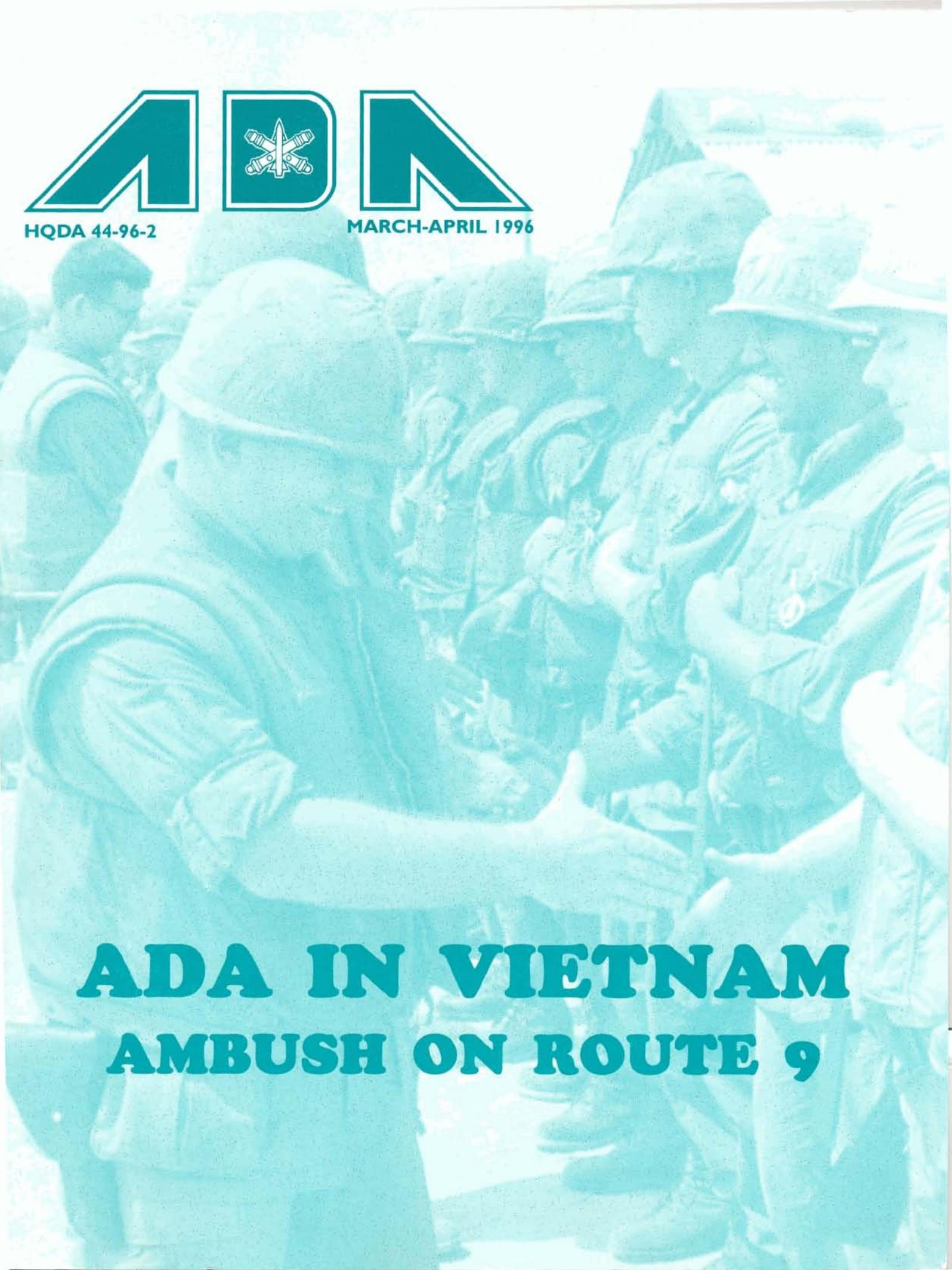




HQDA 44-96-2

MARCH-APRIL 1996

A monochromatic photograph of soldiers in Vietnam, wearing helmets and carrying gear, with their hands clasped in a line.

# **ADA IN VIETNAM**

## **AMBUSH ON ROUTE 9**



HQDA PB 44-96-2

MARCH-APRIL 1996

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# Intercept Point

ADA general officers, brigade and battalion commanders, command sergeants major and key officers from ADA major command staff will gather in April at the U.S. Army Air Defense Artillery School, Fort Bliss, Texas, for the 1996 Worldwide Air Defense Artillery Commanders' Conference. This is my first year to host the Commanders' Conference. Realizing that you agonize over time spent away from your commands, I am determined to provide a "rolled-up-sleeves," "back-to-basics" type of conference. My goal is to see that your time is well spent and that you return to your duty stations with a real sense of accomplishment.

Much of the turmoil and turbulence generated by post-Cold War force reductions, force restructurings and arguments over roles and missions has subsided. And by the time we assemble for the first day of the Commanders' Conference, we should have the answers to the momentous questions posed by the ADA Functional Area Assessment (FAA) '96.

The ADA FAA '96 has passed muster at the U.S. Army Training and Doctrine Command and the Office, Deputy Chief of Staff for Operations and Plans. At Headquarters, Department of the Army, the analysis has been referred to as "the most comprehensive plan in recent history." The Army vice chief of staff is scheduled to review the ADA FAA '96 in March. Our optimism runs high. We expect an affirmative decision that will give us a "green light" to accomplish the following objectives:

- Proceed with the formation of a tenth Patriot battalion.

- Standardize Patriot battalions with five firing batteries in each battalion.

- Standardize the divisional ADA force. (The primary focus is on the heavy division, and the ADA FAA '96 proposes giving each divisional ADA battalion 36 Avengers.)

- Offset the loss of active component units by transferring the corps Avenger mission to the Army National Guard.

- Create an Air and Missile Defense Command.

We have arrived at a vantage point on our journey to Force XXI that offers us a clearer vision of the future. From this vantage point, we can begin making the definitive decisions that are necessary to stabilize, reorganize, standardize, modernize, modularize, downsize and economize the force. The ADA Commanders' Conference provides you, as an ADA leader, an opportunity to make yourself and the soldiers you represent part of the decision-making process.

The U.S. Army Air Defense Artillery School's Combined Arms and Tactics Department (CATD) is organizing the Commanders' Conference. This year's conference will feature fewer frills and less pageantry than conferences you may have attended in the past. Carefully structured workshops will replace many of the formal briefing presentations. Working together we will forge concrete solutions to real-life issues that confront ADA commanders.

I look forward to welcoming those of you who plan to attend the conference to the "Home of Air Defense Artillery." Meanwhile, hang in there and maintain the standard.

**ADA 06 . . . out!**

*Maj. Gen. John Costello*  
Chief, Air Defense Artillery



**ADA  
COMMANDERS'  
CONFERENCE  
'96**

April 22-25

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# AMBUSH ON ROUTE 9



On Jan. 24, 1968, when North Vietnamese Army (NVA) regiments ambushed a U.S. convoy on National Route 9 in Quang Tri Province, the northernmost province of South Vietnam, three air defense artillerymen won Silver Stars. The desperate action on Route 9 is noteworthy not because it was unique, but because it was typical of the daring and determination routinely displayed from the DMZ to the Mekong Delta by the "First to Fire" branch's automatic weapons crews. The Duster, quad .50 and searchlight battalions that served in Vietnam never engaged a single enemy aircraft, but they nevertheless revived the fighting spirit of Air Defense Artillery, a spirit that had been buried for more than a decade in the concrete of Nike Hercules sites around the world.

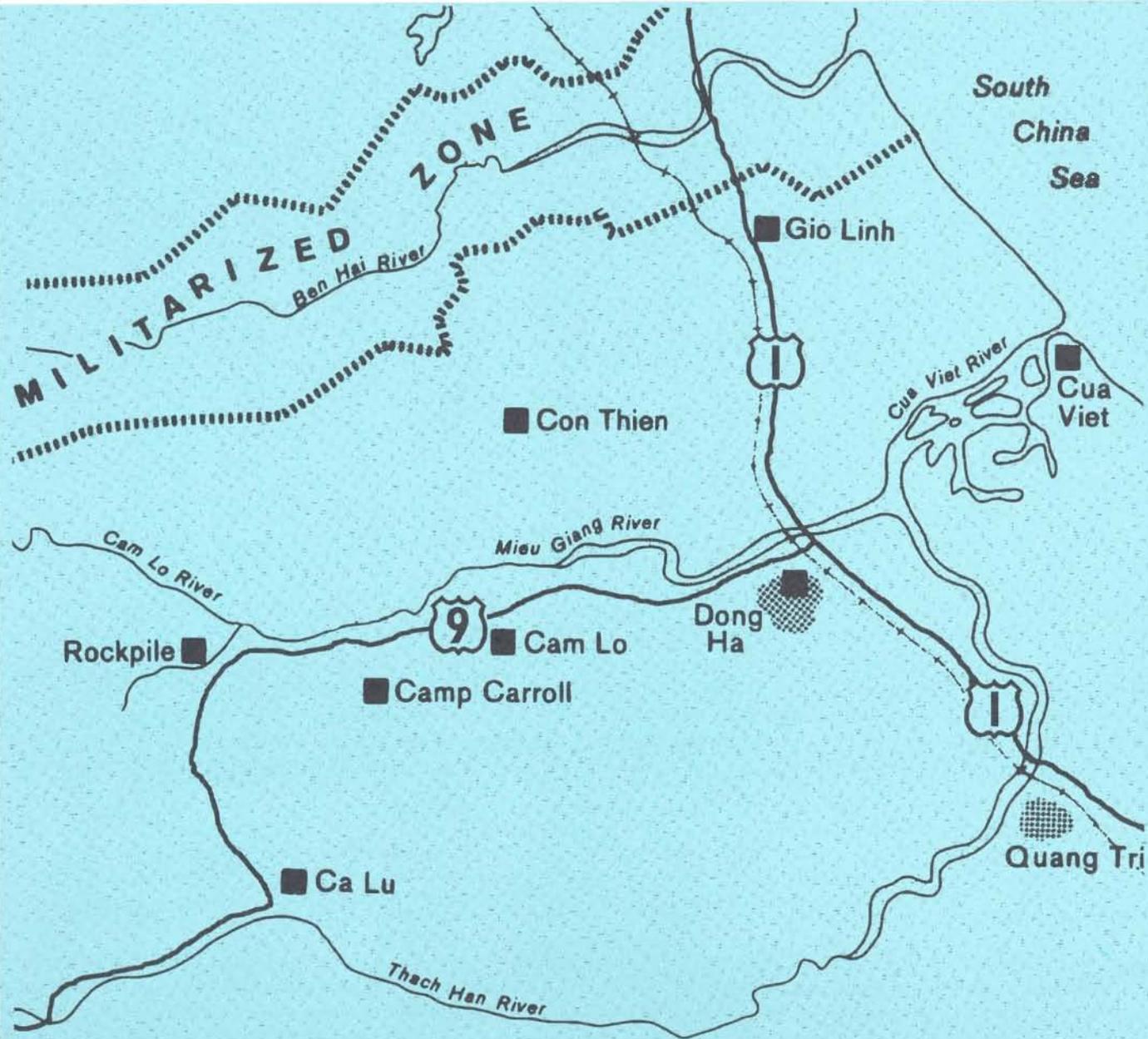
Three automatic weapons battalions (1st Battalion, 44th Artillery; 4th Battalion, 60th Artillery; and 5th Battalion, 2nd

Artillery) served in Vietnam. With a personnel strength, counting attachments, of approximately 1,000, the automatic weapons battalion was one of the larger battalions in Vietnam. Each battalion had a battalion headquarters, four Duster batteries, an attached quad .50 battery and an attached searchlight battery. Each Duster battery had a battery headquarters and two firing platoons. The machine gun batteries had a battery headquarters and six machine gun sections, while the searchlight batteries consisted of a battery headquarters and three searchlight platoons.

The Duster was one of the oldest weapons in the Army inventory. Its ancestor was the M-19, which had turreted dual Bofors L-60 guns on a modified T-24 chassis. This was the "Flak Wagon" of the Korean War. The M-42 Duster, which had more power and more efficient sights, also had twin 40mm Bofors guns, but was mounted on a modified T-41 chassis. Some 2,625 Dusters were produced and reached the Army inventory by 1954. A modified version of the Duster, called the M-42A1, had a fuel-injected engine. This was the Duster that saw action in the jungles and rice paddies of Southeast Asia.

With its high silhouette, open turret and bulky configuration, the Duster wasn't sleek or impressive-looking, but the infantry and cavalry recognized a good antipersonnel weapon when they saw one, and they liked what they saw. They put the Dusters to work as point security for convoys, assigned them the most likely avenues of approach to cover on perimeter defense and used them to conduct recon by fire. The Duster gunners, thus, added their firepower to the tremendous volume of fire American units expended in Vietnam. The NCOs and enlisted soldiers on the Dusters seldom saw their battery

*Capt. V. J. Tedesco decorates soldiers of C Battery, 1-44 Artillery. Spec. 4 Joseph Belardo, wearing his Purple Heart, is second from right. Above, a marine convoy moves along Route 9 just south of the DMZ.*



headquarters or an air defense officer. They were orphaned out to mechanized infantry or armored cavalry outfits scattered the length and breadth of South Vietnam. They provided convoy escorts on the "Street Without Joy," circled the wagons with combat engineers in places like the Ia Drang Valley, conducted recons by fire for infantry heading into the Michelin Rubber Plantation and served with the 101st Airborne Division (Airmobile) and the Third Marine Division in Northern I Corps.

Convoy duty was dangerous and nerve-racking. During World War II and the Korean War, U.S. convoys operated behind front lines with virtual impunity. Things were differ-

ent in Vietnam: there were no front lines and VC or NVA ambushes were a constant threat along most supply routes. Ambushes posed a serious logistics problem since truck traffic provided most of the supplies for inland installations and combat bases. Military Assistant Command Vietnam (MACV) assigned routes red, amber or green classifications, with red representing the most hazardous.

Normally, the lead Duster, at or near the front of the convoy, covered the left side of the road while the rear truck, at or near the end of the convoy, covered the right side. Truck-mounted quad .50s were positioned near the middle of the convoy. Dusters caught in an ambush pulled off the road,

traversed their guns and provided covering fire. The convoy's other vehicles, with the quad .50s blazing away in the center, accelerated to escape the kill zone. The tactic was effective, but it meant Duster crews spent eternities in the kill zone.

Sometimes, ambushes threatened to overwhelm even the combined firepower of the Dusters and quad .50s. When this happened, a reaction force would roll to the rescue out of a nearby base camp or fire base, as one did the day in 1968 that the NVA ambushed the convoy on Route 9.

In 1968, Quang Tri, along with Thua Thien and the Quang Nam, Quang Tin and Quang Ngai provinces, made up Northern I Corps. The region, which stretched southward from the DMZ past Hue, Da Nang and Chu Lai, was later renamed Military Region One. Most of the civilian population in the region was squeezed onto a narrow coastal plain that lay between the towering mastiffs of the Chaine Annamitique to the west and the South China Sea to the east. The mountains, cloaked in triple-canopy jungle, were shrouded during the northwesterly monsoon with dark, menacing avalanches of clouds that could "sock in" mountain fire bases for weeks at a time. Ridges pushing eastward out of the mountain range to the sea dissected portions of the coastal plain into mountain-ringed valleys. The close proximity to the DMZ to the north and Laos to the west made it easy for the North Vietnamese to infiltrate entire regiments, and North Vietnamese artillery dug

into the hills just north of the DMZ outranged American 105mm and 155mm howitzers. The five provinces at the tip of South Vietnam, which encompassed Hue, the A Shau Valley, Hamburger Hill, The Rockpile, Mutter's Ridge and Khe Sahn, accounted for more than 55 percent of America's Vietnam casualties.

In January, the northern provinces, caught in the grip of the northwestern monsoon, were cold, wet and windy. Duster and quad .50 crewmen assigned convoy or reaction force duty along Route 9 wrapped themselves in ponchos to ward off the chill. Route 9 originated at Dong Ha on Highway 1 adjacent to the South China Sea. Roughly paralleling the DMZ, it wound its way west through battle-scarred mountains past Cam Lo and Camp J.J. Carroll, which everyone called, simply, Camp Carroll, to the besieged Marine combat base at Khe Sanh.

*Route 9 ran through the center of "Leatherneck Square," a rough rectangle formed by Marine combat bases (see map at left). C Battery's OP reported large numbers of NVA regulars moving along this ridgeline above the ambush site.*



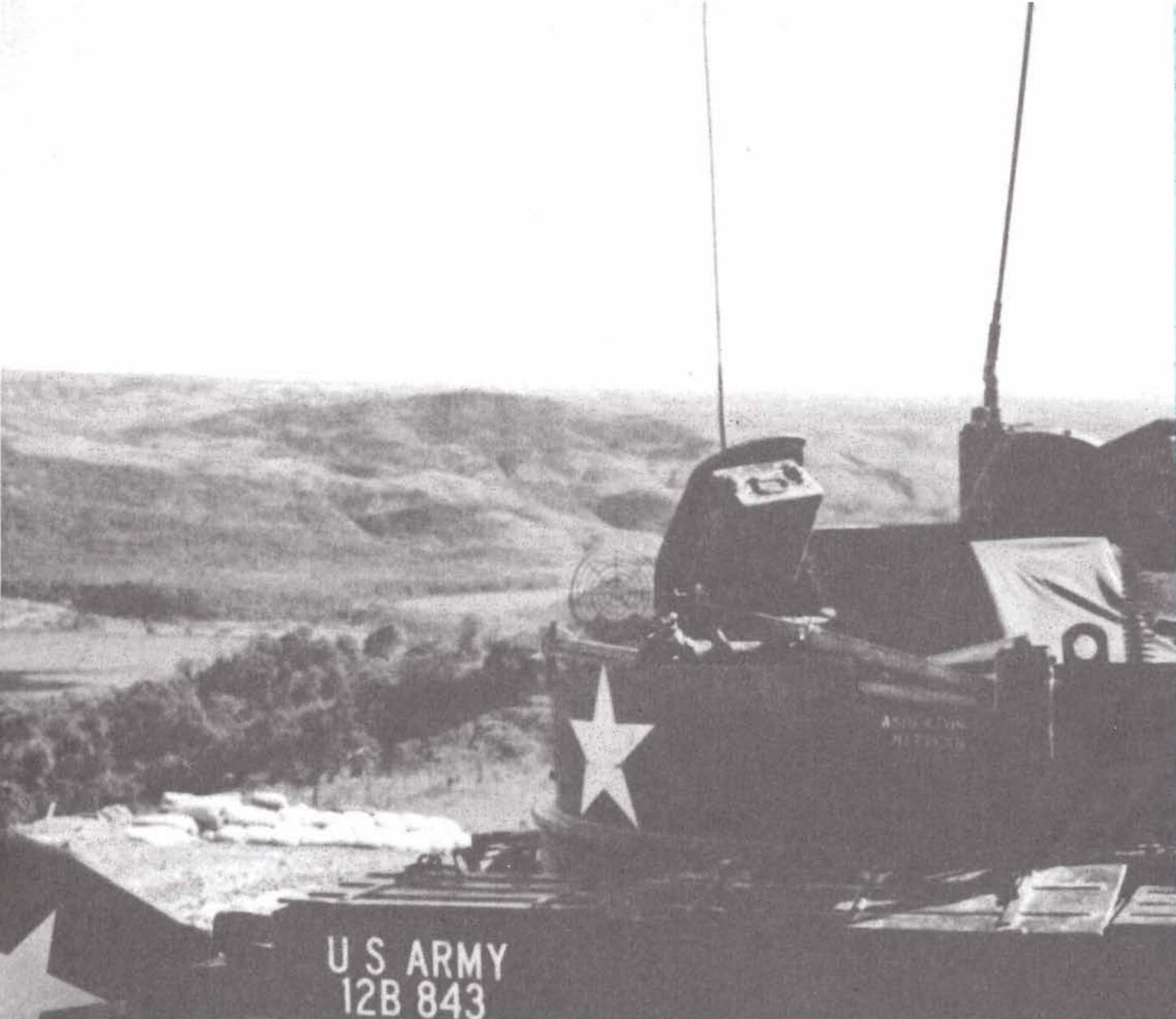


*Capt. V. J. Tedesco and his first sergeant, pictured above, observe air strikes pounding North Vietnamese positions near Khe Shan. Duster crewmen often occupied ridgetop OPs (see photo top right).*

At 1140 hours on Jan. 24, 1968, a two-and-a-half-ton truck traveling from Camp Carroll to Cam Lo along Route 9 received small-arms fire. An Army vehicle following the truck received mortar fire as well as small-arms fire. The occupants of both vehicles, upon reaching Cam Lo, warned a convoy pulling out of Cam Lo for Camp Carroll that Route 9 had been interdicted, but the Marine captain in charge of the convoy disregarded the warning. The NVA regulars hidden in

the hills overlooking Route 9 ambushed the convoy as it approached a bridge across a minor tributary of the Mieu Giang River with small arms, automatic weapons, recoilless rifles, rocket-propelled grenades (RPGs) and mortars. The convoy halted and the troops, shocked by the intensity of incoming fire, took cover along the road.

The C Battery, 1st Battalion, 44th Artillery (Automatic Weapons) (Self-Propelled), observation post (OP) at nearby Camp Carroll, the 4th Marine Regiment's combat base, observed large numbers of enemy moving along the river and ridge lines north of the ambush site. The anti-aircraft artillerymen manning the OP were unaware that an ambush was taking place, but could see NVA infantry crossing the Mieu Giang River in boats and the flash and smoke of firing. The OP requested permission to fire on the enemy and the request was granted by the 4th Marines. At 1145 hours, five Dusters located along the camp's northern perimeter opened up, expending about 8,000 40mm rounds in 15 minutes. An



aerial observer reported excellent target coverage and three secondary explosions.

At 1315 hours, the 4th Marines organized a reaction force of one Marine platoon supported by two M-48 tanks and two of Charlie Battery's Dusters commanded by 1st Lt. Steve Hardin. At 1330, the relief column stopped 100 meters from the ambush site to direct fire against enemy positions on the ridges. The Duster crewmen could see American wounded and dead lying in the kill zone, but there were no NVA in evidence. One tank and one Duster proceeded into the kill zone to extract the wounded. As they neared the ambush site, NVA infantrymen armed with RPGs suddenly popped out of concealed positions. A volley of RPGs quickly put both vehicles out of action. Two anti-aircraft artillerymen aboard the Duster were seriously wounded and four received minor wounds. Hardin, riding on the disabled Duster, called Camp Carroll for assistance.

The remaining Duster, commanded by section chief Sgt. Chester Sines, and the other M-48, a flame-thrower tank, took up a position on a small hill overlooking the convoy. Hardin's destroyed Duster and the disabled M-48 tank. Sines' Duster immediately opened fire on the RPG teams dug in along the road. The handful of Marines that had been riding on the tops of the Duster and M-48 dismounted, dug in and covered the west and south slopes of the hill. At 1345 hours, Sines requested reinforcements from Camp Carroll. The base camp advised: "Hold position. Recover men, casualties and equipment from ambush. Return to Carroll."

Sines' Duster proceeded slowly toward the entrapped convoy. The NVA opened fire on the advancing Duster as it neared the ambush site with RPGs, recoilless rifles and mortars. Supported by the M-48's machine gun and flame thrower, Sines' Duster momentarily held its ground, raking enemy positions with its 40mm guns, and then moved to within 50 meters of the convoy. Unable to disperse the concentrated



*The Dusters of C Battery, 1-44 Artillery, escorted convoys and provided firepower for quick reaction forces.*

NVA RPG teams, Sines decided to withdraw to the hilltop and regroup. At 1415 hours, Sines' driver, Spec. 4 Joseph Belardo, radioed Camp Carroll that ammunition was down to 60 40mm rounds. They would not abandon the convoy, said Belardo, but expected to be overrun. "Awaiting reply," he signed off.

Conserving its 40mm ammunition, the Duster continued to spray the area with its M-60. The crew called in artillery fire and directed air strikes on the NVA positions.

Camp Carroll radioed that a resupply truck, driven by Spec. 4 Robert Williams, was on the way. The truck, said Carroll, was carrying infantrymen as well as ammunition.

Fearing the ammo truck would run into the NVA, Belardo proceeded alone down the west slope of the hill, hoping to intercept the truck before it reached the kill zone. Firing his M-16 rifle and throwing grenades into enemy positions, Belardo made his way to Route 9. After a short wait, he realized the truck wouldn't be arriving. It had run into a second ambush sprung between Camp Carroll and the ambush site. Williams was among the few who weren't wounded. Returning to the Duster, Belardo saw the situation atop the hill had grown more desperate. The Duster crew radioed the base camp that they were almost completely out of ammunition.

Camp Carroll dispatched a second ammunition truck with Marine Cpl. Roger Blentlinger's weapons team aboard. Belardo again descended the hill to intercept the second ammunition truck. Reaching Route 9, he engaged and dispatched one of

the enemy in hand-to-hand combat. Hastily moving west on Route 9, Belardo waved down the second ammo truck and directed it to the waiting Duster.

Resupplied with ammunition, Sines directed fire at NVA soldiers who had now crossed the river and were moving in his direction and toward Camp Carroll. Sines estimated that hundreds of NVA had taken up positions along the eastern and western slopes of the hills north of Route 9. The Duster crew had fired about 2,200 40mm rounds, along with small arms and M-60 machine gun fire, and the M-48 tank had continually raked enemy positions with its machine gun. NVA bodies lay everywhere. Sines estimated that more than 250 NVA had been killed in action.

Sines now directed the Duster to once again move toward the ambushed convoy. As they approached, two 40mm rounds unexpectedly jammed in the breech. The crew worked frantically, but was unable to clear the jam. With the Duster's 40mm guns suddenly silenced, emboldened NVA RPG teams scored a hit, wounding Belardo and squad leader Sgt. Sam Lewis. Simultaneously, the jammed 40mm rounds exploded in the breech, wounding Pvt. Dave Lewis and wounding Belardo for a second time.

Sines advised Camp Carroll of the Duster's condition and received orders to return to the base camp. The soldiers and Marines placed the wounded inside the Duster and M-48. With the Marines lying on the decks of the Duster and M-48, they departed the hilltop at 1700 hours. Sines drove the Duster with Belardo at the M-60 and Blentlinger throwing grenades. With the ammo truck in the middle and the M-48 bringing up the rear, they blasted their way through enemy positions and slowly returned to Camp Carroll. Later that evening, they medevaced the wounded to Dong Ha and Da Nang.

Capt. V. J. Tedesco, the 1-44 Artillery liaison officer, was in the officer's club at Dong Ha drinking a cold beer when word came that Charlie Battery was in deep contact on Route 9 and needed bailing out. At 5 feet 7 inches, Tedesco was about the same height as Audie Murphy, the legendary but diminutive combat infantryman who parlayed fame as World War II's most decorated soldier and baby-faced good looks into a movie career, but there the physical similarity ended. The burly, cigar-smoking anti-aircraft artilleryman looks more like a miniature version of the middle linebackers that his alma mater, Penn State, was famous for producing than a matinee idol. His contemporaries called him "Vinnie," and he was to endure "short jokes" made at his expense throughout his career, even at the end when he wore a full colonel's insignia and commanded a brigade, with gruff good humor. Perhaps the Silver Star he was to win that afternoon made the good-natured hazing easier to bear.

As liaison officer, it wasn't Tedesco's job to take out the Dong Ha reaction force, but the reaction force commander couldn't be located. At 1730 hours Tedesco led two Dusters and two truck-mounted quad .50s to the rescue. The following

morning, he described the action in a tape made for his wife Suzanne.

"I don't know where to start to tell you, Suzanne, about what happened yesterday, well last night, to be exact," Tedesco said. "I guess I'll start from the beginning. I was over in the club around a quarter to five when we got word that Charlie Battery was in contact with the enemy on Route 9 between Cam Lo and Camp Carroll. They had gone to try to relieve a convoy that had been ambushed on that road, and they were in deep contact. They needed help and Rick Taylor wasn't around. He is the reaction force commander; I'm the alternate commander. Rick wasn't around, so it was my job to take the reaction force in there and try to bail Charlie Battery out.

"We left Dong Ha about 5:30, or 1730, and it took us a half hour to get out to the ambush site," he continued. "I had with me two Dusters and two quads. I was in the lead Duster, the quads were in the middle, and there was one Duster in back. When we approached the ambush site, I saw a tank off to the side of the road. Apparently knocked out of action; it was abandoned. Later, I found dead lying on the front deck of the tank. There were four trucks and a jeep in the convoy, lined up straight down the middle of the road. Every one of them knocked out. The jeep had been knocked out by an RPG, which is similar to our bazooka or 3.5 rocket launcher. The people from the convoy were hiding against the vehicles and against the sides of the road; not doing anything very much but looking very horrible and scared and frightened. I saw, farther up the road and across a little bridge, Charlie Battery's track off to the side of the road. The guns pointed crazily up at the sky, the hatch in front was open and nobody was visible around the track. I took my track, and we drove past the tank and pulled off the side of the road and proceeded toward Charlie Battery's track to find out what the story was with them and to give them any support we could.

"As we started moving along the road," Tedesco continued, "we had to pull way off the road into the bushes because there were so many wounded all along the side of the road. They were dragging wounded out from in front of our track as we rolled. I noticed a man lying right under us, and before I could stop the driver, we rolled right over him. He's dead now. I know he's dead. I just hope he was dead before we rolled over him. We caught him right below the buttocks and right across the legs. I don't know if that was enough to kill him or not. He was dead when we did finally get out of the area. We moved back on the road and across the bridge, and I moved my track off the road to my right and saw where the fire was coming from. We were receiving sniper fire, and the Air Force was putting air strikes into the area."

Tedesco directed the track commander, SSgt. Vincent DeSantis, to return the fire raking the column. DeSantis had been assigned to a Hawk missile battery at Cam Ranh Bay, a relatively safe job. Hoping to get closer to the action, he kept putting in paperwork for a transfer without success. Finally he



*The Duster wasn't sleek or impressive-looking, but the infantry and cavalry recognized a good antipersonnel weapon when they saw one, and they liked what they saw.*

met a sergeant who worked in personnel assignments and, a couple of weeks later, found himself on a Duster in Northern I Corps. "The crew," he said, "taught me everything I needed to know. I learned on the gun." With DeSantis directing fire and loading the guns, the Duster delivered effective fire against the automatic weapons, recoilless rifle and mortar positions in the surrounding hills.

Tedesco left the track and ran across the road to Charlie Battery's track, looking for the officer or NCO in charge,

hoping to find out what had happened. He found Harding and discovered three of Harding's five-man crew had been wounded when RPGs had slammed into the track. Sgt. Gilbert in the turret had had both arms blown away by the first RPG. The gunner, Pvt. Solomon, had been wounded by the second RPG. The explosion had ripped the muscles, tendons and flesh from the back of his legs. Then the track has taken two more RPG hits in quick succession. Marines who had been riding on Harding's track were also wounded. Nearby, a Marine lieutenant, who could not speak because his lower jaw had been shot away, was calmly writing down grid coordinates on a piece of paper. He passed the piece of paper to his radio operator, who called in the fire mission.

Running in a low crouch across the road, Tedesco recrossed the bridge and made his way past the main body of the convoy, past the knocked-out tank to where he had left the two Bravo Battery quad .50s and rear Duster. He directed their fire on the hills on either side of the road, at the same place the

infantrymen were placing their fire and where the sniper fire was coming from. Satisfied the rounds were on target, he moved back down the line, trying to find the officer in command of the convoy.

"There were two officers, a Marine captain and an Army lieutenant present," Tedesco said. "All they could do was hide up against the track. There were wounded all over the place. Suzanne, it was horrible. People dead and wounded all over the place. There was a warrant wounded and in a very complete state of shock. It was almost impossible to get them to move off the road, set up some security and try to get the convoy functioning. Anyway, when I saw that these two officers weren't very willing or capable of taking command, I took command of the entire convoy. And my first problem was trying to get the wounded out. We got on the horn and notified Carroll what the situation was, the fact that we needed infantry security and needed aircraft in to evacuate the wounded."

While Tedesco was busy trying to reorganize the convoy, the NVA concentrated their fire on Bravo's lead Duster. Seriously wounded in the back, De Santis refused medical aid and continued to direct his crew's fire and load the guns. Then, an RPG struck the rear of the turret, killing a cannoner and wounding the rest of the crew. Wounded a second time, DeSantis continued to refuse medical aid and, with bullets showering all around him, began evacuating the casualties from the stricken vehicle.

"I moved back down the road across the bridge and headed to my track to try to find out what was going on," said Tedesco, "and I noticed that my track — the track I had come in on — was not firing," he continued. "As I crossed the bridge someone called to me from the bushes on the bank of the little stream the bridge goes over. And it was the sergeant [DeSantis] who had been aboard the track. He had taken a small arm sniper round in his back and fragments in his arm. Two of the other three people who had been in the tub with the sergeant were both wounded and in the bushes with him. We didn't know where the fourth man who had been up in the tub was at the time. We later found out later that he [Spec. 4 Billy Strickland] had been killed.

"The sergeant told me that they had been hit," Tedesco continued. "I ran around to the front of the track to try to get to the radio to let them know we had lost another track, and I saw a horrible, horrible sight. The driver, the man who had driven me in there, had apparently been sitting with his head out of the hatch when an RPG or an aerial bomb, I'm not sure which one it was, landed near the track, and it just blew shrapnel and debris all over his face and shoulders and neck. I thought the man was dead. As of now, he's still alive. He's still in critical condition but they think he might pull through now. The radio was out of action, everything was covered with blood. I moved across the road back to Hardin's track again, trying to get medical aid for the guy in the track, in case he was still alive, and for the sergeant and his people.

"Meanwhile, all of this time I ran across more and more wounded, more and more dead and more and more scattered groups of infantrymen; trying to organize them, trying to move them," he continued. "We had a medevac chopper come in, and we started taking small arms all over the place. I ran over to the chopper and got him out of the area before he got downed right in the middle of our area, so we'd never get anything in or out. This went on and on and on, Suzanne, just on and on and on. I kept moving up and down the convoy, kept calling for the infantry. I kept calling for the artillery. As it started getting darker, I kept calling for illumination."

The illumination rounds, bursting high overhead, released parachute flares that bathed the terrain in an eerie orange glow. Tedesco knew the NVA might use the cover of darkness to move in for the kill.

"Finally," he continued, "I decided we were going to load all the wounded on the two quads and on the tracks and make a run for it. Well, we had gotten one of the quads loaded with wounded when two Seabee trucks came in to help us on their own, and we got the dead and some more wounded loaded on those two trucks. They headed out under the protection of the quads with wounded on it, and then, all of a sudden, the choppers started coming in. The choppers started landing all around us, taking out the wounded.

"Now that the wounded were going," Tedesco said, "my main concern was my two tracks that were out of action. I moved back across the bridge. There were at least 50 civilians in the area. We had fired over their heads to keep them down. We weren't sure whether they were VC or what they were doing. We had a Marine sergeant covering them the whole time with a machine gun. We finally got some trucks in and got the wounded moving out on the trucks, and then the helicopters came in and we kept evacuating. We started pulling back toward the main convoy, evacuating all the wounded with us, picking up all the weapons. I left Lieutenant Gregg, one of the officers from Bravo Battery, in charge there and he saw to it that the wounded were medevaced.

"Hardin and I returned with a bunch of Marines to secure our Dusters," he continued. "This was my main concern now. What were we going to do with the Dusters? I didn't want to leave them to the enemy. I requested permission to destroy the Dusters, and this permission was denied by battalion. They said the relief column was on their way."

A third reaction force commanded by Capt. Charlie Vickers the 1-44 Artillery S-4, roared out of Dong Ha. The reaction force consisted of 1-44 personnel acting as infantry, two Dusters from A/1-44 and two quad .50s from G/1-44, and four ammunition-laden five-ton trucks from Headquarters and 1-44's Headquarters Battery. They reached the ambush site at 1900 hours.

"Well, about 7 o'clock, or 1900, it was getting pretty dark and I was just about to say to hell with battalion and blow them [the Dusters] anyway, when I saw the headlights of the relief



## **DUSTERS, QUADS & SEARCHLIGHTS**

# **MEMORIAL PLAQUE DEDICATION REUNION**

**FORT BLISS, TEXAS**

**APRIL 11, 12 & 13, 1996**

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### **HIGHLIGHTS**

*RETREAT CEREMONY • PLAQUE DEDICATION • READING OF KIA-MIA NAMES  
COCKTAILS AND DINNER AT THE OFFICERS CLUB*

## **RESERVATIONS AND INFORMATION**

### **POINTS OF CONTACTS:**

|                            |                     |
|----------------------------|---------------------|
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column," Tedesco said. "Charlie Vickers had come in with the relief column. Once Charlie got there with his extra force and his people, things cleared up pretty quickly. We got the rest of the wounded out and as many of the dead as we could get out. Steve Hardin started my original track and found it could run, and he drove that out. Charlie brought one of his tracks across the bridge and hooked the Charlie Battery track (Hardin's original track) up with the tow cable, and we towed that out, with Charlie covering my withdrawal with one of his tracks that was still operational. And finally at 1930, or 7:30, we left the ambush site.

"We moved out to Cam Lo at the district headquarters there," Tedesco said. "There we left the vehicles that weren't operative, and with the help of the Huey gunships we came the rest of the way back into Dong Ha. We got back to Dong Ha about 10 o'clock, or 2200 hours. It was a very, very horrible — unbelievably horrible — experience. I don't guess I will ever forget the sight of that guy's body going underneath the track or the look on the face of that poor kid that was driving me after I got back to the track and found that they had been hit. I didn't sleep very much... in fact, I didn't sleep at all last night."

The 3rd Battalion, 4th Marines Regiment, moved in to secure the ambush site, standing watch through the night over the dead and disabled vehicles. Following the ambush, the survivors discovered that they had gone up against elements of the NVA's 320th Division's 48th and 52nd Regiment. Total friendly casualties were seven killed in action, 42 wounded seriously enough to require medical evacuation and 13 with minor wounds. 1-44 Artillery had committed 11 Dusters, five quad .50s and 152 soldiers. They had fired 11,628 40mm rounds and 28,000 .50-caliber rounds.

After the battle, someone — not the Duster crewmen — placed an NVA skull atop a mile marker adjacent to the ambush site, then added a helmet and a pancho. The macabre scarecrow stood along Route 9, symbolizing the savagery of combat in Northern I Corps. Weeks later, the NVA dead were buried in a mass grave on the west side of the stream north of Route 9.

Tedesco, Hardin and DeSantis were awarded Silver Stars for their part in the action. C Battery initiated paperwork to decorate Sines' crew. They had been told to expect, at a minimum, Silver Stars, and were disappointed to receive only Purple Hearts. The paperwork, they were told, had been fouled up. Their first-person narrative accounts of the action had not been rewritten, as required, in third person. The paperwork, they were promised, would be rewritten and resubmitted, but nothing ever came of it, except that PFC Earl Holt, the driver on Sines' track, received an Army Commendation Medal with a "V" device. Tedesco became C Battery's commander in time to pin on the Purple Hearts.

The 1st Battalion, 44th Artillery, was the first automatic weapons battalion to reach Vietnam, arriving in November 1966. It was to become one of the most decorated artillery units in history. Upon its arrival, the battalion was assigned to support the 3rd Marine Division in Northern I Corps. 1-44 established its headquarters at Dong Ha Combat Base near the junction of National Highway 1 and Route 9, approximately 10 miles south of the DMZ. The battalion's fire units were deployed from Phu Bai in the south to Giolinh and Conthien in the north and Khe Sanh in the west. The battalion participated in Operation Pegasus, which broke the siege of Khe Sanh. C Battery led the Pegasus task force into Khe Sanh on April 15, 1968. 1-44 was awarded the Presidential Unit Citation and the Valorous Unit Citation for its defense of Quang Tri during the Tet Offensive of 1968. The battalion became part of XXIV Corps Artillery and moved to Da Nang in 1970. It took part in Operation Lam Son 719, 720 and 810. The battalion came under control of the Da Nang Support Command just prior to its departure from Vietnam in 1971.

After Vietnam, the Army mothballed the quad .50s and searchlights and turned the Dusters over to the Army National Guard in the early 1970s. The last National Guard Duster crewman graduated from the U.S. Army Training Center, Fort Bliss, in October 1988. "You're part of history, there will be no more after you," Lt. Col. Daniel Ruiz, a training battalion commander told them. The last Duster firing took place in 1993 when the South Carolina guardsmen conducted their last annual service practice with Duster.

The automatic weapons battalions and the air defense artillerymen who served on them won't be forgotten by the field artillerymen who watched a quad .50 stop a sapper attack in the wire, by the cavalry platoon leader who rallied his platoon while Vulcans stood off an enemy ambush or by the infantrymen who embraced the Duster leader who broke through to the infantry position early one morning.

The automatic weapons battalions fired more than four million rounds of Duster ammunition and more than 10 million rounds of quad .50 ammunition. They participated in every major American campaign during the conflict in Southeast Asia. Some reached the outskirts of Phnom Penh.

Each battalion won either a Presidential or Meritorious Unit Citation. The soldiers who served in them won more than 450 medals for valor and earned more than 1,000 Purple Hearts.

But they were never able to stop the flow of communist replacements down the Ho Chi Minh Trail, make front page news as often as the peace demonstrators, convince people back home that Vietnam might be worth the price they paid, or make South Vietnam over in the image of America.



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# ADA Association

by Brig. Gen. (Ret.) Ernst E. Roberts, President

The U.S. Army Air Defense Artillery Association has had a challenging and productive year. The association's principal challenge continues to be to raise monies for the development and construction of a new home for the ADA Museum. Initial efforts to secure funding have met with a disappointing response; however, project redefinition to highlight the museum's present and future roles in technical training is expected to prove fruitful.

The projected "time line" to raise monies for a new museum has been extended and consideration is now being given to opening an expanded museum facility in an interim location. This would allow us to take advantage of the existing Fort Bliss structures surplus. New building construction and changes in mission requirements have left the post with buildings that could serve the ADA Museum as a temporary home. Additionally, a program identified as "Adopt-A-Weapon" has been initiated to start the process of artifact (weapon systems and components) restoration. This will shorten the time required to create new exhibits once enlarged and expanded gallery space is available. The Adopt-A-Weapon program also is expected to create enthusiasm among those units that adopt artifacts for restoration.

Meanwhile, the association has provided assistance to the Museums Division in raising funds needed to complete the Children's Bi-Cultural Living History Program. Approximately \$50,000 has been raised from local and regional foundations. These monies are to be used to create curriculum materials and procure supplies for a cultural developmental program for fourth grade students attending schools in El Paso area school districts. The association hosted, at Fort Bliss, the March meeting of El Paso school district superintendents and conducted

them on a tour of the Fort Bliss Museum while briefing them on the concept of the Children's Bi-Cultural Living History Program.

Although museum matters have created an expanded mission for the association, the core projects continue to hold the focus of attention.

**Membership.** Approximately 500 new members joined in the past year, bringing total individual life memberships to 6,638 and corporate memberships to 81.

**Recognition Program.** The association makes available recognition plaques for presentation to Soldiers of the Year and NCOs of the Year at battalion and brigade levels. Plaques are also provided for presentation to the Distinguished Graduates of the ADA Basic Noncommissioned Officer Course and Advanced Noncommissioned Officer Course.

**Receptions.** The association hosts, on behalf of the Chief of Air Defense Artillery, receptions for the air defense graduates at West Point and Command and General Staff College.

**Saint Barbara Awards.** The association administers this hallmark recognition program for air defenders. Approximately 1,500 awards were bestowed by air defense units during the past year.

**ADA Yearbook.** The association distributes copies of the yearbook to all association members.

**Gift Shop.** The association operates the museum Gift Shop, which makes available to visitors, units and organizations memorabilia not readily available locally. Profits from annual sales support the association's recognition program.

For more information about association programs call ADA Association Secretary Edith Fanning at (915) 568-2711 or DSN 978-2711.

# AIRCRAFT RECOGNITION TRAINING: A CONTINUING PROCESS

It is important to occasionally review developments to make use of what is known and to avoid repeating errors. A review of VACR training procedures can provide useful information to new members in the air defense community and may also generate ideas of how to improve VACR training.

VACR training has the important goal of developing the necessary skills military personnel need so they can visually identify threat aircraft and destroy the threat aircraft before it completes its mission. Equally important is the ability to identify friendly aircraft to prevent their engagement and destruction.

There is a distinction between identification and recognition. Identification is a process that involves the determination of whether an aircraft is friendly or hostile and the name of the aircraft. Recognition refers to the decision-making process of whether an aircraft is a helicopter, fixed-wing jet, cargo plane, etc.

The U.S. Army is concerned about the training of soldiers to identify aircraft. The Common Task Test (CTT) annually tests the proficiency of individual enlisted personnel across different military occupational specialties (MOSs) on basic combat survival tasks

that include the visual identification of threat and friendly aircraft. The Army provides intensive training to select groups of air defenders to ensure they become VACR experts. VACR training today is based upon lessons learned and incorporates information learned across the military service.

VACR was an important training topic during World War II and has, to varying degrees, remained important ever since. The emphasis on VACR declined following World War II because of changes in equipment, the evolution of guns to missiles, evaluation of the perceived threat (U.S. forces would maintain air superiority) and reliance on electronic equipment to identify friendly from hostile aircraft. Today's individual soldier is equipped with air defense guns, small arms and devastatingly effective missiles that can inflict heavy losses on low-flying aircraft. Even with the best equipment to monitor an airspace, such as the airborne warning and control system (AWACS) and the ground-based sensor (GBS), lax procedures and human error degrade the performance of such equipment and make the occurrence of a tragedy a real possibility. The use of electronic identification equipment falls short of its promise, so VACR skills are

a necessity for all combat force members, especially ground-based air defenders.

ADA squad leaders, team leaders and sometimes individual soldiers make the aircraft identification judgment and decide whether or not to engage the aircraft. The U.S. Army Air Defense Artillery School has long recognized the need to produce soldiers who have the skills necessary to recognize and identify many different aircraft and to engage only hostile aircraft.

The training of soldiers to high skill levels in VACR for nearly the past 50 years has been conducted in many different ways using various techniques and materials. Some of the earliest materials used included wall charts, flash cards and 35mm slides of tactical photographs of the aircraft, most of which are still in use today.

Many questions concerning the best way to teach VACR have arisen over the years. For example, how many views of the aircraft should be taught? Should only hostile or only friendly aircraft be taught? Do single images on 35mm slides, flash cards, booklets or a computer screen really help soldiers recognize aircraft in flight?

Numerous studies have provided answers to such questions as those above. The Human Resources Research Organization (HRRO) performed a number of studies related to VACR training. The results of their studies indicate that the duration of image exposure during training was not a key factor in test performance. In fact, the two are independent of each other. This finding does not support the initial VACR training method in which images were briefly (less than one second) presented during training; rather, it suggests that longer exposure durations do not interfere with recognition learning.

HRRO reported that efficiently conducted training included an instructor determining how long to show an image and having the class respond orally to each image. The instructor would provide feedback on the response. If the

majority of the class was wrong, the instructor would identify the image, point out the recognition features of the aircraft and distinguish the aircraft from the aircraft named by the trainees. Today, paired comparisons are considered the most effective way to present aircraft for recognition training.

Currently, soldiers instructed in VACR are taught to distinguish one aircraft from another using the wings, engine, fuselage and tail (WEFT) method. Specific details of VACR training appear in FM 44-80, *Visual Aircraft Recognition*. All aircraft have these same basic components; however, the elements differ in shape, size, number and relative position. Trainees are taught to use these differences to distinguish individual aircraft. Soldiers are also taught to use key identifying features, but they are instructed that although aircraft may have unique, detailed parts, one should not rely only upon them during recognition attempts. Detailed features may only be visible at distances where recognition should have already occurred. Also, the features may be blocked from view when the aircraft is flying in a particular direction or orientation (climb, descent or roll).

Since the direction and orientation of an aircraft in flight can change from moment to moment, there are an almost limitless number of aircraft views to which soldiers may be exposed. Because of the limited time available (30 hours) for resident VACR training, it is necessary to identify and use those aircraft views considered the most critical for learning. Without time constraints, one should train on as many aircraft views as possible. It has been found that recognition of an aircraft presented in a particular view is easier if one was presented in the same view during training.

Comparing aircraft views with good generalization to other views of the aircraft and to operationally critical views is the best way to teach. Generalization occurs if the features most critical to aircraft recognition are present across different views.

An example of an operationally critical view is a head-on view. This is the view an air defender is most likely to see when under attack from the aircraft. The direct head-on view does not generalize well. Rotation of the aircraft will present a view that has little similarity to the head-on view of the same aircraft; therefore, the rotated views with good generalization must also be taught along with the operationally critical views.

Closely associated with the question concerning the number of views of an aircraft to use in training is the issue of whether to show views of only friendly or only hostile aircraft. It seems reasonable that we could decrease training time by addressing only one category of aircraft.

Time is a constraint and an important consideration; however, performance following training is more important to the issue. HRRO found that soldiers who trained on only one aircraft class (friendly or enemy) did not gain the accuracy necessary to identify an unfamiliar aircraft as either friendly or hostile.

The issue relates directly to current engagement doctrine for visually sighted air defense weapons. The two weapons control statuses that apply are Weapons Tight (the gunner can engage only those aircraft positively identified as hostile) and Weapons Free (the gunner can engage aircraft not positively identified as friendly). Given these rules of engagement, a training strategy of teaching only one class of aircraft would not produce gunners with the necessary knowledge to perform their air defense mission. The gunners must proficiently identify both friendly and hostile aircraft.

There is another good reason to teach the identification of both friendly and hostile aircraft. Many different nations use the same types and models of aircraft. Political alliances change frequently, and whether a nation's aircraft are friendly or hostile may depend upon the current political situation.

To obtain a high level of proficiency, all aircraft, both friendly and hostile,

that soldiers must recognize and identify should receive equal emphasis in training and testing. Some aircraft, however, are more difficult to learn than others. The more similar the aircraft, the more difficult to distinguish and recognize them. Trainees learning to identify aircraft do not learn one aircraft at a time, but learn to distinguish the aircraft from other aircraft within the set. Learning is also easier if the soldiers review the known aircraft when new aircraft are added to the set.

Is it possible to teach someone using statics (still photographs or line drawings) to recognize aircraft in a dynamic (moving) environment? HRRO investigated this issue and found that printed materials, such as 35mm slides and flash cards, are effective in training observers to recognize aircraft in a dynamic environment. Printed materials are more convenient and less expensive to use in training and testing. Another advantage printed materials have over dynamic images is that soldiers can give more aircraft recognition responses and make more comparisons within a given training period. Training and testing schedules are more flexible with printed materials than with dynamic materials.

Based on the advantages of printed material over dynamic images, VACR training has been conducted in classroom settings for many years. Within the 30 hours of instruction devoted to needs of the students, this type of training is commonly referred to as the "lock-step" method. However, in October 1993, 2-6 ADA, 6th ADA Brigade, Fort Bliss, Texas, implemented a new method of teaching basic VACR — computer-assisted instruction (CAI) — for advanced individual training, National Guard and transition (those who have changed their MOS) students.

The implementation of CAI reflects some of the ongoing changes in the Army. Roles and missions are being redefined due to the ever-shrinking resources of money, equipment and per-

sonnel. The requirement remains, however, for the ADA School to produce soldiers proficient in VACR. To meet this challenge, modern technology in the form of CAI is being employed (see following story).

CAI offers a great deal of flexibility. Developed to supplement or replace instructor-guided training (depending upon the needs of the soldiers being trained), CAI was primarily an exportable training package individual soldiers could use to maintain or increase their VACR proficiency. The courseware associated with CAI produces soldiers with the required skills and knowledge to visually recognize friendly and potentially hostile aircraft. Since the introduction of VACR CAI, some resident training has been conducted in an individual mode. During other resident training, instructors have used CAI courseware as well as large screen monitors to provide traditional instructor-guided training. The tradi-

tional training method suited the large class sizes, lack of classroom space and scarcity of computer equipment.

Both the individual and instructor-guided methods can be used for sustainment (field) training. However, to take full advantage of CAI, individually paced training is probably the best method for routine sustainment training. Testing is tracked on student floppy disks. Those responsible for using CAI to train VACR must determine how to best use the equipment and courseware to meet their training requirements, while keeping in mind that soldiers have individual characteristics that affect their ability to learn and to acquire new knowledge. Drills and practices led by an instructor may be more effective for some soldiers than for others.

For those soldiers who can study on their own, individually paced training using CAI has a number of advantages over the traditional lock-step method of instruction. The amount of time required

for a dedicated instructor may be decreased. An individual can adjust his time to study aircraft he has problems recognizing. He can change the set of aircraft in the courseware to reflect changing requirements (it's easier to make the changes in CAI than to produce new slides and printed material).

Although the Army is fielding CAI VACR training equipment and courseware, soldiers do not ignore other training materials. Training aids such as the Aircraft Recognition Training-Visual II (ART-V II) Slide Kit, flash cards and printed materials (FM 44-80 and GTA 44-2-17 through 44-2-19) for use in VACR training are important and can ensure that the U.S. Army has soldiers well trained in VACR.

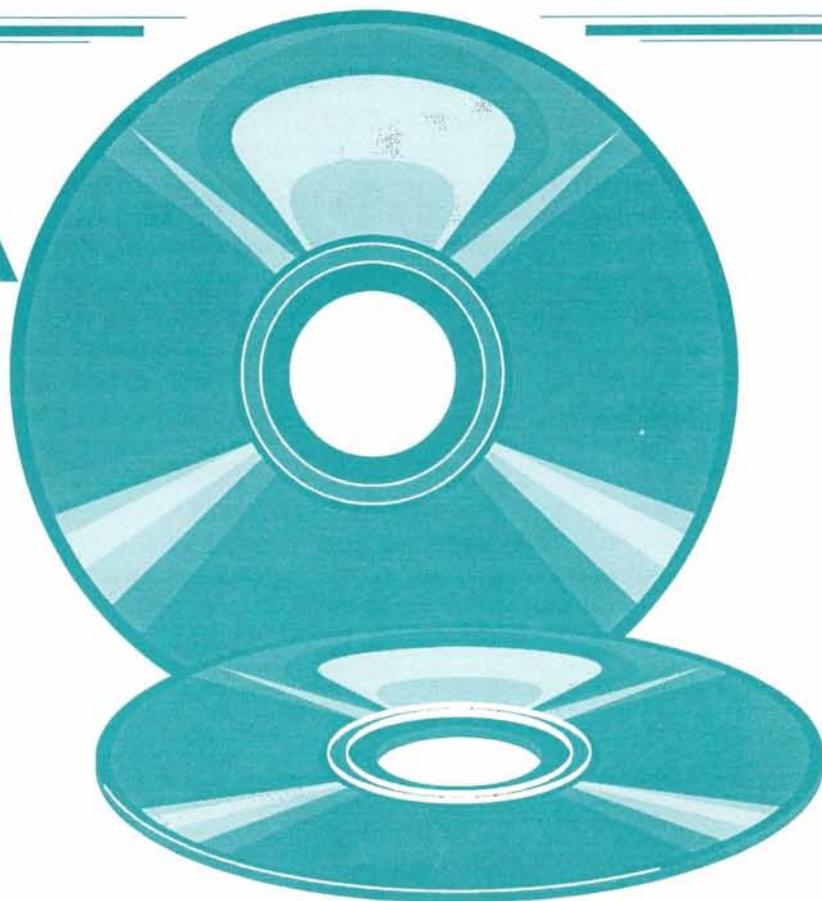
CAI will play an increasing role in how soldiers trained in VACR. Regardless of what materials are available, the Army's ultimate goal is to use the most effective and efficient methods to produce soldiers highly proficient in VACR.

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## VACR GOES MULTIMEDIA

by John Plier

New visual aircraft recognition (VACR) packages produced by the U.S. Army Air Defense Artillery School (USAADASCH), Fort Bliss, Texas, will begin VACR training's transition from field manuals to compact discs, the VACR format of the future. Scheduled for distribution to the field in fiscal year 1996, the new VACR packages will emphasize heli-



## AV-8B HARRIER II



WINGS - High mounted with negative slant.

WEFT

Comparisons

FM 44-80

All Views

Animation

Photographs

Video

1000 Meters

2000 Meters

3000 Meters



CD ROM VACR lessons are menu-driven. Just one click can instantly give you WEFT characteristics or a side-by-side comparison (see right) of similar aircraft.

copters and unmanned aerial vehicles (UAVs), the threat platforms that have replaced high-performance aircraft as the primary focus for forward area air defense units.

### Computer-Aided Instruction (CAI)

USAADASCH is completing work on the CAI III, which will be available only on read-only memory compact discs, or CD-ROMs. It will consist of six to eight CD-ROMs with four to six gigabytes of information. CAI III will feature the wing, engines, fuselage,

tail (WEFT) lesson, 98 aircraft lessons (most with infrared film included), basic intermediate and advanced testing with tracked scoring, digitized photographs and video and gaming. UAVs and cruise missiles will be included. Fielding is set for the fourth quarter of fiscal year 1996.

System hardware requirements are a multimedia 486 PC with eight Mb RAM (will play on 386, but very slowly); 2X-4X CD-ROM; SVGA monitor; 16-bit sound card with speakers; Windows and mouse. The CAI III

|                                                                                                               |                                                                                                               |                                                                                       |
|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| AV-8B HARRIER II                                                                                              | MIRAGE F1                                                                                                     | WEFT                                                                                  |
|                              |                            | Comparisons                                                                           |
|                                                                                                               |                                                                                                               | FM 44-80                                                                              |
|                                                                                                               |                                                                                                               | All Views                                                                             |
|                                                                                                               |                                                                                                               | Animation                                                                             |
|                                                                                                               |                                                                                                               | Photographs                                                                           |
|                                                                                                               |                                                                                                               | Video                                                                                 |
|                                                                                                               |                                                                                                               | Mirage F1                                                                             |
|                                                                                                               |                                                                                                               | A-6 Intruder                                                                          |
| <ul style="list-style-type: none"> <li>• High Mounted Wings</li> <li>• Swept Back Tapered Tail Fin</li> </ul> | <ul style="list-style-type: none"> <li>• High Mounted Wings</li> <li>• Swept Back Tapered Tail Fin</li> </ul> | Similarities                                                                          |
|                                                                                                               |                                                                                                               | Differences                                                                           |
|                                                                                                               |                                                                                                               |  |

software will run even better on Pentium processors.

**Field Manual (FM) 44-80, Visual Aircraft Recognition**

FM 44-80 was last revised and fielded in July 1993. The revised manual, scheduled for fielding in the fourth quarter of fiscal year 1996, will include a chapter on UAVs and cruise missiles and feature new photos throughout. USAADASCH will field the new manual on CD-ROM (the distribution method of the fu-

ture), on the Internet and a limited number of paperback hard copies.

**Aircraft Recognition Training-Visual (ART-V II)**

The ART-V II 35mm slide kits fielding begun last December should be completed in the second quarter of fiscal year 1996. Each kit contains 11 slides per aircraft, assembled and loaded in slide carrousel trays that are packaged in footlockers for shipment and storage. They feature 96 aircraft, including UAVs and cruise missiles.

**Flash Cards, Graphic Training Aid (GTA) 44-2-17/18/19**

This revision replaces GTA 44-2-13/14/15. The three-deck GTA features 103 aircraft, including UAVs and cruise missiles. The cards, which have three views of each aircraft, can be intermixed for training.

**Point of Contact**

Direct questions concerning the new VACR packages to John Pliler, Directorate of Training Management, USAADASCH, DSN 978-4687.



HVM LIGHTWEIGHT  
MULTIPLE LAUNCHER

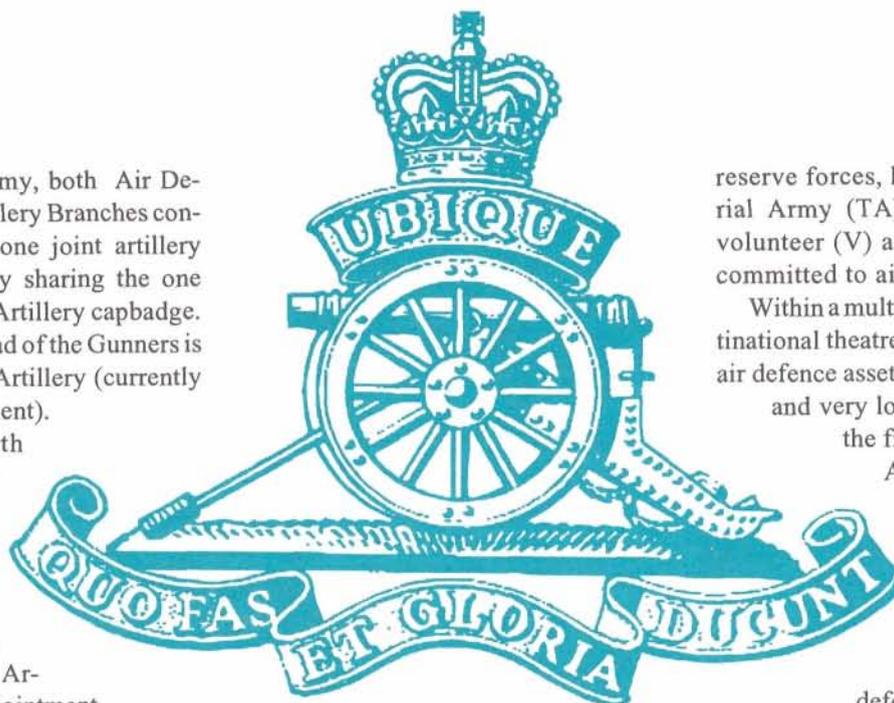
# AIR DEFENCE ARTILLERY IN THE BRITISH ARMY

by Lt. Col. Morton W. Burdick

In the British Army, both Air Defence and Field Artillery Branches continue to serve as one joint artillery combat arm proudly sharing the one Royal Regiment of Artillery capbadge. The professional head of the Gunners is the Director Royal Artillery (currently a two-star appointment).

Operationally, both field artillery and air defence regiments are responsible through the normal chain of command to the Commander Royal Artillery, a one-star appointment at the headquarters of the British Land Forces. It is quite normal for gunner officers to move between air defence and field disciplines during the course of their military careers, although soldiers (enlisted men) in the Royal Artillery will usually remain within their one chosen branch.

Over the past five years, the British Army has gone through a tough and demanding period of re-examination, restructuring and reorganization. The overall process, known as "Options for Change," examined every aspect of military life from the Ministry of Defence (MoD) downward. No part



of the Army was exempt and the Royal Regiment of Artillery, along with all the other arms and services came under intense scrutiny. The gunner strategy, however, which had been in place even before "Options," was to **embrace change — rather than to be embraced by it!** The Royal Artillery, first formed in 1716, came out of this latest review comparatively well. The Gunners currently form about eight percent of the total strength of the British Army and of the 16 regular artillery regiments, four are equipped for the air defence role. Within the

reserve forces, known as the Territorial Army (TA) - three of the five volunteer (V) artillery regiments are committed to air defence roles.

Within a multiservice and often multinational theatre, the Royal Artillery's air defence assets contribute to the low and very low level air defence of the field army. The British Army has no high or medium air defence capability and so relies heavily on integrating with other NATO air defence assets -- air defence fighter aircraft and Patriot and Hawk systems manned by American, Belgian, Dutch, German and Italian air defence units.

## British Air Defence Philosophy

The philosophy underpinning British low level air defence artillery is based on the following principles:

- Air defence is a fine balance between attrition and protection.
- The threat must be constantly re-evaluated as the tactical situation changes.
- Assets must be carefully matched to tasks. For example, targets subject to deliberate attack from above cloud, such



RAPIER FSC LAUNCHER WITH SURVEILLANCE RADAR UNDERSLUNG ON THE "SEA KING" HELICOPTER



as fixed installations, must be defended by an all-weather capable system. More mobile, opportunity targets need a system that can match their mobility.

- Passivity is important in the forward areas of the battlefield.
- Destruction of the target should, where possible, occur before its line of weapon release.
- Systems must be capable of autonomous operations; i.e., any system should be capable of surveillance, detection, acquisition and engagement of the target without external assistance.
- Control and coordination must be at the highest level.

The refinement of these tenets has led to the fielding of two classes of complementary weapon systems: Rapier provides an all-weather, towed, area air defence capability while Javelin and

the High Velocity Missile (HVM) provide a passive and highly mobile close air defence capability.

#### The Aim and Roles

The simple aim of the British Air Defence Artillery is **to prevent enemy aircraft from interfering with ground operations**. Its equipment is matched for two different but complementary roles: area and close air defence.

Area air defence gives even coverage over specific areas where operations or movements are taking place. The deployment will normally be weighted to cause maximum attrition to enemy aircraft. Area air defence is usually provided by batteries equipped with active all-weather Rapier missile systems. On occasions, area air defence deployments may be augmented by Close Air Defence (CAD) equipment,

namely the new HVM and Javelin weapon systems.

CAD is designed to ensure that enemy air attacks on specified targets fail and, when possible, destroy the attacking aircraft before it can release its weapon load. Batteries equipped with the HVM and Javelin air defence missile systems will normally carry out this "point defence" role.

#### Equipment and Characteristics

British Air Defence Artillery is totally missile based, guns having been out of the inventory for more than 20 years. The four short-range air defence (SHORAD) missile systems currently in, or about to enter, service are described below.

Rapier Field Standard C (Rapier FSC). Built by British Aerospace Dynamics, and known commercially as

Rapier 2000, Rapier FSC is a robust and highly capable new, third-generation system rather than an "improved hybrid" as the name may suggest! Its modular software design will permit easy upgrading throughout the course of its life. It has an engagement range in excess of eight kilometers, is able to fire two missiles at once, is heli-portable and has a crew of nine in war. The system consists of three main components: the launcher, surveillance radar and radar tracker. Each is mounted on a two-wheeled trailer with its own integral generator. These trailer units are towed by a four-ton trucks that carry the crew, weapon stores and spare missiles.

The launcher is armed with eight ready-to-fire missiles and has a passive electro-optical surveillance and tracking system. In extremis, with only the launcher and the operator's control unit, one man is able fight the weapon system.

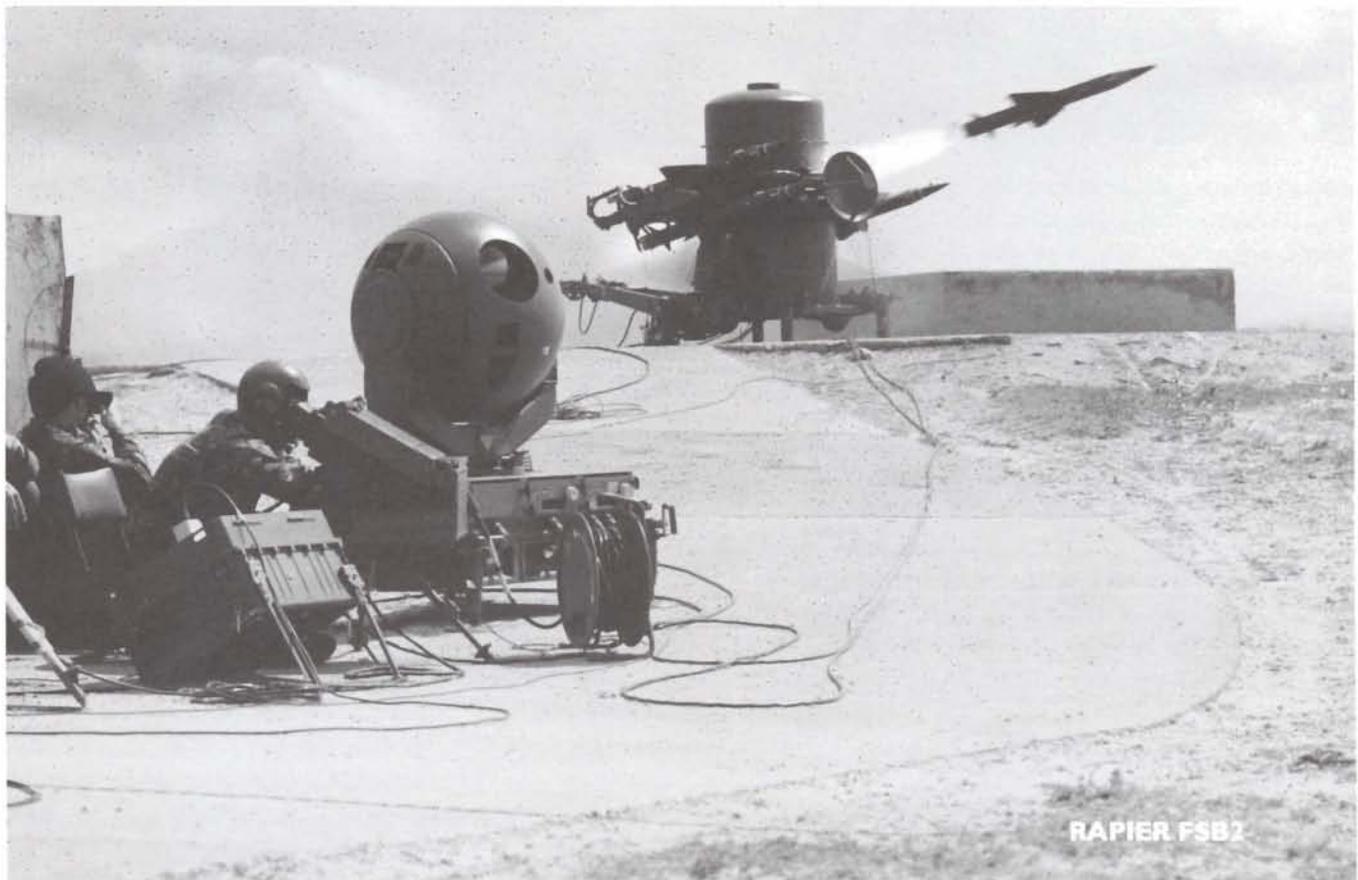
The surveillance radar has a three-dimensional acquisition and tracking capability that allows simultaneous tracking of more than 75 targets while automatically displaying for the operator the top priority targets. The surveillance radar is well protected in the face of the most severe electronic countermeasure conditions.

The radar tracker acquires and tracks targets in all weathers. It gives the system its capability to fire the second radar-guided missile once the first electro-optical engagement is underway.

Rapier Field Standard B2 (Rapier FSB2). Again from British Aerospace, this two-wheeled towed platform mounts its six Rapier missiles and the surveillance radar on the same rugged chassis. The system is controlled from a remotable operator's control unit (good for crew protection!) and has the night and all-weather capability when de-

ployed with the Blindfire radar tracker. The system evolved as the electro-optical technology demonstrator between the early Rapier Field Standards and Rapier FSC. However, its digital technology and high reliability are such that the decision to keep Rapier FSB2 in service has been well vindicated. Operationally its characteristics approach those of Rapier FSC, although it still remains a second-generation SHORAD system. With firing checks done, the nine-man detachment can be fully deployed and ready to engage the enemy within 30 minutes.

Both makes of Rapier rely extensively on built-in test equipment to monitor systems and detect and analyse faults. This, coupled with graceful degradation, contributes to an excellent equipment availability record and very high operator confidence.

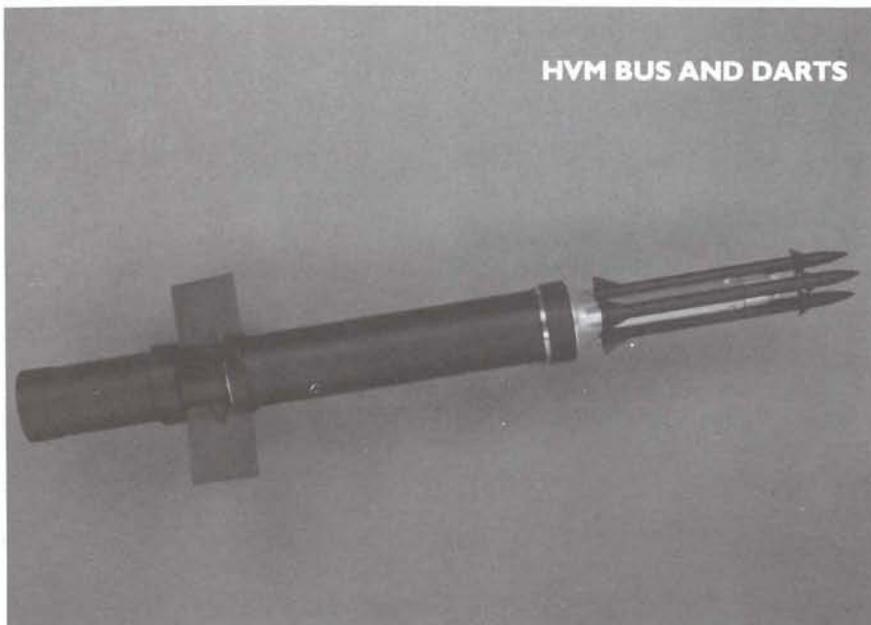


**RAPIER FSB2**



SELF-PROPELLED HVM

**HVM.** Built by Shorts Missile Systems and commercially known as Starstreak, the HVM has evolved from the well proven family of Blowpipe and Javelin. The system consists of a missile bus that carries three small laser-beam-riding darts. On launch, the bus is boosted to a speed in excess of Mach 3. It has a range of approximately six kilometers with a dramatically short time of flight! It is particularly effective when engaging pop-up helicopters or swift and fleeting targets. It is mounted on the Alvis Stormer armoured vehicle. Once the target has been identified, the three-man crew can fight the system from under armour. Eight missiles are mounted in two panniers on the top of the Stormer along with the vehicle mounted (VM) passive infrared surveillance and detection unit, the Air Defence Alerting Device (ADAD). It is able to detect fixed-wing targets out to a range of approximately nine kilometers and helicopters out to six kilometers. Once the ADAD has detected a target, it alerts the operator and automatically slews the sight and missile panniers toward the aircraft presenting the greatest threat to that weapon site.



HVM BUS AND DARTS

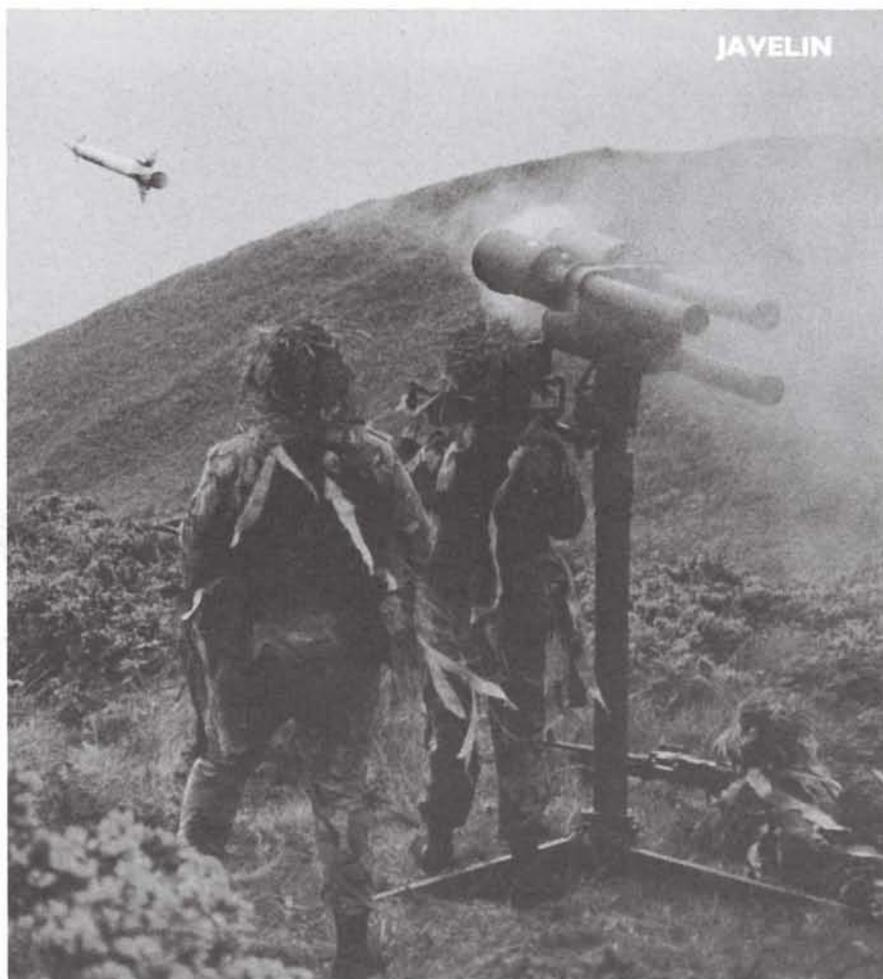
Whilst the HVM system is primarily designed to be fought from under armour, should the crew be required or forced to dismount, it carries an additional (manportable) HVM Aiming Unit (AU). This provides the reversionary mode when the AU is mounted onto the Lightweight Multiple Launcher (LML), a

quickly erected, adjustable tripod that enables the operator to fire three missiles without reloading. The HVM system is so flexible that any member of the crew can mate the AU to a single missile canister and carry out a shoulder-launched (SL) engagement without additional assistance.



Javelin. Also built by Shorts Missile Systems and known commercially as Starburst, Javelin is a manportable, laser-guided “point defence” weapon system. It is extremely effective against head-on approaching fixed-wing aircraft and, with its range of around five kilometers, is well able to engage enemy aircraft before their point of weapon release. Against helicopters, it has a very good crossing target capability and therefore provides excellent “all-round coverage.” It has a three-man crew and moves about the forward battlefield area in the Alvis Spartan armoured vehicle. When operating with wheeled or mechanized troops, Javelin detachments can deploy using Landrovers and trailers.

It is primarily a shoulder-launched system and consists of two elements, the AU and the Javelin missile in its field canister. The system can be in action in seconds by simply clipping the AU onto the canister. As with HVM, each detachment also carries its own LML (into action time of less than three minutes) and additionally, Javelin detachments carry a free-standing (manportable) version of ADAD (FS ADAD) for passive target detection and queuing.



## Organization and Deployment

As already mentioned, the British Army Air Defence ORBAT includes four Regular and three TA air defence regiments. The majority of British Air Defence Artillery effort provides support to the ACE Rapid Reaction Corps (ARRC).

## Command and Control

The command and control of British air defence troops committed to the ARRC is very much within the multinational framework. The ARRC air defence staff are part of the Air Branch (which, incidentally, is found within the Combat Support Division,

along with Field Artillery, Recce, Engineers, Communications and Special Forces).

The Air Branch is commanded by a British one-star general. As well as the Air Defence Cell, it includes the Offensive Air Support Cell, the Attack Helicopter Cell and the Support Helicopter Cell. The Air Branch staff (including the air defence element) are drawn from American, British, Dutch, German and Italian troops.

The complete listing of regiments, locations, numbers of missile batteries, equipment and training affiliations is shown below.

Control is a combination of both positive and procedural measures. Every British air defence platform is linked through the Air Defence Command and Information System (ADCIS), a near-real-time computer-based CIS system that automates the passage and processing of air space coordination order (ACO) and weapon control status (WCS) information from the Corps headquarters level down to the individual FUs. The data is transmitted as bursts over existing VHF communications using the British Ptarmigan switch packet system. It automates current procedural control measures and speeds up the passage of orders and instructions

## BRITISH ARMY AIR DEFENCE ORGANIZATION

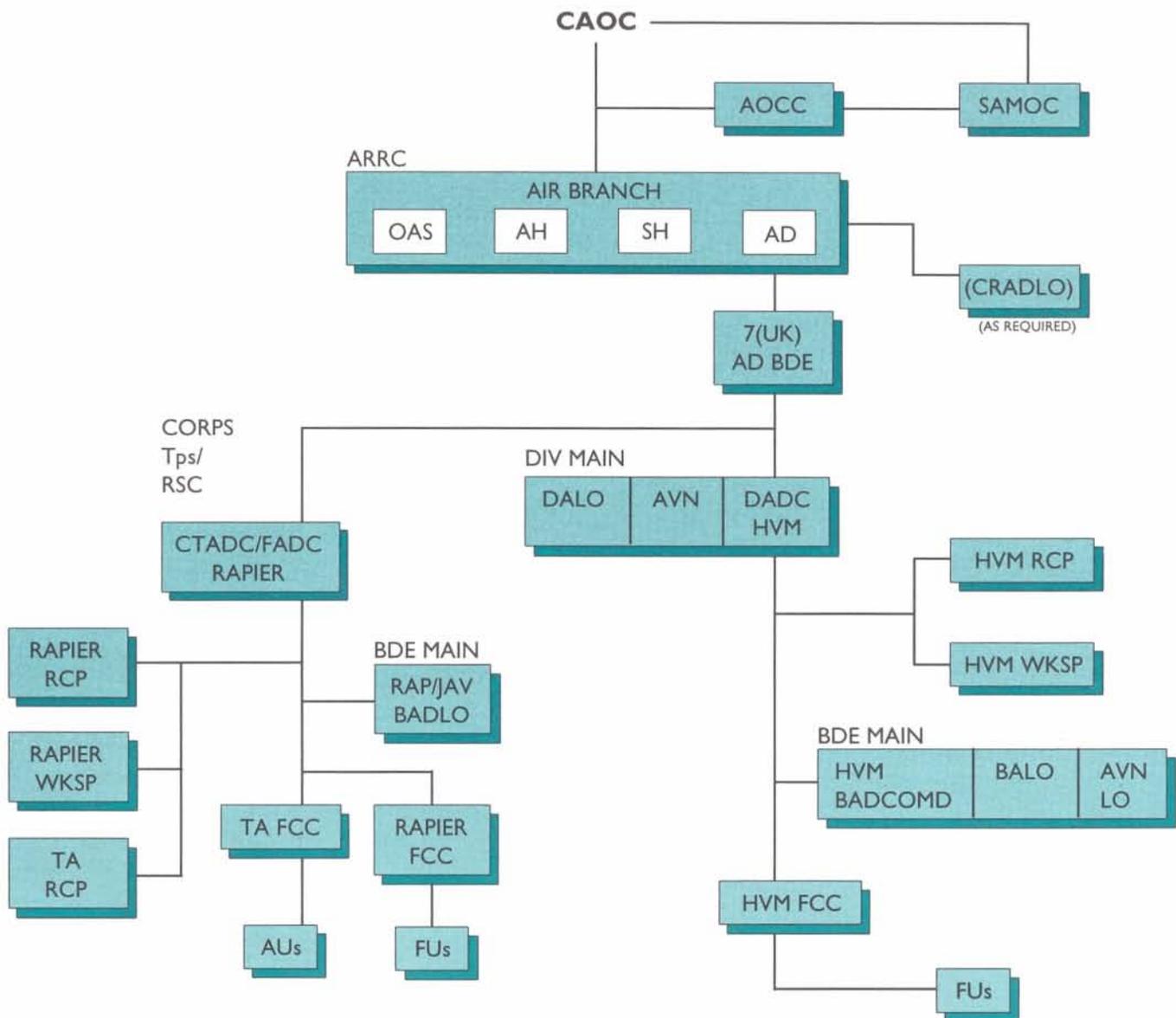
| Regiment<br>(Location)  | Equipment                              | Batteries<br>(dets per btry) | Tng Affiliation                                              |
|-------------------------|----------------------------------------|------------------------------|--------------------------------------------------------------|
| <u>Regular</u>          |                                        |                              |                                                              |
| 12 Regt RA<br>(Germany) | SP HVM                                 | 3 (36)                       | 1 (UK) Armd Div                                              |
| 16 Regt RA*<br>(UK)     | Rapier FSC                             | 3 (8)                        | Corps Tps                                                    |
| 22 Regt RA<br>(UK)      | Rapier FSB2                            | 4 (10)                       | Corps Tps (less for<br>one btry supporting<br>3 (UK) Cdo Bde |
| 47 Regt RA<br>(UK)      | Javelin (Spartan)                      | 2 (36)                       | 3 (UK) Div                                                   |
|                         | Javelin LML/SL                         | 1** (36)                     | MND(C)<br>24 Airmob Bde                                      |
| P Tp (7 RHA)<br>(UK)    | Javelin with ADAD<br>(Airborne Forces) | 1 troop of 12                | 3 (UK) Div                                                   |
| <u>TA - Volunteer</u>   |                                        |                              |                                                              |
| 103 Regt (V)<br>(UK)    | Javelin with ADAD                      | 3 (12)                       | Corps Tps                                                    |
| 104 Regt (V)<br>(UK)    | Javelin with ADAD                      | 3 (12)                       | Corps Tps                                                    |
| 105 Regt (V)<br>(UK)    | Javelin with ADAD                      | 3 (12)                       | Corps Tps                                                    |

\* 16 Regt currently man 24 Tracked Rapier Mk1B (Final) equipments. They will convert to Rapier FSC commencing in mid-1996.

\*\* The battery supporting 24 Airmob Bde is commanded by the U.S. exchange battery commander, Maj. Don Fritz, U.S. Army.

Note. It is planned that all Javelin-equipped units will eventually convert to HVM as more equipment becomes available for issue.

# BRITISH ARMY AIR DEFENCE COMMAND AND CONTROL LINKS



and other essential information that must pass between the Corps Air Defence Cell (CAOC), through division and brigade levels, to the weapon platforms. It ensures greater safety and freedom of operation for friendly aircraft and allows maximum time at Weapons Free for all air defence systems.

## Conclusion

With 400 highly capable autonomous air defence weapon platforms effectively commanded and efficiently

controlled, the British Army possesses a strong, flexible and thoroughly viable low level air defence capability. This is a result of a sound and well-based long-term procurement strategy and a capital investment of more than \$3 billion. It clearly demonstrates the British resolve to ensure that those land forces that the air defence units of the Royal Artillery are assigned to protect will have the best opportunity to conduct their ground operations without interference from enemy air activity.

**Lt. Col. Morton W. Burdick** fills the appointment of the British Army's Air Defence Liaison Officer at the U.S. Army Air Defence Centre, Fort Bliss, Texas. He has more than 20 years of air defence experience in the British Army and has served on operations in Northern Ireland, the Sultanate of Oman and the Falkland Islands.

Previously Burdick was the Senior Air Defence Instructor at the Royal School of Artillery, Larkhill, in the United Kingdom. In early 1994, he was detached from the School for a six-month operational tour with the UN as the Chief G1, in the headquarters of the Bosnia-Herzegovina Command in the Former Republic of Yugoslavia.

# Column Write



After more than three years as command sergeant major of Air Defense Artillery and Fort Bliss, the time has come to relinquish my position. I'm confident my replacement, CSM Jeffrey Jordan, will lead the branch with the expertise and devotion our soldiers deserve.

My time as branch command sergeant major has been exciting and rewarding. I've seen many developments during my tenure:

- Since the Gulf War, we've seen ADA NCOs support contingency operations in Somalia, Haiti, Korea, Southwest Asia, and Bosnia.

- The 32nd Army Air Defense Command became just another chapter of history in the book on air defense.

- The Theater High-Altitude Area Defense User Operational Evaluation System (THAAD UOES) battalion was fielded at Fort Bliss, expanding positions for air defenders and possibly creating a new MOS.

- The Bradley Stinger Fighting Vehicle was fielded, and with it came more responsibilities for air defenders. ADA NCOs are the BSFV: they man it, fire it, drive it and command it.

- Air Defense Artillery set a new precedent for the Army: your branch converted MOS 16S soldiers to MOS 14S ASI Y2 soldiers — an exception to policy that allowed all soldiers to compete for promotion even before undergoing transition training. No other combat arm can compete with our branch's history of soldier care.

I see my term as branch command sergeant major as the culmination of a great 25-year career in Air Defense Artillery, as well as the catapult to my new position as command sergeant major of the European Command. Without the support of the branch leadership, the support of each of our commanders, and most especially the support of our great NCOs, I might be leaving my position for retirement instead of bigger opportunities.

I'd like to use my final column to express heartfelt thanks to all the great NCOs in Air Defense Artillery. No other combat arm can boast of the quality leadership our soldiers exemplify, not only in times of war, but in their daily duties. ADA NCOs are the *creme de la creme*, and I'm very proud to have served with them.

My farewell message to the NCOs of Air Defense Artillery is simple: don't take the easy way out. Go for the dirty boots jobs. Finish your education. Put soldier care first.

You are in one of the best branches in the Army, a branch that takes care of its quality soldiers. Promotions are wide open; in fact, your opportunities for promotion right now are better than ever. Continue to display the traits — dependability, flexibility, adaptability, motivation, technical competence and professionalism — that have made you not only the best soldiers in the Army, but *air defenders* — a breed apart.

James E. Walthes  
Command Sergeant Major



CSM Jeffrey G. Jordan, a native of Union Springs, Ala., enlisted in the U.S. Army in 1973 and attended initial entry training at Fort Polk, La.

He served one tour in Germany with the 32nd Army Air Defense Command and one tour in Korea with the 2nd Infantry Division. His stateside assignments include duty with the 4th Infantry Division at Fort Carson, Colo.; the 24th Infantry Division at Fort Stewart, Ga.; the 82nd Airborne Division at Fort Bragg, N.C.; the NCO Academy at Fort Bliss, Texas; and the XVIII Airborne Corps at Fort Bragg, N.C.

Since his appointment to his present rank, he has served as the command sergeant major of I-2 ADA at Fort Stewart, Ga.; commandant of the 24th Infantry Division (Mechanized) NCO Academy, Fort Stewart, Ga.; and as command sergeant major of the 31st ADA Brigade, Fort Hood, Texas.

Jordan's military education includes the Drill Sergeant Course, Advanced NCO Course, Parachutist Course, Jumpmaster Course, Equal Opportunity Management Institute and the First Sergeants Course. He is a graduate of U.S. Army Sergeants Major Academy Class #34.

His awards and decorations include four Meritorious Service Medals, five Army Commendation Medals, two Army Achievement Medals, the Army Superior Unit Award and the Master Parachutist Badge.

# ADA DIGEST

## WEAPONS DEVELOPMENTS

### RESEARCH CONTRACTS AWARDED

The U.S. Army Research Laboratory in Adelphi, Md., has awarded two basic research contracts to Sanders-led consortiums of industry and academic participants, addressing telecommunications, information and sensor technologies critical to the Army's future development of digital battlefield systems. One five-year contract is valued at \$46.8 million, while the sensor technologies contract is valued at \$51 million.

The \$46.8 million contract addressing telecommunications and information technologies was awarded to a consortium that includes Motorola and GTE, both leaders in commercial and military communications products and systems, and Bellcore, recognized for its work in the generation of interoperability standards, networks and protocols. Academic institutions represented include the Massachusetts Institute of Technology, University of Maryland, Howard University, the City College of New York and the University of Delaware.

Telecommunications projects will fit within several broad technical areas: wireless communications, tactical and strategic interoperability, information distribution, multimedia concepts and additional research that provides new ideas with a high payoff.

"These are technologies that will become the foundation for U.S. Army communications in the 21st century," according to Steve Krikorian, the telecommunications program manager at Sanders. "This research, which leverages both commercial and military tech-

nologies, will be of enormous value to the Army as it searches for systems solutions on the digital battlefield."

The consortium addressing sensor technologies includes Massachusetts Institute of Technology, Stanford University, Georgia Institute of Technology, the University of New Mexico, Ohio State University, University of Michigan, the Environmental Research Institute of Michigan, University of Maryland and Clark Atlanta University.

This contract covers several broad areas of research: radar, automatic target recognition, multiple sensor fusion, signal processing and other areas. Of interest is the way in which diverse sensors can extract information autonomously from raw sensor data, which may then be transmitted over tactical networks.

According to Bill Hood, the sensor program manager at Sanders, "As re-

search brokers for the Army, we have assembled extraordinary sets of 'research triplets,' individual teams of three experts from the nation's leading universities, private industry and the Department of the Army. We have worked for two years to enlist the best sensor talent in the world to participate in this consortium."

Both efforts will be managed under a "federated laboratory" concept that partners scientists from the Army Research Laboratory with scientists from the academic community and industry. The aim of this concept is to provide an environment that encourages free exchange of information and ideas between technical communities of the public and private sectors.

To share research findings, the teams will make extensive use of Internet communications, and members will rotate assignments. In the process, consortium members, as well as personnel from the Army Research Laboratory, may earn advanced degrees with courses taken at the participating universities and locally with the University of Maryland at College Park and the University of Delaware at Aberdeen Proving Grounds.

SANDERS

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### CRUISE MISSILE STUDY UNDERWAY

The U.S. Army Space and Strategic Defense Command (SSDC) released a Broad Agency Announcement (BAA) for a Cruise Missile Radical Concept Study last November. The BAA asked industry and academia for papers proposing concepts, technologies and operational tactics to counter both the near- and far-term cruise missile threat.

This is a joint undertaking with the U.S. Army Missile Command, and both SSDC and MICOM technical staff will monitor the proposals and resulting contracts. Complete proposals are due by March 29. Possible contract award for a 12-month effort is planned for June.

As described by its name, the study will examine innovative and uncon-

ventional concepts that offer effective, robust cruise missile defense capabilities and a cost savings over traditional cruise missile defense architecture. The study product will be technological and operational "nuggets" that not only reduce cost, but also provide flexibility (multiple mission capability) to the warfighter. Results will recommend promising concepts and areas for further investigation or investment.

Threats under consideration include cruise missiles, antiradiation missiles and unmanned aerial vehicles. Study results will include threat excursions such as short-range rockets, tactical air-to-surface missiles, attack helicopters, deployed submunitions and countermeasures.

Detection of cruise missiles and similar threats usually occurs under

potentially severe environmental conditions and could require, for instance, the deployment of space-based early warning sensors for targeting. Discrimination and identification of cruise missile types may be one of the most difficult problems to solve, since these threats can appear as part of the low-altitude mixed air battle when clear lines of offense and defense often are not obvious.

Killing cruise missiles could involve offensive optical or radio frequency jamming or disruption, but also catastrophic destruction either on the ground or in flight. Then there is the problem of false engagements, which could lead to fratricide.

Finally, cruise missile defenses must be part of the overall Army weapon design. We cannot afford a

special system with a single mission. Therefore, cruise missile defense must operate in theaters and environments in which conventional forces must operate.

GERDA SHERRILL

## VET NEWS

### ISRAEL DEPLOYMENT EARNS NO MEDAL

Most of the Army's 300,000-plus Desert Storm and Desert Shield veterans are entitled to three campaign medals, one given by the United States and two by foreign countries.

Except, that is, for a small number of soldiers who were deployed to Israel as part of those operations. They are eligible for only one campaign decoration — the Southwest Asia medal, which all Gulf War veterans are automatically awarded.

Unfair? One soldier stationed in Israel during the war put it this way.

"We didn't even get mentioned" when two Kuwait Liberation Medals were issued recently. "We were left out in the cold," said Sgt. Christopher J. Copeland, who served with 4-43 ADA (Patriot). "Everybody's got two more of 'em except us."

And Copeland, now stationed at Fort Polk, La., with 2-43 ADA, believes he knows why. "We were the biggest political tool of the whole war."

Israel remained neutral during the war, although Iraqi dictator Saddam Hussein's Scud missiles heavily damaged sections of blacked-out Tel Aviv and Haifa.

Six Patriot batteries were deployed to Israel to fortify its civil defenses.

## NEW KILL VEHICLE BEING DEVELOPED

The Space and Strategic Defense Command selected Lockheed-Martin Missiles & Space Company in a competitive down-selection for the continued development, fabrication and flight testing of a new kill vehicle in the Atmospheric Interceptor Technology (AIT) program. The selection makes Lockheed-Martin eligible for the award and options of a contract totaling \$111 million.

The program will produce a lightweight integrated vehicle to operate within the earth's atmosphere at the high and low altitudes necessary for both national and theater missile defense. Traveling at very high speeds, the interceptor will operate through severe, high temperature and high pressure environments as it acquires, tracks and engages enemy targets. AIT will ensure endoatmospheric hit-to-kill with aimpoint accuracy using advanced infrared seeker technologies.

AIT is the endoatmospheric interceptor technology base for the Ballistic Missile Defense Organization to enable advanced capabilities for the acquisition of future weapon systems beyond current state-of-the-art. The kill vehicle contains an inherent capability to advance the performance of the Theater High-Altitude Area Defense, Corps Surface-to-Air, Boost Phase Intercept and Navy Upper and Lower Tier missile systems.

AIT can also be easily retrofitted using a solid, liquid or gel divert propulsion system for existing Army, Air Force and Navy missile defense infrastructure. Plans call for flight demonstrations in 1998.

GERDA SHERRILL

Four were manned by U.S. soldiers and two by Israelis. Meanwhile, President George Bush worked to keep Israel out of the war for historical and geopolitical as well as tactical and strategic reasons.

At best, the relationship between Israel and her Arab neighbors could be characterized as cool. When the Gulf War broke out, the United States had to keep that in mind to contain the conflict, said an authority on the Mideast.

"The Bush administration's strategy was to separate the Arab-Israeli issue and at the same time confront Iraq over [its invasion of] Kuwait," said Shibley Telhami, an expert on Arabs and Israelis at the Brookings Institution in Washington, D.C.

"Iraq, if you remember, tried to link these two issues by claiming that it was merely rallying the region against a U.S.-Israeli-led conspiracy. Iraq firing the Scuds at Israel was related to that. It was essential to Iraq that Israel be seen as the enemy.

"But Bush's policy of keeping Israel out of the war was highly successful. It was a terrifically envisioned and implemented strategy," Telhami said.

And, on the ground at least, it was enforced by several hundred U.S. air defense soldiers, none of whom qualify for the Kuwait Liberation Medals issued by Kuwait and Saudi Arabia.

According to the Total Army Personnel Command, a soldier must have served in these countries and regions during the war to receive the medals: Iraq, Kuwait, Saudi Arabia, Oman, Bahrain, Qatar and the United Arab Emirates, or the Arabian Gulf, Red Sea, Gulf of Oman, Gulf of Aden and that portion of the Arabian Sea north of 10 degrees north latitude and west of 68 degrees east longitude.

These land and sea areas, along with other criteria for eligibility, were approved by the secretary of defense, said Capt. Dave Farlow, spokesman for PERSCOM. But the criteria were drawn up by the government of Ku-

wait and the kingdom of Saudi Arabia, not the United States, he said.

Farlow produced a July 1994 memorandum from Maj. Gen. Ali Al-Mumin, chief of staff for Kuwait Armed Forces, to Brig. Gen. Robert R. Ivany, chief of the Office of Military Cooperation in Kuwait. The memo, which had an Arabic letterhead, outlined the criteria in detail.

"I'm not surprised Israel is not included" on that list, Telhami said. "Israel and the Gulf States have no formal diplomatic relations."

Like all Gulf War veterans, those stationed in Israel qualify for the U.S. Southwest Asia Medal, Farlow reiterated.

But there are no special medals for troops deployed to Israel, and Israel is not likely to issue any medals of its own.

"Israel," Telhami pointed out, "was not a staging area during the war."

JANE McHUGH

## COMBAT TRAINING CENTERS



### JRTC Trends

Is the glass half full or half empty? This old cliché is often used to portray whether someone is looking at a particular issue from an optimistic or pessimistic point of view. At the Joint Readiness Training Center, the air defense observer-controllers have

started using this question as a coaching tool when discussing the information that key air defense leaders are providing to battalion and brigade commanders.

Normal battle rhythm for battalion task forces and brigade combat teams usually involves at least one, if not two, staff updates to the commander each day. These updates are intended to rapidly inform the commander of such critical items as recent and projected enemy activity, current and projected status of the unit's combat power, and a myriad of other key information across all battlefield operat-

ing systems that may require command interest or intervention. All too often, the staff members approach this critical information-sharing time with a "glass half full" attitude.

The air defense officer (ADO) is no exception. A typical ADO's brief will follow along these lines: "Sir, our current combat strength is six Stinger teams, three Avengers and one LSDIS [light and special division interim sensor]. We have 36 missiles on hand, we shot down one Hoplight and one An-2 Colt today and the weapon control status/air defense warning is Yellow/Tight." The brigade commander, with a thousand thoughts on his mind, nods his head, says "Good," and the next briefer begins his pitch.

The questions that must be asked are: "What critical information did we just provide the brigade commander?" and "What is his perception of the "glass is half full" brief we just provided?" While all the information presented was certainly truthful, what we didn't do was answer the "Sowhat does that mean?" question. As a result, the brigade commander assumes that there are no significant issues with his air defense battlefield operating system and he shifts his focus elsewhere.

Now let's present the same information, but approach it from a "glass half empty" perspective. "Sir, our current combat strength is six out of ten Stinger teams, three out of six Avengers and one out of two LSDISs. Current replacement projections indicate that I should receive two replacement Stinger teams tomorrow; however, I don't expect to be up to full combat strength for another 48 hours. As a result, I'm readjusting positions and accepting some risk in the amount of defense in depth I am providing to your priorities. I am prepared to brief you in detail on team locations if desired. Additionally, I am down to 36 missiles, which is about 50 percent of the UBL [unit basic load] for the systems that are still operational. An emergency CDS [containerized delivery system] resupply of missiles is planned for tonight and I've coordinated with the S-3 Air for a UH-60 to assist in getting the missiles distributed. Today we were successful in killing one Hoplight and one An-2 Colt that were conducting recon missions. Based on the LSDIS tracks, I believe these aircraft were able to determine the location of the Q-36 before we shot them down. Consequently, I recommend that we consider moving the Q-36 to its alternate position after dark this evening."

While some may consider the information presented in the "glass half empty" example too pessimistic, in reality, this example has provided the brigade commander with the amount of information he needs to make informed decisions. As a result of this data he now has complete visibility on the full status of air defense, the importance of the CDS, why one of his limited amount of UH-60s is on a supply mission, and why it is imperative that he direct the movement of the Q-36.

MAJ. MICHAEL HENCHEN

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# RED FLAK TRAINS

by Maj. Alan R. Koenig

During World War II, Russian railroads conveyed huge quantities of men and munitions to the front. The Luftwaffe accordingly sought to interdict these vital arteries through which supplies constantly flowed. In response, the Russians strengthened their antiaircraft defenses and employed about 200 armored trains of the PVO (*Protivo-vozdushnaya oborona* [air defense command]). This article examines the composition and employment of these Soviet “flak trains.”

Armored trains were certainly not new weapons; various nations had used them since the mid-19th century. During the Russian Civil War (1918-1921), a conflict especially well-suited for armored train mobility and firepower, more than 150 of these heavily armed behemoths served in various capacities. They supported maneuver forces, safeguarded rails against enemy depredations and acted independently or in task forces — not unlike wolf packs — to seize vital objectives and accomplish other missions.

By World War II, however, improvements in aviation and armor had reduced armored train effectiveness. During the summer of 1941, head-to-head encounters with Axis aircraft and tanks knocked out many of the Red Army artillery branch's armored trains. To counter the aerial threat, the Soviets mounted antiaircraft artillery on armored railway cars. They kept their lumbering trains in the rear, far from the

potent high-velocity guns of the agile panzers. Red Army artillery branch armored trains enjoyed far greater survivability just behind the front providing indirect fire support for the infantry and armor.

During World War II, the primary role of Soviet armored trains shifted from artillery support to antiaircraft defense. The PVO began the war with just one flak train, but by the war's end more than 200 flak trains protected junctions, bridges and other critical targets from Luftwaffe attacks. This huge increase in flak trains suggests that the Soviets found them effective, and they evidently had more of these than artillery trains, though it seems that the trains differed very little.

Flak trains had an armored locomotive, a tender and seven armored flat cars. A typical two-axle armored flatcar weighed about 20 tons and bore weapons. Its sides were one meter high and 12mm to 15mm thick. Builders even armored the floor to protect the interior from mines, bullets and fragments.

Flak trains had a variety of weapons to engage all aircraft types. To ward off dive bombers and fighters, two cars each had one 37mm antiaircraft gun and one 12.7mm DshK machine gun. Three other open-top cars had 76mm antiaircraft guns to engage horizontal bombers. Niches in the cars held ammunition, and the car's low sides allowed all guns to depress to engage low-flying aircraft and ground targets if

necessary. The remaining two cars carried additional equipment, personnel and track repair equipment.

Weapon systems are only as good as the intelligence system that supports them; therefore, an extensive PVO observer network constantly searched for German aircraft. Spotters radioed or telephoned sightings to PVO headquarters, which then relayed warnings to firing batteries. In some instances, PVO units sent reports directly to moving flak trains, where observers in the command post acquired targets and determined ranges with stereoscopic rangefinders. The command post, which served as the communications center and the fire direction control, was located in one of the large gun cars. Computers sent firing data telephonically, as all cars were linked with electric cables. A crewman then repeated fire commands aloud to the gun crew.

A logistics, or “base” train, supported each flak train in the same manner that submarine tenders supported submarines. A base train accommodated personnel and stored ammunition, track repair materials, equipment, supplies and rations. It had one unarmored locomotive, a few flatcars, covered sleeping wagons, a kitchen, a medical station and additional cars when necessary.

Controlling many flak trains demanded an efficient command, control and communications system. PVO headquarters, therefore, radioed orders to flak trains daily at a pre-designated time. After this transmission, the trains relayed their own reports to headquarters. When radios failed, signalmen used radios from nearby PVO units.

The Reds organized their flak trains like other PVO units to ease interoperability and assigned each train a number to help keep track. Some of these trains appear to have had names just as artillery trains did, but Soviet sources provide little information on how they were designated.

Competent train commanders arranged their cars to exploit firepower when stopped or on the move. When



A Russian armored anti-aircraft artillery train, used near Leningrad.

defending a station, the locomotive dispersed cars along available branch lines, sidings or spurs. Commanders placed large gun cars in the middle of sidings, flanking them with lighter gun cars by the switches. Officers strove to obtain good circular fields of fire, and gunners quickly entered pertinent firing data on ordinary range cards. If an area lacked sidings, the crew simply uncoupled cars along the track. After a battle or after reconnaissance aircraft flew by, the crew moved the cars to new positions to confuse would-be attackers.

When flak trains moved, a specific march order or sequence of cars exploited weapon capabilities and reduced vulnerability. Cars with small-caliber guns rode near the front and rear, while cars with large guns stayed next to the

locomotive. This arrangement reduced dead space and optimized fields of fire. Flak trains avoided interfering with scheduled traffic by avoiding delays and assembly points for new trains. Avoiding assembly areas also improved flak train survivability, since neighboring trains or prominent obstructions compromised fields of fire. Competent commanders shunned situations that prevented their guns from engaging attackers.

The Soviets learned this lesson the hard way near Stalingrad in July 1942. A flak train suddenly found itself between two arriving trains and could not effectively engage an attacking German plane. As a result, German bombs and burning trains heavily damaged it.

Flak trains were often in harm's way as they escorted lucrative targets such as troop, ammunition and fuel trains that lacked anti-aircraft weapons. Some flak trains also patrolled sectors frequented by Axis aviation. When close to the front, flak trains might support Red Army units. With three 76mm guns and a few smaller weapons, their firepower was comparable to that of an artillery battery. The Axis accordingly gave these rolling behemoths a high priority for destruction.

Flak trains operated all over the Soviet Union during World War II. Soon after the Germans invaded, Leningraders equipped the first anti-aircraft train. Eight flak trains fought in the Battle for Stalingrad in 1942

and 1943 and, in the summer of 1943, 35 flak trains operated at Kursk.

Clever train commanders sometimes used deception to accomplish their missions. In April 1943, PVO Train #190 was protecting tank cars destined for Murmansk. Capt. Mironenko, the flak train commander, spotted a German reconnaissance plane watching the train. Mironenko stopped the train at the nearest sidetrack, coupled his locomotive to the rear of the train and backed up, causing the German pilot to think the train was headed south. When the pilot, having summoned bombers, departed, Mironenko reversed the train and headed north. Bombers arrived and flew southward from the point where the reconnaissance plane had spotted the train. Failing to spot their target, they dropped their bombs in a swamp and left.

When the Reds could not employ deception, firepower often proved effective, as Axis aircraft found heavily armed trains formidable opponents. PVO Train #201 was on patrol near Kandalaksha (near Finland) in May 1943 when four German fighters tried to strafe it repeatedly. The Red gunners repelled all attacks, shooting down one fighter and driving off the rest. Nine Stuka Ju-87 dive bombers replaced the fighters and attacked for 40 minutes. The Germans knocked out several command post personnel, but the Soviets still downed two Stukas. Another flak train fought seven Stukas and four Messerschmitt 109 fighters nearby in early June. This encounter cost the Germans three aircraft.

While Soviet sources often lack credibility, another anecdote may provide more insight on Red flak trains in combat. Knowing that moving targets are hard to hit, Soviet train commanders preferred to shoot on the move when engaging Axis aviation. PVO Train #2 engaged German aircraft in a running battle that started at dawn on June 28, 1942, when four groups of 10 to 15 Junkers approached. One of the groups headed for the siding Train #2 was protecting. In response, the train moved

onto the main tracks and went to battle stations. Soon a group of 18 aircraft turned and dive-bombed the train, which opened fire as bombs exploded next to it, wounding and killing crewmen. One Junker soon trailed smoke and returned to the west. Another never pulled out of its dive, and the crew bailed out just before the crash. Upon landing, the three German aviators hid behind a stack of railroad ties near the tracks. Three Reds tried to capture the flyers. The Reds killed two Germans in the ensuing fight and captured and interrogated the third in the train. All of this evidently transpired after the German planes had left, and the Germans attacked again 30 minutes later. Planes dived one after another, but the train's firepower allowed only near misses and downed yet another airplane. A third attack wounded more crewmen, who were evacuated by car to a hospital.

In the next attack a bomb landed between the cars and destroyed a section of the track. The repair crew lacked a steel rail to replace it, so they improvised a rail with a reinforced oak beam. The train slowly crossed it, only to be assaulted again by more Junkers. Soviet machine gun fire set a Junker's fuselage ablaze, and it crashed into the forest. The battle dragged on for half a day before the Germans switched from bombing to strafing. The armor nevertheless protected the train crew from the attacks, and they shot down the Junkers as they pulled out of their strafing runs. The train crew repelled 10 attacks in the 14-hour battle, which took pressure off other Russian targets. PVO Train #2 returned to base at the end of the day, after it ran out of ammunition.

Finding flak trains dangerous adversaries, the Luftwaffe revised tactics for raids on railroad stations guarded by trains. Groups of 20 to 30 aircraft attacked in short intervals to overwhelm the defense. PVO Train #129 repelled such a raid in March 1943 on the Voronezh Front. In another instance, 21 Stukas and Junker 88s attacked a station from an altitude

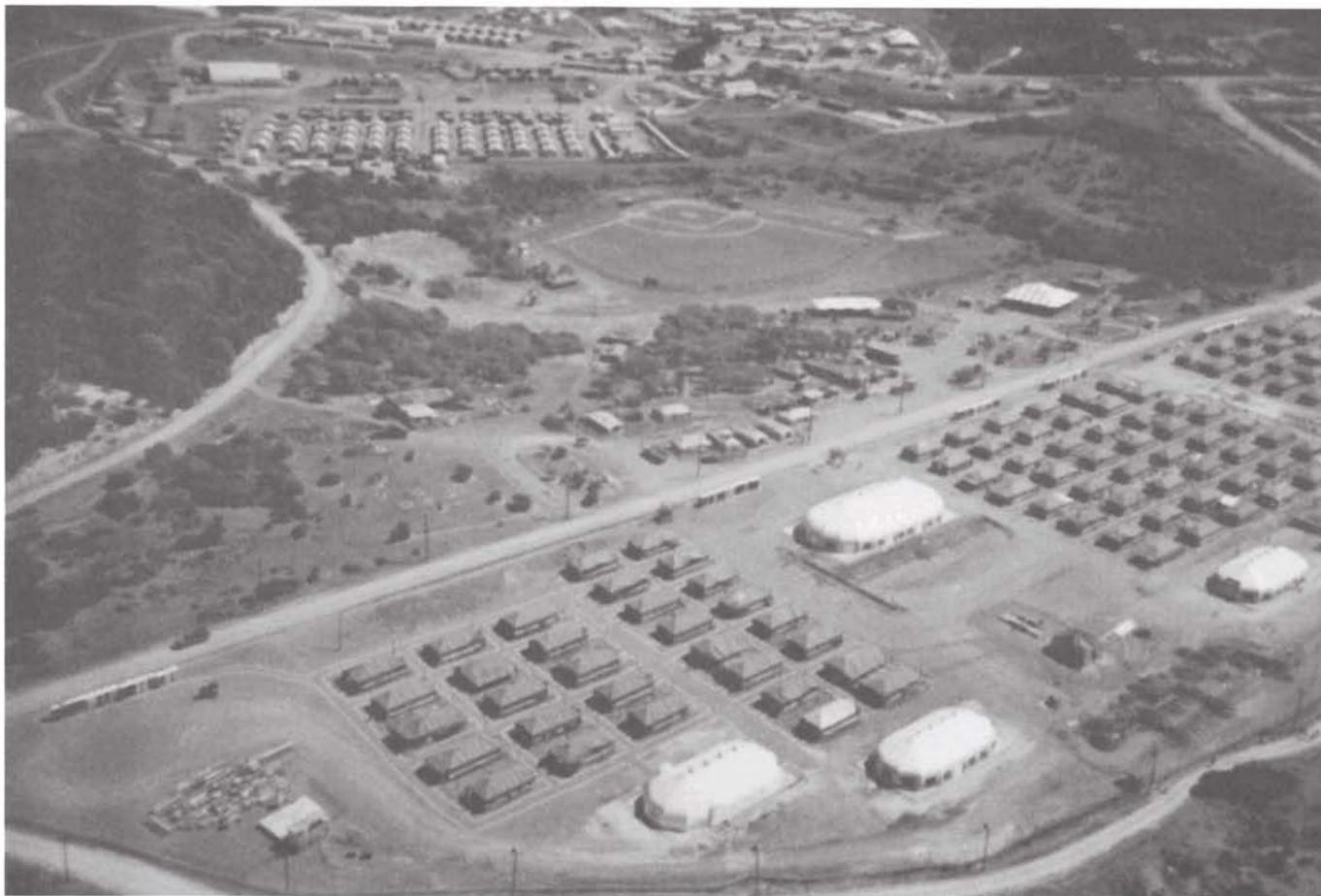
of 5,000 to 6,000 meters. Three Ju-88s dropped bombs from horizontal flight, which started several small fires. The next group of planes dived in circular formation, dropping bombs and firing machine guns and cannons at the station. The train crew put up a great volume of fire and downed a bomber by skillfully leading it with a 76mm gun. Switching tactics, the gunners of the light antiaircraft weapons and machine guns deceived the Germans by dry firing, which lured the bombers into attacking again. When the last plane dived, the train opened fire. It purportedly shot down four German planes besides saving the main station.

With the exception of one case, Soviet sources neglect to tell how and where their flak trains failed. A critical analysis of German sources might reveal some telling information on their vulnerabilities.

In conclusion, the Reds effectively employed large numbers of flak trains during World War II. The large numbers alone suggest that Soviets considered them valuable components of their overall air defense network. Employing a march order that exploited every weapon's field of fire, the Reds transformed vulnerable trains into formidable opponents. Effective command and control integrated more than 200 PVO trains into an overall system of defense, while imaginative and innovative commanders and crewmen sometimes even overcame the Luftwaffe through deceptive measures and firepower.

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# MAINTAINING READINESS IN OOTW

*TF 1-3 ADA's participation in Operation Sea Signal*

by Maj. David L. Mann

Commanders are right to worry that operations other than war (OOTW) missions may degrade combat readiness, but deploying units can minimize the damage. The 1st Battalion, 3rd Air Defense Artillery, Fort Carson, Colo., discovered that the key is planning proficiency sustainment training as carefully as the mission itself.

During the summer of 1994, about 35,000 would-be migrants set sail from Cuba aboard small boats and rafts in a desperate attempt to reach the United States. In an effort to save lives and protect its borders, the United States intercepted the migrants and interned them at Guantanamo Naval

Base (GITMO), Cuba, until a decision could be made regarding their disposition. On Nov. 24, 1994, 1-3 ADA received a warning order from the 4th Infantry Division (Mechanized) to prepare to conduct a six-month deployment to GITMO in support of Operation Sea Signal. The mission was to replace 1-12 Infantry, another 4th Infantry Division unit, and to provide external security for Cuban migrant camps located in the southeastern part of the naval base. The ADA battalion was told to be prepared to deploy on or about Feb. 1, 1995, and to expect to assume migrant operations on Feb. 7, 1995.

The battalion learned in early January 1995 that the mission had been significantly changed, and that it would now include internal security and quick reaction force (QRF)

responsibilities. In addition, the battalion would be tasked to establish new camps in an area completely devoid of the infrastructure necessary to support the thousands of migrants expected to arrive the first week of February. With this dramatic change in focus, 1-3 ADA readjusted its training plan to concentrate on tasks needed to execute its new mission, in addition to maintaining its "go to war" skills.

### Predeployment

Upon notification and throughout the predeployment period, 1-3 ADA planned and initiated actions to prepare soldiers and families for the upcoming deployment. The battalion immediately began conducting weekly in-progress reviews and adjusted its mobilization plan to meet Operation Sea Signal requirements. We validated our unit "chains of concern," and scheduled family support group meetings at battalion and battery levels.

On Nov. 29, 1994, following an extensive staff analysis, the battalion published its operation plan. Task Force (TF) 1-3 ADA would operate under Joint Task Force (JTF) 160, a headquarters one echelon below Joint Task Group (JTG) Bulkeley, an ad hoc headquarters staffed by Marines whose mission was to provide command and control of both internal and external security for the migrant camps. To meet troop strength numbers outlined by JTF 160, the battalion received two engineer companies from the 4th

Infantry Division's 299th. TF 1-3 ADA would subsequently take operational control (OPCON) of a U.S. Air Force security police company upon its arrival in GITMO. Near-term training focused on ensuring all units were fully deployable and prepared to execute their OOTW mission. Two units that had recently returned from GITMO, the 716th Military Police, Fort Riley, Kan., and 2-5 ADA, Fort Hood, Texas, furnished mobile training teams that provided valuable insights regarding migrant operations. From Dec. 11 to Dec. 15, 1994, the battalion commander and selected personnel conducted a reconnaissance of the mission area to initiate coordination with JTG Bulkeley and JTF 160 personnel and to begin gathering information and identifying issues.

An important predeployment phase task was the development of a training program to sustain combat readiness while preparing soldiers for their new mission. Recognizing this fact, the TF revised its long-range training goals and gathered the necessary training resources prior to deployment. As a result of the mission area reconnaissance conducted in early December and contacts with 1-12 Infantry, the TF gathered vital information regarding the availability of training resources in GITMO. Based upon this information and restrictions on what equipment could be brought into the mission area, TF 1-3 ADA developed its training plan to sustain combat readiness.

*TF personnel called this hot, humid and dusty tent city home for six months.*



The established training goals were for both basic soldier skills and air defense peculiar tasks; e.g., common task training (CTT), small-arms qualification, Army Physical Fitness Test (APFT), Stinger Standards in Training Commission (STRAC) qualification, visual aircraft recognition (VACR), Bradley Stinger Fighting Vehicle (BSFV) tasks and engineer tasks. While preparing for deployment, the unit also conducted various small-arms ranges, riot control training and mission area briefings. We scheduled training to avoid disrupting the Christmas and New Year holiday period and to give soldiers maximum opportunity to spend time with their families prior to deployment.

### **Deployment and Mission Assumption**

On Jan. 25, 1995, TF 1-3 ADA's advance party deployed to Cuba and immediately began preparations to receive the main body. The advance party coordinated with JTG headquarters for billeting space, vehicle support and other life-support functions. A TF operations center was established in former military housing located close to our future migrant villages. On Feb. 1, 1995, TF 1-3 ADA deployed to GITMO and immediately began preparing for migrant operations. Early efforts focused on establishing migrant camps and equipping them with adequate life-support systems. This proved to be a laborious task that required soldiers to clear large areas strewn with construction materials, concertina

wire, rocks and residue from previous migrant camps. The next step included the establishment of tent cities, placement of portable latrines, installation of security fencing and the construction of guard towers. On Feb. 11, 1995, TF 1-3 ADA received its first migrants. Over the next three weeks, the task force received more than 3,500 migrants and came face to face with the enormity of its humanitarian aid mission.

During the first six weeks of the deployment, units tasked with internal and external security missions conducted only mission-related training, although we conducted physical training three times per week throughout the deployment. Our QRF battery focused on developing standing operating procedures (SOPs) and training on skills needed in case of migrant unrest. Specific QRF training included crowd control, movement techniques, obstacle breaching, reaction drills and the development of contingency plans to address situations ranging from humanitarian concerns to migrant disturbances.

### **Combat Readiness Training**

Within two months of arriving in GITMO, TF 1-3 ADA had received the majority of its migrants, and the work schedule permitted units to begin training on areas other than migrant operations. TF 1-3 ADA implemented a formal training program focusing on goals that had been established at home station. At this point in the deployment, soldiers were working 12 hours on with 24 hours off. The task force

*Throughout the deployment, TF personnel conducted sweeps of migrant villages to eliminate contraband.*



instituted a training program that required units to train four hours during the 24-hour off-shift period. Units were given maximum latitude to choose the timing of their four-hour block of training during the 24-hour period to accommodate migrant operations responsibilities.

Small-arms qualification is one training area essential to a unit's readiness that requires constant attention. The task force learned prior to deploying that small-arms ranges were available to support M-16, M-203, hand grenade, Claymore, demolition and light anti-tank weapon (LAW/AT4) training. We also knew that a large quantity of ammunition, originally pre-positioned at GITMO for use by the Rangers in support of possible operations in Haiti, would be on hand. Upon deploying to GITMO, the task force found that the ranges needed extensive improvements before they could be safely used. We found that we could use the resources at GITMO to keep soldiers qualified through December 1995. This would prevent the battalion from having to conduct qualification ranges immediately upon redeployment, which was scheduled for July. The availability of ranges coupled with the variety and quantity of ammunition on hand allowed the TF to conduct small-arms ranges throughout the deployment window, keep marksmanship skills sharp and provide soldiers with a break from migrant operations responsibilities. In addition to small-arms ranges and CTT testing, the TF also focused on a variety of air defense and engineer peculiar skills.

*Bradley Stinger Fighting Vehicle (BSFV) Tasks.* Before deploying to GITMO, the battalion's master gunner was tasked to identify BSFV tasks that could be conducted while the unit was deployed. We brought along coax machine guns and 25mm cannons so crews could practice assembly and disassembly tasks. Although no unit conduct-of-fire trainers (UCOFTs) were present in the mission area, crews were able to conduct crew coordination exercises using silhouette cards and scenario-driven exercises. Armored vehicle recognition classes were also conducted throughout the deployment. In addition, master gunners used BSFV study guides to prepare crews for a Bradley-Stinger gunnery to be conducted three months after redeploying to Fort Carson.

*Stinger STRAC Training/Qualification.* Despite the lack of a moving target simulator, we conducted extensive training throughout the deployment to maintain Stinger team readiness. The battalion was able to complete STRAC qualification for all Stinger teams using Stinger troop proficiency trainers (STPTs) that were brought from home station. For example, Stinger teams used field handling trainers (FHTs) to conduct crew drills and 13 critical checks evaluations and to train on other perishable skills.

*Engineer Specific Tasks.* GITMO proved to be a unique training experience for the TF's engineers. The extensive minefields that separate GITMO from sovereign Cuba provided our engineers with a first-hand opportunity to learn about minefield

*TF personnel conducted Claymore mine ranges, a welcome diversion from migrant operations.*



maintenance. We arranged for our engineers to train with Explosive Ordnance Disposal (EOD) personnel at the Guantanamo Naval Base. As previously mentioned, the TF benefited from large quantities of ammunition and demolitions left by previous units. As a result, both of our engineer companies conducted demolition ranges using C-4 explosives, detonation cord and blasting caps to cut through poles and logs and to construct "expedient" Claymore mines. They also conducted 12-mile road marches, breaching drills, mine emplacement and extraction, and land navigation in preparation for the 4th Infantry Division's "Sapper Stakes" competition.

*CTT.* While in GITMO, all TF soldiers completed CTT testing for fiscal year 1995. We identified the resources prior to deployment to ensure we could achieve this training goal while in GITMO. The actual testing was conducted by first-line supervisors with platoon sergeant oversight during the platoon's training period. We established a suspense date to ensure completion of this task prior to redeployment. We required units to report their CTT status during weekly training meetings.

*Combat Lifesaver Certification/Recertification.* Two combat lifesaver certification and recertification courses maintained the division's standard of one combat lifesaver per crew or team. The TF's medics collected the necessary study guides prior to deployment and administered this program in GITMO. In coordination with the batteries, courses were

conducted to accommodate units' migrant operation responsibilities. We certified 84 soldiers and recertified 14 during our deployment.

*Mandatory Training.* The TF also conducted required annual training during its deployment. We conducted classes on suicide prevention, sexual harassment, drown-proofing and family reunification. In many cases, we coordinated with the naval base for subject-matter experts, training aids and facilities needed to conduct these classes. Although suspense dates were established to ensure all soldiers received these classes, batteries were again given the flexibility they needed to schedule these classes to accommodate their migrant operation responsibilities.

*Spanish Classes.* Throughout the deployment, TF 1-3 ADA conducted Spanish classes for its soldiers. This program not only facilitated the execution of migrant operations by reducing communications barriers, but also fostered an atmosphere of good will between soldiers and the Cuban population. The task force used its Spanish-speaking soldiers to locate Cuban teachers willing to teach soldiers. A classroom was identified, along with the necessary resources (paper products, butcher boards, etc.). Each platoon attended 12 three-hour sessions. We administered validation tests and used the results to advance soldiers to higher levels of proficiency. As a result of these classes, many of the migrants openly shared their experiences under Fidel Castro's rule. The

The TF had to renovate the available ranges before they could safely use them. On this range, TF personnel conducted AT-4/LAW training.





*The water line next to this guard tower, one of many manned by TF personnel, helped to meet the migrants' needs.*

ability to communicate with the migrant village population proved critical to the success of this mission.

*Officer/NCO Professional Development Program.* One of the benefits of participating in a joint operation is the opportunity to learn how other services operate. TF 1-3 ADA took advantage of this opportunity and arranged for representatives from the other services to discuss warfighting from their perspective. As previously mentioned, we coordinated with naval base personnel for our engineers to receive training on minefield maintenance operations. TF leaders also received briefings from our JTG Marine Corps counterparts on integrating close air support with ground operations. In addition, officers and NCOs participated in tours aboard various naval ships and learned about their capabilities and how they employ their weapon systems. One brief aboard an Aegis cruiser taught our TF leaders how this state-of-the-art weapon system meets the Navy's air defense needs. Arrangements were also made for personnel to receive briefings on the September 1994 migrant riots that had occurred during the early stages of Operation Sea Signal (see "Guantanamo," page 34, *ADA*, July-August 1995).

In addition to meeting its training goals, the task force also benefited operationally from participating in a real-world mission. On a daily basis, leaders at all levels coordinated and interacted with JTG and JTF personnel on critical operational and logistical issues. We prepared and executed operations

plans for both the deployment and redeployment. We developed SOPs and plans to address every possible contingency that could take place within the migrant villages. In summary, TF personnel received valuable experience from executing their day-to-day migrant operations responsibilities and working with the other services.

### **Training Insights**

TF 1-3 ADA set high standards for migrant operations in GITMO and also accomplished its training goals. The TF established its goals and identified resources early in the predeployment phase. OOTW mission requirements dictate the training that can be conducted and what resources units will be allowed to bring. The following insights are provided based on our experiences in support of Operation Sea Signal.

*Training Resources.* Many locations where units deploy in support of OOTW operations lack adequate training resources. Depending on the mission and the length of the deployment, a unit may be able to justify pre-positioning UCOFTs or deploying with some of its combat vehicles. Unfortunately, neither option was available to TF 1-3 ADA. As a result, leaders were forced to come up with innovative ways to maintain their batteries' readiness. In the absence of UCOFT support, BSFV crews used silhouette cards to train crew coordination and shadow boxes for battle command post

tasks. The task force also relied heavily on Stinger FHTs and STPTs to maintain Stinger team proficiency.

*Train with Other Units.* Many of the OOTW operations occurring throughout the world are conducted with units from various branches and services. Take advantage of all opportunities to train with other units. Our engineer companies received valuable instruction from naval base personnel who are experts in their field and operate daily in a real-world environment. TF staff officers also benefited from working with the other services and learning new techniques for accomplishing difficult missions.

*Maintain Basic Soldier Skills.* TF 1-3 ADA was fortunate that adequate ammunition and ranges, though austere, were available in GITMO to maintain small arms qualification. This will not be the case in all OOTW operations. When possible, units should deploy with the necessary resources to maintain basic soldier skills. CTT is one area that requires limited training aid support but is essential to maintaining soldier readiness. Combat lifesaver courses can also be taught with limited training aids using unit medics.

*Learn About the Mission Area.* A key to the success of our operation was the TF's productive relationship with the migrant population. Spanish classes taught by migrant teachers reduced communication barriers and fostered an atmosphere of trust. Future operations will also require soldiers to interact with local populations and to learn about different cultures. Leaders must look for opportunities within mission guidelines to develop these productive relationships.

### Conclusion

TF leaders and soldiers learned valuable skills during their participation in Operation Sea Signal, but at a price in combat readiness. As previously mentioned, soldiers learned important conflict resolution and contingency planning skills as a result of their experience operating migrant villages, but suffered training degradation in many critical "go-to-war" skills. The TF's primary responsibility for six months was ensuring that the basic living needs of 5,500 migrants were met in a timely and satisfactory manner, not on maintaining perishable BSFV and Stinger skills. This negative impact on unit readiness is an important consideration when determining the length of a unit's participation in these operations. This is especially true when units are required to quickly prepare for a real-world mission shortly upon returning from an OOTW operation, as was the case for 1-3 ADA upon returning from GITMO. Only two weeks after completing a liberal leave period at Fort Carson, 1-3 ADA was notified to prepare a BSFV platoon to participate in Operation Intrinsic Action (Kuwait). The platoon had one month to prepare for this operation, including conducting a Bradley Table VIII qualification. The successful preparation of this platoon was due in large part to the high level of training sustained while deployed to Cuba.

With the current emphasis on OOTW, units throughout the Army can expect to be deployed in support of such missions. Operations in Somalia, Haiti, Cuba and Bosnia are illustrative of the various missions units now undertake. The challenge is to conduct these operations with the same professionalism and technical expertise exhibited during the Gulf War. Such missions place a premium on innovative and creative leadership, especially when resources are limited or training time competes with real-world OOTW responsibilities.

Maj. David L. Mann is the S-3 for 1-3 ADA, Fort Carson, Colo.



## OPINION

### OOTW:

### *The Winning Role of the U.S. Army*

by Capt. Sean A. Kushner

And through all this welter of change and development your mission remains fixed, determined, inviolable. It is to win our wars. Everything else in your professional career is but corollary to this vital dedication. All other public purposes, all other public projects, great or small, will find others for their accomplishment; but you are the ones who are trained to fight . . . . Yours is the profession of arms, the will to win, the sure knowledge that in war there is no substitute for victory . . . .

Gen. Douglas MacArthur, May 12, 1962

Since the end of the Cold War in 1989, U.S. military strategists have grappled with the use of armed forces and the roles and missions of each service. The demise of the Soviet Union and the resultant loss of bipolarity in world politics has destabilized many regions of the world, spawning ethnic and religious violence, clan rivalries, terrorism, organized crime and related crises. To cope with the increasing challenges to U.S. international policies worldwide, the U.S. Army has developed doctrine to handle a continuum of military operations for peace, crisis and war. Some strategists argue that many of the future operations in which the Army will be involved are not missions suitable for soldiers, but are missions that only soldiers can handle.

## OPINION

Today, senior military leaders eager to protect the force from even deeper post-Cold War force reductions embrace peacetime missions they once would have resisted on grounds that they degrade the force's combat capabilities. Though the Army has the capability to conduct humanitarian assistance, firefighting and peace operations, and has incorporated versatility as a tenet of Army operations, leaders must consider thoroughly the costs to force readiness and warfighting capability. The Army must approach operations other than war (OOTW) from the position that combat readiness is our top priority. Activities that jeopardize this readiness must not become missions. Therefore, the U.S. Army must examine the mistakes of the past in its conduct of OOTW, propose better ways of achieving national objectives and establish employment criteria that ensure combat readiness is not impaired.

The first step is to consider the principles of OOTW. The perseverance principle states the Army must be able to sustain long-term operations to ensure the success of U.S. policy objectives. This principle is fundamentally flawed in that perseverance is viewed internally to the Army. In Vietnam, the U.S. Army was involved in combat operations for well over a decade and achieved victory after victory in battle. Yet, despite such success, the policy objectives of the United States were not attained. This was not the result of military failure on the battlefield or the military's inability to sustain combat operations indefinitely. The support of the American public for the war in Vietnam waned and eventually turned to opposition. Senior leaders, therefore, must view perseverance not only from the Army's standpoint, but also from the standpoint of public support. Thus, public support of OOTW is the national and strategic center of gravity.

Most Americans expect and accept the loss of American lives on foreign soil during a war, but American casualties are unexpected and far less politically sustainable during OOTW.

When the media broadcast videotapes of Somali militants dragging the bodies of young American soldiers through the streets, the American public was outraged. As a result of public pressure, the United States withdrew its soldiers from their humanitarian mission in Somalia in the midst of escalating hostilities initiated by Somali factional militants. Thus, "Operation Restore Hope" ended in irony. It failed to restore hope and placed the Somalis at the mercy of clan warlords.

Since the U.S. withdrawal, Somalis who had welcomed American and U.N. humanitarian assistance stand alone without protection from warring clans. Floods have wiped out crops in several areas and malnutrition is on the rise. The water pumping station that once provided 90 percent of the water supply to Mogadishu's one million residents is idle, its fuel supply commandeered by gunmen. At the same time, hospitals are without needed drugs and workers to treat an increasing number of patients. Many Somalis now perceive Americans they once

hailed as saviors as cowards who shrank from a violent confrontation with a local warlord.

The United States, in deploying forces to Somalia and pulling them out on terms unfavorable to our initial policy aims, did much to undermine the credibility of U.S. forces in the international community. Sustaining the willing acceptance of the missions assigned U.S. forces is the definition of legitimacy in doctrinal terms. The perceptions of the U.S. public, U.S. forces, indigenous parties and the international community all impact upon the legitimacy of the Army's mission. This legitimacy is jeopardized or lost when the world perceives that the Army is incapable of defending its own troops, or powerless to stop local gunmen because of self-imposed limitations on the use of force. The net result is that countries in need of humanitarian assistance or other peace operations will not look to the United States for lasting support or credible leadership because we conduct our operations in a way that makes success impossible.

On Dec. 4, 1992, President George Bush deployed U.S. troops to Somalia to operate under a U.N. mandate for non-traditional military operations. In Somalia, the U.S. Army witnessed "mission creep" when the United Nations assigned additional tasks to our forces that were never covered in the original specified and implied tasks to our soldiers. For example, the United Nations wanted to expand the operation to establish presence in the northern part of Somalia, to disarm factional militia, reestablish a Somali national police force and assist in refugee repatriation. Because the U.N. tasks were not covered in the original mission statement, U.S. Army leadership coined the term "mission creep" to describe the phenomenon of political mission expansion.

One also could argue that "mission creep" is a failure to plan properly. That failure to identify potential missions, hazards and pitfalls contributed to the death of 18 soldiers. "Mission creep" could more properly be defined as changes made to initially unrealistic planning and faulty assumptions. In Somalia, "mission creep" occurred because Operation Restore Hope did nothing to stop the root causes of the Somali civil strife, but instead focused on the symptomatic treatment of the humanitarian crisis.

America's recent intervention in Haiti, is widely perceived as a success, but it is still too soon to see if we have merely installed a left-wing rather than a right-wing dictator. In Bosnia, we are hoping for a "quick" resolution to ethnic strife that has plagued the Balkans since antiquity. There are already signs of mission creep. Activists are calling for U.S. soldiers, sent to enforce the peace accord by creating a "zone of separation" between warring factions, to help hunt down Serb leaders accused of war crimes. In January, Secretary of Defense William Perry said U.S. troops will provide protection for war crime investigators. In the future, Army leaders must fully articulate employment criteria to ensure that it is never again involved in a situation where the mission is vague and the rules of engagement are complex.

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Historically, the U.S. Army has conducted successful peace operations only in conjunction with decisive military victory. Therefore, the success of humanitarian operations hinges upon establishing peace first. The use of overwhelming force, the conduct of decisive military operations against those who might jeopardize future humanitarian operations or the peace process, and the timely redeployment of U.S. forces are crucial elements of successful OOTW. This approach would not involve training beyond the scope of unit mission essential task lists (METLs) or call upon soldiers to stand unarmed in harm's way. The Army's role would be to impose peace to facilitate the peace process or humanitarian assistance. For U.S. soldiers to provide humanitarian assistance or to conduct peacekeeping operations in areas torn by civil war is political and military folly if we cannot first establish the military pre-conditions for these operations. Hence, policy should be aimed at the root causes of strife and the key belligerents.

Billions of dollars, American lives and American credibility have been lost and wasted in the conduct of OOTW in Vietnam, Beirut and Somalia. The philosophy of a new American way of war is bankrupt. Soldiers conducting peacekeeping operations who merely observe and stand in the line of fire do not effectively demonstrate American resolve; they merely provide convenient targets. This is the proven method to waste the lives of soldiers. In 1982, a suicide bomber in Beirut killed 281 Marines, and the United States accomplished nothing but a humiliating withdrawal. Our humanitarian operation in Somalia resulted in 18 soldiers killed. The Somali warlord Aideed evaded capture and prevailed, outlasting the U.N. forces committed to finding him.

Employment guidelines must address whether the United States is committed to achieving military victory to obtain its policy objectives. In this way, the U.S. Army will not be constrained artificially in conducting operations. Judiciously applied military force can pave the way for political and diplomatic solutions.

Operation Just Cause is an example of decisive military operations preceding political, diplomatic and humanitarian actions. We put a dictator in jail and replaced him with a democratically elected leader. Operation Desert Storm was a resounding tactical triumph but a marred victory. We drove Iraq out of Kuwait, but we failed to topple Hussein from power. We left Shiite Moslems and Kurdish rebels who, at our urging, have risen up against their oppressors and are at the mercy of Iraq's Republican Guard, which escaped Desert Storm's encirclement largely intact. Operation Provide Comfort, which provided humanitarian relief to displaced Kurdish refugees, was a successful reaction to consequences that Gulf War strategists should have foreseen and prevented. Thanks to the United States, the Kurds are no longer starving, but they are still refugees.

An additional danger in conducting OOTW as non-traditional missions is the degradation of combat skills. Units deploy for six-

month periods, often without their organic equipment, and conduct operations not included in their METLs. During this period, soldiers learn new skills and conduct time- and resource-intensive missions at the cost of METL training. Units fighting forest fires are not battle-focused and are unable to train properly on warfighting skills. They cannot perform maintenance on combat equipment while on missions thousands of miles away from that equipment.

When the Army conducts long-term operations, the number of units tied up exceeds the number of units actually deployed on the operation. According to Col. William W. Allen, sending a "brigade-equivalent force" overseas on peacekeeping duties adversely impacts a "minimum of one division at any one time." Allen further explains that, "in addition to the deployed force, there would be a replacement force in preparation to relieve the current peacekeepers, and another force in recovery." Thus, when undertaking long-term peace operations, such as those in Haiti or Bosnia, the Army degrades its capabilities to fight battles and win wars. China, meanwhile, rattles its sabers at Taiwan and North Korea turns up the tension along the DMZ another notch.

Political solutions take years to achieve. In light of millennia of ethnic and religious animosities between warring factions in various world hot spots, quick political solutions may be impossible. Often, peacekeeping missions are used in trouble areas. Peacekeeping is a military operation in which outside forces become involved in a conflict with the consent of all the major belligerent parties to monitor as impartial observers. Peacekeepers must deal with violence without becoming participants. The danger in conducting such missions is that all belligerents must abide by their agreement. Observers may be caught in the crossfire between belligerents. Furthermore, the media can blow even the smallest incident involving peacekeepers out of proportion and affect the strategic-level mission.

OOTW often force the U.S. Army to violate established principles of war. Objective, offensive, mass, maneuver, unity of command, surprise and simplicity are virtually non-existent in multi-national peace operations. The Army's departure from these principles is the reason for its frequent failure in the conduct of OOTW. Peace operations are often indistinguishable from combat operations. Yet, as an organization, we tailor solutions and adjust our doctrine to achieve political correctness.

The Army's responsibility to national defense dictates that we outline successful use of force options in support of national objectives to our civilian leadership before embarking on OOTW missions. Political quick fixes should not involve the Army if the judicious use of force is not politically sound or warfighting capability is impaired. The U.S. Army is a tool of policy that must be used properly to be effective.

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