQ-73, ICC, A/4-7 Display site status (missile count, operational, tracking, firing, engaged) TSQ-73: Same as above ICC: Same as above
Step 5	Remote track reporting MCRC: Initiate remote track (check all units for reception) TSQ-73: Same as above
Step 6	Transmit and receive pointer (all locations)
Step 7	Compare track data (all locations) (position, speed, altitude, ID)
Step 8	Correlation (all locations) (check displays for dual tracks)
Step 9	Change ID (all locations) (send and receive ID changes)
Step 10	Send and receive engagement commands (all locations)
Step 11	Send friendly protect commands (all locations)
Step 12	Send state of alert commands (all locations)
Step 13	Send and receive weapons control commands (all locations) (weapons tight; weapons free)
Step 14	Ensure all tracks are displayed (all locations over 100)
Step 15	System power off



tion, the exercise move as quickly as possible through each configuration. When ROK personnel completed the checklist on a configuration, the configuration would switch. After running through the five system configurations, the four communications plans would be implemented for each system configuration. This was agreeable to all participants.

On Aug. 12 the first group of visitors arrived. By the end of the operation more than 1,700 personnel had visited the site. This number included the current, and at least two former, ministers of national defense, the leader of the opposition party and more than 160 general and flag rank officers. As much as practicable, the interoperability exercise continued unabated during those visits.

On Aug. 19, the adaptable surface interface terminal established the link between an airborne warning and control system and TFE. Voice and data flowed through the link. While not an integral part of the exercise, this was an important accomplishment. It was the first time the terminal had successfully linked an airborne warning and control system with the brigade TSQ-73.

By Aug. 20 TFE implemented configuration III. At this time a PIP II Hawk battery moved to Suwon Air Base from Tactical Site 53 and collocated with TFE. This was one of the first PIP II units in country. TFE reconfigured to configuration I. The battery linked

to the ICC and created a new configuration (Ib). After completing the 15 checks, the battery departed and the progression through the checklist for configuration III resumed.

All of the equipment functioned superbly during the exercise. Both the TSQ-73 and the ICC were operational 100 percent of the time, although the ICC had a period of degraded operations. The Patriot firing unit and the communications links were operational more than 95 percent of the time. Problems with the radar station accounted for the firing unit's downtime. A series of three nonoperational KG-30 electronic key generators accounted for the communications outage.

On Aug. 24, the ROK ADA Command and the TFE participants conducted an in-progress review. The ROK personnel raised a series of interesting questions and issues resulting from their observations during the interoperability exercise. To provide visible answers, TFE reconfigured to configuration I and proceeded through each configuration, remaining in each just long enough to demonstrate answers to the specific questions.

Phase III, the JOTH-T JTN test, began Sept. 1. Insufficient time prevented integration of TFE into the structure of this exercise. Rather, TFE linked into the Air Defense System Integrator (ADSI) that was conducting a parallel exercise during this time.

A new North Korean missile has Republic of Korea and U.S. military officers worried. This weapon, an enhanced version of the Soviet Scud B, is rated at a range of 31 to 370 miles Once operational, a missile with such anticipated range could hit any target in the Republic of Korea.

— Beyond the Cold War:
A Global Assessment

Today the Pentagon estimates that it would have no more than 24 hours lead time in the event of an attack from the North. As the end of the Kim Il Sung era approaches, the risk of conflict along the "demilitarized zone" is rising, not diminishing. It would be inappropriate at this juncture to instigate further reductions in U.S. force levels in South Korea, if Washington is to reduce the likelihood of the war it wishes to avoid in the region. With large cuts pending in both America's global military budget and worldwide force levels, the need to communicate an undiminishing willingness and capability to support U.S. allies in Seoul may be all the more urgent.

— Nicholas Eberstadt

The ADSI is a multifunction data link buffer designed to resolve most data link, radar interface and intelligence source problems. The current ADSI is a prototype that has undergone several tests and expansions throughout the years. (ADSI can furnish early warning of TBM launches through data and voice links.) In the current exercise, ADSI merged intelligence and targeting data and provided it to users.

The console for the ADSI, while located in the MCRC, was not directly linked to the MCRC. By Sept. 2, ADSI had passed early warning of a simulated TBM launch to the ICC. Additionally, voice and data necessary to fight an integrated air battle passed from the ADSI to TFE and back again.

Phase IV, the redeployment, began on Sept. 4 with the termination of the ADSI link and with a tour by the last group of visitors. TFE members began preparing equipment for departure and return to supporting units. ROK and TFE personnel conducted a combined after action review on Sept. 5. Participants judged the operation a success. No significant issues arose during the review. The ROK ADA Command had not completed the tabulation and assessment of the collected data at this time. They agreed to provide complete copies of their internal after action review to TFE at a later time. By Sept. 9, all equipment was ready for redeployment. The first C-5A departed Sept. 10. On Sept. 16, the last C-5A landed at McChord Air Force Base. The operation was complete.

Conclusions

The operation was an unqualified success. All portions of the commanders' intents were accomplished. The most difficult parts of the operation were the planning and preparation. Execution was easy by comparison. The actual execution varied slightly from the OPLAN. However, in retrospect, no portion of the operation revealed flaws so significant they would mandate changes if the operation were repeated.

There were several factors that significantly impacted on the success of the mission. First, the accurate formulation of the commanders' intents set the stage for success. Second, ensuring that the various commanders' intents were congruous facilitated

unity of effort. Third, maximum mutual cooperation in achieving clearly defined goals was important. Fourth, flexibility in regard to non-essential detail while adhering to the commanders' visions ensured success. Fifth, the ability to communicate was a necessity. The English ability of the ROK participants was a key part of this. Additionally, all participants possessed a similar technical and tactical knowledge that facilitated communication. Sixth, in spite of all efforts, occasionally things went awry because of misunderstandings or competing goals. A mutual sense of humor helped smooth over these infrequent occurrences.

This successful operation demonstrated several important facts. First, the Patriot system is compatible with the current ROK air defense network. However, to ensure maximum use of Patriot capabilities, either a TSQ-73 using Patriot compatible software or an ICC should link the firing unit to the MCRC. Second, a Patriot system and the ROK PIP I and PIP II Hawk units can interoperate. Third, a U.S. Patriot task force can deploy to the Korean theater of operations and rapidly integrate into the existing air defense network. A Patriot task force supplements the current air defense capabilities in the theater against an air breathing threat. It also complements these capabilities by providing an anti-TBM capability.

Following the operation, several issues remain. First, the ROK ADA Command questions the ability of the Patriot to engage and destroy TBMs launched from close proximity to the targets. Second, they are concerned that the size of the Patriot equipment precludes rapid movement throughout the Korean theater of operations. Third, they fear that existing tactical sites will require extensive modification to accommodate the Patriot. The first question must be answered by technical experts. The ROK ADA Command hopes that a Patriot deployment to ROK during Team Spirit '93 will provide answers to the last two questions.

Lt. Col. Kirk E. Murray is the S-3 of the 35th ADA Brigade, Fort Lewis, Wash.

Column Write

Career Counseling

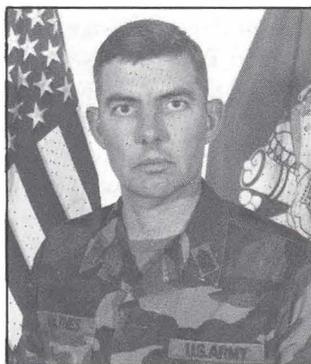
Today, thousands of soldiers who had planned to make the Army and Air Defense Artillery their life work are being forced out of the military by massive force reductions. Hundreds of ADA soldiers whose MOSs will disappear as older air defense systems leave the Army inventory are making the transition to new MOSs and new weapon systems. With the world turned topsy-turvy by the collapse of the Soviet Union, everyone who wears the uniform is wondering what the future holds.

The role we as senior NCOs play in counseling soldiers on career decisions will grow more crucial as the Army drawdown continues. As NCOs, we all know that it's not the quality of today's high-tech weapon systems, but the quality of today's soldiers, that makes the real difference between the Army of the 1990s and the "hollow force" of the 1970s.

It's up to us to maintain that quality by convincing promising soldiers that the Army emerging from the drawdown will be an Army of excellence, filled with challenges and promotion opportunities. But, at the same time, we have to acknowledge that some ADA MOSs will be reduced by as much as 50 percent. ADA soldiers are rightfully concerned about their future and are wondering where to turn for information and advice in making the right decision. It's only natural that they should turn to us.

We owe soldiers, particularly those not likely to make the cut, honest advice. If they are going to be forced out of the Army, it's up to us to make sure they leave with everything they've got coming. By now, all ADA units should have a copy of the Chain Teaching Program: Drawing Down the Army, Updates 1 and 2. You should have already tailored the package to your unit and passed the information along to your soldiers.

Arrange individual meetings with each of the soldiers who serve under you to review their job performance. Make sure they know where they stand. Make sure they are aware of the early release programs, voluntary incentives, reclassification programs and options of transferring to Reserve Component programs. Explain services, such as guidance counselors, chaplain, chain of command and the Army Career and Alumni Program, that are available to help them make the transition from military to civilian life. If you've already interviewed your soldiers, don't forget to follow up. Arrange a second meeting for soldiers who seem unable to make up their minds, or seem to be making the wrong decision.



Help your soldiers evaluate their potential to weather the storm. And remember, it is best for the soldier and best for the Army that they make the right decision rather than having the Army make it for them.

Meanwhile, keep your soldiers mission occupied and their thoughts focused on the future rather than the transitory period of personnel turbulence and force restructuring. Experts responsible for designing ADA's future force structure and creating new MOSs agree that career progression and NCO leadership opportunities will return to pre-drawdown levels for soldiers who ride out the storm. Threat trends, an expanded mission and an influx of new weapon systems combined make the future bright for Air Defense Artillery. And ADA NCOs will continue to be blessed with the opportunity to train and lead the best soldiers ever recruited by any nation, anyplace, anytime.

CSM James E. Walthes
Post Command Sergeant Major

I know the change [brought about by the drawdown] has caused some pain, but we cannot expect to do what we have to without paying some price. We shall cope . . . survive . . . succeed because we have a system to keep ourselves trained and ready.

We must focus on our vision of a total force, trained and ready to fight, serving the nation at home and abroad, a strategic force capable of decisive victory. Doctrine, training, quality people, modern equipment, force structure and leader development will help us maintain our equilibrium.

I need your leadership skills now more than ever. Your Army and your country are relying on you and your willingness to share the responsibility for keeping vigilant and prepared. A strong NCO Corps—trained to standard—training young men and women to become part of the greatest Army ever assembled. You clearly are the key.

The NCO Corps is right where it has wanted to be from the beginning: firmly in place as the backbone of the Army. We are facing enormous challenges. We understand the task; the conditions are somewhat unclear; the standards remain clear—victory.

— from Army Chief of Staff Gen. Gordon R. Sullivan's address during ceremonies celebrating the 20th anniversary of the U.S. Army Sergeants Major Academy

PATRIOT: A Reason to be Proud



You can measure success on many levels. At the strategic level, it [Patriot] was a success because Israel stayed out of the war and the coalition held together. At the operational level, it was a success because Gen. Schwarzkopf and the ground force commander had time to build up their forces and their supplies and were able to launch their offensive when they wanted to. At the tactical level, it was a success because not a single one of the installations that was defended by U.S. Patriot missiles in dedicated defense was damaged by Scud attack.

— From the testimony of Col. "Skip" Garrett

The Patriot controversy ended, or at least subsided, when Congressman John Conyers (D-Mich.), chairman of the House Government Operations Committee, withdrew a report that questioned the success of the Patriot during the Gulf War rather than submit the report to a vote. The draft report was based on testimony delivered last spring during the committee's open hearings on Patriot's Gulf War performance. It charged that few, if any, of the Patriot missiles fired at Iraqi Scuds over Saudi Arabia and Israel actually found their targets, and held allegations that the Army purposely exaggerated Patriot's success to promote funding for Strategic Defense Initiative projects.

"The decision to withdraw the investigative report amounts to an acknowledgement that the committee lacks confidence in the report's validity," said Brig. Gen. James J. Cravens, assistant commandant of the U.S. Army Air Defense Artillery School, Fort Bliss, Texas. "Patriot was not perfect — few things are — but it far exceeded our expectations. Detailed analyses from available data indicate that it was more than 70 percent effective in Saudi Arabia and more than 40 percent effective in Israel. These figures are exceptional considering that before Aug. 2, 1990, we had only three PAC 2 missiles available and had conducted only limited test firings before Desert Storm hostilities

Desert Storm "Scudbusters" returned home to cheering crowds and a chorus of critics.





Air Defense Artillery School assistant commandant Cravens (left); at center and right, Garner and Heebner who testified at Patriot committee hearings.

commenced. As importantly, the PAC 2 missile was not designed for coverage of an area the size of Tel Aviv or Haifa. In spite of these facts, our great, well-trained soldiers fought the world's first anti-missile war and *won!* In the process, we learned a lot about system design, tactics, techniques and procedures that will help us achieve greater success in future conflicts.

"The committee's decision to kill the report removes a significant threat to continued funding for Patriot PAC-3 improvements and the Theater High Altitude Area Defense system," Cravens added. "My only regret is that the hearings cast undeserved negative comments upon the Patriot and indirectly implicated the soldiers who operated it. Our Patriot crews performed superbly, had confidence in the system, and were deservedly proud of their results. Their performance was by all accounts magnificent!"

Conyers withdrew the report following the release of a Government Accounting Office (GAO) analysis that faulted the methodology of Patriot's critics, who largely based their criticisms on videotapes of Patriot-Scud engagements taken by network television crews. The analysis concluded that "according to electro-optical experts in academia, industry and the U.S. Army and analysts in the Congressional Research Service and the Center for Strategic and International Studies, the videotapes cannot be relied upon to reach conclusions about the performance of the Patriot missile in the Persian Gulf War." Experts testified that commercial television cameras operate too slowly to accurately record high speed events

such as Patriot-Scud engagements and would, more often than not, make successful intercepts appear as misses.

In applauding the rejection of the draft investigative report, Congressman Frank Horton (R-N.Y.) said, "It is time to stop the press barrage that has presented a biased and distorted view of this weapon, its performance, the data used to support its performance, 'expert' critics who are not expert at all and so many other things that make this entire exercise one that I consider destructive to the legitimate defense and security interests of our country.

"Members had to weigh the findings of this staff-recommended report that the Patriot might not have worked even once against the findings, experience and statistical record of soldiers in the field who operated the weapon system, commanders who oversaw its operation and our own Defense Department, defense experts and analysts, as well as defense experts and analysts from Israel, Saudi Arabia and Kuwait where the weapon was used," Horton continued. "The decision to pull the report is a pretty clear indication of where the members stood."

Testimony delivered at the beginning of the hearing generated a storm of adverse publicity for Patriot. The bad press was, in part, a reaction to the rave reviews that proliferated after the initial Patriot intercepts.

"The anti-missile debate ended at about 4 a.m. this morning," reported *The Wall Street Journal* following the historic first intercept. "That's when the now famous Patriot missile blasted an Iraqi Scud out of the sky over Saudi Arabia."

Simple calculations indicate that the 500 to 600 pounds of high explosives in a Scud warhead would be sufficient to subject an area 20 to 50 yards in radius to five pounds per square inch blast overpressure. This is enough to demolish virtually all types of residential construction and much commercial construction. When Scuds explode in populated areas, such devastation is unmistakable, and the absence of such devastation associated with the identified impact of a Scud warhead is conclusive evidence that the warhead did not explode on impact. If you don't have a lot of catastrophic damage in an area when something like over 30 Scuds fell in populated areas, and more than 50 were fired, common sense tells you something is going on to prevent that catastrophic damage.

— From the testimony of
Dr. Charles Zraket

We were soldiers trying to do a job—the job we were sent to do—and we were thinking we had done such a great job. We get back, and a year later we're told you guys didn't do as good a job as you thought you did. Well, that's wrong. We did a great job!

— From the testimony of
SSgt. Jose Lopez

The bottom line is this: a Patriot missile was the first in the world to shoot down another missile. None of the airport-sized areas defended by Patriot in either Israel or Saudi Arabia suffered significant damage. Strategically, the presence of Patriot batteries in Israel kept Israel out of the Gulf War, thus preserving the multilateral alliance fighting that war.

— Detroit News



Thank God for Patriot!
— President George Bush

The Patriot quickly took on an aura of invincibility and its crews the mystique of heroes. "The Patriot's success, of course, is known to everyone," Gen. H. Norman Schwarzkopf told reporters a few days later during a Gulf War press briefing. "It's 100 percent, so far. Of 33 [Scuds] engaged, there have been 33 destroyed."

Following the war, the Army reviewed after action reports and ground damage assessments and rated Patriot's success at more than 80 percent in Saudi Arabia and more than 50 percent in Israel. A subsequent, more exhaustive reassessment, undertaken at the request of Conyers' committee, placed the success rate at more than 70 percent in Saudi Arabia and more than 40 percent in Israel. But the shifting numbers heightened media scrutiny.

On the eve of the congressional hearing, an ABC *Nightline* segment challenged even the Army's revised estimates. Reporter Forrest Sawyer, substituting for *Nightline*'s regular host, commented "[Patriot] seemed to be the triumph of high technology, the equivalent of firing a bullet to pick another bullet right out of the sky, and it has become the perfect justification for spending even more money for even fancier technology, unless of course the Patriot is not what it's cracked up to be; unless all those stories about the Patriot's accuracy were all wrong, which is exactly what critics are now claiming. Tonight, with your hard-earned tax dollars at stake, we will ask whether Patriot was a white knight or a white elephant."

Sawyer then aired seemingly irrefutable commercial videotapes that critics said showed Patriot missiles missing incoming Scuds by large margins and explosions they said were caused by Scuds slamming into the ground. However, experts who appeared before the committee demonstrated that videotapes taken by low-speed commercial television cameras would make even pinpoint hits look like misses because most of the action would have taken place "between the frames." "The chances are one in 10 or one in 17 of seeing a hit on a videotape. It's easier to find misses than hits," said one. Other experts testified that spectro-analyses of videotapes said to show warheads detonating actually showed low-yield explosions caused by the burn-off of impacting

Scud fuel cells. They said the absence of catastrophic ground damage confirmed their analyses.

Maj. Gen. Jay Garner, the Army's assistant deputy chief of staff for operations and former assistant commandant of the U.S. Army Air Defense Artillery School, testified before the committee that the Army never purposely inflated Patriot's statistics, but that figures presented by Schwarzkopf and other Central Command briefers were based on the best information available at the time.

"The Patriot story is a dynamic one," Garner said. "There was change at every juncture. The mission was expanded from a point defense system to an area defense system. The threat moved from a relatively short-range, ballistically stable, INF treaty-compliant missile to a Scud variant fired at far greater ranges, traveling to higher altitudes and attaining speeds of over 5,000 miles per hour while often maneuvering and breaking up. The capabilities of the Patriot evolved to meet this threat with extraordinary cooperation between industry and government. As I said earlier, it is an American success story, one that could only be accomplished by a great nation."

Brig. Gen. David Heebner, who commanded U.S. and Dutch Patriot units deployed to protect Israel against Scud attacks, testified that a combination of factors caused Patriot's success rate to be lower in Israel than in Saudi Arabia. He said the longer ranges involved caused Scuds fired at Israel to break up more than missiles descending on Saudi Arabia and that Patriot units defending the huge urban sprawl of Tel Aviv and Haifa were required to engage incoming Scuds outside their normal engagement envelope.

"When the bottom line is drawn," Heebner said, "Patriot was far more successful than I could ever have hoped for as I understand, now, the effect of what happened in these engagements."

News of the investigative report's demise was also applauded at Patriot manufacturer Raytheon's corporate headquarters. William H. Swanson, senior vice president and general manager of Raytheon's Missile Systems Division, had only recently released an open letter to the company's workers. "The bottom line is that Patriot worked and worked

well, and that all of those who were involved directly with its operation know this to be a fact," wrote Swanson. "The comments of [Patriot critics] pale in comparison with the words of thanks contained in the hundreds upon hundreds of letters received from ordinary men, women and children in Saudi Arabia and Israel who saw firsthand what happened. There was no doubt in their minds as to what Patriot did for them. In the words of Prince Bandar Bin Sultan Bin Abdul Aziz, ambassador of the Kingdom of Saudi Arabia to the United States, "I was there, and the most beautiful sight in the world that I have ever seen in my life was that Patriot streaking across the capital of Saudi Arabia hitting those Scuds Don't listen to people who

think they are playing video games. That was no game."

Conyers' decision to table the investigative report represents an important, perhaps decisive, battle in the campaign to restore Patriot's reputation. But although Secretary of the Army Michael P. W. Stone has declared that it is time to lay the Patriot controversy to rest (see "Closing the Patriot Controversy," below), some of the system's critics have indicated an unwillingness to agree to a cease-fire. An aide who worked on the report but requested anonymity told a States News Service reporter that "Obviously with Congress on recess it's not going to be a report of the full committee, but we're looking at other ways to put it out."

Closing the Patriot Controversy

by Secretary of the Army Michael P. W. Stone

During the past several months a steady cacophony of criticism has been directed at the Army's Patriot missile system. The tenor of the criticism seems a gleeful return to the days before Desert Storm when "experts" predicted the demise of the very same systems that served the United States so well once the war began.

Fortunately for the United States, this latest criticism is just as flawed as the charges made several years ago. Despite the rancorous and slanted television presentations and a series of ill-informed editorial tirades, the Patriot remains a proven battlefield winner — the world's only fielded anti-missile defense system.

Although originally designed as an anti-aircraft weapon, today's more advanced PAC-2 Patriot is capable of defending high-value targets such as command and control centers, airfields and logistics bases from intermediate-range missiles like those covered by the INF treaty between the United States and the former Soviet Union — weapons much slower than the Scuds fired during

the Gulf War. It does so by intercepting and then destroying or diverting incoming warheads.

During the Gulf War, the Patriot not only accomplished its mission; it did more. Within 12 hours of arriving in Israel, Patriot units were in action, ready to do their best to handle a new, broader mission of defense against modified Iraqi Scuds that frequently broke up in flight and complicated the job of intercepting the actual warhead.

Most of the controversy surrounding the Patriot has centered on the success rate of the units deployed in Israel. Initial Defense Department figures cited success rates of more than 50 percent. After further analysis, defense experts adjusted that figure to well over 40 percent warhead kills or mission kills. (The former refers to the destruction of a warhead; the latter to missile diversions or large reductions in payload delivery.) If two unsuccessful engagements, now classified as failures, were to be reclassified as mission kills, the Army would be in the position of adjusting its success rate upward, not down-



The only way to know [Patriot's effectiveness] is to look at the ground. Patriot reduced the damage expectancy from one-and-a-half to four in Israel. This is absolutely not the performance of a system that failed. I believe the Patriot system was an astounding success, even if it only cut in half the severe damage that might have been otherwise produced by the Scuds. Patriot was used to defend against a threat well beyond the outer edge of its original design envelope, and it frequently succeeded. For the first time in history ballistic missiles launched in combat were countered by defending interceptors. That's important. We need to push ahead with research and development for advanced tactical ballistic missile defenses.

— From the testimony of
Dr. Peter Zimmerman



It is my belief that the applause still echoing from Tel Aviv, Haifa, Dhahran and Riyadh will soon drown out the cries of post-war revisionists. It is my conviction that the reputation of Patriot and the "Scudbuster" crews who made history during Operation Desert Storm will emerge undamaged by the war of words.

— Maj. Gen. John H. Little,
Chief of Air Defense Artillery

ward, because the success rate would be closer to 60 percent than 50 percent, the original number. In Saudi Arabia, the Patriot successfully engaged more than 70 percent of its Iraqi Scud targets.

The Army analysis of the Patriot-Scud engagements has been rigorous and conservative and based on every piece of evidence and data one could expect to exist. Israeli and American soldiers were fighting a war. They were not testing missiles at the Army's White Sands Missile Range. There were no elaborate telemetry devices in place. High-speed tracking cameras were not available at Patriot fire units. Instant replay was not available. What went on was not a game.

As a result of these reviews, the book ought now to be closed on the success rate debate — though further refinement of the methods used to collect and analyze data should and will continue. After last year's debate, little has changed since President Bush and the Defense Department made their pronouncements about Patriot. Mr. Bush's praise of the Patriot was appropriate, as was his observation in February 1991 that, "No system is [perfect]; no system ever will be, and not every intercept results in total destruction."

Perhaps the most bizarre as well as perplexing element of the success-rate debate has been the accommodating reception given by the press and networks to Patriot critics. No serious examination of the critics' positions were undertaken by either the print or electronic media. The statements of critics have been reported as gospel.

Yet in testimony before the House Government Operations Committee, a representative of the Congressional Research Service characterized the analysis of MIT Prof. Theodore Postol, Patriot's most outspoken critic, as "worthless." Dr. Postol's attempt to analyze Patriot-Scud engagements by referring to commercial news video footage was discredited by Dr. Peter Zimmerman, a physicist and expert in imagery analyst at the independent Center for Strategic and International Studies in Washington. Further refutation of Postol's methodology came from Charles Zraket, a former chairman of MITRE, a nationally recognized research institution and a scholar in residence at Harvard's Kennedy School of Government.

Reuven Pedatzur, a less well-known but equally prolific critic of the Patriot, received the same hands-off media treatment as Postol. Mr. Pedatzur's diatribes claimed that the "Patriot missile did not succeed to hit [sic] any warhead of the Scud missile The intercepts in Israel [were] zero." In this assertion Pedatzur, a retired Israeli Air Force major, stands alone. In fact, no responsible analyst in the United States or Israel shares his view.

Gen. Avihu Ben-Nun, a retired commander of the Israeli Air Force, was so taken aback by Pedatzur's unsubstantiated broadsides that he prepared a letter disavowing any agreement with Pedatzur's opinions and clearly distancing himself from Pedatzur's position. That letter is now a part of the Congressional Record.

The real Patriot story has several essential elements.

- On the strategic level, Patriot was an important factor in the Israeli decision to avoid a direct entry into the Gulf War.

- At the tactical level, Patriot accomplished a historic mission: successfully engaging, intercepting and killing incoming ballistic missiles.

- On the psychological level, Patriot provided a great mental lift for Israelis, Americans and freedom-loving people around the world by demonstrating the effectiveness of American technology.

- And most important, on the human level, the Patriot saved lives.

Today, Patriot is the only weapon system in the world that can do what was done in the Gulf War, and Patriot will be the only fielded system with that unique, missile-killing capability for most, if not all, of this decade. Whether it will be the most effective anti-missile system in the next century remains to be seen. But Patriot has been and is today a remarkable American technological achievement and a highly successful weapon system.

We won Desert Storm and the Patriot air defense system played a vital role in that victory. If we are going to be prepared to win again, we must look to the future, build on what we have learned, and abandon fruitless debates over small statistical differences — arguments advanced by those pursuing their own agendas.

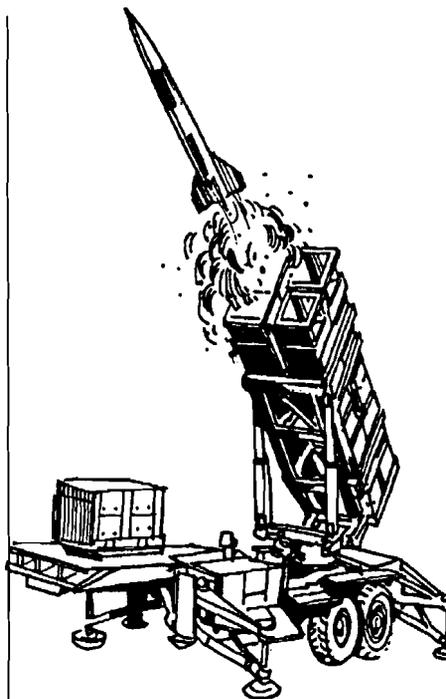
PATRIOT PAC-3 ANALYSIS UNDERWAY

Phase II of the Patriot PAC-3 Cost and Operational Effectiveness Analysis (COEA), which began in January, is scheduled for completion in September. It will answer critical operational questions about battle space and force effectiveness left unanswered in Phase I due to insufficient data. Final PAC-3 COEA results will support a September Army Acquisition Review Council decision.

PAC-3 is a series of significant upgrades to the Patriot system designed to achieve the user-identified required operational capabilities detailed in the PAC-3 operational requirements document dated May 1, 1992. Patriot PAC-3 operational requirements focused on lessons learned from Operation Desert Storm, capabilities required to defeat the threat into the next century and efforts to accomplish new and revised missions.

The upgrades will improve Patriot to its "elastic" cost-effective limits, buy back battle space lost due to the advances in the air-breathing threat, and extend Patriot's anti-tactical ballistic missile footprint to protect assets within a larger area.

Other upgrades include lowering the system's minimum engagement altitude against the air-breathing threat, increasing the Patriot battery's surveillance section; improving the system's organic classification, target discrimination and identification techniques; and incorporating technical advances in target recognition. The upgrades will also improve system lethality against a wider range of incoming tactical ballistic missile warheads, increase the number of targets that can be tracked without degradation, shorten missile



reload time and improve Patriot's strategic lift capability. In addition, the upgrades will improve the Patriot

battery's capability to integrate into the ADA command, control, communications and information network without an information coordination central, and provide the battery and battalion with an integral data recording, playback, analysis and training capability.

PAC-3 upgrades will be implemented in configurations. Each configuration, consisting of integrated hardware and software enhancements, will be tested and fielded as a package. The implementation schedule calls for testing in 1995 with fielding in 1996 and full attainment of the required PAC-3 capabilities between 1998 and 2000.

The Army decided to proceed with Phase II because at the end of Phase I the study advisory group lacked sufficient data to choose between two competing missiles, the Patriot multimode missile or the extended range intercept technology missile better known as ERINT.

ARMY AWARDS RAYTHEON GIANT PATRIOT CONTRACT

In December, the Army awarded a \$1.03 billion contract to Raytheon Co. for the purchase of tactical hardware in support of the Patriot missile system in Saudi Arabia.

The contract is for the purchase of 13 Patriot fire units, 761 missiles and other equipment and services. It is part of a \$3.1 billion Patriot sale agreed to by the U.S. and Saudi governments. Other contracts in support of the sale will be awarded later.

When combined with a first phase executed in 1990, the total value of the Patriot transaction with Saudi Arabia is \$4.2 billion.

The sale is managed by the Security Assistance Management Directorate at the U.S. Army Missile Command, Redstone, Ala. The Patriot missile system is managed by the Patriot Project Office, an element of the Program Executive Office for Global Protection Against Limited Strikes.

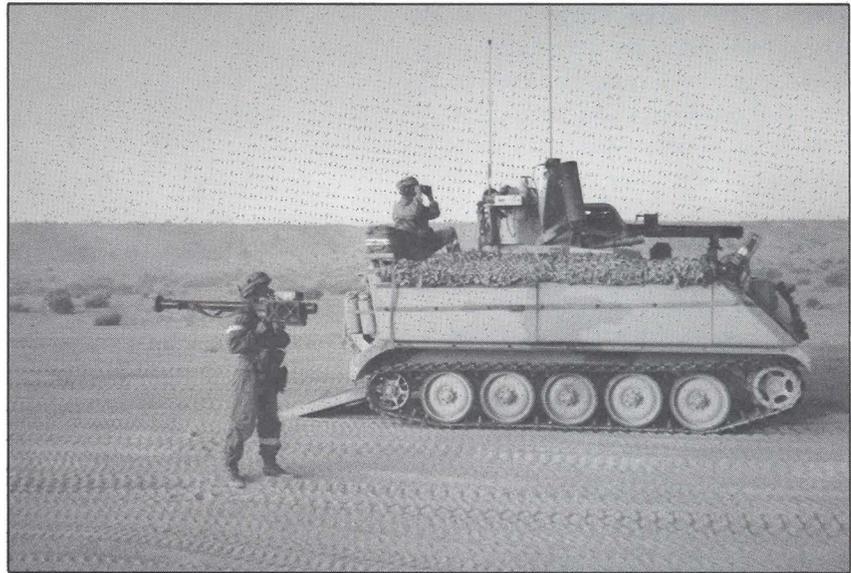
1-3 ADA JOINS "ORDER OF THE COBRA"

The Vulcan squad moved out at 0400 to link-up with D/2-77 Armor, lead company team of Task Force (TF) 2-77 (the "Iron Tigers"). 2nd Platoon, A/1-3 ADA, was tasked to provide short-range air defense to the task force as it moved into an attack by fire position in support of the 3rd Brigade's main attack in the south. TF 1-8 Infantry (3rd Platoon, A/1-3 ADA, in direct support) was the lead task force.

The 3rd Brigade of the 4th Infantry Division (Mechanized) had been deployed to the National Training Center (NTC) on Operation Desert Chief for three weeks and was entering the final training phase of brigade operations in the NTC's Central Corridor. Light air activity lingered for the next three hours as TF 2-77 engaged an enemy combat reconnaissance patrol in the vicinity of the Goat Trail.

Suddenly, the air defender's relative calm was broken by a call over the net: "Initial Track, Initial Track, two unidentified aircraft, Jello-Five-Two, heading east!" The platoon immediately went into action with Stinger gunners popping out of the back hatches of their Vulcan tracks followed closely by their squad leaders. Senior gunners in their tubs oriented the 20mm Vulcan cannons toward their primary target lines to face southwest and west.

A Battery's 3rd Section, 4th Platoon, moved into action as well, also in direct support of TF 2-77. The section was positioned to the rear of the two trail task force company teams. Three teams deployed on the northern flank, three on the southern flank



A/1-3 ADA squad leader and Stinger gunner in action at the NTC.

and two teams protected the combat trains. This provided mass fires, mutual support and balanced fires to cover the likely enemy air avenues of approach. Stinger gunners put their weapon systems into action while their team chiefs oriented them to the west to scan for the unknown air threat.

Enemy aircraft flew into sector as suddenly as they were reported, flying in pairs and using pop-up techniques of attack. The platoon rapidly engaged the enemy for the next 20 minutes, firing nearly 70 Stinger missiles and 4,000 Vulcan rounds. As enemy sorties flew into sector, engagement reports flooded the platoon leader's armored personnel carrier (APC) and his radio-telephone operator struggled to keep up with the flow of information. The platoon's two five-ton trucks maintained a steady resupply effort as Stinger

HMMWVs, with all their basic load expended, took turns with the Vulcans to collect badly needed Class V supplies. The platoon leader's APC also helped in the effort when it was needed to push 20mm ammunition and Stinger missiles forward to the Vulcan squads.

The last enemy attack aircraft departed the battlefield at 0805 local time and the platoon went to YELLOW/TIGHT at 0810. As a result of the attack, the enemy lost all eight of its aircraft employed against TF 2-77, with the task force suffering only the loss of two M-1A1 Abrams battle tanks. The air defense success in this battle can be attributed to four key factors: a large volume of sustaining fire, accurate early warning (EW), good command and control and the motivation and professionalism displayed by the platoon's soldiers. This battle illustrates how

these four elements can be used by platoon leaders on future deployments to the NTC. Stressed by observer-controllers (OCs), they are crucial to the air defense mission.

In this brief air battle on the floor of the Central Corridor, 30 aircraft engagements were reported by 2nd Platoon's four self-propelled Vulcan squads and seven Stinger teams. While firing this number of missiles and rounds at so few aircraft in actual combat would be unrealistic, the NTC determines the percentage of enemy air kills by the number of missiles and rounds fired. The reason is that there is no suitable MILES system for fixed-wing aircraft. A MILES system for A-10 aircraft, which fly as Red Air at the NTC, has been developed. This system, once fielded, will make air engagements as realistic as ground engagements.

Meanwhile, kill assessment presents a challenge you can overcome. Employ one five-ton vehicle as close as possible to the Vulcan platoon and the other between the two Stinger formations moving to the rear of the task force diamond formation. This allows rapid resupply and permits air defense systems to maintain the required high volume of sustained fire.

EW is another key to success at NTC. A Battery's 3rd Platoon's Tactical Defense Acquisition Radar (TDAR) supplied EW to the 3rd Brigade. This asset was destroyed early by Opposing Force regimental reconnaissance forces, leaving the brigade blind to oncoming enemy aircraft. As a result, we shot down no enemy aircraft in the TF 2-77 sector as the first battle progressed through the Valley of Death. Vulcan squads and Stinger teams couldn't react to an air threat they couldn't locate until planes swarmed over the battlefield.

Capt. Malcolm Sharp, commander of A Battery, implemented a number

of survivability measures to counter the threat to the TDAR, such as placing the TDAR in more secure locations, limiting its radiating time and constantly moving the radar team. These measures paid off as evidenced by our battery's air defense success in all subsequent battles.

Timely EW and a high volume of fire require effective command and control to maximize the air defense effort. Communication is very important on the dynamic modern battlefield. The biggest problem faced by 2nd Platoon was maintaining good communications throughout the duration of the battle.

Communications problems stem from long distances, enemy jamming, hot weather and crowded radio nets. Keeping all four radio nets up in the platoon leader's APC was always a challenge. The most common communications problem occurred between the platoon leader in his APC and his section sergeant in the task force tactical operations center. Messages relayed were often not received because of distance problems. Despite our best efforts to keep our radios cool, the summer NTC heat burned out many of them. Finally, with the Vulcan platoon and the Stinger section all communicating on one net, maneuvering and reporting engagements hindered smooth net operations.

Detailed planning and preparation with limited reliance on radios reduced command and control problems. The best way to resolve such problems is by communicating the operational concept to soldiers during the planning stage. Sand table exercises, leader reconnaissance, rehearsals and back briefs also paid great returns for 2nd Platoon. They helped soldiers understand their role in the task force battle, even when communications fail.

We undermined the enemy's efforts to destroy command and control assets by rehearsing the plan and maximizing time management before a battle. Understanding the commander's intent is a key to success during the heat of a battle. It allows subordinates to plan and rehearse prior to movement. This is the cornerstone of command and control. Experience shows that total reliance on radios during the heat of battle can set one up for failure.

Motivation and professionalism are essential to a successful NTC rotation. Soldiers must understand why they are training at the NTC, the Army's ultimate training experience. NCOs who set and maintain professional standards are the key to success. Learning from mistakes is also very important. OCs help soldiers learn by facilitating the after-action review (AAR). Dedicated soldiers and NCOs who actively learn from OC-driven AARs produce a motivated platoon that will win in training and on any future battlefield.

Four factors — providing and sustaining a large volume of fire, accurate EW, good command and control and maintaining a high level of motivation and professionalism — were the essential elements to 2nd Platoon's success at NTC. The platoon achieved a high kill rate of enemy aircraft while protecting the task force's combat power. At the end of the rotation, the platoon received a certificate of achievement — the coveted "Order of the Cobra" — from Lt. Col. James Gunlicks, the senior Cobra OC. Most importantly, the platoon accomplished its mission: to provide short-range air defense for TF 2-77 during tactical operations at NTC.

2ND LT. MATTHEW T. TEDESCO



Members of 4-3 ADA made history by becoming the first unit to demonstrate the BSFV's effectiveness in a gunnery exercise.

4-3 ADA PUTS BSFV ON THE FIRING LINE

The Army has been going through many changes over the past few years and Air Defense Artillery is no exception. Little did the air defenders of 4th Battalion, 3rd Air Defense Artillery, know that when they enlisted as Chaparral or Vulcan short-range air defense system crew members, their days were numbered. Early in 1992, 4-3 ADA, 3rd Infantry Division, Kitzingen, Germany, cached its Vulcan and Chaparral weapons systems in "mothballs" and received Bradley Stinger Fighting Vehicles (BSFVs).

Although the battalion was supplied with the BSFVs, it was the battalion's job to come up with the drivers, gunners and tank commanders. The former Chaparral and Vulcan soldiers were thrust into new equipment training for intense familiarization.

Since qualifying on the BSFV, the soldiers of 4-3 ADA have little but praise for the Army's newest air defense weapon system.

"I'm a taxi for the Stinger team and I don't have much confidence in the 25mm against aircraft," admitted Sgt. Stanley Crosby, ex-Chaparral squad leader, now an A Battery Bradley commander. Crosby did praise the Bradley for its armor. "The Chaparral had no ground defense. The Bradley is better protected."

SFC Charles Butts, a former Vulcaneer who is now a C Battery Bradley platoon sergeant, explained, "Bradley is a better weapon system. The Vulcan had more firepower but less range. The Bradley is more accurate."

"The Chaparral was a static weapon system. We would sit and wait for the aircraft. With the Bradley, we can seek the enemy. We have the Bradley firepower to defend against ground and helicopter attacks and the Stinger team takes care of the 'fast movers' (jets)," said Sgt. Duane Shaw, ex-Chaparral crew member, now a Bradley gunner with C Battery.

PFC Alfred Collins, an ex-Vulcan crew member who is presently an A Battery Bradley driver, said, "The Vulcan was slow, it was mounted on an M-113 chassis. The gun system was good, but the wrong chassis."

Some things are gone forever, and it seems that the Chaparral and Vulcan ADA weapons systems fit the mold. 4-3 ADA is rolling with the changes and making the best of them. One thing that they all agree on is because of the Bradley's armor, they'll (the crew members) all be around for a long, long time.

Although the BSFV is new to 4-3 ADA, some soldiers within the battalion have already started making improvements to its weapon configuration.

The Army has approved \$1.2 million to engineer the BSFV Stinger missile rack. The Bradley Program Management Office and Air-to-Air Missile Program Management Office are working with FMC Corporation

to develop the rack design. Meanwhile, units equipped with BSFVs are using an interim rack that allows them to mount two ready rounds in brackets on the roadside and curbside walls of the Bradley.

During earlier exercises at Hohenfels training area, SSgts. Scott Bush and Bobby Purdom, Bradley commanders, A/4-3 ADA, saw a problem with the storage of the Stinger missiles. "Originally, we carried six Stingers. Two 'ready' rounds (ready to fire), one on each side of the interior of the vehicle behind the crew member's head. This was a safety hazard," explained Bush.

During one rotation, Bush and Purdom put their heads together and devised a possible solution. Once back at their home station (Larson Barracks, Kitzingen), Bush went to work. "In our motor pool we have a scrap metal bin where I got the metal that I needed. Once I acquired the metal that I needed, I took it to the craft shop. Ten dollars later, I was walking out with the welded components. All together, I spent maybe three hours in the development and construction of the mount."

Once mounted, it was time for hands-on testing and evaluation to be conducted during aerial gunnery at Putlos, Germany by the North Sea. Since the rack's testing, Bush and Purdom have received nothing but praise. The highest praise came from the guys that use it most, the BSFV team.

According to Sgt. Richard West, Stinger team chief, A/4-3 ADA, "It's definitely better this way. By TRADOC standards, we'd normally carry two ready Stingers and four in coffins (storage containers). We still can't figure where they expect us to carry the coffins. There just isn't room." West went on to explain, "With this rack, we carry the two 'ready'



Sgt. Robert Giammaresi launches an RCMAT during 4-3 ADA's BSFV gunnery practice.

rounds, two 'weapon' rounds (semi-ready), and two 'missile' rounds (require some assembly) on one rack. We no longer have to worry about the coffins." In addition to alleviating the Stinger storage problem, the improvised rack allows the BSFV to carry six rather than two TOWs.

Bush has sent the plans and suggestion to TRADOC, and not only is he sure they'll adopt his modification, but others in the battalions will adopt it as well.

4-3 ADA recently conducted aerial gunnery at Putlos where the battalion made history by putting the BSFV to its test as an air defense weapon system.

"[Being a new air defense weapon system] maneuver of the Bradley was doctrine, but the ADA concept wasn't," said Lt. Col. Michael A. Vane, 4-3 ADA commander. "After this gunnery, we will give TRADOC

and Fort Bliss input for developing a training package. In lots of ways, we're an operational test unit."

As the BSFVs maneuvered down range through Table 7 and a modified Stinger Table 8, "Kill, kill, kills" echoed within the range tower. The battalion set a standard that will be hard to beat: a 91 percent average using the Bradley's 25mm gun and 7.62 coaxial machine gun as air defense weapons. The Stinger teams trailed slightly behind with an 86 percent average for Stinger integrated Table 8.

"The battalion commander is very happy with the scores," said Maj. Clay Earnest, 4-3 ADA S-3. "The battalion proved the concept of the Bradley Stinger Fighting Vehicle to be very effective."

SSGT. CHRISTIAN MULVEY

How Does the Army Determine Its Force Structure?

A look at Total Army Analysis

by Lt. Col. Frank J. Caravella



In the end he [Gen. Albert C. Wedemeyer, architect of the U.S. Victory Plan of 1941] remarked, it was necessary to work like a journalist and answer the traditional questions of who, what, when, where, why and how. Wedemeyer therefore established for himself a series of questions to answer to accomplish his task:

What is the national objective of the United States?

What military strategy will be devised to accomplish the national objective?

What military forces must be raised in order to execute that military strategy?

How will those military forces be constituted, equipped and trained?

His methodology implied that by the time he had answered the first three questions, he would have the information he needed to answer the last, which was the objective task he had been given.

— Maj. Charles E. Kirkpatrick,
Writing the Victory Plan
of 1941

The Bear is dead. You hear this saying echoing throughout the halls of Congress and even the Pentagon itself. As a result, the United States no longer needs the large forward-presence Army. It requires a leaner, deployable Army that moves and strikes fast to address variable global contingencies.

The key term in today's vernacular is *decisive victory*. The question remains, given the force structure cuts already mandated by Congress, "How will the Army realign its forces to achieve *decisive victory* in the next campaign?" Also, "What if the Congress cuts Army end strength even further? How will the Army adjust its force structure to minimize risk in the next conflict? How much of this downsized force will include Air Defense Artillery?" The answer to each of these questions is Total Army Analysis (TAA).

TAA, a biennial study directed by the Army Chief of Staff and chaired by the Deputy Chief of Staff for Operations (DCSOPS), identifies the force structure requirements for the Army program. It also provides a priority assessment for adjusting manpower force structure within budgetary constraints. TAA decisions affect the five-year budget submission. The current TAA 2001 will affect budget decisions from 1996 to 2001.

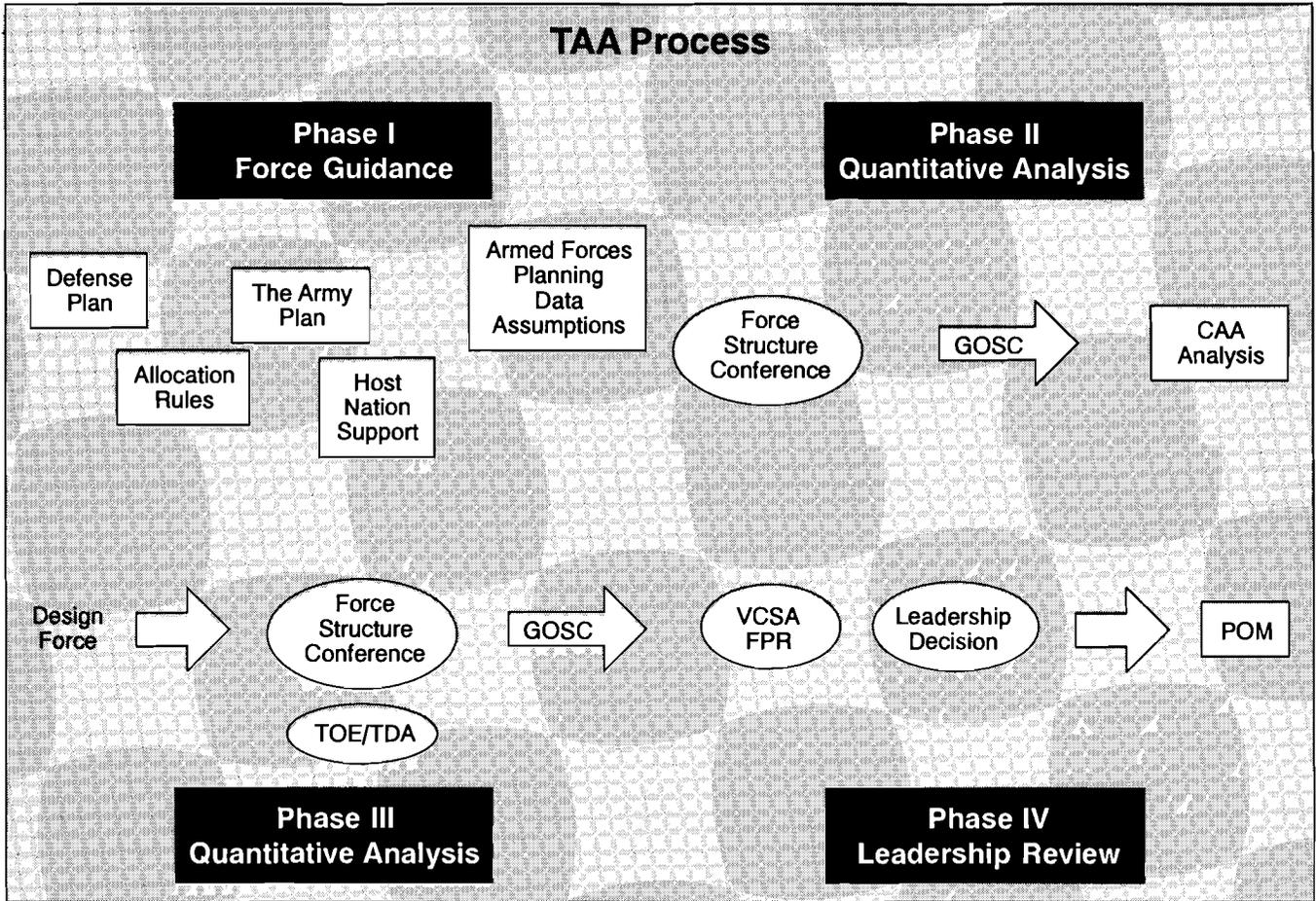
The TAA process is made up of four phases starting with Phase I, Force Guidance. The Deputy Chief of Staff for Operations reviews Department of Defense and Department of the Army force-sizing guidance that determines combat force structure.

They then prepare and disseminate the TAA study directive to all the participating agencies and major commands. This study directive provides guidelines that will be used in Phase II of the TAA process.

Phase II, Quantitative Analysis (Requirements), involves the conduct of force deployment and warfighting simulations. The intent is to determine time-phased, balanced and geographically distributed force structure requirements. The guiding idea in this phase relates to requirements, not resourcing. Using doctrinal guidelines provided by the Army proponent, force structure is generated in an unconstrained environment. They determine the proper force mix given the force guidance in Phase I. This phase involves two major conferences to discuss, delineate and defuse proponent differences. Force Structure Conference One (FSC I), usually conducted in June, is attended by field grade representatives who address proponent requirements and negotiate trade-offs. The unresolved issues are left for the General Officer Steering Committee I (GOSC I) that usually meets in September.

Phase III, Quantitative Analysis (Resourcing), develops detailed force structure for each year of the program within projected manpower levels. Taking the analysis completed in Phase II, the questions remain, "How much of the required force should the Army resource and which parts? Specifically, where can the Army take a prudent risk based on the projected fighting scenarios?"

As you might expect, proponent branches possess different perspectives of what is



most important to resource. To address these differences, two conferences are held. The first, Force Structure Conference Two (FSC II), usually held in November, provides field grade representatives the first opportunity to do battle. Unresolved issues fall to a second General Officer Steering Committee (GOSC II) the following month. Both the FSC II and GOSC II address the table of organization and equipment and table of distribution and allowances Army. Tradeoffs in cutting each part are weighed as proponent arguments are heard. In the end, votes are cast and a resourced force structure position is solidified.

Phase IV, Leadership Review and Program Objective Memorandum Development, is complete when the GOSC II-recommended force structure is briefed and approved by first the Vice Chief of Staff and lastly the Chief of Staff. This staffing action occurs between January and March following GOSC II. Once approved, force packages are developed and an Army Force

Structure message outlining the final force structure decisions is sent out (usually in April) to all commands. These decisions drive new inputs to the budget and, specifically, the program objective memorandum.

In alternate TAA years, the process repeats with the intent of refining the prior year's results. Program objective memorandum adjustments are made accordingly.

How does our branch fit into all this? Air Defense Artillery is one of the proponents that argues its case for maintaining ADA structure. Chief of ADA Maj. Gen. John H. Little maintains a seat on the GOSC I and II, personally fighting for the correct ADA structure, both active and reserve, that will adequately support the next warfight.

Lt. Col. Frank J. Caravella is the chief of force development, Directorate of Combat Developments, U.S. Army Air Defense Artillery School, Fort Bliss, Texas.

AirLand Operations explains what the Army must do to succeed in an environment that is already upon us. A strategic Army must be able to support the national security strategy. We must be versatile, deployable, lethal and expandable. These characteristics and this concept form the framework within which we will develop the doctrine, design the organizations, establish the requirements of materiel and determine how we train and develop leaders. It will provide the azimuth for reshaping and modernizing the Army.

— TRADOC Pam 525-5

Explosive Ancestry

V-1 "buzz bombs" and V-2 rockets introduced the world to cruise and tactical ballistic missiles

There once was a thing called
the V-2
Which pilot you did not need to,
You just pushed a button and it
would leave nothin'
But stiffs and big holes and de-
bris too.

— Thomas Pynchon,
Gravity's Rainbow

Which threat should air defenders worry about most: (a) cruise missiles or (b) tactical ballistic missiles? Most, especially those exposed to Scuds during the Gulf War, would choose (a). But ADA combat developers are concerned about both. Technology to counter cruise missiles is built into Patriot PAC-3 and Corps surface-to-air missile (SAM) requirements, while an improved capability to counter tactical ballistic missiles is contained in Theater High Altitude Area Defense (THAAD) system and Patriot PAC-3 requirements.

However, a debate over whether tactical ballistic missiles or cruise missiles are most likely to constitute the prevalent threat isn't entirely moot. The argument has its roots in World War II, when Nazi Germany introduced the world to a new era of warfare by launching V-1 "buzz bombs" and supersonic V-2 rockets against London.

The "robot blitz" began the night of June 13, 1944, seven days after the Normandy landings, when the first V-1 flying bomb (forerunner of modern cruise missiles) droned across the English Channel and ended in March 1945 when the last V-2 rocket (predecessor of today's ballistic missiles) smashed down in London.

The German V-1 was a relatively small, automatically controlled, jet-propelled monoplane that carried a ton of high explosives. Its range was 250 miles, and it flew at

preset altitudes of 600 to 10,000 feet at speeds of 300 to 400 miles per hour. Magnetic compasses and gyroscopes controlled the flight of the V-1, which could make one 45-degree turn provided the turn was preset.

Nevertheless, the V-1 had a smaller vulnerable area than a piloted aircraft and was difficult to destroy because it could only be stopped by a hit on the warhead detonator or the destruction of a large part of the wing, a vital part of the engine or the robot pilot. The V-1 spawned a generation of jokes, gallows humor inspired by the droning noise its jet engine emitted. You would hear the drone of the flying bomb approaching the city, then the sound of the engine cutting off — a sound that meant you had approximately 10 seconds to duck for cover.

The V-2 was different. No one made jokes about the V-2.

After six years of development, the Germans first test-launched a V-2 rocket in October 1942. In March 1943, Wernher von Braun, who was later to guide the U.S. space program but who then held the rank of major in the SS, reported to Adolph Hitler at the Wolf's Lair. He brought along some film of the test launch and told Hitler that the missile, once perfected, could hurl a ton of TNT across the English Channel.

About 6,000 V-2s eventually were built and more than 500 hit London, killing more than 2,700 civilians. Decades later, when

von Braun's autobiography, *I Aimed at the Stars*, appeared during the glory days of the U.S. space program, one cynic suggested a more apt title might have been, *I Aimed at the Stars but Kept Hitting London*.

The first V-2 rocket fell on London on Sept. 9, 1944. Early morning sunlight would have caught the rocket's exhaust as it rose high above its launch site in Holland and arched across the North Sea. What made the V-2 the ultimate terror weapon of its time was that you couldn't hear it coming. First, you'd hear the blast and then, supposing the rocket had plunged through the roof of the neighborhood pub down the block or smashed into a school yard around the corner, and you still lay safe in bed, you'd hear the sonic boom of the rocket descending.

Despite having survived the Battle of Britain, Londoners regarded the V-2 with awe and terror, but some post-war analysts later pointed out that the V-1 may have been the more effective weapon.

Hitler distrusted Hermann Goering's (commander of the German Luftwaffe) ability to make effective use of the vast resources a strategic bombing campaign would require. But the idea of dealing mass destruction impersonally, by remote control, appealed strongly to him. The Versailles Treaty, drafted at a time when biplanes and dirigibles constituted the air threat, forbade Germany to make bombers, but it said nothing about ballistic missiles. When Hitler seized power, he found a military missile team already in existence. In 1936, Hitler authorized its head, Walter Dornberger, to issue a directive calling for a rocket designed to carry 2,200 pounds of explosive more than 156 miles.

"In a sense Hitler was right that the coming strategic weapon would be a high-payload ballistic missile," writes British historian Paul Johnson in *Modern Times*. "One of the few to grasp this on the Allied side was Tory prime minister Duncan Sandys, who warned on Nov. 23, 1944: 'In future the possession of superiority in long-distance rocket artillery may well count for as much as superiority in naval or air power.' Allied orthodoxy revolved around the flexibility of the big bomber, essentially a First World War concept. The reply of Churchill's chief scientist, Lord Cherwell, Dec. 5, 1944, was

that the long-range rocket would be highly inaccurate, without a compensatory high payload. This was an unanswerable criticism so long as the explosive remained conventional.

"Hitler's difficulty was that he had to choose between two possibilities. The pilotless guided aircraft (V-1) appealed strongly to his highly developed sense of military economy," Johnson continues. "It was one of the most cost-effective weapons ever produced. For the price of one Lancaster bomber, crew training, bombs and fuel, Hitler could fire well over 300 V-1s, each with a ton of high explosives, a range of 200 miles and had a better chance of reaching his target. In the period June 12 through September 1944, for an expenditure of 12,600,190 pounds, the V-1 cost the Allies 47,645,190 pounds in loss of production, extra anti-aircraft and fighter defenses and aircraft and crews in the bombing offensive against the sites. The Air Ministry reported (Nov. 4, 1944): 'The results were greatly in the enemy's favor, the ratio of our cost to his being nearly four to one.' Only 185 Germans lost their lives, against 7,810 Allies (including 1,950 trained airmen). The V-1s were damaging 20,000 houses a day in July 1944, and the effect on London morale was very serious.

"But Hitler did not invest early or extensively enough in this telling weapon. In the chaos of the Nazi procurement program, it was necessary to appeal to the Fuhrer's romanticism to get priority," Johnson continues. "That was what Dornberger's big rockets did. The V-2 program seemed the only way to gratify Hitler's intense desire to avenge himself on Roosevelt by destroying New York. The allocation of resources to it made no sense in terms of likely performance. In Germany alone, it employed 200,000 workers, including a large proportion of the highest-skilled technicians. The program deprived the Germans of advanced jets and underground oil refineries and its absorption of scarce electrical equipment interfered with production of aircraft, submarines and radar. The actual rocket used in the V-2 campaign, the A-4, of which only 3,000 were fired, cost 12,000 pounds each (against 125 pounds for the V-1), carried a payload of only 12,000 pounds and was hopelessly inaccurate. The projected intercontinental

Around 6,000 V-2s were eventually built, at an average cost of about \$18,000 each (some 20,000 slaves died to make this bargain rate possible). More than 500 hit London, killing more than 2,700 civilians. They did not save Hitler's hide, but they later guaranteed von Braun's safe passage across the Atlantic where he found wonder-weapon work again under the auspices of the U.S. Army. From then on, the moon's unblemished days were numbered.

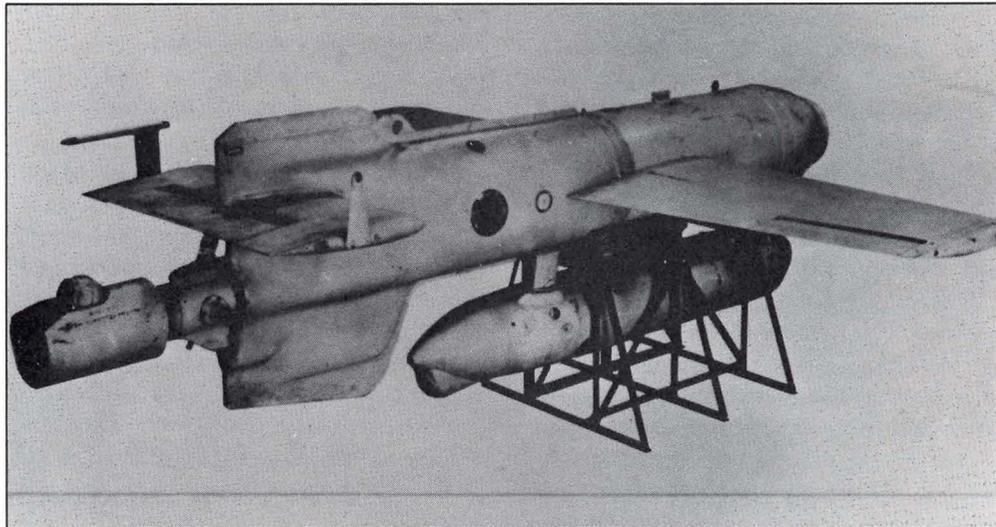
— Wayne Biddle,
New York Times

Then followed three months of concentrated attack. Sometimes a hundred a day were launched, all through the summer weather, and London and Southern England continued to work and wait and listen for that all-too-familiar roar that mounted so fast, and for that sudden silence as the motor cut out. They listened, too, through that interminable pause of five seconds or so before the crash of the explosion. Then you knew if it had come for you or not, but you did not know, just then, if it had taken your family, your home or friends.

— Maj. E. S. Watkins,
British Army, 1944

It takes little stretch of the imagination to envisage a perimeter rocket defense of the United States and its industrial centers. We believe this will be an AA mission, requiring a special rocket of short range and of a velocity greater than any other missile; further, that it will be fired from the ground.

— Lt. Gen. LeR Lutes,
President, U.S. Coast
Artillery Association, 1946



V-1 "buzz bombs" were damaging 20,000 houses a day in July 1944, and the effect on London morale was very serious.

rocket, the A-9/A-10, weighing 100 tons and with a second stage ascending to 230 miles into the stratosphere, planned to be used against New York and Washington, never got beyond the drawing-board stage. Even if built and fired, its conventional payload would have rendered it nugatory.

"Hitler's only prospect of achieving a stalemate by a decisive technical advance lay in marrying the A-10 rocket to a nuclear payload. There was never much prospect of him achieving this within the time-scale of the war," Johnson concludes.

World War II air defenders, after a brief period of panic spawned by the unveiling of the first of the Nazis' dreaded secret weapons, discovered they were able to cope with the V-1. At the end, belts of anti-aircraft guns were shooting down more than 90 percent of the V-1s that threatened vital areas. But they could do little about the supersonic V-2s except estimate their time of arrival.

Today's cruise and tactical ballistic missiles are already many times more sophisticated than the V-1s and V-2s of World War II, and continue to mature in range, accuracy and lethality. The Scud missiles U.S. air defenders countered during the Gulf War are often described as "dinosaurs." Cruise missile technology, compared to tactical ballistic missile technology, is relatively cheap and easy to imitate. U.S. Tomahawks demonstrated their remarkable accuracy during

the Gulf War, and weapons experts expect both the accuracy and range of cruise missiles to increase.

The list of Third World countries fielding tactical ballistic missile systems in the 300- to 1,000-kilometer range continues to grow, and several may soon have missiles in the more than 1,000-kilometer range. Scientists say guidance technology will gradually improve tactical ballistic missile accuracy to within a circular error probable (CEP) of 100 meters or less by the year 2000 and, shortly afterward, to a CEP of 50 meters or less. Area munitions such as cluster and fuel air explosives will continue to steadily increase tactical ballistic missile warhead lethality while solid-propellant motors and other technologies make them cheaper and easier to fire.

Visionaries expect tactical ballistic and cruise missiles to play an increasingly significant part in future conflicts, including the low-intensity conflict and contingency scenarios that, in the aftermath of the Cold War, have grown to dominate U.S. military thinking.

"The more than 2,700 casualties produced by V-2s impacting in London was not a decisive factor in World War II," said Maj. Gen. John H. Little, the U.S. Army's chief of Air Defense Artillery. "Neither were the 1,150 to 2,300 Iranians killed by Iraqi Scuds in 1988 during the Iran-Iraq 'War of the Cities.'

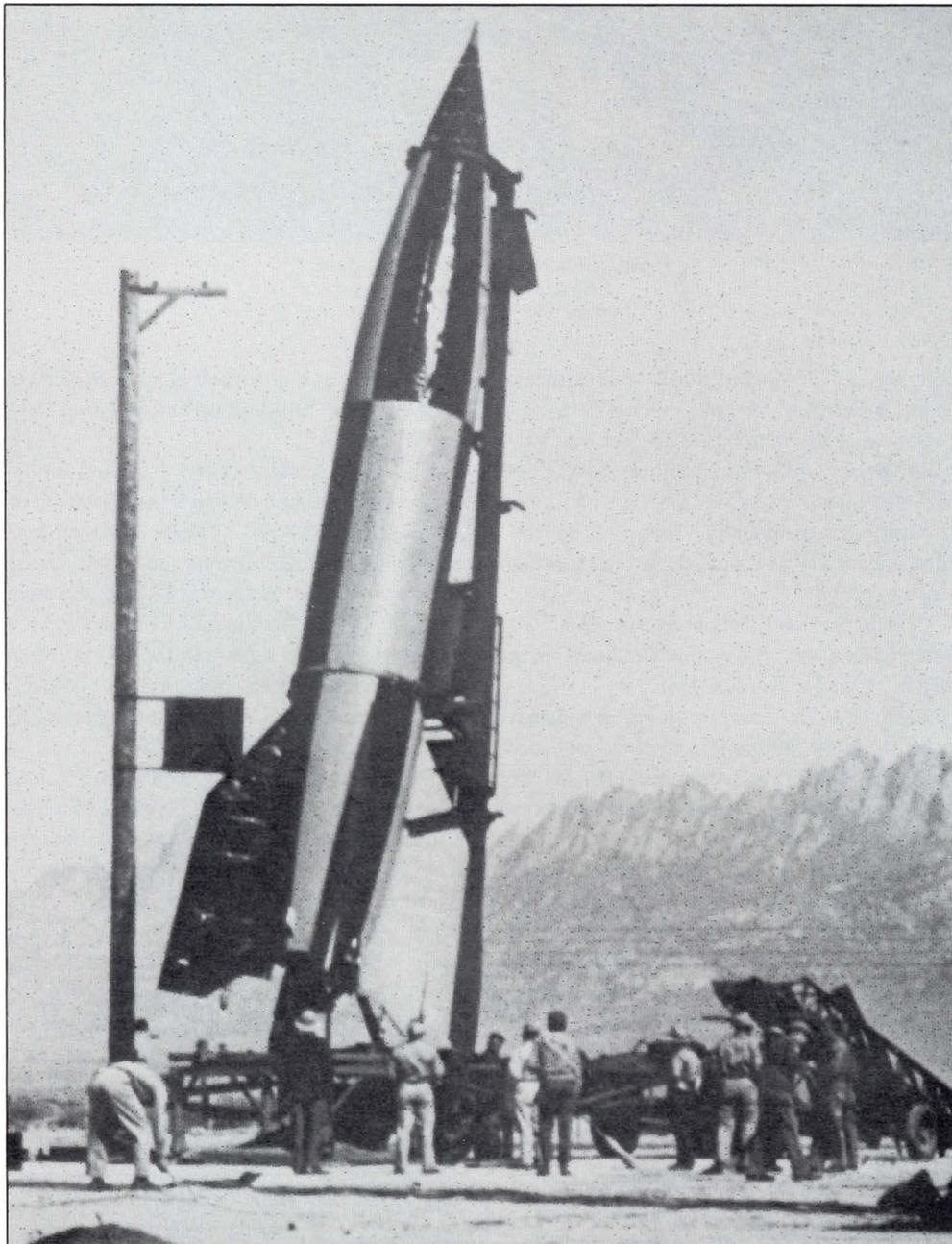
The reason they weren't decisive was because citizens of London and Tehran were willing to accept mass casualties in what, for them, had become a battle of good against evil, a life or death struggle, a fight to the finish.

"But mass casualty weapons, because of their potential to sway public support, could prove decisive in post-Cold War scenarios.

Future conflicts that engage U.S. forces will certainly involve national interests, but they are unlikely to involve national survival. We cannot expect, nor should we ask, Americans to accept high casualties in what, for them, are likely to be relatively low-stakes affairs.

"The Army learned in Vietnam that the political consequences of war cannot safely

A V-2 positioned for launch at the U.S. Army Ordnance Proving Ground, White Sands, N.M.



It is well known that other countries intend to exploit and develop the possibilities of rockets and other guided missiles with a view to their large-scale future use for both offensive and defensive purposes. The requirements for defensive purposes are so great in themselves that large expansions are already taking place in the anti-aircraft organizations of some other countries, obviously in recognition that this role properly belongs to the anti-aircraft.

— Lt. Gen. LeR Lutes,
President, U.S. Coast
Artillery Association, 1946

It is unlikely that any defense other than superior fire will be developed against short- and medium-range missiles used in ground support. On the other hand, the long-range guided missile will have flight characteristics which might make interception possible. A defensive guided missile will, of course, be the answer to combat it.

— Lt. Col. William R. Kinter,
General Staff Corps, 1946

During the course of the war, no effective active defense against the V-2 was developed. A passive warning defense was only partially effective in that it gave persons a matter of two or three minutes, at the most, to take cover. With its maximum velocity of 3,600 miles per hour, range of over 200 miles and maximum ordinate of about 70 miles, the V-2 could not be coped with, and it was only after the last launching site was captured by our ground troops that the V-2s ceased to fall in the London and Antwerp areas. This velocity, range and altitude is impressive, but so was the 30 miles per hour of the automobile of the 1930s. We have seen only the beginning.

— *Maj. Ralph M. Rogers,*
Antiaircraft Journal, 1946

The closing stages of the war with Nazi Germany prematurely revealed the character of future global warfare. Although the net military effect of the terror V-1 and V-2 attacks on London and Antwerp was small, it requires little imagination to see these primitive robot weapons evolve into the predominating artillery of the future. Along with being in the forefront of technical development of this weapon, the United States must be ready to exploit its offensive capabilities to the fullest, and as well, be in a position to set successful countermeasures into operation.

— *Lt. Col. William R. Kinter,*
U.S. Army,
General Staff Corps, 1946



World War II anti-aircraft guns proved highly effective against attacking V-1s.

be ignored,” Little continued. “In Southeast Asia, Americans, despite their general acceptance of the nation’s Cold War containment policy, proved unwilling to accept casualty rates that, given the size of forces committed, were not excessive. This heightened sensitivity to casualties is our Achilles Heel.

“While we can count on the U.S. Air Force to do a good job against the fixed-wing threat, only Air Defense Artillery can adequately provide force protection against today’s attack helicopters, tactical ballistic missiles and cruise missiles. These are ‘weapons of mass casualty’ that can sway our national resolve.

“A single Scud that leaked through our Patriot defenses and hit a barracks outside Dhahran killed 28 soldiers. It was, for coalition forces, the Gulf War’s darkest hour,” Little added. “The cease-fire, which came only hours later, soothed the trauma, but its impact, magnified by today’s instantaneous media coverage, was, nevertheless, ominous and, I hope, instructive.

“What would the impact on public support and coalition cohesiveness have been if the Iraqi Scuds had begun impacting in August of 1991 rather than January of 1992?

Could we have absorbed casualties for six months while building up to Operation Desert Storm?”

The U.S. Army recently awarded multi-million dollar contracts to industry teams to develop the THAAD system. The new system is destined to become the upper tier of defense against tactical ballistic missiles that air defense leaders like Little say is necessary to provide adequate force protection in future operations. Ironically, THAAD, like the missiles it is designed to counter, traces its lineage back to the V-2.

During the collapse of the Third Reich, von Braun and his team of rocket scientists surrendered to U.S. forces. Smuggled under a cloak of secrecy to Fort Bliss, Texas, they continued their work under a different flag. Their experiments gave birth not only to more sophisticated ballistic missiles, but also to surface-to-air missiles and the giant rockets that lifted American astronauts into orbit and, eventually, to the moon. Last October, as the U.S. Army awarded Lockheed Missile and Space Co. and Raytheon multi-million dollar THAAD contracts, a flurry of adverse public reaction persuaded German officials to cancel plans to celebrate the 50th anniversary of the first V-2 launch.

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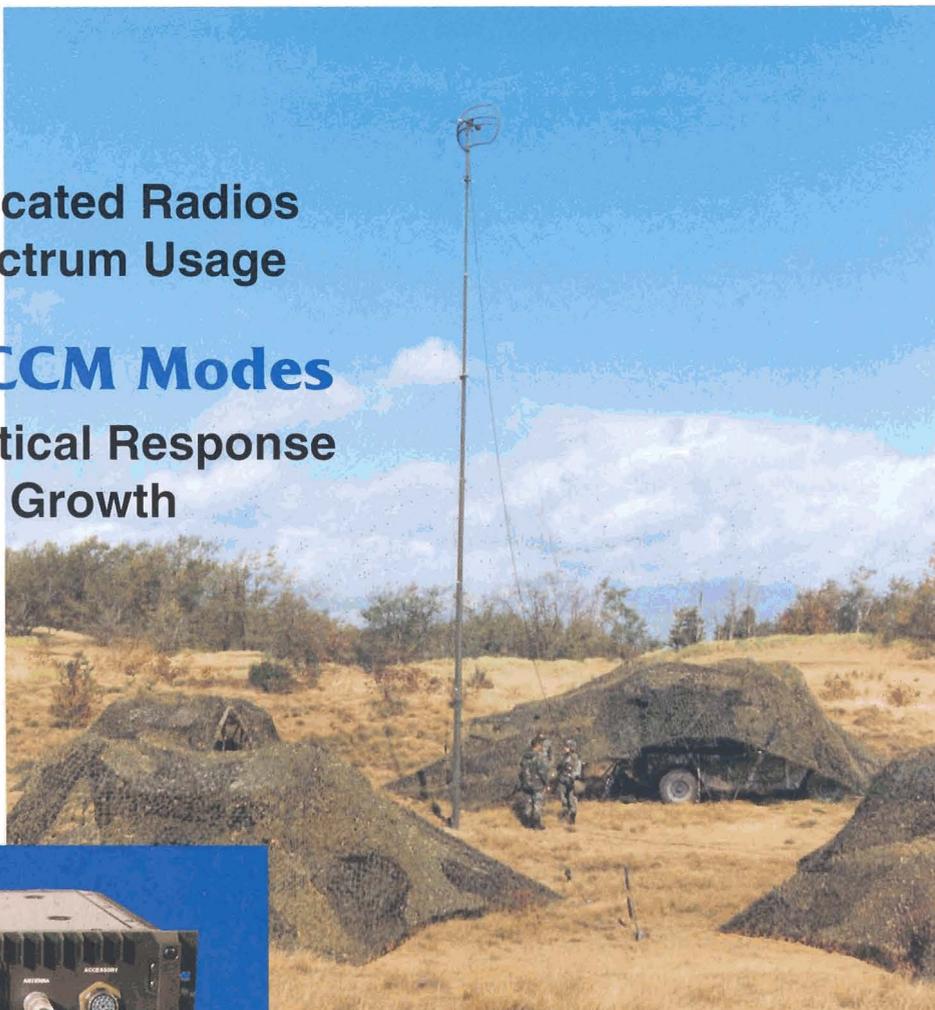
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