

SECTION A
 2A Message from MARS
 4A Double Time

Desert Shield: The Home Front

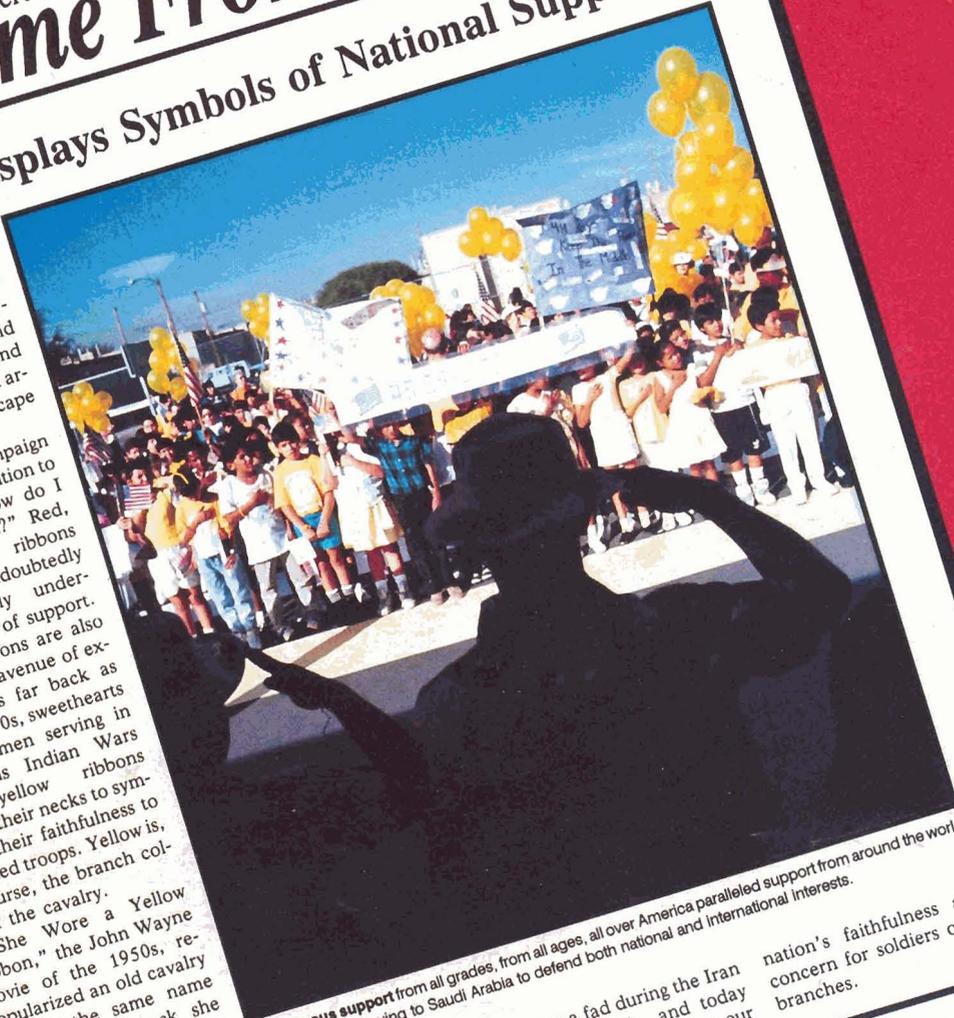
America Displays Symbols of National Support

All across the country, Americans are displaying proof of their support for soldiers deployed to Operation Desert Shield and their families. Flags and ribbons (yellow in most areas) adorn the landscape from coast to coast.

The ribbon campaign seemed a ready solution to the question: "How do I show my support?" Red, white and blue ribbons and flags are undoubtedly patriotic, easily understood symbols of support.

Yellow ribbons are also an excellent avenue of expression. As far back as the late 1800s, sweethearts of cavalymen serving in the Plains Indian Wars wore yellow ribbons around their necks to symbolize their faithfulness to departed troops. Yellow is, of course, the branch color of the cavalry.

"She Wore a Yellow Ribbon," the John Wayne movie of the 1950s, popularized an old cavalry song of the same name ("Around her neck she wore a yellow ribbon, she wore it for her lover who was far, far away . . ."). "Tie a Yellow Ribbon," a 1970s hit record, revived the custom, although in the song a convict, not a



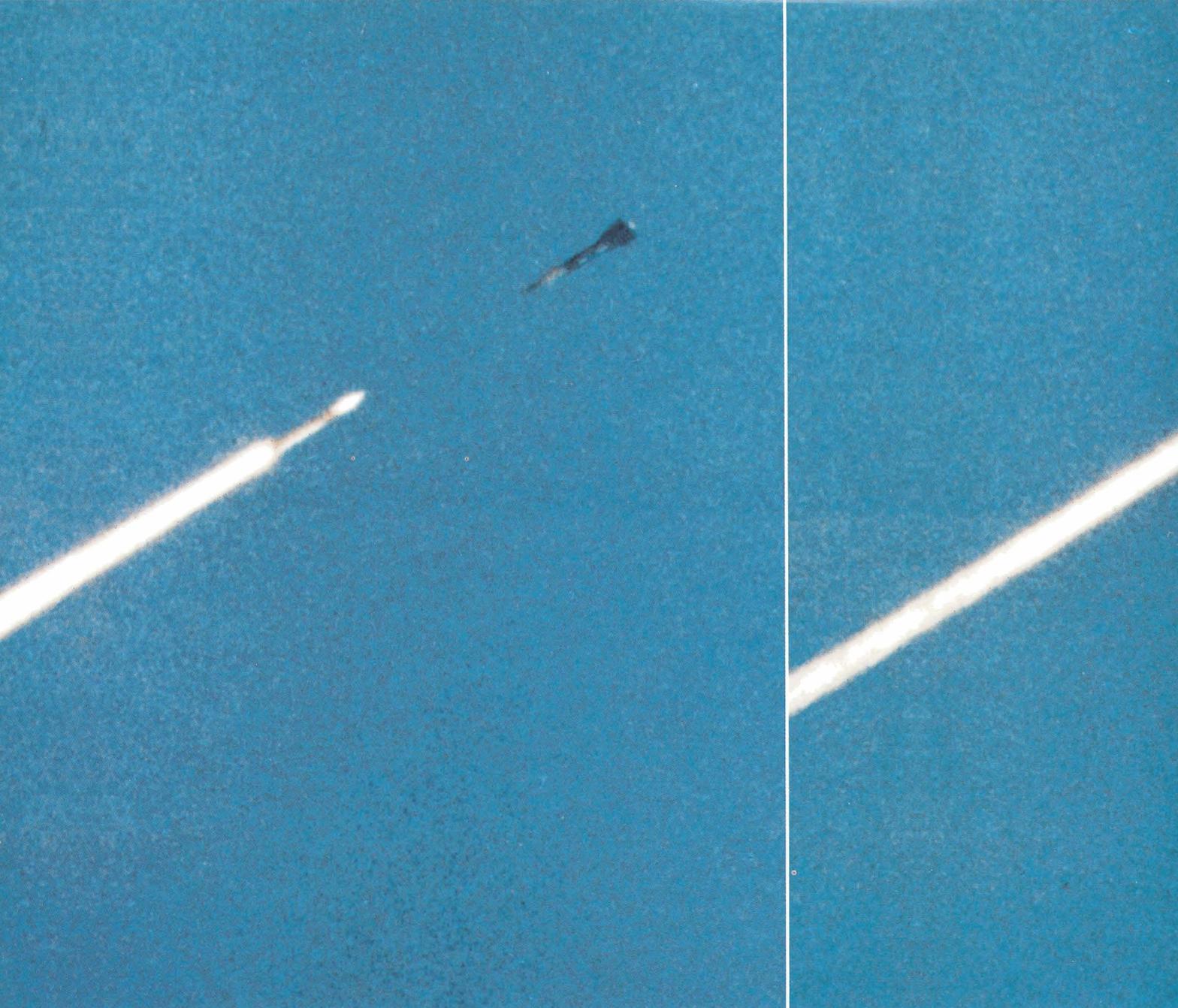
Unanimous support from all grades, from all ages, all over America paralleled support from around the world for soldiers deploying to Saudi Arabia to defend both national and international interests.

soldier, returned home to a faithful loved one. Yellow ribbons again be-

came a fad during the Iran hostage crisis, and today the ribbons symbolize our

nation's faithfulness and concern for soldiers of all branches.





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INTERCEPT POINT

No bands played and no crowd of citizens waved American flags. Bravo Battery, 2nd Battalion, 7th Air Defense Artillery, the first element of the 11th Air Defense Artillery Brigade deployed to Saudi Arabia, departed Fort Bliss, Texas, in darkness and secrecy. The first C-5A Galaxy to touch down at Biggs Army Airfield the night of August 11 was loaded in less than an hour. Bravo Battery achieved "wheels up" 72 hours after its initial notification to deploy, and its Patriot fire units were on the ground, in position and ready to engage just 48 hours later.

The departure of Bravo Battery was merely the beginning of a massive mobilization and deployment effort that has few comparisons in number of troops and tonnage of equipment deployed and is altogether unprecedented in its speed of execution. At first, there was tendency to compare Operation Desert Shield to Operation Just Cause, but the American response to the Iraqi invasion of Kuwait quickly dwarfed the Panama contingency operation.

Some say the Operation Desert Shield deployment can be adequately compared to D-Day, June 6, 1944, but that mammoth cross-channel invasion was the result of years of careful and agonizingly slow planning and logistics stockpiling, while the Desert Shield deployment was completed in a three-month whirlwind of activity. Never in the history of warfare has such a powerful force been assembled and moved so great a distance in so little time.

And what a force we have put in place! The Operation Desert Shield contingency force is the best trained, best equipped and most thoroughly integrated military force ever to set foot in a theater of operations. And Air Defense Artillery is playing a key role in the Desert Shield scheme of operations.

Today, all Fort Bliss elements of the 11th ADA Brigade — two Patriot battalions, a Hawk battalion and a Vulcan/Stinger battalion — have "closed" in Saudi Arabia. Some of its units are defending key Saudi airfields, tactical operations centers and logistics points. Others are deployed forward in support of maneuver elements. The brigade's liaison officers man dedicated ADA consoles aboard U.S. airborne warning and control system (AWACS) aircraft and at U.S. Air Force control and reporting centers around the clock.

The soldiers of the 11th ADA Brigade report that previous training exercises, especially Exercise Roving Sands, are paying off. Airlifting Patriot, a particularly difficult task, went smoothly. An officer newly assigned to the brigade was amazed to see soldiers backing Patriot launchers onto the C-5As as smoothly as if they were backing sports cars into parking spaces. The brigade, after all, had practiced airlifting Patriot between air bases during Roving Sands '90 just a few weeks earlier. Once on the ground, the air defenders discovered that integrating with



Army, Marine, Navy and Air Force elements was facilitated by working relationships the brigade had established with their sister service counterparts during Exercise Roving Sands and National Training Center rotations.

The Arabian desert is not an obstacle to our soldiers. The culture is unfamiliar, but the environment is not. Trained in the desert surrounding Fort Bliss, accustomed to climatic extremes, 11th ADA Brigade soldiers have encountered no unanticipated problems, just the usual problems solved with the usual solutions. They deal with it. The weapon systems and associated equipment, they report, are working great.

(Continued on page 34)

Joint Custody

by Maj. Tom Ruiz



Is the proposal to split non-line-of-sight proponent responsibilities between combined arms branch the best possible approach?

OPINION

Sarah, trying unsuccessfully to fight back tears, hung up the phone and turned to Molly, her best friend and confidante since college days. "I just want . . . to do . . . what's best . . . for my son," she sobbed.

Her son, Michael, better known to everyone as "Mikey," had just called from YMCA summer camp for the second time in as many days. The second message had been the same as the first. The 12-year-old, away from home for the first time, wanted to come home: not tomorrow or the next day, but now. Mikey had spent the last two nights soaking his pillow with homesick tears.

The problem wasn't the cold hot dogs, the runny eggs, the bunk beds, the community showers, the mosquitoes, the snakes that slithered across the hiking trail, or the other boys. The camp counselor said Mikey got along fine with the other boys. Mikey wanted to come home simply because he missed his mother.

Sarah's ex-husband, John, was all too willing to make the 20-mile drive up to Camp Evergreen to pick up Mikey and bring him home. "Why make him stay where he doesn't want to be," John had shrugged.

Sarah could think of plenty of reasons. Mikey needed to build self-confidence and learn the lesson of perseverance, or else . . . or else, he might end up just like his father.

She recalled how exuberant Mikey had been the day he left for camp, so excited that he'd given Sarah a handshake instead of a hug and a kiss. Now, on Thursday, he had only to remain for two more nights and the week-long camp would be over. Sarah knew that giving in and permitting Mikey to return home early would only make it harder for him the next time he tried "to cut the apron strings." She wanted Mikey to stick it out.

But John was willing to do whatever it would take to make Mikey happy for the moment. Sarah often thought her ex-husband was like a boat without a sail, content to drift wherever the current took him. Never a thought for the future. Always leaping at the easy way out. Adopting the same nonchalant attitude toward his son's future that he'd applied to his own career and, come to think of it, their marriage.

"We never agreed on anything when we were married, why should we agree now that we're separated. If only I had sole custody, I could make decisions in Mikey's best interests," Sarah told Molly, who, like a true friend, nodded her head in agreement. "This joint custody agreement only makes things worse since we can never agree on what's best for Mikey, and it's Mikey who will pay the price in the long run."

Not unlike the judge who assigned the warring parents in the preceding scenario joint custody of a developing adolescent, the Army seems headed toward a decision that may jeopardize the best interests of the forward area air defense (FAAD) system's non-line-of-sight (NLOS) component, one of the most exciting new weapons to enter the Army inventory in decades. Responding to a Congressional mandate to exploit NLOS' full potential as a dual-mission system, the Army is currently juggling rationales that may assign combat arms branches dual, or even multiple, proponent responsibilities for the still maturing weapon system.

Everyone seems to like NLOS. The system works, it isn't particularly expensive (an important consideration in the era of budget deficits and conventional force reductions) and, best of all, it kills both attack helicopters and tanks. Its versatility, however, has created something of a controversy.

Is NLOS an air defense, armor, infantry or field artillery weapon, or a combination? The Army's strategy of assigning combined arms branches dual, or even multiple, proponent responsibilities for the new system has both proponents and opponents. My purpose is to make a case for why the Army should make Air Defense Artillery the sole NLOS proponent, a case principally based on three factors:

- The "First to Fire" branch's unquestioned ability to execute the NLOS air defense mission.
- Air Defense Artillery's ability to execute the NLOS anti-tank/ground mission at a fully acceptable level.
- The overwhelming inherent advantages of having a single proponent rather than two or more proponents.

Conceived in U.S. Army Missile Command laboratories in the early 1980s, the system was first thought of as an anti-tank system. It seemed destined, in the beginning, for the Infantry's anti-tank sections — a location that may yet be its final destiny.

However, the death of the Sergeant York Gun and the birth of the FAAD system in 1985 spotlighted NLOS' powerful potential. NLOS could kill attack helicopters hovering behind ridge lines or terrain mask before they pop up to release ordnance. Air Defense Artillery, which saw NLOS as the solution to one of forward area air defense's toughest problems — the attack helicopter — became the system proponent.

When the FAAD concept was approved, the Army temporarily halted its pursuit of NLOS' anti-tank potential while Air Defense Artillery developed its air defense application. The NLOS program evolved via an organizational and operational (O&O) concept and required operational capability (ROC) documents that were in-

cluded as an annex to the overall FAAD ROC. Air Defense Artillery then put the system through concept evaluation and into full-scale engineering development with the goal of fielding 12 to 18 dedicated NLOS systems in each of the divisional FAAD battalions.

However, in December 1987, language embedded in the Congressional Budget Resolution demanded that the Army immediately begin figuring out ways to exploit NLOS' full potential as a dual-capable (NLOS-AD [air defense] and NLOS-AT [anti-tank]) system. The resolution put Infantry, Armor and Field Artillery back into the NLOS ballpark.

In the spring of 1988, the Combined Arms Center, Fort Leavenworth, Kan., began sorting out the problem. The Command and General Staff College performed a doctrinal assessment of the weapon and de-

termined, among other things, that NLOS-AD would be best deployed in a decentralized manner using FAAD command and control (C²) while NLOS-AT would be best employed at brigade level. From this assessment, the Combined Arms Combat Development Activity (CACDA) developed an NLOS combined arms O&O concept that embraced the brigade-level employment idea for NLOS-AT. While the CACDA O&O won general support, its ultimate approval was predicated on whether NLOS could be controlled at brigade; if not, it would have to be organized at the task force level — a concept earlier envisioned by the Infantry.

CACDA conducted a thorough and comprehensive concept evaluation program (CEP) to answer the level of control issue. The evaluation program used numerous analytical tools, including the newly activated Battlefield Simulation Network at Fort Knox, Ky., the Army Training Battle Simulator at Fort Hood, Texas, and the U.S. Army Training and Doctrine Command's (TRADOC) computer modeling capability.

The CEP determined the NLOS system could be controlled effectively from a centralized brigade to engage follow-on ground targets without an elaborate C² architecture; currently projected sensors and voice telecommunications would suffice. The CEP also produced a number of other important findings:

- Brigade (as compared to battalion or division) appears to be the best level to control NLOS-AT because the most important sensor and C² linkages are at bri-

gade level. Battalion level cannot effectively integrate the assets needed to optimize the system while division level is too far removed from the action to be sufficiently responsive.

- The NLOS-AT is most effective against follow-on forces rather than defiladed targets in the vicinity of the close battle. Several factors play a role in this, but the most significant factors are system response time (which is comparatively slow regardless of the level of control,

thus reducing the effectiveness of close engagements), NLOS' extraordinary capability to find massed follow-on targets, and its ability to better shape and manage the close battle by engaging follow-on forces first.

- Air defense and anti-tank/ground engagements are best executed by NLOS systems dedicated to the specific mission. The very

different nature of air and ground engagements makes assigning dual primary missions to individual NLOS systems an ineffective way to operate. Secondary dual missions are greatly preferred.

- NLOS should not be employed as just another indirect fire weapon for ground engagements. The system should be closely netted with sensors and a C² structure that allows it to be selectively used to shape and manage the battlefield.

- NLOS systems dedicated to the air defense mission can effectively crosswalk to the anti-tank/ground mission without a sophisticated C² architecture.

- Fifty-four NLOS systems (18 dedicated to the air defense mission and 36 to the anti-tank mission) per heavy division and 36 (12 to air defense and 24 to anti-tank) per light division are very effective in executing both the air defense and the anti-tank/ground mission. The CEP did not specifically address an optimal number, but analytical results suggest that 54 is close to optimum.

Based on the CEP findings and the desire of the Army and Congress to fully exploit both the air defense and anti-tank/ground capability of the NLOS system, CACDA recommended a dual proponent concept. Under this concept, NLOS-AD would remain under the Air Defense Artillery umbrella while NLOS-AT would fall under the auspices of Field Artillery. Field Artillery was chosen because its inherent sensor and brigade C² linkage favored it over the maneuver branches.

Placing NLOS in Air Defense Artillery would maximize the system against aerial targets

Despite some obvious drawbacks of having two proponents for the same system, the recommendation that Air Defense Artillery and Field Artillery share dual proponent responsibility, at first, seemed to make a lot of sense. Placing NLOS in Air Defense Artillery would certainly maximize the system against aerial targets while placing NLOS in Field Artillery (possibly within the direct support artillery battalion) was structurally workable and would seemingly support the brigade-level concept. NLOS at the Infantry task force level could not exploit the system's deep capability. And Air Defense Artillery, as sole proponent, did not appear well-suited to absorb a large number of systems dedicated to the ground mission.

On the way to the "approval bank," however, Army leaders provided some very significant added guidance.

Although basically agreeing with every finding and recommendation embedded in the CEP, including ADA proponent responsibility for NLOS-AD and the brigade-level control concept for NLOS-AT, the Army leadership declared that one NLOS-AT characteristic should be considered paramount — its responsiveness, or lack of responsiveness, to the maneuver command.

The cornerstone of the dual proponent concept was NLOS' ability to engage follow-on forces, not its responsiveness to the maneuver commander. Although the CEP had determined that NLOS as a Field Artillery weapon could support maneuver elements, it had also recognized a clear danger: NLOS might not be responsive if used "improperly" as just another indirect fire weapon. Instead the system could easily be engaged in air defense or fire support missions when called upon by the maneuver commander. Although critical to battle, these other missions could significantly lessen the ability of the maneuver commander to quickly leverage the NLOS assets where he wants them. The air defense mission was understood to be unavoidable. However, there was a question whether Field Artillery counter-battery, suppression, interdiction and other calls for fire might consume NLOS assets.

In an attempt to correct problems associated with the lack of Field Artillery NLOS-AT responsiveness at brigade, the Army is examining the possibility of placing some sort of maneuver (Infantry or Armor) NLOS organization at the brigade level. The idea behind this solu-

tion is that it would make the system more responsive to the maneuver commander by getting it from under the perceived "stranglehold" of the Field Artillery C² system.

Unfortunately, there are some serious problems to this approach. The first problem is that maneuver forces never have been, nor ever will be, principally concerned with fires against follow-on forces. To execute the deeper mission an Infantry or Armor NLOS element would have to tie into a sensor and C² system and begin looking very much like the Field Artillery organization it was to replace.

Secondly, because of the nature of the weapon, responsiveness would not be significantly improved even if the system were proliferated at battalion level. The price for this slight improvement would be a greatly

compromised ability to execute the higher-payoff follow-on battle.

A third problem in assigning proponent responsibility to a maneuver branch is that Infantry and Armor have no brigade-level organization in which to place maneuver NLOS-AT assets. Field Artillery and Air Defense Artillery already have battery- and battalion-sized direct support organizations; completely new organizations would have to be created for Armor or Infantry to play the same role.

If a maneuver NLOS organization at brigade doesn't make sense, what does? In light of weaknesses inherent in the dual proponent concept, the Army should seriously consider Air Defense Artillery the sole proponent for both NLOS-AD and NLOS-AT.

The following points support this proposal:

- Air Defense Artillery can much more readily execute the ground mission than any of the other branches can execute the air defense mission, a postulation supported by CEP findings.

- Based on mission, enemy, terrain, troops and time available factors, ADA NLOS-AT could be effectively integrated with the fire support plan, the maneuver commander's scheme of maneuver, or both. ADA NLOS-AT would belong (organically or in direct support) to the brigade, would function outside the fire support architecture and would be free to execute either air defense or anti-tank/ground missions.

- Placing both NLOS-AD and NLOS-AT under a

If a maneuver NLOS organization at brigade doesn't make sense, what does?

OPINION

single air defense commander would provide maximum flexibility to weight NLOS assets against either the air or the ground threat. Dual proponents would have less flexibility to task organize between air and ground missions, and no other single proponent could do justice to the air defense mission.

- If NLOS-AT were correctly used to shape and manage the battlefield, calls-for-fire message traffic could be effectively handled outside of the Field Artillery C² by voicetel or FAAD command and control and intelligence and the enhanced position location reporting system.

- Additional NLOS systems for the anti-tank/ground application could be placed into the existing FAAD battery organization. By adding a second NLOS platoon, six additional systems per brigade could be added without any significant overhead structure. More than six would only require an additional force structure similar to that which would be required by other NLOS options.

- Basically, the FAAD battery is already a brigade-level organization. Whether in direct support (currently the norm) or organic (favored under many current Air-Land Battle Future concepts), the FAAD battery has traditionally operated to support the brigade commander.

- As a single proponent Air Defense Artillery would be much more resilient to uncertain or changing funding levels. Will funding levels for NLOS exceed the amount allotted for the air defense buy? If not, there is absolutely no way to achieve the optimum level of 54 NLOS-AT in the heavy division and 36 NLOS-AT in the light division.

- With potentially fewer systems, the idea of dual proponent responsibility becomes much less viable since it would lead to a piecemeal organizational approach such as platoons attached to brigade headquarters batteries or similar organizations. As sole proponent, Air Defense Artillery could adapt easily to a variety of fielding alternatives. Air Defense Artillery, for example, could absorb small quantities of systems into the existing FAAD battalion or establish a battalion structure similar to those discussed earlier for the other combined arms if funding becomes available to field a full AT/AD complement of 36 or 24 systems. One additional point: an ADA battalion combining all 54 NLOS-AT and NLOS-AD systems makes more sense than a 36-system battalion under any of the dual proponent concepts.

- The beauty of a single proponent arrangement for maintenance, training, MOS structure and combat developments is its simplicity and is almost an overriding factor by itself. The advantages of having a single train-

ing base, a single MOS structure with upward mobility, and a single school to handle management system requirements and materiel development, as well as testing and fielding, are overwhelming. The NLOS system is going to require dedicated efforts on the part of whoever owns it to make it operate effectively. It makes sense that a single branch with the system as one of its "pillars" will do a better job of making the system work than two, or several, proponents who treat it as a "secondary system."

Although the sole ADA proponent concept is loaded with advantages, it does have a few shortcomings. However, they are minimal and, to a great extent, more perception than reality.

As sole proponent, Air Defense Artillery might not integrate NLOS anti-tank/ground systems with other fire support assets as well as Field Artillery. The business of Field Artillery is, after all, fire support integration, and no one does it better. However, the CEP shows there is no reason why air defenders could not superbly execute the NLOS anti-tank/ground indirect fire mission, provided the anti-tank/ground mission receives proper training emphasis.

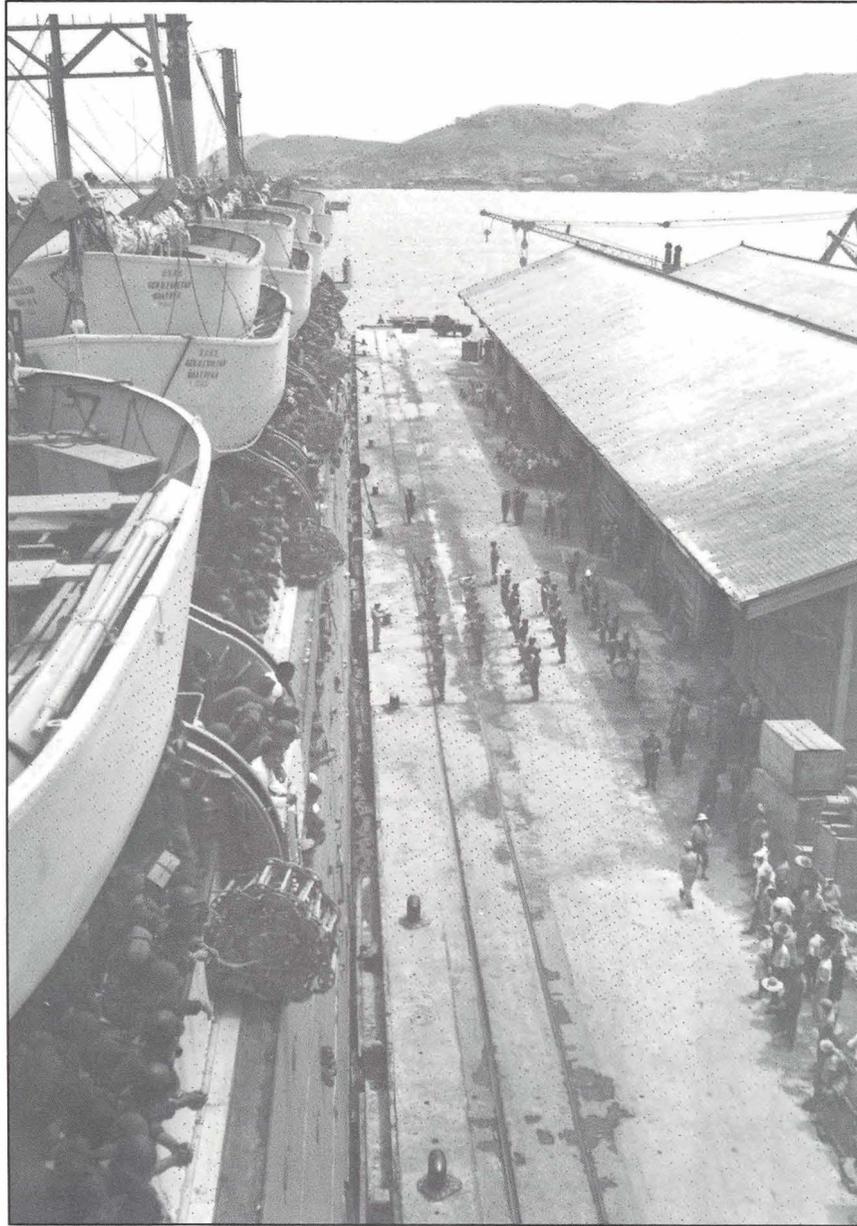
The NLOS anti-tank/ground mission may appear to be outside the classically defined ADA mission; however, it must be noted that Air Defense Artillery has, since its inception, employed systems such as Quad 50s, M-42 Dusters and Vulcans in ground-support roles with tremendous success. And in the future, ADATS and other FAAD weapon systems will likely take on ground as well as aerial targets. The FAAD combined arms air defense initiatives, meanwhile, give air defense capabilities to non-ADA maneuver elements. Assigning Air Defense Artillery to support the maneuver commander with ground fires is nothing new and is totally consistent with the prevailing trend toward making the Army more combined arms oriented.

Today's resource-constrained environment may not offer a perfect solution to the problem of assigning NLOS proponent responsibility. However, based on Air Defense Artillery's ability to execute both the air and ground mission, assigning Air Defense Artillery sole proponent responsibility for NLOS is the solution that will best enable the Army to fully develop NLOS' vast potential.

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Korean War

40th Anniversary



At home, the Korean War was billed as a police action, but units like the 9th Regimental Combat Team, 2nd Infantry Division, disembarking at Pusan Aug. 14, 1950, found themselves in the middle of one of the nation's most desperate struggles.

ADA in Korea

A remembrance of antiaircraft artillerymen who fought in a forgotten war

by Hubert L. Koker

Korea, the forgotten war, was a brutal and protracted struggle that began on a monsoon-drenched morning four decades ago and raged up and down a remote peninsula for 37 months. When it finally ended in a stalemate at a bleak "truce village" in no-man's land called Panmunjon, it had involved 22 nations, claimed five million lives and set off political and economic tremors that reverberate still. It is appropriate on the anniversary of the Korean conflict (the Cold War turned hot) that we are now witnessing the apparent end of the Cold War.

The animosity that prevailed between North and South Korea after World War II ignited into open warfare Sunday, June 25, 1950, when, without warning, the North invaded the South. President Harry S. Truman promptly ordered U.S. troops, planes and warships into action to defend South Korea. For many reasons the Korean War, which ended with an unstable truce in 1953, is one of the most important events of the 20th Century. It influenced the United States' position in relation to all nations as profoundly as either World War I or World War II. For political reasons, official Washington classifies the Korean War as a "police action." Washington's justi-

fication: the struggle was a collective effort by 17 nations under the United Nations flag simply to restrain Communist aggression, rather than to punish the aggressor and deprive him of territory.

The Korean War was an old-fashioned kind of war, dominated far more by field artillery, machine guns and rifles than by bombers, tanks and aircraft carriers. These modern weapons, along with paratroopers, occasionally figured in the fighting, but for the most part, the Korean War was fought along pre-20th Century lines. Hand-to-hand combat was common. Bayonets and hand grenades were widely used, as were barbed wire and field mines. It was once said of a war between France and Austria that it was a war of 1859 fought between armies of 1809 using tactics of 1759; it might be said of Korea that it was a war of 1950 fought by armies of 1945 using tactics of 1916.

The U.S. Army's total strength in 1950 numbered less than 600,000, with one division in Europe and four divisions on occupation duty in the Far East. Understrength was the norm: divisions had two regiments instead of three, regiments had two battalions instead of three and artillery battalions had two firing batteries instead of three. And as usual

in peacetime, fighting troops were in short supply; there were plenty of drivers, clerks and cooks, but there were not many riflemen.

In 1950 what remained of the Coast Artillery Corps was mostly antiaircraft battalions. The conduct of war had changed in many vital respects. Coasts were no longer defended with coast artillery cannon, but with combat aircraft operating far beyond the range of even the heaviest guns. The most threatening attacks were not anticipated from the sea but from the air. The Army reorganization act of 1950 took Air Defense Artillery and its mission from the Coast Artillery Branch, which then ceased to exist, and transferred it to the Field Artillery Branch.

In anticipation of this move, and in response to the tactical and organizational doctrine being rewritten during the years 1948 to 1950, numbered light automatic weapons (AW) antiaircraft artillery (AAA) battalions, both self-propelled (SP) and towed, were being organized and trained at Fort Bliss, Texas. These AAA battalions were formed to replace the single AAA battery in division artillery units. Few infantry divisions had organic AAA battalions in 1950.

The Army Antiaircraft Com-



The self-propelled M-19 "Flak Wagon" with its twin 40mm Bofors guns was one of the workhorses of the Korean War.

mand, established in 1950 to work with the Air Force in the protection of the continental United States against air attack, siphoned off many of these battalions. Although anti-aircraft guns played an important role in the defense of the homeland, it had an equally important and admirable role to play with the field Army in Korea.

The first AAA — and U.S. Army — unit to see action in Korea was Detachment X, deployed to Suwon airfield June 29, 1950. Detachment X consisted of three officers and 32 enlisted men from the 507th AAA AW Battalion, then on occupation duty in Japan. Detachment gunners

used four M-55s (quadruple mounted caliber .50 machine guns) to shoot down two North Korean (Russian) Yak-9 fighter aircraft that afternoon. Lacking adequate communications and early warning, AAA gunners had trouble distinguishing between the Russian Yak-9 and American F-51, both in use in Korea. The gunners had to depend on hostile acts by aircraft before engaging. When North Korean fighters attacked again on June 30, PFC Thomas Merante suffered a broken leg and became the first U.S. soldier wounded in Korea. The next day Detachment X destroyed its equipment and moved south. The

detachment was evacuated to Japan July 2.

By July 20, 1950, the 8th U.S. Army Korea was formed from elements of the 24th and 25th Infantry Divisions and the 1st Cavalry Division. In addition to the single AAA battery with each division, D Battery, 865th AAA AW (SP), was an 8th Army asset for air base defense. It was a meager beginning for the 22 AAA battalions that would eventually support United Nations troops before the end of the war.

With the exception of three more Yak-9 fighters downed by A Battery, 26th AAA AW (SP), on July 19, near Yusong-mya, AAA units

were used initially in ground support delaying actions. Meanwhile, troops of the 50th AAA AW (SP) Battalion, with their combat-loaded fire units lashed to the decks of cargo and transport ships, were furnishing air defense for a large armada bearing X Corps for an amphibious landing at Inchon. The stated mission of AAA in 1950 was (1) to attack, destroy or nullify all forms of enemy aircraft and guided missiles and (2) to provide close support for infantry (armored) units by reinforcing the fires of infantry heavy weapons and to attack and destroy targets of opportunity on land or on water.

Before Korea, a predominant question was how "close" can you get in "close support?" In Korea, in terms of physical location, sometimes the anti-aircraft weapons were in front of the troops, and sometimes in the rear. The main point

is that the anti-aircraft troops were always *with* the infantry, absorbing its shocks on the defensive and spearheading its advances on the offensive, participating in its infantry and air support actions, and integrating well in the newly developed Infantry-Armor-Artillery team.

Self-propelled AAA automatic weapons, often called "automatic artillery," became the darlings of the Korean war. AAA battalion elements, from single weapons to batteries, were used in close support missions with infantry, field artillery, armored and engineer units. Specific missions included defensive and offensive fires against enemy personnel; neutralization and destruction of enemy machine guns, mortars and light artillery; support of infantry elements from squad to battalion size on combat patrols; reinforcement of armored

units; establishment and defense of friendly roadblocks; defense of regiment and battalion command posts; and defense of air strips.

Neither the M-16 (half-track vehicle with turret-mounted quadruple .50-caliber machine guns) nor the M-19 (full-track vehicle with turret-mounted twin 40mm Bofors guns) were adequately armored to deliver direct fire from positions in full view of the enemy. Their sides and "tubs," in which the guns were set, had a mere 1/4- to 1/2-inch armor plating. There was no overhead protection at all.

The truth is that until the Korean War these high-silhouette vehicles were considered only as mobile gun-bearing platforms, with little thought given to how the men who used them would be protected from enemy ground fire. Designed for AAA defense against low-flying aircraft, their thin skins were adequate against bomb fragments but were not designed for the close support role they played in Korea. In some cases, where available, special armament was fabricated and welded on turrets for protection. Hull defilade was used where possible in static situations, but for the most part AAA gunners remained exposed in their "tubs" while firing.

In the early stages of the conflict, regiments misused self-propelled units because of a lack of knowledge (limitations of the weapons and their proper use) and experience. When regimental commanders observed that the "Flak Wagons" had such terrific firepower and maneuverability, they were inclined to use them in any situation without due thought to their vulnerability.

The M-19 with its twin 40mm guns had a cyclic rate of fire of 240 rounds per minute while the M-16 with its four .50-caliber machine guns could spit out 2,000 rounds per minute. Both systems could attain 45 miles per hour on improved roads. AAA guns were placed in



90mm AAA guns firing in a ground-support role, September 1950.

outpost positions or sent on patrols in guerrilla infested country with no riflemen for protection; often they were called upon to lay on sustained fire without regard to rapid ammunition expenditure. When the battle took a turn for the worst, they were kept on the move day and night without opportunity for the maintenance so necessary to keep them active fighting machines.

This misuse was corrected when both infantry and AAA commanders learned that they should be used much the same as an infantry heavy weapons company. Self-propelled units should never be sent on a mission without adequate rifle protection, nor should they be sent to a position from which they cannot make a rapid withdrawal.

At first the tremendous firepower of the Quad 50 units made the half-tracks appear suitable for use as points in the advance guard of the tanks and infantry. These units, practically unarmored, became victims of land mines, automatic weapons and anti-tank weapons in road-blocks.

Various combinations of AAA-Armor-Infantry employment were tried. The one that met the greatest popularity was to permit a tank to lead, followed by two AAA track or half-track units and then a tank, accompanied by infantry. The tank in the lead could absorb counter-tank action and take automatic weapons fire from the front that the AAA weapon could not and, unless the track was cut, was better prepared to withstand mines than any other vehicle. The tanks' vulnerability was from the side and rear where it carried lighter armor. Enemy forces normally attempted to attack from these angles. If an enemy rocket unit opened fire it depended upon surprise, and the time lag before it could be located, to permit the crew to "zero in" on the tank and put it out of action.

In the system under discussion,



M-16 half-tracks were often used in ground-support roles.

as soon as bazooka fire was discovered coming from a given general locality, AAA weapons swept the area with a tremendous volume of fire and dispersed or destroyed the hostile bazooka elements. Surprisingly, many actual records exist of anti-tank weapons being disabled and crews killed when the location had not been pinpointed by our troops. Also in this type of road formation, a column was sometimes halted by an obstacle in the road, a setup permitting banzai charges before the barrier could be removed. The multiple .50-caliber units proved deadly against these mass infantry charges.

On one such patrol in January 1951, elements of the 82nd AAA AW (SP) Battalion scored a first when they shot an airplane "up" rather than "down." The incident occurred when a Quad 50 unit accompanying an infantry patrol topped a rise and surprised a North Korean aircraft on the ground along with 200 Chinese troops.

In November 1950, elements of A Battery, 15th AAA AW (SP) Battalion, reached the Yalu River,

which separates Korea from Manchuria, while supporting the U.S. 7th Infantry Division. D Battery, 15th AAA, was destroyed while supporting infantry near the Chosin Reservoir when Chinese troops attacked across the river.

Overwhelmed by the surprise Chinese onslaught, the AAA batteries played a key role in the fighting retreat south from the Yalu. AAA gunners blasted their way through Chinese roadblocks, clearing the way for trapped columns of infantry, armor and field artillery pieces and writing some of the most heroic pages in the history of artillery.

By January 1951 AAA AW use was somewhat standardized. Each of three batteries provided one platoon in the anti-aircraft role to protect a light field artillery battalion, one platoon supported an infantry regiment committed to combat and one battery provided AAA protection for special missions and for critical installations, defiles and bridges within the division sector.

Competition for use of AAA AW (SP) units was particularly keen among division infantry and field

artillery units, and the premium on corps artillery enhanced the importance of AAA 90mm units as field artillery. So great was this need for AAA automatic weapons that in January 1952, 12 additional Quad 50 units were authorized for each infantry division. Often these were assigned to tank companies but still controlled by the AAA unit commander. The 24th Infantry Divi-

sion, with A Battery, 26th AAA AW (SP) organic to its division artillery, was augmented early in 1951 with the 21st AAA AW (SP) Battalion, an all M-16 unit. With an additional allotment of 12 M-16s in 1952, the 24th Infantry Division had a minimum of 76 Quad 50s. Later some divisions received six additional M-16s.

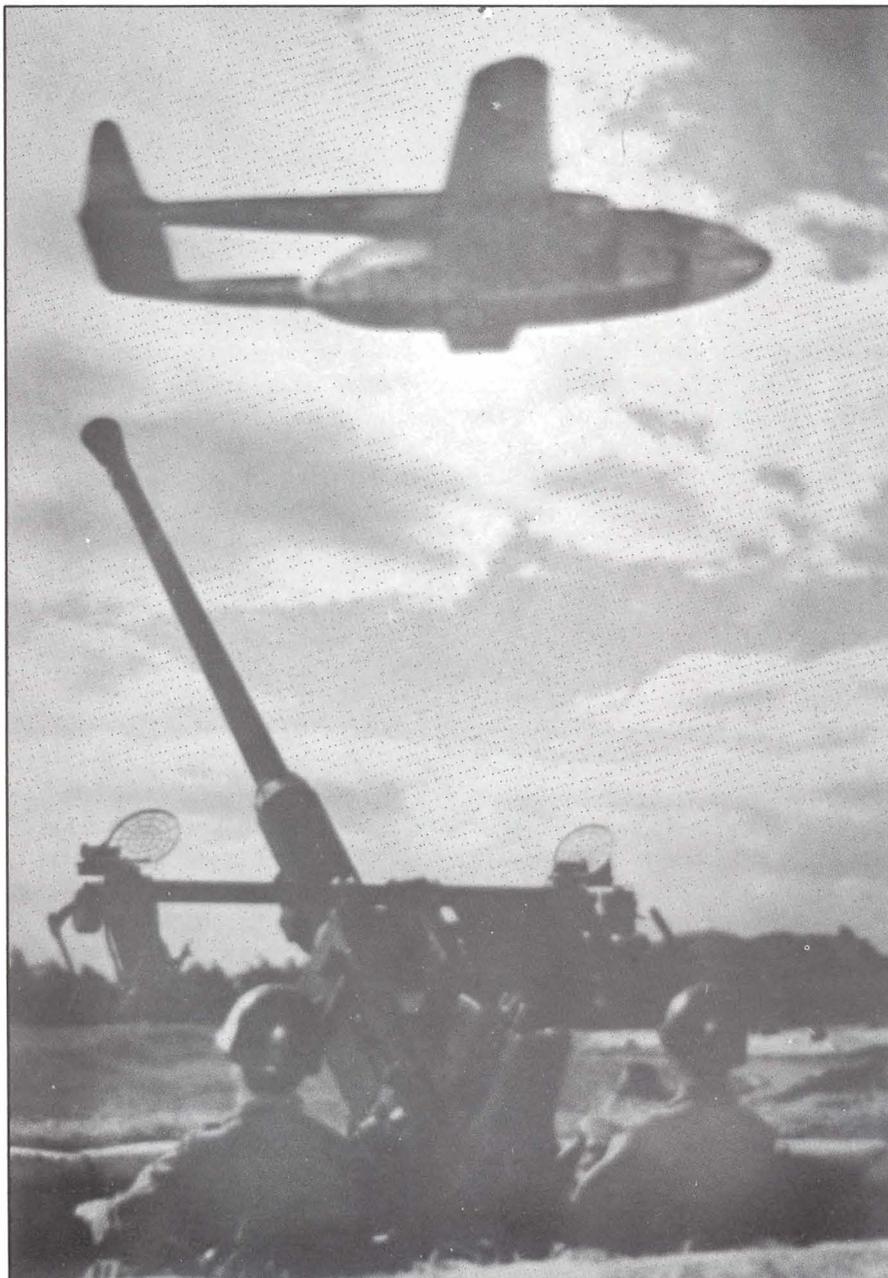
The watchword for AAA in Ko-

rea was adaptability — it seemed that everything taught and learned from history had to be modified. For example, the 10th Group, an 8th Army asset, was released from the U.S. Air Force's control and became division artillery for the 1st Cavalry Division and South Korea's 1st and 6th Infantry Divisions. Leaving their motor generators, director equipment and radars in Pusan, the 10th AAA Group picked up a field artillery battalion and plotting boards, made a fire direction center and followed the divisions north.

The first shots fired by the AAA 90mm guns in Korea were at ground targets. During the extraction of the X Corps from Hungnam during Christmas 1950, a AAA AW battalion headquarters was used as a task force headquarters.

The small unit leader was the key in automatic weapons units. In Korea, the M-19 or M-16 was no longer a component of a large smoothly coordinated team — it was *the team*. In the fast-moving ground situation, the squad leader was no longer a minor commander dedicated to a subordinate role. When troops fought a few yards from the squad leader's weapon and he was handed a fire mission, he became *the commander*.

Refueling was a problem, especially during the first year of movement. The M-19 with its twin Cadillac engines averaged one mile per gallon, while the M-16 got two to three miles per gallon. Borrowed trucks loaded with 55-gallon drums often followed AAA columns. Hand-pumping 110 gallons of gasoline into each of eight M-19s and M-16s was a Herculean task that considerably delayed convoy movements. Both the M-19 and M-16 could fire while moving and could traverse 360 degrees. However, the M-16 had a dead space over the vehicle cab and sometimes had to be driven backward into position for



A C-119 Flying Boxcar overflies a 40mm gun defending an airfield.

the guns to depress enough to fire level or downhill.

During the first phase of the Korean War, the year of movement, first priority went to infantry support, with little time for anything else. During this period the M-16 justly earned its vaunted reputation.

During the next phase, the year of the static buildup, first priority went to the infantry MLR (main line of resistance); tracks were assigned "deadlined" or more FPL (final protective line) types of missions. Whatever tracks were left went back to field artillery. During the last phase, the year of the enemy artillery buildup, the AAA was forced off the MLR to field artillery or to some place in between: a direct support artillery role.

Indirect fire by AAA SP units presented only minor problems. All AAA officers were trained in field artillery. When the AAA fire units were in close proximity to field artillery battery, they tied into the field artillery fire direction center; if none was handy, the AAA battery headquarters borrowed equipment and made their own.

The AAA guns registered by normal field artillery procedures and delivered indirect fire from defiladed positions. To determine azimuth or deflection the AAA gunners used a hand-made indicator scale clamped to a non-rotating portion of the turret and a fixed index attached to the rotating portion of the turret. A heavy machine gun clinometer was used to determine elevation. Field Artillery forward observers or the AAA platoon leader adjusted fire.

Indirect fire was made more effective by stripping the tracer element from armor piercing, incendiary and tracer ammunition and using the flash of the exploding incendiary round to make adjustments (the tracer burned out at about 3,500 yards). The lethal effects of this type fire are attributed

to the fact that the enemy could not hear the approaching round and, even at long ranges, .50-caliber plunging fire was effective. Depending on wind and temperature, the maximum indirect fire range was 7,000 yards, which usually translated to approximately 2,000 to 5,000 yards in front of the MLR. This type of fire gave rise to the terms, "Whispering Death," "Silent Death," "Death in the Dark" and "Half-inch Howitzers."

Although the ground support role took up most of the equipment and energy of air defenders in Korea, the primary mission of air defense was not forgotten. The North Korean or Chinese air threat remained. However, the Air Force maintained air superiority and discouraged any serious air attacks on ground troops.

The M-16 retained its veteran status through three years of the Korean War, emerging as the most notoriously effective weapon in use there. Air defenders with their automatic artillery wrote a never-to-be-forgotten chapter in the history of air defense in the ground support role. Unfortunately, they proved themselves under conditions that may never exist again, and in such a way that the primary role, that of air defense, remained untested.

With the end of the fighting in Korea the United States returned its thoughts to the Cold War with its ICBMs and long-range bombers. The Quad 50 that had been such a friend to the infantryman was relegated to the National Guard and the half-track vehicle became only a memory. Later, during the Vietnam War, the towed Quad 50, the M-55, was recalled to active duty only to be replaced by the gatling gun and Vulcan.

The Korean War was the first of a new kind of war, neither victory nor defeat. For years after fragile peace was established at Panmunjon, it was not even called a war.

Since the U.S. Congress had never declared war, it was referred to, instead, as the "Korean Conflict." Only during America's involvement in Vietnam — another "undeclared war" — did it become standard to refer to the "Korean Conflict" as the "Korean War."

Korean veterans were welcomed home, but to a subdued welcome that fell far short of the reception World War I and World War II veterans received. Returning home to lukewarm receptions, many of the Korean veterans, no doubt, felt unappreciated and forgotten. But if they complained, they complained very little; theirs was not a generation given to complaints, protests or political activism.

The public seemed immersed in a new novelty — public television. The medium, in its maturity, was later to make Vietnam the "living room war," projecting grisly images of combat that were instrumental in rousing public outcry against the war. But during Korea, television, still in its infancy, fed the complacent '50s households a steady diet of variety shows, situation comedies and "shoot-'em-ups" set in the Old West rather than the real thing from Korea.

A movement to build a Korean War Memorial similar to the Vietnam Veteran's War Memorial seems likely to succeed, but, for the most part, the 40th anniversary commemoration of the Korean War has been eclipsed by Operation Desert Shield and overshadowed by plans for the bigger, more ambitious 50th anniversary commemoration of World War II scheduled for 1991.

Soldiers of the "Forgotten War" remain best remembered by their comrades in arms.

Hubert L. Koker, a Korean War veteran, is a member of the *Air Defense Artillery* magazine staff.



ADA FORUM

As the branch's Senior Noncommissioned Officer, I would like to share some thoughts with Air Defense Artillery warriors.

First, I would like to recognize our soldiers that have already deployed, or are in the process of deploying, to the Middle East. You are among the best trained soldiers in today's Army. As air defenders you have trained individually and collectively — you have trained to standards. And as soldiers who never deviate from those standards, you are true professionals.

Teamwork and the buddy system are important parts of everyday life for soldiers. I have always stressed one of the keys to the success of any unit or group of soldiers is the buddy system, whether during an evaluation, preparing for an inspection or just plain going to school. So I ask all soldiers: never deviate from the standards and always use teamwork and the buddy system to accomplish your mission. Operation Desert Shield is a perfect example of the importance of establishing a buddy system and providing guidance on the issues buddies should help each other with (enforcement of water consumption, eating and watching for fatigue, sunburn and heat injury).

Preventive maintenance checks and services (PMCS) on all the equipment is of the utmost importance. I cannot overemphasize the requirement of daily PMCS, even if the equipment is not used, especially in the severe environmental conditions of the Middle East. Do not take shortcuts in PMCS on any piece of equipment. You never know when you may have to depend on it to properly function to defend you and your fellow soldiers.

Extreme environmental conditions of the Middle East present other challenges to the soldier. Driving

in unfamiliar places coupled with severe heat requires the greatest safety precaution. Not only does the driver need to be alert, but the assistant driver has to act as a second pair of eyes. If in a convoy or on the road, remember to obey the imposed speed limits. During blackout conditions, follow the distance guidelines, determined by the rear blackout marker lights on the vehicle ahead.

The use of night vision devices imposes another threat to safety. Do not place too much trust in, or overestimate, the goggle's capabilities. The most helpful guideline in using goggles is the scanning technique; however, dust conditions greatly reduce effectiveness, so slow down!

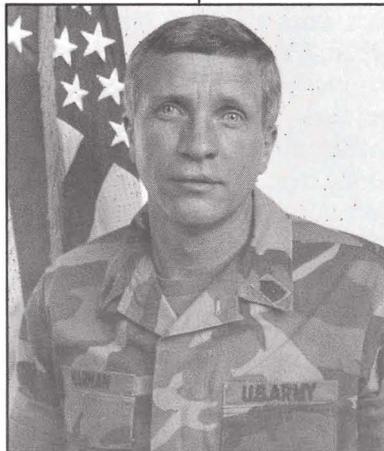
Another major concern is sleeping in and around vehicles. Establish and enforce a designated sleep area. Prevent vehicles from rolling toward sleeping personnel. Brief each driver on correct driving and sleeping procedures during hours of darkness. Remember, only an untrained soldier has accidents.

The last item I would like to discuss is the role of family support groups. They are dedicated to taking care of your spouses, children and loved ones left behind at your home station. The dedication and community support for deployed soldiers and family members is the finest I have experienced in my entire military career. I can honestly say that all personnel not deployed are totally dedicated to serving the soldiers and families left at their military installations.

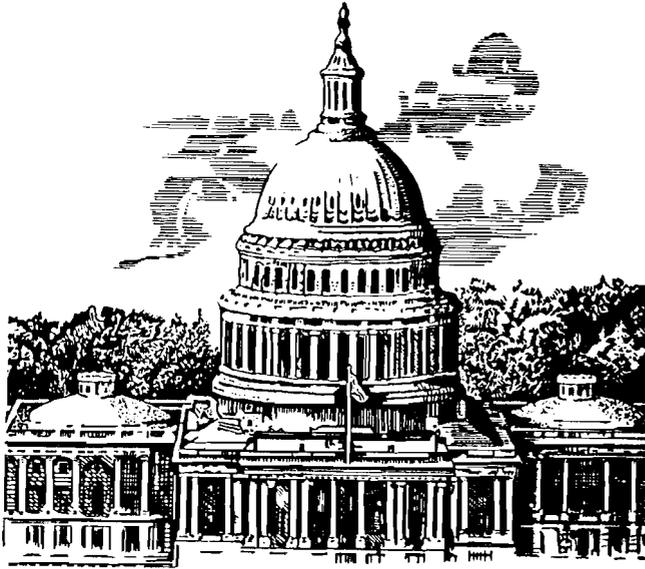
Again, use the buddy system, practice safety, and never deviate from standards.

"First to Fire"

— CSM Robert W. Harman
U.S. Army Air Defense Artillery School



War Powers Act



Has Operation Desert Shield put Congress and the president on a constitutional collision course?

by Maj. Paul A. McCarthy

The deployment of Operation Desert Shield soldiers to Saudi Arabia could put the White House on a collision course with Congress over the War Powers Act.

The controversial act requires the President to consult with Congress within 30 days of initiating military actions that place the lives of U.S. servicemen in danger. Unless Congress authorizes continuation, the President must withdraw the forces within 60 days.

In compliance with the War Powers Act, the Bush Administration notified Congress of the Desert Shield deployment in August, but to delay the 60-day clock that would force their withdrawal, the adminis-

tration contended that the troops were not in imminent danger. However, Secretary of Defense Richard Cheney, in an effort to make Desert Shield soldiers eligible for extra pay, declared Saudi Arabia an imminent danger zone retroactive to Sept. 1. The War Powers Clock, at least in theory, has been ticking ever since and will strike midnight around the end of November.

It seems unlikely, given the strong public support, that Congress would invoke the War Powers Act to force the withdrawal of U.S. forces from Saudi Arabia. It seems just as unlikely that the executive branch would yield to legislative coercion without forcing a constitutional fight that might end up in the Supreme Court.

As soldiers and citizens, Air De-

fense Artillerymen should understand the issue involved in the debate since they are likely to be among those most affected by its implications.

Congress believes that the power to commit combat forces overseas is granted to it alone by the Constitution. Many presidents, especially those who have held office during the past 50 years, disagree; instead, they have argued that the Constitution invests them with the power to commit forces under a variety of circumstances. To settle this impasse and curtail the power of the executive branch, Congress passed the WPA in November 1973 over President Richard Nixon's veto. So far, no president or administrative spokesman has admitted the WPA's constitutionality. Former Secretary of Defense Caspar Weinberger told Ted Koppel, during a *Night Line* segment devoted to the WPA and Operation Desert Shield, that he considers the act an unconstitutional usurpation of executive power.

Is the WPA constitutional?

The framers of the Constitution gave Congress several powers to control presidential warmaking. The appropriations authority — the “power of the purse” — was intended to serve as the primary tool to control the military. In 1787, this was a powerful tool. State militias furnished the major ground forces, and few anticipated the regular Army and Navy would grow into large organizations. Today's large standing army and powerful navy are forward-deployed and possess huge operating budgets that can absorb the full, or at least initial, cost of contingency operations. The president can easily deploy relatively large contingency forces and, once these forces are committed, it is difficult for Congress to force a quick withdrawal, especially if the military action is of short duration, as was the case in Grenada, Panama and the punitive bombing of Libya.

Other checks and balances available to Congress included presidential impeachment (very unlikely) or a constitutional amendment (almost impossible).

Frustrated by the inadequacy of powers clearly available to them, feeling hoodwinked by President Lyndon Baines Johnson's application of the hurriedly passed Tonkin Gulf Resolution to sharply escalate U.S. involvement in Vietnam, and in reaction to the anti-war fervor of the times, Congress passed the WPA in November 1973. As the act's main constitutional justification, Congress cites the "necessary and proper clause" of Article I, Section B of the Constitution. This section, the argument goes, allows Congress to codify and define the war powers of both the legislative and executive branches. Therefore, the WPA lists the circumstances under which the president, "by virtue of his independent constitutional office as commander-in-chief," may act without consulting Congress and those circumstances in which he must consult Congress before acting.

The defenders of the WPA also refer to Article I, Section B of the Constitution, which grants Congress the power "to declare war." Many argue that this clause makes Congress the only entity authorized to start an offensive war, while the president can always wage a defensive war since no declaration of war would be necessary. The problem becomes one of definition. Is a preemptive strike or a hostage rescue attempt a show of force designed to intimidate a potential enemy offensive or defensive acts? Nonetheless, a strong case can be built that the president's power is strictly defensive and reactionary. For example, Article I, Section 8 of the Constitution says that "Congress shall have the power . . . grant letters of marque and reprisal." This clause seems to indicate that Congress

alone can authorize reprisals such as the Libyan raid. Interpreted broadly, this clause could also cover hostage rescues, shows of force and embargoes.

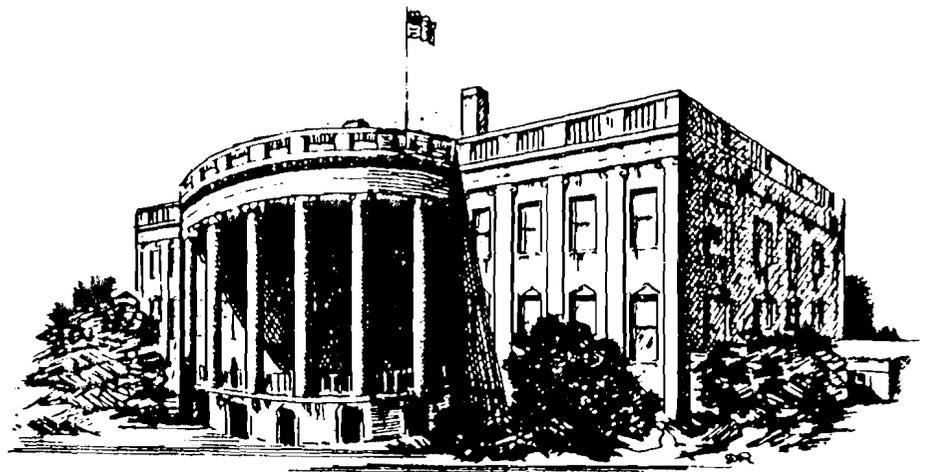
Presidents view the WPA as an unconstitutional infringement on the warmaking powers of the executive branch. They regard its passage as an attempt to amend the Constitution without the necessary referendum. In his veto message, Nixon complained that "certain of the president's constitutional powers would terminate automatically under this resolution 60 days after they were invoked." The executive branch also argues that the framers of the Constitution wanted to avoid spelling out every power in detail because it would be an impossible task to cover every circumstance and situation. In what amounts to a powerful argument against the stance of the legislative branch, Alexander Hamilton himself asked, "what is to be the consequences in case the Congress shall misconstrue this part of the Constitution and exercise powers not warranted by its true meaning?" The executive branch also justifies its warmaking power by claiming authority under

its role as "sole organ" of American policy and a "legal validity [to use combat forces overseas at their discretion] through repetition." In other words, the right of precedence.

The United States has fought many wars over the years, but Congress has declared war only five times. The Korean War and the Vietnam War came without Congressional action. As one author put it: "Wars are no longer declared by anyone, anywhere, let alone by Congress".

It is this author's opinion that the WPA is an unconstitutional attempt by Congress to regain a constitutional role it was never assigned, or, at least, a role it long forfeited through inaction and paralysis. The motive may be correct, but the method is not. Congress should appeal either to the Supreme Court or the American public via referendum, or else live with its diminished role.

Maj. Paul A. McCarthy, formerly a professor of military science at Syracuse University, is the officer in charge of the 69th Air Defense Artillery Brigade fire direction center.



Chemical Attack!

Operation Desert Shield soldiers are trained, equipped and mentally prepared if Iraq resorts to chemical weapons

by 1st Lt. Mary Hillman

In perhaps the most famous of allegorical tales, a servant dispatched to purchase provisions is jostled by Death in the crowded marketplace.

Terrified, the servant borrows a fast horse from his master and gallops away to Samarra. The master then goes to search for Death in the marketplace and, upon finding her, asks why she had made a threatening gesture to his servant.

"That was no threatening gesture," Death answers. "I was merely surprised to see him in Baghdad, for I have an appointment with him tonight in Samarra."

The moral of the story is that there's no escaping fate. Today, Samarra is the site of Iraq's largest chemical weapons manufacturing facility, but, while chemical weapons are formidable, their effects are not inescapable, nor are their results preordained.

A world absorbed with the horror of nuclear holocaust thought it had left the specter of chemical warfare behind it in the mud and carnage of Verdun and the Somme, but today U.S. soldiers deployed for Operation Desert Shield face an en-

emy who not only possesses a chemical arsenal, but has announced, in no uncertain terms, its intention to use it.

The threat of chemical warfare during Operation Desert Shield is particularly ominous because Iraq and other Arabic countries that possess chemical weapons have shown little inhibition against using them. Indeed, where chemical weapons are concerned, their actions have often matched their overheated rhetoric.

Central Intelligence Agency Director William Webster recently told a World Affairs Council audience that "the spread of chemical weapons among the Arab states, principally Iraq, Libya and Syria, could seriously alter the regional balance of power." Egypt, which has sent troops to aid the United States in the defense of Saudi Arabia, employed chemical weapons against Yemen in the 1960s. Libya used them against Chad in the late 1980s. Iraq used chemical weapons against Iran during the Persian Gulf War of 1980 to 1988 and then turned them against its own rebellious Kurds in 1987.

Iraq's use of poison gases against its own population marked a grim new milestone in the history of chemical warfare. When Iraq used mustard, nerve and cyanide gases to block Iranian human wave assaults during the Persian Gulf War, many emerging Third World countries noted that Iraqi chemical weapons were a success in the political arena as well as on the battlefield. There was a total lack of international response.

Although Iraq was the first to use chemical weapons in direct violation of the Geneva Protocol of 1925, its actions did not precipitate any enraged outcries from the nations that had signed the chemical weapons ban, nor did it inspire any attempt to bring Iraq before the International Court of Justice. The United Nations Security Council declined to renounce Iraq by name during the Iran-Iraq War, and it was not until Iraq gassed Kurdish insurgents that the United States, pressured by media shots of crumpled bodies, including those of women clinging to infants in a death embrace, imposed ineffectual economic sanctions against Iraq.

Terrorism adds a new dimension to the chemical weapons threat emanating from the Middle East. Chemical weapons are ideal terrorist weapons. They can panic and intimidate entire populations, their ingredients are readily obtained, they are cheap and easily produced, and they are hard to detect. Virtually any target is vulnerable. Terrorists, as a group, have not rushed to use chemical weapons because conventional explosives are familiar and still sufficiently effective. However, as explosive detection technology improves and as headline coverage demands ever more spectacular terrorist events, terrorists may find chemical weapons increasingly attractive. Iraq has warned the United States that Arabic groups would retaliate against U.S. intervention in the Persian Gulf with terrorist attacks directed against a wide variety of targets.

In numerous interviews, U.S. military leaders have assured reporters that American troops participating in Operation Desert Shield are trained, equipped and mentally prepared to cope with chemical attacks. Indeed, some newsmen, drawing upon off-the-record interviews, suspect that, privately, U.S. commanders would almost welcome a chemical attack. Such an attack, they feel, would cement public support of Operation Desert Shield and allow the United States to unleash the full fury of American conventional military response.

Chemical agents are compounds used in conjunction with military applications to kill, incapacitate or seriously injure combatants through their chemical properties. In a military context they are typed as casualty, training and riot control, screening smokes, signaling smokes and incendiaries.

The war gases, however, are usually classed by their physical and psychological effects, such as choking, blistering, vomiting or tearing,

Middle East Chemical Warfare Primer

Iraq

With help from West German firms, Iraq brought chemical production facilities on line in the early 1980s. Iraq has produced and used nerve gas, blistering agents and cyanide. Five facilities are believed to be operational. The Samarra facility produces mustard gas as well as Sarin and Tabun nerve agents. Its "test grids" cover more than 25 square kilometers and can produce 1,000 tons of gas per year. The Salman Pak facility probably conducts research on advanced chemical agents.

Egypt

The Soviets supplied Egypt, which supports Operation Desert Shield, with chemical weapons, defensive equipment and training in the early 1960s. Egypt reportedly produces chemical agents including nerve and blistering agents. It may also be producing precursor chemicals needed to make poison gases. Egypt also makes munitions needed to deliver chemical weapons, including bombs and short-range artillery rockets and shells.

Syria

Syria, another Operation Desert Shield supporter, acquired chemical capabilities in 1972 when it bought, allegedly from Egypt, artillery projectiles filled with nerve gas. Aid from the Soviets began in 1973. Czechoslovakia may have also provided training or munitions. With the help of West German firms, Syria began producing nerve agents, reportedly Sarin, by 1986. Syria may have produced chemical warheads for its Scud-B and SS-21 missiles and artillery shells. Its Frog and Scud missiles are reportedly armed with VX, a highly toxic nerve agent.

Libya

The Soviet Union trained the Libyans in chemical warfare. Libya may have received chemical agents from Poland in 1980. The Libyans apparently obtained poison gas in 1987 from Iran. Often described as the Third World's largest chemical weapons manufacturing facility, the Rabta complex is allegedly nearly ready to go into production and may be capable of producing multiple tons of mustard and nerve agents per day. Also located in the Libyan Rabata complex is a metal fabrication facility that is apparently intended to produce empty artillery projectiles and aircraft bombs that can be used for chemical weapons delivery. Both of the Libyan chemical weapons manufacturing facilities were built by Western European and Asian corporations. The Libyans have a second production facility in operation at Mata-as-Sarra.

Iran

Iran, now aligned with Iraq, built a chemical weapons production plant near Tehran in the mid-1980s and now produces limited quantities of nerve agents, blood agents and mustard gas, which it loads into artillery rounds and bombs. Early Iranian chemical attacks on Iraq apparently relied on captured Iraqi munitions and weapons possibly received from Syria. A German chemical company agreed in 1988 to build a pesticide plant for Iran that may be used to make nerve agents. There is some evidence that Iran is trying to develop chemical warheads for its surface-to-surface missiles. Iran has reportedly agreed, beginning in 1988, to provide Libya with chemical weapons in return for missiles, an indication that Iran's chemical weapons factories are in production.

and their effects on the blood and nervous system. All agents are either persistent, providing a long-term hazard, semi-persistent or non-persistent, having a relatively short duration effect. Unlike conventional weapons that cause injury or death by tearing apart or piercing the body, chemical agents react with tissue, chemically altering it in a manner that either injures or kills. Because they produce no heat or blast, chemical weapons tend to damage only living organisms, leaving little collateral damage.

For the most part, the chemical agents employed during World War I were chlorine-based derivatives, such as chlorine gas and phosgene. During the later stages of the war, however, more toxic agents, such as mustard gas, were developed. Modern chemical agents fall into three general categories: blister, blood and nerve.

Blister Agents. This category includes agents that burn any portion of the body with which they come in contact.

Blood Agents. These agents cause injury and death by entering the respiratory system and attacking the blood cells, thereby interfering with the human body's ability to carry oxygen. Included in this category are hydrogen cyanide and cyanogen chloride.

Nerve Agents. There are two known varieties of nerve agents. The "G" family includes Tabun, Sarin and Soman. Developed in the 1930s, the "G" series of gases attack the human body, primarily through the respiratory system.

Only one type of agent, simply called "VX," comprises the "V" family of nerve agents. The "V" family, developed in the early 1950s, includes liquids that act by absorption through the skin. "G" agents, however, can also act via the skin, provided they are mixed with a chemical thickener that retards evaporation, thus keeping the agent in a liquid form.

Chemical agents are also classified by their duration of lethality on the battlefield. In general terms, an

agent that remains active for a period of minutes is considered non-persistent. In contrast, an agent that retains its potency over a period of days is termed persistent. For military purposes, agent persistency is of vital importance. For example, with proper timing and distance, the employment of a non-persistent agent can delay enemy troops by forcing them to don chemical protective equipment, while friendly forces can maneuver through the same terrain unencumbered by protective chemical equipment once the agent has dissipated in the atmosphere.

On the other hand, a persistent chemical agent can hamper or, in some cases, totally deny the use of a specific piece of terrain to all forces desiring to operate in the affected area. For this reason, commanders must carefully consider the use of persistent agents.

Non-persistent Agents. The non-persistent category includes blood agents and "G" class nerve agents. Agent GB, however, usually re-

Chemical Substances of Military Significance

Type	Characteristics	Countermeasures
Nerve "G" agents Tabun Sarin Soman "V" agents VX	Liquid or vapor. Attacks nervous system. Very small doses lethal. Kills within minutes. Persists for hours to days. "G" agents attack primarily through the respiratory system. "V" agents act by absorption through the skin. Chemically related to pesticides.	Automatic agent detection and identification devices. MOPP equipment. Atropine injection. Artificial respiration. Decontamination.
Blister Mustard Lewisite	Liquid or vapor. Burns any body surface it contacts. Can kill through secondary effects such as blistering in the respiratory system. Persists for days to weeks. Easy to make. Long storage life.	Automatic agent detection devices. MOPP equipment. Protective salves and ointments. Decontamination.
Blood Hydrogen cyanide Cyanogen chloride	Attacks blood cells, interfering with their ability to carry oxygen. Non-persistent; dissipates rapidly.	Automatic agent detection devices. Decontamination. MOPP equipment.



11th ADA Brigade Patriot crew members train in MOPP-4 ensembles.

mains effective for about 20 minutes. These agents have their greatest use against targets on the axes of advance. Although they could be used against deep targets, non-persistent agents are most effective in a route preparation role. They are often used in advance of maneuver, air assault or airborne units, or when enemy dispositions and strength are not accurately known.

Persistent Agents. Mustard, Lewisite and "V" class agents fall into the persistent category. ("Thickened" class nerve agents are semi-persistent.) The principal value of persistent agents is their lingering effect on the target area. In addition to producing immediate casualties, they also cause continued attrition and a degradation of morale. Because of the need to function in full chemical protective clothing, performance will be seriously affected. The time required to accomplish essential tasks will increase dramatically. Persistent agents will also restrict the movement of units through contaminated areas and may force them to avoid

contaminated areas altogether. Decontamination will stop all mission activities in the interim.

Wearing the mission-oriented protective posture (MOPP) ensemble degrades mission and individual performance. Six physiological effects have been identified.

Fine Motor Skills. The protective gloves reduce the ability to grasp tools and manipulate controls.

Gross Motor Skills. Wearing the overboots and possibly other portions of the ensemble slow a soldier's overland movement.

Visual Skills. Wearing the mask reduces visual acuity significantly.

Hearing Skills. Wearing the hood reduces hearing level significantly.

Stamina. Wearing the MOPP ensemble can induce heat stress casualties, particularly if operations are conducted in moderate- to high-temperature environments.

Heat Buildup. Heat buildup, of course, is the physiological effect that most concerns Operation Desert Shield commanders. It affects the individual differently from the other five physiological effects.

When MOPP gear interferes with the dissipation of heat, job performance is not immediately degraded, as is the case with most of the other factors, but in time the effects may be catastrophic. Interference with heat dissipation leads to a gradual increase in the body core temperature. The body counteracts this by accentuating the mechanisms by which heat is transferred to the skin. Thus, when an individual is active in a MOPP ensemble, his body compensates with increased heartbeat, engaging of the outer blood vessels and increased skin temperature. The skin attempts to transport more heat into the environment by the slightly increased conductivity resulting from the cooling through an increased skin temperature gradient and, more importantly, by an increased volume of sweat. If a temperature equilibrium is established, the body core temperature ceases to increase. If not, the body core temperature may advance to levels that induce heat exhaustion and, perhaps, heat stroke. The amount and rate of body core temperature increase are complicated functions of environmental temperature, humidity and wind speed; metabolic rate of the individual; skin temperature and area; clothing heat flow impedance; and individual activity.

Needless to say, the soaring daytime temperatures of the Arabian Desert are not conducive to MOPP operations. However, the sharp differential between daytime and nighttime temperature characteristic of desert environments, plus low humidity, makes the desert more hospitable to MOPP gear at nighttime, the most likely time for a chemical attack.

There are also many psychological effects. Wearing the MOPP ensemble creates increasing morale problems and mental stress since recognition by the individual is largely lost, communications are

difficult, and the perception of battlefield isolation — a long recognized combat effectiveness factor — is heightened. However, the Doughboys of World War II faced the same psychological effects and, through training, overcame them.

Desert Operations

The behavior of chemical agents in a desert environment allows us to predict problems U.S. soldiers might encounter and what sort of form Iraqi chemical attacks against U.S. soldiers in Saudi Arabia might take. Most chemical attacks in a desert environment will be spot or on-target chemical attacks. This is because chemical agents evaporate quickly in the hot, arid climate. For example, even mustard gas, a persistent agent, evaporates rapidly under the desert sun. With the temperature at 90 degrees Fahrenheit and a light wind, the concentration would be less than 50 percent in one hour.

The downwind hazard area increases in the desert because there are few trees or buildings to alter the wind flow. Operation Desert Shield soldiers should place alarm systems for the widest possible coverage. Since desert soil is very porous, an attack with an unthickened liquid agent may occur in support of a pre-dawn attack. At first, the desert sand would soak up the agent. As the sun rises, it would begin to heat the surface. The evaporating agent rising from the sand would then create a downwind hazard.

A non-persistent agent attack is unlikely during daylight hours. Daytime desert winds would quickly blow away any agents. Nighttime reverses the conditions, creating the ideal conditions for a non-persistent agent attack. At night, agents linger and settle into low areas, such as foxholes. Since soldiers cannot wear night vision goggles under their chemical protective masks, chemical agents could, in certain situa-



11th ADA Brigade soldiers in MOPP training prior to Operation Desert Shield.

tions, partially offset the nighttime fighting advantages possessed by U.S. forces. The reverse, of course, would be true if the United States preceded a night attack with non-persistent chemical weapons. However, there has been no indication that U.S. forces would react to an Iraqi chemical attack by employing their own chemical weapons.

In planning for defense, strenuous activity should be reserved, when possible, for nighttime. This will reduce heat stress in soldiers encumbered by MOPP gear. Commanders and NCOs operating in situations where chemical attacks are considered imminent should regularly check to make sure that mask seals are not broken. They should use the buddy system or have sentinels check to ensure that sleeping soldiers are masked throughout the night.

Most stateside units on alert for Operation Desert Shield deployment immediately stepped up MOPP training. At the U.S. Army Air Defense Artillery Center, units jogged and played football in

MOPP gear. Public affairs officers set up MOPP demonstrations for television crews and newspapermen to assure the public that American soldiers are prepared to defend themselves against chemical agents. In Saudi Arabia, deployed units train daily for chemical attack.

The threat of chemical weapons, obviously, is one that no Operation Desert Shield commander is taking lightly. While the possibility of a chemical attack is a prospect no one looks forward to, American commanders and individual soldiers have expressed in numerous interviews their confidence in their chemical warfare training and MOPP equipment. U.S. soldiers are well prepared to fight, win and survive in a chemical warfare environment.

1st Lt. Mary Hillman is a threat analyst with the Directorate of Combat Developments, U.S. Army Air Defense Artillery School, Fort Bliss, Texas.

Waiting is the Hardest Part

Operation Desert Shield air defense units prepare for action as the Persian Gulf crisis sizzles on the anvil of the sun

Some say waiting is the hardest part, and the crisis in the oil kingdoms has a slow fuse. But the Air Defense Artillery units deployed for Operation Desert Shield are doing much more than simply sitting in the desert and waiting for the powder keg to explode.

Hawk and Patriot battalions, deployed to defend air bases, command and control centers, ports and major troop concentrations, maintain a 24-hour watch on the skies over the Persian Gulf area. Farther out in the desert, divisional ADA units stay on the move, constantly repositioning themselves to protect the airborne, armor and infantry units they support.

For the moment, Operation Desert Shield resembles a gigantic training exercise, a real-world laboratory in which to test new weapon systems, like Avenger, or new air defense command and control equipment such as the new portable work station designed to give forward area air defense commanders a computerized view of the battlefield.

Even the Arabian Desert, with its low mesas and rocky outcroppings, reminds air defenders of the training ranges that surround the U.S. Army Air Defense Center at Fort

Bliss, Texas. The difference, of course, is that this time the guys wearing the aggressor uniforms are the real thing.

"We train at Fort Bliss in these conditions," Lt. Col. Lee Neel, commander of the 2nd Battalion, 7th Air Defense Artillery, told reporters. "Sand and heat and dust — we're used to it. Not that we like it, but we're used to it."

The Patriot battalion, part of the 11th ADA Brigade, Fort Bliss, Texas, began arriving in Saudi Arabia just five days after Iraq's August 2 invasion of Kuwait. About 500 to 700 of the battalion's 800 men and women are now deployed, operating out of camouflaged tents and bunkers at scattered desert sites that resemble their training base in the desert of West Texas and New Mexico.

Deployed for the first time in a contingency area, Patriot's primary combat mission is to defend against high- to medium-altitude air attack, but the sophisticated system also provides the only defense against Iraq's arsenal of tactical ballistic missiles.

The ADA battalion commander, meanwhile, is trying to improve his unit's quality of life. Airmen from an air base adjacent to the Patriot

battalion headquarters area have constructed an asphalt basketball court. A television and video cassette recorder are in the camouflaged day room.

1st Lt. Matthew Van Kirk, who spent two weeks with Desert Shield ADA soldiers to assess the operation of experimental command and control hardware, said that while fewer amenities are available to forward area air defense soldiers assigned to maneuver units, "they worry most about whether they'll be home for Christmas."

"Usually, there's a light at the end of the tunnel — you tell them two weeks or three weeks. They can deal with that," Neel said. "But their rent's still due; their car payments are still due. I tell them to be prepared for the long haul. I tell them I told my family to plan for me to be gone a year."

The Army is working to establish a rotation system in case Operation Desert Shield, as many expect, turns into a long-term affair. Soldiers in Vietnam served a 12-month tour. Korea had its "point system" based on time in country and time in combat. A soldier in a front line unit could accumulate four points a month. He needed 36 points to rotate home. The Desert Shield

tour of duty will probably be shorter, perhaps only six months, provided the current desert stalemate continues.

The situation regarding rotation would change drastically, of course, if open warfare erupts. There would then probably be no rotations until the conflict is resolved, unless the war settles into a static and protracted conflict — the sort of war the United States hopes to avoid.

As Operation Desert Shield entered its third month, the odds against a peaceful settlement of the crisis seemed as great as ever. Baghdad not only refused to withdraw its invasion forces from Kuwait, but threatened to attack Israel and the oil production facilities of neighboring Arab states if the embargo noose tightens too tightly around the necks of the Iraqi people. "We will not allow the Iraqi people to be strangled," said Saddam Hussein.

The United States, meanwhile, continued to marshal its forces in the Arabian Desert. American soldiers and Saudi defense forces were joined in ever-increasing numbers by contingents from other nations backing the United Nation resolution demanding Iraq's unconditional withdrawal from Kuwait. The Japanese military ignited a constitutional debate in the home islands by lobbying for permission to send troops to Saudi Arabia, a deployment that would alter the nation's 45-year policy of pacifism.

The War Powers Act clock, which requires Congressional approval of Desert Shield type deployments within 60 days, ticked past midnight. No one paid it the slightest attention.

Soldiers in ADA units still scheduled for Operation Desert Shield deployment made preparations for departure. At Fort Bliss, the home of Air Defense Artillery, Army leaders warned the families of Desert Shield soldiers not to expect them home for Christmas.

Echo Battery Prepares for Action

by SSgt. Charles R. Williams

Echo Battery, 2nd Battalion, 7th Air Defense Artillery, reached its defensive sector after a long, hard drive through the desert and then worked through the night preparing for action. By daybreak, all systems were go.

Radar combed the sky in search of hostile intruders. The Patriot missile launchers were deployed and pointed toward their assigned sectors. And Echo Battery turned its attention to the construction of temporary living quarters, erecting tents against the scorching desert sun.

One of the section sergeants, SSgt. Danny Peterson of the battery's fire control platoon, said it had taken them a little more than an hour to reach operational posture. Peterson looked tired as he thumbed through a technical manual, doing his best to concentrate, but distracted by the sand and dust that covered the pages, his eyebrows and the sweaty-moist lines of his face.

"Just a little hotter," Peterson said. "We train at Fort Bliss under the same environmental conditions. This is nothing new to us."

Some soldiers flopped on their cots for a quick nap. Squads continued to move boxes of equipment while a few soldiers cleaned their weapons.

Two lieutenants, both battery tactical control officers (TCOs), sat near the far end of a weather-beaten tent. Dwayne Q. Dunlap and Hope M. Jackson had been in the battery less than two weeks. They had been borrowed from the 6th ADA Brigade, a Fort Bliss training unit, when the 11th ADA Brigade re-

ceived orders to deploy for Operation Desert Shield. The brigade had been short of TCOs.

Dunlap, although not long out of ROTC, spoke confidently about the battery's ability to accomplish its mission. "When we're set up, there'll be no problems," he said. "Give us a few days to work the bugs out of it, and it'll be perfect. Probably the hardest thing right now is to keep troop motivation up, but after we're set up and things start running smooth, they'll be fine."

"However, no one's complaining," said Jackson. "We are slowly but surely getting better."

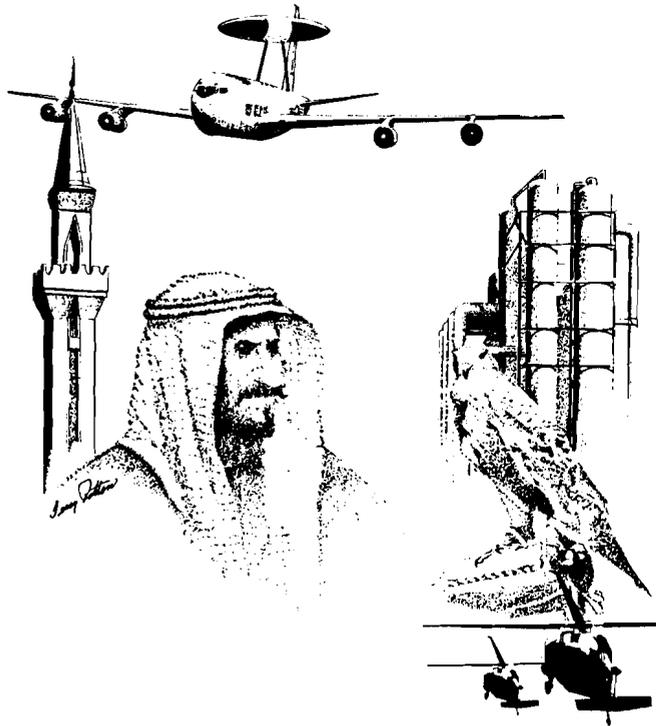
Generators were already producing electricity and some of the conveniences of home would soon be in place. Portable toilets were scheduled to arrive the same day, and prefabricated housing would soon replace the tents.

Echo Battery looked forward to cool showers and hot meals they knew would soon arrive — a definite plus in the morale department. And a chiller, a device used to cool water in very hot weather, would soon provide cool drinks.

Echo Battery, which had moved into a tactical grid filled with grit and grime during the night, had shown a little grit of its own by transforming barren desert into a livable and fortified base of operations. Through it all, the soldiers' attitudes seemed to echo the words of a female lieutenant when she said, "It's not all that bad."

SSgt. Charles R. Williams is a public affairs specialist in Saudi Arabia with the 11th Air Defense Artillery Brigade.

The al-Saud



All in the Family

Obscured by diplomatic maneuvering, buried under the tonnage of newsprint generated by Operation Desert Shield, the item was of interest primarily to air defenders and congressional appropriations committees. Saudi air defense command and control center operators say they can easily track Stealth bombers, picking up the clandestine aircraft's characteristic tracks at a range of 10 miles.

Since the Stealth bomber does not activate all of its stealth equipment during normal operations, the Saudi operators said tracking the controversial bomber would probably be much harder, but perhaps not impossible, during tactical operations. The Saudi air defense C² operators doubted less sophisticated Iraqi radars could detect approaching Stealth bombers under any combat conditions.

The quality of Saudi air defense hardware comes as no surprise to U.S. air defenders who have served as liaisons to the kingdom. With a population of only 12 million, the desert kingdom cannot field a large standing army, but has used its plentiful petrodollars to create a high-quality, technologically advanced defense force. In 1988, the Saudis, their efforts to purchase weaponry from the United States spurned by Congress, placed large orders for aircraft and missiles with British firms that, subsequently, became their largest suppliers.

Saudi Arabia's decision to purchase the equivalent of weapons formerly denied it by the United States in the international marketplace has cost U.S. defense firms billions of dollars in lost business. The vanished revenue and the Saudis' ready access to comparable

weapons from other suppliers was one of the factors behind the recent Bush administration decision to sell Patriot air defense missile systems to Saudi Arabia.

Saudia Arabia owes its present position of world influence not just to the fortuitous discovery of the world's largest oil reserves within its borders, but to the ascendancy of a remarkable family — the al-Saud.

The al-Saud had ruled large areas of the Arabian peninsula for centuries, but were driven from their ancestral home and Ridyah, their capitol, in 1891. For a decade, the al-Saud subsisted largely on the charity of neighboring kinsmen, including the founding family of Kuwait, until 1902 when Abdul Aziz, also known as Ibn Saud, recaptured Ridyah and reestablished the House of Saud. In a quick succession of minor wars, Ibn Saud succeeded in unifying the tribes of the Arabian Peninsula under one banner — the green flag of Islam. He completed his conquest in 1924 when he seized the holy cities, Mecca and Medina, from Shareef Hussein. (Shareef Hussein is the great grandfather of Jordan's King Hussein — just one of the myriad interrelationships that make the Gulf Crisis so nightmarishly complex.)

The al-Saud allied itself with Great Britain and the United States during World War II when Ibn Saud met with President Franklin D. Roosevelt aboard the *USS Quincy* to seal an alliance that has sometimes wavered but endured.

Today, about 400 members make up the al-Saud. The family, never given to ostentatious displays of its vast wealth, rules with a firm but benevolent hand, restricted by an Islamic code that places as severe obligations upon those who rule as it does upon those who are ruled. U.S. policy makers have long considered Saudi Arabia a voice of reason and restraint in the turbulent Middle East.

Desert Shield: *The Home Front*

SECTION A

2A Message from MARS

4A Double Time

America Displays Symbols of National Support

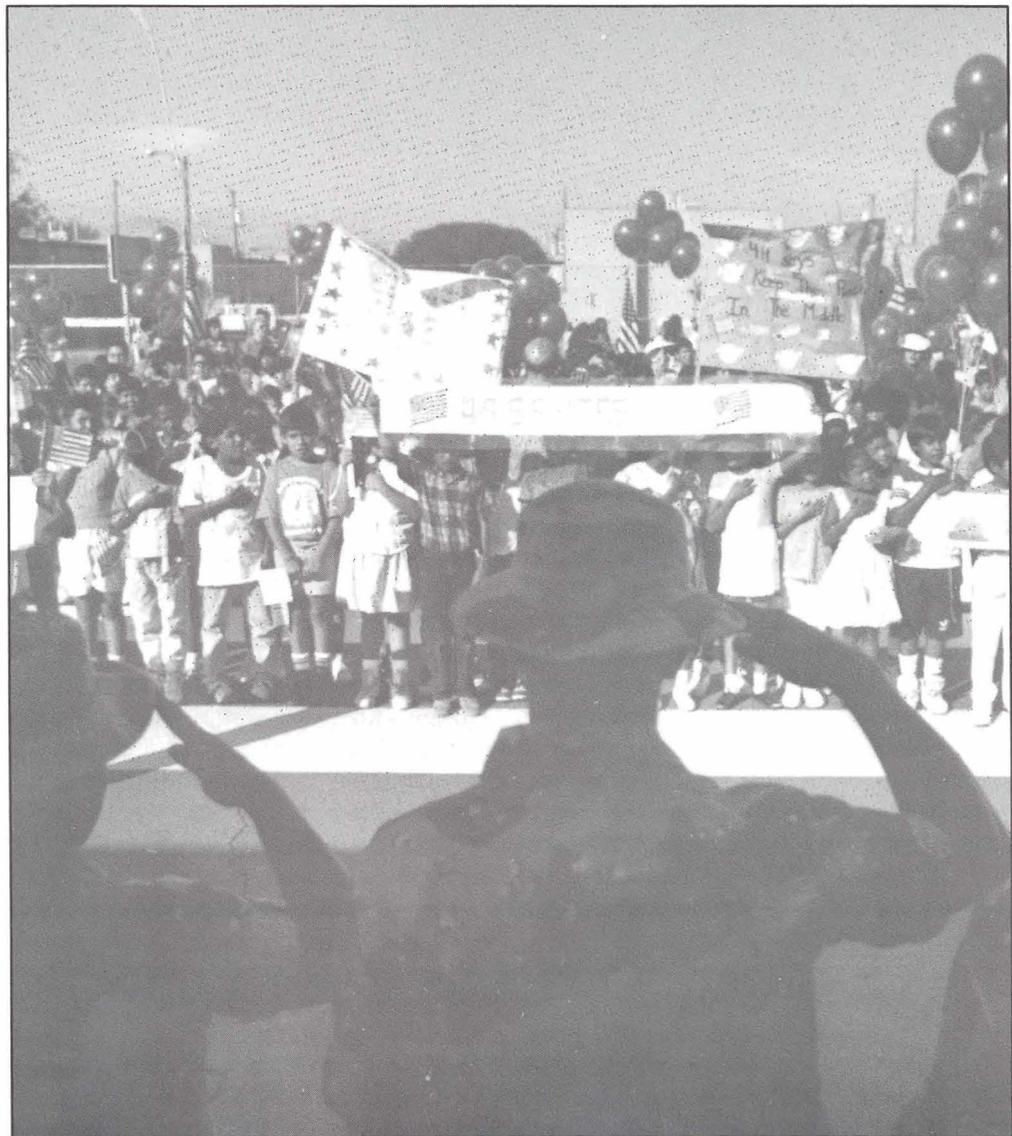
All across the country, Americans are displaying proof of their support for soldiers deployed to Operation Desert Shield and their families. Flags and ribbons (yellow in most areas) adorn the landscape from coast to coast.

The ribbon campaign seemed a ready solution to the question: "How do I show my support?" Red, white and blue ribbons and flags are undoubtedly patriotic, easily understood symbols of support.

Yellow ribbons are also an excellent avenue of expression. As far back as the late 1800s, sweethearts of cavalymen serving in the Plains Indian Wars wore yellow ribbons around their necks to symbolize their faithfulness to departed troops. Yellow is, of course, the branch color of the cavalry.

"She Wore a Yellow Ribbon," the John Wayne movie of the 1950s, repopularized an old cavalry song of the same name ("Around her neck she wore a yellow ribbon, she wore it for her lover who was far, far away . . .")

"Tie a Yellow Ribbon," a 1970s hit record, revived the custom, although in the song a convict, not a



Unanimous support from all grades, from all ages, all over America paralleled support from around the world for soldiers deploying to Saudi Arabia to defend both national and international interests.

soldier, returned home to a faithful loved one.

Yellow ribbons again be-

came a fad during the Iran hostage crisis, and today the ribbons symbolize our

nation's faithfulness and concern for soldiers of all branches.

Army Community Services: *Rendering Aid to Bereft Families and Deploying Troops*

ACSs across the country have expanded their programs to keep up with the extra demands caused by Operation Desert Shield. The following examples describe ACS operations at Army installations with Air Defense Artillery units deployed to Desert Shield.

Fort Bliss, Texas — "We set up a two-prong attack to counter problems caused by deployment to Desert Shield," reports Ms. Donna Santos, ACS director. "We work with both the deploying soldiers and their families, registering the family members and their special needs in a data bank. We assure the deploying soldiers that their family will not be alone — ACS will be there during the soldiers' absence."

The ACS has mounted a massive volunteer campaign during Operation Desert Shield; deluged with calls from would-be volunteers, it has set up a volunteer data bank solely to keep track of the specific contributions volunteers may make. A great number of the new volunteers are military retirees and members of the Veterans of Foreign Wars and the Association of the United States Army.

Santos added that Fort Bliss has decentralized its ACS program to the unit level. "We are continuing to offer our regular programs, but now we're working more closely with each unit's family support group. We send out trainers to educate the support group leaders in crisis in-

tervention and communication skills, and encourage the support group to depend on its members in times of need.

"One of the unique problems we're seeing," Santos explained, "is the number of male spouses left behind while the female is deployed. The males are understandably concerned about their spouses' welfare in the event of capture, given the Middle Eastern attitude toward females. They're also learning the mundane (and sometimes trying) daily duties of being a housewife."

The Fort Bliss ACS has added a 24-hour health-line, creating a direct connection to a trained coun-

Please see ACS / 5A

Message from MARS

The Military Affiliate Radio Station (MARS) is now transmitting MARSgrams — written messages — to soldiers in the Middle East.

The free service is available through Fort Bliss or a volunteer MARS ham radio operator in El Paso, Texas. Every branch of the service has a MARS system.

Senders must have the soldier's complete unit address, name, rank and Social Security number. Any message may be sent except those concerning critical illness, injury or death (handled by the Red Cross). Messages are limited to 28 words.

To send a MARSgram, call 915-568-8100 or 915-568-8089.

Ban Lifted: Officials Issue Contraband Caution

On Sept. 7, the Pentagon lifted the 12-ounce restriction on mail to APO and FPO addresses in Saudi Arabia. All classes of mail, up to the maximum weights allowed for that class, will now be accepted. Tobacco products

may be mailed, and stamps with the American flag may be used.

Anyone sending packages should be aware of restrictions imposed by the government of Saudi Arabia. These include:

- Matter containing re-

ligious materials contrary to the Islamic faith.

- Matter depicting nude or seminude persons or pornographic or sexual items.

- Nonauthorized political material.

- Firearms.

- Pork and pork by-products.

- All alcoholic beverages.

If contraband, illegal or offensive items are found, the soldier as well as the postal service to all troops is in jeopardy.

Share Letters Home

Mail is the mainstay of morale not only for troops deployed to Saudi Arabia, but also for their families and friends left behind.

Beginning with the January-February issue, *Air Defense Artillery* will publish letters from troops deployed to Saudi Arabia describing their feelings, expectations and human interest stories. Letters to soldiers from families, friends and concerned citizens should emphasize soldier-support efforts at home, thoughts, feelings, well-wishes, and human interest stories.

Air Defense Artillery reaches ADA soldiers in Saudi Arabia three to four weeks after distribution in the United States.

Send letters to:

Letters Home

ADA Magazine
ATTN: ATSA-ADA
Building 55
Ft. Bliss, TX 79916-0002

The Importance of News

Air Defense Artillery soldiers describe the effect of mail on American troops in Saudi Arabia

1st Lt. Matthew F. Van Kirk, an ADA soldier recently returned from Saudi Arabia, commented on soldiers' reaction to news from home:

"The deployed soldiers want news and care packages from home. Right now little or no consumables are available, given the current policy of no shopping on the economy and no mixing with the Saudi people.

"Some units," Van Kirk added, "are unaware of public opinion, of Americans backing them 100 percent. The troops receive sporadic news due to some units having better access to newspapers and information than others. At division and corps lev-

el, soldiers are getting papers a day or two old, such as the *Stars & Stripes* from Germany. But the soldiers out in the desert, in individual companies and batteries, are getting news a week to 10 days old."

When writing to deployed service members, Van Kirk warns that "context is key. We need to de-emphasize the 'Look at what you're missing' letters and instead concentrate on the message, 'This is what we'll do when you get home to celebrate your return.'"

SSgt. Charles Williams, a public affairs specialist with the 11th Air Defense Artillery Brigade in Saudi Arabia, eloquently described the need for mail:

"The support shown by fellow Americans in their letters of hope and prayer for our safety is an essential element of soldier morale. Words cannot express how good it feels to know that America is behind our military all the way in this endeavor."

Letters addressed to "Any Service Member" will be distributed among all the units, allowing soldiers who might not otherwise get mail to receive news from home. Letters are sent at regular domestic mail rates.

Do not use the addresses shown to send a letter to a particular individual. If you are writing a particular soldier, use his or her complete address.

"Any Service Member" Addresses

(Do not use to write a particular soldier)

To send your letters to soldiers in the Army, Air Force or Marine Corps, use this address:

**Any Service Member
Operation Desert Shield
APO NY 09848-0006**

To send your letters to soldiers in the Navy and Marine Corps on ships in the gulf region, write:

**Any Service Member
Operation Desert Shield
FPO NY 09866-0006.**

ACS

Continued from 2A

selor. Trained professionals are briefing guidance counselors at area schools on problems to expect from children of deployed soldiers.

Existing programs that ACS has expanded during Operation Desert Shield include Youth Services (critical now to keeping youngsters off the streets) and Latch-Key (more active now that children's remaining parent may have to go to work).

Other new programs include Simple Mechanics, Beating the Holiday Blues and Keeping the Romance Alive (through letters).

Fort Stewart, Ga. — "I've never been more impressed with the Army

than I am right now," says Mrs. Jane McDonald, director of ACS at Fort Stewart. "The dedication of family, friends and volunteers is amazing."

Fort Stewart's Family Assistance Center is now operating around the clock. Trained personnel are available at all times to help in tangible (how do I balance my checkbook?) or intangible (I just needed to talk) ways.

Are volunteers really teaching wives to balance checkbooks? "We find that some of these wives can't read a Leave and Earnings Statement or balance a checkbook," said McDonald. "Helping the wives with these skills is a two-fold issue: they will be learning a necessary skill, but the husbands will be returning to *very* independent wives!"

Fort Stewart's food locker, staffed by both employees and volunteers, has doubled its operation.

Fort Campbell, Ky. — Mr. Elbert Rainey, director of ACS at Fort Campbell, reports that Fort Campbell's brigades and battalions each have family support groups, assisted and counseled by ACS professionals.

In addition to its regular ACS programs, Fort Campbell has also set up a Family Assistance Support Office, operating 24 hours a day, seven days a week. The Family Assistance Support Office operates on a walk-in basis, has an on-post hot-line (798-9936) and a toll-free hotline for all 50 states (1-800-927-0001). The Support Office is manned by ACS professionals, qualified counselors, and volunteers. Food service and the food locker are both available at this office.

"Our schools are on post," Rainey explained, "so we don't require as much coordination to counsel our students as some of the other posts.

"We will continue 24-hour operation as long as needed," he concluded.

Fort Hood, Texas — The ACS at Fort Hood, like that of other posts, has added an emergency food locker at their Family Assistance Center and has begun 24-hour operation.

Fort Hood's Directorate of Personnel and Community Activities is working on a program to counsel schoolteachers and guidance counselors in area high schools on problems to expect from children of deployed parents.

Fort Bragg, N.C. — "ACS exists to serve our troops, but deployments like Operation Desert Shield intensify and concentrate our efforts," said Mr. Richard J. Wilkins, ACS director at Fort Bragg.

"Our Family Assistance Center, manned by ACS personnel, is operating around the clock. We've beefed up our volunteer corps and increased the staff's hours.

"Every unit at Fort Bragg has a family support group," Wilkins added. "We've organized workshops for each support group; for example, one of the next workshops will cover stress and financial planning."

How important is financial planning assistance to the families of deployed soldiers? "The veteran families, the soldiers who've been de-ployed before," Wilkins explained, "are good at this.

But some of the young soldiers have never been deployed, this is their first time, and their families just don't know where to start."



ACS professionals at Fort Bliss brief families of soldiers deploying to Operation Desert Shield.

Double

Continued from 4A

Captains Weiner and Weiner share an unusual if not unique relationship.

She left for Saudi Arabia August 14 while he stayed behind as commander of A Battery, 1st Battalion, 6th Air Defense Artillery Brigade, at Fort Bliss, Texas.

"I was out on a three-day field training exercise and I wondered if she would still be here when I got back," said Capt. Ben Weiner. "Luckily, Ida was able to let me know when she was leaving by way of a cellular phone we had in the field, so we had five days to prepare before she left."

Weiner and Weiner share many things. They run together, talk shop, divide household duties, share frustrations and military experiences. "I miss her company. You tend to take your spouse for granted. And it's difficult going to receptions, tailgate parties at football games or any social event without your wife. Our friends are primarily couples and I feel odd, out of place."

It's not just at home and social functions that Ben misses his spouse. As battery commander, Weiner must assure not only that

his new platoon leaders are trained competently, but also that their spouses are kept informed. "I spend about an extra hour a week now making sure new lieutenants' spouses are kept informed and activities coordinated in Ida's absence." She (Ida) was the "senior lady" for the Air Defense Artillery Officers Basic Course spouses. She always took care of that for him (Ben). She was also a member of four other spouse groups. "It's tough for me to know if I'm giving spouses the information they need," Weiner says.

The double time, double duty couple stays in touch primarily via mail, at a rate of two letters a week.

In one letter she wrote: "... Here in Saudi Arabia women are not supposed to drive vehicles. This is not a law but a very strong custom. The other thing that insults Arabs are women wearing the desert BDU shirts because the body curvature shows. It is because of the women (myself) coming out in a jogging outfit or shorts that may be a no-no. I'll try the whole jogging suit (which is baggy) and see if that flies. Women in Saudi Arabia don't work and entertainment in this culture centers around the Muslim religion. There are no



The Weiner's dachshund, Taby, gave birth to four pups after Ida left.

restaurants, movie theaters, dance clubs, etc. They do have Burger King and McDonald's. The socializing is segregated (men only socialize publicly with men and women only with women). It's rare to see women in the city streets and when you see them, they are covered totally except for the eyes and/or face"

"I served in the Sahara Desert for 45 days," he said, "so I know the terrain and some of the customs she must adjust to and deal with. We've been married for six years and we've served in areas away from one another for three of those six years, so this isn't something new. That doesn't make it any easier, just that it's nothing new for us. It's something we knew we would have to deal with as part of being a married military couple.

"I miss being able to share and exchange pro-

fessional experiences. As an S-2 officer she shared her tactical experiences and I shared knowledge gained in training new lieutenants."

So it's back to double time for him — shopping, preparing meals, washing clothes, cleaning house and taking care of the four babies. "We've already found good homes for them," he says. The Weiners' dachshund Taby gave birth to four pups only days after Ida left.

"Ida missed that and she's going to miss the change of command and my promotion to major in November. Not being able to share these professional milestones hurts."

Having chosen a dual military career, the couple at least shares a deeper, more meaningful understanding of what each is going through and what it takes to make it — double time.

\$\$ The Cost of Deploying \$\$

Soldiers deployed to the Saudi Arabian desert for Operation Desert Shield are eligible for imminent danger (hazardous duty) and foreign duty pay, but the cancellation of separate rations means many will only break about even, and some will see their paychecks actually shrink.

Soldiers who live off base and pay for their own meals rather than eating free in Army mess halls draw an allowance for separate rations. This allowance disappears with their deployment to Southwest Asia, cutting soldiers' paychecks an average of \$180 per month.

The leaner military paycheck is a problem for Army families who have grown accustomed to using the separate rations allowance to cover other expenses. To make up the difference, some Army spouses are canceling the lease and heading home to mom and dad, even though the Army advises them to stay put and take advantage of military support services.

The following paragraphs describe pay entitlements for soldiers deployed to Operation Desert Shield.

Imminent Danger Pay. The secretary of defense

authorized imminent danger pay for soldiers in the Persian Gulf area on Sept. 19. Imminent danger pay is payable to soldiers performing duties in an imminent danger area, as designated by the secretary of defense, for six or more days.

Hostile Fire Pay. Hostile fire pay is payable to soldiers subject to hostile fire or explosion of hostile mines while on duty. Soldiers are entitled to hostile fire pay for the month in which they are subject to hostile ordnance. The rate for hostile fire pay is \$110 per month. Soldiers cannot receive imminent danger pay and hostile fire pay for the same month.

Foreign Duty Pay. Foreign duty pay is payable to enlisted soldiers deployed to Saudi Arabia for eight or more continuous days, including the day of arrival and departure. Rates depend on rank: E1 and E-2=\$8; E3=\$9; E4=\$13; E5=\$16; E6=\$20; and E7 and E9=\$22. Officers do not receive foreign duty pay.

Family Separation Allowance Type II. Separation pay (\$60 per month or \$2 a day) is payable to soldiers whose duty separates them from their dependents more than 30 continuous days.

Basic Allowance for Subsistence. Soldiers deployed for Operation Desert Shield are considered to be in a field status and will be issued a field meal card. Enlisted soldiers lose their separate rations. Officers will continue to draw their basic allowance, but will be docked \$4.10 per day for meals each day they are in a field status, whether or not the meals are eaten.

Parachute Pay. Jump pay will continue for Desert Shield soldiers who were authorized jump pay prior to deployment.

Quartermaster Laundry. Quartermaster laundry deductions stop with the month of a soldier's departure.

Reservists. A call to active duty may place National Guardsmen and Reservists, whose civilian pay often far exceeds their active duty pay, in financial straits. House and Senate members have pledged to improve financial and debt protection for reservists activated for Operation Desert Shield with amendments to the 1940 Soldiers and Sailors Civil Relief Act.

Of Special Interest

Special Leave Accrual — Operation Desert Shield soldiers won't lose leave. Federal law permits special leave accrual under certain conditions. These include situations in which soldiers are entitled to hostile fire pay for at least 120 consecutive days, are deployed for contingency reasons that preclude their taking leave, or are deployed to enforce national policy based on a national emergency or to defend national security.

Allotments — Dependents can make no allotment changes except for changes of address.

Payment to Soldiers in Overseas Areas — Direct payments may be made as the commander deems necessary. These payments are deducted from end-of-month pay.

Eviction Protection — Lawmakers also hope to act, within weeks, on recommendations and draft legislation to shield more reservists against eviction from rental housing.

Why We Are in Saudi Arabia

by Col. V. J. Tedesco Jr

Reporters interviewing troops deployed to Saudi Arabia for Operation Desert Shield report that U.S. soldiers seem highly trained and genuinely motivated to accomplish their mission. But there's some public confusion about the nation of that mission. Are U.S. soldiers deployed to defend Saudi Arabia, liberate occupied Kuwait, protect the world's supply of oil or destroy a dictator?

"I am here to defend the interests of my country, and I will do whatever it takes to accomplish that mission," a second lieutenant told one reporter. Other soldiers told newsmen that they were in Saudi Arabia to fight for liberty and freedom, a mission they apparently considered the normal, everyday business of the American soldier, but a sentiment the world news media views as typical American naivety.

Why are we in Saudi Arabia? The correct answer, of course, is all of the above. Operation Desert Shield is about oil, but it is also about much more than oil. To begin with, it is about Kuwait. Its destruction threatens not just the nations of the Arabian Peninsula but all nations that cherish freedom and strive for peaceful coexistence among the community of nations.

In his address to the United Nations General Assembly, President George Bush described the Iraqi leader, Saddam Hussein, as an anachronism, a "dark relic of a dark past." American soldiers in the Arabian Peninsula may be strangers in a strange land, but Hussein is no stranger. We have confronted the Saddam Husseins of the world on other battlefields.

It is true that both Kuwait and Saudi Arabia are monarchies whose strict devotion to Islamic law and adherence to ancient Bedouin traditions have produced structures that seem alien, in many ways, to Americans bred in a more tolerant and more permissive society. However, the Kuwaiti and Saudi people, who tend to be even more traditional than their rulers, cannot be said to be oppressed. While the ruling families have grown fab-

ulously wealthy, the average citizen of the two societies have prospered enormously from the oil economy, and their rulers have, for the most part, proven adept at matching the pace of modernization to the slow adaptability of Arabian culture.

The same cannot be said of Hussein's police state. Despite Iraq's super abundant oil reserves and its ownership of the largest expanse of arable land in Arabia, the Iraqi people have been victimized by a cruel and oppressive regime whose military adventurism has left them paupers in the world's most affluent neighborhood.

Hussein is a political, not a religious, leader whose call for a "holy war" has fallen upon deaf ears. Instead, Islamic religious leaders have condemned his invasion of Kuwait. The military uniform he habitually wears, except when cozing up to frightened child hostages, is mere posturing. Having failed the entrance exam to Iraq's military academy, he rose to political power through a series of purges, sometimes picking up a rifle to join the firing squads. As vice president, he accepted a political appointment to the rank of lieutenant general, and then promoted himself to field marshal upon assuming the presidency.

While the Iraqi propaganda machine portrays Hussein as a military genius, he has proven strategically and operationally inept. He assured the politically appointed generals who survived his purges that the invasion of Iran would be a walkover. After initial successes, the vaunted Iraqi military machine was driven backward by Iranian counterattacks and reduced to cowering impotence behind its trenchworks. Only when Baghdad seemed in danger of falling did open rebellion among military professionals persuade Hussein to allow the military to run the war.

Hussein rewarded the generals who salvaged a stalemate with demotions and assassinations, a tactic certain to cost him dearly if the Gulf Crisis erupts into open

hostilities. With only silted-up waterways to show for hundreds of thousands of Iraqi casualties, with the economy in tatters and with assassination attempts on the upswing, Hussein badly needed a dramatic success. He assured his generals that Kuwait would provide the easy victory denied them in Iraq.

Middle East experts say that Hussein is probably surprised by world reaction to his invasion of Kuwait. Espousing Arab unity, he has united the Arab nations against him. Depending on ideological differences to paralyze the United Nations, he has forged an allegiance of world powers where none before existed.

Given his gifts for ruthlessness and miscalculation, it is small wonder that, even prior to his invasion of Kuwait, Hussein was often referred to as "the most dangerous man in the world;" nor is it any wonder that leaders of countries whose borders abut Iraq worry whether their nations, like tiny Kuwait, will be devoured and destroyed in the name of "Arab unity."

The Iraqi invasion of Kuwait has set in motion a swelling tide of refugees. Burdened by the remnants of dreams that could be crammed into automobiles, thrown into the backs of trucks or carried, the disenfranchised have piled up against the borders of neighboring countries in scenes eerily reminiscent of World War II. Indeed, the parallels between Iraqi aggression, undertaken under the mythic banner of Pan-Arabism, and Axis aggression, with its dual goals of European unification and the restoration of Roman imperialism, are as unmistakable as they are instructive.

In 1936, when Italy's modernized army overran Ethiopia in the first flexing of Axis military muscle, Emperor Haile Selassie stood before the League of Nations to plead for the return of his country. However, the diplomats of that era decided it was easier to favor the strong over the weak, even when right was clearly on the side of the weak.

Now Shiek Jaber al-Ahmed al-Sabah, the Emir of Kuwait, has come before the community of nations to plead for the restoration of his country. His address to the United Nations General Assembly seemed to echo the pleas of Selassie and those of other national leaders whose countries were sacrificed during the dark autumn of naked aggression and appeasement that served as the prelude to World War II:

***"The fate of a people,
of a nation,
is in your hands"***

Today, I plead before you the cause of a people whose land, until so recently, was a beacon for peaceful coexistence and genuine brotherhood among the family of nations. A people whose national territory was a gathering place for individuals of various peaceful nations who sought a decent and dignified life through constructive work. Some of these people have now been made homeless wanderers

living only on hope in their banishment, while others have become prisoners or fighters refusing, even at the risk of their own lives, to surrender or yield to occupation with its violence and brutality.

. . . We have never seen in contemporary

post-World War II history a country that overran a sovereign independent state, a member of the United Nations, and then sought not only to annex it by brutal force but also to erase its name and entire entity from the world political map and wipe out the parameters of its national identity as defined by its institutions and its political, economic and social structures.

. . . Now, the fate of a people, of a nation, is in your hands. Expecting you to act in good conscience, we are confident the only measure that will win your endorsement is support for our legitimate right to liberate our land. Furthermore, we trust that you will not waver in deciding on the measures needed to compel the invading aggressors to restore the legitimate authority and to put an end to their barbaric acts.

Today the United Nations has taken a firm stand against aggression. The U.S. soldiers participating in Operation Desert Shield are a part of that stand. So, don't call Operation Desert Shield the "Oil War." Our mission is to liberate Kuwait, defend Saudi Arabia, protect the world's oil supply, safeguard the interests of their country, destroy a dictator and, no matter how naive it might sound, fight for liberty and freedom.

Col. V. J. Tedesco Jr is the deputy assistant commandant, U.S. Army Air Defense Artillery School, Fort Bliss, Texas, and executive director of the Air Defense Artillery Association.

INTERCEPT POINT

(Continued from page 1)

The Fort Bliss ADA units, of course, are not the only ADA units in Saudi Arabia, nor were they the first on the ground. Three Stinger teams from the brigade's Headquarters and Headquarters Battery, 2nd Battalion (Airborne) (Hawk), 52nd ADA, Fort Bragg, N.C., were the first air defenders on the ground. They touched down with the XVIII Airborne Corps headquarters within 24 hours of the decision to deploy U.S. forces. Air defenders of the 3-4th ADA, 82nd Airborne Division, also of Fort Bragg, arrived almost simultaneously and were among the very first to "draw the line in the sand." ADA units with the 1st Cavalry Division, 101st Airborne Division (Air Assault), 24th Infantry Division, 3rd Armored Cavalry Regiment and 197th Infantry Brigade are also in place. According to initial reports filtering back from the Persian Gulf, their deployment has been as remarkably successful as that of the 11th ADA Brigade.

The story began on Aug. 6 with a midnight phone call that activated the Emergency Operations Center at Fort Bliss (the 11th ADA Brigade had been alerted to expect the call a few hours earlier by its Army Central Command liaison officer). The installation's Directorate of Planning and Mobilization immediately activated the Emergency Operations Center (EOC), assembled the key players, managed the Fort Bliss mobilization and staffed the EOC around the clock.

The 11th ADA Brigade was initially tasked to airlift Patriot fire units to defend designated assets considered vital to the early stages of Operation Desert Shield. The brigade commander, Col. "Skip" Garrett, selected Bravo Battery for the initial deployment, a decision based on his commander's quick assessment of mission requirements and the battery's past performance. He then set about tailoring Bravo Battery for the mission. He assigned the battery extra Stinger gunners from 5-62nd ADA, drew maintenance personnel from the 13th Ordnance Company and borrowed two Avenger fire units from the 6th ADA Brigade to provide the battery a nighttime Stinger capability. The same sort of task organization continues amid the sand dunes of the Arabian Desert as the brigade reacts to changes in mission requirements.

Colonel Garrett also faced up to perhaps the toughest of all Operation Desert Shield tasks: informing the

families of departing soldiers. Prevented by security considerations from telling the families where the soldiers of 11th ADA Brigade were going and not knowing when they would be back, he could only promise that the Army would take the best possible care of deploying soldiers and of the families they left behind.

There was a rush to get on board the Desert Shield express. Many of the brigade's air defenders on medical profile succeeded in convincing doctors that their symptoms had suddenly disappeared, or were not as serious as they had seemed.

An ADA lieutenant who had left the Active Army and joined an Army Reserve unit telephoned to remind the brigade that she had put in more than 800 hours in AWACS. Couldn't orders be cut calling her back to active duty, she wanted to know. Orders were cut — she became the first 11th ADA Brigade officer to take her turn in the rotation of AWACS air defense liaison officers in the skies over the Persian Gulf.

A captain midway through a PCS move to the Pentagon was a two-day drive from Fort Bliss when the telephone in his motel room rang. He made a 200-mile detour, dropped his car off at his parents' house in the Midwest, and caught a flight back to El Paso in time to make the initial deployment.

A call to Aberdeen Proving Grounds solved the problem that faced four 11th ADA Brigade soldiers who had been placed on the nondeployable list because their faces were too small to fit M-17 chemical masks. Richard Seggans, a civilian employee, located four extra-small M-40 masks — new masks yet to be fielded — and air-expressed them, complete with extra filters and spare parts, to Fort Bliss in time for the four soldiers to take their places aboard the airlifts.

Fort Bliss Directorate of Installation Support soldiers and civilian workers, meanwhile, coordinated air and rail transportation, supplying not only the paperwork but much of the muscle work as well. At the height of the 11th ADA Brigade airlift, a plane was taking off every three hours. The air armada eventually grew to approximately 120 C-5A Galaxies and C-141 StarLifters from the 21st and 22nd Air Force as well as 25 commercial airliners. These aircraft eventually ferried nearly 9,000 Fort Bliss soldiers, including troops from the 3rd Armored Cavalry Regiment and 70th Ordnance Battalion as well as the 11th

INTERCEPT POINT



No bands played and no flags waved when ADA first deployed.

ADA Brigade, to Saudi Arabia. DIS soldiers and civilian employees also loaded, tied down and braced more than 25,000 short tons of equipment on more than 1,460 rail cars comprising 26 trains. The trains journeyed to ports where the materiel filled 13 cargo ships. Despite the long hours and the staggering workload, worker morale soared. "What got us through the long hours and the hard physical labor was knowing that what we were doing was extremely important," said Rudy Rivera, chief of DIS Logistics Operations Branch. "The chips were down, and people, as they always seem to do, rose to the occasion."

Away from Fort Bliss, other actors in the mobilization drama were playing their roles to near perfection. The Military Airlift Command coordinated the flight schedules of C-5As and C141s bearing ADA soldiers with the arrival of cargo ships laden with ADA equipment at Saudi ports. The Navy put just about every vessel that could make steam (and a few, as it turned out, that couldn't) to sea. Some 11th ADA Brigade equipment went to the Persian Gulf aboard Saudi freighters with multinational crews. Civilian manufacturing assemblers of ADA weapon systems were quick to respond to the crisis situation. Raytheon and Martin-Marietta Corporation accelerated the production of Patriot PAC II missiles, shipping them directly to Saudi Arabia through Patrick Air Force Base. A call to Red River Army Depot activated an EOC at

the huge Northeast Texas supply center. Within 24 hours, Red River delivered Stinger-RMP missiles to Little Rock Air Force Base for a direct flight to Saudi Arabia and loaded other Stinger-RMP missiles onto trucks bound for Fort Bliss.

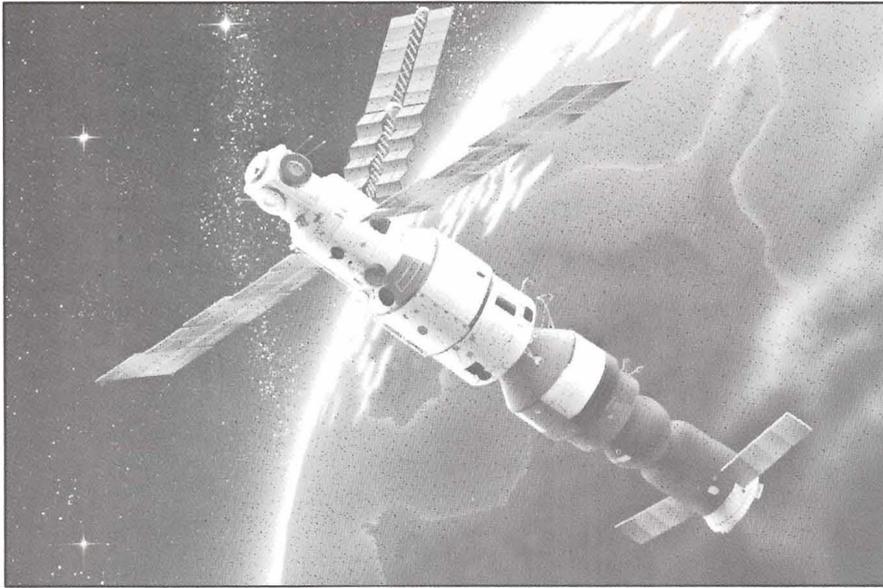
When the Operation Desert Shield deployment was over, the general reaction was amazement that the system had worked so well. "It was a little like being told the 'check is in the mail' and then discovering the check really was in the mail," said Lt. Col. Pete Thomson who, with the brigade commander in Saudi Arabia, oversaw the final weeks of the 11th ADA Brigade deployment before climbing aboard one of the final airlifts. "Thousands of things, some major and some minor, could have gone wrong, but very little went wrong, and none of the things that did go wrong were very significant. There was no real reason to suspect the system wouldn't work, but there is a great deal of blind trust involved in the logistics system, so you have to wonder. 'Trust us,' they told us. Well, we found out the system can be trusted."

The 11th ADA Brigade and other ADA units were prepared and ready to respond when the midnight call arrived. Today, ADA units deployed for Operation Desert Shield are standing tall. They are fired up and ready to go. The only gloomy news is that, as I write, war still seems a very probable, if not yet inevitable, solution to the Persian Gulf crisis.

I want to assure those of you who serve beneath ADA banners in Saudi Arabia that public support for you, your mission and your families remains strong and unwavering. If you were among those air defenders who deployed in secrecy aboard the initial airlifts, you may be unaware of it, but bands played and flags waved for soldiers who followed. I guarantee that bands will play and flags will wave for the return of ADA soldiers who are . . .

First to Fire!

— Maj. Gen. Donald M. Lionetti
Chief, Air Defense Artillery



Rockwell International Corp. will design the Army's anti-satellite system.

Rockwell Gets ASAT Contract

Rockwell International Corporation has been selected by the U.S. Army Strategic Defense Command, Huntsville, Ala., for final contract negotiations to demonstrate, validate and design a near-term kinetic energy anti-satellite system (ASAT).

Rockwell began work on the 24-month, \$100 million contract in mid-August. If ASAT progresses to a contract for full-scale development, the total contract value could exceed \$800 million.

The program is managed by Rockwell's Strategic Defense Center using resources at the company's California facilities including Space Systems Division, Downey; Rocketdyne Division, Canoga Park; Satellite & Space Electronics Division, Seal Beach; and Autonetics Strategic Systems Division, Anaheim. Also involved is Rockwell's Tactical Systems Division, Duluth, Ga. The

Rockwell team also includes LTV, Dallas, Tex.; Logicon, San Pedro Calif.; and Advanced Technologies, Inc., San Bernardino, Calif.

The Army was designated lead service for a joint program to develop a land-based kinetic energy weapon system, including the missile kill vehicle, launcher and associated weapon control and support systems. The overall objective of the program is to define, develop and field an ASAT system designed to deter ASAT attacks against friendly space systems while negating hostile satellites.

The Army has assigned Air Defense Artillery proponent responsibility for developing and fielding the ASAT kinetic energy interceptor, a ground-based tactical missile system that will launch a small, lightweight, nonexplosive vehicle to detect, identify and destroy hostile satellites.

A representative ASAT battalion, designed and based on current Army tables of organization and equipment, would have a headquarters and headquarters battery and one or more firing batteries. The ASAT firing battery will become the first surface-to-air missile battery tactically deployed in the United States since the Nike-Hercules sites were abandoned during the 1970s. Battery density is programmed at 40 to 75 personnel, some of whom may be federal service civilians or government contract employees.

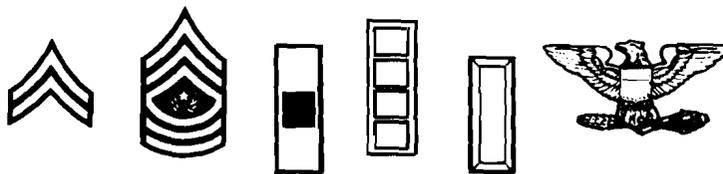
Two ASAT sites were originally proposed, but budget austerity has since reduced initial planning to one launch site or battery. Various sites are under consideration.

ASAT should not have a major impact on force structure since a single ASAT battalion should be able to counter the satellite threat, but the ASAT mission could expand as rival nations compete for military mastery in space.

Brig. Gen. J. Morgan Jellett, an ADA officer, manages the ASAT Joint Program Office. The office is collocated at Huntsville, Ala., with the Strategic Defense Command to take advantage of technical expertise generated by continuing work on the Strategic Defense Initiative (Star Wars) ground-based interceptor program.

Since its inception, the ASAT acquisition strategy has evolved into a two-phase development and fielding program. However, program participants are confident the ASAT program will reach maturity because of the decisive role communications and surveillance satellites play in modern warfare. The Soviet Union is thought to possess a workable anti-satellite capability.

The U.S. Army Air Defense Artillery School, Fort Bliss, Texas, is at work on ASAT force design, tactics and techniques as the system acquisition cycle progresses.



CAREER NEWS

Promotion Break for NCOs

Soldiers deployed to Operation Desert Shield may be promoted to sergeant and staff sergeant without the required Primary Leadership Development Course (PLDC).

Starting Sept. 1, commanders are authorized to board sergeants deployed in support of Desert Shield, who have not been to PLDC, for promotion to staff sergeant. Sergeants boarded without PLDC may be promoted if they meet the cutoff scores while deployed. This exception is effective for the duration of Operation Desert Shield.

Soldiers who meet cutoff scores *after* deployment to Operation Desert Shield will be promoted to sergeant effective the first day of the promotion month.

Staff sergeants requiring the Basic Noncommissioned Officer Course (BNCOC) to obtain promotion or attend the Advanced Noncommissioned Officer Course who are denied the opportunity to train due to deployment will be exempt from the BNCOC requirement for promotion.

Stop Loss in Effect

Effective immediately, the Department of the Army has implemented Stop Loss actions as a result of Operation Desert Shield. Stop Loss will cause soldiers on active duty to have their enlistments extended indefinitely.

This action affects active duty Army personnel in certain military occupational specialties (MOSs) and keeps affected personnel from the active Army on active duty until the activated reserve units are released or the President directs release, whichever is earlier. It specifically limits separations of enlisted soldiers possessing a primary, secondary or additional MOS in 21 career management fields — Air Defense Artillery included.

It also keeps National Guard and Reserve personnel called up by the President on active duty until they are released — from 90 to 180 days.

Enlisted personnel in designated MOSs who had transition leave approved on or before Aug. 28, and have an end term of service on or before Nov. 30, are not affected.

Officers in designated MOSs who have transition leave approved on or before Aug. 28, and have a separation date on or before Dec. 1, are not affected.

After Aug. 28, transition leave was suspended for officer and enlisted personnel in the designated specialties, except for retirement purposes.

Exceptions include retirements and retirement requests and personnel not working in the Health Services Command, Military Traffic Management Command, most of Forces Command and most of Army Central Command.

Retirements approved prior to Sept. 1 for separation dates prior to Feb. 28, 1991, will be considered on a case-by-case basis. Requests for retirement dates after Feb. 28 will be processed under current policy.

Humanitarian exceptions will also be taken into consideration, such as pregnant soldiers who wish to leave the Army.

— ARNews

On Orders

What is the process used by U.S. Personnel Command (PERSCOM) to place you on orders? The following article, contributed by the assignment officers at the Air Defense Artillery Assignments Branch, PERSCOM, answers the question and offers their perspective on how Air Defense Artillery identifies officers to be placed on orders based on Army needs and officers' personal desires.

Through a system of checks and balances, major Army commands (MACOMs) identify officers as losses to their organizations six to nine months prior to normal permanent change of station (PCS). Once officer losses are identified, MACOMs submit requisitions for new officers to fill the impending vacancies. All requisitions are sent to the Distribution Division

CAREER NEWS

(DD) in PERSCOM.

Upon receipt of the requisitions, DD begins a validation process, matching Officer Distribution Plan (ODP) numbers against numbers on the ground at the MACOM. The ODP, the source document for requisitions and requisition validation, is developed from projected authorizations and projected inventory. It ensures equitable distribution of officers by MACOM per Department of the Army priorities. Since inventory does not equal authorizations by total, grade or career management field, the ODP is the management tool by which *shortages* are distributed.

If a MACOM has the required number of officers in the required grades and the required specialties by ODP, the requisition is rejected and returned. If DD determines a valid requirement exists based on ODP, grade and specialty, DD validates the requirement, opens a requisition and notifies the Assignments Branch that they must fill the requisition.

Once the Assignments Branch receives a valid requisition, the assignment officer is given approximately two months to place an officer on orders against that particular requisition. Assignment officers can identify requirements generated for a particular specialty (for example, airborne, Spanish speaker, military education level 4) through several computer programs. Generally, anything that appears on the Officer Record Brief (ORB) is found on the computer data base. These entries, in many instances, identify

the one or two officers who may meet the special skills requirements built into the requisition. For this reason, you should accurately update your ORB.

The assignment officer has several means available to determine who should be placed on orders to fill a requirement. An availability roster listing all officers' last PCS date and last date returned from overseas is one method of determining who is available based on time on station restrictions. Assignment officers also identify officers for requirements based on their knowledge of officers' personal desires gained through phone conversations and preference statements. While this is not the most frequently used method, it does provide the assignment officer an avenue to place someone on orders based on the personal desires of the officer being assigned.

The assignment officer selects the best qualified officer for the job from among several qualified officers. Qualifications, determined when the requisition is being built, include a variety of specifications ranging from grade and professionally developing functional area assignments to language experience and security clearance. What qualifies one officer for an assignment may disqualify another officer. An important note to remember is that the Assignments Branch does not build requisitions, it fills them — Army requirements really do drive the train.

Depending on the type of requisition, an officer is first identified for a job and then notified telephonically of the pending assignment to determine any problems that may arise from the move. Under normal circumstances, an officer is identified for a job, notified of the assignment and, if no problems exist, run on orders for the position.

A *shotgun* requisition is a request for an officer to fill a position not previously identified by a MACOM during the normal validation process. A shotgun is a quick-reaction requisition containing a one- or two-day suspense. Officers will be notified of their nomination to the position only if time and instructions permit. A shotgun is normally built for a functional area or immaterial position that must be filled on a high priority basis. Each of the combat arms branches submit a nomination for this position. The Combat Arms Division chief decides which files will go forward to the PERSCOM commander to fill the shotgun.

Assignment Officers

AV 221-0025/0026

Lt. Col.(P) Vernon W. Hatley
Branch Chief

Capt. Kurt G. Lanbert
Capt. Assignments

Maj. Kenneth M. Younger
Col. Assignments

Capt. Donald P. Eady
Lt. Assignments

Maj.(P) Allen E. Taylor
Lt. Col. Assignments

CWO 3 Patrick Francis
WO Assignments

Capt.(P) Kenneth J. Cox
Maj. Assignments

Capt.(P) Beverly M. Stipe
ADA Readiness Officer

Capt. Kent E. Friederich
ADA Readiness Officer

CAREER NEWS

Black Book requisitions, also high priority requisitions, are usually for sensitive assignments, unprogrammed losses of key billets and one-time fills for special projects. A *Black Book* is a "package" of best-qualified nominees for certain high priority positions in the White House; Office of the Secretary of Defense; Joint Chiefs of Staff; Office of the Secretary of the Army; Office of the Chief of Staff, U.S. Army; Army Staff; and similar levels. *Black Book* taskings come from the Office of the Director, Army Staff or the Deputy Chief of Staff for Personnel. Normally the *Black Book* tasking means that the Chief of Staff or the Vice Chief of Staff will have a direct influence on who is selected for the position.

Black Book nominees and their commands or agencies are not informed of the personnel action taking place. Selected officers will receive notification to fill the requirement upon approval of the nomination; officers not selected will never know they were under consideration. If you are interested in a *Black Book* assignment, contact your assignment officer.

According to Army policy, assignments or reassignments involving PCS moves are authorized only when required for national security or to ensure equitable treatment of service members. Qualified volunteers will receive first consideration for all assignments if all other factors, such as time on station, are equal. All assignments and reassignments are based on possession of the professional military qualifications required to perform the duties and the professional needs of the officer.

PCS moves within the continental United States will not be made solely on the basis of passage of time. Reassignments can be made, however, on a case-by-case basis for reasons such as job stress, personal hardship or requirements for fresh expertise. Personnel stability is a fundamental principle of all personnel management policies. Assignment procedures will avoid unnecessary personnel movement while providing for mission accomplishment and the professional development of the officer.

The Assignments Branch considers several factors when making assignments. Personal desires and requirements for professional development are important factors. Assignment officers also consider whether other Army programs apply, such as the Army

Married Couples Program (joint domicile) and Exceptional Family Member Program.

Assignment alert is the official notification to an officer of an impending assignment. An assignment is considered "firm" when an officer has been notified of his or her selection to fill a command's requisition. Many notification actions constitute an assignment alert. Notification (either by telephone or in writing) from an assignment officer through a request for orders with a firm "where/when" constitutes alert. The officer's commander, supervisor or installation point of contact (Adjutant General) can also act as the notification point for the alert.

While the above is personnel doctrine, the Air Defense Artillery Assignments Branch takes a more personal approach. Our policy is to discuss each assignment with the officer involved. We care about the personal desires of officers and will do everything legally possible to see that their needs are met while still satisfying Army requirements.

As the Army gets smaller, there will be fewer positions available. Remember, MACOMs *request* them, DD *builds* them and the Assignments Branch *fills* them.

Tuition-Free Medical School

The Uniformed Services University of the Health Sciences in Bethesda, Md., is the military's own medical school. There is no tuition and all books and equipment are provided free of charge. Students study the traditional civilian medical school curriculum plus courses of direct military medical relevance. At graduation, students receive the M.D. degree.

Military personnel with a college degree may apply for the four-year medical program at the F. Edward Hébert School of Medicine.

The Uniformed Services University also has a graduate program leading to advanced degrees in the basic medical sciences.

For more information and detailed age, physical, personal and academic requirements, contact the Office of Admissions; ATTN: PAC, Uniformed Services University; 4301 Jones Bridge Road; Bethesda, Md. 20814-4799 or call (202) 295-3101. For more information on the Graduate Program, call (202) 295-3106.

AVENGER

Soldiers of the first Avenger battery are bewitched, but not bothered or bewildered, with new weapon system

Story and photos by Robyn Gregory

The smoking remnants of an aerial target sifted earthward. "Do it again! Here comes the Hussein express," whooped an air defender. The shattered target was one of four direct hits made recently by 4th Battalion ("Renegades"), 5th Air Defense Artillery, 1st Cavalry Division, Avenger gunners during new equipment training at Fort Hood, Texas.

Two Avengers belonging to the 6th Air Defense Artillery Brigade, a Fort Bliss, Texas, training unit, and a platoon of Avengers from the 3rd Armored Cavalry Regiment, also of Fort Bliss, are currently deployed in Saudi Arabia as part of Operation Desert Shield. But the 1st Cavalry's Vulcan/Stinger battalion will become the first unit to field a full battery of the Army's first shoot-on-the-move air defense missile system.

"It's the best thing since ice cream," said one air defender, an opinion seconded by all the soldiers who make up Delta Battery, history's first Avenger battery. The battery consists of 4-5th ADA Stinger gunners who have been redesignated MOS 16S Avenger crewmen. Two Avenger fire units make up a section while three Avenger sec-



The 4-5th ADA, 1st Cavalry Division, is fielding the first Avenger battery.

tions comprise an Avenger platoon. At full strength, Delta Battery will field six Avenger platoons. The battalion will retain three Vulcan batteries.

Designed to counter high-speed, low-level attack aircraft, Avenger fires lethal Stinger missiles combat-tested by *Muhajideen* rebels in Afghanistan with decisive results.

"It definitely helps our confidence knowing they [Stinger missiles] are battle tested," said Capt. David Schaumann, S-3. "Everyone wants to be in the battery now. Stingers are very popular."

The Avenger can fire one of the deadly missiles every six to eight seconds. "There is not a G-force maneuver that can escape the missile," Schaumann said. "Anything we can't hit would automatically kill the pilot."

Fort Hood features near-desert terrain and summertime temperatures approaching, if seldom reaching, the blast-furnace conditions Avenger crews are coping with in Saudi Arabia. The 4-5th ADA Avenger repairmen are confident the new system can take the heat.

"The heat of the desert will have



Dismounted Renegade Avenger crewmen prepare for remote firing.

little or no effect on our equipment," said an Avenger repairman, "but it will heat up our gunner in the canopy. When it's 85 degrees outside, it's 110 in there. But we

have a good ventilation system, and an air conditioning module is on the way."

"Absolutely fantastic, great, remarkable and any other superlative you can find," said 4-5th ADA CSM V.C. Strebe of the system itself. "This will help us immensely. The PMS [pedestal-mounted Stinger] throughout convoy routes would negate the threat of enemy air on our supply. We've never had a system with these capabilities."

Delta Battery put in 110 hours in seven days learning the new system under the tutelage of a Boeing Aerospace training team. "These young men have the best attitude of any soldiers I've ever seen. We've trained them, tested them, and now they're doing it. They have passed with flying colors — they're the best," said Boeing lead instructor Milford Butler.

Robyn M. Gregory is a 1st Cavalry Division public affairs specialist.



A Renegade Avenger crewman locks onto a streaking aerial target.

The Air Threat in Infancy

*Civil War balloonists provide
history's first aerial gunnery
targets*

by 2nd Lt. James D. Crabtree

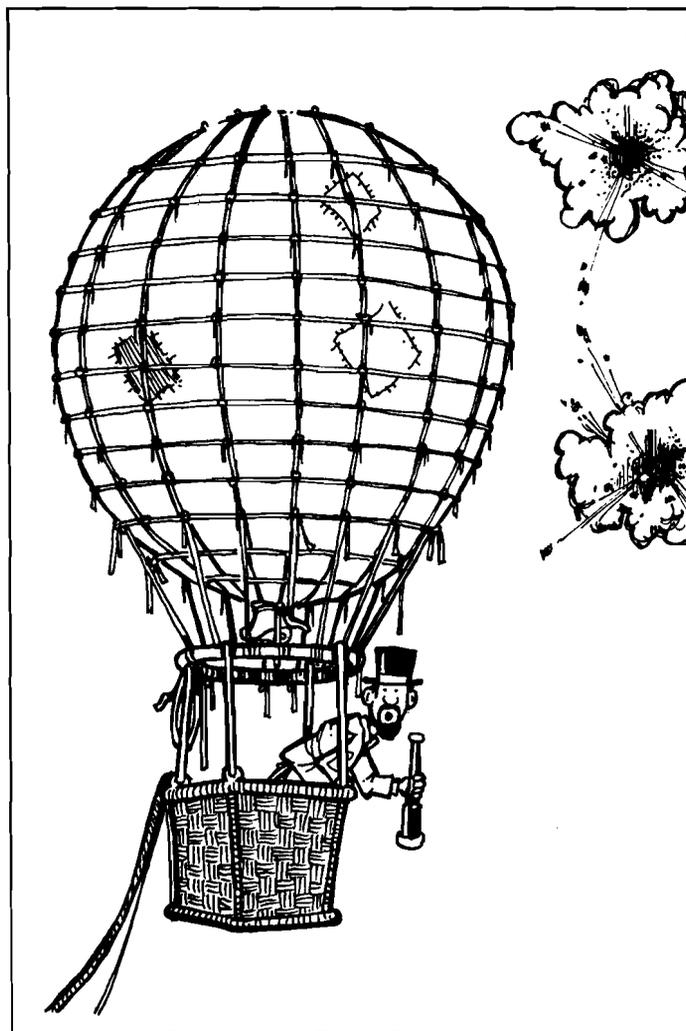
Prior to the American Civil War little consideration was given to balloons as an instrument of warfare. They had been around for more than 60 years, but no one had yet found a real use for them. After all, you couldn't go anywhere in them except where the wind sent you. The French experimented with balloons for observation purposes during the French Revolution, but few military leaders recognized in them any military potential. Austria made the first attempt to deliver bombs by air during its 1849 siege of Venice, but the experiment backfired when the wind shifted, and as many bombs landed on Austrians as Italians.

So it seemed that the balloon was doomed to be confined to the role of a state fair oddity with daredevils performing death-defying stunts above enraptured crowds. But when the shooting war broke out in 1861, the crowds left for the battlefield and the balloonists followed.

At first they didn't have much luck; the military establishment thought the idea of using balloons for military purposes a lot of hot air and refused to allocate funds to the project. Some of the civilian aeronauts attached themselves on an unofficial basis to Union officers (who often ended up paying them out of their own pockets). One of them, a former carnival showman

named Professor Thaddeus Lowe, made a tentative ascent in June 1861 that served to convince President Abraham Lincoln of the usefulness of the balloon. From his altitude of 500 feet, Lowe could see for 25 miles and, using a telegraph, he wired from his perch to officials below that he could clearly see Confederate encampments surrounding Washington. It seemed that the hydrogen balloon, coupled with the telegraph, had come of age.

LaMountain, another civilian aeronaut working for the U.S. Army, made an ascent from Monroe, Va., in July 1861 that not only provoked Rebel fury but resulted in the first passive air defense mea-



The Union balloonist descended "as fast as gravity would permit."

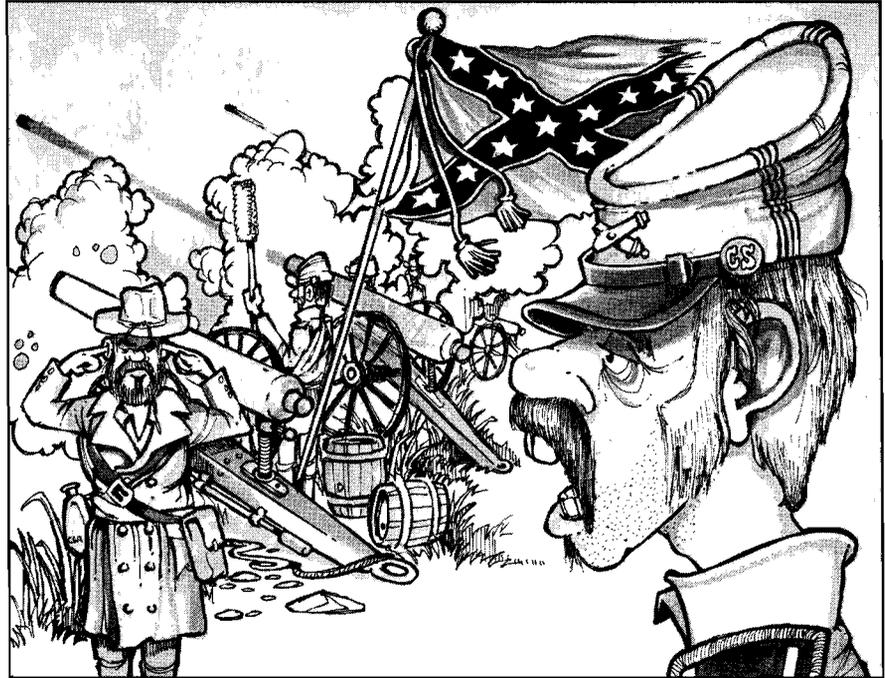
sure: the dousing of campfires at night to prevent the balloonist from estimating the strength of Confederate forces. No doubt it was little comfort to the cold Confederates shivering beside the doused campfires that they could no longer be seen from the air.

Other ascents made by Lowe in Northern Virginia also prompted passive measures. Confederates began camouflaging their troop positions to prevent aerial observation. They also began to build dummy positions armed with "Quaker Guns," logs painted to resemble artillery pieces. The measures took time, but were thought effective and necessary by the Rebels, who would have probably used camouflage nets if they had thought of them.

In August 1861 an American aeronaut came under antiaircraft fire for the first time. A rebel officer by the name of Capt. E. P. Alexander directed fire from his guns which, according to his report, caused a Union balloonist to descend "as rapidly as gravity would permit." This is entirely possible as Alexander had exploding shells available and would have employed them were he able to get proper elevation.

Artillery had come a long way since Napoleon's time, although the guns themselves appeared to be little different. Exploding shells were much more reliable thanks to new fuses that took the guesswork out of how many seconds would pass before detonation. Also, rifled barrels helped to improve accuracy and range. All of this contributed to the attempts to use field pieces against balloons.

Apparently Rebel gunfire did little to discourage Lowe. A month later he pioneered the use of balloons to direct Union fire on Rebel positions, a use for balloons that would be common during the Great War 50 years later. In deploying his balloon as an artillery spotter, Lowe



Union observation balloons frequently provoked furious Rebel response.

had changed the air threat from little more than a passive nuisance to an active killer.

The U.S. Army Balloon Corps was ready to go when Gen. George B. McClellan's Army of the Potomac began the Peninsular Campaign in March 1862. With three balloons, Lowe followed the army up the length of the Peninsula in its advance toward Richmond. His balloons proved themselves well able to scout enemy positions and may have been decisive in preventing a Union defeat in the Battle of Fair Oaks, a prelude to Gen. Robert E. Lee's spectacular Seven Days Campaign.

The Peninsular Campaign also saw one of the few attempts by the Confederates to make use of the third dimension. Hampered by a blockade and lacking the manufacturing base to produce hydrogen gas and rubberized balloons, attempts by aeronauts such as Alexander (the same officer who had attempted to shoot down a Union balloon near Arlington) and Lt. John Randolph Bryan were few and far

between. Bryan was nearly shot down by Union artillery fire during his first ascent and attempted to resign from the ballooning service. His resignation was refused by Gen. Joe Johnson on the basis that he was the only experienced balloonist in the Confederate Army.

Eventually the Rebel balloons were grounded by lack of gas, lack of material and, worst of all, lack of interest. While the Union had sufficient gas and all the necessary material for ballooning, lack of interest eventually defeated their efforts as well. Aeronauts sent to South Carolina and Mississippi encountered cold receptions by the generals they were assigned to serve. Lowe's Balloon Corps was dismantled in 1863, just before getting a chance to participate in the Battle of Gettysburg. It seemed that military traditionalism was more of a threat to the aircraft of those days than the enemy's shot and shell.

2nd Lt. James D. Crabtree is an assistant platoon leader in B Battery, 2nd Battalion, 1st Air Defense Artillery, Fort Bliss, Texas.

Keystone Stinger

Activation transforms Military Police detachment into ADA battalion

by Lt. Col. John E. Stevens

Pennsylvania's 1st Battalion, 213th Air Defense Artillery — the Army's newest ADA battalion — recently celebrated its first anniversary. The battalion was activated Sept. 16, 1989, at Fort Indiantown Gap, Pa. Maj. Gen. Gerald T. Sajer, Pennsylvania Adjutant General, and Maj. Gen. Vernon E. James, 28th Infantry Division commander, uncased and presented the long-retired colors of the 213th Coast Artillery (Antiaircraft) Regiment to Lt. Col. John E. Stevens, battalion commander, and CSM Ernest R. Fenstermaker, battalion command sergeant major. The ceremony, a featured event of the 28th Infantry Division Veterans' Reunion weekend, included a 13-gun salute to the colors, a remote-controlled miniature aerial target (RCMAT) flyover and the new battalion passing in review.

The activation of 1-213th ADA reestablished the ADA tradition in the Pennsylvania Army National Guard (ARNG). The 213th Artillery, Coast Artillery Corps, was organized in 1922. Elements of this regiment trace their lineage to the War of 1812 and, as the first militia unit to reach Washington at the outbreak of the Civil War, President Abraham Lincoln proclaimed the

regiment "The First Defenders." The regiment was among the first National Guard units called to federal service Sept. 15, 1940, by President Franklin D. Roosevelt. In 1942 the 213th AAA landed in Casablanca as part of Gen. George S. Patton's Western Task Force, and it went on to serve in Sicily, Italy, Corsica, France and Germany, earning nine campaign streamers. The regiment earned two campaign streamers in the Korean War and

was inactivated in 1968, the year Air Defense Artillery became a separate branch from Field Artillery.

The new battalion was created from elements of Headquarters and Headquarters Detachment (HHD), 165th Military Police Battalion and its attached combat support companies, the 723rd and 1068th. Several months after its return from Reformer '87, the MP battalion was scheduled for inactivation in 1990, and no successor organization was



Maj. Gen. Vernon E. James presents 1-213th ADA colors to Lt. Col. John E. Stevens.



MPs traded in their sidearms for Stinger missiles.

programmed. Unrelated force structuring decisions also created the need for the Pennsylvania National Guard to field an ADA battalion for the 28th ID. The planned activation of the 29th ID (Light) in the Maryland and Virginia ARNGs called for the Virginia ARNG's 3-111th ADA, the 28th ID's ADA battalion, to fill that role for the 29th ID. Sajer advanced the 165th MP Battalions inactivation and directed its reorganization to assure continuity of air defense support to the 28th ID.

On July 22, 1989, military policemen converged on Fort Indiantown Gap for annual training, and two weeks later those soldiers returned home as neophyte air defenders. The 1-213th ADA was not slated for activation until July 31. However, on the first day of annual training, soldiers were organized into batteries and ceremoniously presented with ADA guidons.

The New Mexico Army National Guard's ADA Training Activity (ADATA) conducted 16S (Stinger) MOS qualification training, while Mr. David Eschelmann of the U.S. Army Air Defense Artillery School trained RCMAT pilots. The 24th

ID's 1-5th ADA also played an important role in the reorganization. Through the 28th ID and 24th ID training affiliation, Capt. Kent Freiderich and a team of officers and NCOs conducted an ADA officer orientation for former MPs and also advised the 1-213th ADA during its participation in the 28th ID's Warfighter Exercise.

The image of MPs converging on a military installation and departing as air defenders two weeks later does not provide insight to the complexity of planning and coordinating such a reorganization, nor does it convey the challenge of manning, training and equipping 1-213th ADA to bring it to combat readiness.

The 1-213th ADA's experience showed that effectively reorganizing a battalion requires the proactive involvement of the chain of command. As a first step, the MP battalion was attached to the 28th ID, its future gaining command, on Jan. 1, 1989. As the battalion staff's reorganization concept plans identified the need for trainers, training aids, equipment and facilities, the leadership of the 28th ID and the adjutant general made those needs a prior-

ity. Frequent progress briefings and reviews orchestrated by the division's ADC-S, Brig. Gen. George W. Schuler, and G-3, Lt. Col.(P) Walter Pudlowski, assured timely coordination with the National Guard Bureau, Missile Command, ADATA, 1-202nd ADA (Illinois ARNG) and 1-5th ADA. The battalion's plan for achieving combat readiness includes combined arms training with 28th ID maneuver units in FY 91 and battery-level Army training and evaluation program exercises in 1992.

The Headquarters and Headquarters Battery of the new battalion and its 723rd ADA Detachment (RCMAT) are comprised of the MP battalion's Headquarters and Headquarters Detachment and elements of the former 723rd MP Company. Stationed at Lehigh, the HHB is commanded by Capt. Richard A. Kutzler.

A Battery, the reorganized 1068th MP Company, is commanded by Capt. Patrick N. Hinds and located at Pottsville and Hamburg.

B Battery, located at Reading and commanded by Capt. Walter P. Kenney, was formed and activated by soldiers from both the 723rd and 1068th MP Companies.

D Battery, manned initially by soldiers from the HHD and 723rd MP Company, is stationed at Easton and commanded by Capt. Ray Iram.

C Battery will be organized when the product-improved Vulcan air defense system is fielded to the National Guard and 1-213th converts to a gun/missile organization. C Battery was bypassed in the alphabetic sequencing of units to restore the tradition of D Battery, 1-213th ADA, to Easton, the community from which that battery was called to serve in World War II.

Lt. Col John E. Stevens is commander of the 1st Battalion, 213th Air Defense Artillery, Fort Indiantown Gap, Pa.



VAPOR TRAILS

Tacit Rainbow

The newest addition to the Army's family of fire support missile systems managed at Redstone Arsenal, Ala., has entered a full-scale development phase.

Tacit Rainbow is a ground-launched mini-cruise missile that "sprouts wings" in flight and homes in on enemy radar. Tacit Rainbow's mission is joint suppression of enemy air defense, said Col. John Harnisch, project manager.

"It's a fire-and-forget autonomous smart weapon; it has its own brain," Harnisch said of the electronic warfare system that is an add-on, not a replacement, capability for the Army.

Roughly the size and weight of the multiple launch rocket system (MLRS), Tacit Rainbow is launched from a MLRS tracked vehicle.

It is powered by a solid propellant booster engine that burns out and drops off after launch, Harnisch said, and then an internal jet engine powers the missile. The wings unfold and the missile homes to the target area, where it dives to destroy the target.

Tacit Rainbow will be cost effective on the battlefield, Harnisch said, because it requires no new force structure. It is compatible with the Army's deep attack family of weapon systems, including the MLRS. Tacit Rainbow has the additional benefit of flexibility in that it lends itself to future payload options.

Raytheon Company was awarded \$105 million for full-scale development of the Army's version of the Air Force and Navy's air-launched Tacit Rainbow, said William T. Moore, who has been deputy project manager for the program since it began.

Teamed with Raytheon are McDonnell Douglas of St. Louis, Miss., and E-Systems of Fairfax, Va. Missile prototypes will be designed and assembled at McDonnell Douglas' Titusville, Fla., facility, Moore said. LTV is the system's integration contractor.

Last March the Air Force transferred the contract for development of the Army's Tacit Rainbow to MICOM and also passed executive service responsibility

for the system from the Air Force to the Army.

Under the agreement signed by the Army and Air Force, Tacit Rainbow will remain a tri-service program to reduce costs and share common technology, Moore said.

The air version of Tacit Rainbow will be launched from the Air Force B-52 and Navy A-6 aircraft.

The Army's ground-launched Tacit Rainbow will use the MLRS fire control and data direction systems for command, control, communications and intelligence and integration with the intelligence and electronic warfare system for target data.

"This program will provide, for the first time, an automated link between battlefield sensors, command and control systems and a fire support weapon. It has never been done before," said Harnisch. He sees that linkage as the biggest challenge to the program.

"What we have here is a 'slick' weapon system with the capability to achieve the automated link. We don't have the control over the intelligence and electronic warfare, battlefield sensors and command and control functions.

"Our goal is to bring all the players together. And (that) will result in a program operating and fully tested prior to a production decision," Harnisch said.

Moore pointed out that the Tacit Rainbow program is both common and unique. That is, a system that can be the recipient of software and hardware packages common to other systems, and at the same time have its own special package.

— Sandra Lager

European Stinger

The United States has approved plans to co-produce the Stinger shoulder-fired antiaircraft missile in Europe. Switzerland and a consortium of the United Kingdom, Germany, Italy and Greece will build the missiles. The U.S. Senate is concerned over the possibility that Stingers could end up in the hands of terrorist groups.

— Aviation Week & Space Technology

VAPOR TRAILS

Stinger 'Superbowl'

The sun glared onto the Ostsee (East Sea) as an orange BAT arced into the sky. Moments later, with a roar and a flash of light, a Stinger missile tore into the air. The BAT, angled downward, escaping toward the sea. The Stinger shot past it, but like a hound turning in its tracks to pursue the scent of a rabbit, changed course and locked onto the BAT's trail. A puff of smoke and a splash declared the Stinger's kill.

Todendorf, a small town on the Ostsee, recently made history as 27 U.S. Army Europe Stinger teams gathered there for the first annual Stinger Shootout.

"The air defense teams competing in the shootout represent the best in their units," said Maj. David M. Casmus, coordinator of the competition. "They are already winners of unit-level competitions. Those competitions led to this — the 'Superbowl.' The shootout is the biggest thing going, probably in the whole year, for these guys."

Two-man Stinger teams competed in rigorous tests that evaluated their skills in land navigation, physical training and firing the Stinger missile. The members of the Stinger teams found themselves operating from sunup to sundown on little sleep, somehow finding the energy to complete event after event.

The competition determined the top Stinger teams in USAEUR. The first (Sgt. Robert L. Carter and Spec. Jonathan R. Lovins), second (Sgt. David Pelikan and PFC Brendan Kelly) and third (Spec. Christopher Howard and Spec. Noel Hudson) place Stinger teams were all from the 5th Battalion, 3rd Air Defense Artillery.

The fourth place team (Sgt. Bobby McCrary and Spec. Kenneth A. Fisher) was from the 1st Battalion, 1st Air Defense Artillery.

The Stinger Shootout marks the first time the Stinger has ever been fired live in Germany.

— Spec. Linda L. Sluder

Fort Bliss' Farewell Run



Fort Bliss, the home of Air Defense Artillery, recently bid farewell to thousands of 11th Air Defense Artillery Brigade and 3rd Armored Cavalry soldiers deploying to Desert Shield. Air

defenders, family members and well-wishers lined streets posted with American flags to bid the departing soldiers a rapid deployment and a speedy return.

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