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AIR DEFENSE

MAGAZINE



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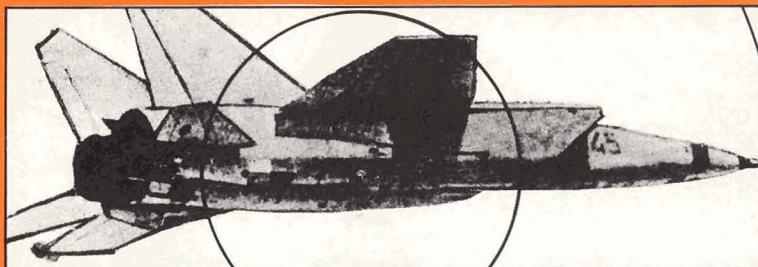
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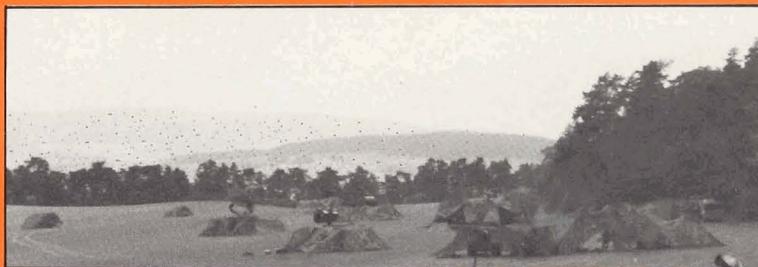
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AIR DEFENSE

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COVER: On the front we have depicted the systems that are about to rise before our eyes and expand the pattern of air defense tactics and doctrine. On the back you see the existing systems that form the base that has made future doctrinal and tactical expansion possible.

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AIR DEFENSE Magazine is published quarterly by the US Army Air Defense School to keep air defense personnel informed of the latest tactical, doctrinal, and technical developments in air defense worldwide, and to maintain a stimulating and mutually productive dialog between the School and units in the field, with a view toward increased efficiency in all aspects of air defense.

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As of 1 April 1979.



MAJOR GENERAL JOHN J. KOEHLER, JR.

In this Intercept Point I would like to discuss the training literature program at the US Army Air Defense School. My point of view will be from the direction our literature program has to follow to support training both at the School and in the field. Each publication developed for distribution has its place in a hierarchy of training literature (see diagram on page 4). The literature provides the soldier with the information to perform individual and collective tasks in conformance with an overall plan. An interdependence between publications becomes more and more apparent to the trainer and trainee as proficiency increases. Your future and effectiveness as an officer or soldier are heavily dependent on the quality of literature provided, thus our mission effectiveness is equally dependent on the quality of this literature.

Following is a list of the items of literature I will cover in this discussion:

■ **Field Manuals** provide military doctrine, tactics, and techniques of employment in battle. They are instructional documents as well as informational. They provide material relative to operations and training. How-to-fight manuals are a special type of field manual devoted to new equipment and doctrine.

■ **Training Circulars** provide interim information on materiel necessary for training in specific areas of interest. Normally, a training circular is incorporated into the applicable field manual within a 3-year period; so in this discussion I have included the training circular with the field manual.

■ **Army Training and Evaluation Programs (ARTEPs)** list the tasks that must be performed for the unit to accomplish its mission. The tasks are listed and ranked according to criticality. The ARTEP is the unit training guide and evaluation document. It is the bridge between the field manual and the soldier's manual.

■ **Skill Qualification Tests** provide the evaluation tool to measure the soldier's ability to perform required tasks and demonstrate proficiency as an individual.

■ **Soldier's Manuals** describe the tasks and set the conditions and standards for the MOS and skill level performance of each Air Defense Artillery soldier. I include the commander's manual and job book as elements of the soldier's manual because they have specific purposes to aid in training.

■ **Technical Manuals** are designed to provide you with information on how to operate and main-

SW



tain equipment.

In the Hierarchy of Literature diagram, you will note that crew drill is indicated as a separate step in the literature development program. To me, the crew drill for a system is the first collective task that integrates the men and machine to satisfy the mission. It combines the individual tasks in an ordered fashion to place the system in action quickly, accurately, and smoothly. Each soldier must demonstrate the knowledge for task proficiency, but within the framework of a coordinated action, just as the platoon sergeant or platoon leader must coordinate the activities of the elements of his platoon; the battery commander, the elements of his battery; and the battalion commander, the elements of his command. It is through the crew drill or system integration procedures that the best collective effort toward the mastery of individual tasks (as ordered in the crew drill) is obtained.

These crew drills, then, are the link pins between the individual tasks laid out in the soldier's manual (subsequently evaluated by the SQT) and doctrinal unit tasks stated in the how-to-fight manuals (evaluated by the ARTEPs). Our crew drills are published in the field manual, but that doesn't reduce their importance to the individual soldier.

On the battlefield, it is crew proficiency that lends success to the mission.

Our literature foundation is embedded in the individual training requirements contained in the soldier's manual and technical manual. The mastery of these training tasks is evaluated by the skill qualification test. After the individual tasks are mastered, the soldier begins to learn crew drill. In most cases this learning activity is concurrent with individual training tasks mastery. The ARTEP is the bridge to the interaction among doctrine, tactics, and techniques that have been incorporated into the field manual. The field manual or how-to-fight manual provides the framework for collective action on the battlefield and the principles that the leaders must know to exercise judgment. Judgment involves knowledge, experience, training, problem-solving ability, and self-confidence. The goal of all training, as well as supporting literature, is to reduce the judgment factor by enlightening each soldier about tactics, techniques, and tasks applicable to the unit's mission.

The Commander, TRADOC, charges the Commandants of the Service Schools to originate the concept papers proposing new doctrine and publications. The cornerstone of all doctrine development is FM 100-5, Operations. All how-to-fight

manuals must conform with the doctrine and tactics provided in this field manual to insure continuity of effort directed to a common set of criteria.

In the development of the how-to-fight manual and ARTEP, the goal is to present the special mission of Army air defense and associated equipment in a manner to complement the capstone manual, FM 100-5. TRADOC monitors our activities in doctrine development through its Tactical Doctrine Office. This agency insures consistency in the development of how-to-fight manuals and supporting field manuals and training circulars.

We recognize the special focus of the soldier's manual and skill qualification tests as training tools, but they also complement the enlisted personnel management system. These publications undergo a triple validation process to insure that you, the soldier, get the information necessary to proficiency and advancement in your career field. No less important are the supporting functions of the commander's manual (to provide the commander an easy reference to the tasks associated with an MOS) and the job book (to record the soldier's training progress at a given skill level).



Hierarchy of Literature

Yet, it remains for the unit commander to interpret the needs of his unit for collective and individual training. As you can see, assistance is provided to him with the appropriate training literature for his unit.

At the Air Defense School, we have attempted in the introduction of new equipment to provide doctrinal literature directed to the proper target audience. Our how-to-fight manuals are specifically written to provide doctrinal information for the senior noncommissioned officer, warrant officer, and officer users at the command and staff level. Each manual has a companion manual identified with a (-1) after the primary number, which is specifically written for the trainers.

The companion manual is titled after the system it portrays and contains the crew drills, operational techniques, and training information applicable to the system. This concept is also applied to current reading grade level requirements instituted by the Department of the Army.

I want to assure you that each publication developed by the US Army Air Defense School is thoroughly reviewed by all School agencies in the preliminary draft, coordination draft, and final draft stages of development. Coordinating drafts are provided to appropriate field commanders for comments and recommendations prior to publication. It takes approximately 2 to 3 years to publish a field manual. In this effort, we need your feedback. New ideas, techniques, and concepts are sought. The publications are written for you. They are your key to better performance.



Letters

OUT OF THE PAST

Dear Sir:

During my last tour in Germany as an SP Hawk Battery Commander (1969-1971), I read an article comparing the ADA battery commander's responsibilities to job descriptions in the civilian realm. In the article, the battery commander runs a hotel accommodating 100 people per night, a restaurant that feeds over 500 meals per day, a transportation firm with 30 trucks (all sizes), etc. I believe that article was in what was then Air Defense Trends. I surely would like to have a copy of that article. Could you please check issues of the magazine published in that time period and, if the article is available, send me a copy.

S. BOYD ADAMS
CPT(P), ADA
HQ, 108th ADA Gp

The article to which you refer (copy furnished), is titled "Management and the Missile Site Commander" and was published in the October 1969 issue of Air Defense Trends. It was written by then Major Edward R. Morrissey of Headquarters, US Army Air Defense Command. It is an excellent analogy of some of the many responsibilities that confront the ADA battery commander.

— Ed.

TEC VACR

Dear Sir:

This letter is in reference to several letters that have appeared since the March-April 1978 issue of the Air Defense Bulletin in regard to Visual Aircraft Recognition (VACR).

Currently, we are the only airborne air defense unit in Europe, being a member of NATO's Allied Mobile Force. Since we have a multitheater mission, our visual aircraft recognition must be maintained at extremely high accuracy. We feel that our visual aircraft recognition program meets the needs of our mission.

We use TC 44-30 in the establishment of the training program. We have found that once the soldier develops the knowledge of basic aircraft recognition features using the WEFT formula, he is able to grasp the GOAR Kit images very well. External stores and camouflage paint schemes are not stressed because once the soldier understands the basic aircraft designs, he can determine its basic mission. We use actual photo slides periodically

to test the skills taught and as a change of pace from the traditional GOAR Kit.

The section has included wing and fuselage markings, which are necessary since we work with our NATO Allies. As a supplement, the "Guide to Military Airpower and Aircraft Identification," and "Soviet Airpower and Artillery," published by the Tactics Department, USAADS, have been very effective. To keep abreast of current aircraft, we use JANE's Book of Aircraft. At the present time our post does not have the TEC tapes on VACR. We also do not know the number, so it would be greatly appreciated if you could forward information on the TEC tapes so that our visual aircraft recognition will be current and complete.

An effective VACR program is demanding and necessary. As air defenders, we must be able to defend our units against the third dimension of the battlefield — the air threat.

JAMES L. COLLINS
LT, AD
Battalion Combat Team
1st Bn (Abn), 509th Inf

The TEC tapes are not yet in the field. They are in the final developmental stage with filming of the motion sequences now underway. The current schedule calls for trials and validations in April, with full-scale production shortly thereafter. Delivery to the field will be in the last half of CY 1979.

Since the TEC tapes have an "all soldiers" distribution, you should receive them automatically soon after they are released. No action to obtain them will be required on your part.

— Ed.

SENIOR ADA COMMANDERS

The 9th DIVADA was activated last December, is commanded by LTC Joseph H. Felter, and should have been included in the list appearing in the Jan-Mar 79 issue of AIR DEFENSE Magazine. Also, LTC D. E. Barnes should have been shown as the School Brigade's Staff and Faculty Battalion Commander.

CREDITS

We thank Ralph Prince, SP5 Joseph Adams, and Manuel Martinez for their contributions to artwork and Alfonso Serna and Marie Seeber for their contributions to illustrations appearing in this issue of AIR DEFENSE Magazine.



FOXBAT

NINE O'CLOCK!

Lieutenant Colonel James R. Webb

Private Thompson felt naked, confused and very alone. His brief time in the Army had, at least to his mind, left him unprepared for this moment. He tried to recall everything they had taught him back at Fort Bliss about being a Vulcan gunner but somehow it just didn't make him feel any safer up there in his exposed gunner's position. He kept watching the big Sheridan tanks lumbering majestically through the desert ahead of him and wishing he had just a bit more protection like their thick-skinned hulls instead of his thin-skinned Vulcan.

Thompson's platoon leader, Lieutenant Wyatt, himself as new to the Army as Thompson, had been barely able to conceal his excitement that morning as he briefed the members of his four-gun Vulcan platoon on the upcoming support operation. His voice occasionally breaking slightly with tension, he had told them they were moving forward to provide air defense protection to a combined armor/mech force which was attacking to secure a hill which would provide the brigade control over a river crossing. None of this meant very much to Thompson as far as the big picture went but he did recall going through these hot, dusty training exercises with the 3d Cav back in the Texas desert. As best he could recall, the primary objective was to stay up close to the rear tank section that was overwatching the lead platoon in order to shoot down any aircraft that might attack it. His small tinge of pride at these remembrances was immediately squelched by other recollections of a never-ending series of frantic dashes followed by endless waits. Squinting into the sun from which the attack might come this afternoon would be just as boring and noisy.

Somehow, now that it was afternoon, it all seemed different. True, the desert was pretty much the same with its endless sand and heat, but

there was an eerie and threatening silence which Thompson couldn't recall from Bliss and the rumble of the tanks and his own tracks seemed uncomfortably loud.

Thompson glanced ahead to the command group for reassurance where Lieutenant Wyatt rode and then settled back to scan the skies where his enemy lurked. Suddenly, a blur high up in the dazzlingly blue sky caught his eye. His mind unconsciously registered wings, fuselage, tail. "Foxbat," he thought, and somehow without knowing why he knew it was on a reconnaissance mission. His finger tightened on the firing trigger then relaxed with the realization that the plane, moving with such speed, was far beyond the range of his guns. There was a certain sense of frustration at his inability to attack this aircraft as he had been trained to do, but just as he was about to pull his eyes away, there was a burst of white smoke near the plane. "Hawk," he thought, as the Foxbat made a violent climb to get above the range of the sister AD battalion providing overhead coverage for the division. Thompson felt a little better knowing that other eyes than his, eyes with far-seeing radars to help them, were also guarding the airspace over the division.

Feeling somehow that the aircraft he had been watching boded a threat to himself, Thompson returned to scanning the skies even more carefully.

Suddenly his track turned slightly and picked up speed. A glance told him that the company team was changing formation. His track pulled up close to and slightly inside of the tank ahead. Thompson realized that was the formation used when contact was expected and felt his hands grow moist. Just as they got into this new position, the heavy silence was split by a high whistle, followed almost instantaneously by two loud cracks. Looking back, Thompson saw smoke drifting up behind them.

The radio crackled and Lieutenant Wyatt's voice came on. "Those are 152s ranging on us," he almost yelled. "Don't close up too much!" Thompson's track shuddered violently as it veered away from the tank it had been snuggling up to for protection. The whole formation veered off toward some hummocks which offered some scant protection from these terrifying forces so foreign to all Thompson's experience.

They traveled much more carefully now with one platoon moving while the other covered. Sometimes the AD guns stayed back and sometimes they moved with the lead elements. It all depended on Lieutenant Wyatt's guidance over the radio and seemed to be predicated on how far they had to move. It was stopping and starting, dusty and noisy, but somehow very different from those maneuvers they had practiced in training.

Thompson kept his eyes glued to the sky but knew he must also be ready to shoot at ground targets if Lieutenant Wyatt called on him. Suddenly, as they were waiting to move forward, one of the lead tanks up ahead belched smoke and flame. Thompson didn't know it but the tank had been hit by a T-12 antitank gun squatting in hull defilade more than 2 miles away. Its gunners, like Thompson, were proud of their ability to do their job. He was trained to shoot down aircraft while they could kill a tank at 8,000 meters. Thompson shuddered to think what they could do to his thin-skinned personnel carrier.

As Thompson's gaze shifted from the smoking tank to his front, his eyes caught movement farther ahead. Two fast-moving blurs popped up over the hazy desert skyline moving perpendicular to the tank formation. Again, those endless hours of aircraft recognition training paid off as Thompson's eyes registered their details, cataloged them, and called forth from his memory bank their designation and tactics. "Fencers," he thought, and there was no doubt in his mind that these sleek shapes met all of the hostile criteria he had studied so diligently in the battalion SOP. He knew they were completing their recognition run and soon would be climbing and turning so as to attack the formation he was defending. As they began a slow lazy turn Thompson began the firing preparations he had practiced a hundred times before. Quickly he looked down to see that his mode switch was in the radar position and that his M61 sight was uncaged. The aircraft had completed their turns and were heading for the rapidly dispersing tanks. Thompson sighted on the leading plane and punched the foot pedal activating the range only radar. "Slowly, slowly," he thought as he centered the ever-increasing silhouette of the aircraft in his sight. Suddenly, acquisition time delay occurred and the sight reticle drifted upward and to the right. Thompson slowly, oh so slowly, brought the plane back into the reticle. "Now," he

muttered and squeezed off a 60-round burst. The track was immediately engulfed in smoke. "Keep tracking, keep tracking, smooth, smooth," thought Thompson as he blindly continued to move the gun to the left. As the smoke momentarily cleared, Thompson again centered the reticle of his sight and squeezed off another burst. Despite an almost uncontrollable desire to duck, Thompson continued to squeeze off carefully aimed 60-round bursts. Through occasional gaps in the smoke haze he could see the tracers of the other three Vulcans converging on the aircraft and could barely hear through the deep-throated roar of the gatling guns the sputter of the tank machineguns as they tried to help. Suddenly, just as it seemed as if the planes were about to strike his track, one of them exploded with a deafening roar and the other pulled up sharply and clawed for altitude. Thompson knew he should be firing at the escaping plane as it banked away, but he was weak with tension and fear and just couldn't traverse his weapon away from the fireball of the burning aircraft 800 meters away. He did, however, hear the distant sound of an explosion as the other plane, trying to escape the incessant chatter of 20-mm guns from the ground, had inadvertently strayed into the territory of the ever-present Hawk, far to the rear. "Two for two — that's not bad," thought Thompson, as he breathed a deep sigh and, feeling very much the veteran, prepared to continue the advance.

They were getting close now. That was easy to tell from the staccato chatter of PK machineguns up ahead and the smoke and occasional flames as the SPG-9s and RPB-7s sought and sometimes found their marks. The Vulcan stayed back with the supporting platoon as the tanks and mechanized infantry deployed to begin their first assault of the hill. Thompson could see "Fitters" coming "in" to provide close air support to the defenders and he began to fire at these planes as he had been trained to do, even though he knew they were well out of range. Faced with this barrage, the aircraft veered away only to be attacked by the tank/mech team's organic Redeye weapons as the planes flashed their heat source to these infrared homing-weapons that had left the platoon leader's command track and scattered out to firing positions to help Thompson and the other gun crews.

The firing ahead was deafening and Thompson felt very exposed even though his section chief had sought and found what cover he could. The hill ahead was defended by infantry and T-62 tanks in hull defilade and they poured out a withering fire, even though the friendly artillery was pounding the hill with salvo after salvo. Thompson, in response to Lieutenant Wyatt's orders, joined in this fire, squeezing off burst after burst which described a gradual red arc as they sought out the infantry defending the hill. Thompson's attention

was distracted as the tank alongside reared up, accompanied by a deafening explosion. Slowly it spun in a slow arc as one track slithered away. Again, Lieutenant Wyatt's voice crackled over the radio. "Saggers," he called, "look to the right." Thompson looked but saw nothing at first. Then a helicopter jumped up from behind a hillock and Thompson saw the silhouette of a missile being launched. Thompson knew the helicopter was too far away to engage effectively, but he remembered that a burst or two might cause the gunner to lose his concentration. However, in spite of his efforts he had a sick feeling as the missile described a slow arc before impacting with another tank. Another helicopter popped up, this one much closer, and Thompson almost as a reflex sighted and fired. The missile, although launched, was never to reach its intended destination for Thompson's 20-mm shells found their mark long before the helicopter crew could guide the missile to its target. The other helicopter, seeing its companion destroyed,

pulled out and Thompson turned his attention back to the battle for the hill. Things here were rapidly reaching a climax as the deployed infantry mopped up the defenders while the enemy armor was driven back or destroyed by the tanks, friendly artillery, and close air support.

Much remained to be done for the position had to be consolidated, but when the tank/mech team finished preparing hasty fortifications on the hill and had deployed its Redeyes for air defense, the Vulcans' job was done. With friendly waves from tankers and infantry, they pulled back in order to prepare for other tasks more urgently needed by the division commander. As they retraced their steps they passed burned-out tanks, broken tracks, and the wreckage of the aircraft they had destroyed, each mute testimony to the lethality of today's battlefield and each providing evidence of the vital necessity for each element of the combat team.

GLOSSARY

(In order of appearance in the article)

FOXBAT: NATO code name for Soviet manufactured MIG-25 fighter aircraft. Primarily used as an interceptor and high-altitude reconnaissance aircraft. Capable of operation at altitudes above 80,000 feet and at speeds greater than Mach 2.

152-mm GUN-HOWITZER (D-20): A towed artillery piece firing 4 rounds per minute; range 18,500 meters; basic load — 36 rounds; crew of 10.

T-12 ANTITANK GUN: A towed antiarmor gun; 100-mm, rate of fire — 10 rounds per minute; lethal against armor out to 8,500 meters, fires HEAT and APDS; crew of six.

FENCER: NATO code name for the Soviet manufactured SU-19 aircraft; first Soviet aircraft designed specifically for ground attack; incorporates a variable geometry wing; capable of carrying a wide range of ordnance including anti-radiation missiles.

PK MACHINEGUN (GROUP): A series of 7.62 machineguns in various configurations; general effective range — 1,000 meters; sustained rate of fire — 250 rounds per minute.

SPG-9 RECOILLESS GUN: A tripod mounted antitank weapon, firing a fin-stabilized, rocket-assisted 73-mm projectile; effective range — 1,000

meters.

RPB-7: A shoulder-fired recoilless antiarmor weapon capable of penetrating up to 14 inches of armor at 500 meters; normally employed at 300 meters or less; weight — 14.4 pounds.

FITTER: NATO code name for a series of Soviet-manufactured aircraft including the SU-7, SU-17 and SU-20. Aircraft are fighter types used primarily in the ground support role; SU-17 and SU-20 employ a variable geometry wing.

T-62, MEDIUM TANK: Weight approximately 36 tons; mounts 115-mm gun; with proper gunner training is lethal at 3,000 meters and beyond, normally engages at approximately 1,500 meters; carries a coaxially mounted 7.62 machinegun, may also mount a 12.7-mm machinegun; basic load — 40 rounds; road speed — 30 mph; range — 300 miles; may be equipped with deep fording snorkle and night-firing devices; crew of four.

SAGGER AT-3: A wire-guided antitank missile; may be manpacked (3-man crew) or mounted on carriers; range in excess of 2,500 meters; must be tracked all the way to target; effectiveness requires a high degree of gunner training and practice.



Lieutenant Colonel Webb contributed several excellent, thought-provoking articles to AIR DEFENSE Magazine and formerly to Air Defense Trends. He holds a Masters Degree in Educational Administration and Supervision which he put to good use when previously serving as Tactics Division Chief in the Tactics Department, US Army Air Defense School. He is currently Commander of the 3d Battalion, 71st ADA (Herc), in Germany.



AUTUMN FORGE 78



a candid report

WILLIAM I. LATHAM

Opinions expressed in this article are those of the author and should not be construed as official positions of the US Army or Department of Defense.

Being an official observer at the REFORGER 78 Autumn Forge War Games in Germany had its high moments and its low — the high moments as we soared through the air in a Huey helicopter over castles and fields, forests and cities; and the low moments when the pilot would turn and say, “That fog’s too thick — we have to go back to Hanau.”

Since one never argues with a helicopter pilot, we kept silent as the helicopter winged its way back to Hanau and the airfield — hoping it was not too late in the day to obtain motor transportation and continue field visits.

There were three of us from El Paso, Texas, visiting in Germany as observers of the REFORGER games — Nate Goldman, president of the Omar N. Bradley Chapter of the AUSA and president of a cleaning firm; Ed Arnold, president of a major El Paso bank; and this writer, in his role as Civilian Aide to the Secretary of the Army for West Texas. A fourth member of our group, Dick Poe, an automobile dealer, had been called home after a week in Germany by a visit from an IRS auditor. Nothing wrong, he assured us, but he had better be on hand.

We left El Paso on Friday night, September 8th, loading with Fort Bliss troops — 90 of them — on a giant C-141 of the Military Airlift Command, USAF. Our destination was Frankfurt, Germany, where the troops would go to nearby prepositioning of materiel configured to unit sets (POMCUS) sites and pick up their equipment for the games

and the four of us would go to the nearby USAF Billeting Facility, our unofficial base of activities. Eight hours after leaving El Paso, we had a 2-hour stopover in Goose Bay, Labrador, and then on to Frankfurt, where we arrived at 7:00 p.m. on September 9th.

CPT Jim Wilson, of Fort Bliss, Texas, our escort officer, met us at the Rhein Main Airport. Also on hand was a former El Pasoan — BG Cary Hutchinson — Deputy Commander of the 32d ADA Command, Darmstadt. A good night’s rest in comfortable rooms really refreshed us after the long trip.

Our time in Germany was divided into two phases — one was the week before we went into the field, when we visited around; and the other was the visiting of units actually participating in the maneuvers.

Our first helicopter ride was the next day when we departed Rhein Main for Grafenwoehr. That maneuver area, located near the East German border, dates back to Hitler’s time and we actually talked to one man, a German, who had served there in the pre-World War II army and had seen Hitler in person. An interesting sight was the water tower, which looks like of a castle and has a walkway around it where Rommel is said to have stood to watch his tanks maneuver.

Germany from the air is beautiful — the fields, the winding roads, the many villages, the autobahn cutting across the country, and the forests (many of them planted by hand).

The following morning, we went by bus to a 2d Cavalry kaserne near Hof, where we were given the same briefing that is given to all newly assigned personnel and their spouses. It told, bluntly



OBSERVERS — Major General Koehler, Commander, Fort Bliss, Texas, is shown with El Paso observers at Hanau Air Field while waiting for a helicopter's arrival. From left, Ed Arnold, Bill Latham and, far right, Nate Goldman.

and factually, why we have troops in that area of the world and what their role is — in peacetime and war, if it should come. Then we toured the East German border, and we were watched by East German soldiers through binoculars every time our vehicle stopped. We saw watchtowers, gun positions, border guards, even one “killer dog,” chained beneath a railroad bridge over a small river. And we first saw “the fence” — highly publicized in Berlin but just as threatening and awesome here — constructed NOT to keep East Germans IN but to keep West Germans OUT. We had never heard that line before.

Fog had closed in on Grafenwoehr during the day and the Hueys were grounded. So we took a train from Vilseck back to Frankfurt, the first time I had ridden on a German train. They are excellent, they are comfortable, and they do run on time.

The next day a German friend of Captain Wilson's, who had served with him at a missile site previously, took us on a tour of Frankfurt, on a cruise up the Rhine River from Redesheimer to St. Goarshausen and back by train, and to a gasthaus for supper (with applewein, music and an evening of fun). Here, we first savored that famous German dish — rumpsteak. Nothing at all like our steaks in Texas.

Wednesday, we drove to Darmstadt to meet MG Charles F. Means, commander of the 32d AADCOM, and to attend a briefing on the air defense role. We had brought along with us a supply of Amigo Men, the tiny insignie of El Paso's Convention and Tourist Bureau, and we presented General Means with one. In our time in Germany we gave away over 300 of the insignia, thus calling attention to El Paso all across Germany. We visited the 108th ADA Group; B Battery, 2d Battalion, 60th ADA; and the TSQ — 73 Group Operations Center at Bann Hill, before departing for

Ramstein, where we stayed overnight. Thursday we visited C Battery, 2d Battalion, 56th ADA, and Landstuhl Hospital. Friday we visited A Battery, 3d Battalion, 59th ADA, and the 97th General Hospital in Frankfurt. The Secretary of the Army, Clifford Alexander, had asked me to check into the hospitals and medical care of troops. I found both in good condition.

Over the weekend we flew from Frankfurt to West Berlin, visiting Templehof Air Base, touring West Berlin and, on Sunday morning, visiting in East Berlin. We crossed at Checkpoint Charlie, a well-known spot, inspected the Berlin Wall, and visited the People's Monument Against Fascism (formerly the tomb of the unknown soldier), the Russian War Museum, the Garden of Remembrance, and the Brandenburg Gate, which is a pre-Hitler monument dividing greater Berlin into two cities. Those who do not believe East Germans and Russians are brainwashed should see the film at the museum — “The Capitulation of Berlin” — in which Russian soldiers are seen in the attack in US-made vehicles but no credit is given for Allied aid. In a 30-minute film there is one US soldier, General Tooley Spatz of the Army Air Force, who is shown signing the Four-Power Treaty, and I found only one picture of an American soldier, General of the Army Omar N. Bradley, in the entire museum. No wonder the Russians think they won the war singlehanded.

The Garden of Remembrance, where 5,254 Russian soldiers are buried facing Moscow, is a sobering place to visit. There are numerous other such memorials in East Berlin, all praising the strength of Russian arms, but time did not permit us to visit them. Many US Army soldiers cannot visit East Berlin because of their job-related access to classified information. One heaves a sign of relief on returning through Checkpoint Charlie to



COLD IN GOOSE BAY — The C-141 in which 90 Fort Bliss troops and 4 El Paso civilians flew to Germany for REFORGER 78. Here members of the party walk back to the aircraft after a 2-hour stopover for refueling at Goose Bay, Labrador.

West Berlin — freedom never seems so sweet as when you visit an area where it is gone.

West Berlin is a charming place — wide boulevards, good cafes and gasthouses, souvenirs, happy people — but the German mark was playing around on us and we couldn't be too sure of bargains. It was a visit I'll never forget.

Back in Frankfurt on Monday, we prepared for a week in the field. Tuesday, we visited the 2d Battery, 23d Fla Rak Btl, Nidder Kaserne, Schoneck, and lunched with German and US officers stationed there. MG John J. Koehler, Jr., and COL J. T. Weathers joined us that day.

Wednesday was a busy day. We reported to Joint Visitor Bureau at V Corps early, but the helicopters were grounded by the weather. After a V Corps briefing, we went by helicopter (as the weather had cleared) to the 10th ADA Group, 1st Battalion, 55th ADA, and 2d Battalion, 55th ADA. Lunch was a "hot meal" in the field — C rations warmed in a can of hot water. Not particularly appealing but filling.

Through Friday of that week we were truly observers. We soon learned that REFORGER war games are immense — five NATO armies involved in six maneuvers going on simultaneously. CERTAIN SHIELD, which we observed, conducted by V Corps in the region of eastern Hessen and on the edge of upper Franconia, was the largest. It involved 56,000 troops, employed 6,400 wheeled vehicles, 2,800 tracked vehicles, more than 300 helicopters, and 24 fixed-wing aircraft. It was a "free play" exercise, in which commanders of the Orange and Blue Forces could move freely with certain restrictions such as highway use in some areas and airspace control. Orange Forces attacked into the maneuver area and drove south for 4 days, swinging toward Fulda Gap. Then the Blue Forces counterattacked and drove north, finally winning due to superior numbers, I was told.

A total of 13,694 US-based Army personnel was deployed to Europe for REFORGER. The USAF, mostly the MAC, flew 153 missions between August 15th and September 17th to deploy these troops to Europe. A month later the USAF flew them back home.

Major units were the 5th Inf Div (Mech) from Fort Polk, LA, with 5,911; 1st Bde, 4th Inf Div (Mech), Fort Carson, CO, with 3,336; 229th Attack Helicopter Bn, Fort Campbell, KY, with 1,150; 3d Bn, 60th Infantry, Fort Lewis, WA, with 675; and 2d Bn, 77th Armor, Fort Lewis, WA, with 550.

Fort Bliss deployed 419 men and women to Europe. The 1st Battalion, 55th ADA (Chaparral/Vulcan), sent 250 and provided air defense for the 5th Inf Div (Mech) during CERTAIN SHIELD; and the 2d Battalion, 55th ADA (Hawk), sent 169 men and women who were attached to and worked for the 10th ADA Group, stationed in Germany.

This was the first exercise in which a divisional



THE WALL — Berlin's famous "wall" is shown stretching to the left around buildings in background, which are in East Berlin. The circular top of the wall revolves, making it virtually impossible to obtain a firm handhold.

Chaparral/Vulcan battalion was deployed to Germany, an Improved Hawk unit was deployed to Germany, and air defense weapons were sea-transported to Germany since the REFORGER program began.

The 1st of the 55th offloaded equipment at Rotterdam, prepared all sea-transported equipment for movement to the exercise area, and recorded more than 30,000 vehicle miles with only one minor accident during CERTAIN SHIELD.

The 1st of the 55th, defending the 5th Inf Div (Mech), recorded 178 confirmed aircraft kills and participated in 15 battalion-size moves.

The 2d Battalion, 55th ADA, had one battery — D — operational within 24 hours after receiving its equipment. Battery D made eight tactical moves, four at night, and logged 37,000 vehicle miles with only one nonexercise-related accident.

Battery D, working with the Blue Forces, recorded 40 percent of the confirmed aircraft kills for that force.

We visited the headquarters of the 5th Inf Div (Mech) and 3d Armored Div in the field — also, all the Fort Bliss units we could reach. We had to cancel two scheduled visits because the units could not be located. Between the fog and bad coordinates, we were out of luck.

Once, as our pilot started the helicopter (on Wednesday), something went wrong and the order was given to evacuate the aircraft fast. It was something to see our observer group hit the ground running. I looked back over my shoulder from a safe 25 yards away. Fortunately, it was only a minor problem — soon cleared up.

All of the Fort Bliss units we visited had good sites and used their camouflage equipment well. Morale was high. We talked with many soldiers of various ranks, who saw the exercise as a test of the first order. When you visit units in the field and find how well the troops are trained and equipped,



A BUSY PLACE — *Hanau Air Field, headquarters area for many of the 700 civilians, media, and VIPs visiting REFORGER 78, was a busy place. Six helicopters are shown waiting for their parties to load and take off.*

you feel much better about the “all-volunteer” concept. Volunteers are well-motivated and do make excellent soldiers (and that from a World War II GI says something).

On Saturday, September 23d, I said my good-byes to General Koehler and Colonel Weathers, and also to Nate and Ed, who were leaving Frankfurt by commercial aircraft for Charlestown, SC, and then El Paso. The two officers were returning to Fort Bliss by military aircraft.

Captain Wilson and I were off for another round of visits — to Berchtesgaden, where we visited the salt mines, took a trip on the Koenigsee, visited Hitler’s Eagle’s Nest, and had a conducted tour of the World War II bunker system under the Walker Hotel. My division — 86th (Blackhawk) — was driving for the “redoubt” in Bavaria when the war ended. It was something to go back years later and see where we were heading . . . and into what.

Then back to Frankfurt, to Bonn to visit German Air Force Headquarters and look up some friends, to Mannheim to inspect a POMCUS site warehouse and, finally, back to Darmstadt to visit the headquarters of Stars and Stripes.

On Saturday, September 30th, I again boarded a C-141 at Rhein Main and, with some 90 Fort Bliss troopers, headed toward El Paso. We stopped at McGuire AFB, NJ, and reached El Paso around midnight. Two days later, after sleeping off the jet lag, I began to live again.

The hospitality of the air defense people in Europe, many of whom had lived in El Paso or had been assigned here, was great. We met them everywhere — in kasernes, cafes, gasthauses, at briefings — and most of them plan to retire in El Paso. It was a real pleasure to hand out Amigo Men to folks who knew what they meant.

As a civilian observer, I had my questions and sought information to obtain answers. I am de-

cidely not an authority on Army policy but here are some observations:

POMCUS Sites. Our materiel — tanks, trucks, artillery pieces, jeeps, etc. — is well housed and there was no major difficulty, as far as I could tell, in REFORGER troops picking up their equipment and moving into the field. Some of our POMCUS warehouses are World War II buildings and need replacing. The long air trip to Europe found some of the troops tired and it may be that the Air Force should consider a layover somewhere so troops could arrive refreshed. One officer pointed out that most of his troops slept all the way over, so in that case a rest was not needed.

Air Defense. Many of our units in Germany (i.e., armor and infantry) seem to pay more attention to their own problems than to air defense. There is little doubt that NATO forces would not have air superiority if an attack should come. I would think every unit commander should be well informed on his air defense capabilities — where his weapons are, their ability to move quickly, their communications with his headquarters — in short, what to do when an air attack comes. I did not find this. Usually the briefing officer would say, “Let me call in the Air Defense Officer. He’ll answer your questions.” The air defense role should be part of every briefing, to my way of thinking.

Evacuation Procedures. Air Force officers told me that an evacuation plan, with MAC planes flying in troops and flying out dependents, has been mapped out. It seemed to me that a lot would depend on such factors as whether the enemy had missiles aimed at POMCUS warehouses, major airfields, even sections of the autobahn that could be used for aircraft landings. And one question that came to mind: What would a soldier do if he



WAR GAMES MAP — *Hanau’s Fliegerhorst Kaserne was umpire control center for Operation Certain Shield of REFORGER 78. This giant war map was constructed in a gymnasium and men from the 8th Infantry Division posted results of the maneuvers daily.*

had to make a choice between staying with his family, if an attack comes, or reporting to his unit? Shorter tours of duty in Europe, with dependents remaining stateside might be the answer.

Maneuvers. Is REFORGER worth the money spent in transporting units to Germany and the damage claims paid? The maneuvers cost \$5 million in claims damages, I understand, and \$31.9 million overall. Eight soldiers and four civilians died, according to a story in Stars and Stripes. I think field maneuvers are badly needed. Officers need the staff and command training; NCOs and men and women in units need testing in the field. I found a great enthusiasm for the maneuvers on everyone's part. They saw it as an opportunity to learn whether they could use in the field what they had learned in garrison. Large maneuvers in the continental US are a thing of the past; we are fortunate that Germany is still willing to hold them. Opposition is growing in the German press, I noted.

Manpower. I am sold on the "total force" concept now used by our Army leaders — Regulars, National Guard, and Reserves working together in the "round out" program. But at this time, we are some 600,000 men short in our National Guard and Reserve forces.

The Selective Service System, if it should be revived in time of an emergency, would not be able to put draftees in front lines for 7-9 months, I am told. It would take that long to register, train, and equip troops for combat. In today's world, in which enemy missiles are only 30 minutes away, we don't have that kind of time.

I favor immediate legislation to fund a program to set up a registration program for 18-year-olds. We need to know where they are — today we do not.

I favor, first, Universal Military Training for this nation. I think every man and woman owes a debt to the nation and a year or two out of his or



PACKAGE SOLDIERS — Major General Koehler chats with two men of a "package" sent from Fort Bliss to Germany for REFORGER 79.

her life, before reaching twenty one, is not asking too much. It would help, not hinder, them.

Secondly, I favor restoration of Selective Service. I know it is unpopular just now, but we need men and women in uniform and in training for what lies ahead. All deferments, except physical, should be eliminated. A fair shake for everyone would make the program a lot more popular.

I am fed up with those who argue for butter, not guns. We have seen the B-1 cancelled, bombers and missiles dropped, antiaircraft missile systems retired, and more than 100 capital ships cut. We closed our only ICBM production line at a time when Russia was testing or producing eight new missile systems.

As Teddy Roosevelt once said: "It cannot be repeated too often that in modern war . . . the chief factor in achieving triumph is what has been done in the way of thorough preparation and training before the beginning of the war."

I agree. I think it is time we got our house in order.



William (Bill) Latham was a newspaperman in the Southwest for 42 years before he retired in July 1976 as Editor of the El Paso Times. In November of that year he was appointed Civilian Aide to the Secretary of the Army for West Texas, and in that capacity he observed REFORGER 78 in Germany last September. During World War II, he served as an infantry officer in Germany and in the Philippines. On his recent trip, he visited areas where he formerly saw combat. A graduate of the School of Journalism at the University of South Carolina, Mr. Latham has been active for many years in El Paso business and civic circles. Although now in retirement, he still keeps busy.



TEAM B i THE MILITARY

Colonel Jo

Introduction

A management tool new to the Army that has been used with great success in industry for more than 20 years is Organizational Effectiveness (OE). OE serves as an aid to commanders at all levels by emphasizing effective two-way communication. The Army definition of OE is:

"The systematic military application of selected management skills and methods to improve how the total organization functions to accomplish assigned missions and increase combat readiness. It is applicable to organizational processes (including training in interpersonal skills) and when applied by a commander within an organization, is tailored to the unique needs of the organization and normally implemented with the assistance of an Organizational Effectiveness Staff Officer (OESO)."

There are two very important points to recognize in this definition. For the hard liners who are critical of OE as a tool for a military commander, it must be recognized that this is not really new but is using "selected management and behavioral science skills and methods" which have not only been around the business world for a long time but are proven concepts. Secondly, the commander should implement OE with the direct assistance of an OESO who has completed the Army's 16-week course at Ford Ord.

This article is not meant to be a commercial for OE, which almost every military publication has presented, but will provide the commander or team leader an example of the use of one of the many "behavioral science skills" in the OE assortment. It will demonstrate the use of an OE intervention called Team Building to improve the unit efficiency, lessen overall training time, and considerably reduce the apprehension uninformed commanders and leaders have toward the OE concepts.

It is necessary to digress for a few paragraphs to set the stage and clarify not only OE but some of the practitioner's skills prior to discussing the Team Building Process. To begin, the reader should become acquainted with some OE oriented definitions:

■ Culture. The prevailing activities, interac-

tions, norms, sentiments, beliefs, attitudes, and values appearing within an organization.

■ Goals. The goals of the OE effort agreed upon by the team, client, and consultant.

■ Grid. Framework for classifying people by personal qualities or behavior. It assumes leadership ability can be learned, modified, and developed. It measures a manager's style on a scale of 1 to 9 in relation to his concern for production (the first number) and his concern for people (the second number).

■ Intervention. Action on the part of a consultant to bring about organizational change in the client or team group.

■ MBO (Management by Objectives). Organizational development intervention designed to reduce managerial stress by attempting to establish a better "fit" between personal and organizational goals, by increasing communications and shared perceptions between the manager and his subordinates.

■ Norms. Rules, usually unwritten but understood and accepted by the group, regulating behavior in an organization.

■ T-Group. Form of training concentrating on the problems of organizational change, interpersonal relationships, and the ability of people to communicate and collaborate for the sake of organizational achievement.

■ Themes. Issues developed by a consultant through interviews of team members prior to the first team group meeting.

■ Off-Site. A location other than the regular place of work — free from interruptions — permitting consultation on group interaction (can be within the battery area but not the same TAC area).

■ Feedback. Communication to a person or group about some aspect of their perceived behavior and its effect upon the informant.

The foregoing definitions contain several OE interventions that can be considered similar to team building in either their method of employment or the final result. All have application to the Army and probably would result in improvement in management if for no other reason than that they

BUILDING

ENVIRONMENT

F. Crater

would improve interpersonal relations, communication, and group understanding.

The structure of the military organization invites some form of team-building activity. There are several team-building interventions that either focus on the family group (a permanent work team composed of a commander and his subordinates), or other interventions focusing on special teams such as "Start Up" teams (newly constituted due to organization mergers or structure changes), task forces, committees, etc. The team-building interventions are directed toward four major areas: diagnostic, task accomplishment, team relationship, and team and organization processes. These interventions differ from sensitivity training or T-Groups, etc., which are focused primarily on the individual and how he reacts to the feelings of the "Boss." A comparison of Family Group and Special Group team-building activities at figure 1 demonstrates the applicability of the Family Group activities to the military organization. There are some specific applications for the Special Group team-building intervention in an air defense unit; for example, annual service practice, organization for a specific evaluation such as technical proficiency inspections, or the NATO tactical evaluation of a unit. Application of this intervention in preparation for these activities offers exciting opportunities for OE.

The remainder of this article concentrates on the development of a type Family Group team-building effort. Figure 2 is a model for its application to the military environment.

FAMILY GROUP TEAM BUILDING

Team development has been defined as "an inward look by the team at its own performance, behavior, and culture for the purposes of dropping out the dysfunctional behaviors and strengthening the functional ones." The team should become more cohesive, mutually supportive, and trusting, with increased individual potential and high expectations for task accomplishment.

The team-building effort (not new to the military) is normally the responsibility of the supervi-

sor in consultation with the third party or the consultant. Occasionally, the group may initiate the idea and take it to the boss; however, the important point is that the group and the supervisor be willing to accept the intervention. The normal length for the related meeting is about 3 days and is held off-site.

Usually, the consultant will interview the team members separately prior to the meeting. He tries to determine their perception of the group's problems as well as their own, how they believe the group functions, and what obstacles are in the way of improving the group's performance. He will attempt to reduce any anxiety about OE and gain the confidence of the members. The data gathered will vary with the collection method and the consultant's knowledge of the organization. He may have additional information gained from observation, attendance at staff meetings, etc. The data should include information on leadership methods, goals, objectives, and decision-making processes. He will also have an understanding of elements relating to organizational culture, such as trust, communication patterns, and interpersonal relationships. Finally, barriers to effective

TEAM BUILDING ACTIVITIES	
FAMILY GROUPS	SPECIAL GROUPS
Diagnostic Meetings Team Building Focused on:	Diagnostic Meetings Team Building Focused on:
- Task accomplishment, including problem solving, decision making, role clarification etc.	- Task accomplishment, especially special problems, role and goal clarification, resource utilization, etc.
- Building and maintaining effective interpersonal relationships, including boss subordinate relationships and peer relationships.	- Relationships, especially interpersonal or inter unit conflict, and underutilization of each other as resources.
- Understanding and managing group processes.	- Processes, especially communications, decision making, and task allocations.
- Role Analysis Technique for role clarification and definition.	- Role Analysis Technique for role clarification and definition.

Figure 1.

group functioning and task and related technical problems should have been surfaced. The data are sifted by the consultant, categorized into themes, and presented to the group at the beginning of the first meeting. The themes are posted on butcher paper and the team then proceeds to prioritize them. Members' expectations should be generated and time constraints should be considered in prioritizing the agenda items. Should more items be developed at this time which the group feels are relevant, they too are posted and given a priority ranking. Initially, the team avoids the frustrations associated with not meeting expectations and sets a tone for success. Care must be taken to ensure that there is a clear understanding in the variance of roles between the team leader as supervisor and the consultant. The team leader has the goals of improving the work of the team, setting priorities, and solving problems, while the consultant's job is to improve the performance of the group and the relationships of the members. The team leader must be explicit and insure his goals take priority and that he does not abdicate his position to the consultant during this early phase. The consultant helps the group solve its own problems without obviously influencing them. Though he assumes a passive role, the consultant has already begun his intervention by getting people to communicate and bringing hidden problems into the open. The manager carries the burden of working through the tentative agenda and posts the changes, deletions, and additions to additional butcher paper sheets as required. Upon completion of this activity, the consultant provides the first feedback of his observations with due consideration of the group's willingness to accept his comments.

The meetings continue for the remainder of the 3-day period. As important problems are discussed, alternatives for action are developed. The consultant takes an active part by providing conceptual inputs in the form of lectures or brief comments. He structures the situation so a particular problem or process is highlighted. He may interject a wide variety of exercises that teach techniques in group problem-solving and interpersonal relations. The resulting plan should specify actions to remedy identified problems and set target dates when each action will be started.

Team-building efforts are not always successful. The chance of success may be materially reduced if:

- The commander or team leader does not fully understand team building and inhibits the data collection efforts of the consultant.
- The leader of the group is using team building for accomplishing his own purposes, either organizational or personal.
- Team members are insecure due to external factors.
- The team-building process is used as a substitute for management action; i.e., allowing leaders to avoid an uncomfortable decision.
- The norms and goals of the consultant are too far removed from those of the group and he tries to improve them in the group.

The team-building effort is not completed, however, unless there is a firmly established schedule. The work that has gone into preparation and actual performance of the team effort will be lost if following sessions are not scheduled to review members' achievements periodically, based on their commitments during the session.

A MODEL OF FAMILY GROUP TEAM-BUILDING INTERVENTION IN THE MILITARY ENVIRONMENT

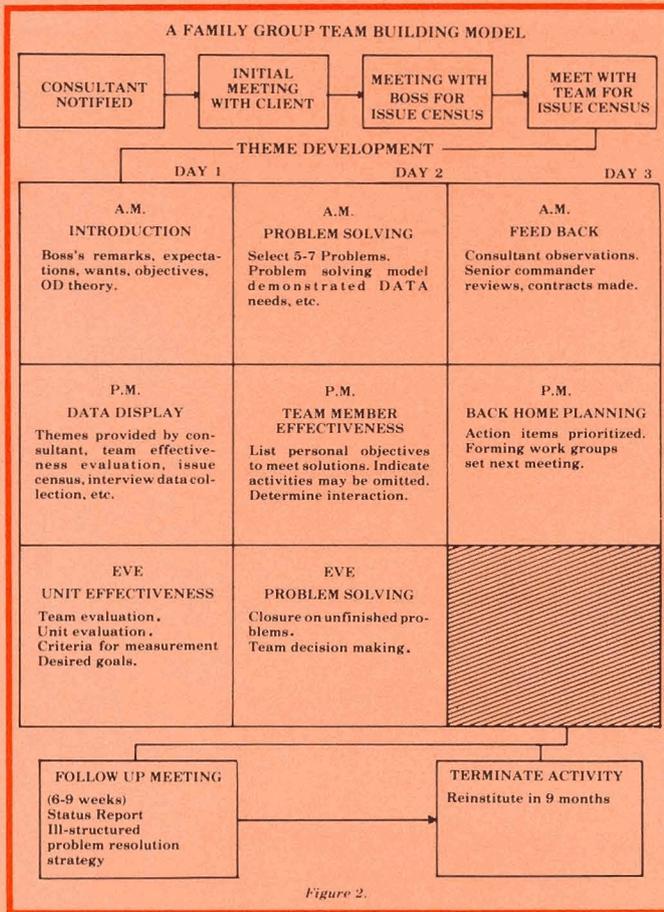
Design of the specific team-building intervention that will be employed in any given setting will depend on the desires of the commander and possibly be influenced by recommendations by his superiors, coupled with the consultant's estimate of the acceptance level of the team members.

An example of an appropriate intervention could be the desire of a new battalion commander to obtain early commitment of his staff to his goals. An equally acceptable unit for this intervention is the security section of the Nike Hercules launcher platoon. In each case, the commander or section chief wants to improve the performance of his "team" through obtaining a contract on their contribution to the overall goals of the section, thus advancing the organization or client. The consultant would normally be the installation or higher headquarters Organizational Effectiveness Staff Officer (OESO) and preferably from a unit outside the battalion.

The OESO will conduct his personal survey of each of the staff members and battalion commander and develop his themes as discussed previously. Specific items he might require from each member include a brief job description, what specific standing operating procedures he follows to meet normal suspense items, what other staff members could do for him to improve his effectiveness, and a statement as to his goals for the coming 6 months. If the consultant can establish sufficient trust, the member should be asked to identify the problems he sees in the organization. A questionnaire, coupled with a personal interview, would probably be appropriate.

The off-site location for the team-building effort may be as simple as one member's quarters, a classroom on the installation away from the battalion, or a unit work area. No interruptions must be allowed during the group meetings, since maximum concentration is required of each participant to obtain effective interpersonal exchange. For a typical 3-day schedule or model, see figure 2.

Some clarification of the model is appropriate. During the introduction, day one, the consultant will lead the team, which is unfamiliar with OE procedures, through a lecture on OE theory. He will then demonstrate with a freeing-type OE exercise to unfreeze the team and remove some of the normally high anxiety levels of the members. Using first names and even wearing civilian clothes to maximize trust and stimulate interpersonal exchange are encouraged. The team must address its



perceived effectiveness as soon as the themes are presented by the consultant, followed by an evaluation of the unit effectiveness. There may be an enormous distortion about what the unit's role should be. The team should determine whether this criterion for measurement of unit effectiveness is correctly applied.

After a night's sleep, the team should be ready to begin problem-solving. The manager or commander must be careful to limit the number of problems accepted by the team to permit closure within time constraints. During this period, the area of responsibility of each team member, starting with the superior, is carefully examined. It typically occurs that there is a great deal of overlap and that some areas appear to be no one's responsibility. These areas must be worked on until there is agreement. Some members may develop sharply changed views of their jobs, including the commander. It is necessary to resolve this conflict before problem-solving can continue.

Once the team reaches the point of making decisions, the distribution of power will become important. A variety of decision-making methods will work. There are five methods by which components of teams may be used in decision-making. These are:

1. One only. The commander makes the decision and announces it to the team.
2. One: one. The commander bases his decisions

in part on the suggestions of a single team member.

3. One: team. The commander bases his decisions largely on the suggestions he receives from all team members.

4. Majority. Majority vote decides the issue.

5. Consensus. Team shares ideas and suggestions and as a team reaches a decision through obtaining consensus.

The effective commander will use all decision-making methods as appropriate, and the team should be tasked by the consultant to estimate whether power is too diffused or too concentrated and what it recommends. This accomplished, the commander is then free to operate in this arena and achieve contractual closure in a much shorter time.

Feedback must not be overlooked. The consultant, who is a trained OESO, will make his observations about the team. He will comment on how they handled the tasks, the work that remains to be done, the unresolved problems still facing them, and some interpersonal observations. He is trained to be frank and not leave things unsaid. During the last hour of this period, the next higher commander may be invited to make comments. The walls are plastered with butcher paper, improvement plans are sketched out together with individual job descriptions. He may ask, "What have you decided?" and, if he has background in team effectiveness meetings, may generate some candid discussion.

Finally, the planning is accomplished to take all of the decisions back to the organization for implementation. The job is not complete, however, until a follow-up meeting is held in 6 to 9 weeks to determine progress on the action plans and devise new strategy for problems that were ill-defined or whose solutions were poorly structured.

As previously stated, the Family Group team-building effort described here is only one of many OE interventions. It has been well researched and does have direct bearing on the military environment. Team building is a task-oriented activity that focuses on real organizational issues with problems surfaced by members of the team. Like any other OE intervention, it will fail without adequate follow up and positive reinforcement by the team leader or commander. If the commander provides continued reinforcement of the Family Group, the effort will prove successful and highly profitable.

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Colonel Crater received his commission from the US Military Academy in 1957. He has completed several Branch courses and graduated from The Command and General Staff College. He holds a Masters Degree in Business Administration from Central Michigan University and is presently a student at the National War College. He has command experience in both Pershing and Nike Hercules units.





VIEW from the FIELD

CLEAR THE SKY!

Because of the potential for a North Korean surprise attack through the low-level approach routes leading into the 2d Infantry Division assembly areas, Major General David E. Grange, Jr. directed the 2d Battalion, 61st Air Defense Artillery, to deploy sufficient resources to deter this threat.

During the summer of 1978, the battalion executed this mission by deploying one Chaparral platoon, one Vulcan (SP) platoon, and two forward area alerting radars (FAAR) to provide the requisite air defense protection to the vital Camp Casey and Camp Hovey complex. All of these systems were deployed at positions that overlooked likely avenues of approach.

The Vulcan platoon responsibility alternates between A Battery and B Battery and provides defense to the Division Headquarters, the Division Support Command, and the assembly areas for the 1st and 2d Brigades.

The Chaparral platoon from either C or D Battery provides the defense and the mix needed for effective air defense coverage of the probable low-altitude, attack routes leading into the Camp Casey/Hovey complex. These units rotate mission responsibility on a weekly basis.

The FAAR platoon from the battalion's Headquarters Battery strategically employs two FAAR units so as to provide the Chaparral and Vulcan platoons a reliable source of target data and early warning information. The FAAR unit's early warning capabilities are such that it is possible for

them to pick up targets originating from the north and flying at very low altitudes.

There have been numerous logistical problems that had to be resolved to insure smooth operation of the mission. Provisions established for maintaining units in the field on a 24-hour basis included the full spectrum of the supply system necessary to maintain each unit's operational readiness. Additionally, all supply requirements were weighed against fund limitations.

The sites of the Casey/Hovey defense have become more permanent with the addition of better living quarters and firing positions. Also, two hot meals — breakfast and dinner — are provided daily to the soldiers manning the Chaparral sites.

It has become common practice to designate another platoon within the battery as the employed unit's support element. It is tasked to provide whatever personnel or logistical support is required by the platoon in the field. The support platoon has personnel on call 24 hours a day. In addition, the battery maintenance section has one motor and one system mechanic on call to provide support to the unit in case of unexpected emergencies.

The Casey/Hovey defense is a fully active air defense mission and it has been tested on numerous occasions. On 13 September 1978, the US Air Forces in Korea conducted a simulated air attack against high-priority targets near the Division Headquarters.

The initial nature of the attack was high-altitude



The 2d Infantry Division's 2d Battalion, 61st Air Defense Artillery, mans operationally ready sites surrounding the Division headquarters 24 hours a day.

approaches from north to south. On the aircrafts' inbound and outbound attack runs the Chaparral systems were able to engage and subsequently score simulated kills on many of the targets. As the aircraft flew into the effective range of the Vulcans deployed around the Casey area, these air defense systems were able to attain numerous simulated hits on the attacking aircraft.

Noting the capabilities of the Vulcan and Chaparral systems, it was determined that all aircraft would have been destroyed or averted from their attack profiles. During other similar tests, the Casey/Hovey defense demonstrated that this air defense mission is a valuable asset to the defense of the forward deployed 2d Infantry Division.

After one such exercise, members of D Battery were asked if the mission meant anything to them. "Seeing the aircraft performing operations against Camp Casey makes us realize just how close to the DMZ we really are," said Sergeant John Morquez. "It would scare the hell out of me if these planes ever dropped anything, but at least I would have the chance to flame some," Specialist Four Leonard Mortion said.

The morale of the troops is high. The motivation and desire to excel while involved with air sorties or daily activities are achieved through each individual's realization that the air threat exists and could become reality at any instant.

As Major General Grange said, "The 2d Battalion, 61st ADA, is the only forward area weapons air defense unit in the US Army deployed for combat."

As operations continued, plans were made and

implemented to winterize the nine sites to provide protective shelters to combat the Korean winter. The Division's combat engineer battalion leveled each site and constructed tent frames that support general purpose small tents with winter liners. Each site is heated by Yukon stoves to protect against the subzero temperatures experienced during the Korean winter, both night and day.

The sites are also equipped with an ingenious electrical lighting system. The material needed was WD-1 wire, the slave receptacle tied into the vehicle, and a low-wattage light bulb that draws little current from the vehicle's batteries. The winterization of all sites was completed during early November 1978.

Safety is a prime concern, particularly during winter operations, and precautionary measures were taken to insure that fire and carbon monoxide did not cause loss of life or Government equipment.

Radio checks with the battalion tactical operations center are conducted regularly to check communications and update operational status. In addition, the platoon leader establishes radio communications between Vulcan and Chaparral command posts to maintain constant awareness of the overall mission. As a further aid to communications, the Division's signal battalion has installed a hot-loop radio system used by the Vulcan units to enable their command posts to maintain constant communication with each squad. This hot loop consists of communications wire attached to AN/GRA-39s at each site. The signal battalion



An important part of the 2d Battalion, 61st Air Defense Artillery, are the Korean Augmentees to the US Army, or KATUSA. The KATUSAs have been assigned to the 2d Infantry Division's units for 29 years. They serve within every unit of the division, and their contributions to the operational capability of the unit are important. Here, a KATUSA readies his Vulcan to engage a ballistic aerial target system during a live-fire exercise.

also installed a commercial telephone at the Vulcan command post, which enables the Vulcan platoon leader to communicate directly with battalion headquarters or his battery orderly room.

Alternate means of communications are presently under scrutiny for the Chaparral platoon but, due to geographic location of their sites, a hot-loop or commercial telephone is impractical.

Communications problems occur despite efforts to stabilize systems. These problems are addressed by the platoon leader, and a great deal of responsibility is placed on the NCOs commanding squads to insure that tactical and administrative systems are operational.

The high degree of visibility afforded the 2d Battalion, 61st Air Defense Artillery, during the performance of this critical mission

all members of the 2d Battalion, 61st Air Defense Artillery.

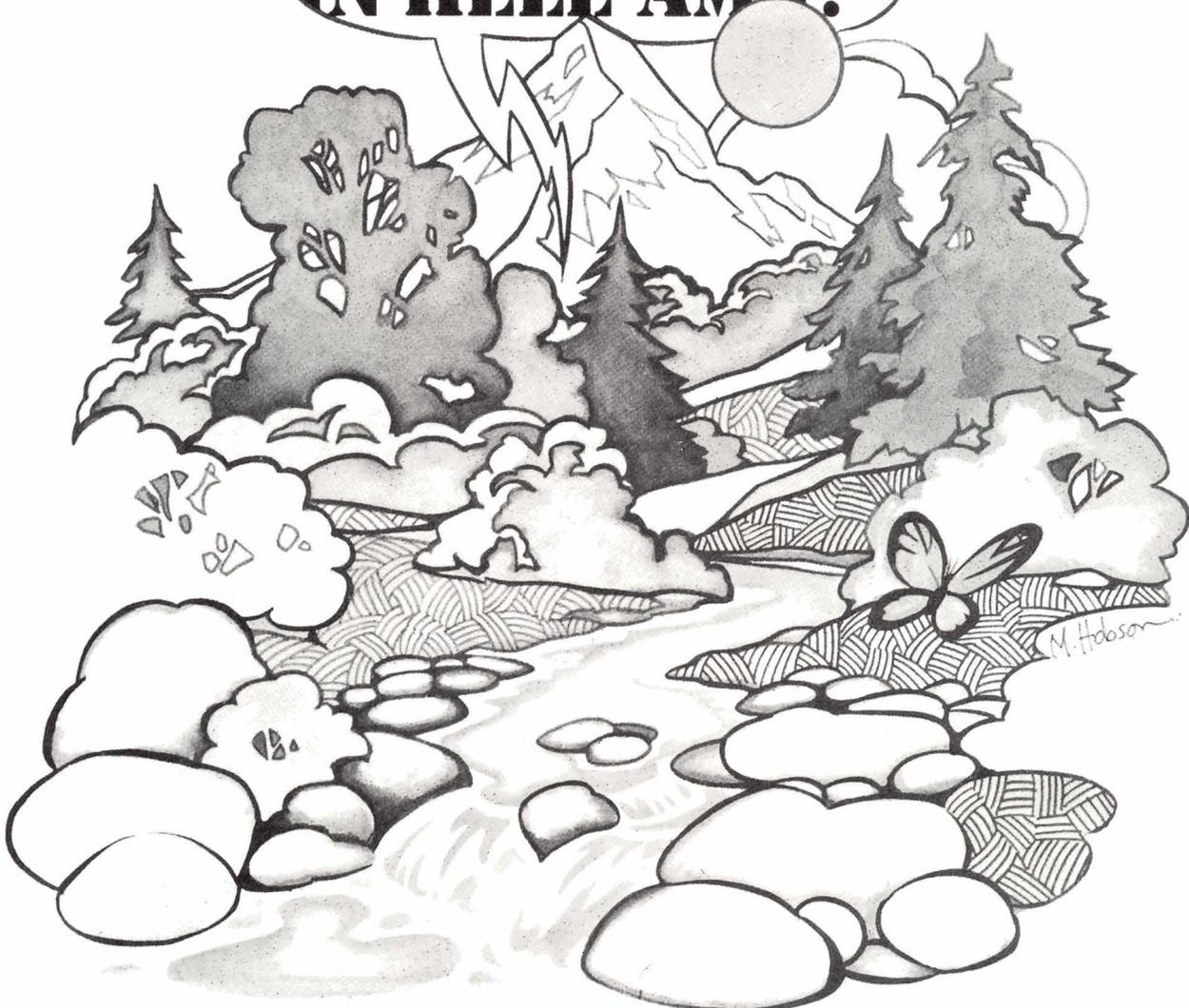
"Clear the Sky!"



Live-fire training further enhances operational capabilities.

This article was prepared by the staff of the 2d Battalion, 61st Air Defense Artillery, and the Public Affairs Office, 2d Infantry Division.

**"THIS IS TANGO
TWO-FOUR!... WHERE
IN HELL AM I?"**



*Reprinted With Permission
of
Hughes Aircraft Company*

Not an Army endorsement of the product involved

Tactical battlefield commanders are getting a big boost from an innovative system that answers the question... "Where am I?"

Rifle company Tango Two-Four has just fought off the second attack of the afternoon. They still hold the high ground. From the ridge the captain sees the enemy deploy for yet another attack. He glasses the valley beyond. To the left, behind the screen of trees, there's movement. Tanks lumber into focus. Theirs.

Checking map coordinates he radios headquarters. "Tango Eight-Niner. This is Tango Two-Four. Request artillery—suppression fire. Target Fox-Niner. Grid: India. Set: Bravo Golf Papa. Got it? Okay. Target number two. Tanks. Seven—maybe more. Grid: Papa. Set: Mike Lima Echo. Request air strike. Got it? Okay. We've taken seven wounded. Request medvac. Over..!"

With these explicit and, one would hope, accurate directions from the beleaguered company, headquarters will relay the data to air-to-ground support squadrons and the artillery fire direction center. Medical air evacuation will also be alerted.

Shortly a barrage will thunder in, routing the enemy massing below. *Or will it?* An attack squadron will soon scream overhead, driving the tanks to cover. *Or will it?* Any minute now, a medvac chopper will whirl in, taking aboard the wounded. *Or will it?*

The life or death import of the answers to these questions pivots on a factor as simple as it is crucial: whether Tango Two-Four really knows just where in the hell it is. It had better. Because an error in positioning by as slim a margin as 50 or so meters could make the company's predicament seem like a church picnic by comparison. Their own artillery could make them dance to the rhythm of enemy applause.

Position and direction—without these data the battlefield commander, the force element in the field, and the support echelons are literally playing blind-man's bluff. With disaster as the forfeit.

Position location is of such priority in tactical operations that it's common practice to survey conflict arenas before or even during actual battle. Employing standard surveying techniques, parties systematically lay out the area to establish range coordinates, fire zones, landmark locations and other key tactical points. The human propensity for error and the stress of working in a hostile environment make it easy to understand why survey measurements are not always accurate. Imagine, then, the probability of catastrophic error in situations wherein no surveys were conducted at all. Add to this chaotic scenario such other woes as darkness, bad weather and broken terrain and one gets a bleak composite of some of

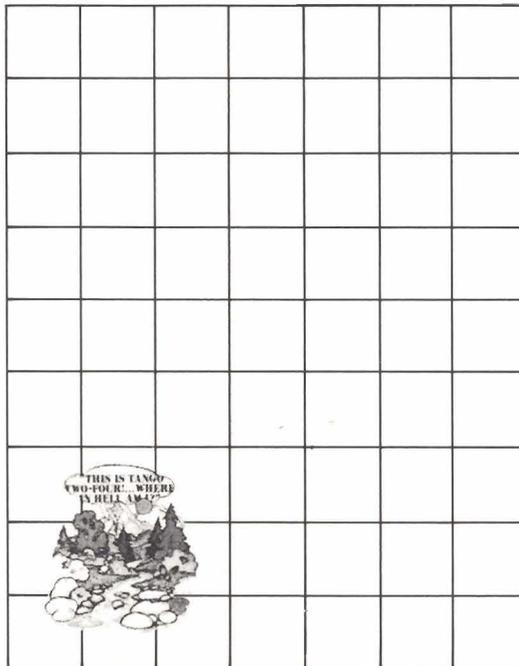
the problems that have plagued field and force commanders since war became a science. Until recently, the field commander thrust into a situation like this had no recourse but to radio command headquarters for positioning data that would eventually get him where he was supposed to be in the first place.

And herein lies some other problems he must reckon with: overburdened radio nets (units in similar straits are also requesting information); the possibility of misunderstanding voice communications (bracketing mortar

fire, for example, is not always conducive to precise enunciation); and perhaps the greatest hazard of all, clear voice susceptibility to enemy eavesdroppers, spoofers and jammers (voice communications are very interceptable—an inadvertent surrender of information and location data that could literally be a "dead giveaway").

Reporting, receiving, map referencing—all this takes time and a lot of nervous sweat. And in the complex and fluid milieu of modern military operations, time consumption and precise knowledge of troop dispositions can be as important as superiority in numbers and firepower.

Soon, U.S. battlefield commanders will possess an automated system that could dispel much of the confusion that beset their predecessors. ▶





The PLRS user readout module is the "business end" of the man-carried line of sight transceiver. The lightweight system sends signal bursts to a visual display at the PLRS master unit. Altitudes to 50,000 feet are automatically measured, enhancing the unit's practicality when used aboard aircraft.

Called a Position Location Reporting System (PLRS), this electronic network provides all elements engaged in battle operations with instantaneous accurate knowledge of where each unit is in relation to the others—regardless of weather, darkness or difficult terrain.

PLRS consists of a transportable master unit and up to 370 "user" units per master unit. The user unit, weighing less than 17 pounds in a manpack configuration, can conveniently be carried by a soldier or easily adapted for mounting in ground vehicles or aircraft.

The unit is as simple to operate as it is easy to transport. For example, in order for a platoon to provide the battlefield commander with its precise location, the user unit operator has only to turn on the power to his PLRS unit. Electronically linked to the master unit, this manpack user-in-the-field device transmits bursts of data at selected intervals several times per minute. The burst transmissions are also received by other units within range. The time of arrival of the

transmission is measured by each of the units receiving the burst; this data, in turn, is automatically relayed to the master unit.

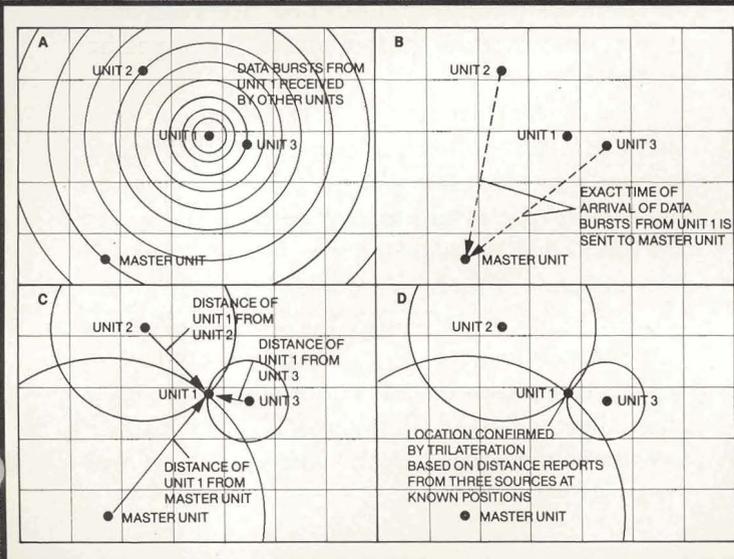
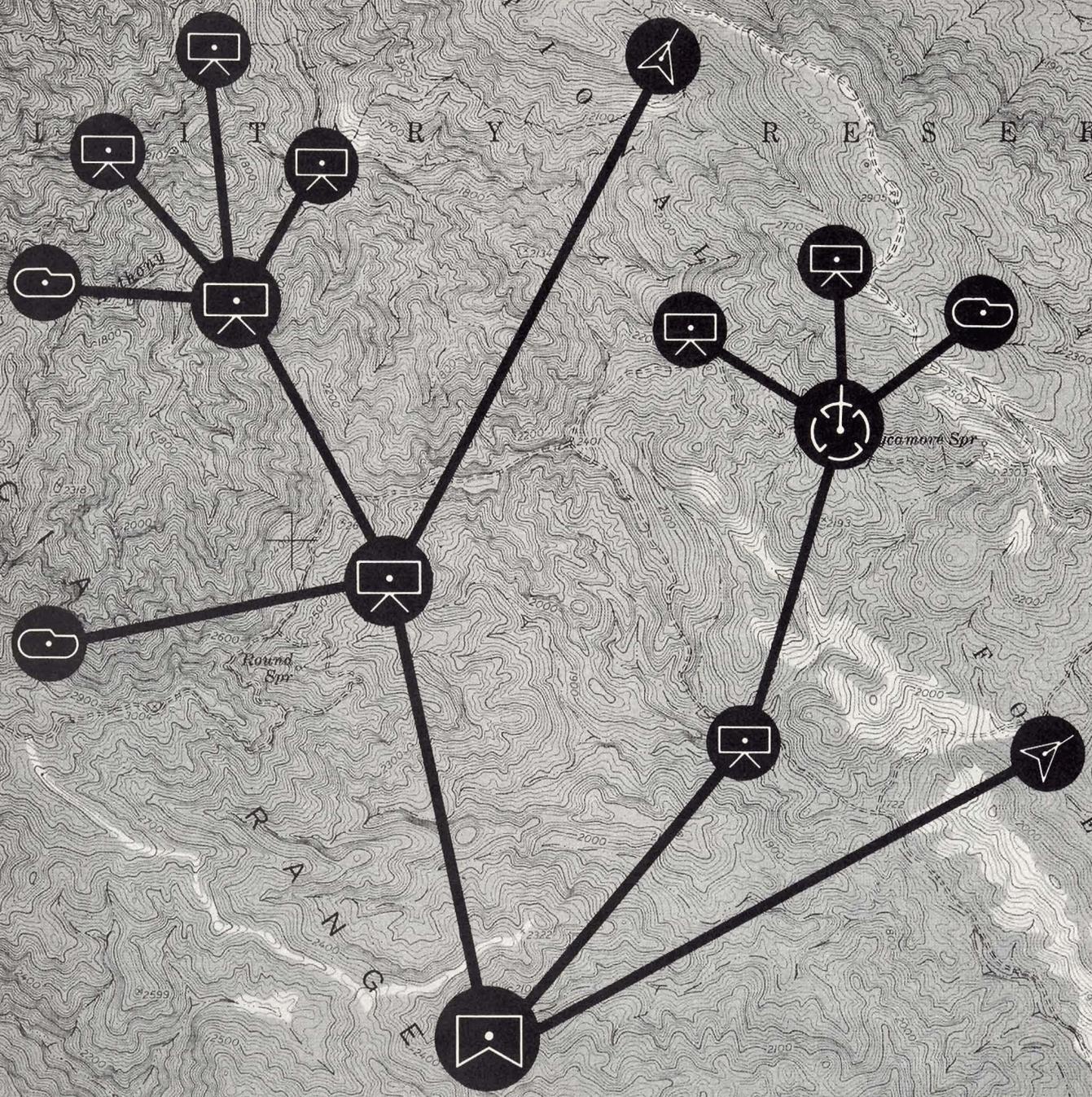
The master unit serves as the timing reference of the system. Its computer "knows" the exact time the pulse left a user unit. Based on time of arrival data, it calculates the precise distance from the master unit to the platoon.

By obtaining time of arrival reports from at least three units, the master unit uses trilateration to determine the position of each unit in relation to each other and to the master unit. By way of analogy, the links between the master unit and the force elements in the field can be likened to an electronic web comprised of precisely measured segments. Even though these segments may be constantly changing—reflective of the mobility of troop movement—the master unit can accurately track and record their position within 15 meters. Helicopters in flight are generally locatable within 25 meters. Units in fixed locations can be position-surveyed to an accuracy of better than five meters.

The PLRS master unit can, in fact, track hundreds of user units simultaneously—a capability that enables the system to support a division-sized network that covers several hundred square miles, regardless of the unit mix of manpack, vehicles and aircraft.

Relay routing between units and network management are automatically performed by the computer in the master unit, which not only knows the location of all units but their relationship to other units as well. The multiple relay feature provides complete area coverage; it also overcomes difficult non-line-of-sight terrain conditions. In the event a user unit is knocked out, the computer automatically reroutes relay paths and restructures the network so that the other units are not affected. ➤

U.S. military command and control centers will enjoy a new dimension of strategic overview of vast battle areas via the Position Location Reporting System developed by Hughes Aircraft Company. Coverage of a battlefield can be achieved by automatic relays between user units in the field and the master unit where the position of every user is displayed. This data is then transmitted to remote command and control centers for decision-making. (Symbols shown are identical to those appearing on master unit display.)



A simplified version of the way PLR locates units in the field is depicted at left. To determine its location, a user unit sends out a burst of data which is received by the master unit as well as several other field units [A]. Each unit receiving the burst sends to the master unit the exact time that the burst was received at its location [B]. These time figures can be translated into distance, thus placing the unit sending the burst somewhere on a circle whose radius is the calculated distance [C]. Knowing where these distance circles intersect from at least three points establishes the exact location of the sending unit [D].

- 
 Aircraft
- 
 Armored
- 
 Helicopter
- 
 Infantry
- 
 Master Unit

PLRS continually tracks, identifies and displays on a real-time basis all unit locations to the master unit. And here's where it all comes together. The master unit is the centralized data management point of the entire PLRS network—a computerized center that synthesizes all cryptographically secure data streaming in from field user units and instantly processes the information into a constantly updated display of all troop deployments. Not only is the constantly updated picture kept crystal clear for the tactical commander, it can also be transmitted to remote command and control centers for strategic decision-making. The flexibility of the system also permits integration with command and control systems now in use or envisioned by the Marine Corps and the Army.

Each user unit has a hand-held readout device that allows the operator to exchange various kinds of digital data with the master unit. These exchanges include fixed and variable formatted



The situation is well in hand when infantry communications personnel are equipped with the PLRS user unit in the manpack configuration. The heart of the unit is a low-power microprocessor. The manpack package weighs less than 17 pounds, including its 24-hour battery.

messages with over 600 coded inquiries, thereby saving much of the time standard radio inquiries would normally require.

For example, if the user in the field wishes to know his precise location, he simply enters a message on the hand-held device, which then transmits it to the master unit. His position coordinates are immediately displayed on his readout device. If he needs to know the location of, say, another platoon, he merely keys in a preprogrammed, two-digit alphanumeric message. The bearing and range of that platoon is immediately displayed.

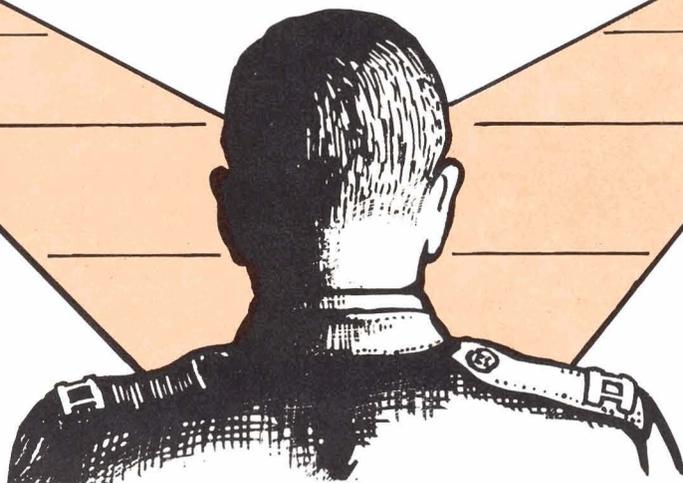
The operator can also query the master unit for status reports, medvac requests, the last known position of inactive user units, and range and bearings to landmarks, targets or other designated units. Imparting even more communication flexibility is the unit adapted to airborne use. A helicopter pilot so equipped can navigate to any one of dozens of selectable landing zones, to a moving ground unit, or even other airborne aircraft.

PLRS, developed by Hughes Aircraft Company, is extremely resistant to jamming. Engineers made PLRS resistant to a wide range of enemy jammer or spoofing techniques by integrating into the system the capacity for synchronous time-division multiple-access transmissions. Spread-spectrum waveform and frequency-hopping are other PLRS measures designed to thwart the enemy. PLRS communication integrity is assured even should a unit fall into enemy hands. The system's integrated cryptographic security prevents use by anyone who does not possess the current cryptographic code. In addition, access to the master unit data base is closely controlled; users can only acquire information appropriate to their specific missions.

Thus, even in the most fluid battlefield situation and despite extremes of weather and terrain, PLRS will provide the tight realtime coordination required in the combined arms battle arena. For the first time the commander in the field will have accurate, timely location data relevant to all force elements—without taxing already overburdened radio nets. Simply put, PLRS will help answer the questions field commanders and force elements have asked throughout military history: "Where in the hell am I? And where in blue blazes are you?" ✱

ETHICS

VALUES



WHICH WAY?

By Chaplains

(LTC) David J. Woehr, (MAJ) Anthony Longval, Jr.,
and

(CPT) Paul W. Morgan, Jr.

Today, the whole discussion of ethics in the military profession is central to the overall leadership evaluation. The military community has been recently exposed to the US Army War College's 1970 "Study on Military Professionalism" and the 1977 "Analysis of Professional Military Ethics" by then LTC Melville A. Drisko, Jr. In addition, a recent ethical study made at Fort Carson this year will soon be released, bringing to the community more insight into this aspect of leadership. The ethical aspects of leadership are being examined at all levels of military schooling and training in this post-Vietnam era. What this all means is that the Army is taking a very close look at itself and its members in the areas of values and ethical issues.

Such an analysis usually lends itself to a myriad of definitions and descriptions. For our purposes, one appropriate description of values comes from *Values and Teaching*, by Roth, Harmin, and Simon: "Out of experiences may come certain general guides to behavior. These guides tend to give direction to life and may be called 'values'." Simply stated, we experience our values as those determiners within us that influence our choices in

life and decide our behavior. Freely chosen, these values take root in our lives and become our interior attitudes or dispositions, our relationship to ourselves and the world around us. The values systematize and become the "ought" in our lives. Thus, ethics for our purpose can be defined as "the study of what ought to be, so far as this depends upon the voluntary action of individuals."

Issues around ethical decisions are inextricably tied to self-concept, self-esteem, and integrity — all aspects of the human personality. Therefore, it should not be a surprise to a leader, regardless of rank, that he faces not only mission accomplishment and welfare of the troops, but faces himself as well.

In the military, much of the confusion around values stems from the lack of awareness of personal values and institutional values as they are manifested in expression and in behavior. One may become conscious of these values only when they are in conflict with each other or when the expressed value conflicts with the behavioral value. In other words, awareness often takes place in the experience of the clash. An issue that arises today and creates stress in the leader's experience is the

question, "Is the institution teaching one set of values but in fact rewarding another?"

A values exercise, presented by a group of active duty personnel in a graduate Values Clarification Course, illustrates such conflicts that could arise on the job. The group presented seven related skits dealing with the preparation and reporting of the Army's monthly Unit Status Report (USR). After the completion of each skit, the class members were called upon to list their observations as to values maintained, values compromised, and values in conflict. The skits, while presented as hypothetical vignettes, were based upon an existential reality pertaining to the reporting of unit readiness. The results of the values exercise were striking. Throughout the exercise there were noticeable conflicts in the following values: (1) Honesty vs. Loyalty; (2) Honesty vs. Security; (3) Honesty vs. Integrity; and (4) Friendship vs. Hypocrisy. What was most revealing about the exercise was the fact that those members of the class in leadership positions within the military tended to identify with those holding like positions in the skits and subsequently gave favorable ratings to those who compromised their values.

The Drisko study appears to corroborate this tension from another angle in that it stated that out of 2,215 officers from 10 different CONUS installations, as well as proportionate representation of FORSCOM and TRADOC, 63 percent felt ethical behavior went unrewarded. It further revealed a strong need for a positive reinforcement of ethical behavior. This ethical behavior appears to be that which has always been expressed by the institution and which the individual has accepted when he entered military service, but which in practice he finds constantly in question.

Even though the pressure to compromise is present, there still remains much to be said for the man whose loyalties go beyond himself to the principle of what is right and wrong, those values that the institution holds before him as its highest ethic. Being able to adhere to those values in the face of adversity and the temptation for ethical compromise not only helps the institution to live up to its ethical pronouncements, but helps the individual maintain his integrity.

"Man is, and always remains, capable of resisting and braving even the worst of conditions. A person is free to shape his own character and is responsible for what he may have made of himself." This critique by Gerald F. Kreyche, Chairman of the Department of Philosophy of DePaul University, on The Will to Meaning by Dr. Victor Frankl, can serve to stimulate our thinking on the current resurgence of values and ethical thinking. Dr. Frankl, as a young student of psychiatry in Vienna, was swept up in the Holocaust and became prisoner 119,104 in dreaded Auschwitz. Out of his experiences in Auschwitz, Frankl discovered

that each person, whatever his circumstances, could preserve his emotional freedom and independence of mind. One of Frankl's basic concepts, purified through the hell of Auschwitz, is simply stated, "that everything can be taken from a human being except his attitude to choose his own way in any given set of circumstances." Then, wherever man walks, in whatever situation he may find himself, he takes with him the freedom whereby he can choose his own way of responding to his external environment, that is, his ethical system.

The study of ethical and value systems is not simple, for one encounters a milieu of complex approaches in trying to find what one ought to do. Even without surveying the whole history of ethics from the time of the Greeks to the modern day, one still is faced today with different ethical positions. Many have heard of situational ethics, utilitarianism, and even absolutism with all levels of standards (codes, laws, regulations, directives). In military leadership, leaders are encouraged to be aware of the different ethical stances in society and in the military organization itself. The object is to keep professional standards high for the purpose of mission accomplishment and troop welfare. In some ways, however, one ethical dimension is often forgotten: the spiritual or religious value.

The humanistic psychologist calls man into the freedom to be; the theologian affirms this and adds the courage to be. We speak of the courage of our forefathers in this land and across the seas. However, after paying homage to the strength that flowed from their sense of humanistic values and desire for freedom and fair play, we forget that for many these values had their foundation in the religious or spiritual dimension. In this country, itself, the Judeo-Christian religion lays at the root of freedom, justice, equality, and dignity. It played a major role, though not the only role, in the forming of our democratic system. The Judeo-Christian religion formed a base upon which our society set standards for behavior. The American community pulled it from the law of Moses and teachings of Jesus Christ. America was not alone in the use of this source. Other nations, especially in the West, were similarly formed. The same might be said of Eastern religions and philosophies and their impact on their cultures.

Secular ethics, by its practicality and its "this world" approach, speaks indeed to our existential condition. It is valuable to understand how an individual internalizes these values both to form his character and to provide himself with a source of inner strength and stability during times of crisis. This inner strength becomes an asset both to the leader and the follower. But what of the time when

man's condition throws him back upon himself and secular ethics become limited? What of the time when what is right and wrong in the eyes of a secular standard offers no stability, and where one's situation changes to the degree that the secular ethics are insufficient to meet a new challenge? Can we disregard the spiritual dimension, whether this dimension is narrowly defined as an organized religious view or as a spiritual belief in something outside of man's capabilities and behavior — that which is beyond?

Many of the men who returned from Vietnam prisons may not agree with such an oversight on the part of many leaders. Major Roger Rowe faced the stress, the void, and the sheer desperation of a POW camp. He stated, "No training prepared me for what I faced in POW Camp. I had no rank, no position, no title; I was an animal. What sustained me were three things that couldn't be taken from me — my beliefs, loyalties, and faith."

This is not to say that the spiritual dimension in one's values is to necessarily be equated with a particular religion. Many Christian chaplains have often made the error in teaching and discussing ethics and, in doing so, set up a process whereby the spiritual dimension was cast out or disregarded by the listener. Ethics in general, even spiritually based ethics, is not simply synonymous with a denominational doctrine. It is a set of values and standards which are based on that source of power outside of human strength. They form stability and give guidance when human will-power becomes human weakness.

This is not to say that spiritually based ethics come into play only when man is faced with such catastrophies like Frankel's concentration camp and Rowe's Vietnam prison camp experiences. Even in peacetime and within the secure boundaries of one's homeland, people face that risk to meaning, that compromise of integrity which can threaten their self-images and identities. And for many people this can come at different stages and levels and in different situations. Chaplain (BG) Kermit Johnson, in his article, "Ethical Issues of Military Leadership," stated that, "Before being sentenced for his Watergate role, Jeb Stuart Magruder testified: 'Somewhere between my ambition and my ideals, I lost my ethical compass. I found myself on a path that had not been intended for me by my parents or my principles or by my own ethical instincts.'" But with all dimensions of ethics considered and all resources of ethics studied, decisions can be made that comfort and stabilize so that one can choose his or her way.

Having said all of this, who is responsible for setting the moral tone for the command? All too

often, the task is given to the Chaplain to be the command's "Moral Policeman."

While the Chaplain may be a central resource for leaders in the area of ethical awareness, the responsibility of guiding troops in every aspect of leadership still remains with those who command. The Chaplain, on many occasions, is the confidant of the leader when he is called upon to make difficult decisions, decisions that affect his own integrity, the welfare of the men serving under him, and his unit's readiness to serve the interests of the nation.

The Chaplain is there to listen, to encourage, and to support a leader as he heeds his conscience in making his decisions.

He assists the leadership in creating a climate in the command that is more aware of the need for the inner development of individuals and where personnel are instructed, encouraged, and rewarded for ethical behavior. This can be done through his counseling, his teaching, his sharing of conditions with the command, and his conducting of religious services. The Chaplain thus adds spiritual substance to ethical consciousness.

Alvin Toffler, in his book, "Future Shock," expressed the danger in the lack of a substantive ethical base in the life of man. He stated, "If there is no vital center to man that is dynamic and unique that acts in terms of higher standards, then all expressions are equally valid." This should be everyone's concern — that this "Vital Center" within man be recognized, developed, and utilized as a guiding source in life and in making decisions. Therefore, all dimensions, including the spiritual, should be addressed in developing a foundation for leadership.



ABOUT THE AUTHORS

Chaplain Woehr is a Presbyterian from Philadelphia, Pennsylvania. He attended the Princeton Theological Seminary, where he attained his Master of Divinity Degree and later attended the San Francisco Theological Seminary where he earned his Doctorate of Ministry.

Chaplain Longval is from Tampa, Florida. He attended the Southwestern Baptist Theological Seminary at Fort Worth, Texas, and holds a Masters Degree in Religious Education. He also holds a Master of Arts in Marriage and Family Counseling from Azusa Pacific College, California.

Chaplain Morgan's home is the Panama Canal Zone. A member of the Disciples of Christ, he obtained a Bachelor of Arts Degree at Florida State University and a Master of Divinity Degree at Vanderbilt University.

The country of Kuwait lies at the northwest corner of the Arabian (Persian) Gulf. Its 7,450 square miles are bounded by Iraq on the north and west, the Arabian Gulf on the east, and Saudi Arabia on the south.

It's 1130, 14 September 1978 at Mc Gregor Range, New Mexico, as the 4th Kuwait Battery's Improved Hawk Assault Fire Unit fires its missile for certification. This shot concludes a 15-month intensified Improved Hawk collective (package) training program for Kuwait, which ended in a high degree of success. Instructor personnel of the 3d ADA Training Battalion, 1st ADA Training Brigade, and the Improved Hawk Training Detachment (IHTD) (Kuwait/Jordan) must be credited with this success.

Collective training of the four Kuwait Improved Hawk batteries at Fort Bliss, Texas, extended from 5 July 1977 to 15 September 1978. The IHTD was organized on 23 June 1977 under The School Brigade and attached to the 5th Battalion, 57th Air Defense Artillery, an Improved Hawk battalion, for administration and logistic support. The mission of the IHTD was to provide collective training to 4 Kuwait Air Defense Force and 11 Royal Jordan Air Force Improved Hawk batteries.

Personnel assigned to the IHTD were highly qualified in their military occupational specialties (MOS) and were well experienced and site seasoned from serving at Improved Hawk tactical sites. The command and training officer positions were filled with personnel who were tactical control officer (TCO) qualified in either Korea or Germany and had extensive experience with the Improved Hawk system. Most of the detachment members were stabilized on station for the duration of the program to insure continuity in the training and to capitalize on the experience each had gained in working previously with Allied soldiers.

Training of the Kuwaiti and Jordanian personnel ran concurrently throughout the program and during May and June 1978 reached a peak of five batteries on station at one time. One Kuwaiti and one Jordanian battery were in their initial training phase, one Jordanian battery was in its collective training phase, and one Kuwaiti battery and one Jordanian battery were undergoing certification firing exercises.

Administrative and logistical support for the Kuwaiti and Jordanian personnel was handled by The School Brigade's Allied Student Battalion. Disciplinary jurisdiction rested with the liaison officers from Jordan and Kuwait and the commanders of units undergoing collective training.

Kuwaiti personnel averaged 2½ years in the US prior to starting the Improved Hawk collective training program. All attended the Defense Language Institute for English language training, followed by a contractor-operated school at Fort Bliss for training in basic mechanical skills, basic



MAJOR JOE C

electronics, and additional English usage prior to attending the regular Air Defense School courses. Upon completion of the regular courses, they reported for collective training as a unit.

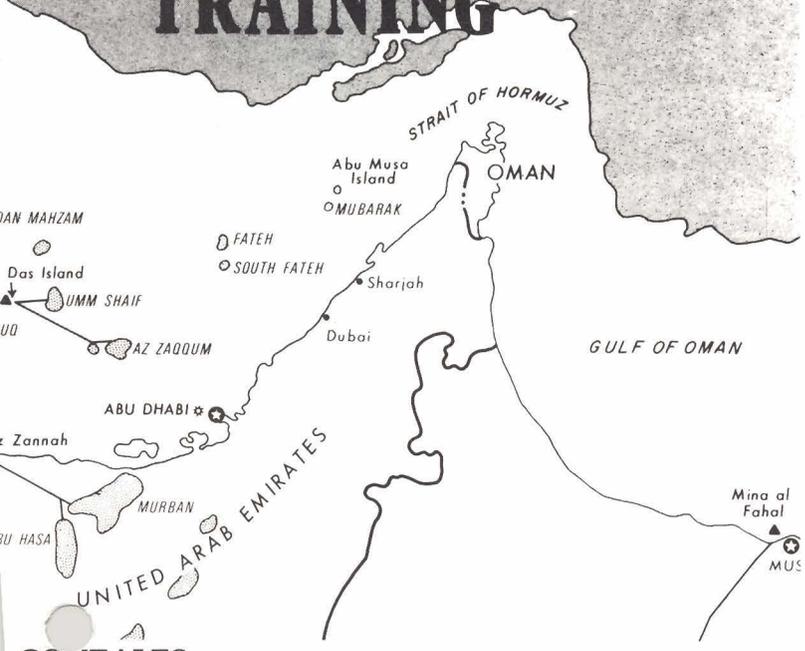
Each Kuwaiti battery was trained on its own set of new Improved Hawk equipment, which was issued to the IHTD prior to the start of each training cycle. The training cycle lasted 20 weeks, with the first 10 weeks devoted to operator training for the 16Es and 16Ds, conducted by instructor personnel of the 3d Training Battalion. The second 10 weeks of the cycle were devoted to collective training of the entire battery by the IHTD itself. The first 8 weeks of collective training were conducted at Fort Bliss and the last 2 weeks were devoted to range training and certification firing. Upon completion of the collective training phase, the battery equipment was returned to the Raytheon Company for refurbishment as needed and shipment to Kuwait.

Batteries 1 and 3 were trained in the standard or "square" Improved Hawk configuration and each fired two missiles for their certification firing exercise. Batteries 2 and 4, each with an improved platoon command post (IPCP), were trained as two

The country of Kuwait lies at the northwest corner of the Arabian (Persian) Gulf. Its 7,450 square miles are bounded by Iraq on the north and west, the Arabian Gulf on the east, and Saudi Arabia on the south.

kuwait HAWK

COLLECTIVE TRAINING



separate fire units. Two missiles were fired by each unit for its certification firing, one from the IPCC and one from the improved battery control central (IBCC).

Each battery commander was directly responsible for control of his battery throughout the 20-week training cycle, to include discipline, appearance, and attendance at scheduled training. Each battery averaged approximately 90 personnel at the start of the second 10 weeks of training, including officers, warrant officers, operators, generator operators and mechanics, simulator operators; and all required 24-series maintenance MOS.

The first battery trained included the battalion staff officers and the battalion commander designee. These personnel not only observed the training of the battery but also observed their counterparts in the actual performance of their duties at the 5th Battalion, 57th Air Defense Artillery.

First echelon maintenance and troubleshooting were performed by Kuwaiti operators and mechanics under supervision of the IHTD instructors. Direct and general support maintenance for Improved Hawk-peculiar equipment was performed by Raytheon technicians assigned to the

particular battery set of equipment and by other technicians from Raytheon Facilities in El Paso, Texas. The technicians assigned to the battery set stayed with the equipment for the duration of the 20-week training cycle and deployed with that particular set to Kuwait. Direct and general support maintenance for other than Improved Hawk-peculiar equipment was performed by various support agencies at Fort Bliss.

To insure Improved Hawk system availability for training, Kuwait kept an entire battery set of float equipment at the Raytheon Facilities in El Paso, including an adequate authorized stockage list and prescribed load list (ASL/PLL). To insure that strict control was maintained on the float equipment, authority for issue and use was retained by Kuwait through the Project Manager's Office at the Missile Readiness Command (MIRCOM), Redstone Arsenal, Alabama. Although equipment problems were experienced, they were insignificant, since equipment availability for training was maintained at a high level throughout the training program. No training time was lost because of equipment malfunctions. The use of one particular major end-item from the float equipment was required only twice during the entire training program.

The systems were operated by commercial power during the first 10 weeks of the program and by standard 60-kw generators during the collective training phase. Due to the use of commercial power during the initial phase, the systems remained stable with little or no voltage fluctuations, thereby sustaining equipment availability for training. By using generators during the collective training phase, the trainees were exposed to the problems associated with generator output and its effect on the system, thus they learned the importance of keeping the generators in top operating condition. The trainee generator operators and mechanics gained hands-on experience in operating and maintaining the equipment by actually performing all required routine and periodic checks and adjustments under close supervision of instructor personnel. Additional training for the mechanics was provided by having them observe direct and general support maintenance at the Director of Maintenance generator shops at Fort Bliss. They not only observed the replacement of defective parts but also saw what the generators looked like when completely disassembled for rebuild.

Upon activation of the IHTD, and prior to the trainees reporting for training, the all-important task of providing the cadre personnel with a culture briefing was undertaken. Since literature on dealing specifically with Kuwaiti and Jordanian soldiers was nonexistent, help was sought and acquired from their respective liaison officers at Fort Bliss. Both country representatives briefed the detachment personnel on cultural customs, traditions, and life styles.



Dealing with foreign soldiers will always pose a number of interesting and challenging situations that are inherent in cultural exchanges. Because of the limited time available to train the entire battery, the IHTD personnel had to adjust quickly to the psychology and needs peculiar to the trainees. Cultural and religious customs had to be taken into account not only on a day-to-day basis but also as an impact on long-range scheduling of training. A good example of the latter is their observance of "Ramadan," which lasts for an entire month. Ramadan can be equated to the Christian Easter season. During observance of Ramadan, the devout Moslem will not eat or drink between sunrise and sunset. This custom had a direct impact on training. Not only did meals have to be rescheduled for presunrise and post-sunset serving, but the trainees showed less energy and initiative during this period of time as the fasting took its toll. An additional element for consideration in feeding these personnel, although it did not impact on training, was the fact that they do not eat pork. Also, the Moslem holy day falls on our Friday, so an extended lunch break had to be included in the training schedule to accommodate their religious ceremonies and prayer activities.

Other traditions and modes of personal behavior had a definite effect on the instructors in conducting daily training. The Arab concept of individual dignity does not permit correction of a soldier in the presence of his peers. Openly correcting a trainee is considered rude and distasteful because the soldier can "lose face." Additionally, any cursing or swearing is considered extremely rude and offensive and is therefore taboo. A great deal of tact and patience was required in the course of daily training.

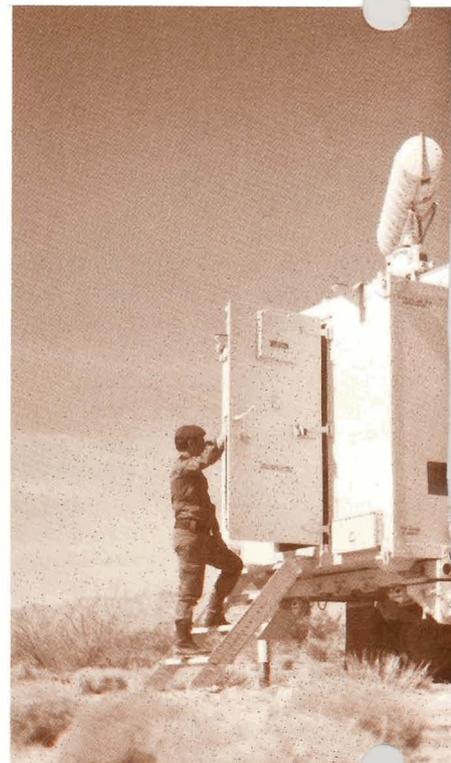
Probably the most challenging complication in teaching Kuwaiti personnel, aside from the language barrier, stemmed from their reluctance to accept the fact that the instructors differed in their manner, techniques, and interpretations when presenting the same ideas or material. Their learning is done by memorization and not by understanding concepts, abstractions, or analogies. Their method of learning is geared more to the ear than to the eye. This ingrained learning method caused problems with the start of each cycle due to our own regional manner of speaking. Until the trainees "tuned in" to the instructors' speech mannerisms, they had problems keeping up with the instruction.

The training was based on a program of instruction used to train US Korea-based personnel when their units were being converted to the Improved Hawk configuration. The program was modified to accommodate the different missions with which the units were tasked and to comply with contractual requirements and locally-imposed constraints.

The IHTD published a weekly training schedule that was flexible enough to allow changes on a day-to-day basis. It also compensated for equipment problems and the need for additional or less training, based on trainee understanding of subject matter. No formal lesson plans were used because of the need to remain flexible. Maximum use was made of DA technical manuals (TMs), field manuals (FMs), and published crew drill and operational readiness evaluation (ORE) procedures, including Fort Bliss annual service practice (ASP) and range safety regulations and procedures.

Use of the TMs was emphasized throughout the program and they proved to be the most effective training vehicle, since the operators and maintenance personnel could not perform checks or adjustments on the equipment without reading the TM. This not only taught them how to use the TM but also prevented them from taking short cuts or excluding steps prescribed by the manual.

Training was conducted in much the same manner as on a tactical site, with trainees (by MOS) first learning to



perform daily checks and adjustments on each item of equipment and then progressing to more complex operations. Adhering to US tactical site procedures, the operator read the TM while the mechanic performed the necessary checks and adjustments. This procedure also emphasized the two-man rule for safety while working on equipment.

Training on individual items of equipment was conducted for the first 3 weeks of collective training. Operators, by MOS, learned to operate related equipment in the battery while mechanics learned troubleshooting and fault isolation procedures on their respective equipment. In addition, instruction on maintaining equipment log books and on soldering techniques was provided each 24-series mechanic.

On the fourth week of collective training, the personnel were formed into a battery structure, and all training thereafter was conducted on the intergrated system. Because of equipment/instructor-to-trainee ratio limitations, only two crews of 36 members each could be trained effectively. The remaining personnel mostly observed, participating in MOS training when possible. Personnel for each crew were selected by the instructors based on observations of trainee knowledge and performance. TCOs were selected on performance and knowledge of the equipment, which was ascertained via a short oral and written examination that officers, excluding the commander, were required to take.

Once the crews and TCOs were selected, training was geared to teaching them how to function as a team. Each crew was taught to perform integrated daily and weekly checks and adjustments before progressing to orientation and alinement (day and night procedures), followed by integrated crew drills, OREs and, ultimately, preparation for ASP.

The TCO and the IBCC crew, who run the air battle and control the battery in a tactical situation, learned to work as a team by engaging simulated targets generated by the AN/TPQ-29 guided missile radar signal simulator. While the IBCC



crew trained with the simulator, the rest of the battery conducted section training. The 16D and 24C personnel were trained on launcher crew drill, canning, decanning, and missile assembly. In addition, they were trained to operate the loader-transporter, to include missile transfer procedures between pallets and launchers. Proper indexing and preloading of the loader-transporter, to include proper use of the missile latches and tie-downs, were emphasized throughout.

Warrant officers received training on their duties as Improved Hawk maintenance supervisors and technicians from the warrant officers assigned to the IHTD. Training was general due to the nature of their jobs, but it was specific enough to make them aware of their responsibilities to their commanders in keeping the system operational. Each Friday during collective training was a designated maintenance day. That was when the warrant officer really got his training (by organizing his maintenance personnel to identify equipment problems and report them and correct them if they were within his capability to correct). If the problem was beyond his capability, the warrant officer would report it to his instructor who would then work hand in hand with the trainee warrant officer to try to correct the problem. If the problem could not be corrected at this level, it would be turned over to the direct support unit (Raytheon).

The eighth week of training was devoted to a practice ASP with the IHTD instructors serving as evaluators and being extremely critical in scoring trainee actions. Upon completion of the practice ASP, a complete ORE was administered to the battery by the Fort Bliss Test and Evaluation (T&E) Team. This practice ORE served two functions. One was the training derived from it and the other was to allow the trainees to see someone other than their instructors evaluating them.

Using vehicles and drivers from the 5th Battal-



ion, 57th Air Defense Artillery, the equipment was moved to a firing site at McGregor Range for the ninth week of training. Trainees and IHTD instructors participated in preparing the equipment for travel and emplacing it at the firing site.

Training during the ninth week involved range orientation, range safety procedures, and additional ASP training (using actual range conditions and scoring criteria). An additional practice ORE was administered by the T&E team to reemphasize safety and to insure that personnel clearly understood range safety criteria.

At 0730 on Monday of the tenth week, the T&E team presented the in-briefing to the battery personnel and the certification firing exercise was underway. Each battery member was now on his own and, under the complete direction of the TCO, each had to demonstrate his skills, knowledge, and training to the evaluators as the crews prepared their systems for firing live missiles at drone targets.

While the battery personnel were undergoing their certification exercise, the IHTD instructors, along with the Raytheon technicians, served as permanent party in keeping the equipment operational should the battery personnel detect problems that had to be corrected before proceeding with the certification exercise. This arrangement worked well because of the immediate response available to correct equipment malfunctions or replace parts if necessary.

The system was normally fully prepared and ready to fire by 1100 on Wednesday, at which time the safety officer would allow the target to be flown in for an actual engagement and firing of the missile by the first crew. Once the first crew fired its missile, the second crew would man the equipment and fire the second missile to conclude the certification firing exercise.

A thorough critique of all phases of the evaluation was presented to the battery and the IHTD personnel by the T&E team upon completion of the

firing exercise, with a satisfactory or unsatisfactory rating rendered to the battery. Although no official numerical scores were rendered on the four batteries trained, the measure of success of the training program was easily determined by the number and types of faults, procedural errors, or safety violations noted by the T&E evaluators.

The collective training program, as conducted by the IHTD to train personnel with limited command of the English language, proved successful in every respect. The key factor to which the program's success can be attributed was that all personnel assigned to the IHTD were site-seasoned, well-experienced, and highly qualified in the Improved Hawk system. Each man knew his job and learned to appreciate and deal with the task of training personnel whose language, life style, culture, and religious background were different from his own. Another important factor was the manner in which the direct and general support efforts were organized. Keeping the systems operational and available for training was top priority and, because of the immediate response, no training time was lost due to equipment non-availability. This is remarkable in itself.

The flexibility afforded by the training schedule was another factor, since changes were made on the spot or as required to accommodate trainee difficulties in understanding. The fact that all training was on the job (hands on) and conducted in much the same manner as that conducted on a US tactical site had a direct impact on trainee retainability. Not only did trainees have to perform their duties physically, they learned to perform them by using the technical manuals.

The intricately complex weapon systems employed in combat today demand highly skilled soldiers who must be fully trained. Collective training, as conducted by the IHTD, has proved to be an effective approach to preparing soldiers to employ these new, complex weapon systems without prolonged training.



Major Gonzales is a graduate of New Mexico Highlands University and holds a Masters Degree in Management from Webster College. Also a graduate of the Command and General Staff College, he has served in ten different command and staff positions, including that of a national-level adviser in Vietnam. He is currently Commander of the Improved Hawk Training Detachment (Kuwait/Jordan), Fort Bliss, Texas.

DARCOM PROJECT MANAGERS FOR ADA WEAPONS

PATRIOT



**MG Oliver D.
Street**

As a service to our readers, we are introducing five presently chartered project managers of air defense weapons. They provide the interface with the Army and industry to insure all program requirements are met regarding the particular system development they are chartered to oversee. They can be contacted through COL Lauris M. Elk, Jr., Chief of Project Management, Headquarters, DARCOM (AUTOVON 284-9751).

ROLAND



**BG Joseph O.
Lax**

Major General Street is a graduate of the US Military Academy and holds a Masters Degree in Personnel Management from George Washington University. He has an impressive string of high-level command and staff assignments covering a wide field of specialties.

Brigadier General Lax graduated from The Citadel with a degree in Chemistry and earned his Masters Degree in Industrial Management at Babson Institute. His background as a project manager includes the TACOM XM880 vehicle and VIPER/AHAMS.

HAWK



**COL Howard C.
Whittaker**

Colonel Whittaker graduated from the US Military Academy and holds a Masters Degree in Education from Boston University. He became Chaparral/FAAR Project Manager in 1975 before becoming Hawk Project Manager.

STINGER



**COL Vincent P.
DeFatta**

Colonel DeFatta's formal education embraces mathematics and physics, culminating in a Masters Degree from the University of Tennessee. He has held numerous high-level positions as a physicist and has served with the US Atomic Energy Commission.

DIVAD



**COL Len
Marrella**

Colonel Marrella is a graduate of the US Military Academy and holds a Masters Degree in Management and Finance and a Doctorate in Business Administration. He has extensive experience in various aspects of project management.

AN/TSQ-73 M

Sergeant First Cla

The AN/TSQ-73 Missile Minder is a highly mobile, automated command, control, and communications (C³) system that provides the air defense commander a rapid, effective, and accurate means of controlling and coordinating the activities of his command. It has two major components, the AN/TSQ-73 group operations center (GOC) and the AN/TSQ-73 battalion operations center (BOC). The Missile Minder is the fifth generation of air defense command and control systems. It provides welcome improvements in airspace surveillance and automatic target tracking, IFF/SIF processing, threat evaluation, friendly protection, battalion or fire unit assignment, and data link communications.

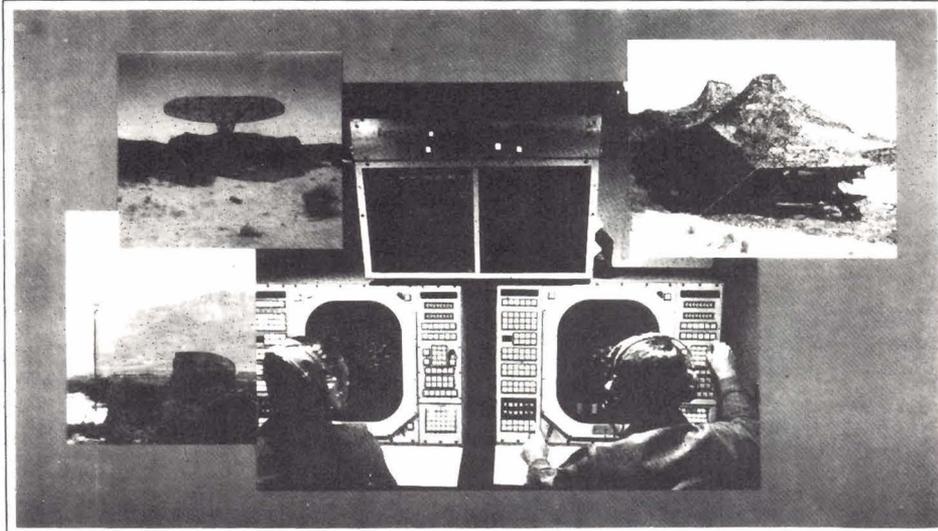
Sitting before the situation display console, the operator sees a complete picture of the air battle, including all tracks, fire units and their status, defended points, safe corridors, area maps, and other tactically significant information received or generated by the system.

With this system, the Army air defense commander will be pleased to find that, through digital data links, he has the capability of automatic exchange and interoperation with systems of other US services and those of our Allies.

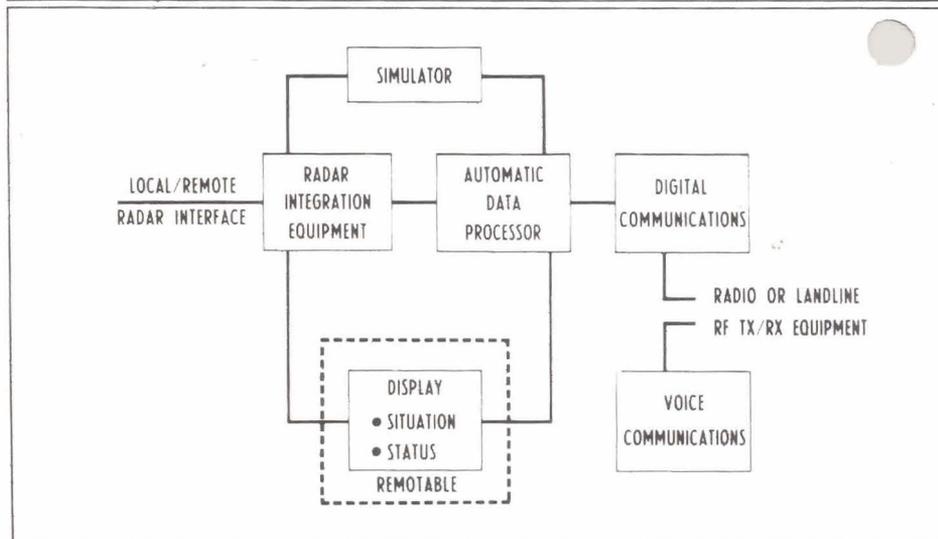
The AN/TSQ-73 system is developed around a repackaged configuration of the AN/GYK-12 standard military computer. It boasts two central processing units, eight 8,192-word 33 bit memory modules, two general purpose display consoles, a dual-channel radar data processor, and digital data links. A high degree of reliability is another of its assets and, through computer-aided fault detection and troubleshooting techniques, manpower requirements for effective system maintenance are greatly reduced.

A new MOS (25L) has been established that covers both operation and repair of the system. The

AN/TSQ-73 IS THE COMMAND AND CONTROL CENTER FOR ARMY BATTLE FIELD AIR DEFENSE



AN/TSQ-73 BATTALION SYSTEM CONSISTS OF SIX SUBSYSTEM ELEMENTS

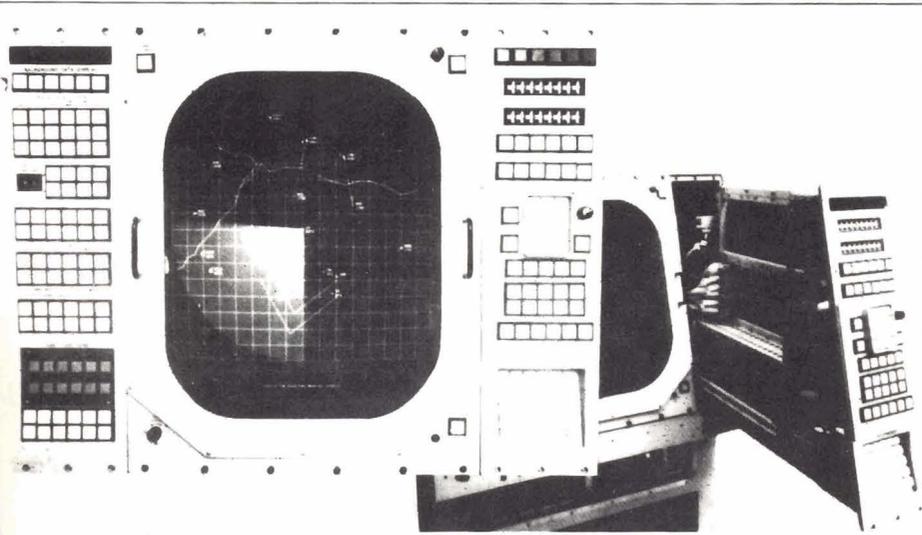


reasoning is that an operator/repairer can operate and maintain the system more efficiently because he will understand all of its functions. The concept offers the advantage of reduced manpower require-

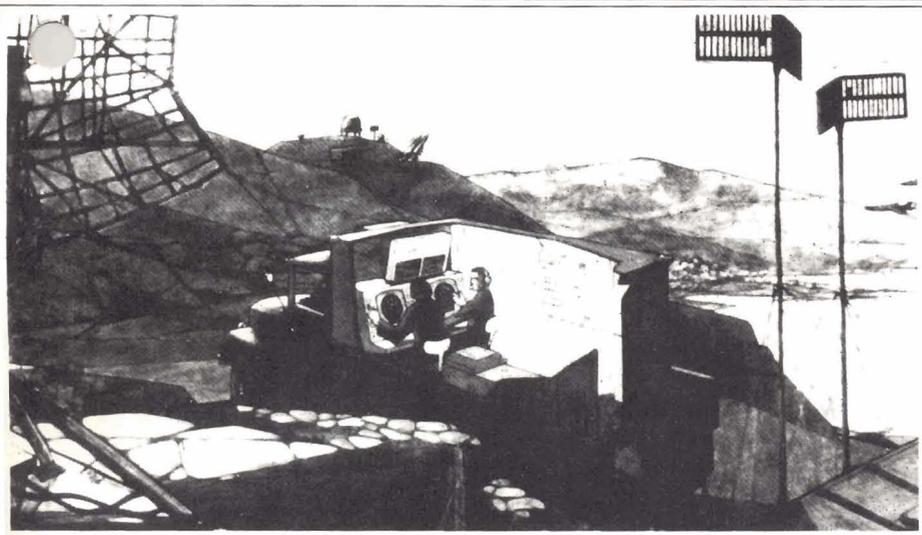
MISSILE MINDER

Charles D. Myers

AN/TSQ-73 SITUATION DISPLAY IS AN ADVANCED GENERAL PURPOSE CONSOLE



AN/TSQ-73 CONTROLS SAM AS PART OF AN INTEGRATED AIR DEFENSE SYSTEM



ments, quicker recognition of minor maintenance problems, and instant action to continue an air battle in the event of a partial system failure during normal operation.

The Missile Minder comprises five subsystems. The first of these is the display equipment, consisting of the status display panel, which monitors all fire unit status (operational, engagement, etc.), and the situation display console, which displays the air battle for the operator. At these consoles, all tactical actions involved in controlling IHawk and Nike Hercules fire units are initiated. The second subsystem, the simulator, produces synthetic radar data and ECM for realistic operator training. The third subsystem, the radar integration equipment, provides the means for the AN/TSQ-73 to interface with a variety of analog and digital acquisition radars. The fourth subsystem, the automatic data processor, is the brain of the system. Information coming into and going out of the system is processed through the automatic data processor. The fifth subsystem, the voice communications, can be quickly programmed to interface all of the various subscribers with voice into the AN/TSQ-73. In addition to voice, the digital communications subsystem gives the Missile Minder the capability to exchange data with the firing batteries and adjacent and higher level command and control systems. Digital communications are accomplished through any of several modems (modulator/demodulator) that are adjustable by switch for either frequency shift keying or differential frequency shift keying, one of four data formats and one of four digital data rates.

Through software implementation (refer to AIR DEFENSE Magazine article, "Software Spoken Here," Apr-Jun 78, for detailed discussion of software), the system improves operator efficiency by automating many of the operator tasks that were accomplished manually in previous systems. The various software programs are outlined below:

<u>OPERATIONAL PROGRAM</u>		<u>SIMULATION PROGRAM</u>		<u>GRADE*</u>	<u>MOS</u>	<u>JOB TITLE</u>	<u>NO. OF PERSONNEL</u>
Airspace surveillance		Programed targets		04/03	14G	Air Defense Command and Control Officer	1
Threat evaluation		ECM		03/01	14G	Air Defense Command and Control Officer	4
Friendly protection		FM noise		E7	25L40	Senior Operator/Repairer (Operations NCO)	1
IFF/SIF processing		AM noise		E6-E4	25L	Operator/Repairer	4
Display		Random pulse		E3-E2	25L	Operator/Repairer	4
Data link communications		Sync pulse		E5-E2	63B	Wheeled Vehicle/Generator Mechanic	2
		Spot					—
		Barrage					—
		Data recording					—
		Data reduction					—
TOTAL PACKAGE							16

*Officer grades are dependent upon whether package is to be assigned to a group or battalion system.

The purpose of the package training course is to introduce system operators/repairers and command and control officers to integrated operation procedures and to prepare them to perform as an effective team in an operational AADCP.

The 4-week package training course covers these areas of instruction:

- NATO Tactical SOP.
- Tactical Evaluations.
- European Drivers' Training.
- System Operations.
- System Maintenance.
- Integrated Procedures.
- Generator Operations and Maintenance.
- Field Training.

Package training is enhanced by use of the simulator, monitor trainer, and command and control, commonly called the SIMTRACC. The SIMTRACC can produce 256 targets simultaneously and up to 1,500 targets during a 3-hour exercise. It can also simulate both local and remote radar data, fire units, inputs from adjacent and higher level AN/TSQ-73 systems (group or battalions), and other services' inputs.

In the future, the AN/TSQ-73 will be employed as the group C³ system for Patriot and has the potential to control the division-level SHORAD systems. In an environment of ever-increasing emphasis on interoperability, the AN/TSQ-73 provides the means of bringing together the air defense systems of the US Army, our sister services, and our Allies.



The operational program includes all the functions necessary to automatically assess the threat, choose the best fire unit to engage the threat, and monitor and control the battalion's fire units. The simulation program produces programable radar data inputs, including ECM—very helpful in operator training. The maintenance and diagnostic program enables the system's built-in test equipment (BITE) to monitor system functions and report any potential system problem through the test monitor (TMON). This program is used in conjunction with the system module test set (AM/GSM-208) to isolate the problem to an easily replaceable printed circuit board. The support program allows the operator to construct area maps and safe corridors and to tailor his system capabilities to meet the local situation.

The Missile Minder is the Army participant in the joint tactical air control system/tactical air defense system (TACS/TADS) interface program. The system also directly interfaces with either Improved Hawk or Nike Hercules batteries and controls either effectively.

The 1st Battalion, 7th Air Defense Artillery, is currently conducting package training of the personnel scheduled for deployment with the AN/TSQ-73 systems. To date, nine packages have completed training. Each package consists of the following personnel:



Sergeant Myers is a graduate of Saint Leo College, Florida, and also the AN/TSQ-73 System Operator-Repairer Course. He is currently the Noncommissioned Officer In Charge of the AN/TSQ-73 Package Training Program being conducted by 1st Battalion, 7th Air Defense Artillery, Fort Bliss, Texas.

AIRCRAFT RECOGNITION QUIZ

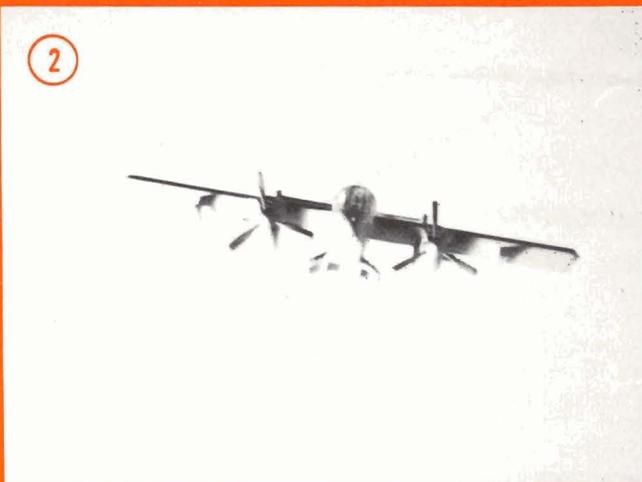


Can you identify these aircraft?
(Answers on page 41.)

1



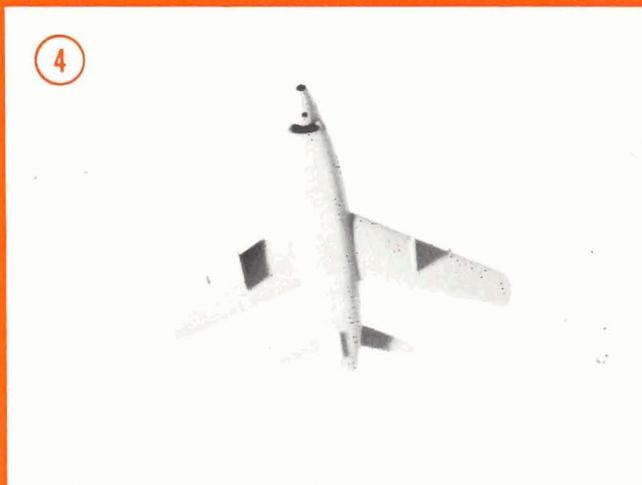
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3



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5



6



THE COMPANY XO

Captain Marshall L. Helena

Editor's Note: This article by an Infantry officer was previously published in the November-December 1978 issue of ARMOR Magazine. We think it is comprehensive and that it offers some important advice to a valuable member of the fighting team. We reprint it not only for the benefit of our numerous battery XOs, but also for all other lieutenants, many of whom will one day be battery XOs.

History is replete with examples of sudden violent combat wherein unit commanders were quickly eliminated from the action—casualties, loss of communication, or capture—and the executive officer assumed the command. The ability, preparation for command, and the competence of the XO all too frequently meant the difference between failure and success. The company XO is the “next” commander, and it is the responsibility of the current commander to groom him for that role. Obviously, the XO must be regarded by the commander and by himself as far more important than an administrative assistant. The alternative could be disaster in combat.

Little is written in the area of company executive officer duties. This is probably as it should be, to enable the commander to maintain maximum flexibility over his utilization. The commander will certainly brief the XO concerning his duties. What the commander may not brief is the foundation of the position or, more specifically, some of the “tools” to get the job accomplished. The purpose of this article is to provide the new XO with a few general guidelines to being an effective XO who is prepared to assume command.

First, get yourself organized. Keep a notebook with you at all times to record the results of meetings, progress of important projects, frequently required statistics and, most important of all, a continuing list of various items to be done. All successful leaders I have known have acquired the habit of committing the various actions required of their position to paper. These are then crossed off as accomplished.

Next, establish and maintain a personal filing system for records such as meeting notes, memo-for-record, approvals of actions, proposals, and the like. Sound like a high-level staff? Not at all. The ability to retrieve a memo-for-record for an inspection or investigation can save hours of extra work.

Develop the ability to take meaningful notes in an outline format. After sitting in for the commander at a meeting, you can pass your notes to him later for his review. With note-taking comes the habit of writing down missions. With the numerous daily requirements and “crises” in a company,

I look with skepticism on an XO who does not commit to writing an order or mission that I issue. If I see the XO writing, I am confident that the project won't be forgotten. As a commander, I do the same with my boss.

Keep the commander informed. Let him know of progress and problem areas within your sphere of responsibility. However, do not burden him with unnecessary details. Sound contradictory? It certainly can be, but there is a middle ground. Experience with and guidance from the commander will assist in this area. When at all possible, talk to the commander, but an XO who constantly sticks his head in the door can wreak havoc with a tight daily schedule. The alternative is to reduce the less critical or nonperishable information to short written notes that can be read as time allows. Here again, a middle ground must be found.

Never present a problem without an accompanying recommendation for solution, or several solutions. The concept of completed staff action applies just as well at company level as it does at higher staff level, though less formally. The earlier this technique is developed and cultivated, the better. Executive officers who have mastered this technique are valuable assets.

Organize your time. Take a few moments at the close of the day to list those actions you must accomplish the following day. Then establish a priority. Once the items are on paper, rigidly avoid any distractions. Sure, you will have to stay somewhat flexible (really flexible sometimes), but the successful XO is the one who can, within reason, establish his priorities. Squandering time invites failure.

Perhaps one of the most ticklish areas of the XO's duties is his relationship with the platoon leaders. The XO must be prepared to assume command at any time. Such a situation requires a certain distance from the platoon leaders. This is a difficult situation for the XO who was lately a fellow platoon leader, but it must be addressed and resolved.

Finally, the XO should assume the state of mind of a commander. His actions must be based constantly on the answers to such questions as, “What would I do in this situation if I were the CO?” or “Where should I be right now?” Gaining this outlook will enable him to stay one step ahead of the command requirements and take the reins of command when the CO departs, whether temporarily or permanently.

So there you have it—a few common pointers applicable to any company-level XO. Though certainly not the total solution for successful tenure as an XO, they are the tools by which the XO can accomplish his mission: to be prepared to assume command at any time.



ADA GENERAL OFFICERS & COLONELS (P)

(As of 1 April 1979)

AIR DEFENSE Magazine provides this list to facilitate the interchange of ideas and information between commanders of all branches and ADA Generals.

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BRIGADIER GENERAL CARY B.
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COLONEL(P) JOHNIE FORTE
Director, J1 and IG
European Command
APO New York 09154

COLONEL(P) JAMES R. DEMOSS
Commander
The School Brigade
US Army Air Defense School
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COLONEL(P) VICTOR J. HUGO, JR.
Chairman, Personnel Management
Action Committee
Deputy Chief of Staff for Personnel
Headquarters, Department of the Army
Washington, D.C. 20310

ANSWERS TO AIRCRAFT ID QUIZ

Photo 1: JAGUAR. The Jaguar is a new aircraft developed and used in Great Britain and France. It is a fighter-bomber in that it is designed to perform both the air-to-air and air-to-ground roles.

Photo 2: OV-10A BRONCO. This aircraft is an observation aircraft that was developed by the United States. It is operational with the US Air Force, Navy, and Marine Corps, as well as several foreign nations.

Photo 3: MiG-27 FLOGGER D. The FLOGGER D is the aircraft in the Flogger series that is optimized for the ground attack mission. It is produced in the Soviet Union.

Photo 4: G91. The G91 is an Italian aircraft used

for reconnaissance and light attack missions. It has been used by the Federal Republic of Germany.

Photo 5: ALPHA JET. This new aircraft is designed as a trainer and light attack aircraft. It is entering service in the French and West German air forces.

Photo 6: SCOUT. The Scout is a light helicopter built in Great Britain. Another version known as the Wasp has wheels instead of skids for landing gear and is used by the Royal Navy.

Look for similar quizzes in future issues of *AIR DEFENSE Magazine*.

—Ed.

INTERVIEW

with
an
Army
DASC

Research, Development and Acquisition (R,D&A) Magazine has been conducting a series of interviews with senior persons who are or have been involved at the policy-making level in the Army's materiel acquisition community. As part of this series, the R,D&A Editor chose for one of his recent interviews a typical Department of the Army System Coordinator (DASC) from the Office of the Deputy Chief of Staff for Research, Development, and Acquisition, Major Raymond J. Wauford.

Major Wauford, formerly IHawk DASC, is one of 68 on the Army staff and is currently DASC for the Patriot air defense missile system. He is a graduate of Vanderbilt University with a BS in Electrical Engineering and has an MS Degree from the University of Texas. Major Wauford is an ADA officer.

The interview was comprehensive, and space here will not permit printing it in its entirety. However, following are some interesting points that were discussed.

Q. Did you know you were going to be the Improved Hawk DASC when you came or only that you were going to be a DASC?

A. Yes, I knew I was being recruited specifically for that job, based on my experience with the Hawk system.

Q. Had any of your previous military and academic experience related directly toward your duties as a DASC?

A. I have found my military and academic experience directly applicable to the job. Three years of battery level field experience with the Hawk system proved invaluable in my initial assignment as the Improved Hawk DASC. Issues at that time centered mainly around readiness, product improvements, foreign sales, etc. First-hand knowledge of the Hawk system greatly assisted in understanding these problems and subsequently coordinating Army response. I suppose my academic background has been most helpful during the past two years as the Patriot DASC. This background in electrical engineering and operations research/systems analysis has assisted in monitoring the technical aspects of the Patriot program and in understanding issues raised by the continuing studies of the system. I feel fortunate to have had this background and experience to draw from while sorting through issues that generally are complex and confused by technical language and jargon.

Q. You completed the course at the Command and General Staff College at Fort Leavenworth before coming here. Did your training at Leavenworth give any feel at all on systems development, how the Army goes from a requirement into a hardware development?

A. I understand the course has changed quite a bit since I attended in 1973. The electives program has expanded to include a stronger coverage of research and development and the system development process. My particular class received extensive instruction on the budget cycle but limited exposure to the life cycle management system.

Q. In the interview columns that we are doing for the magazine we try to inform the reader audience so that one can better do his job. In your case, what advice would you give a member of the RDA community who might be selected as a DASC? What could he possibly do to prepare himself?

A. I believe each DASC encounters a different situation, depending on the system and its stage of development. Hopefully, a new officer would have a current and extensive background in the type of system he is being assigned to monitor. Any general advice I might offer would concern his philosophical approach to the job. I believe the word coordinator in the DASC title is the key. The DASC job is a position of trust, and it demands absolute objectivity in the "full-coordination" of all viewpoints of issues concerning the system he monitors. He must insure that the Army Staff and

Secretariat are fully informed of all aspects of an issue to support ultimate Army positions which are in the best interest of the Army. The DASC shares a more personal position of trust, I believe, with the System Project Manager. He serves as a link between the Project Management Office and the Army Staff. As such he shares detailed knowledge of the specifics of the PM's program. This is particularly necessary, of course, for budget preparation and defense of that budget. The relationship

must be an open and honest one and certainly not adversary in nature. The special relationship between the DASC and the PM is in no way inconsistent with the DASC's requirement to remain totally objective in coordinating issues on the Army Staff. The only advocacy role that I see that is appropriate for the DASC is one of defense of Army positions with the Secretary of Defense and subsequently with the Congress.

Q. How are the relationships of DASCs, generally, among themselves and DARCOM and TRADOC? Are there any unnecessary areas of overlap?

A. The relationship among the DASCs and their counterparts is excellent and is built on respect for each other's respective responsibilities. I guess it can be summed up in the fact that I have never gone to anyone on the Army Staff who didn't have time to listen to my problem and, in turn, I am never too busy to talk to anyone with a question related to Patriot. This gets back again to the value of eyeball contact. By working together, the DASC and his counterparts are able to address complex problems quickly as they occur. Action officers on the Army Staff are collectively some of the finest people I have ever worked with. Each DASC has points of contact in each Army Staff element. These points of contact work just as hard as the DASC in trying to reach timely resolutions to problems. Because of the close proximity to DARCOM Headquarters, we are able to directly coordinate issues with points of contact there on a daily basis. Unfortunately, TRADOC Headquarters is a bit farther south, and most coordination is done during periodic visits or over the telephone. The activity of each DASC is coordinated and approved at the division and directorate levels within ODCSRDA to insure a cohesive Army program. I don't believe, there are any unnecessary areas of overlap in this arrangement within the Army Staff or with DARCOM and TRADOC.



MAJ Raymond J. Wauford and RDA Magazine Editor L. VanLoan Naisawald

Q. Is NATO looking at Patriot in terms of buying it entirely off the US shelves or coproducing or trying to come up with a system that would provide for the consumable aspects? Can you tell us in what direction the NATO studies for Patriot are heading?

A. It certainly appears to be in the best interest of NATO that Patriot be standardized as the replacement for current NATO Nike Hercules and either replace or, at a minimum, be interoperable with NATO Improved Hawk. In consonance with that view, our efforts have been to encourage and assist the European nations in determining a European production arrangement which is most suitable to their acquisition of the system. During the past years, four different options have surfaced that typify the span of different alternatives available to them. On one end of the spectrum would be direct purchase from US production; at the other, a license arrangement similar to our planned acquisition of Roland. Improved Hawk and F-16 type options offer alternatives between these two. We are now entering into a 2-year effort to look at these options and determine an arrangement which will be economically and politically acceptable to the Europeans, and permit NATO standardization of the system. From where I sit as the DASC, the ultimate challenge to NATO (and the US) lies with our resolve to seek and achieve economically and politically acceptable arrangements which will permit continued modernization of NATO forces to meet the massive Soviet threat. I believe we are heading in the right direction.



The Space Shuttle Columbia made a stopover at the US Army Air Defense Center on 20 March.

Originally, plans called for the Columbia, riding atop a Boeing 747, to make a 2-hour refueling stop here at Biggs Army Airfield. But problems with the tiles on the "skin" of the shuttle delayed its departure from its base in California for over a weeks, so on Tuesday, 20 March, the Air Defense Center was notified that, if weather permitted the shuttle to fly that day, it would proceed directly to Kelly Air Force Base at San Antonio, Texas, without stopping at Fort Bliss.

It was quite a surprise, then, when about 1600 local time the 747 carrying the shuttle appeared over El Paso. By the time it was touching down on the runway at Biggs, people who had been driving home were streaming into Biggs Field to get a glimpse of the spacecraft.

The flight was diverted into El Paso because of bad weather in the San Antonio area. While this delayed the planned schedule, it was good luck for people in the El Paso area, since it afforded many of them the opportunity to see the Columbia.

On Thursday, the 22d, the weather was suitable for the next leg of the journey, which was to Kelly Air Force Base. Take off occurred about 0800 and a large crowd was on hand to bid the shuttle farewell. So for a day and a half, the Air Defense Center had a brush with the nation's space program.

FACTS ABOUT THE SHUTTLE.

The space shuttle is the first reusable space vehicle in the world. Each such craft will be used approximately 100 times to carry men and equipment into space, build space stations, repair and retrieve satellites, and perform many other space missions.



SPACE shuttle

A stylized illustration of a space shuttle in flight, angled upwards and to the right. The shuttle is dark with a white nose and tail. Several orange stars are scattered around the shuttle, and the word "SPACE" is written in large, bold, black letters above it, and "shuttle" is written in a similar font below it.

Bert Kinzey

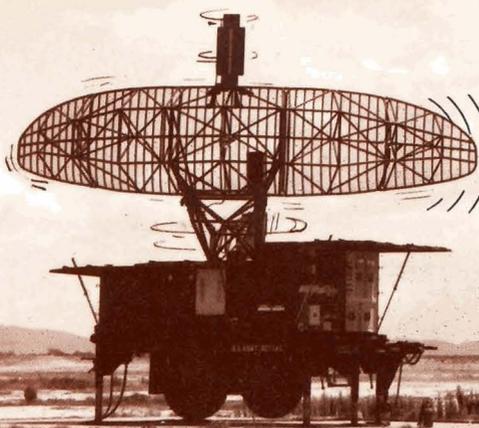
ducing 470,000 pounds of thrust.

When it is launched into space, two additional boosters will be strapped on. These will separate at an altitude of about 27 miles and fall back to earth where they will be recovered. Between the boosters is a large fuel tank that provides propellants to the engines on the shuttle. As the spacecraft enters orbit, the tank is jettisoned. It is the only part of the vehicle that is not reusable.

Missions will last up to 30 days and can eventually provide real benefits to the people of the world. Solar power stations can be built to furnish electricity to a world presently in an energy squeeze. Working in weightless space will also mean new manufacturing techniques that could reduce the costs of many products and improve the quality of others. The shuttle will also open the door to the first space settlements.

With the shuttle's visit here, personnel at the Air Defense Center and many residents of El Paso had an opportunity to take a look at the future. It was an experience that will not be soon forgotten by those who took advantage of the opportunity to see the Columbia.





SCANNING

NEW ADA BATTALION

The 1st Battalion of the 4th Air Defense Artillery (Hawk), located at Fort Lewis, Washington, is expected to be formally activated in April 1979. When officially activated, the unit will have some 760 personnel assigned and about \$100 million worth of Improved Hawk missiles, command and control equipment, maintenance facilities, and all the battalion's supporting equipment.

As each of the battalion's individual batteries is activated, the soldiers will be deployed to the US Army Air Defense Center and School at Fort Bliss,

Texas for Improved Hawk tactical and technical training. Actual firing of missiles will also be conducted at Fort Bliss ranges, since the Fort Lewis area cannot support live firings.

Following training and missile firing at the Fort Bliss and New Mexico ranges, the batteries will return to the battalion at Fort Lewis, its permanent station as a nondivisional unit in support of the 9th Infantry Division. LTC Lewis Carter will command the battalion.

CERTAIN SENTINEL

Members of the 11th Air Defense Artillery Group recently returned from Europe after participating in REFORGER 1979 in the Exercise Certain Sentinel. The 8 officers and 17 enlisted personnel participating were from HHB, 11th Group, 1/7 ADA, 4/1 ADA, and 2/55 ADA. The 11th Group personnel provided operational intelligence, logistics, and personnel administration support for the 69th Air Defense Artillery Headquarters in Germany.

The purpose of the 5-week training exercise was to check effective operation of troops under severe cold climate conditions and to test combined unit effectiveness with CONUS-based and USAREUR forces. During the exercise, the forces maneuvered from Bamberg to Ansbach from bases in Wurtzberg and Grafenwoehr, Germany.

Prior to their participation in Certain Sentinel, the 11th Group soldiers attended classes to better acquaint them with European operations and survival under extreme cold conditions. Fifty percent of the 11th Group members had previous duty in Europe, making the transition for new soldiers to Germany much easier.

The exercise proved that CONUS-based forces can augment USAREUR forces effectively when properly prepared. Further, the exercise was of special importance to air defenders as new airspace control measures were introduced and a real effort was made to coordinate the use and control of airspace. The 11th Group veterans of Certain Sentinel are back at Fort Bliss busily sharing their cold climate experiences with their comrades whom they unfortunately had to leave behind in the Sun Country of El Paso, Texas.

SQT HANDBOOK REVISED

DA Pamphlet 350-37, Handbook for the Conduct of Skill Qualification Tests, is being revised by the US Army Training Support Center, Fort Eustis, Virginia. Distribution is expected sometime in 1979. The revised handbook will incorporate policy and procedure changes that have been

disseminated in bulletins, messages, and other official documents emanating from the Individual Training Evaluation Directorate (ITED). Many of the changes are the results of suggestions and recommendations from units in the field and concerned agencies.

2D BN, 51ST ADA JOINS 1ST INFANTRY DIV

The 1st Infantry Division has greatly enhanced air defense capability by the recent assignment of the 2d Battalion, 51st Air Defense Artillery. The 51st becomes the first Improved Hawk (TRIAD) battalion ever to be actively deployed with an Army division. It is expected that the new battalion will share the 1st Division's combat mission of early European reinforcement.

While its association with the 1st Division may be new, the 2/51st ADA itself is the descendant of an old unit with a proud history dating back to the turn of the century. Organized in 1901 as the 109th Company, Coastal Artillery, at Fort Greble, Rhode Island, the unit was redesignated the 51st Artillery in February of 1918. The command served honorably during the First World War, participating in the St. Mihiel, Meuse-Argonne, and Lorraine campaigns. It also saw considerable World War II action in the American Theater, Luzon, Normandy, Northern France, Rhineland, Ardennes-Alsace, and Central Europe Campaigns. Until its deactivation in 1956, the battalion served with various Army divisions as a field artillery unit. Reorganized and redesignated under the Combat Arms Regimental System, the unit became the 2d Battalion, 51st Air Defense Artillery in September 1971. The 2/51st ADA has made a great deal of progress since its formal activation in September; however, it will be several months be-

fore the unit reaches its operational capability.

The training cycle, which began early in September with the deployment of the battalion's direct support platoon to Fort Bliss, Texas, is divided into three phases: a 5-week Hawk equipment demonstration and acceptance phase, a 10-week package training and annual service practice phase (live missile firings), and a 4-week period for equipment checkout and deployment to Fort Riley. The start of training for the firing batteries is staggered 5 weeks. The first battery to complete training returned to Fort Riley the end of February 1979. By May 1979, all battalion elements will have completed training and be deployed to Fort Riley, Kansas. The start of training for the firing batteries is staggered 5 weeks. The first battery to complete training returned to Fort Riley the end of February 1979. By May 1979, all battalion elements will have completed training and be deployed to Fort Riley, Kansas.

The Hawk system is ideally suited for service with the Big Red One. It has the mobility to keep pace with our mechanized vehicles when they're on the move. More important, it complements the coverage of the division's forward area Chaparral/Vulcan and Redeye weapons with its greater range and all-weather capability. The Hawk battalion helps insure freedom of action for the division's maneuver elements.

ROLAND FIRE UNIT "FLIES"



Tests at Aberdeen Proving Ground, Maryland, demonstrated the helicopter transportability of the fire unit for the US Roland air defense missile system, built jointly by Boeing Aerospace and Hughes Aircraft Companies. The self-contained structure, weighing approximately 20,000 pounds

(9,000 kg), is being transported by a US Army CH-54B helicopter. The fire unit was carried some 20 miles during three lifts. The Roland fire unit can be deployed for its short-range air defense mission in the dismantled configuration as shown, or can be mounted on an Army XM975 tracked vehicle.





ENLISTED CAREER NEWS

NAME OF THE GAME—POINTS

Are you ready to face the Promotion Board?

Appearing before a promotion board begins with you. The first step, of course, is to be recommended; in other words to have a sponsor—usually a senior NCO or unit commander. Once this has been accomplished, you should set up an appointment with the personnel section maintaining your records. It is here that they determine how many points you have earned for promotion purposes. It is here that the tallying of much needed points begins. These points are given for time-in-service, time-in-grade, civilian and military education, awards and decorations, your enlisted evaluation report (EER), and your skill qualification test (where applicable). The maximum number of points you can earn is 750. Your SQT score must be 80 plus. However, in some cases waivers are given with an SQT score of 51 or more.

Your appearance before the Promotion Board can net you another 250 points. Forty points can

be earned for self-improvement by civilian or military education. Another 30 are for such achievements as class honors or soldier of the month. The board president will evaluate attitude, leadership qualities, advancement potential—scoring up to 40 points.

Your personal appearance, military bearing, and self-confidence can all add up to a tidy 30 points. The remaining 110 points can be earned through an evaluation of your conversational skills, basic soldiering techniques, and a knowledge of world and military affairs.

Most units have study guides, basic soldier's manuals, and current periodicals. Don't pass up the opportunity to use these excellent aids. Finally, don't forget how important it is to present your point case with a clean regulation haircut, a smart and neat uniform, and correct hand salute. Now do you get the point(s)?

OPERATIONS INTELLIGENCE COURSE

The Army Institute for Professional Development is now administering an Operations/Intelligence Course for Operations/Intelligence Personnel in Air Defense Artillery, Field Artillery, and Infantry units. This course is currently available only through correspondence. The course objective is to provide supervisor-monitored, performance-oriented, correspondence training of personnel in or entering Operations/Intelligence duty positions.

Enrollment Applications Receive Special Handling

This is a unique course in that a special enrollment package is sent directly from the Institute

for Professional Development. The enrollment package can be requested by an individual or his supervisor. The package consists of:

- A supervisor's guide.
- Four enrollment application forms.
- Four copies of each student training plan option.
- Four franked return envelopes.

Training Plans

Each enrollment package contains four copies of three different training plans. The chart below shows the number of possible credit hours available for each duty position if all subcourses in a student training plan are elected.

DUTY POSITIONS	CREDIT HOURS BY BRANCH			
	*ADA	ARMOR	FIELD ARTY	INF
OPS SGT	53	48	49	39
OPS ASST SPEC	44	19	19	19
INTEL SGT	39	32	35	25
INTEL ASST SPEC	48	23	23	23

*The ADA course has been tailored to tasks in the 16H Soldier's Manual. It should be of invaluable help in preparing for the SQT.

One advantage of this course is that each soldier and his supervisor determine those areas in which training is needed, which means that a soldier may not need all the subcourses for the training plan selected. In addition, each enrollee has the option of selecting subcourses that may be only a small part of another training plan.

Pretest and Post-Test

Another big advantage of the course is that students have an opportunity to pretest for each of the subcourses they select. The way this works is that the supervisor administers the pretest for each subcourse before a student devotes time to studying the material. If the student passes the pretest, he then moves on to the next subcourse. If the student does not pass the pretest, he completes the subcourse before taking the post-test.

Supervisor Registration

Enrollment in the course requires enrollment by

the student and registration of a supervisor. This procedure is necessary so that the supervisor can provide help when needed and administer the pretests and the post-tests.

What To Do

■ Request the enrollment package directly from IPD at Fort Eustis, Virginia, by calling Mrs. Paula Dalton, Operations/Intelligence Course Team Chief, AUTOVON 927-4876 or LOCAL 898-4876 or by writing to:

The Army Institute for Professional Development

US Army Training Support Center (161)
Newport News, Virginia 23628

■ If the enrollment package is received by the student to be enrolled, it should be taken to his supervisor.

■ When the supervisor receives the enrollment package he should read the supervisor's guide carefully.

■ The student and the supervisor then discuss the training plan options and complete the training plan forms. The supervisor and the student must complete these forms.

■ The student and the supervisor then complete the enrollment application form.

■ The supervisor mails the completed training plan and enrollment form to IPD in the return envelope provided in the enrollment package.

CSM APPOINTMENTS

DA message, SAPA-CI, 181136Z Jan 79, subject: More "Teeth" for CSM Selection Boards, announces a new MILPERCEN policy that denies Sergeants Major the option of declining CSM appointment after selection by a Department of the Army board. Sergeants Major retain the option to decline CSM selection board consideration. If declinations are not submitted before boards convene, personnel selected must either accept appointments or, if otherwise eligible, apply for non-disability retirement within 30 days after announcement of the selection list. Retirement date

must be within 6 months. Individuals not eligible for retirement within 6 months after notification of CSM selection will have no alternative except to accept appointment to CSM, unless it would impose a bonafide hardship on the soldier.

Verbal information from the CSM/SGM Branch, MILPERCEN, indicates that personnel appointed to CSM from future CSM lists will be required to serve a minimum of 1 year as CSM before they will be authorized to retire or withdraw from the program. Again, bonafide hardship cases may warrant an exception to this pending requirement.

FORT BLISS TO TEST UNIFORM

Fort Bliss has been chosen as one of the test sites for a new "Army Green" uniform, which is expected to be in clothing sales stores in late 1981.

The new uniform fabrics are being tested to determine which one will be most comfortable and present the best appearance. The fabrics will be tested for shade (color control), wrinkle resistance, durability, and overall appearance.

For the test, 500 men's and 500 women's uniforms were made from each type of fabric. One hundred of the women's uniforms are pantsuits.

Soldiers wearing the test uniforms were selected by grade and duty to represent a cross section of the Army, but most of the soldiers chosen are from the lower enlisted ranks who have less money to spend for uniforms.

The year-round uniforms will cost \$45-50 in clothing sales stores Army-wide and they will be dry cleanable only. New soldiers will be issued two sets of the year-round uniforms when the garments enter the Army supply system.





BARS to STARS

OPMD UPDATE

EMBASSY DUTY

MILPERCEN is seeking colonels (and promotable lieutenant colonels) to serve as commanders of US military groups in American embassies in South America. Candidates must hold commissions in the combat arms, be a senior service college graduate, and speak Spanish.

The assignments available are for either 2 or 3 years and selected officers are encouraged to take their families to these areas.

Selected officers will receive training related to

their assignments and refresher language training. Positions will open in the following countries: Nicaragua in May, Honduras in June, Argentina in July, Venezuela in November, Paraguay in January 1980, and Colombia in June 1980.

Interested officers can call MILPERCEN at AUTOVON 221-7877, Commercial (202) 325-7877/7879, or write to Commander, MILPERCEN, ATTN: DAPC-OPC, 200 Stovall Street, Alexandria, VA 22332.

EUROPE COMMAND EXTENSION

Command tours for colonels and lieutenant colonels serving in Europe received a permanent extension from 18 to 24 months, according to a policy by Army Chief of Staff General Bernard W. Rogers. Command positions affected by the policy include all those selected by the DA Centralized Command Selection System, according to a DA official. The official added that these make up "virtually all" command tours in Europe, including combat, support, and service units.

The permanent approval of the command tour

extension follows a test that began in October 1976. Test results showed that stabilizing commanders in key positions improved unit readiness and continuity. The 24-month command tours for officers in grades 05 and 06 primarily affect commanders of battalions and brigades.

Command tours in Korea, by comparison, are usually 12 months, because Korea is a short tour area. Command tours in CONUS are usually 18 months for FORSCOM and TRADOC units.

PRECOMMAND COURSE

To clearly define the policy for all command-designated colonels and lieutenant colonels for attendance at the Precommand Course (PCC), the following information has been announced and is effective immediately:

■ Command-designated colonels and lieutenant colonels, regardless of present assignment and location, selected to command Infantry, Armor, Field Artillery, Air Defense Artillery, Aviation, or Combat Engineer brigades, battalions, or equivalent size units are required to attend PCC prior to assumption of command.

■ Those officers who have assumed command early due to unforeseen circumstances and are not PCC trained will attend within the first 90 days of command. Officers in command will receive PCC attendance priority. Requests for quotas to attend

the PCC will be forwarded to Cdr, MILPERCEN (DAPC-OPC for 06/DAPC-OPL for 05).

■ To maintain a small pool of officers ready to assume command, the Cdr, MILPERCEN, will select and schedule officers (up to three in each command category) from the alternate command list for attendance at PCC. This will, over a period of time, alleviate the problems of an officer assuming command without the benefit of PCC training.

■ PCC program for officers described above includes the following phases (phases I through IV must be attended in sequential order):

—Phase I—Self-Study (will be mailed to each command-designee by TRADOC).

—Phase II—Branch Refresher (2 weeks at respective branch school).

—Phase III—Command Development (1 week at

Fort Leavenworth).

—Phase IV—How To Fight (1 week at Fort Leavenworth).

—Phase V—German Language (6 weeks at Defense Language Institute).

—Phase VI—Senior Officer Legal Orientation (SOLO) Course (4 1/2 days at the JAG School for colonels and lieutenant colonels who will be special

courts-martial convening authorities).

Command-designees other than combat arms will continue to be scheduled to attend the 2-week Senior Commanders Orientation Course (SCOC) at Fort Knox. Those command-designees who will be special courts-martial convening authorities will also attend SOLO.

WARRANT OFFICERS

■ Regular Army warrant officers may now apply for direct appointment as Army Reserve commissioned officers without having to resign their RA warrants. Previously, warrants could not hold dual status as a Reserve commissioned officer. The change to AR 135-100, Appointment of Commissioned and Warrant Officers of the Army, National Guard, and Army Reserve, is expected to be to the field this spring.

Interested RA warrants should submit applications to Reserve Components Personnel and Administration Center (RCPAC). Instructions for preparing and processing applications will be found in AR 135-100. Those individuals desiring additional information may write: USAR Components Personnel and Administration Center, 9700

Page Boulevard, St. Louis, MO 63132.

■ In 1972 the number of enlisted MOS open to women was expanded and the number of women on active duty began to climb dramatically. Because of this action, a considerable number of women are now eligible for appointment as warrant officers.

All MOS are open to women with the exception of MOS 100E (Attack Helicopter Pilot) and MOS 224B (Short-Range Air Defense System). Many of the MOS have a direct relationship to enlisted feeder MOS. Women interested in making application for the warrant officer program should follow instructions outlined in DA Circular 601-81. Assistance may also be obtained from the local servicing military personnel office.

ALTERNATE SPECIALTY DESIGNATIONS

Some YG 72 officers have not submitted their alternate specialty preferences. Commanders are requested to remind officers that their desires for an alternate specialty cannot be considered unless

they are known by their MILPERCEN career manager. YG 72 officers will be designated an alternate specialty in early May regardless of whether a preference form has been received.

STABILIZED TOURS

Officers assigned to S1 and S4 jobs at battalion level, usually captains, will be stabilized in these positions for 12 months, if possible. The 12-month stabilized assignment goal was approved by the Officer Personnel Management System (OPMS) General Officer Steering Committee. Stabilization

in these jobs will enhance battalion S1 and S4 operations and improved readiness by promoting continuity in these critical positions.

Prevailing company-grade shortages in certain branches may prevent 12-month stabilizations in some units.

INITIAL ALERT DATE

Officers wishing to retire or resign in lieu of accepting an assignment should be aware of what constitutes an official date for initial alert for assignment according to MILPERCEN instructions.

The "30-day rule" allows officers to submit a voluntary retirement application or unqualified resignation if they do not want to comply with assignment instructions. The 30-day rule requires MILPERCEN-managed officers (excluding those

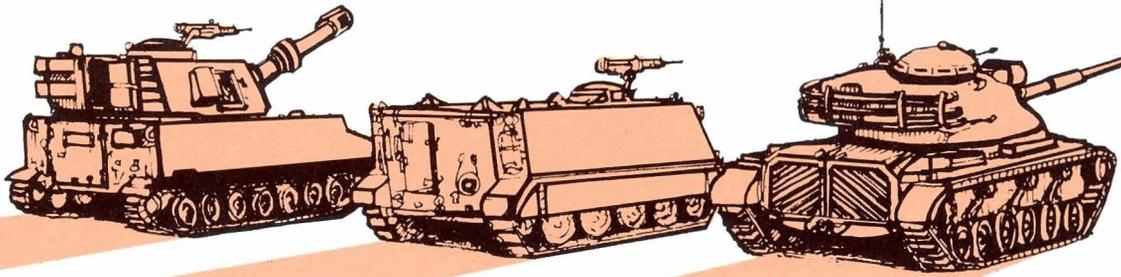
in the AMEDD, Chaplain, or JAG Corps) to submit separation requests to their approving authority within 30 days of assignment notification.

Official assignment notification is defined as an interview, phone call, or correspondence from a MILPERCEN career manager to an officer that includes a firm explanation of where and when the officer will be assigned, or an official notification date can be the date an officer receives a copy of a request for orders from MILPERCEN.



COMBINED ARMS

CORNER



RESERVE OVERSEAS TRAINING

National Guard and Army Reserve units will participate this year in overseas deployment training with OCONUS commands, according to DA officials. This joint training program with overseas units prepares Reserve Component units for possible assignments to units overseas in the event they are mobilized during a national emergency. Twenty-seven Reserve units and 48 National Guard units and unit cells will take part in the program.

This is not the first time such overseas joint training has taken place. Guard and Reserve units have participated in major exercises, including Rerforger, Tempo Caper, and Jack Frost. The com-

bined training program is directed more at Europe since much of Europe's combat support and combat service support will come from Reserve components if they are mobilized. However, some units train in Korea and Alaska. The 412d Engineer Command and the 10th TAACOM have year-round European training commitments.

The Governor of the state from which the unit comes must approve the release of the unit for deployment training. This year, National Guard units will deploy and train in Germany, England, Norway, and Korea. Such training increases unit readiness and effectiveness.

MARINE COMMANDANT ON JCS

The Commandant of the US Marine Corps has been named a member of the Joint Chiefs of Staff. The appointment of the Marine Corps Commandant to the JCS was authorized by Congress in the 1979 Defense Money Bill.

The Commandant of the 191,000 members of the Marine Corps has had equal status with the Joint Chiefs on matters directly concerning the Corps since 1952, but had no say on other military affairs until this new authorization by the Congress.

NJANG GOES TO WEST POINT

The 253d Transportation Company, New Jersey Army National Guard, traveled some 300 miles from its home station on Jersey's Atlantic Coast to the US Military Academy on the Hudson at West Point, New York. The purpose of the trip was part of the unit's annual training but more specifically to furnish transportation for the cadets during their summer training program conducted at Camp Buckner and other field training sites. What appeared on the surface as a routine mission became anything but routine when the soldiers of the 253d became tutors for the 1,200 mem-

bers of the Corps of Cadets at the Military Academy. Here is how their secondary but very important mission came about.

Following instructions, the 22-truck fleet from the Garden State set up its motor pool and operations center in a parking area to the rear of the Michie Stadium grandstand. The 253d motor park area included the normal variety of tarpaulins and trailers (field concept) for vehicle maintenance and vehicle record keeping. The area was well organized and a general hub of activity surrounded the field motor park. Business as usual was the

theme until MAJ John Sylvester, Chief of the Cadet Field Training Maintenance Committee at the Point, took a short cut to his office one day, and by so doing passed the 253d area, but not before he was impressed by the business-like manner in which the operations at the motor park were conducted. According to the Major, he saw a working motor pool and one that was functional as well. Safety, discipline, and knowhow were evident throughout the motor area. Here, he thought, was the real world of vehicle maintenance. Why not put this talent to work for the benefit of the cadet corps? The Major was concerned that the cadets needed reinforcement in teaching testable skills in how to perform maintenance inspections as well as more exposure to the scope of field maintenance

vehicle activities.

With the approval of all concerned, a program of instruction, including lesson plans, training selected cadets to conduct classes for fellow classmates, and the arranging of training stations, was quickly devised. The cadet corps visited the motor park area and participated in some realistic vehicle maintenance—hands-on equipment-type training. According to a number of cadets, the practical training was most rewarding and enhanced their knowledge of proper field vehicle maintenance. For the personnel of the 253d Transportation Company, this secondary mission proved equally beneficial and they took great pride on being, even for a short period of time, teachers to the military cadets of the classes of 1979 through 1981.

MARINE CORPS CHOOSES GSG

Ground Systems Group (GSG) of the Hughes Aircraft Company has been chosen for the competitive contract definition phase of the Marine integrated fire and air support system (MIFASS) of the US Marine Corps. GSG will compete with Morden Systems for the next step, the engineering development phase.

MIFASS is designed to increase the effectiveness of command and control activities in Marine

Corps combat operations by integrating the varied elements into a coordinated effort.

MIFASS will result in computer and communications hardware and software for the command and control of air, sea, and land fire support.

A main subcontractor in the project is Computer Devices Corporation of Canada. The contract was awarded by Naval Electronics Systems Command.

RESERVE FORCES REFRESHER

The Command and General Staff College recently held a 1-week officer Support Command refresher course. Approximately 114 Reserve and National Guard officers were provided the opportunity to develop staff teamwork and paper application of current combat service support doctrines. Course of instruction during the week was in stockage objectives, movement of supplies, status at a certain period of time, location and positions of units (logistical), and supporting the corps operations.

Tactics update was provided to explain the fundamentals of defense planning, the latest tactics and terms, battlefield organization, and defen-

sive operations conduct.

Soviet logistics update provided the officers an opportunity to identify what is similar, the differences, and the vulnerabilities of the Soviet and the US logistics systems.

Combat service support fundamentals update prior to getting into the exercise was used in determining missions, functions, organizations, and operations of the combat service support (CSS) system. Map exercises were held analyzing problems and preparing CSS plans and orders under time and resource constraints.

—The Lamp

AMRAAM

The US Air Force Systems Command at Andrews Air Force Base, Maryland, announced two contracts totaling \$84,526,643 to begin a prototype validation on an advanced medium-range air-to-air missile (AMRAAM).

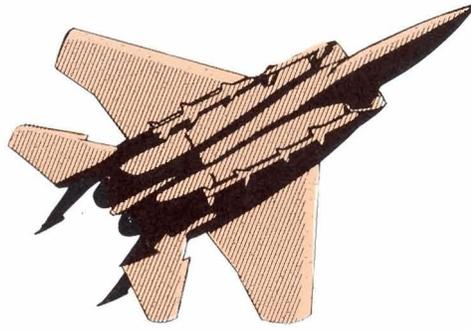
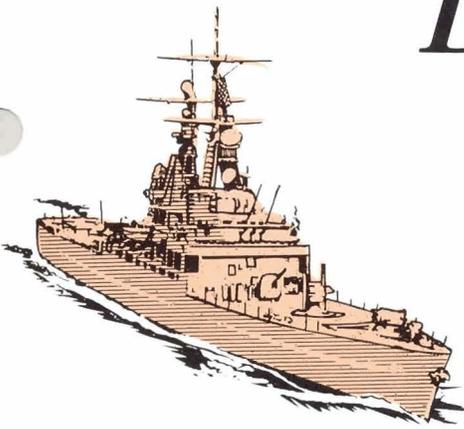
Under the contracts, Hughes Aircraft Company and Raytheon Company have been selected by the Air Force to work the prototype validation of the AMRAAM. The validation phase is expected to last 13 months, after which the winning

AMRAAM design will be carried through full-scale engineering development into production. The new missile is intended to replace the widely-deployed, radar-guided Sparrow, an air-to-air missile in use by the US Air Force and the Navy.

The AMRAAM will be launched from any of the four latest US fighter aircraft, the F-14, F-15, F-16, and the F/A-18. It may also be employed on NATO aircraft.



DEVELOPMENTS



NEW FIGHTING VEHICLE

The prototype of a new fighting vehicle system (FVS) that for the first time houses the TOW weapon subsystem and crew completely under armor has been accepted by the US Army and has entered extensive field tests.

The vehicle is equipped with the electro-optical and data systems group's TOW weapon subsystem, which consists of an integrated sight, a TOW launcher, command guidance electronics, and a power converter. The subsystem has been devel-

oped under contracts totaling about \$16.5 million.

The FVS is one member of a new family of fighting vehicles and is designed as a companion to the Army's XM-1 main battle tank. The vehicle is armed with two TOW missiles, a Bushmaster cannon and a machinegun.

In the first test firings of the TOW missile from the FVS last June, gunners scored 100 percent against stationary and moving targets at ranges from 500 to 3,000 meters.

MINE-CLEARING ROLLER

The track-width, tank-mounted, mine-clearing roller system developed by the US Army Mobility Equipment Research and Development Command (MERADCOM), Fort Belvoir, VA, has been type classified and is scheduled to go into production in August.

The mine-clearing roller consists of a retrofit kit, a mounting kit, roller kit, and fixture kit. It weighs less than 10 tons and can be mounted in the field by the tank crew in less than 15 minutes for use day or night under all weather conditions.

This roller is about 90 percent effective against

pressure-fuzed mines buried up to 4 inches when traveling up to 10 mph. A weighted chain suspended between the roller assemblies clears tilt rod mines. It can survive blasts from two 22-pound high-explosive mines. Under battle conditions, the rollers can be released in less than 30 seconds using a hydraulic disconnect system.

Ninety rollers will be procured initially over the next 3 years for use by armored units in Europe. Preproduction tests will be conducted at Aberdeen Proving Ground, MD, this spring.

—ARMOR

NEW ROCKET LAUNCHER

A new type of helicopter-mounted rocket launcher is being developed for the US Army. The launcher has proved to be less costly, more durable, and lighter weight than models now in service. Although low enough in cost to be disposable, the aluminum launcher can be reused for as many as 32 firings.

There are two versions of the new launchers — a 19-tube and a 7-tube model. The 19-tube launcher weighs only 79 pounds, about 70 pounds less than the one presently in use. This weight savings will permit the Army to add other features to improve the performance of its helicopter rocket launcher system without sacrificing critical fuel.

A key reason for the launcher's advantages in weight and cost is the adaptation of advanced manufacturing techniques that have been developed in the TOW antitank guided missile. In one such process, an electromagnetic force is used to press the aluminum skin and tubes of the launcher into the three aluminum support structures. This greatly reduces labor costs and lowers the weight associated with such conventional metalworking methods as welding.

During the tests in which 4,300 live rockets were fired, the two versions of the light-weight launcher showed better than a 97 percent reliability in initial firings. In test procedures, the launchers had

to survive 16 two-hour helicopter flight missions with no more than 3 tubes of the 19-tube version, or 1 tube of the 7-tube model becoming inoperative.

The launchers are intended initially for the Army's AH-1 Cobra series of helicopters and its new advanced attack helicopter (AAH). Modification studies are being considered that would permit them to be adapted to fixed-wing military aircraft. The production version of the launchers will

permit fuze-timing selection from the cockpit and also will provide the capability to launch 2.75-inch rockets powered by either the standard Mark 40 motor or the new, higher thrust, Navy-developed Mark 66 motor. The 2.75-inch unguided rockets that are fired from the launchers are used for a variety of battlefield purposes such as antipersonnel and antivehicle, depending on the warheads installed.

GSRS IN 1980

Two contractors, Boeing Aerospace and Vaught Corporation, are currently involved in a shoot out at White Sands Missile Range in New Mexico. The two companies are competing for a contract to produce the Army's new general support rocket system (GSRS).

The GSRS is planned to be a multination development and production program which will involve several NATO countries. Negotiations with the countries involved are currently underway for establishing a cooperative program. Through a cooperative program, it is expected that development costs will be greatly decreased, thereby benefiting economically all countries concerned.

According to program officials, the GSRS will be

a low-cost, rugged, reliable artillery rocket system. The new system will be carried by a self-propelled, tracked vehicle which will use modified infantry fighting vehicles. The system will feature a 12-round launcher that can fire rockets singly or in rapid succession.

Three warheads are planned for the GSRS: a dual purpose antimateriel/antipersonnel warhead, a scatterable antitank mine, and a terminal homing antitank warhead.

GSRS is a new development that is designed to supplement current artillery. Originally, the Army planned a 10-year developmental program; however, the program has been accelerated and is expected to be fielded within 5 years.

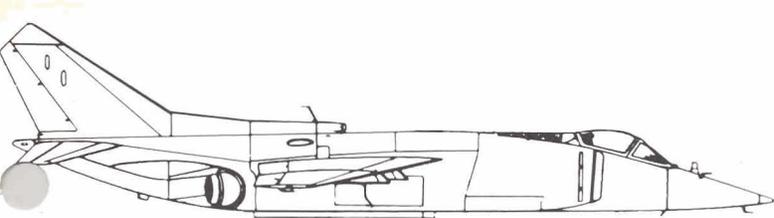
NEW BOMBING SYSTEM



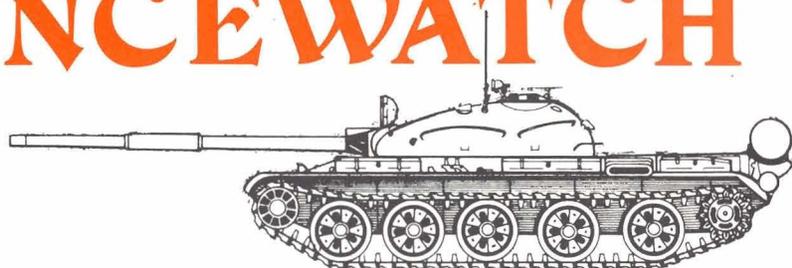
A new angle rate bombing system (ARBS), whose "eye" can be seen mounted in the nose of the A-4M above, is expected to sharply improve both day and night bombing accuracy of these US Marine Corps attack aircraft. The A-4M, which

participated in the technical evaluation of the weapon aiming and delivery system, carries small Mark-76 practice bombs on its outer wing rack in readiness for a test bombing run.





INTELLIGENCEWATCH

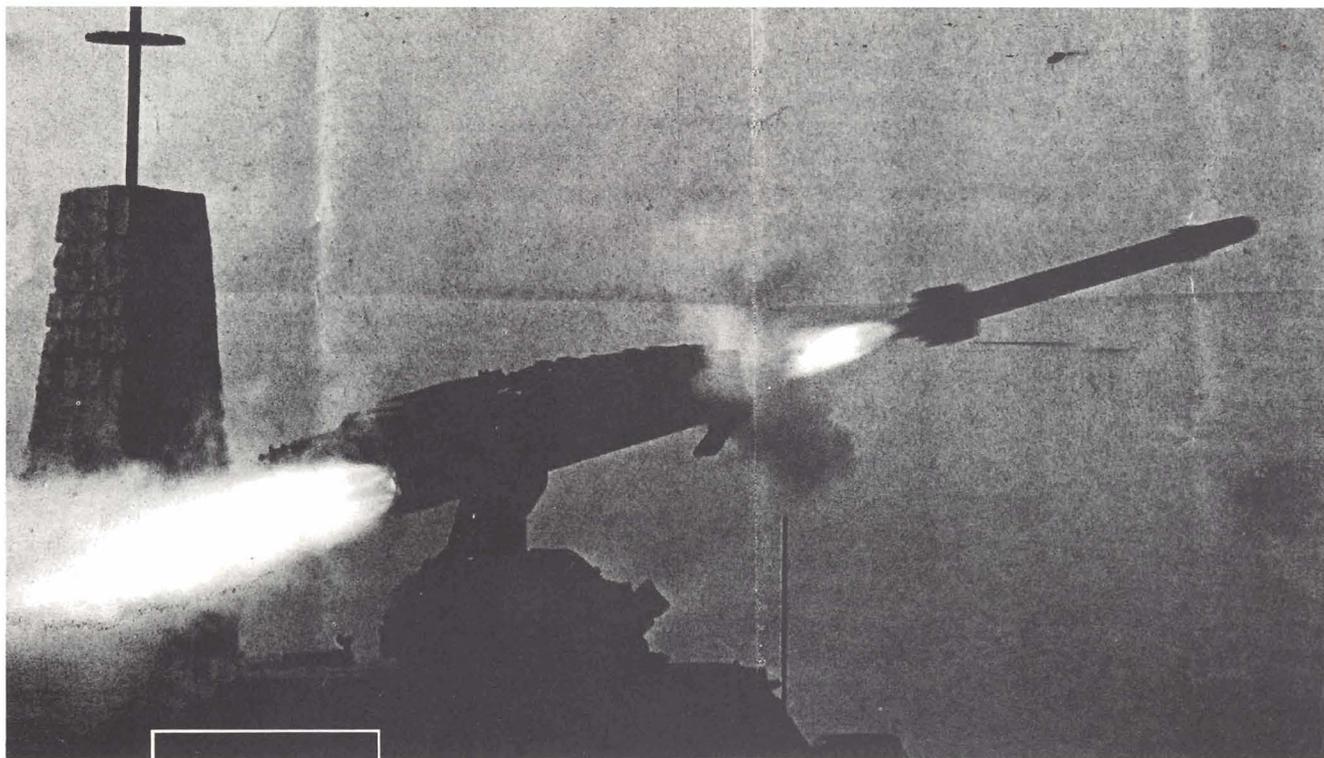


KOREAN MISSILE

South Korea successfully tested its first surface-to-surface missiles in September 1978. The missiles, developed entirely by South Korean technology, will go into production soon. No details on

range or other capabilities were released. Until now, South Korean forces have relied on US-built Honest John missiles, which give our Field Artillery its big punch.

SA-9/GASKIN AT LAUNCH



To date, only parade photos of this Soviet air defense weapon system (operational since 1974) have been available. This is the first that shows the system firing. It can be seen that the four storage/launch tubes can be fired in rapid succession. Note that one missile is leaving the launcher while the missile in the right outer launch tube has just been ignited. Targets have to be visually acquired and aligned in azimuth and elevation. The

disadvantages of the GASKIN system are a reduction in effectiveness by poor visibility, especially in darkness or smoke on the battlefield, and the lack of an integrated radar unit. After firing, the launcher is easily detected because of the fire and smoke signature from the missile. The high profile of the missiles in their containers makes them vulnerable to enemy fire.

20-MM M55



Seen here is a three-barrelled, 20-mm M55 AA gun manufactured in Yugoslavia. The weapon rests on a one-axle pallet, is .70 caliber, its overall length in travel position is 4.04m, the width is 1.27m, and its weight is 1,089 kg in the travel position. In firing position the weight is adjusted to 1,171 kg. It has a height of 1.93m in travel position. Elevation ranges from -5° to 83° , azimuth traverse is 360° . Rate of fire is 700 to 800 rounds per minute. Maximum range is 5,700m horizontally, 4,500m in the verticle firing position. Effective range against aircraft is 1,500m and against ground targets, 840m. It can penetrate armor up to 18-mm. The system has a crew of six.

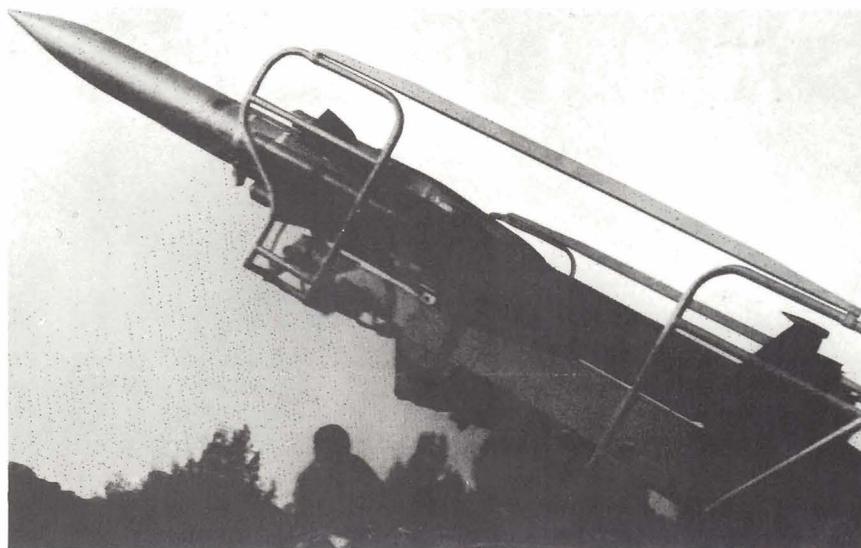
TOW FOR BRITAIN'S LYNX

The first tube-launched, optically tracked, wire-guided (TOW) system for Britain's Lynx helicopter was delivered recently, marking a major milestone in the British Ministry of Defense program aimed at arming the Lynx with the TOW for service with the British Army Air Corps in the 1980s.

Westland Helicopters, Ltd, will install and

flight-qualify the Lynx TOW system. The system is being developed by Hughes for the British Ministry of Defense and its prime contractor, British Aerospace Dynamics Group, Stevenage/Bristol Division. The British firm will manufacture the system under license from Hughes.

GASKIN/GAINFUL



Another View of the GAINFUL

The Soviet anti-aircraft missile system GASKIN and GAINFUL, on full-tracked vehicles, have been delivered to Yugoslavia. Photo shows Yugoslav soldiers of the air defense troops with the GAINFUL

system. With these new weapons, the Yugoslav army has modern defense weapon systems for use in the field.





CRISIS IN COMMAND, by Richard Gabriel and Paul Savage, Hill and Wang, New York, 1978. 179 pages, \$10.00.

**Reviewed by Major Paul E. Semmens,
ADA The Air Force Academy**

Much scholarship on the Vietnam War is focusing on explaining why the United States lost to a third-rate power. Criticism of the political leadership has been universal. David Halberstam, in his The Best and the Brightest, derides Washington bureaucrats who confidently directed the war effort without any real appreciation of the facts. The most balanced study, Colonel Dave Palmer's The Summons of the Trumpet, outlines President Johnson's vacillation regarding policy objectives and his over-control of military operations.

Criticism of the military's performance, however, has been relatively mute because most scholars feel Westmoreland's "Big Unit War" was the best solution to a complex political-military problem. In contrast, two retired Army officers, Paul Savage and Richard Gabriel, suggest the Army did contribute to the debacle in Vietnam. In fact, they maintain the Army's "operational performance" there suggested the military faced a Crisis in Command.

Specifically, the officer corps possessed an ethic, the authors argue, which centered on self-advancement rather than on service, sacrifice, and devotion to unit cohesion. The authors conclude that careerism replaced leadership in Vietnam and that the same ethos continues to exist today.

Gabriel and Savage charge that officers went to Vietnam to get their "tickets punched" rather than to lead and get the job done. Senior Army officers encouraged this by reducing company commands to 6 months and flooding the country with excess officers. Consequently, the enlisted men believed a great majority of the officers, who were located in relatively safe base camp areas and

shuttled through combat units, didn't understand the tactical situation. The soldiers, who spent 12 months "in the trenches," were frustrated. They believed that their commanders didn't understand the nature of the war, yet the same people were prepared to sacrifice lives unnecessarily to enhance their careers. The authors believe this lack of trust accounts for many of the officer murders between 1969 and 1972.

Crisis in Command condemns the Army's General Officer Corps for its lack of professional dissent. General Westmoreland and his subordinates realized early that search and destroy tactics necessitated a prolonged war of attrition. Army leaders recommended to the Secretary of Defense that American forces eliminate the Communist sanctuaries in Laos and Cambodia—but these ideas were ignored or rejected. Our "strategic bankruptcy" was evident in 1968 when after 3 years of the "Big Unit War"—and optimistic statements by both military and political leaders—the Communists still had the resources to launch the massive Tet Offensive. When faced by President Johnson's political decisions, which they knew were militarily ineffective, not one Army general demonstrated his professional pride by retiring, resigning, requesting relief, or refusing to obey an order. Instead, a belief of "if I don't do it, someone else will" kept them on active duty.

Crisis in Command has its shortcomings. It gives the impression the entire army in Vietnam, rather than a small proportion of it, lacked cohesion. This is certainly not true. Also, the authors borrow freely from a 1971 Army War College study that ostensibly forms the basis for many of their criticisms of the officer ethic. The study is cited, but not given the credit it deserves. A third point is the thesis of the book is repeated to the point of redundancy.

Despite these faults, Crisis in Command does represent a powerful cry for reform in the military.

It is a plea for military men to realize that success in combat is not a function of management and efficiency but rather leadership and sacrifice. Soldiers are not businessmen. One cannot manage a man to die. Every air defender should read this book.

STRATEGY FOR DEFEAT, Adm. U.S.G. Sharp, Presidio Press, San Rafael, California, 1978. 324 pages, illustrated, \$12.95.

Was the United States doomed to lose the long, exasperating struggle in Vietnam—or was it a war that could have and should have been won?

Admiral Sharp reveals the decision-making at the highest levels of Government and critically analyzes the strategy as it evolved. He concludes that, had the United States used its air and naval power to maximum effectiveness in support of ground forces, the war could have been won.

The author writes from a unique vantage point, having served as Commander in Chief, Pacific, during four of the most critical war years. Though he was in charge of all military activities in the Pacific, including Vietnam, with General Westmoreland and General Abrams reporting to him, his directives came from Washington. There the Joint Chiefs of Staff advocated an aggressive campaign, emphasizing bombing of the heartland of North Vietnam and mining of enemy harbors. The civilian leadership, however, placed severe restrictions on the bombing and insisted on a strategy of gradualism. While the hawks and the doves battled in Washington, the war dragged on for a futile decade.

Admiral Sharp quotes from personal interviews, official dispatches and documents, and Pentagon Papers. Based on a firsthand knowledge of the events, strategies, and personalities, his account is a valuable contribution to contemporary history.

FLYING COMBAT AIRCRAFT: USAAF — USAF, VOLUME II, edited by Robin Higham and Carol Williams, Iowa State University Press, Ames, Iowa, 1978. 170 pages, \$11.95.

Once again, more than 20 authors document the mystique and history of the combat aviation experience. Just published by the Iowa State University Press, *Flying Combat Aircraft: USAAF — USAF, Volume II*, is full of fascinating detail on this phase of aviation. Editors Robin Higham and Carol Williams have gathered authentic, readable pieces on the roles various USAAF — USAF combat aircraft and their pilots played in United States history.

Each chapter is uniquely individual — written by a pilot-author who flew many hours in his machine in times of peace as well as combat. Many of these gallant men are still flying their aircraft, some having been in service for 20 years.

Flying Combat Aircraft, Volume II, is a sequel to the highly successful *Flying Combat Aircraft*. FCA II does for American aviation what other books have done for the British — it tells how various types of aircraft were flown. The accounts are enlightening, stimulating, and sometimes amusing — covering different types of aircraft, including the Navy's FOF Panther jet, and the super bomber of World War II, the B-24. *Flying Combat Aircraft, Volume II*, is a book of air lore for buffs, lovers of flying, and historians of war and technology.

F-14 TOMCAT, by Arthur Reed, Charles Scribner's Sons, New York, 1978. 112 pages, \$9.95.

Reviewed by Bert Kinzey

Calling the F-14, "the most potent fighter in the Western armory," Arthur Reed traces the development of this aircraft from inception to full-scale production and presents good evidence to support the "most potent fighter" claim.

A large portion of the book covers the development of the Tomcat with photos and pilot reports of the first flights. Many interesting photos and an equally informative narrative explain how the F-14 is assembled. The use of the electron beam welding process, use of titanium, and how the swing wings are constructed are all covered in such a way that the reader can gain an understanding of just how complex an operation it is to construct a modern military aircraft.

With the recent internal trouble in Iran, the chapter titled, "The Sale to the Shah," sheds light on the sale of America's most sophisticated fighter to a country whose proximity to the Soviet Union created a defense need but left the aircraft and its technology dangerously close to Soviet hands.

Chapters are also included that give an excellent account of the Tomcat's potent weapon system and fighting capabilities. The amazing abilities of the AWG-9/Phoenix system are discussed, and the author leaves little doubt that the F-14 is indeed the finest, most potent fighter in the world. This is due to the fact that the F-14 can track 24 targets and fire on 6 of them simultaneously. It is the only fighter that can attack more than one aerial target at a time, which truly puts it in a class by itself.

The last, and perhaps the most interesting chapter, is titled, "Tomcat Beneath the Ocean." This is an account of the efforts, frustration, and ultimate success of the US Navy in recovering an F-14 that had rolled overboard from the aircraft carrier, USS John F. Kennedy. Attached to the Tomcat was one of the sophisticated and secret Phoenix missiles. The efforts made to recover the aircraft and missile are thoroughly explained and illustrated with excellent photographs. The reader can sense the urgency, drama, and frustration as the aircraft was found, then lost, then found again, and finally successfully recovered as the Soviets watched and waited close by.

An interesting and informative book, *F-14 Tomcat*, by Arthur Reed, is excellent reading for anyone with an interest in modern military aircraft.

THE DUEL OF THE GIANTS, by Drew Middleton, Charles Scribner's Sons, New York, 1978. 241 pages, \$12.95.

Reviewed by CPT Douglas E. Warren

The Duel of the Giants describes modern China since Mao's death and the causes and results of the Sino-Soviet rift. For those who desire an overview of these subjects without getting bogged down in trivia, *The Duel of the Giants* is an excellent source. The author combines research, a personal visit to China, and discussions with Soviet military personnel into an analytical discussion of the situation between these two giants.

The book begins with a discussion of the apparent change in direction China has taken under Hua's leadership. It appears that Mao's "revolution" has been set aside, at least temporarily, in favor of developing China's potential as a superpower. Many of Mao's most cherished policies in the Great Leap Forward and the Great Proletarian Cultural Revolution have been abandoned—and rightly so—as counterproductive. The new leadership believes that economic modernization must take precedence over the "revolution." They also believe that political stability is an essential prerequisite to this. While it would seem that this new attitude would bring China closer to the Soviets, it does not. The pervasive attitude in China today is that the Russians are China's enemy and will attack China. The author makes it clear that this attitude is shared by all Chinese and not just the top leadership.

The author traces the ill feelings between the two nations back to 1579. He summarizes the main events that led to the open break between Mao and

Khrushchev in 1960 and describes the detrimental effect this break had on China. The superpower myth surrounding China is also exploded. The only thing currently super about China is the size of its population. Oil may be China's big hope for the future. The reserves are vast, but as production of oil grows, so too will China's appetite. Being a Communist nation, China could, however, create an artificial excess.

Throughout the book, the author portrays the Chinese people as humorous and courteous with an endearing frankness about their weaknesses. They are a busy people, intent on development, who eagerly reach for the new but are not quite ready to give up the old. There is, of course, a great ignorance of life in other countries. Though involved in the difficult transition from a backward to a modern state, the Chinese people maintain a strong communal sense. Family groups are still closely knit.

The author also discusses Siberia in some detail: both its importance to the Soviets and the military preparations taken to "defend" it. Although 80 percent of the energy consumption in the Soviet Union lies in European Russia, 80 percent of the primary reserves lie in Siberia. Reserves in European Russia are becoming depleted. The author believes that Russia will shortly face an economic crisis and that developing Siberia will be their only chance of overcoming it. To "defend" Siberia the Russians have assembled a massive army. This army has supply problems, however. The Trans-Siberian Railway is of limited capacity and is very vulnerable to interdiction. The Baikal-Amur Mainline Railway under construction shares these problems. Supply by sea and air is difficult and it is doubtful that the Soviets could maintain adequate supply for a prolonged period. Even with this problem, the author believes the Soviet Union is quite capable of launching an offensive that would be at least initially successful.

The Chinese counter this threat with the "people's war." They firmly believe, perhaps unrealistically, that they could win any war with people instead of tanks. Throughout China, massive tunnel complexes have been built under cities and communes. The Chinese plan to use these both for civil defense and as a base for guerrilla operations. Chinese military thoughts and tactics are as far behind the times as their equipment. The survivors of the Long March have, unfortunately, had an unwarranted effect on China's military.

In conclusion, the author discusses possibilities for the future. Will there be a rapprochement between China and Russia, a continued rivalry, or

war? Although China's economic situation tends to lead her to rapprochement, the author believes that the status quo will be maintained as long as the present, conservative Soviet leadership is in power. Should war break out, however, the big question in the author's mind is who America would support, if anyone.

Captain Warren is a graduate of the US Military Academy where he carried subjects dealing with both China and Russia. He has also served in the Far East.

THE RAMADAN WAR, 1973, by Badri, Magdoub, and Zohdy. T. W. Dupy Associates, Inc., Dunn Loring, Virginia. 236 pages, \$14.75.

The Ramadan War, 1973, is an English translation of a history of the "Fourth Round" of conflict in a long series of Arab-Israeli Wars. To many, this round is widely known as the October War of 1973; however, it is best known to the Arab and Islamic world as the War of Ramadan. The Ramadan War, 1973, may be the only available English translation of the October War of 1973 as told by Arabs who played important roles in this Arab-Israel conflict of 1973. Their combined efforts serve as an eye-witness report of the build-up for the war, the conflict itself, and the postwar period to include the economic impact on both nations.

The three Arab authors of the book are: General Hassan el Badri, Professor of Military History and the Art of War at the Nasser High Military Academy (Badri participated in the formulation of political-military recommendations to President Sadat); General Toha el Magdoub, head of the GHQ Operations Department during the War of Ramadan; and Major General Mohammed Dia el Din Zohdy, a Professor of Strategy and the Operational Art at the Nasser High Military Academy. General Zohdy was Chief of the planning task force before and during the Ramadan War. All three authors are senior officers of the Egyptian Army and all participated in an official capacity in the events they describe. T. N. Dupy edited the original translation.

The Ramadan War, 1973, is a comprehensive military analysis (from the Egyptian point of view) of the war between the Arab nations and Israel. As might be expected, the authors spare no words in placing the Arab soldier and Arab military strategy in a most favorable light. The reader feels this throughout the book. One gets the impression that the authors are redeeming the tarnished Arab image that resulted from the 6-day war of 1967 between Egypt and Israel.

The Ramadan War taught most military thinkers what measures must be taken to defend against several Russian air defense missiles. The

authors of the book give us some insight on this important aspect of the battlefield. The use of SA-2s, SA-3s, and SA-6s is vividly described. What we might expect in the tank battle of the future is demonstrated in the book. The authors explain in detail the effective employment of a complete combat arms team. The use of the artillery, infantry, armor, rangers, and combat engineers, as well as the Navy, Air Force, and Frog Men, is dramatically told. According to the authors, air defense played a most important role during the war. Air defense provided continuous protection for land forces east and west of the Canal throughout the fighting. Effective cover for air bases prevented the enemy from destroying planes on the ground, which was not the case in the war of 1967 between the Arabs and Israel. Air defenders of all nations learned much from this encounter, and the story of the Ramadan War should be of great interest to those charged with formulating an air defense plan.

The history of the Ramadan War, 1973, is exceptionally well documented by the authors. Chapter 4, Part 11, "Surprise," gives in detail the rationale for choosing the hour, day, and month to begin the Ramadan War. This is a study in itself. The time, effort, and attention to detail that went into the planning for the War were professional even to the age-old military tactic of surprise. The crossing of the Suez Canal and the assault on the Bai Lu Line are dramatically described. The success of this assault made a myth of the statement of the Israel Chief of Staff that the Bai Lu Line would be the graveyard of the Egyptian Army. According to the authors, the Siad offense of October 1973 achieved every one of its political and military objectives. The impact of the war on Israel's economy was most damaging according to the authors. Arab figures revealed that the War of 1967 cost Israel \$1 million per day compared to \$250 million per day in 1973.

The Ramadan War, 1973, has a wealth of information that any military man would find interesting and informative. The section dealing with lessons learned is enlightening and thought-provoking. The withholding of oil by the Egyptians as a weapon of war added a new dimension to the conflict. The book gives one a good insight into the very sensitive problems that are unique to the Middle East. It also contains pictures and map illustrations that help the reader understand the order of battle.

INSTRUMENTS OF DARKNESS, The History of Electronic Warfare, by Alfred Price, Charles Scribner's Sons, New York, 1978. \$12.95.

Reviewed by Captain Kenneth L. St. Cyr

Although this is its first release in America, In-

struments of Darkness is a revised version of the original book released in 1967. Its two additional chapters updated the development of electronic warfare from the World War II era to the present.

The book concentrated on providing the reader with a comprehensive description of the evolution and use of electronic warfare through World War II by both the British and Germans.

Mr. Price is particularly effective in his ability to explain concisely and clearly the basic concepts underlying the use of electronic warfare aids.

Throughout the book, Price portrays the effect electronic warfare employment had on Allied operations from the Battle of Britain to the conclusion of World War II. In each case, he accurately relates its importance without overstating its value in each successful operation, as some historians tend to do when attempting to drive home a point.

Of particular amusement is Price's account of a briefing for Reichsmarshal Goring at which Goring was given a detailed explanation of the workings of the Y-Gerät, an early German Air Force device used to guide German bombers to their ground targets. Goring's one comment was, "Radio aids contain boxes with coils, and I don't like boxes with coils." His bewilderment of electronics is shared even today by many of us.

The British development and employment of "Window" (chaff as we know it) still remain as an extremely effective electronic countermeasure technique.

In March of 1942, British scientist Joan Curran succeeded in developing strips of foil, code named "Window," capable of saturating both British and German radar sets. The Germans likewise had developed their own version of the strips, "Duppell." Goring was so fearful of the German test results that he forbid any further discussion on research on "Duppel," including an antidote, for fear of British discovery and subsequent use against German radar nets. When the situation finally dictated the British use of Window in the Battle of Hamburg, July 1943, its success was so complete that German Field Marshal Milch re-

marked, "I am beginning to think that we are sitting out on a limb and the British are sawing that limb off."

The Allies' effective and highly coordinated use of chaff and spoof techniques in three elaborate flint operations, TAXABLE, GLIMMER, and TITANIC, in support of the Normandy D-Day invasion was very successful. It deceived the Germans as to the true intent of the Allied Normandy invaders and it was not until the afternoon of D-Day that the Germans were convinced it was the main assault and committed their armor to the battle. But by then it was too late.

The final two chapters of the book summarize the ebb and flow of electronic warfare development during World War II. American employment of electronic warfare during the Korean War was very limited and consisted basically of World War II equipment and tactics. This limited employment led to a lull in electronic warfare development until Russian air defense systems employed in Vietnam forced its revival.

The last chapter contains an excellent account by CPT Don Larson, 44th TAC Fighter Sqdn., of a typical "Wild Weasel" SAM suppression mission over North Vietnam in the late 1960s.

Mr. Price's use of over 75 photographs and illustrations enhances the development of the story and gives the reader a much greater appreciation of the role of electronic warfare in modern combat.

The greatest impression that Price makes is just how incredible the sophistication of electronic warfare became during the World War II years and, with few exceptions, how lax it has been since. The 1975 Arab-Israeli War has again served as a reminder that the luxury of peacetime development can quickly be dissolved by the necessity of war.

Captain St. Cyr graduated from the US Military Academy in 1974. He has served in command and staff assignments in ADA units and is now attending the ADA Officers Advanced Course. Upon graduation, he will be assigned to the 4th Bn, 61st ADA, Fort Carson, Colorado.

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