

# AIR DEFENSE

OCTOBER-DECEMBER 1978

MAGAZINE

*Seasons Greetings*



LINDA  
ROSS

# AIR DEFENSE

## MAGAZINE

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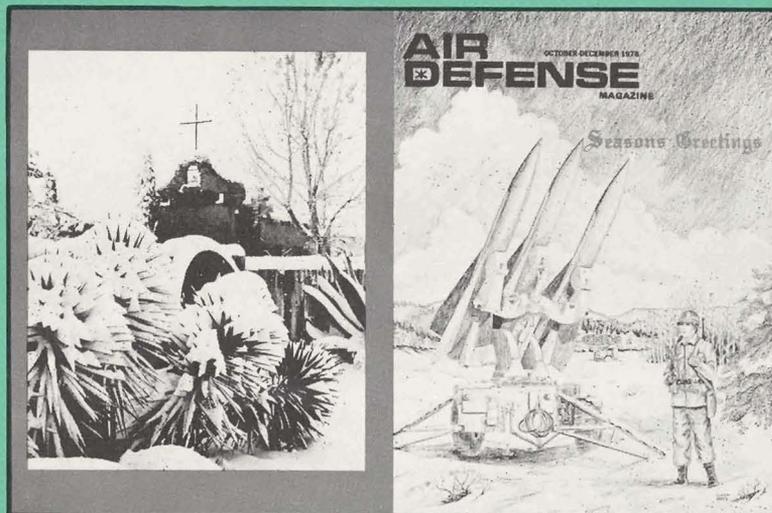
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*COVER: Across oceans and continents, thousands of soldiers keep a lonely vigil, allowing their countrymen and their loved ones to enjoy the blessings of freedom this Holiday Season. (Drawing by Linda Ross; back cover photo by Harry Dudek.)*

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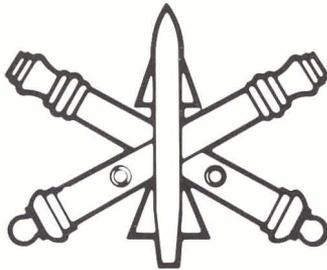
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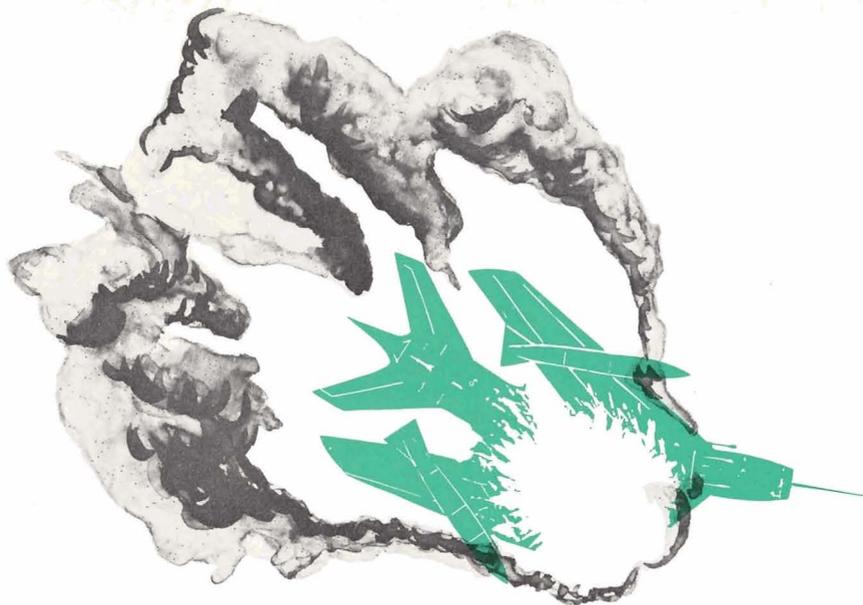


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# INTERCEPT

MAJOR GENERAL JOHN J. KOEHLER, JR.

**T**he topics that I have addressed previously in Intercept Point included changes in air defense mission requirements within the last decade, self-paced instruction, Improved Hawk package training, and the recently published Commander's Manual. Either directly or indirectly, a theme repeated in these discussions was the importance that commanders, supervisors, and US Army Air Defense School graduates (based on their field experience) communicate to the Air Defense School their thoughts, ideas, suggestions, and recommendations regarding the School products. Revealing your ideas to the School about these products is, in a simple term, feedback. So feedback is the focus of this Intercept Point discussion.

At the Air Defense School, training programs are developed through a systematic and logical process formally called Instructional Systems Development (ISD). Here is a somewhat simplified description of how this five-phase process works.

In Phase I, we determine the tasks involved in a specific job that an individual must be taught before he can be expected to perform that job. Job performance measures that will be used to evaluate his proficiency in performing these tasks are also developed.

In Phase II, we convert job tasks to learning objectives/steps, design test items to measure each learning objective, and arrange learning objectives/steps in a logical and progressive learning sequence.

In Phase III, the instruction package is devel-

oped, including the identification and allocation of all resources needed to conduct instruction. The first three phases are under the staff supervision of the Directorate of Training Developments with participation of the Directorate of Training and the Directorate of Evaluation.

In Phase IV, we implement the instruction package; i.e., we train the instructors, supervisors, and managers, and conduct instruction. The Directorate of Training has staff supervision of this area for officer and maintenance courses, and the Commander of the Air Defense Artillery Training Brigade has staff supervision of the operator/crewman courses.

Finally, in Phase V, we evaluate the effectiveness of instruction and the actual performance of job incumbents to determine what revisions that affect other phases are necessary. It is this phase that involves feedback.

Phase V is a continuous process that makes the ISD system viable. The Directorate of Support, The School Brigade, the Directorate of Combat Developments, and the TRADOC System Managers for Patriot, Stinger, Roland, and DIVAD Gun are key participants in the feedback loop at Fort Bliss. It reveals the changes necessary to realize our ultimate product — a highly proficient soldier. Feedback from you commanders, supervisors, and school graduates is, therefore, a key element in Phase V of the ISD process. Your comments help provide the basis for revising training programs to conform with adjustments due to organizational/operational changes in the field,



modifications to equipment, or clarification of an imprecise definition of job tasks, standards, or conditions in original programs. Without this feedback, based upon experience, we find little justification for revising established training programs.

Within the Air Defense School, feedback is collected by a variety of means. These include questionnaires, in-course examinations, evaluation of instruction, seminars, end-of-course interviews, and end-of-course hands-on proficiency tests. Information is collected from the field by means of questionnaires, on-site visits and surveys, SQT results, and letters from commanders, supervisors, and graduates.

Although most departments in the School are concerned with the collection of feedback, the information we've been discussing is of particular interest to the Directorate of Evaluation (DOE), USAADS. This comparatively new directorate is uniquely organized to collect and analyze feedback and then present recommendations concerning any training problems revealed. DOE, as well as other directorates and training departments, periodically sends teams to the field to gather information. This on-the-spot method is highly effective in maintaining direct contact between USAADS and the units we serve. However, constraints on travel funds, coupled with the crowded schedules of field units, preclude increasing this aspect of the feedback collection effort to the extent desired.

Another method that is less direct but highly effective is to have units conduct thorough reviews of draft documents and literature from the

School and provide the benefit of their experience through constructive comments. I'm referring to draft FMs, SQTs, ARTEPs, Soldier's/Commander's Manuals, and similar materials. These comments are needed and are given serious consideration in our efforts to produce the best and most realistic literature possible. Too often, we receive this feedback after a document is distributed to the field in final form — too late. But even this feedback is used as the basis of change for many training products.

We especially need field feedback on ARTEPs at this time. If your unit has trained using ARTEP standards recently, we would like to hear what you think of the tasks, conditions, and standards.

I urge all air defense commanders, supervisors, and other users of the Air Defense School's products to maintain a flow of information to the School concerning the quality of these products. Just write to the Commandant, US Army Air Defense School, ATTN: ATSA-EV, Fort Bliss, Texas 79916. Your input will be used in our joint effort to provide you the best product possible.



*John J. Koehler*

# ENGAGEMENT ZONE



## ASP COST EFFECTIVE

Dear Sir:

Inclosed is a letter written through us to you by CPT Paul Thompson, who served as our Battalion S4 for 30 months. Having recently departed this command for Fort Hood, Texas, CPT Thompson left the letter with us and we now forward it to you for possible use in the "Engagement Zone" section of AIR DEFENSE Magazine.

DAVID C. CLINGER  
CPT, ADA  
Adjutant, 1st Bn, 43d ADA

*The letter to which CPT Clinger refers follows.*

Dear Editor:

As an Ordnance officer, I have had to undergo numerous changes in my thinking since being assigned as the S4 of the 1st Battalion, 43d Air Defense Artillery (Herc), at Fort Richardson, Alaska. The most difficult was justifying the travel expense associated with sending three firing battery crews from Anchorage to Fort Bliss, Texas, for annual service practice (ASP). However, justification was realized this past March when I had the opportunity to observe one of our firing batteries participating in ASP. The benefits derived from the exercise far exceed the recognition for mission performance capabilities alone. I observed a marked increase in esprit de corps and in each man's confidence in his individual skills.

The 1st Battalion, 43d Air Defense Artillery's mission requires a constant ready status, but the primary weapon system is never really employed during operational readiness tests. However, during ASP the spectrum is changed from theoretical to actual and even someone not directly associated with ADA firings could detect a change of mood in the battery personnel. It began on the plane en route to Fort Bliss and culminated the moment the round was fired in the form of tight unit cohesiveness. This was especially obvious during assembly operations in which personnel worked as if they were one pair of hands, performing steps taken during more routine periodic exercises with the

skill and coordination of a surgeon.

The evaluators not only evaluated but also carefully instructed and informed the crews what was expected of them, even going as far as explaining to individuals their roles in the operation. Esprit came into play twice in the form of pride in the battalion's performance and in competition between the individual batteries for the highest overall score.

The result of this year's ASP was the realization that each battery within the 1st Battalion, 43d Air Defense Artillery, is capable of forging itself into a singular unit dedicated to excel in the job its men have been trained to do. My observations during the exercise have convinced me that ASP is not only cost effective but an absolute necessity.

PAUL THOMPSON  
CPT, ADA  
S4, 1/43d ADA  
Fort Richardson, AK 99505

## CRITIQUE

Dear Sir:

The article by SSG Page, "Psychological Warfare," Jan-Mar 78, is subject to challenge.

Historical background of psychological warfare comprised the body of the article, with the reader expecting an up-to-date synopsis of current "enemy" propaganda methods being used against the American populace. Despite the "scare" tactic used in the opening paragraph, the article fails to produce any substantiating facts on how Communist propaganda is inciting average Americans to "destroy our own Government when the people rise up in revolution." I do not believe the Communist nations are directly involved in a campaign to stir discontent within the US. His appeal for a forceful offensive propaganda war to "stir discontent within Communist nations" is open to challenge. The assumption that a US propaganda campaign "would surely bring public pressure upon its leaders" assumes that leaders of Communist countries are responsible to their people. After decades of manipulating hundreds of millions of people,

these leaders regard "public pressure" as a nonentity.

SSG Page goes on to define propaganda as "a kind of communication that attempts to influence the viewpoint and reactions of others, irrespective of the truth of the message." By recommending that "the main message of our propaganda should be that the majority of Americans live happy, comfortable lives because of our freedom, etc.," leads the reader to believe that this statement is propaganda, and possibly untrue.

JOHN KARESKI  
CPT, ADA

*A somewhat less pointed appraisal of the Psywarfare article follows.*

- Ed.

Dear Sir:

As an air defender and a psyoperator, I was pleased to see an article dealing with PSYWAR in the January-March issue. However, I feel that there are a number of serious shortcomings in the article that should be brought to the reader's attention.

First, the author has confused the terms "PSYOP" and "PSYWAR" in presenting his definition. According to FM 33-5, PSYOP is defined as follows:

*Psychological operations include psychological warfare and, in addition, encompass those political, military, economic, and ideological actions planned and conducted to create in neutral or friendly foreign groups the emotions, attitudes, or behavior to support the achievement of national objectives.*

The key point to be noted here is that PSYWAR is only targeted against the "enemy," not "friendly" or "neutral" groups.

Second, the author discussed "tactical" and "strategic" propaganda, with the former noted as being directed against the enemy in the forward areas and the latter being directed at the enemy in his home country. The terms actually used in FM 33-1 are tactical and strategic "PSYOP" (not "propaganda"). According to FM 33-1 the two terms are defined as follows:

*Tactical PSYOP are operations designed to exploit vulnerabilities in foreign military forces and populations in support of tactical military operations.*

*Strategic PSYOP are operations designed to further broad or long-term objectives. Guidance for such operations usually emanates from high levels of authority and is directed at forces, people, or areas in their entirety.*

Third, the author states that "Selection of the form of delivery system to be used in the dissemination of propaganda depends on the delivery system and the message itself." He fails to take into

account the characteristics of the target audience. Some of the important considerations are (1) what is the illiteracy rate?; (2) what is the population density in the target area?; (3) what percentage of the target population owns or has access to radios and/or television receivers? These and other factors must be considered when selecting a delivery system.

The author appears to be attempting to stir the reader to action through some propaganda of his own. He, in fact, writes only in generalities and fails to present any specific efforts by the United States with respect to current PSYWAR efforts. However, this has not prevented him from claiming that they are ineffective. Rhetoric such as this is risky when presented to a generally uninformed audience that is vulnerable to virtually any form of anticommunist theme presented in a military journal.

ALLAN J. FUTERNICK  
MAJ, ADA  
1st ADA Tng Bde

## REQUEST FROM ITALY

Dear Sir:

As an air defender in Italy, I help keep abreast through both the Air Defense Bulletin and the AIR DEFENSE Magazine. Until recently, I was a site commander and received both through the mail. Now, as part of the US Army Southern European Task Force staff, I no longer have access to them. As part of the G3 Nuclear Operations Division, we do have an authorized air defense slot for technical assistance visits. So please keep us supplied with both publications. There will always be someone here to read and learn from them.

JACKSON INTLEHOUSE  
CPT, ADA  
G3, NOD

## AIRCRAFT RECOGNITION

Dear Sir:

This letter is in reference to an article that appeared in the March-April 1978 issue of the Air Defense Bulletin. The article pertained to the use of visual aircraft recognition (VACR) and Ground Observer Aircraft Recognition (GOAR) Kit slides.

While I was assigned to an ADA unit at Camp Mosier, Korea, I was the principal instructor in VACR and could identify every slide in the GOAR Kit with minimal errors. Currently, I am assigned to an infantry unit at Fort Carson, Colorado, and I have been introduced to actual pictures of aircraft reproduced into slides used by VACR. I was extremely confused when I tried to identify these aircraft due to camouflage paint, bombs, missile pods, and reserve fuel tanks in addition to the variations of aircraft styles used. In talking to other

soldiers, I have discovered that I was not alone in my confusion. Many other soldiers coming from other posts around the world have similar difficulties in their aircraft identification classes here (Fort Carson).

As a possible solution, may I suggest that the present GOAR Kits be replaced with actual photos when possible so as to keep the various air defense units updated with the most current slides.

Currently at this post, the Redeye sections are the only ADA units using this type of slide for VACR. The only way we, as Redeye sections, get these slides is to cut pictures from magazines and books, take them to the photo lab, and wait for them to be reproduced into slides.

It is my opinion that it is the tactical version and attitude of the aircraft that the gunner will be presented rather than the less than adequate mock-up slide now being used. We place a high priority on our ability to identify aircraft so that we, as ADA gunners, can become more proficient in our jobs as US Army air defenders.

Your consideration of the problem I have mentioned will be appreciated, not only by myself, but by all of my air defender counterparts throughout the Army.

SSG Daniel R. Unger  
Redeye Section, Sgt

*We have asked a member of the Extension Training Branch, Course Development Division, Directorate of Training Developments (where experts on VACR are assigned), to respond to your letter.*

- Ed.

The problems stated in your letter are very real. They are addressed as far as is feasible in the new TEC lessons on VACR now under development by the US Army Air Defense School. In these lessons, any ordnance that is normally carried on an aircraft, regardless of mission, is shown on the aircraft. Examples of this are the AIM-9 Sidewinders on the wingtips of the F-16 and the AIM-7 Sparrows on the F-15. Additionally, pylons on which other ordnance and other external stores are carried are also shown on the aircraft and pointed out to the student. However, no ordnance is attached.

The reasons for this are many, but it basically boils down to this: A given fighter aircraft can carry many types of stores on its pylons in many different configurations. For example, the flight manual for the F-4 Phantom lists well over 100 weapons and other external stores that the aircraft can carry. These stores are large, small, fat, thin, short, and long. The combinations of configurations in which these stores can be carried on the aircraft run into the thousands. It is impossible to give an example of what would be a typical

ordnance and stores configuration for most aircraft. The external loads of most aircraft can be changed in so many ways that result in so many different appearances that it is most difficult to represent them all in any training program. It would be misleading to show only a few examples of such configurations and cause a student to believe he now can identify a given aircraft regardless of external load. Therefore, the approach of the US Army Air Defense School is to make the student aware that aircraft can carry stores that will alter the appearance and point out to him where these stores are carried. Thus, he is taught to identify the aircraft by looking past the ordnance for the basic wings, engine, fuselage, and tail (WEFT) characteristics. This is considered to be the best method of teaching VACR today.

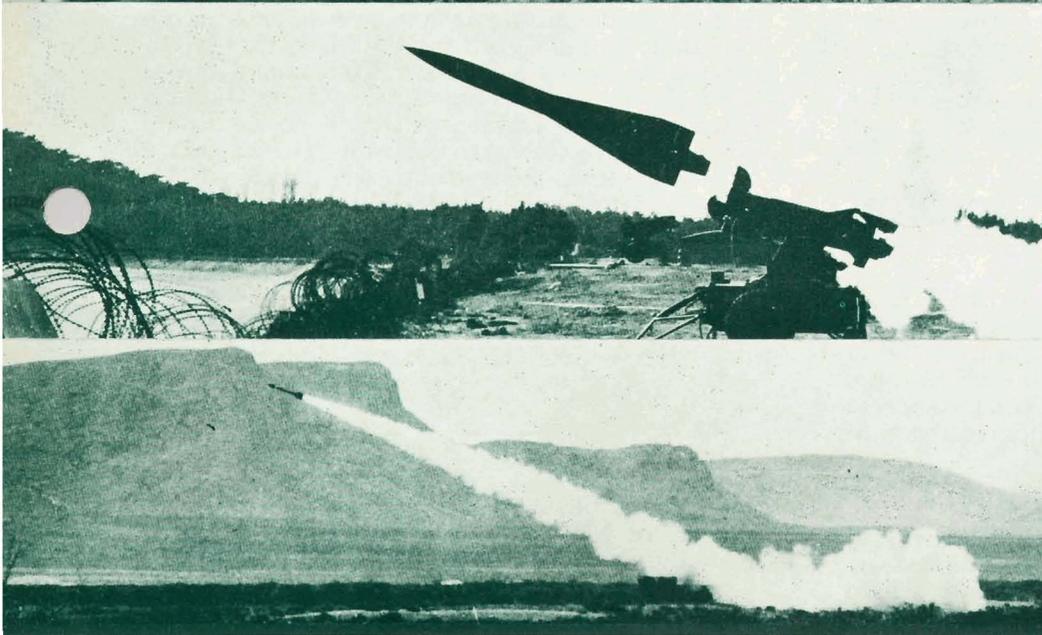
Camouflage paint schemes are another real problem. There are hundreds of such schemes throughout the world and they can be changed overnight. In every war since World War I, with the exception of Korea, camouflage schemes on aircraft were changed drastically from the outbreak of hostilities to the day the final shot was fired. Today, many nations are experimenting with new schemes, and US Navy and Marine aircraft are undergoing a complete new approach to camouflage paint techniques.

This means that there is no practical way to represent all the possible camouflage schemes on even one aircraft and then keep this updated and current with all changes that are bound to occur continuously. Even if this could be done, it would be impractical since the same camouflage scheme appears different with age, weather conditions, different viewing angles from the sun, viewing ranges, and other variables.

These problems are real and we must live with them. Representation of a few schemes of camouflage and a few configurations of external stores does not solve the problem and even tends to be confusing. A soldier who could recognize all the slides in the GOAR Kit might have trouble when he first sees the same aircraft with a combination of ordnance stores on it. By using both the VACR and GOAR Kit, he will become familiar with the basic configuration of the aircraft even though the same aircraft with different stores combinations and configurations may appear different when seen in combat.

We believe that the new TEC program with its dynamic motion sequences, background, sound effects, technical accuracy, and educational philosophy represents the best way to teach VACR. For an overview of these new TEC lessons, see AIR DEFENSE Magazine, October-December 1977, pages 24-25.

*CORRECTION: On page 5 of the Jul-Sep 78 issue of AD Magazine, the Commander of 2d Bn, 76th FA, was indicated as LTC George R. AZ. The correct spelling is George R. AX.*



*The views, opinions, and/or findings contained in this article are those of the author and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other official documentation.*

*The failure of the American Army in Europe can be largely attributed to its neglect of the vital air flank. This neglect was due primarily to two factors:*

*(1) The US Army did not have a single soldier, neither general nor private, who had experienced the terrible destructiveness and chaos that accompanies an air attack, hence his disorganization following such an attack was easily exploited.*

*(2) Senior US defense officials traded quantity for quality in their air defenses, not realizing that at a certain threat level quality cannot substitute for quantity. They had ignored the principle of mass. (Translated from the Russian.)*

# DIVISION AIR DEFENSE 1985

COLONEL WILLIAM O. STAUDENMAIER

This hypothetical passage reflects the current Soviet expectation of the outcome of any future NATO-Warsaw Pact conflict and suggests a trend in the quantitative balance of military forces between the US and USSR over which many defense analysts are becoming increasingly concerned.

The Soviet general purpose force buildup is well known. Quantitatively, the Soviets in the past 15 years have built a force that surpasses the United States in almost every measure of ground strength: deployable manpower, tanks, field artillery, air defense, and ready divisions. The Soviets also lead the United States in every quantitative category of tactical air combat forces except carrier-based aviation. More alarming, however, is the narrowing of the qualitative gap as it relates to close air support (CAS) in the central region. The Su-19, Fencer-A, the first Soviet aircraft designed specifically for the CAS mission, employs sophisticated air frame design and avionics to enhance its low-level penetration capability. The rapid production and deployment rates of the MI-24 Hind fire support helicopter, armed with Sagger missiles, present US Army divisions in Europe with a formidable antiarmor threat that will only intensify in the 1980s. The accuracy, lethality, sophistication, and proliferation of modern weapons in the Soviet arsenal have created a new combat environment in Central Europe. The Army has taken organizational and doctrinal initiatives to keep pace with the changing nature of the battlefield.\* The remainder of the article discusses some of the air defense organizational and doctrinal issues raised by the Soviet threat and the US response.

## AIR DEFENSE IN THE RESTRUCTURED DIVISION

The US Army Training and Doctrine Command (TRADOC) included a new division air defense artillery (DIVADA) organization as part of its comprehensive divisional reorganization plan. The essentials of the DIVADA organization appeared in an earlier issue of this magazine (Jan-Mar 77, pp. 24-27), so only a brief outline of its major aspects will be considered here. The major features of DIVADA included the:

- Separation of the air defense guns and missiles into one battalion of guns (Vulcan/DIVADS) and one battalion of missiles (Chaparral/Roland).
- Consolidation of MANPADS (Redeye/Stinger) into a battery of the AD missile battalion.
- Issue of MANPADS missiles to each gun squad.
- Integration of the air defense electronic warfare platoon from the Combat Electronic Warfare Intelligence (CEWI) Battalion into DIVADA.
- Employment of the Hawk battalion in direct support (DS) of the division.
- Consolidation of mess, supply, administration, and maintenance support at battalion level. Consolidation is for management purposes; the necessary mess, supply, and maintenance teams will habitually be provided to the batteries.
- Establishment of a DIVADA headquarters under command of a colonel to provide command

and control of two subordinate ADA battalions, integrate CEWI operations, coordinate and plan for the fires of the DS Hawk battalion, and coordinate with USAF elements and other division organizations. DIVADA would be on an organizational par with the maneuver brigades, DIVARTY, and division support command.

This AD reorganization was designed to integrate the fires of the AD weapons of the 80s — Patriot, Hawk, Roland, DIVADS, and Stinger — with those of USAF interceptor aircraft to win the combined air/land battle of the next decade and beyond.

But this reorganization has run into trouble. In January 1978, as part of a reorientation of the test of the Restructured Division, the decision was made to cancel the divisional test of the DIVADA concept. However, it was decided at the same time to establish and test a division air defense staff element (DADE). The DADE, commanded by a lieutenant colonel, consists of approximately 42 personnel whose job it is to exercise staff responsibility for the division's airflank, recommend air defense task organization, perform all required external coordination, provide liaison with the supporting Hawk unit, and coordinate air defense battle planning within the division. Field testing of the DADE will take place at Fort Hood, Texas, during the period June-September 1978. It is envisioned that rather than having the two air defense battalions that were assigned to DIVADA, the DADE concept will have only the C/V battalion that is normally assigned to the division. However, this battalion will be augmented with a modified Redeye battery (24 teams) to determine the feasibility of incorporating Redeye into the divisional AD battalion. Hopefully, the decision to cancel initial DIVADA testing, although a setback, does not mean the end of the DIVADA concept; it should be reconsidered and tested elsewhere in the Army.\*\*

## STATUS OF AIR DEFENSE WEAPON PROGRAMS

The new organizational concepts were designed to optimize the employment effectiveness of the new generation of air defense missiles and guns that will be fielded in the 1980s. In the Annual Report for FY 79, Secretary of Defense Brown made the following statement.

*... The air defense objective of ground-based systems is to limit the opponent's effectiveness in attacking critical assets so that land*

*\*See "The Restructured Division," AIR DEFENSE, Jul-Sep 78, pp 34-36.*

*\*\*Editor's Note. The DADE testing is ongoing but results are not yet available. The US Army Air Defense School has officially proposed testing of the full DIVADA by the 9th Infantry Division at Fort Lewis, Washington, in August 1979. Preparations are well under way. Current plans call for the DIVADA concept to be tested under the TRADOC Concept Evaluation Program.*

*forces may maneuver with a minimum of interference from enemy air . . . The Army is attempting to maximize the effectiveness of its current family of air defense weapons while concurrently developing a new family to meet the threat of the late 1980s.*

In that regard, Secretary Brown went on to outline the current status of the major AD systems.

**Patriot.** The current DoD plan is to eventually replace both the Nike Hercules and Improved Hawk with conventionally armed Patriot missiles. Until Patriot becomes operational in the 1980s, Nike Hercules and Improved Hawk will continue to provide high- and medium-altitude air defense coverage.

**Roland.** The US Roland is scheduled to replace Chaparral in the next decade as the AD protection for rear vital targets and the corps area. A study is also being conducted to determine the need to deploy Roland as a divisional system to replace or supplement the Chaparral. In the meantime, the Chaparral is being upgraded to overcome its earlier deficiencies. The resultant Improved Chaparral will include an enhanced forward engagement capability, a more lethal fuze and warhead combination, and a better IRCM capability.

**Stinger.** The advanced manportable Stinger will replace the Redeye that is current assigned to divisional forces. The Stinger incorporates a "fire-and-forget" infrared guidance system and an ability to hit inbound and faster targets (which is an improvement over the older Redeye) and an identification, friend or foe (IFF) system. Procurement for the basic Stinger began in FY 78, to be followed by an advanced version with an enhanced infrared countermeasure capability at a later date.

**Divisional Air Defense System (DIVADS).** Unlike the Chaparral, the Vulcan will not be significantly improved since it is scheduled for replacement by the DIVADS. The new AD gun will be an all-weather, radar-directed gun system of either 35-mm or 40-mm caliber, perched atop an M48A5 tank chassis. Two contractors are competing to develop this shoot-on-the-move, highly accurate, rapid-firing gun for the Army.

While these organizational and research and development issues currently hold center stage, lurking in the wings are critical doctrinal issues that will challenge the adequacy of air defense tactics in the next decade. The import of the Army's new doctrine of active defense to air defense is particularly important.

## AIR DEFENSE AND THE ACTIVE DEFENSE

The active defense is characterized by a defense in depth, increased lateral mobility, a small central reserve, and concentration of combat power at the point of the enemy's main attack, while employing economy of force measures elsewhere. It expects the covering force area (CFA) to become a more heated battle area as the covering force units defend and force the enemy to reveal the location of his main attack. Once the enemy's main attack has been identified, the division commander will con-

centrate the bulk of his combat elements in this narrow sector. Since the division will withhold only a small reserve, the additional battalions must come from less critically engaged brigades in other sectors of the main battle area (MBA). This, in admittedly sketchy detail, is the essence of the active defense that the divisional AD commander must support.

One of the first issues that must be resolved is the primary orientation of divisional air defense. The current consensus regarding air defense doctrine is that the divisional air battle will be divided into two parts; one battle will be fought primarily by AD guns in the MBA and CFA, while another will be waged in the division rear by the surface-to-air missiles (SAM). The DIVADA concept included one gun battalion and one missile battalion oriented on these two battles. This tactic would seem to spread divisional air defense assets dangerously thin in the critical MBA, where the battle will be won or lost. Seldom will AD have enough weapon systems to support the combat forces in the main battle and covering force areas and still adequately defend the critical assets in the division rear area. Therefore, if there are not enough AD weapons to do both jobs simultaneously, priorities must then be established based on the division mission. If this procedure means that the Improved Chaparral must be used in the forward area (cross attached with AD guns), then that is what must be done. Air defense organization for combat must not be based primarily on some perceived difference between the air battle at the FEBA and the air battle in the division rear, even if such a distinction can in fact be made. Divisional AD must provide the division maneuver elements the requisite freedom of movement to accomplish their mission — all other considerations must be secondary.\*

A second air defense concern of the 1980s that stems from the new doctrine is how best to protect the lateral movement of mechanized units that is expected in the active defense. On this highly mobile battlefield, it is vitally important that the combat units arrive intact at the decisive point. Yet, the *ad hoc* nature of the battle will require a high degree of decentralized control that will make deliberate AD planning almost impossible once the battle starts. But if combat units will be disengaged from battle on the flanks and moved laterally to mass at the point of the enemy's main attack, then perhaps it might be better to establish an area air defense before the battle, however porous it might be. Considering that the expected battlefield environment will be characterized by (1) heavy enemy use of ECM to disrupt command and control communications, (2) intensive battlefield interdiction by enemy air and artillery firepower, and (3) extensive use of the division air space by friendly helicopter units, the assumption that a coordinated, let alone integrated, air defense can

*\*Editor's Note. ADA employment integrates all systems into a coordinated defense of all ground forces regardless of disposition.*

be established in the division area must be challenged. This is particularly true if the AD fire units must move with their support units, thereby providing air defense under the worst possible condition — on the move.

Although divisional air defense weapons (including MANPADS) are more suited to small unit or critical asset defense missions, if an area defense can be accomplished by massing the fires of the air defense assets of the division and those of the DS Hawk in the forward brigade areas (weighted toward the most likely ground avenue of approach) then the maneuver units could move underneath the in-place air defense protection thus created. Perhaps Stingers from the AD MANPADS battery should be attached to the maneuver units during combat operations.\* Certainly, some AD guns would be used to protect high-priority armor and mechanized units while they are executing their movement to contact. If additional protection were needed in the division rear area, corps ADA assets, particularly Roland, could be put in support of the division. By using this type of approach in the postulated battlefield environment of 1985, at least divisional AD can approach a coordinated or deliberate air defense.

Obviously, area coverage would require considerably more AD fire units than are presently programmed, particularly Improved Chaparral. To adequately protect the MBA, the Roland or Improved Chaparral must be positioned well forward where it can provide coverage for the front line units against stand-off enemy fire support helicopters firing SAGGER antitank missiles. If, in addition to the protection of the brigade area, it were desired to extend organic air defense coverage to critical assets in the division rear, then the number of divisional AD weapons must be increased still further to 72 or even 96 fire units — not including MANPADS. Although these amounts may presently be infeasible from a budgetary standpoint, they are tactically justified.

As important as these organization and doctrinal issues are, perhaps the key to US victory on the battlefield of the future will be the psychological factor. The American soldier must be convinced that he can operate effectively under hostile skies. The Army cannot count on tactical air superiority on any future European battlefield. But the *Wehrmacht* proved during World War II that the loss of air superiority, as important as it is, is not tantamount to an inability to maneuver or to fight.

To the German soldiers on the Western Front in 1944, it must have seemed that the Allied air superiority was insurmountable. The Western Powers enjoyed an overall 7 to 1 advantage in the air that

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prevented the Luftwaffe from reconnoitering, let alone interfering with the invasion fleet in British ports. By D-Day, the superiority had reached 20-1, enough to isolate the Normandy beachhead and prevent any sizable German reserves from affecting the battle. Thereafter, although the ratio eroded somewhat, it was never enough to offer any real hope to the *Wehrmacht*. General Bayerlein, Commander of the Panzer Lehr Division, gave an insight into the terrible destructiveness of tactical air power when he stated that during the Allied reconquest of Europe he had lost the fighting strength of his division two and a half times from enemy air action alone. But the German Army did not collapse; it fought on by adjusting its tactical doctrine to meet the realities of the battlefield. It found that it could survive — and fight — even when the skies were dominated by the enemy. The American soldier must also face up to this prospect.

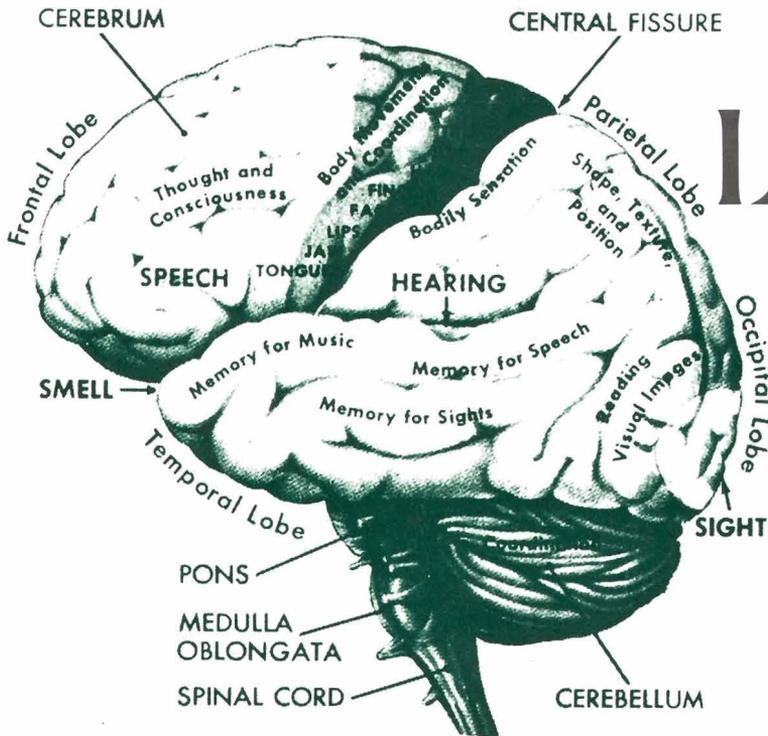
I am not suggesting that the USSR can achieve a level of air superiority similar to that enjoyed by the Allies over the Germans in World War II. Nonetheless, the psychological shock and disorganization that accompanies an air attack will have to be dealt with and overcome. Divisional air defense men, in partnership with other combat arms, can develop an understanding of the nature of the air threat and appropriate responses to it, enabling the division to complete its mission in the face of potentially heavy enemy air interdiction.

This article has raised some, but by no means all, of the issues that affect air defense resulting from the Army's division restructuring concept — the development of the doctrine of the active defense and the battlefield environment of 1985. The current debate over these organizational and doctrinal issues offers air defense men, particularly those assigned to the divisions, a unique opportunity to not only increase air defense awareness among the other elements of the division, but to influence Army organization and tactical doctrine as well. It is an opportunity that should not be lost.

*\*Editor's Note. Current Redeye and Stinger concepts place these weapons organic to maneuver and artillery battalions. However, the DIVADA concept envisions these weapons being allocated to defense of any priority asset designated for defense.*



# LEARNING CENTERS



**T**he learning center is one of the most flexible, efficient tools the commander has to accomplish his individual training mission and increase unit effectiveness. It provides a place —

- For remedial training for soldiers having difficulty with a particular training subject.
- For the up-grading of individual proficiency.
- Where the individual soldier may review training materials prior to taking the SQT.
- Where the soldier may pursue certain GED programs and become a better-trained individual.
- For training the unit's trainers.

The learning center can free unit commanders from spending training time on the preparation and conduct of training where individual training packages such as TEC are already in existence.

To accomplish these desirable goals, it is not necessary to provide plush, air-conditioned rooms. It is necessary, however, to provide an easily accessible, centralized facility for the storage and use of training materials in an environment that stimulates the individual's desire to learn.

The key to success is that today's soldiers learn at different rates. They've been exposed to audiovisual and other media presentations since childhood. Television has been a pervasive influence on them and they regard audiovisual presentations as a normal approach to learning. The concept of individualized instruction, where each soldier is enabled to progress and learn at the rate most comfortable to him and where training is

performance-oriented, is allowed to flourish in the learning center.

Of course, the training manager must carefully weigh the techniques and materials of the learning center and their applicability to his own situation, but a battalion learning center is generally composed of three parts:

- Individual study section where the soldiers can use the variety of materials available in the learning center.
- Group study section where space is provided for groups of up to 25 to use mediated group-lesson packages.
- Administrative section where records are kept and materials are stored.

These materials include audiovisual lessons and projectors, audio tapes and tape players, printed lesson materials, and other learning devices.

To be used successfully, the learning centers must be an integral part of the battalion's learning plan. Use of the center by small groups must be planned in advance and shown on training schedules. Individuals must be encouraged to use the learning center on a voluntary basis, but command support is essential. Hours of operation must be established that provide maximum use by troops, and qualified personnel must be assigned to manage the training center. Detailed suggestions for establishing and operating an effective learning center are available from Fort Eustis, USATB, in TEC Publication 75158 titled, "Learning Centers for TEC."



## **IS THIS YOUR LEARNING CENTER?**

**If yours doesn't match this one in quality,  
then look upon it as a challenge--  
an example to follow and equal ...**



Master Sergeant Clarence S. Adams  
(136th PAD, NMARNG)

**T**he New Mexico Army National Guard (NMARNG) is contributing significantly to the Army's air defense. With a number of individual units training in various sections of the country, as well as in Germany, the 200th Air Defense Artillery of the New Mexico Army National Guard is holding its own in the readiness category. As an example, Guardsmen of the 111th ADA Brigade spent 2 weeks of annual training at Fort Bliss this summer.

With the 111th ADA Brigade serving as the command headquarters for the 200th ADA, NMARNG, the four M-42 self-propelled weapon (Duster) firing battalions have become highly proficient in their training. During recent years, a cooperative effort between the NMARNG and the Active Army has resulted in the implementation of the One Army Concept, a plan that provides for individual National Guard units to participate in annual training (AT) with their Active Army coun-

ted in that 2-week exercise, the period of AT was most effective.

An increasing interest in cold weather combat training recently resulted in a Southern New Mexico National Guard unit being scheduled for training with the 47th "Viking" Infantry Division at Camp Ripley, Minnesota. Last February, 80 members of Battery B, Second Battalion (AW)(SP), 200th ADA, of Deming, New Mexico, and the Battery's 1st Detachment of nearby Truth or Consequences, participated in one of the most significant 2 weeks of active annual training to date. It was important in many ways, but one fact stands out as perhaps more significant than others: guardsmen were sent from an extremely hot region of the country to an area of extreme cold where they performed in an excellent manner. According to First Lieutenant Barry Stout of Truth or Consequences, the training was most effective for the men of his unit. "Our training included subjects that teach the individual soldier how to survive in extreme and violent weather, as well as how to fight in a very harsh environment." Instructors for the 2 weeks of AT at Camp Ripley included National Guardsmen from both New Mexico and Minnesota units.

# ADA GUARDSMEN TRAIN AT BLISS

terparts throughout the United States, as well as in other areas of the world.

The 111th is the only Reserve Component Air Defense Brigade in the US Army. Serving as the command headquarters for the firing units, the brigade plans and coordinates training for the firing batteries of the First, Second, Third, and Fourth Battalions, which are located throughout New Mexico. The planning and strategy of the 111th have paid big dividends.

During the past 5 years, as the One Army Concept has been developed and implemented, units of the NMARNG have participated in annual training with Active Army units in Germany, New York, California, Texas, Minnesota, and Arizona.

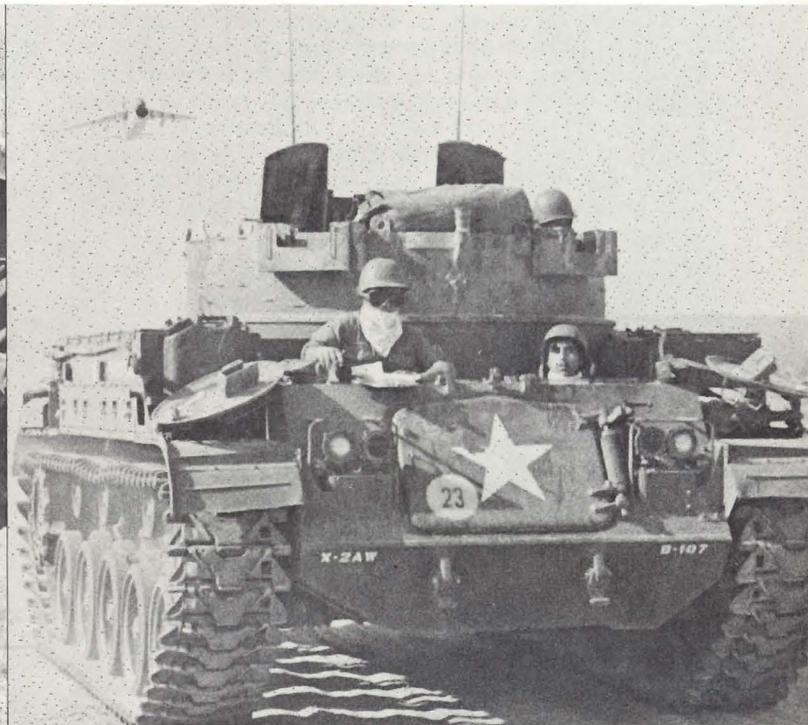
Last April the 207 members of the 3631st Heavy Equipment Maintenance Company of Santa Fe, along with Detachment 1 of Espanola, spent 2 weeks at AT with the Army's 5th Maintenance Company of the 66th Maintenance Battalion in Germany. Here, the New Mexico Guardsmen worked with their counterparts in the Active Army, performing maintenance on equipment from 0.5 kw generators to huge V-12 power plants for M-60 tanks. According to men who participa-

During the first week of the cold-weather exercise, most of the training was concentrated on skiing. Military skiing is primarily cross-country, therefore, the Guardsmen were equipped with 7-foot military skis with special trappings. After 2 days of trial and error, the hot-weather boys were cold-weather soldiers, engaging in downhill ski training and towing akhios, which are small sleds capable of carrying up to 200 pounds of military supplies and equipment.

In addition to their preparedness in air defense, New Mexico Guardsmen are prepared to serve the community in civil emergencies. Last March, for example, the NMARNG drew national attention when troops assisted in "Operation Mudhole," a massive airlift of food, fuel, and other vitally needed supplies for some 12,000 Navajos who were stranded by deep snow and mud in Western New Mexico and Eastern Arizona. This incident is only one of many in which the New Mexico Guard has participated. Anytime there is a hurricane, tornado, flood, or severe snowstorm, or in the event of a national emergency and a call-up by the President, the New Mexico Army National Guard is ready to answer the call.



*FROM THE ICEBOX INTO THE FURNACE. These extremes were experienced by the New Mexico National Guardsmen who participated in training in Minnesota and later at Fort Bliss, Texas.*



*Guardsmen medics practice life-saving skills during annual training at Fort Bliss.*

*A New Mexico Army National Guard A-7D Corsair comes up for a strafing attack.*

*Editor's Note: Adapted from a recent address to a class of officers advanced course graduates at Fort Bliss, Texas. The discussion on leadership is a summary of major points from the speech dealing with that topic.*

### **Introduction**

My game plan is to present some thoughts on leadership, then to discuss the national attitude toward the Armed Forces, and finally to comment on civilian control of the military.

When it comes to judging the worth of a military career, I am neither a Pollyanna nor a pessimist.

I hope I am a realist who, from the vantage point of retirement, can view the profession of arms with a healthy detachment. At any rate, my purpose is

Knowing your job entails willingness to work at it on your own. You have to fill the gaps on your own by self-study and by asking pertinent questions of the right people. Knowing your job also means caring about and doing all you can to advance the well-being of those who look to you for leadership.

### **Set the Example**

The next axiom is — set the example for your command. The troops, staff, and subordinate commanders all look to the commander's personal actions as a key to him as a person, as an index to the behavior he expects from the command, and as an indication of what he considers important. Most outfits are eager to do what's wanted, but need

# **The Profession Of Arms and National Security**

**GENERAL GEORGE V. UNDERWOOD, Jr., US Army (Ret)**

to offer for your consideration some viewpoints that reflect my 40 years of involvement in the profession of arms and national security affairs.

## **LEADERSHIP**

I suspect that we focus too much attention on how to lead and not enough on what sort of person a leader should be. It is far more important to develop yourself as a person than to invent dazzling leadership devices. Actually, the higher you rise in the Army, the more important it is to have a sound character, a good mind, a wholesome outlook, a solid professional base, and a genuine concern for the soldier. In the end, these attributes count much more than who has the cutest bag of leadership gimmicks.

### **Be of Strong and Sound Character**

The first rule of leadership is to be of strong and sound character. Your ability to lead is only as strong as your character. The nature of your character sets limits on what it is possible for you to accomplish as a leader.

In my book, the most important aspect of character is integrity. The troops will quickly discern whether you have it, and your superiors will soon discover whether you lack it. You must have integrity if you are to enjoy the confidence and respect of your troops and staff.

### **Know Your Job**

My second principle is to know your job. For an Air Defense Artillery officer, knowing your job means especially to know your equipment, tactics, and doctrine. Without such knowledge, you will never be a real commander; the best you can ever become is a confused manager.

some clues as to what ought to be done and in what priority.

We all know that what the commander emphasizes is what gets done. But the commander must be careful that what he emphasizes is what he really wants done, and he must also be careful that he does not emphasize more things than the unit can possibly accomplish, with the result that the unit is overwhelmed.

### **Be Accessible**

My next point is — be genuinely accessible to those who look to you for leadership. A simple principle, but violation of this guideline is responsible for many breakdowns in leadership. Granted, the commander can't see everyone instantly, but he had better institute a system that permits people with real problems or vital information to receive expedited handling or he'll soon be presiding over a first-class flap.

### **Look at Your Command and Staff From the Bottom Up**

Being accessible is fine but it is no cure-all for the commander who wishes to stay abreast of the situation within his own command. You simply can't sit at your desk and operate off reports from others, colorful wall charts, or beloved computer printouts. You must get out to the end of the line and look back on your operation. When you do, you will often find that the view from the bottom up is more realistic and less comforting than the view from the top down. Moreover, hitting the road is often the best way to discover the bad news that others may hesitate to bring you voluntarily.

A 1978 GALLUP POLL PLACED MILITARY LEADERSHIP THIRD (BEHIND CHURCHES AND BANKS) IN TERMS OF PUBLIC TRUST.

### **Don't Cream Junior Officers the First Time They Make a Mistake**

A quote of General Omar Bradley is appropriate here. Years ago I heard him counsel restraint and understanding in handling junior officers when they made mistakes. "Remember," he said, "that good judgment comes from experience and experience comes from bad judgment." He was saying that to develop good judgment you must first live long enough and make enough mistakes to have an experiential basis for knowing what is right and what is wrong, what is sound and what is not, what works and what doesn't.

What the Army needs is not commanders who can get the job done if given the very best personnel, but commanders who can take whatever kind of people they are given and motivate them to perform at the peak of their potential. After all, there has to be a place in the Army for average people.

### **Don't Overcontrol, But Pay Attention to Details**

The next principle sounds contradictory and is useable only by commanders with good judgment. It is: Don't overcontrol, but pay attention to details.

There is a limit to how much a commander can prescribe without getting his command so tied down that it can hardly operate on its own when it must. Yet, in avoiding overcontrol, the commander must not go overboard and fail to pay attention to details. Deciding how much attention to pay to which details is a tough call for the commander — one of the so-called "gifts of command" you might say.

The commander must learn where to strike the balance in his specific situation between overcontrol and inattention to details. This is a delicate setting, but then they wouldn't call it active duty if there were no tough problems to be solved.

### **Expect Adversity and Learn to Live With It**

My last point is not exactly a leadership principle, but it may be the best advice I offer today. That advice is — don't lose heart because you encounter setbacks and bad breaks along the way; expect adversity and learn to live with it. Be resilient in the face of adversity, keep your cool and keep charging, learn from your experiences, and hope for compensating good breaks farther down the line.

### **Ethics**

In my opinion, ethics are placed in your genes and reinforced by the instruction and example of your parents, teachers, coaches, and others of influence in the early years of your life.

Don't be overwhelmed because some rotten apples have been found in the Army barrel. It is a big barrel, and disturbing as each transgression may be, the percentage of rotten apples is quite small. And don't be confused by those bad examples of ethical behavior who seem to prosper. Most of these unethical operators are eventually exposed for what they really are. With respect to those who seem to survive and advance, my advice is to stick to your own principles. You live internally only

with yourself, and self-satisfaction is one of the highest awards you can earn on this planet.

To me, ethics is a fancy title for character and integrity, the highest attributes of successful leadership. It seldom takes exceptional brainpower to tell right from wrong, but it often takes strong character and pure integrity to adhere to that right and reject that wrong. Whenever you do the opposite, you die a little in terms of self-esteem. You collect a little tarnish on your escutcheon, and you succumb to the debilitating temptation to rationalize your weaknesses. In the process, you begin to disqualify yourself for the coveted role of military leader.

## **NATIONAL ATTITUDE TOWARD THE ARMED FORCES**

The development of leadership ability is the classic goal of the military professional. But the successful military professional of today must also possess two other qualities that I would describe as: (1) a sophisticated understanding and realistic acceptance of the national attitude toward the Armed Forces; and (2) the ability to mesh smoothly and productively with the civilian hierarchy that controls the military.

### **Roots of the National Attitude**

Let's look first at the roots of that national attitude. To begin with, Americans have always harbored some degree of disdain toward the use of military force, not so much antipathy toward the man in uniform as basic distaste for war. So far as the colonial settlers of America were concerned, military forces were an uncomfortable reminder of the oppression in the Old World from which they had fled in search of true freedom. Thus, part of the cultural heritage of America is a congenial disinterest in military affairs and a subconscious desire to dismiss the possibility that an emergency might arise that would require the use of force. It is typical of Americans to long naively for nonmilitary solutions and to be discomforted by reminders of the real world that standing military forces represent. Military professionals represent the protective shield behind which Americans can nourish their ideals.

Moreover, the ardent American devotion to freedom of the individual clashes with the necessary curtailment of civil rights, which is inherent in military discipline. Here we see another way in which things military irritate the national psyche.

This traditional devotion to individual liberty and distaste for military solutions do much to condition the public attitude toward its Armed Forces. It partly explains the deemphasis on military preparedness that always proves attractive in peacetime. It partly explains the demand for quick victory nonetheless when war does occur. It partly explains our inclination to make a moral crusade out of war, and our tendency to lose our sense of purpose and staying power when no moral crusade is mounted by the government. And it may explain in part the hostility encountered annually over the military budget, a hostility that reflects chafing

under the painful reality that large, costly, military forces must be maintained in a high state of readiness in peacetime, if nuclear war is to be deterred and conventional war contained. This new reality goes down hard, goes against the national grain, and competes with the natural desire to put priority on financing domestic programs designed to improve the quality of life.

### **Influence of the Nuclear Age**

The advent of the nuclear age has had a transcendental effect on national thinking about national security.

Initially, our atomic monopoly suggested we could have both small forces and great security. The outbreak of the Korean War shattered this illusion and demonstrated that our nation had little appetite for limited wars of long duration in places of questionable importance. It also showed that when the government chooses to fight a war under a "guns and butter" policy, the citizenry gets confused about the need for sacrifice and doubts that vital national interests are at stake. The result in Korea was a rather unpopular war and considerable disappointment with the stalemate solution. Yet, the UN blessing and the overt invasion at the outset by the North Koreans made this war more understandable than the one to follow in Vietnam.

After the Korean War, as the Soviets broke our atomic monopoly and developed their own strategic nuclear capability, the traditional American distaste for war hardened into a genuine fear of war, especially the kind of war that might trigger a nuclear exchange. Although not fully appreciated at the time, this created a dilemma for both war planners and policymakers. In any future confrontation with the Soviets or their surrogates, can we prevent breaching of the nuclear threshold and still win the ensuing conventional war quickly? The question persists and is one of the toughest challenges to your generation of military professionals.

### **Vietnam Tells Us More**

This brings us to the Vietnam experience. As I look back, I see the Vietnam War as an aggravated replay of the Korean War in several respects, but with far more damaging consequences. First, the failure of the government to develop a national consensus in support of our role in Vietnam led to a crippling debate in the midst of that war on whether our vital national interests required the continued commitment of our military forces. Second, the decision to rely exclusively on the draft instead of mobilizing the Reserve Components deprived the government of the traditional means of galvanizing public support behind its war policy. And thirdly, adoption of another "guns and butter" policy reinforced the feeling that the situation was not too critical or too far from resolution. Finally, this time the war objectives were more limited than in Korea, and the political restraints on use of military force were more severe and more harmful to the prospects of military victory.

Clearly, the Vietnam War gives us these signals

about probable national attitudes toward any future war:

- Don't assume public support of a limited war in an obscure theater. Debate the international issue and the military mission before, not after, our forces are committed.

- Win quickly without using nuclear weapons.

- Mobilize or risk public confusion and loss of public support.

- Use the draft only as a last resort, and then use it to supplement but not to replace mobilization of Reserve Components.

As you know so well, the unsatisfactory ending of the Vietnam War triggered bitter reactions in the form of antimilitarism, negativism, cynicism, and general disillusionment with the government and basic institutions. This in time uncovered the latent isolationism within our national makeup, while the popular insistence on "no more Vietnams" raised and still raises doubts about our willingness to get involved in military action overseas for any purpose.

### **The Volunteer Army Era**

In this polluted atmosphere the Volunteer Army was spawned out of a combination of public disenchantment with the Vietnam War, resistance to what was perceived to be an unfair draft, and sheer political expediency. It was not sought by military leaders of the day.

The shift to a Volunteer Army and the greater distance from the Vietnam War have brought encouraging improvement in the national attitude about the military establishment. Evidence of this brighter outlook is found in a 1976 public opinion poll which measured the extent of public confidence in some 18 different segments of American society. This poll placed "military leadership" as number two on the list, ahead of the mass media, the Federal Judiciary, the Congress, the Executive Branch, politicians, business, and industry. A 1978 Gallup Poll produced similar results with only the church and banks ranking ahead of the military in terms of public trust.

Much of this apparent brightness is probably attributable to lessened concern over the Army as the manning load falls on a smaller and more willing segment of society. Part of the answer undoubtedly lies in the generally impressive performance of the Army today. And the absence of any military emergencies in the past several years has improved the nation's emotional health and allowed old fevers to subside.

Along with fear of nuclear war, a major concern of politicians and citizens alike these days is the high dollar cost and the deep personal impact of the Defense Program. This assures that the Army, the Service that touches the lives and pocketbooks of most Americans eventually, will receive the closest scrutiny, especially when the economy is faltering and inflation is soaring. This is one of the hard facts of life which the well-adjusted military professional understands and philosophically accepts.

### Impact on the Military Professional

That's how I would describe some of the roots of the public attitude toward war and the military. I think the military professional needs to understand what influences that attitude, if he is to stay in tune with the society he serves, and if he is to appreciate the background of the soldiers he will be privileged to lead.

While staying in tune with that society, the true military professional does not overreact when he picks up some discordant notes. He is mindful of the traditional attitude of his countrymen toward military service, but he is sustained by knowledge of the importance of his role in providing for the safety of the nation. He enjoys the appreciation of the citizenry whenever it is manifested, and he is strengthened in darker moments by his own sense of purpose and by what used to be called the "service motive." He is a dedicated professional, not a temperamental amateur. He is the solid sort who serves his country in fair weather and foul; he is not the fragile type who requires tender loving care to flourish. He takes the world as he finds it and adjusts to it. He knows there is no such thing as a free ride for any group in your hyper-critical society of today, and that to expect as much is to bark at the moon.

## CENTRALIZATION OF CIVILIAN CONTROL

My final subject is the trend toward stronger centralization of civilian control in the Office of the Secretary of Defense. Although my discussion will be frank, my purpose is not to oppose the concept of civilian control of the military. Rather, I hope to show the causes of the trend and how this trend influences the role of the military professional.

### The Trend

The two leaders of the Army in WW II, Secretary of War Henry L. Stimson and General George C. Marshall, typified the pre-OSD concept of civilian control at its best, at least from the military point of view. General Marshall had wide latitude in running the Army and in dealing with Congress. He also had direct access to the President in giving military advice to the Commander-in-Chief. Indeed, since President Roosevelt insisted on being his own Secretary of War, General Marshall had more contact with the President than did Secretary Stimson.

For his part, Secretary Stimson concentrated on business-type activities within the War Department and on supporting budgetary requirements. Most importantly, he served as defender and advocate of the Army in the public arena, leaving his Chief freer to focus on his professional military responsibilities.

The two men had great mutual respect and confidence. Each respected the other's expertise. They were an ideal team.

Today, the Army is one of three Services under the tight control of a Secretary of Defense who is equipped with a huge staff, largely civilian. The Secretary of the Army is no longer a Cabinet mem-

ber and really functions as though he were an Under Secretary of Defense for the Army. The Secretary of Defense does not confine himself to business-type activities of the Services, but also initiates or approves any military policy, plan, or program which he considers important. The Chief of Staff of the Army has infrequent access to the Commander-in-Chief and his advice is more likely to reach the President through the Secretary of Defense or Chairman of the JCS than directly. It is probably correct to say that his relationship with the Secretary of Defense is more important than his relationship with the Secretary of the Army. The Chief of Staff is an influential witness before Congress, but he conforms to the policies of the Secretary of Defense, unless asked for his personal views. Finally, a major role of the Army Secretary and Chief is to work together to persuade the OSD Staff and the Secretary of Defense to approve major Army proposals. This all reflects the fact that the Secretary of Defense is vested with broad authority to supervise, direct, and control the Department of Defense and is, in effect, Deputy Commander-in-Chief.

By drawing this contrast between the degree and nature of civilian control during WW II and today, I do not mean to imply that the trend is necessarily wrong or unwise. Actually, the point is not worth debating because the trend is the result of irresistible factors, some of which merit mention.

The trend toward stronger and more centralized civilian control started with the establishment of the Department of Defense under the Unification Act of 1947. This Act recognized that the Services had become so large and costly that their requirements had to be coordinated in a single, integrated Defense budget for presentation to Congress. Neither the President nor the Congress could cope any longer with a situation in which the Services presented large requirements based on independent views of what was needed to carry out their individual plans for supporting their own version of national security objectives.

The original Secretary of Defense, James Forrestal, intended to have a small office of about 50 substantive staff members and to concentrate on policymaking while leaving control of operational activities in the military departments. This illusion vanished as the Secretary of Defense was confronted with more and more issues clamoring for resolution. Today, the Secretary of Defense has a staff of some 2,000 people (over 500 of whom are military) and a collection of Defense Agencies numbering some 98,000 people.

### Causes of the Trend

In the space available here, I can only enumerate some of the factors contributing to the centralization trend. The primary factor was the growth in size and cost of modern Armed Forces to which I have already referred. As the impact of the Defense Program on the domestic economy increased, and as competition between military and domestic programs for available dollars shar-

pened, the Defense Program took on a political significance that led naturally to expansion of the civilian hierarchy overseeing the military effort. These same factors stimulated greater concern by Congress in the Defense Program. This concern manifested itself in broader oversight and deeper inquiry into the Defense effort. As a result, more people and more centralized control were required by OSD to accommodate a much more inquisitive Congress.

On another front, the rise of the Soviet threat after WW II, the adoption of a national policy of containing the spread of Soviet power, and the realization of the need to deal with the Soviets from a position of strength made coordination of military and foreign policy more important and enlarged the need for civilian control of the military effort. At the same time, development of far-flung collective security arrangements and formation of supporting military alliances further tightened the interrelationship of foreign and defense policy. To handle its interest in all these politico-military matters, the Secretary of Defense set up his own "little State Department," as his Office of International Security Affairs is often described.

All the while, the gradual growth of Soviet nuclear capabilities made it a matter of highest national importance to deter nuclear war and to prevent lesser situations from escalating into nuclear war. Thus, supervision and control of the military effort were needed on a more extensive and detailed basis than ever before.

Then came the technological revolution in automatic data processing, which made it possible for the civilian controllers to collect, store, manipulate, and display tremendous amounts of data and to use that data for more centralized control of military programs, some down to the post level. It seems that once a manager acquires a computer, he inevitably tries to make maximum use of it, whether this defies the principle of decentralized management or not.

Similarly, the technological revolution in communications meant that the civilian hierarchy in Washington could and would control military action in the field in minute detail, such as the deployment of troops within the city during the Berlin Crisis, the actions of boarding parties in the Cuban missile crisis, the use of force by on-the-scene commanders during the civil disorders of the 1960s, and the classic case of almost daily approval of targets to be struck by our aircraft in Vietnam.

These amazing improvements in communications and use of computers made more contingency situations and crises susceptible to more detailed management by the civilian authorities in Washington. It made possible far more centralization of control at the seat of government. The temptation to do so has proven irresistible.

The enthronement of Robert McNamara as Secretary of Defense in 1961 produced a quantum jump in the amount and character of centralized civilian control. He had no desire to be a passive

leader presiding over whatever problems were brought to him. Instead, he chose to be an active leader who would participate in the problem-solving process and influence the formulation of solutions. This concept pulled problems up to his level in greater numbers and at earlier stages. His installation of advanced analytical techniques subjected military programs to examination in excruciating detail and multiplied the number of civilian wizards in OSD. He was the first Secretary of Defense to be unimpressed by expressions of military judgment by military professionals, unless the validity of those judgments could be presented in statistical format. The return to the Pentagon of his number one Whiz Kid, Harold Brown, as Secretary of Defense has magnified the McNamara style of civilian control.

One unfortunate consequence of the McNamara-Brown concept of civilian control is the near abandonment of the Stimsonian role of defender and advocate of the military in the public arena. With so much attention focused on micromanagement of military programs, little effort is available for doing what only the civilian officials can do to generate public respect, appreciation, and support of the role of the military. This preoccupation with internal management is responsible in considerable part for a disturbing deterioration in public understanding of the need to provide strong, steady incentives for military careers.

One other factor deserves mention because it opens up possibilities for further centralization. For a long time, the theory was that the JCS would evaluate the military threat, prepare military plans to cope with that threat, and determine forces needed to support those plans. These actions would provide the starting point for the annual budget exercise. The JCS would later provide their assessment of the risks involved in important budget decisions contemplated by the civilian officials.

So far as the civilian controllers are concerned, this theory is faulty in practice because what the JCS come up with somehow always leads to more forces and bigger budgets than are realistically attainable. Hence, the OSD staff has gradually tried to influence the threat estimate, the strategic planning, and the force level determinations as a means of assuring an eventual budget that will fit into the available ball park. A new move engineered in OSD threatens to substitute so-called Consolidated Guidance by the Secretary of Defense for the traditional input from the JCS and thus reduce the role of the Service Chiefs and the JCS to one of reclamation and dissent. The outcome of this exercise is unpredictable, at least by me.

#### **Impact on Role of the Military Professional**

If those are some of the factors influencing the trend toward stronger and more centralized civilian control, how does this trend affect the role of the military professional?

Simply put, this trend means that an Army officer must be a star, two-way player. Not only must he master the art and science of soldiering, he

must also broaden himself so that he can perform as an effective military adviser to civilian authorities, and so that he can be a persuasive advocate of the military viewpoint when dealing with the cost-oriented, politically sensitive, civilian mind.

You will be fortunate indeed if you spend as much as 40 percent of your service with your branch after you graduate from this course. How well you prepare yourself for these non-Air Defense experiences, and how well you perform in these broader roles, will have considerable bearing on how well you serve the Army and how high the ceiling on your career will become.

Sooner than you think, you will be working on projects that involve contact with or ultimate decision by the civilian hierarchy. You will be prepared for that experience partly by further military schooling, but mostly by staying in touch with American society, by developing (on your own) an appreciation for economic and foreign policy factors affecting national security matters, and by immersing yourself in the experience when it comes.

As you rise in the Army and come into increasing contact with the civilian control echelons, you may find yourself developing deep convictions about issues that are not resolved in accordance with your thinking or that of your Chief of Staff. Here is where you need a philosophic outlook on your role as a military professional. I offer this one.

Your role is to make available to your military chiefs and civilian leaders the best thinking of

which you are capable. If your case is rejected for good reasons, you profit from that experience. If it is turned down for insufficient reasons, you accept the reverse with calm detachment and hope for a better call on another day. You neither take offense nor holler foul. Nor do you question the motivation of those in authority.

If you, or for that matter your Chief of Staff, are so out of sympathy with the decision-makers that you reach the breaking point, then you should quietly retire before sounding off in public. But if you know your military history, you realize that the audience available for those who have lost their official platform is quite small. Crying out in retirement didn't work for MacArthur and it probably won't work for you or your Chief either.

A mature, solid Army officer keeps a high gloss on his hard-core professional skills, does his best, when his turn comes, to breathe good sense and logic into the decision-making process and, if things seem to be going wrong, never loses faith in the ability of our system of government to straighten things out in the end, to include correcting for occasional excessive swings in the degree and nature of civilian control of the military.

After all, the military profession is not for those of little faith, or poor team spirit, or ignoble purpose. It is a profession for those of high purpose, strong dedication, and great forbearance. Most of all, it is a profession reserved for that special breed that freely and cheerfully elevates national interest above self-interest.



*General Underwood served as Fort Bliss Commander and Commandant of the US Army Air Defense School in 1967 and 1968. He subsequently served tours as Commanding General of the US Army Air Defense Command, Commander of the 14-State Fifth US Army and, at the time of his retirement in 1973, Commander of the US Forces Southern Command in the Canal Zone.*



**L**ong before the advent of the First World War, Theodore Roosevelt told a group of senior military officers, "It cannot too often be repeated 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."

These words are at least as true today. Deterrence of war is our primary mission and hope, but the Army must also be ready to fight and win military battles in support of the nation's purposes. To be capable of these fundamental functions in the world today requires an Army that is fully manned, motivated, disciplined, highly competent, and credible to both Allies and possible adversaries. Readiness is a tough, continuous job.

In time of peace, literally nothing is more important than the training of our soldiers and units. General MacArthur reminded us that, "In no other profession are the penalties for employing untrained personnel so appalling or so irrevocable as in the military." Our nation entrusts to us its most precious resource — American young people. We must assure that they are adequately trained and

# TRAINING

led. This is important to their welfare and our professional conscience.

Henry L. Stimson, both Secretary of War and Secretary of State at one time or another, said that the morale of a soldier "depends on his military training and his confidence in his leaders." The two — training and leadership — go hand in hand. And because they do, it's absolutely essential that we place the best officers available in command of all types of units. We intend to do this.

## MISCONCEPTIONS

I am concerned that there are misconceptions with respect to the "importance" of the various types of commands. These misconceptions manifest themselves in discussion about the importance of training commands compared to TOE commands.

All too often I hear that:

■ "Captains in training company command positions have been done a disservice, because TOE command and staff experiences are prerequisites for subsequent battalion command."

■ "A lieutenant colonel slated to command a training battalion will never command a maneuver brigade."

■ "Some individuals deserve 'better' commands than the ones to which they were assigned."

Not only are such comments untrue — they also have a corrosive effect upon the credibility of the Centralized Command Selection System in particular, and the Officer Personnel Management System in general.

### PRIVILEGE TO COMMAND

Command is an important and central element of the military profession. It is a signal privilege to command and, so far as the fallible humans who comprise selection boards can assure it, only those who have demonstrated the potential to be outstanding commanders are selected. All commands are important. One type of command is not “better” than another.

Promotion and command selection boards are instructed not to discriminate between types of commands — the performance of each individual, in whatever command assigned, must be weighed on an equal basis. Above all, it is performance that counts. And versatility of experience contributes to effective performance, is often weighed as a plus-factor by boards, and is an enriching factor for the officer himself.

### VARIED EXPERIENCES AND SKILLS

Every command assignment offers a different set of experiences and results in the development of different skills. Both TOE and training unit commanders develop expertise and gain experience in the application of tactics and weapon systems in the employment of a unit. The training commander faces different but not less demanding challenges. In this regard, to the extent possible, it is desirable to attain a “mix” of TOE and training command experience. For example, an officer selected for battalion level command, who once commanded a training company, will not normally be slated to command a training battalion. Likewise, a former training battalion commander will not normally be slated to command a training brigade. In that way, both training and TOE units benefit from the joint experience.

### UNIQUE RESPONSIBILITY

The outcome of battle is heavily dependent upon the quality of training and leadership, and much



## A PRINCIPAL ARMY MISSION

Lieutenant General DeWitt C. Smith, Jr.

### CAPABLE LEADERSHIP

Some of the most capable captains are serving as commanders of training companies. This is by design. It is essential that they do so. Alexander Pope admonishes us to, “Let such teach others who themselves excel.” The very best in leadership and role-models for young soldiers beginning their Army careers is absolutely necessary. The quality of the Army is to a substantial degree a reflection of the quality of our training leadership.

Command of a training company, especially in peacetime, is fully as important to the Army as command of a TOE unit. Company command of a TOE unit is not a prerequisite for battalion command, nor is command of a TOE battalion a prerequisite for brigade command. There are examples on both the brigade and battalion commands lists to refute the argument that they are.

responsibility for assuring that our soldiers are properly trained is vested in commanders of training commands. There is a unique responsibility in shepherding young people from civil to military status and in giving them a foundation on which they, their comrades, and their commanders can rely in days of trial. The officer promotion system seeks to recognize the professional challenge, the importance, and the maturing opportunities afforded by these command positions. We must continue to insure that a high quality of officers serve in training commands. And we must encourage all in the Army to understand and support this vital, professional function.



*Lieutenant General Smith is Deputy Chief of Staff for Personnel, Department of the Army.*

**A**n urgent message from the battalion staff duty officer awakens the charge of quarters at an Improved Hawk battery somewhere in South Korea at 0400 on a Saturday. The Commander, Korean Air Defense Sector, has ordered an increase in readiness and the battery is instructed to move to its tactical site to prepare for combat.

The soldiers gather their equipment, load onto waiting vehicles, move to the site, and deploy to ground defense positions around the perimeter. This is the beginning of Army training evaluation program (ARTEP) and annual service practice (ASP) for units of the 38th ADA Brigade.

Shortly after the soldiers have taken up their positions and established communications with the unit command post, one bunker reports a chemical attack. The alarm immediately spreads around the tactical site and the soldiers don their protective masks. The battery's chemical agent detection team is dispatched to the bunker that reported the attack and, after determining the origin of the attack, moves out to determine the type of agent and the intensity of its concentration.

After several minutes, the team returns to the bunker and notifies the CP that the area is safe and the ALL CLEAR is passed around the site.

It isn't long before the soldiers on the perimeter are confronted with a new situation; they are hit by enemy ground fire. The reaction force is deployed to deal with the aggressors and, in the course of the action, several prisoners are captured. The prisoners are disarmed, blindfolded, and thoroughly searched. Some of them are found to be carrying important documents and some have advanced weapons never before used by the enemy. The prisoners are tied and marched away to the control area, and the men on the perimeter become even more alert.



# 38th ADA ARTEP

CPT A. I. FRIEDERICH and

Then the siren sounds from battery control central, alerting the launcher and fire control crewmen to BATTLE STATIONS, and sends the air defenders running to their assigned equipment. Urgent conversation flies over the headsets as orders are issued and operators perform necessary checks on the equipment, preparing it for remote operations.

The entire battery had been in combat and ARTEP training for months, but none of the members knew who would be selected to march order the equipment to the range or participate in the base site operational readiness evaluation (ORE). The training concept required trained crews for both the battery (minus) and the improved assault fire unit (IAFU) who would be assigned where determined by the toss of a coin just before the sounding of the siren. The critical ORE was not underway for those who would remain behind to continue providing air defense cover for the Republic.

Once the ORE has ended, the word is given to march order, and a crew is dispatched to prepare an IAFU for movement. Within 1½ hours, the convoy is rolling away from the tactical site and the battery is on its way to Special Eighth Army (SEA) Range to complete its ARTEP and annual service practice.

Every year air defense units all over the world undergo these training and readiness evaluations in the form of the ARTEP and ASP, which are known as Tac Eval. Usually, the two are separate. This year, for the first time, units of the 38th ADA Brigade in Korea combined the two into a weeklong exercise that culminated in the live firing of a missile at the SEA Range, Daechon Beach, Korea.

The first 2 days of the evaluation were devoted to recall, ground defense, a CPR test, and an ORE to evaluate the unit's ability to defend against both ground and air attack. A timed march order demonstrated the soldiers' knowledge of proper procedures for a fast and safe move under tactical conditions. At SEA Range each battery was given 1½ hours to move into position, emplace, orient and align, and become operational. This completed the tactical phase.

# BRIGADE / ASP

SP4 DARRELL COCHRAN

The last 3 days were labeled the ASP phase. The first day was devoted to additional checks and maintenance. The IAFU crew went through an exacting ORE on the second day, and on the final day a drone target was tracked and engaged. Many of the units scored direct hits, validating the effectiveness of the IAFU. In fact, only one unit failed to "kill" its target and that was due to a missile failure rather than to human error. Seven out of 12 firing units received an "honor battery" rating.

Not all batteries escaped difficulties. However, only one battery failed to achieve operational status within the parameters of the ARTEP and all units fired from their organic equipment.

Before most people of the brigade heard the phrase, "ARTEP/ASP," the brigade S3 section personnel, under the direction of Lieutenant Colonel Sam Hayton, were hard at work developing the details so necessary to translate the concept into reality. Their's was the task to organize a meaningful evaluation of each step of the combined test. Major Hiltunen, the Brigade training officer, lived with the ARTEP as the guide to the training and evaluation process.

Major Bill Gardepe, the chief evaluator, lived with ARTEP/ASP '78 from beginning to end. Based on this experience he related how "it took a lot of hard work to put it all together and run ARTEP/ASP '78 in a way that emphasizes all aspects of an ARTEP." He believes that "it was worth the effort because our operator and maintenance personnel's training and actual capabilities have been significantly increased and the brigade's readiness has been similarly affected."

CW4 Gil L'Esperance, another evaluator in the fire control area, stated, "this was the most realistic training we have ever had on the Hawk, and the most intensive as well." A veteran of 25 years in air defense, L'Esperance added, "we have accomplished something that many of us knew could be done but had never tried: separate the two sections of the battery (battery minus and IAFU) and remain fully operational at both the original site and the alternate one. Moreover, we did something no one else does — test every soldier in the battery

and not just a hand-picked crew."

Staff Sergeant Ronald Booker, the launching area evaluator, agrees: "It proved that we can combine the tactical and firing phases into a 5-day exercise rather than having two separate, unrelated events of 5 or 6 days each. The ARTEP and ASP are really two parts of one, and we have combined them and proved it works."

Of course, the new concept wasn't entirely trouble-free. For example, some of the units experienced problems with replacement parts due to the requirement to break out a prescribed load list for the IAFU. Yet, their training and evaluation provided realistic logistical requirements, according to Lieutenant Colonel Joe Gray, the Brigade S4. Many positive lessons were learned and a solid base was developed for future evaluations.

The tactical and firing exercises reemphasized the need for improved camouflage systems for radars and launchers. Toward this end, a camouflage system that was field-tested at Fort Bliss last summer has been adapted for use in the 38th Brigade and is being fabricated in Korea. One battery tested the new camouflage system and no damage resulted to the camouflage nets because of the missile firing.

With each unit using its own equipment, the new ARTEP with integrated ASP concept also proved that the Improved Hawk system can withstand long road marches over difficult terrain, be emplaced, and successfully engage airborne targets identified as hostile. Relatively few problems were noted. The IPCP demonstrated its worth in each firing.

The combined evaluation had its benefits for the individual soldier as well. Brigade personnel agreed that the training they received for ARTEP/ASP would improve their individual performance during upcoming skill qualification tests (SQT).





Private First Class Wayne Ferrill, a fire control crewman, relates that because of his training, "I can now run any crew drill on or off the site." He adds that he feels further rewarded by his participation in the ARTEP/ASP exercise because of the preparation it afforded for the SQT. "I feel the Soldier's Manual for my MOS and the ARTEP/ASP training are complementary and this will be reflected on my SQT score."

A continuous wave radar mechanic, Specialist 5 Frank Lovelace, had the additional duty of preparing the men of his unit for chemical, biological, and radiological defense. "ARTEP/ASP gave me a chance to learn some of those tasks that are part of my MOS but are seldom practiced or even studied and, at the same time, I was able to teach others in the unit what they need to know to protect themselves. I now feel very competent and ready to take my SQT."

Staff Sergeant Richard Rogers, a 16D30, was his unit's launcher section chief for the ASP phase. While he has participated in past ASPs in Europe and at McGregor Range, he stated, "this is the best overall training I've ever had."

Rogers added that "the troops we have now are as good as the ones I worked with 14 years ago and this evaluation has been great for preparing these soldiers for the realistic requirements of a wartime situation, since we used all of our equipment." He

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*Captain Friedrich is the Public and Civil Affairs Officer for the 38th ADA Brigade. He previously served in personnel management and public affairs positions in USAREUR and at Fort Lee, Virginia. He received a Bachelor's Degree in Journalism and a Master's Degree in International Relations.*



further commented, "everybody — air defense specialists, motor pool and generator mechanics, cooks, communicators, and supply people — did not only his normal duties but a lot of extra CBR defense, quick reaction to ground attack, etc. . ." In addition to commanding the launcher section, Rogers was in charge of a quick-reaction ground defense force during the tactical phase of the exercise.

Specialist 5 Jeffrey Herrick has been a 24E for 6 years and ARTEP/ASP provided a first hand answer to a question that had never before been explained to him: What would we do as a battery if there was a combined air and ground attack? Before, we never had a ground defense phase and we used only host equipment at the range, which just wasn't the same.

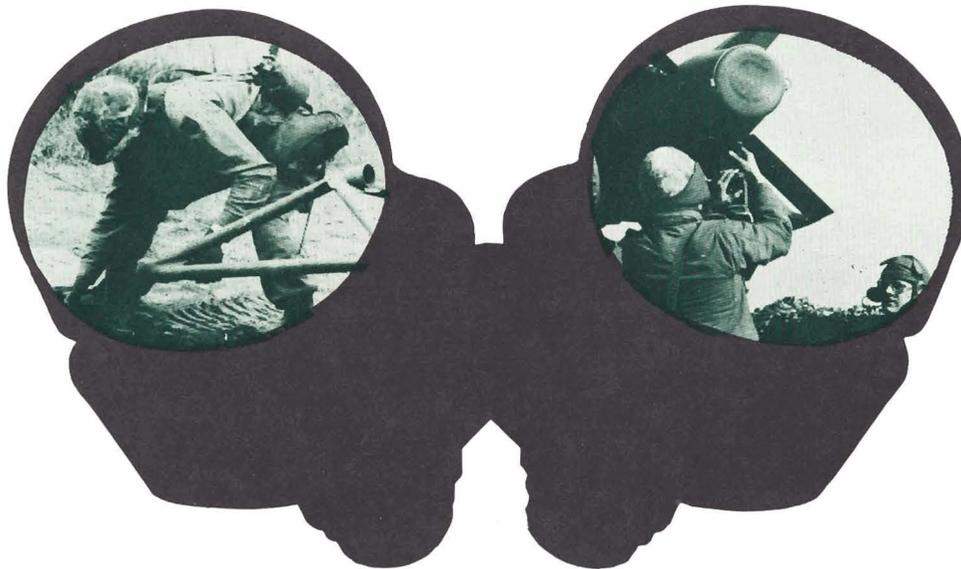
To keep the tactical "edge," each line unit will engage in a fall ARTEP. These exercises will incorporate lessons learned from the previous ARTEP/ASP in a prolonged field exercise for each unit.

The ARTEP and ASP are not just exercises, they are solid mission preparation for the men and women of the "Hand of Power" Brigade in the event they have to defend the Land of the Morning Calm. The batteries are not only ready to fight from their base sites but are prepared to accomplish their missions under all circumstances and at any location on the Korean Peninsula.




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*Specialist 4 Cochran received a Bachelor's Degree in Journalism from West Virginia University in 1976 prior to enlisting in the Army. Before joining the Public Affairs Office, he was assigned to D Battery, 2nd Battalion, 71st Air Defense Artillery, where he was a member of the unit's ASP crew.*



## *VIEW from the FIELD*

Private First Class Bob Kerr

**A**ir defenders of the 2d Battalion, 67th Air Defense Artillery, recently deviated from their normally dry-land role and took to the water and the air in a three-phase field exercise. In the first phase, Vulcans from Battery A joined German and American engineers in a Rhein river-crossing exercise while Chaparral systems took to the air suspended from Chinook helicopters. This first phase of the exercise consisted of field maneuvers around Speyer, Germany.

Another crossing of the Rhein, this time near Otterstadt, was the second phase. Members of the German 880th Heavy Engineer Battalion and American 502d Engineer Company (Assault Float Bridge), 565th Engineer Battalion, were ordered to move Battery A's Vulcans across the river both by ferry and across a bridge. The bridge, an American ribbon bridge, is (at least temporarily) one of only two in Europe.

While the 750-foot bridge was being put together, the Vulcans formed a defensive perimeter around the crossing area. They were set up to provide air defense and ground support for the engineers at the river crossing while waiting for the word to move. They left their night defensive position (NDP) that morning and set up at the new location.

With the bridge still unfinished, the Battery Commander took his Vulcans "swimming." An armored personnel carrier (APC), a Gama Goat, and three Vulcans moved to the river to prepare to take a dip.

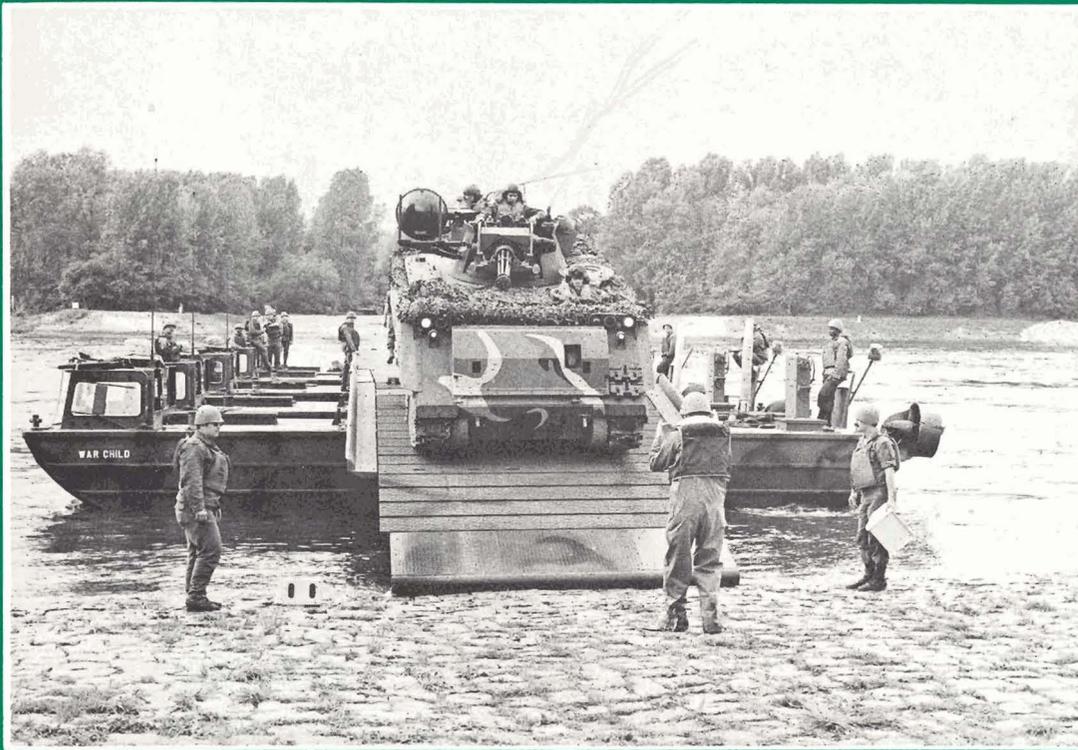
They were hooked to a wrecker and slowly driven to the water. If they took in any water, they would simply pulled out. The APC was first, and the driver was given instructions on how to "swim her." With the crowd shouting wise cracks about going down with the ship, the APC eased into the water. With no leaks appearing, it was released to wait for the others.

Next to swim was a Vulcan. Seaworthy, it joined the APC in the water. The platoon headed back to the bridge when the swim was completed. A crewman later commented on the swim, "I was kind of scared at first, but after a while it was okay. I usually drive but not on a swim."

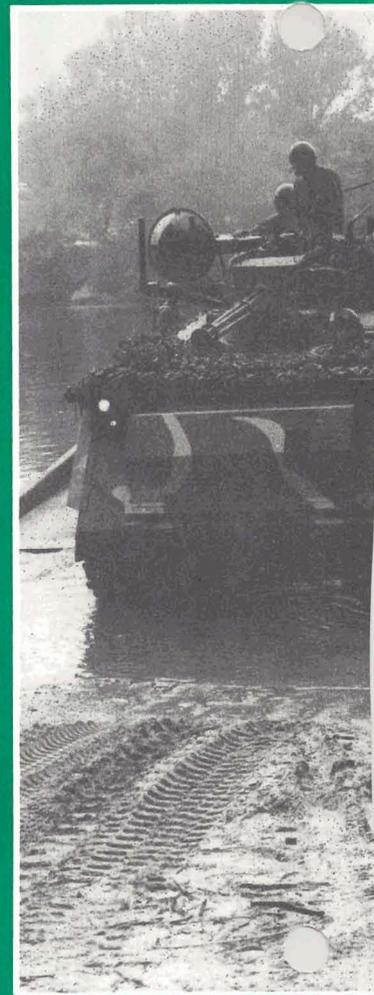
Crossing the bridge, the convoy made its way to an island and then to the main Rhein river channel. A German raft was the next form of transportation for the Vulcaneers. The convoy crossed the river again later but under night conditions.

Phase three was a Chaparral airlift using Chinook helicopters. Four Chaparrals mounted on stationary bases were airlifted from air fields at Coleman Barracks in Mannheim and Germersheim to Battery A, 5th Battalion, 6th Air Defense Artillery, a Nike Hercules unit, to defend it from low-flying aircraft. The missile crews left the two airfields in advance to secure the landing area and bring the choppers in safely with the Chaparrals. Once the Chaparrals were dropped off, the missiles had to be assembled. A crew member talking about the operation said, "It normally takes about 10 minutes for us to get everything fully loaded. Today, I think we were a little faster than that." About the Chinook ride, he said, "It was fun, but I started to get a little airsick after a while." He continued, "With the Chaparrals set up and the observers posted, a long wait began. As an observer, I look and listen for aircraft in my quadrant. If I see or hear anything, I report it over the phone to the senior gunner so he can get a fix on it."

After more than a week of working with other units to improve their own skills, the missilemen and Vulcaneers of 2d Bn, 67th Air Defense Artillery, returned from the field. No longer earthbound and landlocked in their air defense role, the men of the Battalion now sense confidence from the experience of maneuvering by air and water.



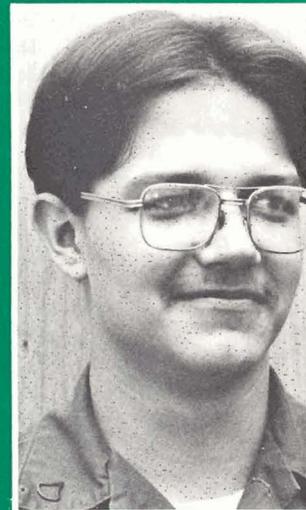
*An engineer from the 565th Engineer Battalion guides a Vulcan track off a tactical ferry during a river crossing near Speyer, Germany.*



*Crossing a branch of the*



*A Chinook helicopter drops off the Chaparral for the crew to assemble.*



*Private First Class Ker  
Defense Information school  
Public Affairs Office at  
as an Associate Editor  
Defense Command News*

*Photos are by Bob Kerr*



hein on a ribbon bridge.



a graduate of the De-  
l. is assigned to the  
Darmstadt, Germany,  
for the 32d Army Air

and Larry Paul.



A Vulcan takes a "swim" during a training exercise near Speyer, Germany. This was the first time some of the crew had taken their vehicle for a "swim."



Charles Fields (left) and Ronnie Green tighten fins on a Chaparral while Scott Martinez looks on.

*This installment is a continuation of Japanese anti-aircraft tactics and techniques in WWII. More information on this topic will also appear in the next installment.*

Long-range radar was extensively used during the last 2 years of the war. Radar sets of either Army or Navy, with ranges of 120 to 180 miles, were installed along the entire coast of Japan, as well as on some of the islands. Sites had been prepared and installation was in varying stages of progress on many island locations for these radars at the end of the war. At some sites, multiple sets had been installed.

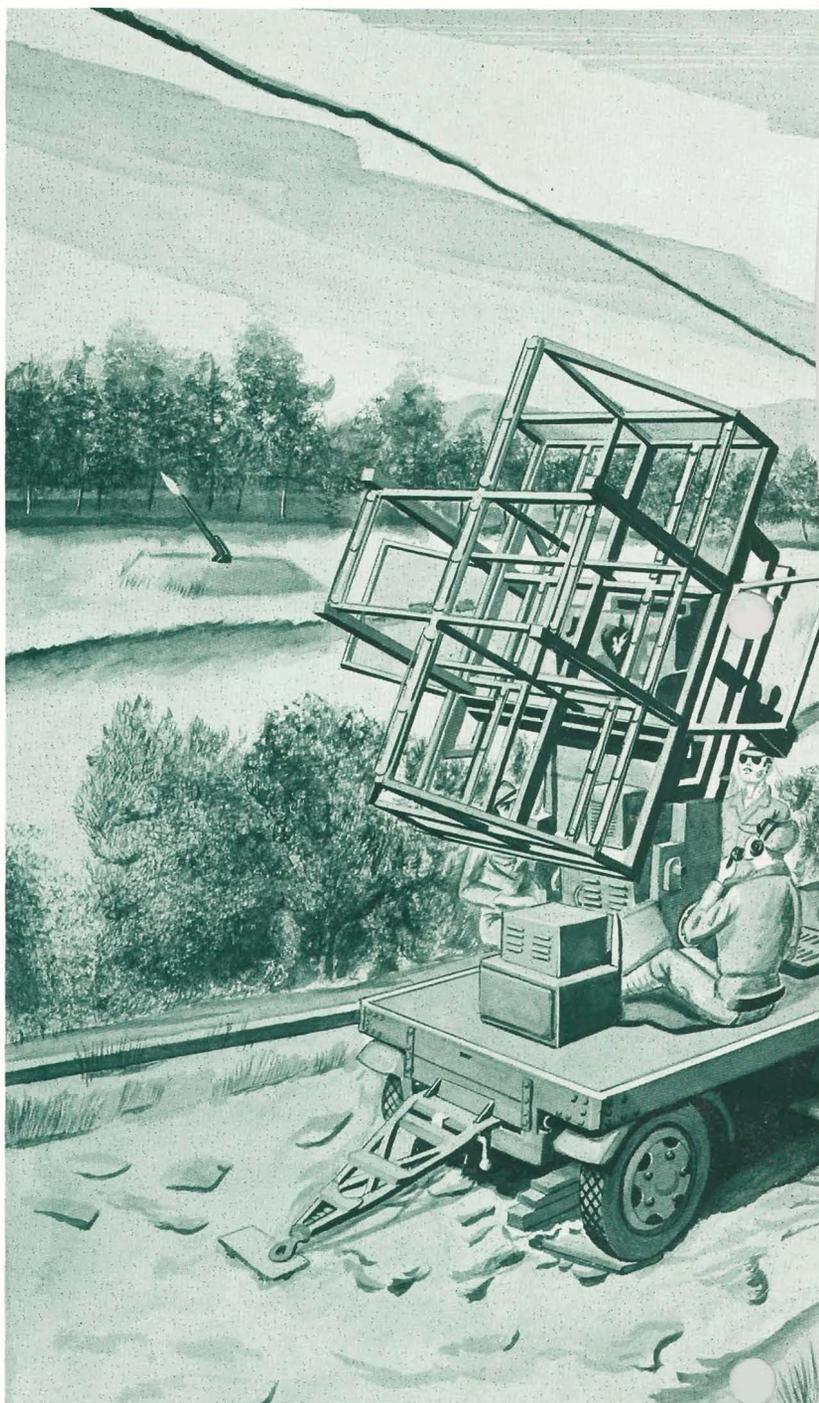
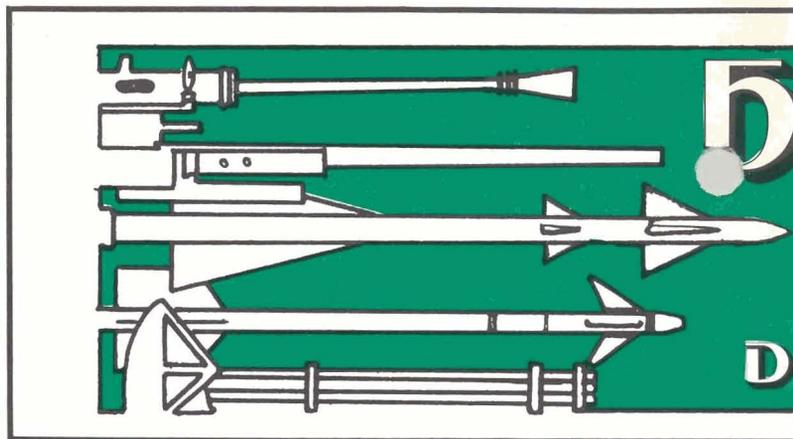
Both civilian and military visual observers were used throughout the Japanese mainland. Although civilians greatly outnumbered the military, there was a reluctance to place complete reliance on civilian observers in the areas of greatest responsibility. The military observers who operated under army intelligence units, as a rule, were placed along the shoreline in the most likely direction of approach of American planes. Military observers also were placed in positions where communication difficulties were most likely to occur.

Civilian observers in the most critical areas were located 5 to 7 miles apart. In mountainous areas of central Japan, these distances were greatly extended. Each group of 10 to 15 observers reported into a filtering center which forwarded intelligence to the army information center. At the end of the war, there were approximately 1,600 civilians so employed in the area of the 12th Area Army (central Honshu, including Tokyo).

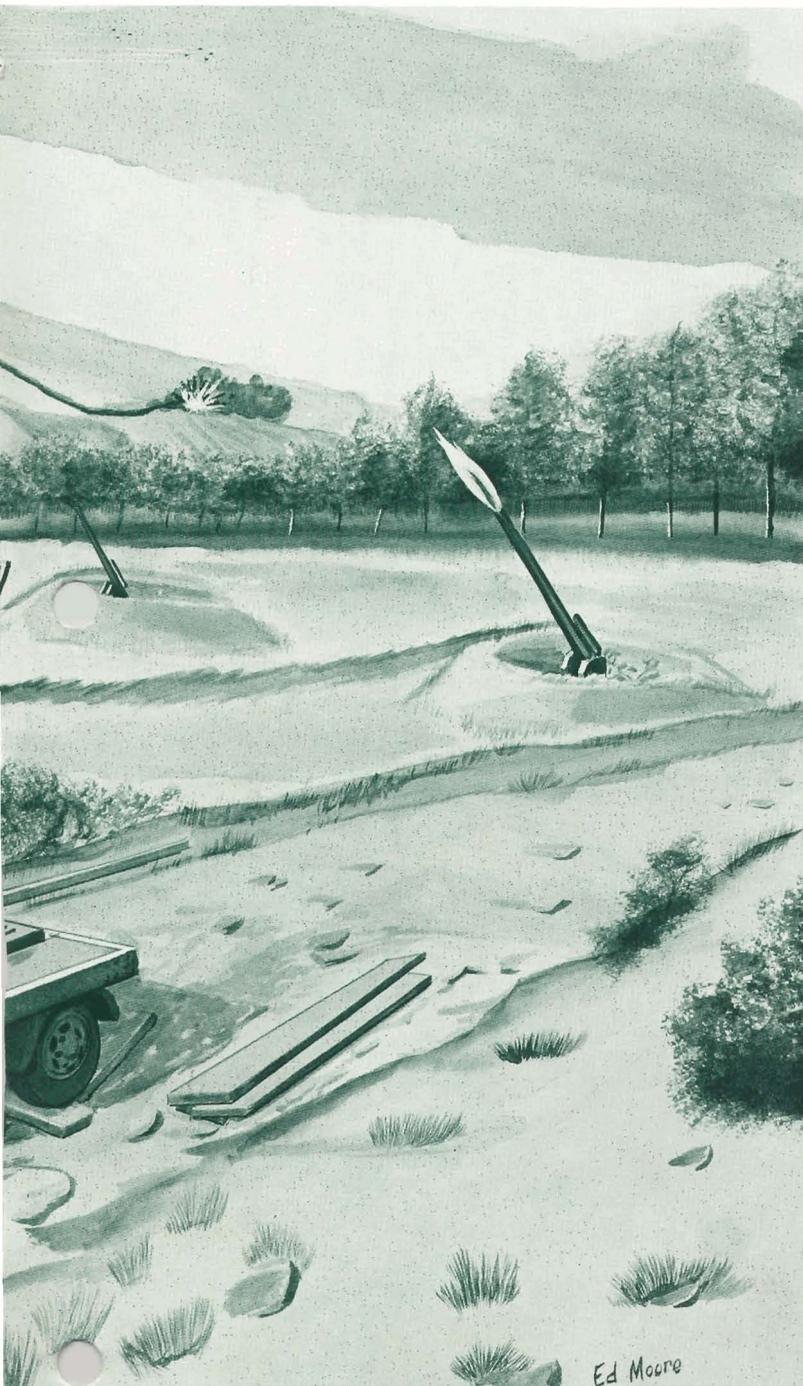
Anti-aircraft Artillery Intelligence Service (AAAIS) followed no fixed organization or method of operation. The few anti-aircraft radars that were available were normally used as an aid in obtaining visual pickup after early warning had been received.

The lack of development of an adequate AAAIS was attributed to a number of reasons. Homeland defense was static and requirements were met largely by well-organized civilian and army intelligence units. Japanese defenses were set up primarily against B-29s. Carrier planes and other low-flying planes were given little consideration. No special equipment or personnel were provided for the AAAIS. Radars were limited and usually not available below battalion level. Radios existed in meager quantities, and none were available for use by visual observers. Wire and other communication equipment was limited in quantity.

The lack of an effective AAAIS had little actual effect on the efficiency of the Japanese anti-aircraft artillery, since their guns had sufficient warning to be prepared to meet the B-29s. Gun-laying radars were the primary source of such information. Radars were usually kept under centralized control and were placed in action by orders from higher



# History of Air Defense



headquarters only when information had been received from early warning sources of the approach of our planes. Radars under battalion control transmitted data simultaneously to the battalion headquarters and to the batteries, providing azimuth, angle of elevation, and altitude. Most radars were Type 3, a model copied from the British Mark II and were available in limited quantities, starting in 1943. They had a pickup range of 25 to 35 miles for high-flying B-29s, which provides only a few minutes early warning.

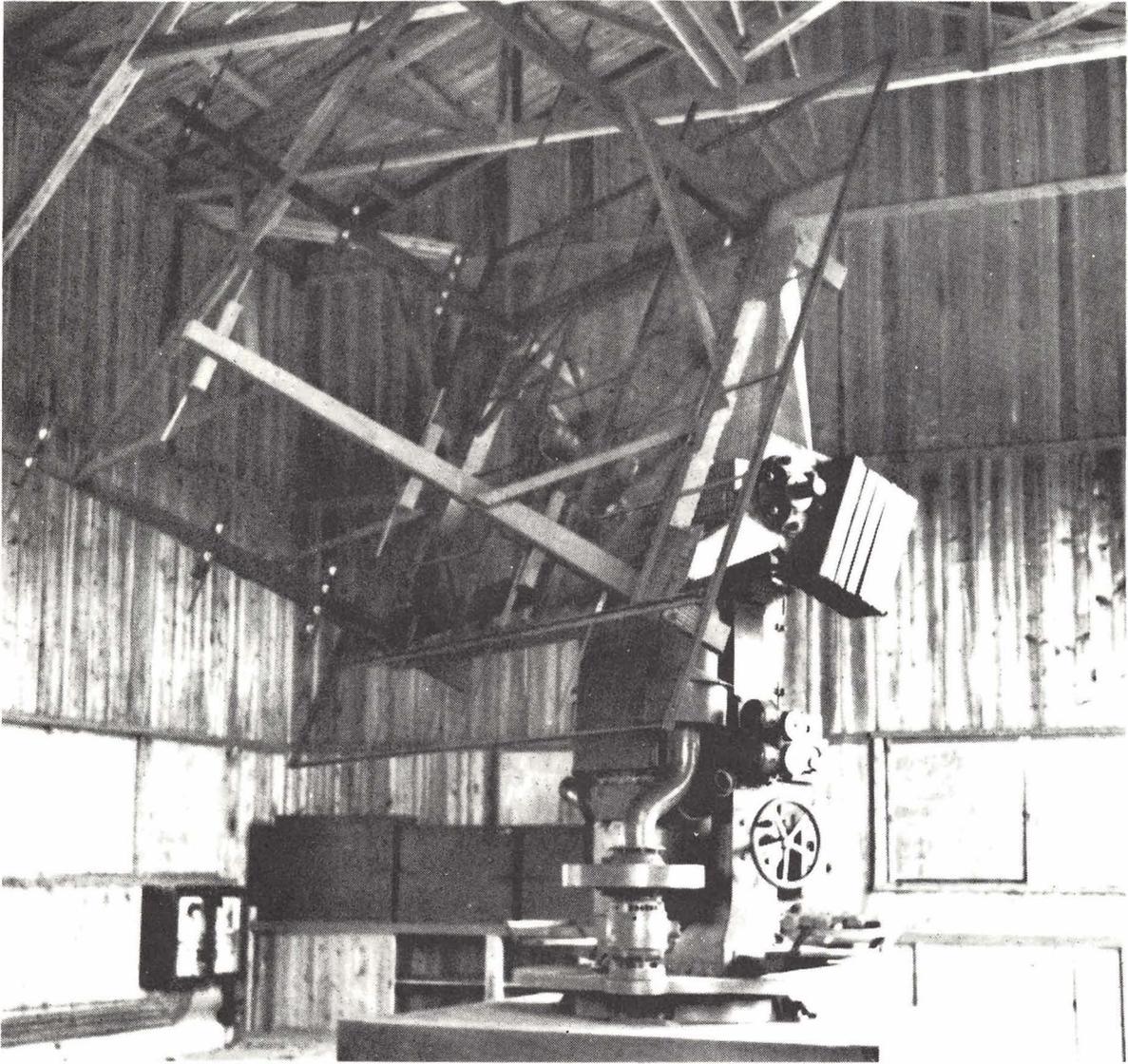
Each of the four anti-aircraft divisions defending the homeland made limited use of OPs (observation posts). Regiments were required to maintain four to six OPs set up in a ring 15 to 30 miles from the center of the objective. The Commanding General, 2d AA Division, stated that the OPs should have been out at least 50 miles, but lack of communication facilities prevented this. In reporting information, OPs normally used grid square numbers as a means of locating the planes and designating the direction of flight. Air guards equipped with field glasses were used at all fire unit positions.

Communication equipment varied as to type and quantity in the various units. Some battalions had no radio transmitters, and many batteries were not equipped with radio receivers; thus, primary reliance was placed on wire communications. Information from battalion radars was transmitted to battalion and then passed by amplifier (wire) or radio to the battery. Information from OPs was transmitted direct to division by wire. Information from division to subordinate units was transmitted either by wire or radio. Wire transmission was the normal method used with broadcasts, reaching all fire units simultaneously. Radio normally went no farther than battalion headquarters.

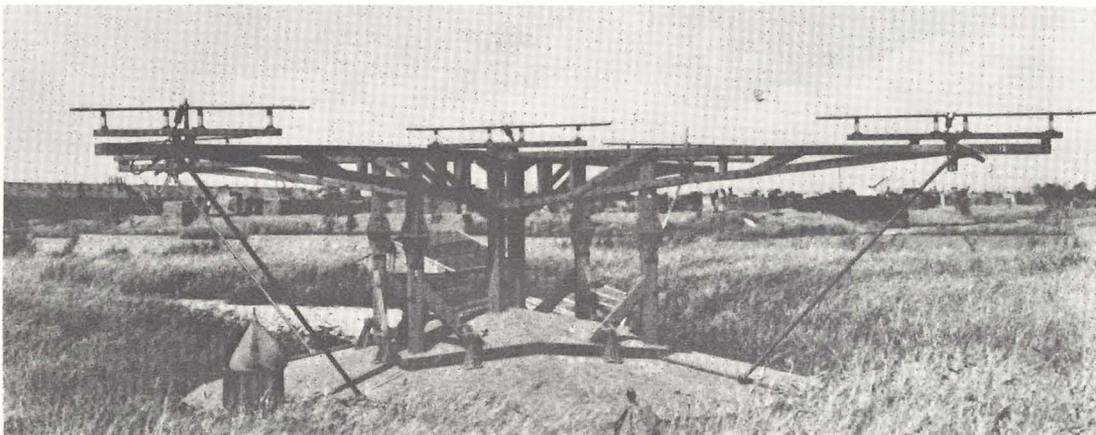
Searchlight battalion commanders could speak directly with individual lights or could relay messages through the battery hookup over the loud-speaker system. As automatic weapons of a battery were normally concentrated in a small area, the communication problem was similar to that of a gun battery. Communications upward from fire units involved more delay than communications downward, because relays were required at battalion and regimental headquarters.

Until May 1945, area armies of the homeland had the responsibility for air defense as well as ground defense within their respective territorial limits (exclusive of naval bases). Certain air force fighter units were also under operational control of these armies. All early warning came to the area army information center; thus, the commander controlled all army elements of air defense at this time.

With the organization of the Air General Army in May 1945, fighter elements were relieved from



*Antiaircraft fire control radar Type 4 modified.*



*Type 3 radar receiving antenna.*

area armies and the responsibility for air defense, and control of the means to accomplish it was split between the air force and the area army commander. The land area of Japan was divided into districts, and fighter defense responsibility for each district was delegated to commanders subordinate to the Commanding General, Air General Army. The 10th Flying Division was made directly responsible for the air defense (less anti-aircraft) of the land area of the Tokyo region, except for Yokosuka Naval Base where the navy, using its own tactical units, was responsible for its own defense and that of adjacent waters. No such thing as a fighter control center existed nor was any centralized fighter control exercised.

Except where the navy had set up its own shore-based aircraft artillery to defend its own installations, anti-aircraft defense was normally furnished by units under the direct control of the area army. The air force had within its airdrome battalions a limited number of automatic weapons which were used in local ground and air defense of their airdrome. In some cases, these defenses were reinforced by army anti-aircraft units under army control.

Throughout the war, no coordination existed between the anti-aircraft and the air forces. Anti-aircraft could fire at any time, regardless of whether planes were operating in the area, and the air force could operate in any area at any time without regard to anti-aircraft defense. The closest approach to coordination existed in the use of anti-aircraft searchlights with the fighter planes. In the Tokyo area, a regiment of searchlights was set up to furnish illumination for fighter interception, but this use of lights was only incidental to their primary mission of illumination for gun battery firing.

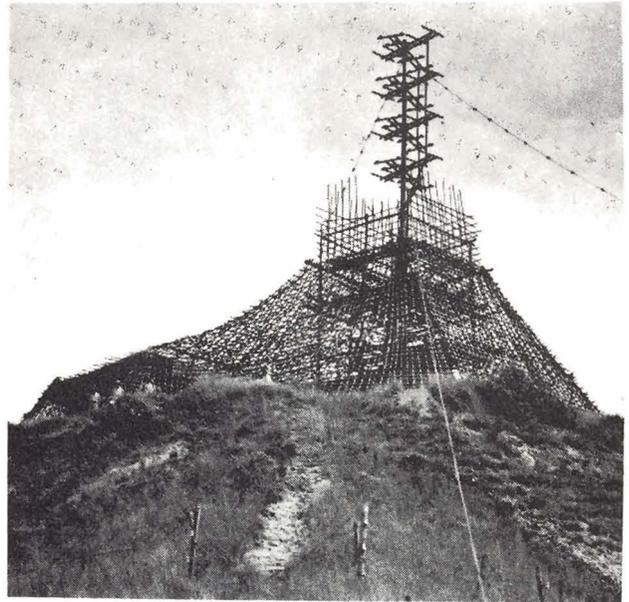
The weakness of this system of independent action and lack of coordination was admitted by anti-aircraft division commanders. Some consideration was given to integrating the anti-aircraft with the air force, but this was quickly overruled by senior artillery officers who felt that under such an organization anti-aircraft would be suppressed and development retarded.

Major General Kawaii, 3d AA Division, stated during interrogation that:

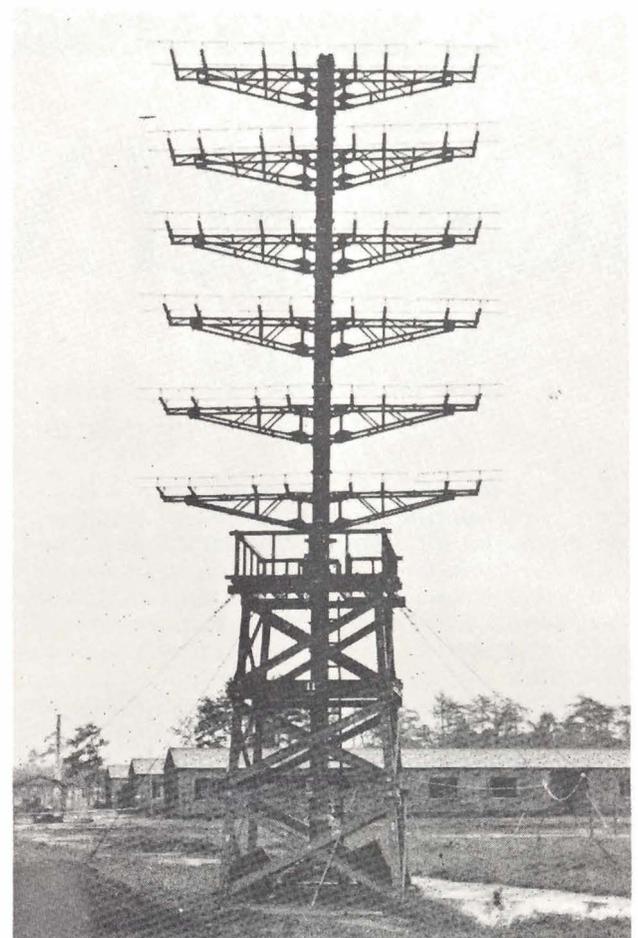
"Coordination is an important point, and it should be good in order to be ideal, but both the anti-aircraft and air corps here in the homeland were so inadequate numerically that both worked in the same area, and while this is very dangerous, it was actually necessary because there was not enough equipment to divide off into areas of defense."

Major General Irie, 2d AA Division, stated during his interrogation that:

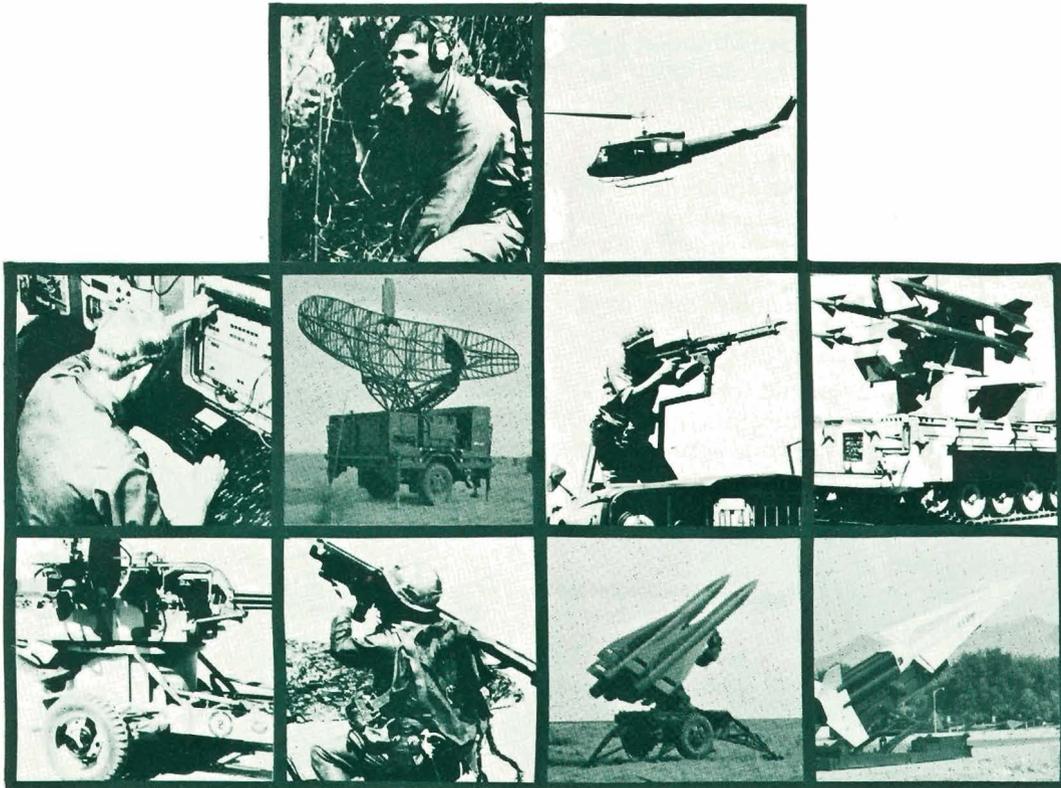
"The Air Force is too small for its action to be coordinated with the anti-aircraft artillery. In March the Nagoya Air Force consisted of only two or three aircraft. They are hardly able to train. AA did most of the fighting."



*Long range early warning radar near Canton, China.*



*Early warning radar antenna installed in Japan.*



# P R O P E R Y

# ACCOUNTABILITY

Major General Oren E. DeHaven

Proper Count has become a watchword in the Army in recent months. It is, of course, a contraction of the words "property accountability" and labels the concerted, intensive effort underway, Army-wide, to make much needed and overdue improvements in the management and accountability of our materiel. It also connotes each soldier's and civilian employee's personal responsibility for ensuring that maximum lifespan and utility are obtained from all Government property entrusted to his or her care.

The Army Chief of Staff directed, last year, a special Department of the Army Inspector General's Inspection of Management and Accountability of Army Materiel. Results of that inspection left little doubt that substantial improvements were needed in the way we look after and take care of Government property. General Rog-

ers, after reviewing the inspector general report, stated his position lucidly, "We simply are not going to tolerate this type of mismanagement in our Army." He also provided clear-cut guidance on the approach to be taken in ameliorating the property accountability problems that exist.

"I expect each commander to become involved, for most of the problems associated with control of supplies in the Army can be attributed to a lack of involvement at all levels of command. The greatest improvements will result from a high level of command interest; I expect that level to be reached by all of us."

After reviewing the inspector general report, the initial, logical question is usually, "What happened to the stringent property controls of the 1950's and 1960's?" A complete answer to this question is difficult since a number of factors have

combined to attenuate the effectiveness of the Army's supply economy program during the last decade.

Active involvement in combat operations frequently has resulted in a shift of emphasis away from strict accountability for property. Our prolonged experience in Southeast Asia was certainly no exception. We must also realize that advancing technology, as well as preparation for multiple contingency missions, has also had an influence. We must keep track of, as well as care for, an ever increasing density of equipment, supplies, components, and parts in a typical unit. The threat of relatively brief, high intensity conflict situations has also necessitated a proliferation of prepositioned war reserve and back-up stocks throughout the world. These must be managed and accounted for.

Numerous changes in the logistics system itself have also had a substantial impact. The advent of the computer provided the means for more responsive logistics support, but it has not been an un-mixed blessing. Increasing sophistication requires personnel with additional skills and, hence, training; and they are not always available in desired numbers or at the most propitious times. Change, whether resulting from doctrinal innovation or system sophistication, all too frequently results in periods of turbulence and uncertainty when items may "fall through the cracks" that temporarily exist while property control procedures are being modified.

Finally, it must be recognized that sociological changes in American society at large sooner or later are manifest in the Army as well. Civilian experts in assets protection have pointed out the diminishing effectiveness of traditional ethical standards and employee goodwill as restraints against criminal or antisocial behavior toward the "company." It is reasonable to expect that some of our personnel view the Army as a nonpersonal, faceless entity that is ripe for ripping-off since "nobody's hurt" and "the Government can afford it." Ever notice how many U.S. Government ballpoint pens you see in use in homes and businesses offpost?

The next logical question is, "What can we do to get better?" The key to a sound asset control program is, of course, the active involvement of commanders at all levels, as the Chief of Staff has stated. It is difficult to argue with the maxim "that gets done which the boss checks." A commander must be fully cognizant of his property accountability responsibilities; be knowledgeable of the policy, procedures, and requirements contained in pertinent directives; and take the time to inspect, question, and review his command's performance.

At company level there are four basic property accountability functions that must be properly performed to adequately control Government supplies and equipment. Accountability must be established and maintained. Every item on the property book or on hand receipts should be hand receipted and subhand receipted to a responsible in-

dividual at the lowest practicable level. All individual clothing records must be accurate and up-to-date. Change-of-command and periodic inventories have to be conducted in accordance with existing directives and at any other time that the commander perceives a need.

Another function the company commander must perform is to ensure that appropriate inventory adjustment and disciplinary actions are taken in a timely manner in incidents involving lost, damaged, or destroyed property. Finally, the commander must take all reasonable precautions to safeguard supplies and equipment that arrive in or depart from his command. In essence, the company commander is responsible for implementing a comprehensive unit asset protection program through the integration of sound management techniques, personal accountability, and physical controls.

Though command emphasis can be expected to result in the greatest improvement in accounting for the Army's property, there are numerous other actions underway to assist in this endeavor. These are being coordinated by the Department of the Army Property Accountability Task Force (DAPATF). The task force was established on 25 October 1977 under the Deputy Chief of Staff for Logistics, based on a recommendation contained in the inspector general report. The mission of the task force is to execute the remaining recommendations contained in the report, that were approved by the Chief of Staff, and to take any other actions deemed necessary to improve the management and accountability of supplies and equipment.

Task force membership consists of representatives from various Headquarters, Department of the Army and field organizations who have expertise in personnel and training, supply, physical security, logistics systems, property accountability, management of change and authorizations, publications, medical supply, military law, and criminal investigation. The multidisciplinary organization of the task force allows for a unified approach to the multifaceted and complex problems associated with our sophisticated logistics system and for expeditious coordination of actions among the Army Staff. To facilitate interchange of information and implementation of the inspector general recommendations, points of contact have been established at all major Army commands and they, in turn, have established similar "stovepipe" communication channels with their subordinate commands.

Department of the Army Staff actions which can be implemented immediately are announced to the field by separate messages. Increased visibility is provided to these property accountability messages through the use of an identifying statement in the passing and delivery instructions. Messages transmitting information are labeled "This is a Proper Count Message." Those that are directive in nature are prefaced with the statement, "This is Proper Count Flasher Message Number \_\_\_." These are numbered sequentially. Policy changes contained in "flasher" messages will ultimately be in-

corporated in appropriate regulations.

The task force is working on a broad spectrum of actions to improve the Army's property management and accountability system. Some highlights of ongoing projects are summarized in the next column. These efforts are being closely coordinated with the major commands to ensure that all proposed changes to the logistics system are reasonable and practical. In addition to the "stove-pipe" property accountability structure between Department of the Army and the major commands to facilitate communications, extensive personal contact is used by the task force so that policy and procedural changes are not developed in a vacuum. Members make frequent TDY trips to continental United States installations. Trips through U.S. Army, Europe, Japan, Hawaii, and Korea have been completed. Periodic working conferences of points-of-contact in the major commands have also provided input from the field to the task force.

Indications are that the tactical commanders have taken up the property accountability banner and are moving out aggressively to improve control of their assets. The logistics community is particularly challenged to provide the tools and expertise necessary to assist them in doing their jobs more efficiently. Directives, technical manuals, supply catalogs, and component listing must be made simple and understandable, with changes published much less frequently. Policies and procedures pertaining to property accountability — as well as relief from accountability — have to be reasonable, yet comprehensive and "close the loop" to ensure that no property or collection actions to reimburse the Government for lost, damaged, or destroyed items "fall through the cracks." Policies and procedures must also be simple, practical, affordable, and effective over the long haul. Thought must also be given to aids or concepts — such as tool set inserts and layout sheets — that facilitate taking inventories at the user and unit levels.

Many of the improvements under consideration by the task force are not new. Some "tried and true" procedures, from years past, may well be reaffirmed and again implemented. Any ideas that you may have, whether original or based on experience, are earnestly solicited and would be appreciated. They should be directed to HQDA (DALO-ZXT), Washington, D.C. 20310.

Our problems have evolved over a period of years and we cannot expect miracles to solve them overnight. However, if we all become as professionally knowledgeable in logistics as we should be, pull together as a team to make the system work as it was intended, and methodically correct the shortcomings, substantial progress can be made in a matter of months. Possession of autho-

ried levels of equipment by units and habitual exercise of supply discipline by all personnel are essential to readiness, particularly during these times of severely constrained funding. We owe this much to our country, our Army and, most of all, to ourselves.

## DEPARTMENT OF THE ARMY PROPERTY ACCOUNTABILITY TASK FORCE PROJECTS

- Devise audit trail at the finance and accounting office to ensure completion of collection actions.
- Simplify property turn-in procedures.
- Establish uniform allowance for CTA 50-900 Troop Installed Items at installation, division, and separate brigade level.
- Simplify and limit changes to supply publications.
- Restrict use of inventory adjustment reports and establish droppage allowances.
- Redesign equipment authorization system to limit stocks on-hand to "minimum essential," upgrade command review and approval, and centralize control of periodically needed materiel.
- Improve control of medical materiel.
- Overhaul the report of survey system.
- Improve management and training of CMF 76, supply, personnel.
- Modify programs of instruction in the officer education system to improve knowledge of supply procedures.
- Provide additional supply training to battalion and brigade commanders.
- Develop tool set layout that can be used for inventory as well as ground cover while working on equipment.
- Control changes to sets, kits, and outfits.
- Develop tool set inserts that leave a void if tools are missing, to facilitate inventory.
- Publish, in a readable and convenient format, a supply primer that summarizes key procedures.



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*Major General DeHaven was Assistant Deputy Chief of Staff for Logistics and Director of the Property Accountability Task Force at the time this article was written. He was recently named Commanding General, Transportation Center and Fort Eustis, Virginia, and Commandant of the Transportation School.*

# AN EARLY AIR DEFENSE COMPUTER

Colonel Ralph H. Prior (US Army Ret)

One of the earliest computers employed by our armed forces was a completely manual model whose elements consisted of the members of a regimental band.

In the first months of 1942, the 93d Coast Artillery (AA) found itself in the desert near Barstow, California, occupying the Mojave Antiaircraft Range — later named Camp Irwin. The regiment, consisting of two battalions of 90-mm guns and one of 37-mm and .50 cal automatic weapons, had been training at Camp Davis, North Carolina, at the time of the attack on Pearl Harbor and had been ordered in late December, 1941, to the San Francisco Port of Embarkation. A change of orders sidetracked the regiment temporarily to the Mojave Desert where training continued on a day-to-day basis while awaiting departure orders.

After several weeks, it was decided that a target practice should be conducted for the 90-mm guns. A towed target was arranged for and, as Commanding Officer of the Headquarters Battery, I was assigned the task of scoring the first such event for the regiment, and the first of my life.

A quick perusal of the technical manual covering the scoring procedure showed that we had the men and equipment for recording the necessary data — the azimuth and elevation of the target and of the shell burst as observed from the ends of a measured base line. However, computation of the miss distance and determination as to whether the shot was a hit or miss for every shot of eight batteries would take me so long that we might leave before I finished and the results would come too late for useful evaluation



*Captain Pryor in battlefield regalia at the time the early "computer" was conceived.*

of the proficiency of the batteries. Casting about for some help, I thought of the band. Here were about 26 intelligent men with no duties during the target practice and, although none of them admitted to knowing anything about trigonometry, they could all add and multiply. It took only a few minutes to show a couple of them how to look up numbers in a trigonometry table.

I had the clerk prepare a quantity of sheets of paper, one for each shell burst, with numbered lines for each step of the computation. I prepared an instruction sheet for each man, telling him how to perform his calculation, for instance: "Receive sheet from station 4. Look in your table for the angle on line 2 and write the cosine on line 3. Pass sheet to station 6," or "Receive sheet from station 10. Multiply the number on line 18 by the number on line 7 and write the result on line 19. Pass sheet to station 12." The sheets were fed into station 1 of the "computer" in chronological order. Although no band member knew how the system worked, each rapidly became proficient at his own operation and was instructed that if he received a piece of data that seemed out of line with the series of numbers he had been receiving, he was to return the sheet to the preceding station for a recheck. This procedure apparently caught the errors.

The results were beyond expectation. Each battery commander received his scores within an hour after he had finished firing. Although at first some of them distrusted the system, after they themselves recomputed some of the misses they thought should have been hits, they all expressed satisfaction with the accuracy and speed of our computer.

*Colonel Pryor, a graduate of Michigan State University (then College), was called to active duty in November 1940 as a captain in Coast Artillery (AA). He was a battalion commander in Hawaii, at Camp Callan, California, at Camp Davis, North Carolina, and in the China-Burma-India Theater during WW II. He served a tour as Chief of the Guided Missile Section of the Air Defense Board (then Board 4) and as Military Attache to Indonesia. He retired from the Antiaircraft and Guided Missile School, Fort Bliss, Texas, in 1959. He retired again as Assistant Professor of Mathematics at the University of Texas at El Paso in 1973.*

# BATTLEFIELD SURVIVAL

# AND INTELLIGENCE PREPARATION of the AIR DEFENSE ARTILLERY

First Lieutenant James R. Caswell

The tactical intelligence support plan for most combat units of the US Army has been working smoothly for several years. Each type of unit has established a usable and concise intelligence operation that satisfies the general and specific requirements of the individual combat element. An exception to this statement involves the Air Defense Artillery.

Air defense units in prepositioned sites are normally linked into the Air Force information system that provides early warning, types of enemy aircraft expected, and sortie rates of air forces. This information is normally passed directly into the operations channels and in most cases is in real time terms. Intelligence reaction to this real time information is virtually impossible. Adequate intelligence preparation for survival in the mission of shooting down enemy aircraft, or for survival on the ground after the air battle, cannot be fully achieved in air defense units because present intelligence support is inadequate in numbers, structure, and experience.

Air defense units not located in prepositioned sites but which are designated to provide direct support and/or general support to another type of combat unit have questionable capability to establish an adequate intelligence system for the support that is essential to survival on the battlefield.

In addition to its other essentials, Air Defense Artillery should have an exclusive intelligence support structure (see chart)

that can meet its routine as well as the unique tactical intelligence needs. This is important to the air defense combat arm which is itself critical in both peacetime and combat.

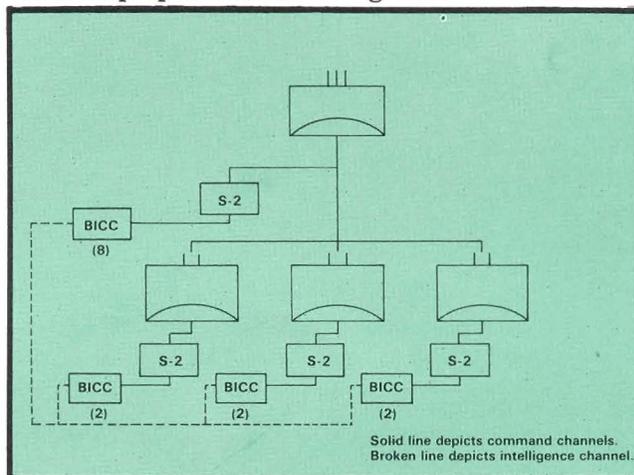
The following discussion examines the present need of the air defense tactical commander for prepared intelligence and explores a method by which it can be obtained.

## INTELLIGENCE PREPARATION OF THE BATTLEFIELD

Intelligence preparation of the battlefield (IPB) is a procedure that provides for the maximum integration and analysis of the factors of combat intelligence (weather, enemy, and terrain). This information enables the commander to exploit his knowledge of the enemy relative to the advantages and limitations of weather and terrain to tilt combat power in his favor. IPB is not a new concept in the US Army or the military in general. Implementation and effective use of this concept, however, have been weak spots in many first line units, regardless of how well their tactical intelligence plan

is supported.

The concept of IPB in relation to fighting and winning the first battle of any future war is especially critical for those commanders who must fight their first round after a major deployment operation. Commanders who must move their units several thousand miles into a hot environment situation cannot take the risk of hoping they will be able to ac-



quire the intelligence necessary to survive after they arrive. Complete survival intelligence must be acquired before the unit leaves its home station, if at all possible. IPB is the means by which the acquisition of survival intelligence can be obtained prior to emergency deployment.

When we speak of survival intelligence, we refer to that specific type and degree of information on weather, enemy, and terrain that will enable the combat unit to fight on the battlefield and survive long enough to accomplish the mission.

## THE BATTLEFIELD INFORMATION COORDINATION CENTER

We have seen that the modern intelligence concept for gaining the tactical information needed by the combat commander is IPB. But the IPB concept can be effectively employed and implemented only by an established system capable of gathering the information required and correctly processing this intelligence into a usable product. At the brigade or battalion level, this means the battlefield information coordination center (BICC) (see chart). The BICC should operate, albeit on a small scale, in the same manner as the tactical intelligence elements of the division G2 and separate military intelligence detachment. Currently, BICCs are planned only for Chaparral/Vulcan battalions. The BICC in the air defense group or brigade should be able to assemble essential intelligence information pertinent to diverse missions and process this intelligence into usable information for the air defense commander.

The operating staff of the battalion BICC should consist of one officer, 35A/37, and one intelligence sergeant. The group BICC should include one officer, a senior intelligence sergeant, two intelligence analysts (E-6), and two intelligence analysts (E-5), all 96B MOS; plus a clerk-typist and a vehicle driver. Critical on-going intelligence activities of this tactical asset should take the form of in-depth air and ground forces order of battle, templating doctrinal ground and air tactics, exercising and identifying tactical intelligence support problems, and conducting general IPB for individual unit missions.

## INTELLIGENCE REQUIREMENTS

Intelligence that will affect the air defense commander's mission performance must be timely

to be of value. It must also be accurate. Maneuver limitations and the high visibility of equipment make it vulnerable to enemy detection and attack, and intelligence that is displayed or inaccurate could spell disaster.

Intelligence for the ADA unit must encompass critical elements of information that go beyond the standard factors collected for the ground maneuver forces. These intelligence requirements also go beyond the normal on-hand requirements of the air forces. Adequate intelligence information for air defense units must be a composite of the information available to both the ground combat units and the air forces.

Some of the essential elements of intelligence information critical to air defense survival on the tactical battlefield include up-to-date air order of battle, air-to-ground attack patterns, comprehensive early warning/operations, security preparation and defense, enemy air sortie capabilities, accurate and timely ground maneuver intelligence, and pinpoint locations of enemy artillery elements.

Timely intelligence for some of the less mobile systems of air defense must be available soon enough to allow unit displacement before the battlefield shifts drastically; i.e., before the mobile forces move. The speed of the ground maneuver forces, both enemy and friendly, must be compensated for in air defense units by obtaining lead time intelligence. Present ground force intelligence systems are not always prepared to give ADA units that kind of support.

Only a few of the many unique intelligence requirements for ADA units have been discussed here. An in-depth study of the tactical needs must be accomplished by an element working exclusively with the situation.

## CONCLUSION

Given the proposition that the intelligence needs of an air defense unit are somewhat unique, that intelligence preparedness is necessary for survival on the battlefield, and that the battlefield information coordination center could provide the means of an adequate tactical intelligence system, a question obviously presents itself. Why don't we have some such system functioning right now?



*A 1974 graduate of the University of Washington, Lieutenant Caswell has served as an Armor platoon leader in the 3d Army Cavalry Regiment, as the S2 of the 2d Battalion, 55th Air Defense Artillery, and is currently S2 of the 11th Air Defense Artillery Group. His prior service background includes tours in Vietnam and Korea. As a military intelligence officer, he is strongly oriented to the tactical intelligence needs of the combat arms.*



# WHAT DO YOU DO NOW,



## LIEUTENANT?

Prepared by Tactics Department, USAADS

### SITUATION:

**Y**ou are the leader of a Forward Area Alerting Radar (FAAR) platoon assigned to a divisional Chaparral/Vulcan Air Defense Artillery battalion. The battalion is providing air defense coverage for the mechanized infantry division that is defending in sector. The division has just defeated a penetration by the opposing forces who have been pushed back across the original line of contact. The division will initiate a counteroffensive with the 2d and 3d brigades on line to secure objectives to the division's front. One Vulcan battery from the organic ADA battalion and the brigade's four Redeye sections will support the 2d brigade attack. In addition, provision for the Redeye section assigned to the field artillery battalion in direct support of the 2d brigade will be required.

The C/V battalion S3 has tasked you with the responsibility to devise a plan to support the 2d brigade maneuver, plot the initial positions for FAAR before the attack commences, and determine the method of displacement to provide continuous, effective early warning to the Vulcan and Redeye fire units moving with the maneuver elements. Intelligence has indicated that enemy air assault teams have been extremely active in the area of operations.

### SOLUTION:

After receiving the S3's instruction, you immediately assigned two of your eight FAARs to the

second brigade's area of responsibility. FAAR Numbers One and Two were selected based on their location in relation to SHORAD weapons supporting the attack. You realize that with the aid of FAARs in this maneuver, you'll be increasing from a visual detection range of 2,000 meters to a radar detection range of more than 12,000 meters. Also, the recognition range is increased from 1,000 to 3,000 meters, thus enhancing Vulcan's ability to engage hostile aircraft effectively at maximum range. Upon detection and identification of the aircraft as friendly or unknown, the radar operator rapidly provides IFF, range, and azimuth information via a radio frequency data line to SHORAD weapon sites. This preengagement information received from the FAAR system enables the weapon units to decrease their sectors of search and concentrate only on targets within their particular area of concern. Thus, the units have more time to prepare for engagements. The key in planning is to minimize FAAR's limitations and maximize its effectiveness through proper planning and employment. Coordination with the brigade S3 is essential to highlight the need for siting of the FAARs on advantageous terrain or hill masses. Such terrain will be demanded for all radio and electronic equipment. Your first thought in the employment process should be to avoid placing your FAAR units any closer than 2 kilometers to the FEBA as a precautionary measure against small arms fire.

The electromagnetic signature of the FAAR must be considered under your operational security plan. It is important that the radars be dispersed no more than 9 kilometers from each other for mutual radar coverage. This mutual coverage prevents a gap when one radar is temporarily out of action for any reason. The FAARs must have line of sight with and be within 15 kilometers of each supported Target Alert Data Display Set (TADDS). It is important for each weapon squad to maintain the orientation of its TADDS box while on the move so that early warning information can be continuously utilized. Of paramount importance is the requirement to provide a

minimum of 10 kilometers early warning; if the distance were any less than 10 kilometers there would not be enough reaction time for the supported weapons. You must also insure that the TADDS can receive and use the data sent from the FAAR. This can be accomplished by insuring that fire units:

- (1) Know the location of the FAAR so they can mark their position on the TADDS in relation to the FAAR.

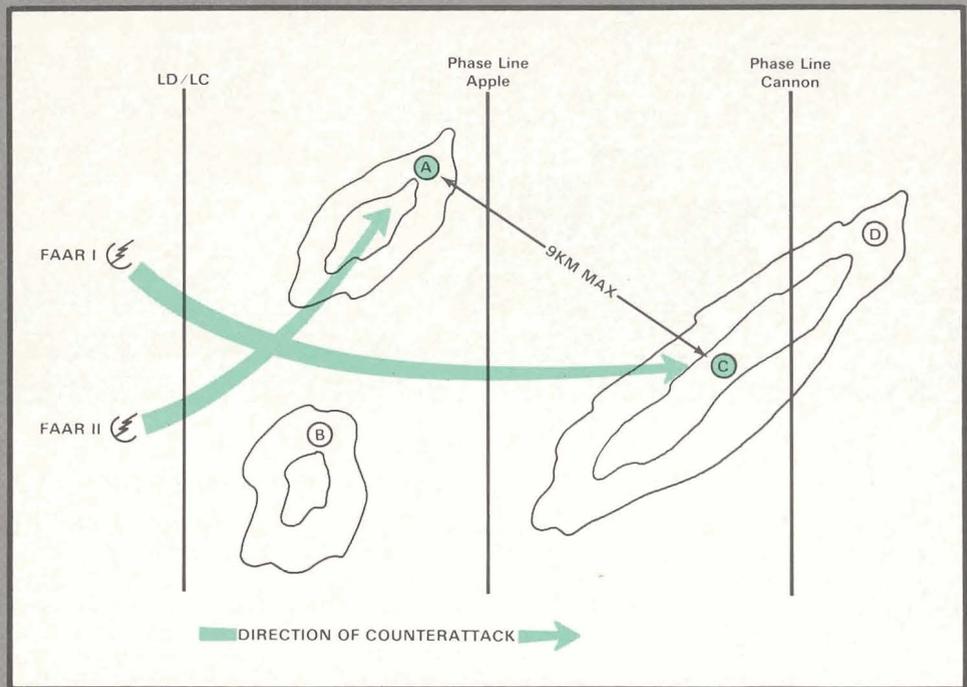
- (2) Are using the same frequency and code. These will be found in the CEOI, and an easy way to prevent confusion is to number the FAARs one through eight. The squad leader merely looks up the number of the FAAR in the CEOI to obtain the frequency and code required to net his TADDS with the selected FAAR.

- (3) Orient TADDS and FAAR in the same direction.

- (4) Have line of sight with a FAAR.

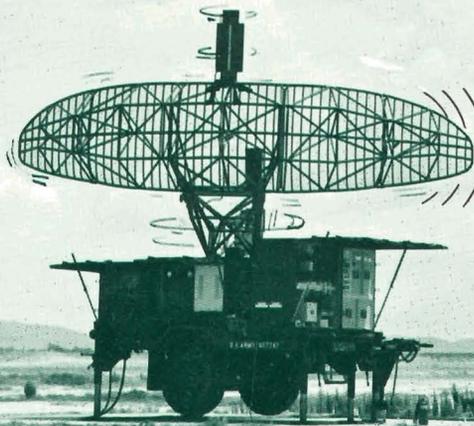
It is important to coordinate use of terrain and road clearance with the second brigade before you move.

Now that the FAAR employment and identification techniques have been firmly planted in your mind, you must plot the likely positions of the FAARs to optimize the support of the attack. If at all possible, their planned positions should be furnished to the ADA units participating in the attack prior to commencement of the operation. The Vulcan and Redeye units are aware of the location of FAAR Number One. This FAAR will provide the necessary early warning for the initial stages of the advance until the attack reaches Phase Line Apple. After reaching Phase Line Apple, and the area behind it is secured, FAAR Num-



ber Two, which up to this point has been following the attack in a march order configuration, will emplace at Position Alpha. Once the successful emplacement of FAAR Number Two has been completed and it is on the air, FAAR Number One is informed via radio that Number Two is operational. FAAR Number One notifies all the Redeye and Vulcan fire units in the area via one-way voice on the TADDS box that FAAR Number Two is in position and on the air. All squads and teams then refer to their CEOI for the frequency and address codes for FAAR Number Two. All units must now refer to their overlays for the location of Position Alpha and then plot that position. FAAR Number One then waits about 5 minutes to insure FAAR Number Two is indeed operational and then march orders. After the penetration has passed Phase Line Cannon and the area behind Phase Line Cannon is secured, FAAR Number One will move to Position Charlie. Once the successful emplacement of FAAR Number One has been completed and it is on the air providing the minimum 10 kilometer coverage, the operator radios FAAR Number Two and tells him he's on the air. FAAR Number Two then relays information to all the Redeye and Vulcan units in the area via the one-way voice on the TADDS box that FAAR Number One is in position and on the air. All squads and teams then refer to their CEOI for the frequency and address codes for FAAR Number One and to the unit overlay for the location of Position Charlie, and then plot themselves accordingly. FAAR Number Two waits about 5 minutes to insure FAAR Number One is operational and then march orders. The passage of control is then repeated.





# SCANNING

## 32d IN NATO EXERCISE

Units of the 32d Army Air Defense Command took part in exercise "Whirly Gig" recently, with other NATO Air Defense Forces. Two Vulcan batteries (Batteries C of the 2d Battalion, 60th ADA and 6th Battalion, 56th ADA); Battery A, 3d Battalion, 7th ADA (a Hawk Battery); and the 32d AADCOM Aviation Section joined with British, Dutch, Canadian, and German forces in the operation.

With the help of the British artillery, the 108th ADA Group set up a tactical operations center (TOC) in the field. The TOC was to control and command the exercise play. Personnel from the 108th were on hand at all times to monitor radio calls, troop movements, and messages.

According to LTC Donald Lionetti, Task Force Commander, the American units used the first weekend of the exercise to perform reconnaissance and maintenance. It also gave them a chance to get to know their British counterparts.

The Americans were taken on orientation visits to a British Rapiet unit, while the British visited

Hawk and Vulcan units for briefings on the US equipment.

Due to the rainy weather, the air defenders tracked mostly enemy helicopter assaults (made by British Puma and Essex helicopters). High-performance aircraft were used later when the weather cleared. The 32d AADCOM Aviation Section set up an air strip in a small clearing near the operations center. The air strip was used by the British Army Air Corps and the Royal Air Force, as well as by the 32d's aircraft.

During daylight, the batteries were in their positions performing air defense missions. During the night, the batteries were on the move to occupy new areas. The initial deployment was quite unusual as the batteries assumed their defense positions after traveling 40 kilometers in radio silence.

The "Whirly Gig" exercise was pronounced most successful by exercise officials. Members of the 32d Army Air Defense Command were afforded the opportunity to work in the field as a team member with other NATO military forces.

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## VULCAN DROP

The 3d Battalion, 4th Air Defense Artillery, 82d Airborne Division, stationed at Fort Bragg, North Carolina, recently added another first to its record. Participating in the 82d Abn Div's Neptune III Field Training Exercise (FTX), the 3d Bn, 4th ADA, supported the simulated war games with Vulcan and Redeye air defense systems. Two Vulcan platoons and one Redeye platoon, all from Battery C of the battalion, were parachuted into the exercise location after dark.

Seven Vulcans landed successfully and were used in a simulated tactical environment during the exercise. According to exercise officials, this was the first time Vulcans had been dropped into a tactical environment at night. The US Army Airborne Board had previously dropped Vulcans at night as part of an air drop test, however, the test was not conducted under tactical conditions.

Research showed that the 3,150-pound weapon system, which resembles a Civil War era Gatling gun with its rotating barrels, was too light for three G-13 cargo chutes so the Vulcan was rigged with two G-13 cargo chutes. Experienced riggers provided some technical assistance to battery personnel, but it was a first for the pros as well.

Dropping the weapons into a simulated tactical environment calls for prompt preparation for action after the equipment hits the drop zone. With a hypothetical enemy in the air and on the ground in the drop zone, all rigging must be moved off the drop zone immediately. In addition to the weapons, there were jeeps, trailers, and other supplies dropped as part of the exercise plan. Seventy-five personnel from Battery C made the assault, which involved two separate Fort Bragg drop zones.

## FAAR FOR MOROCCO

A US Army forward area alerting radar (FAAR) system has been modified and is being readied for shipment to Morocco. This will be the first FAAR equipment sold to a foreign country. FAAR is a mobile radar system that detects low-flying aircraft and relays information to Army air defense weapons such as Chaparral, Redeye, and the Vulcan 20-mm gun.

For Morocco, the FAAR equipment has been

taken off its normal carrier, the Gama Goat, modified, and mounted on two new vehicles, the M-766 general purpose trailer and a standard 2½-ton Army truck, M35A2. The modified FAAR has been considered so successful that the conversion program may be adopted Army-wide for future FAAR systems according to the FAAR Project Officer.

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## REFORGER 78

REFORGER 78 marks the first-time deployment of an Improved Hawk Battery from Fort Bliss to Europe. From 15 August to 15 October, D Battery 2-55 ADA (IHawk), and a small headquarters support element went through various stages of REFORGER 78. The actual FTX took place in Wildflecken, FRG, from 18 to 28 September. The time prior to and after the FTX was devoted to deploying equipment and personnel.

The official starting was 15 August 1978, but the 160 troops involved had been training and preparing in advance. They participated in training

exercises designed to give them a concept of NATO operations. In addition, the unit trained for the packing and shipping of their equipment via sea and rail and for the drawing of additional equipment already prepositioned.

In addition to participating in the FTX, certain select members were involved in cross-training with a German IHawk unit. This training provided a better understanding of operations in Europe by the personnel in 2d Battalion, 55th Air Defense Artillery.

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## NEW ADA UNIT

A new ADA unit has been activated at Fort Riley, Kansas, in a special ceremony conducted at the Engineer Parade Field in Camp Forsyth. The new unit is the 2d Battalion, 51st Air Defense Artillery (Hawk), commanded by LTC Don A. Summers. His previous assignment was with the Deputy Chief for Operations, Department of the Army.

Beginning with 230 soldiers, the 51st ADA Battalion will be at full strength by 1 January 1979. New members of the unit will come from other posts in the United States. As new members arrive they will be formed in small groups and be sent to Fort Bliss where they will receive 2 months training in the Hawk missile system.

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## REPORT FROM ALASKA

The Nike Hercules missilemen of the 1st Battalion, 43d ADA, Alaskan Command, maintain a busy year-round training program in spite of long periods of adverse weather. The preparation and performance of air defense exercises demand extra effort and dedication from the soldier in Alaska because of the unfavorable weather most of his training year.

During the current year, men of the 1st Battalion began their training program with the successful completion of a NORAD Operational Evaluation (NOE) during which all phases of the battalion's combat-related operations were rated. Scores indicated that the unit passed with high grades in all phases of air defense during the NOE.

Following the NOE, the troops performed with superior efficiency during a Defense Nuclear Agency's Technical Standardization Inspection (TSI). The inspection team spent 7 days grading performance and security procedures associated with the battalion's three firing batteries.

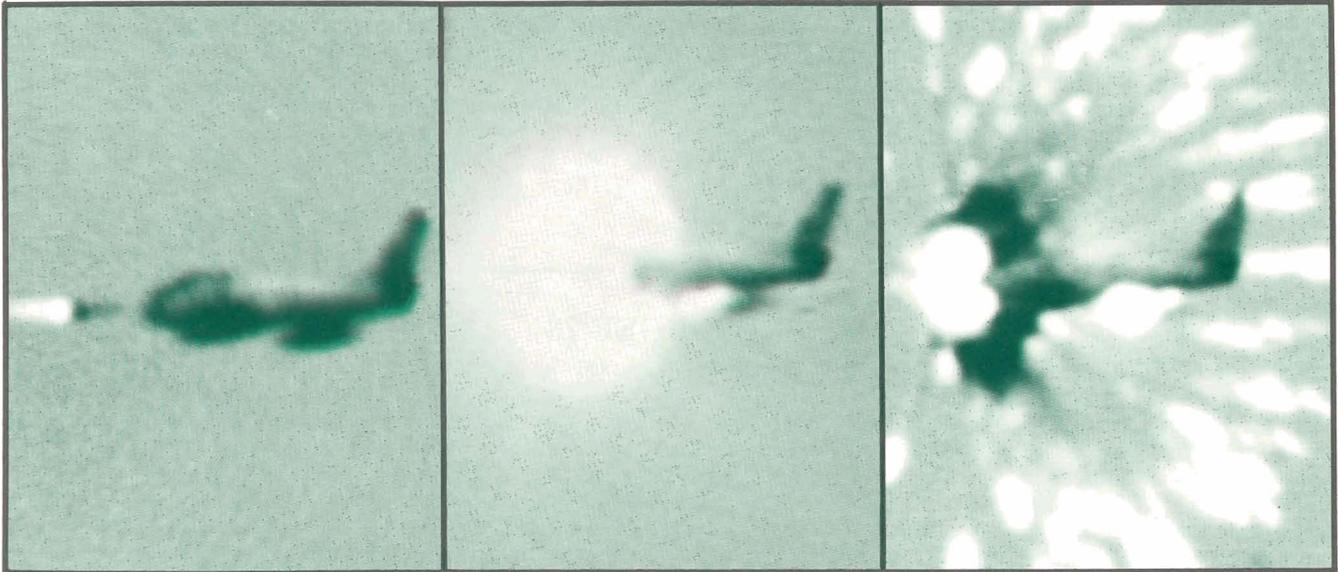
Upon completion of the TSI, the battalion braced itself for FORSCOM's Operational Readiness Evaluation. All three battery launcher control areas were rated superior, as were the fire control areas of Battery B and Battery C.

Between major exercise tests and evaluation, the unit conducts frequent in-house air defense exercises and participates in award ceremonies.

The motto of the men of the 1st Battalion, 43d ADA, is "Consistency in Excellence," and they intend to prove it the year-round, regardless of the weather.

### *Editor's Note:*

*Innovative suggestions by the 1st Battalion, 43d ADA, on how best to maintain vehicles and other ADA equipment when employed in a severe cold-weather environment (based on the battalion's experience) would be helpful and, if received by AD Magazine, would be shared with its readers.*



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### PATRIOT TEST

Patriot, the Army's newly developed aircraft killer, intercepted multiple targets recently in tests at White Sands Missile Range, New Mexico. Three missiles were used in the test. The missiles were without warheads and were fired from the same launcher seconds apart.

Two of the missiles passed well within killing distance of their intended targets. The targets were a full-sized jet (PQM-102) and two Firebee drones. The targets were flown at different ranges

and altitudes. One missile self-destructed, as programmed, when it failed to receive guidance commands. A total of 31 fully guided flight tests have been conducted to date in the Patriot test program.

The Patriot is a mobile, all-weather air defense system that will replace both the Hawk and Nike Hercules missile systems. The system will provide air defense against medium-to-high altitude targets in the 1980s and beyond.

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### TITLE CHANGE

The name of the Army Correspondence Course Program Directorate (ACCPD) of the Army Training Support Center (ATSC) has been changed to, "The Army Institute for Professional Development," (AIPD). There is to be no change in mission; that is, the AIPD will continue to administer the Army Correspondence Course Program. The title, "Correspondence Course," will continue to be placed on instructional materials.

The correspondence course program of the AIPD has been accredited by the National Home Study Council. The accreditation places a civilian stamp of approval on the total AIPD program. Follow-on action will be taken within the next 12 months to examine correspondence courses individually for recommended credit by the American Council on Education.





# ENLISTED CAREER NEWS

## ADA REENLISTMENTS IN EUROPE

A 69th Air Defense Artillery Group reenlistment seminar took place in Wurzburg, Germany, recently. Commanders and reup NCOs discussed problems that are causing ADA units difficulty in meeting their reenlistment objectives.

It is getting increasingly more difficult to get a first-term soldier who is serving with an ADA tactical unit in Europe to reenlist, according to ADA counselors and reup NCOs. One battalion recruiting sergeant said, "Only one-third of all first-term missilemen in my battalion reenlist and of these less than half stay in Air Defense." This statistic is of growing concern to air defense commanders and reenlistment counselors and to DA.

Reasons put forth for the low reenlistment rate for ADA personnel in Europe include long duty hours and limited relocation assignment opportunities. An ADA site must be combat ready 24 hours a day, 7 days a week. Because of official guidelines, shifts of 24 hours at a time are required. This fact alone sends many first termers scurrying to other MOSs where they can be virtually guaranteed an 8-hour day.

An offshoot of dissatisfaction with long hours is boredom. "Doing the same job day after day gets so tedious and boring that sometimes soldiers on a tactical site actually forget how to do their jobs while they're in the process of doing them," reported a senior NCO.

Rotation to a stateside assignment is another sensitive subject with reenlistment NCOs. In most cases within ADA, there are normally three choices for reassignment: Fort Bliss, Texas; Fort Riley, Kansas; and Homestead Air Force Base, Florida. And, with about a 12-month rotation time

for most missilemen, staying in ADA quickly loses its appeal, especially to first termers.

DA is taking a serious look at the ADA European reenlistment problem and has under consideration a number of possible actions to remedy the situation. One DA answer is to place air defenders in a secondary MOS with a guaranteed stabilized tour of 24 months or longer. Then, after a refresher course in the missileman's primary MOS, he could be reassigned overseas working in ADA once again. This procedure would improve the morale of the ADA soldier by keeping him in the States longer and at the same time help the Army retain its experienced ADA soldiers.

Some additional incentives being discussed at DA to enhance the ADA reenlistment program include:

- Bonuses for soldiers in selected MOSs who extend their oversea tour. Bonuses in the range of \$50 per month are being considered.

- Leave and travel options, such as a choices of 30-days leave (above normal leave);
  - or 15-days paid leave with travel expenses by Government aircraft to and from CONUS;
  - or travel expenses (Government aircraft) paid to and from CONUS for member and dependents.

Air defenders do face problems unique to their field, but the future looks brighter. According to SFC Warren Williams, 69th ADA Group reup NCO, it is expected that new weapon systems in the air defense will produce a better working environment, more challenge, and fewer working hours for those soldiers in ADA MOSs.

## CORRESPONDENCE COURSE PROGRAM

The following air defense correspondence subcourses represent a new look in the US Army Air Defense School's correspondence course program. They have been developed from Training Extension Course (TEC) lessons. The task for which the lesson is appropriate is indicated in the subcourse introduction. Additional subcourses developed from TEC lessons will be produced as rapidly as resources permit. Applications (DA Form 145) for enrollment in these subcourses should be addressed to: Army Institute of Professional Development (AIPD), US Army Training Support Center, Newport News, Virginia 23628.

### NEW CORRESPONDENCE SUBCOURSES FROM TEC LESSONS

#### Subcourse 0008 — ENGAGEMENT OF GROUND TARGETS

■ Based on TEC lessons 043-441-5940-F and 043-441-5941-F.

■ Task Coverage — This subcourse relates to tasks 441-16R-1054, 441-16R-1064, and 441-16R-3021.

■ Scope — Preparation and crew procedures for engagement of ground targets. Use of the M134 and AN/TVS-2 night vision sights in direct fire procedures.

#### Subcourse 8230 — IHAWK ORIENTATION AND ALINEMENT

■ Based on TEC lesson 043-441-5401-F.

■ Task Coverage — This subcourse relates to tasks 441-16D-1041, 441-16E-1045, 441-16E-1046, 441-16E-1047, 441-16E-1048, 441-16E-1049, and 441-16E-1050.

■ Scope — Alinement of the IPAR, IFF, ICWAR, IHIPIR, IROR, and ILCHR, primary method.

#### Subcourse 8233 — IHAWK MISSILE

■ Based on TEC lessons 043-441-5443-F, 043-441-5444-F, and 043-441-5445-F.

■ Task Coverage — This subcourse relates to tasks 441-16D-1051 and 441-16D-1052.

■ Scope — Assemble and disassemble; safety and arming test aid (SATA) check on IHawk missile.

#### Subcourse 8333 — IHAWK ROR

■ Based on TEC lessons 043-441-5414-F and 043-441-5415-F.

■ Task Coverage — This subcourse relates to task 441-16E-1049.

■ Scope — Aline the improved range-only radar (IROR) with the IHIPIR (primary method).

### NEW SUBCOURSE FOR ADA MOS, SKILL LEVEL 2

AD Subcourse 2001, Communications, has been prepared in programmed format from TEC lessons and other sources. This subcourse is designed to provide instruction for task 2006 for MOS 16B, C,

D, E, F, H, J, P, and R. Minimum participation by a supervisor is required to grade a pretest over the subcourse material. Students who pass the pretest receive credit for the subcourse; those who fail the pretest must study the subcourse lesson and pass the post test to receive subcourse credit.

#### Subcourse 2001 — COMMUNICATIONS

■ Based on TEC lessons 936-061-0013-F and 936-061-0131-F.

■ Task Coverage — This subcourse relates to tasks 441-ALL-2006 and 113-571-1003.

■ Scope — Entering and leaving a radio net, act as a net control station, and reduce or eliminate jamming problems.

### REVISED/UPDATED SUBCOURSE

#### AD-8303 — IHAWK EQUIPMENT

■ Task Coverage — This subcourse relates to tasks 441-16E-1073, 441-16E-1074, 441-16E-1075, 441-16E-1076, 441-16E-1077, 441-16E-1078, and 441-16E-1079.

■ Scope — Energizing and deenergizing the ICWAR, IPAR, IROR, IHIPIR, ICC, IBCC, IPCP, and the fire control operator's equipment.

### TEC LESSONS

TRAINING EXTENSION COURSE (TEC): The following IHawk MOS 16D/E TEC lessons have been distributed to the field as of 30 June 1973:

LESSON NUMBER	TITLE
043-441-5401-F	Intro to Improved Hawk Orientation Alinement.
043-441-5403-F	Orientation and Alinement of the IPAR: Part 1.
043-441-5404-F	Orientation and Alinement of the IPAR: Part 2.
043-441-5406-F	Improved Hawk Alinement of the ICWAR: Part 1.
043-441-5407-F	Improved Hawk Alinement of the ICWAR: Part 2.
043-441-5410-F	Alinement of the Improved Hawk Launcher, Part 1.
043-441-5412-F	Alinement of the Improved Hawk Launcher, Part 3.
043-441-5414-F	Improved Hawk Alinement of the IROR, Part 1.
043-441-5415-F	Improved Hawk Alinement of the IROR, Part 2.
043-441-5416-F	Improved Hawk Alinement of the IFF, Part 1.
043-441-5417-F	Improved Hawk Alinement of the IFF, Part 2.
043-441-5431-F	IHawk Tactical Engagement: Azimuth Speed Indicator.
043-441-5432-F	IHawk Tac Engagement: Fire Control Opr, Part 1.
043-441-5436-F	IHawk Tac Equipment: Tac Control Asst, Part 2.
043-441-5440-F	Missile Transfer.
043-441-5443-F	Missile Decanning and Assembly, Part 1.

043-441-5444-F	Missile Decanning and Assembly, Part 2.
043-441-5445-F	Missile Safety and Arming Checks.
043-441-5441-E	Improved Hawk Load and Unload: Part 2.
043-441-5405-A	Orientation and Alinement of the IPAR: Part 3.
043-441-5413-A	Alinement of the Improved Hawk Launcher, Part 4.
043-441-5442-A	IHawk Load, Unload, Part 3: Hand and Arm Signals.

The following IHawk MOS 16D/E TEC lessons were distributed to the field during July, August, and September 1978:

LESSON NUMBER	TITLE
043-441-5408-F	Improved Hawk Alinement of the IHIPIR: Part 1.
043-441-5409-F	Improved Hawk Alinement of the IHIPIR: Part 2.
043-441-5411-F	Alinement of the Improved Hawk Launcher, Part 2.
043-441-5430-F	Intro to Improved Hawk Tactical Engagement.
043-441-5433-F	IHawk Tac Engagement: Fire Control Opr, Part 2.
043-441-5434-F	IHawk Tac Engagement: Fire Control Opr, Part 3.
043-441-5435-F	IHawk Tac Equipment: Tac Control Asst, Part 1.

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### JOINT DOMICILE POLICY

Department of Defense Directive 1315.7, "Military Personnel Assignments," was signed on 7 Dec 77 climaxing 2 years of staffing/negotiating by the military services. The Directive established policy for joint domicile, which significantly varies from the previous policy.

#### Old Policy

- Service member could join spouse overseas and DEROS could be adjusted to coincide with arriving member's DEROS.

- Service member must serve 12 months at old duty station prior to submitting joint domicile application.

#### New Policy

- Service members can join spouses overseas

and DEROS can be adjusted to coincide with first arriving member's DEROS provided the last to arrive serves at least the "all others tour."

- Service member must still serve at least 12 months at old duty station prior to submitting a joint domicile application.

It is Army policy to permit the assignment of married Army couples to the same general locality whenever possible. A deciding factor in granting these requests is assignment of both parties against valid requisitions. If you are married to or planning to marry a servicemember, be sure to keep your career management division informed so this information can be considered during the assignment process.

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### NEW SQT SCHEDULE

A new skill qualification test (SQT) schedule, presented for Department of the Army approval will set new priorities for testing to begin after October.

Pending DA approval of the new plan, certain MOS and skill levels will be given priority for testing. Some tests will be later than presently scheduled.

DA announced in March that training, manpower, and budget restraints (in addition to severe

peak-load testing periods) required rescheduling the tests, especially in career fields that were overbooked for FY 1979. The updated schedule is expected to be announced soon.

The new firm dates will enable commanders to make necessary training and management decisions, provide equitable use of SQT for promotion and other personnel considerations, place priorities for testing the largest number of soldiers, and provide flexibility through year-round testing.

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### WEIGHT CONTROL

This subject has become an important factor in determining the reenlistment eligibility of soldiers. In some cases it has been a bar to reenlistment. Recently, DA announced that weight control restrictions on reenlistments include some exceptions that take into consideration body build, bone structure, muscular development, and medical problems.

Paragraph 3-55 of AR 600-9 contains exceptions to the Army's weight standards for soldiers who

are not found to be obese. In addition, exceptions are made for soldiers with a medical condition that interferes with weight loss but a disability separation is inappropriate.

Evidence of satisfactory participation in a weight control program with promising results is grounds for an exception to the policy. Each such case must be documented and must predate requests for exceptions.





### LTC COMMAND SELECTION

The DA Command Selection Board for lieutenant colonel level positions began on 17 October to consider eligible lieutenant colonels and promotable majors for assignment to command designated position vacancies projected for FY 80.

Separate selection boards convened as follows:

- Combat Arms Board — 17 Oct 78 — to select commanders for positions requiring specialties 11, 12, 13, 14, 15, 21, and Special Forces.
- Combat Support Arms Board — 13 Nov 78 — to select commanders for positions requiring specialties 25, 26, 27, 31, 35, 36, 37, and 43.
- Combat Service Support Board — 27 Nov 78 — to select commanders for personnel commands, logistics commands, and logistics troop commands. Positions involve specialties 41, 42, 71, 72,

73, 74, 75, 76, 77, 81, 82, 83, 86, 87, 88, 91, 92, 93, and 95.

Officers who met the following criteria were considered automatically for command in both primary and alternate specialties:

- Be in grade major (promotable) or lieutenant colonel and have not completed 21 years promotion list service as of 1 October 1979.
- Have not commanded a command designated unit at the lieutenant colonel level.
- Have not been selected as principal command designee by previous Command Selection Board or programed for command from an alternate status.
- Have not declined command after being selected.



### CGSC GRADUATE DISTRIBUTION PLAN

Traditionally, the CGSC mission has focused on preparing officers for duty with the Army in the field . . . the current military environment includes a wide range of high level commands and organizations that are outside the structure of the Army in the field and that impose growing demands for CGSC graduates. Many graduates will spend much of the remainder of their careers serving primarily in non-tactical organizations.

This finding from the 1966 Report of the Department of the Army Board to Review Officer Schools remains valid today. Graduates of CGSC are a valuable, sought-after resource. Thus, it is MILPERCEN's mission to insure that the education and experience gained by CGSC graduates are equitably distributed to major commands and agencies in accordance with established priorities. This equitable distribution is accomplished through the CGSC Distribution Plan. The importance of distribution of CGSC graduates dictates that a precise method of control be derived.

The methodology of the plan, discussed in detail in succeeding paragraphs, is based on three elements: the 80 percent "floor;" distribution methodology, weighting priorities; followed by proportional distribution of the remainder. This methodology recognizes that the Army's need for CGSC graduates exceeds the number available; it maximizes distribution equity.

The first step in developing the plan is to compute the command floor as follows:

$$\frac{\text{MAJ CGSC GRAD}}{\text{TOTAL MAJORS}} \times 80\% \text{ COMMAND AUTHORIZATION FOR MAJORS}$$

Once a command floor is established for all major commands (MACOMS) and agencies, the officer management divisions of MILPERCEN assign Military Education Level (MEL) 4's (CGSC-level graduates) on a year-round basis to meet the command floor. The distribution of the graduating CGSC class is a one-time-a year effort that insures command floors are achieved.

The second step is to accommodate the weighting of high-priority activities as established. Thus, additional distribution weights those high-priority activities that have been identified to receive MEL 4 distribution above the command floor. The remaining MEL 4 resources are proportionally distributed to all MACOMs and agencies equitably.

### ADVANCED ASSIGNMENTS

The 1977-1978 class was the first to receive advance assignments prior to Thanksgiving. The advance assignments (assignments following graduation), generated at the request of LTG John R. Thurman, CGSC Commandant, enabled students to take full advantage of the electives program to prepare for their next assignment and provided the MACOMs and agencies with necessary information for advance personnel planning. Advance assignments were not given to the entire class. Approximately 20 percent were withheld to meet unprogrammed but anticipated high-priority nominative assignments. A word of caution: changing authorizations and priorities dictates that some advance assignments be changed. These changes can

take place up to the last month of CGSC.

### SUCCESS RATE

For the 1977-1978 class, there were 563 advance assignments, of which 503 were "completed" for a completed assignment rate of 89.3 percent. Sixty assignments were changed. Some typical reasons were:

- Command changed/cancelled requisition (20)
- Diverted to higher priority (8)
- Incumbent extended (5)
- Change in authorization (12)
- Professional development, personal considerations, etc. (13)
- Nonvalidation of requirement (2)

The completed rate is about what was anticipated (there was no previous experience factor from which to draw). Overall, the advance assignment program appears to have been highly successful. It will be continued for future classes.

In summary, the CGSC Distribution Plan recognizes that needs exceed capabilities and distributes graduates on an equitable basis according to Army priorities.

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### ALTERNATE SPECIALTY DESIGNATION

Officers are designated an alternate specialty prior to completion of 8 years of commissioned service. The alternate specialty designation process for basic year group 1972 began during October 1978. Each officer in this year group was to receive a specialty packet during October explaining the procedures and citing appropriate references that should be consulted in reviewing those alternate specialties available for the infantry officer. Inclosed in this packet is a specialty preference form that must be completed indicating, in priority, four specialties. The preference form is to be returned to the Officer Personnel Management Directorate (OPMD), per instructions, not later than January 1979. Failure to provide specialty monitors in the Combat Arms Division (CAD) with this information will cause those doing the designating to have no idea what the officer really wants as an alternate specialty. Officers in year group 1972 should begin now to study DA PAM 600-3 and become familiar with the professional development guides and qualifications for the various specialties. Year group 1972 officers will be notified of their designated alternate specialty in April 1979.

A 1-year moratorium is in effect for basic year group 1971 officers who were designated an alternate specialty during April 1978. Officers in this year group may request a specialty change only as an exception to the moratorium. A significant

change must occur in an officer's experience or education to justify an exception; e.g., advanced civil or military schooling that better supports a specialty other than the one designated.

Though alternate specialties are designated prior to completion of 8 years of commissioned service, professional development emphasis must be oriented during the company-grade years toward qualification in the primary specialty.

The alternate specialty designation process is multifaceted. Army requirements, prior military and civilian education, duty experience, manner of performance, aptitudes, and preferences are given appropriate consideration. Once all the relevant data have been gathered, a thorough file review is conducted to determine which officers are best suited for service in a given alternate specialty.

The MILPERCEN policy of event-oriented and permissive designation allows for alternate specialty designation prior to the eighth year. These officers must satisfy specific requirements such as graduation from flight school, completion of advanced civil schooling, or alternate specialty qualifying military schools.

Questions on the designation procedures, or the specialties, may be addressed to Major Michael J. Scannel, 200 Stovall Street, ATTN: DAPC-OPEP, Alexandria, Virginia 22332, or call AUTOVON 221-7818/7819.

## DOPMA UPDATE

Currently, two Defense Officer Personnel Management Act (DOPMA) proposals are before the 95th Congress. On 23 March 1977, Mr. Nichols, Chairman of the HASC Subcommittee on Military Compensation, introduced DOPMA (the Bill approved by the House in the 94th Congress) into the House of Representatives, 95th Congress, as HR 5503. The House Armed Services Committee reported out the DOPMA proposal on 2 August 1977, with no proposed amendments to the legislative wording. The House Appropriations Committee reported out the DOPMA proposal on 23 September 1977, with a recommended amendment to provide a maximum separation pay of \$15,000, the current maximum. On 14 February 1978, the House of Representatives passed DOPMA (HR 5503) by a vote of 351 to 7. Prior to voting the DOPMA proposal, the House overruled by voice vote the amendment that would have provided a maximum severance pay of \$15,000, thus the Act retains the \$30,000 cap.

The DOPMA bill approved by the House during the 94th Congress was revised only slightly by Office, Secretary of Defense, to make several technical amendments. This proposal (DOD Proposal 95-5), in accordance with standard procedures for submitting legislation into a new Congress, was forwarded to Office of Management and Budget (OMB) during January 1977 to obtain an administration approval.

On 4 August 1977, OMB provided an administration approval of the DOD version of DOPMA which, at OMB recommendation, provides for a maximum severance pay provision of \$15,000. OSD sent this proposal (DOD 95-5) to the Congress on 31 August 1977.

Indications from both House and Senate staff personnel are that the House and Senate will continue to work with the House-introduced version of DOPMA. The technical amendments included

as part of the OSD proposal can, and most likely will, be addressed during Senate staffing of the House bill.

DOPMA is designed to:

- Establish a common management system for all services.
- Provide career opportunity to attract/retain high-caliber officers.

Major provisions of DOPMA are:

- Field grade authorizations reduce number of officers in grade COL and LTC. Slight increase in grade of MAJ.

- All-Regular force after 11th year of service (RA ceiling removed).

- Changes mandatory release dates for MAJ from 21 to 20 years and LTC from 28 to 26; COL remains at 30.

- Absolute guarantees of tenure removed. Boards may consider for continuation those officers in the grade of MAJ and LTC who are twice nonselected for promotion. Colonels may be considered after 4 years in grade. At least 70 percent of COLs and LTCs must be continued.

- Provides greater equity for women in the Army.

- The House-introduced version of DOPMA (HR 5503) increases maximum severance pay from \$15,000 to \$30,000.

Transition period of 2 years provides that:

- Reservists who complete 18 years service during transition period may remain on active duty in the Reserve to retirement.

- Qualified Reserve officers will be integrated into the Regular Army.

- Officers with tenure under current law will retain that tenure.

- Officers selected or promoted to a higher grade after enactment will acquire tenure provided by new law.

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## TRAINING BASE REDUCTIONS

The Army has been directed to accomplish significant training base reductions during FY 78 and 79. The first reduction was in the areas of the Senior Service College and the Command and General Staff College. For each course, the Army was directed to reduce student input for the 78-79 classes by 15 percent. This means reducing the quotas for CGSC from 1035 to 915 and SSC from 318 to 291.

For FY 79, the Army was further directed to reduce all formal training by 10 percent and to eliminate all nonessential courses. In following

this guidance, the Chief of Staff has marked approximately 50 courses at the various service schools for elimination effective FY 79.

It is anticipated that the Army's education programs will continue to be scrutinized for reduction in the future. In light of this, OPMD will be striving to equate training to requirements, review courses for possible elimination, and eliminate redundancy in training. OPMD will at the same time continue the effort to train all officers within both their primary and alternate specialties.

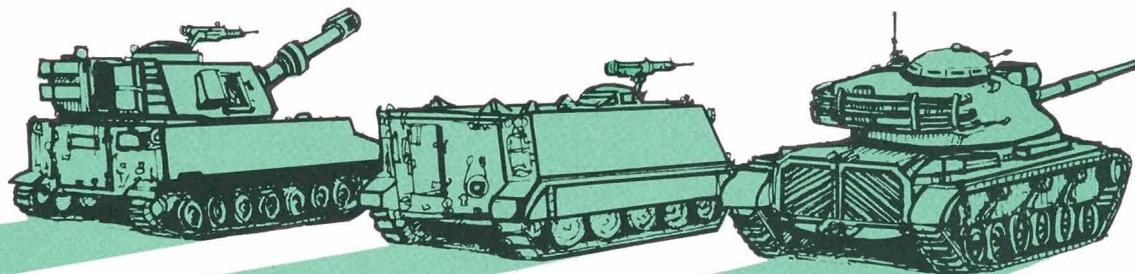
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## SC 54

The Operations and Force Development specialty, SC 54, has been recently classified as a balanced specialty. Contributing to this alinement have been reduced designations in BYG's 1970

and 1971, liberal policies in granting officer requests for specialty redesignation out of SC 54, and recoding of positions in The Army Authorization Documents System.





## ARNG FLIGHT TRAINER

The Pennsylvania ARNG recently dedicated its new \$3.5 million Synthetic Flight Training System (SFTS) during ceremonies at Fort Indiantown Gap.

The 9,000 square-foot training facility is located adjacent to the Guard's Aviation Support Facility, Muir Army Airfield. The facility includes a large "module" room, storage and maintenance room, learning center, classroom, and seven offices in the administrative area. The module room will house a computer system and four cockpits of UH-1H "Huey" helicopters.

This is the 16th such facility built for the Army and the first to be given to the Guard. It will be operated solely by the Pennsylvania ARNG, with

more than 1,000 US Army, ARNG, and Army Reserve pilots scheduled to use the facility.

Army aviators will be able to complete 25 hours of their annual 100-flying-hour requirement by using the synthetic flight trainer. The cockpit modules can be darkened for instrument training, and factors such as wing velocity and direction, barometric pressure, and temperature can be controlled in the flight trainer. Two pilots and one instructor can occupy each of the four cockpit modules.

Each hour in the trainer costs about \$70, compared to the current cost of about \$270 for each flight hour in an actual helicopter.

## THE M-113A1 APC

The new, "product-improved" M-113A1 armored personnel carrier (APC) has passed all tests and is scheduled for production starting in July 1979, according to officials of the Army's Tank-Automotive Materiel Readiness Command. Current diesel-powered M-113A1 armored carrier vehicles will also be improved within the next 10 years.

The present improvement program includes a change in the engine cooling system that will help reduce engine failures. Overheating has been a major cause of the M-113 engine failure. Additional shock absorbers and redesigned torsion bars will enhance crew comfort and increase mobility over

the roughest terrain.

A future improvement plan calls for the use of a new, outside-mounted, bolt-on pair of fuel cells that will reduce the possibility of igniting fuel inside the carrier in the event of an enemy hit. The exterior mounting of cells also allows a 20 percent increase in payload space inside the carrier. The APC's speed is expected to be increased by 38 percent through future changes to the M-113A1.

Red River Army Depot, Texas, and Mainz Army Depot in Germany will convert 18,000 of the M-113s.

— Army Times

## C-E TEST BOARD

A new communications and electronics test board will begin operating at Fort Gordon, Georgia. The mission of the board is to test new signal equipment before it is placed in the hands of field troops. Initially, the test board has programmed 14 test projects for FY 79.

The signal test board will employ 91 military and civilian employees. Many of these personnel

are experts in the signal field who are being transferred to Fort Gordon from a similar activity at Fort Bragg, North Carolina.

A major task of the board will be to test new equipment at the troop-user level. This will be accomplished by using soldiers in signal MOS in addition to engineers and technicians with communications/electronics expertise.

## MULE

A new laser device that will enable the US Marine Corps' forward observers to spot targets accurately for conventional artillery and to direct sophisticated laser-guided weapons with deadly precision has entered full-scale engineering development at Hughes Aircraft Company.

The man-portable, tripod-mounted device, called Modular Universal Laser Equipment (MULE), will designate targets for all laser-guided weapons now operational or under development, including laser Maverick and cannon-launched, laser-guided projectiles.

Laser-homing weapons sense the laser light reflected from the target by a designating MULE and guide themselves down the cone of reflected invisible pulsed light with aerodynamic control surfaces or other steering systems.

MULE is also compatible with airborne laser target acquisition aids such as the laser spot tracker equipped Angle Rate Bombing System now under development and which will improve the day/night bombing capability of Marine Corps aircraft.

Under a contract in excess of \$5 million, Hughes will build six engineering development modules of MULE. The contract is being managed for the Marine Corps by the US Army Missile Research and Development Command, Redstone Arsenal, Alabama.

Confirmation tests on the MULE proto-type

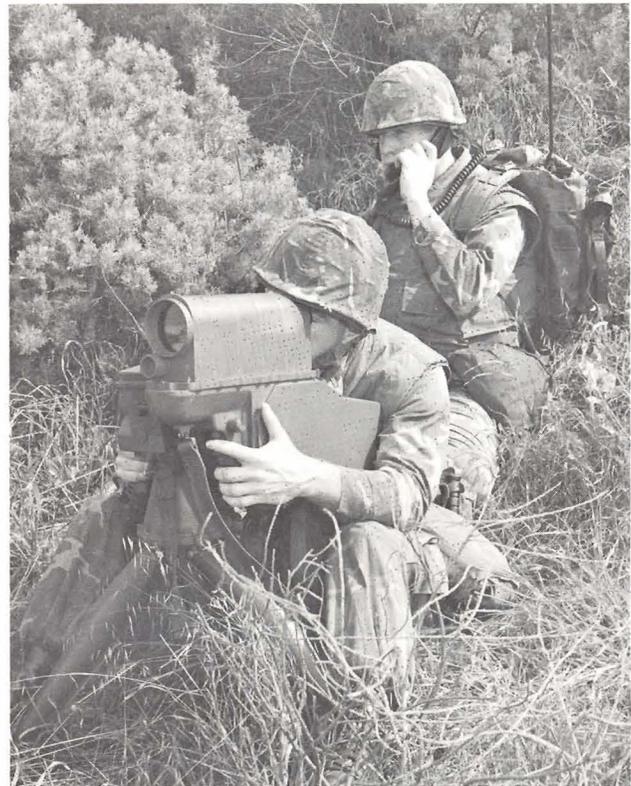
hardware have been completed. Tests included the laser and visual optics as well as shock and environmental tests. All tests have been successful and engineering models are now being developed. Delivery is planned for the fall of 1978, and the six MULE systems will undergo 6 months of operational tests and evaluation prior to a production decision.

MULE consists of three modules — the laser designator/rangefinder module, a north-finding module, and a stabilized target tracker module, which is a multifunctional tripod. The designator/rangefinder, which resembles a short-barreled rifle, can be detached from the tripod and hand-aimed for target designation or rangefinding. The tripod displays range, azimuth, and angle of elevation of targets, and provides a viscous-liquid, damping platform for precisely tracking moving targets.

The north-finding module, a small gyro compass that locates true north to provide azimuth accuracy, is being developed by other companies under the management of the Naval Weapons Center at China Lake, California.

MULE has the capability of combining azimuth, elevation, and range information into a digital message that can be sent through a digital communications terminal to an automatic tactical fire control center. About 87 percent of MULE's parts are already in the military inventory, which will significantly reduce the overall cost of the system.

*A mockup of the Modular Universal Laser Equipment (MULE) is shown here to demonstrate how it might be used by Marines in combat.*



## AQUILA

Aquila, a remotely piloted vehicle, successfully guided a Copperhead antitank projectile to its tank target during tests held recently at White Sands Missile Range, New Mexico.

Aquila, Latin for eagle, is a small gas-driven aircraft that acts as a laser designator. After being launched it is tracked and guided by radar. The controller, behind friendly lines, seeks a target for the Aquila via a TV camera mounted on the bird. In the midsummer test, the target was found 11 kilometers away.

Once the target is located, the Aquila can be locked on to it. The TV camera contains a contrast tracker. This device, once turned on, will keep the camera aimed at the object in focus if the object has enough contrast so it can be distinguished from its surroundings.

Once the Aquila and its TV camera are locked on the target, the Copperhead can be fired. This projectile, equipped with a high-explosive, antitank warhead, is launched from a standard 155-mm artillery tube.

Aligned with the TV camera on the Aquila is a

laser designator that shines on the target. In the nose of the Copperhead is a laser seeker. When the Copperhead approaches apogee, the seeker starts looking for reflected laser energy and homes in on it.

After the projectile is fired, fins deploy on its sides. The seeker can change the position of the fins to alter the course of the projectile. With this system the Copperhead boasts a one-round kill capability.

If no energy is detected by Copperhead, it will continue its flight like any normal cannon projectile. The Aquila can be flown back to friendly ground and landed in a snare net for reuse.

Once fielded, this particular arrangement of laser designator and Copperhead will require from seven to nine men to operate. The Aquila is controlled from a truck-mounted van that can be readily moved, along with the Aquila launcher and recovery net.

The Aquila is produced by Lockheed and the Copperhead by Martin-Marietta.

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## OCONUS RESERVE TRAINING

National Guard and Army Reserve units conducting training with oversea commands have increased this year. The training prepares the Reserve Component units for assignment to units overseas should they be called to active duty. Twenty-seven Reserve units and 38 National Guard units have participated in the overseas deployment training, called OCONUS.

According to officials, OCONUS training increases unit readiness as the units train with Active Army units and participate in joint exercises. Reserve Component units have taken part in major exercises, including Reforger and Empire Glacier. USAR deployment training is aimed more at Europe since most of Europe's combat support and combat service support would come from the Reserve Components in case of mobilization. However, some USAR units train in Korea and Alaska. USAR units participating in deployment training include Signal Corps, Infantry, Ordnance, and

Engineer, as well as light equipment maintenance, and heavy equipment maintenance units. Two major Reserve units, the 412 Engineer Command and the 310th TA ACCM, have year-round commitments to train in Europe.

For National Guard units to participate in deployment training, the governor of the state from which the units come must give approval to release them for deployment. This year National Guard units have taken part in deployment training in Europe, England, Norway, and Korea. Although some Guard units undergoing training are combat support or combat service support units, four combat units participated in deployment training in Germany and two trained in England for the first time. Unit types participating in oversea training include transportation corps, signal corps, ordnance, military police corps, military intelligence, aviation, special forces, and maintenance units.

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## A-10s TO EUROPE

The first oversea wing of the new A-10 close air support aircraft will be stationed in Europe in early 1979 to strengthen NATO's conventional defense. This move will be made by reequipping the 81st Tactical Fighter Wing, currently flying F-4s at Royal Air Force stations Bentwaters and Wood-

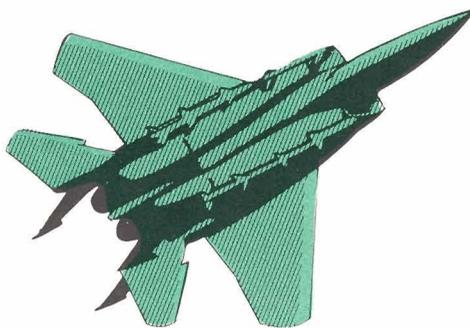
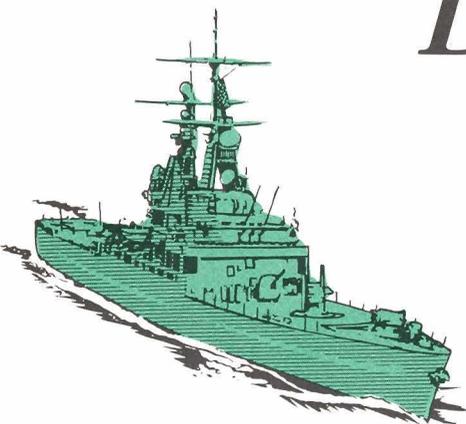
bridge, United Kingdom.

Transition training for A-10 pilots will begin in August 1978. There will be no significant increase in US Air Force personnel at the two British stations since the F-4s there are scheduled to leave.

— Field Artillery Journal



# DEVELOPMENTS



## FIRE SENSING SYSTEM

An automatic fire detection and suppression system that greatly increases chances of surviving an explosion will be incorporated into a US Marine Corps amphibious personnel carrier designed for operation in the 1980s. Key elements of the fire suppression system will be infrared sensors and related electronics that can detect and suppress a fuel explosion inside the vehicle in a fraction of a second.

A contract, valued at approximately \$400,000, has been awarded to provide the fire sensor and amplifier. The contract is for an improved model scheduled to be fielded in 1982.

The contract represents the second major military vehicle program using the system to enhance crew and vehicle survivability from fire hazards. Similar fire-suppression equipment for the US Army's XM-1 main battle tank is scheduled for use during the 1980s.

The landing vehicle, track, personnel-7 (LVTP-7) is an armor-protected transport that can operate from ships offshore, through rough seas and 10-foot plunging surf, across beaches, and over cross-country inland terrain. It operates at speeds

up to 8.4 miles per hour in water and 40 miles per hour on improved roads. It is designed to carry 25 combat-equipped troops and a crew of 3.

Fire suppression systems using the dual-spectrum, IR fire sensor have repeatedly suppressed fires in 100 milliseconds. The Model PM-34 fire sensor used on the LVTP-7 not only detects fires or explosions but also provides a discrimination capability that prevents the system from triggering on the energy from high-energy antitank rounds. The fire sensor is designed to trigger the fire-suppression system only when a fuel tank has been hit or when a small fire grows larger than 18 inches in diameter. The sensor is packaged in space equivalent to the size of a pack of cigarettes.

The fast-response, false-alarm-free fire sensor has undergone 6 years of extensive field testing by the US Marine Corps Development Command in collaboration with the US Army Tank Command and Chrysler Corporation, which uses the dual-spectrum fire sensor on the XM-1 tank. The LVTP-7 program is under the technical supervision of the Naval Sea Systems Command.

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## TOW PRODUCTION

Hughes Aircraft Company has passed the 200,000 mark in its production of the battle-proved TOW guided missile, a mainstay in the antitank arsenal of the US Army and the armed forces of more than 20 other nations. The small 41-pound TOW missile — simple in operation although highly sophisticated in design — can be fired either by ground troops or from helicopters. The name TOW is derived from the missile's operating characteristics — Tube-launched, Optically-tracked, Wire-guided.

The gunner merely keeps his sight on the target, tracking it if it is moving, and the missile is automatically guided to the spot at which the gunner is sighting. As it rockets from its launcher, TOW unreels two hair-thin wires through which the

steering information is relayed from the guidance computer. TOWs are being built at the rate of approximately 3,000 a month, and over 1 million miles of a specially coated steel wire have been wound on the missiles' bobbins so far, enough to string four strands of wire between the earth and the moon.

Since TOW first went into production in 1968, designers and production experts have progressively reduced TOW's unit cost. Today, the Government is paying 40 percent less than it did for the initial production missiles. When the current Hughes contract expires, the US Government will have saved over \$60 million compared with the price it agreed to pay when the fixed-price terms were originally agreed upon.

There has been no sacrifice in performance as a result of the cost cutting. In the Army's "Fly-to-Buy" program, randomly selected missiles off the assembly line are fired before accepting delivery of lots of 1,000 missiles. So far, not a single shipment of the more than 200 lots produced has been rejected. Of the more than 1,000 TOWs fired by the

Army in these trials, 96 percent were successful, meaning they hit a 7.5-foot (2.3 meter) square target at a distance of nearly 2 miles (3,000 meters). In more than 10,500 firings of all types at various ranges throughout the world, including combat, 83 percent have hit their target.

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## VEHICLE TOW MISSILES

The first firings of the TOW antitank missiles from the US Army's Fighting Vehicle System (FVS) have proved successful. Gunners scored hits with all nine missiles fired at stationary and moving targets, at ranges up to 3 km, during the performance phase of the first in a series of firing tests. The FVS, a fast, lightweight armored fighting vehicle designed as a companion to the XM-1 main battle tank, is armed with the first TOW missile system that is completely "under armor."

The twin-barreled TOW launcher is encased in an armored pod on the outside of the vehicle and protected by the same thickness of armor as the

vehicle. The gunner, using a periscopic sight for both day and night viewing, is completely protected. The integrated sight unit contains a daylight viewing channel, TOW missile tracker, and thermal imaging channel. The thermal imaging system enables the FVS crew to see through darkness, smoke, or haze to accurately fire TOW missiles, the vehicle's 25-mm Bushmaster cannon, or the coaxially mounted 7.62-mm machinegun.

This successful extension of the employment of the TOW missile is not surprising, considering its reputation among the many nations that have adopted it.

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## NEW GLLD

A new ground laser locator designator (GLLD) under development for the US Army can accurately pinpoint targets for laser-guided missiles, bombs, and artillery shells, operational tests have shown.

The GLLD is a precision laser rangefinder and target designator designed for use by forward observer teams. It guides to their targets laser-homing missiles (such as laser Maverick and

Hellfire), laser-guided bombs, and the Army's cannon-launched guided projectiles. Twenty-two prototype models of the GLLD, developed by Hughes Aircraft Company and delivered to the US Army Missile Research and Development Command at Redstone Arsenal, Alabama, have completed extensive field tests and evaluation.

Additional tests have been conducted at White Sands Missile Range, New Mexico, confirming GLLD's effectiveness with the

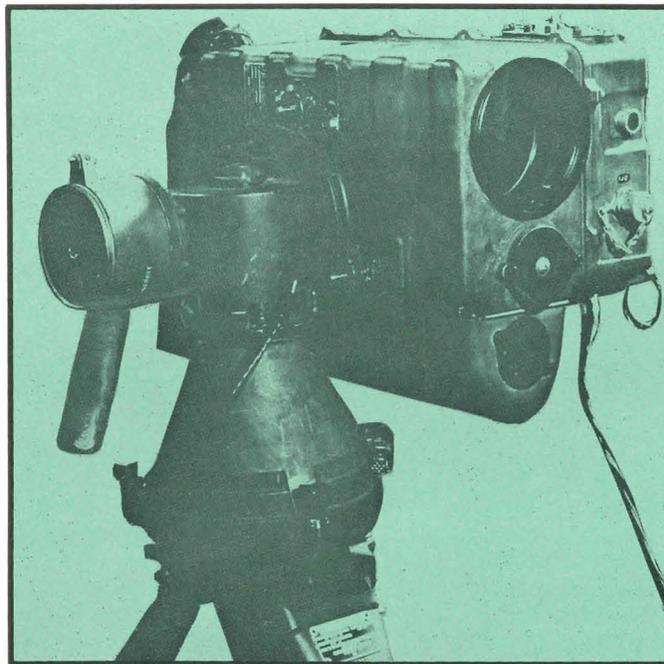
cannon-launched guided projectile by scoring direct hits on a tank.

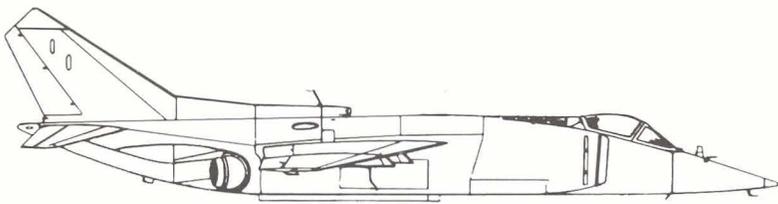
Laser-homing weapons sense the laser light reflected from the target by a designating GLLD and guide themselves down the cone of reflected invisible pulsed light with aerodynamic control surfaces or other steering systems.

GLLD also may be used to pinpoint the range and bearing of fixed and moving targets for con-

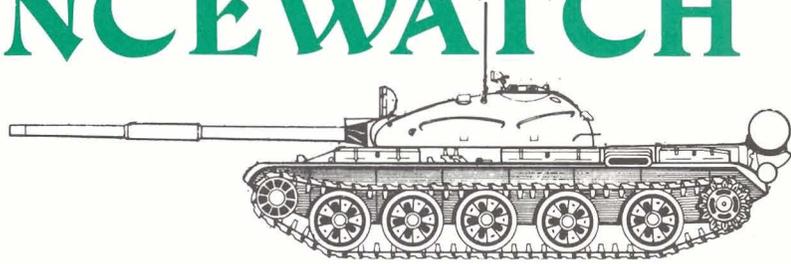
ventional artillery. The man-portable device, mounted on an adjustable tripod, combines high-power optics with a viscous-fluid, damper tracking unit, providing the accuracy to work against rapidly moving distant targets.

The GLLD has also passed the extreme shock and vibration tests demanded for this type of field equipment. During the tests it maintained its reliability requirement of continuous operation for 50 hours without failure.





# INTELLIGENCEWATCH



## MINI TV DISPLAY

A newly developed cockpit TV display, which uses only one-fourth of the space required by a conventional unit, will enable the Swedish Air Force's Viggen fighter to be armed with the precision-guided Maverick missile.

The Viggen cockpit was not originally designed to include a TV display — a requirement for aircraft carrying the TV-guided, air-to-ground missiles. With the Swedish Government's decision to equip Viggen with Maverick, the problem was to install such a display system without costly and extensive modification to the aircraft's cockpit.

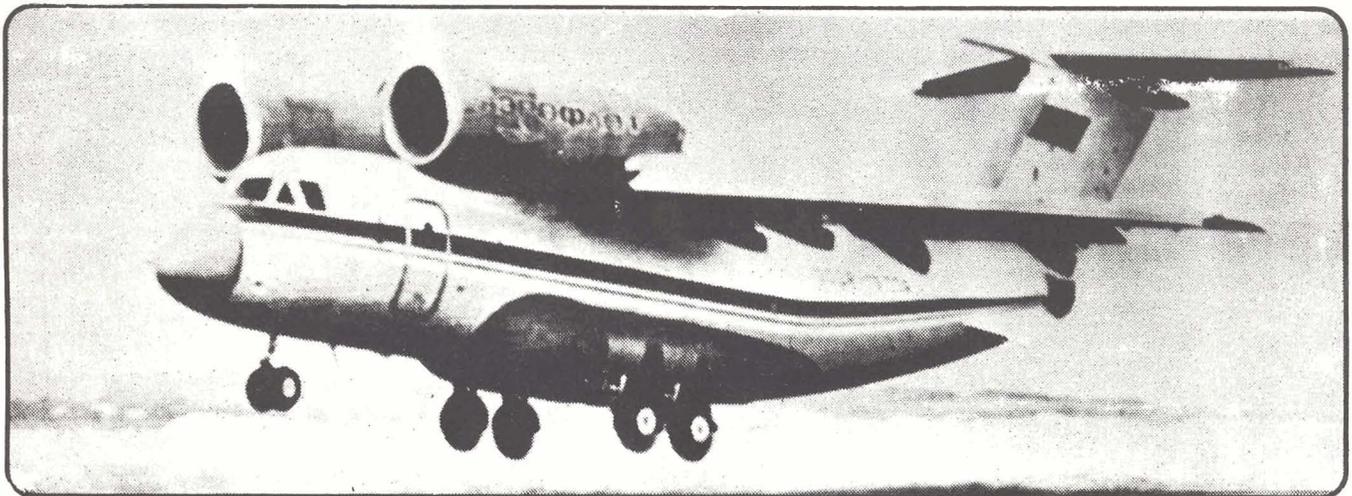
To solve this problem, the Swedish Air Material Department, working with SRA Communications Ab and selected contractors, has designed a display that uses about one-quarter of the panel space taken up by a conventional display unit. The system will display video signals from a television

camera mounted in the nose of the Maverick missile.

The display consists of a miniature cathode ray tube (CRT) with optics to provide a magnified picture almost twice the diameter of the display unit. The optics are designed so the pilot may look outside the cockpit, then view the display without refocusing his eyesight. A contrast enhancement filter makes it possible to view the display in daylight without using a hood. Remote electronics are used to drive the CRT so only the optics and the CRT need to be mounted on the cockpit panel.

The system is flexible enough to be modified to fit other applications where a compact remote TV display is needed. A substantial number of the MINI TV display units are expected to be delivered to the Swedish Air Force.

## SOVIET AN-72



The Soviet-built Antonov An-72 started its flight tests only recently, so very little is known about the aircraft. The type is considered interesting, however, because of its conceptual similarity to the Boeing YC-14 prototype. Both airplanes use "flap blowing" to decrease their landing and take-off runs.

The most obvious difference between the Soviet and American designs is in their respective payloads. It has been reported that the An-72 can carry up to 5 tons, whereas the YC-14's maximum payload is 50 tons. A 5-ton payload is about one-quarter the carrying capacity of a standard C-130.

## EARTHQUAKE BOMB

A new multipurpose weapon (MW-1), especially effective against tanks and airfields, has been under development by Messerschmitt, Boelkow, and Blohm (MBB) for the West German Army. The new weapon weighs about 4.6 tons and contains approximately 4,000 small runaway bombs that detonate and cause fires over an area of some 325 yards, making the earth rumble. Hence the name, earthquake bomb.

The bomb is the result of a study begun in 1966 by MBB to find an effective means to counter tank attacks when in mass, in contrast to attacking tanks on an individual basis with conventional multipurpose weapons having a high-nuclear threshold. The MW-1 system can be delivered by low-level flights using the MRCA Tornado. From

four individual containers, subammunition of different types is ejected sideways. To combat armored vehicles, the containers will carry hollow-charge miniature bombs or mines. The miniature bombs detonate on impact and provide direct (active) antitank destruction. The mines are also detonated when run over by a tank. Considerable area coverage on the ground is caused by the method used to eject the mines.

When attacking airfields, different types of subammunition are used that will cause destruction of runways, prevent movement of aircraft on the ground, and destroy aircraft parked in shelter. In addition to the MRCA Tornado, the MW-1 can be carried by several different types of aircraft.

## ITALY'S A109 FIRINGS

The first Italian airborne firings of TOW anti-tank missiles proved successful when 33 missiles were fired recently from an Agusta A109 helicopter and all scored hits. The firings were conducted at an Italian missile range on Sardinia as part of a program to evaluate the airborne TOW missile system as a possible antitank weapon for the Italian Army.

Each missile was fired from a different attack angle, testing the system's accuracy while hovering, ascending, descending, and banking to ei-

ther side. Target ranges varied from 1,750 to 3,000 meters.

The airborne TOW missile system is the anti-tank system for the Bell AH-1 Cobra series used by the US Army and US Marine Corps, as well as several other nations. The airborne TOW missile has been fired more than 1,400 times from a variety of aircraft with a consistently high success rate. The missile is 117 cm long, 15 cm in diameter, and weighs 19 kg, with a range of 3,750 meters when fired from the airborne system.

## FRG ADOPTS NTDS FOR FRIGATES

Hughes Aircraft Company has a \$9-million contract with the Federal Republic of Germany for its F-122 class frigates' Naval Tactical Data System (NTDS) equipment.

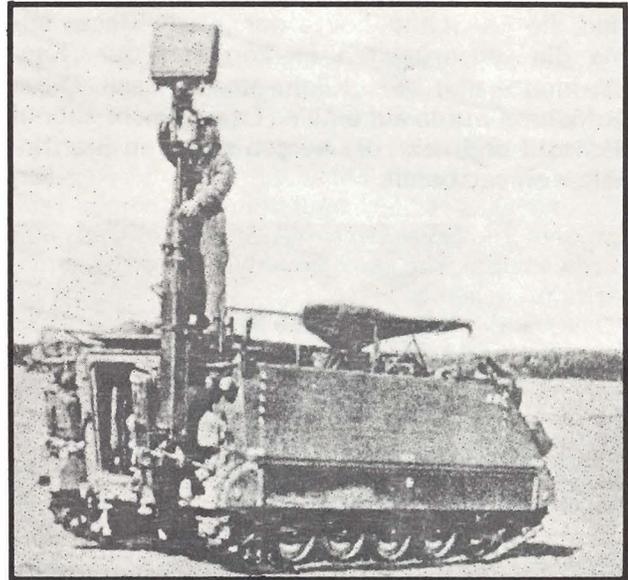
The Ministry of Defense program calls for Hughes Ground Systems Group's AN/UUA-4 data display consoles for each of 6 new frigates — ultimately there will be 12 — plus additional consoles for land-based evaluation. There also will be a central equipment group to interface with the computers and displays, plus

spares, documents, and training.

NTDS provides instant presentation of friendly and hostile action taking place within a tactical zone. It also allows continuous communication and contact between the command ship and other elements of a fleet. Among US Navy ships equipped with NTDS and displays are the world's largest nuclear powered carrier, the USS Enterprise, and missile cruiser, USS Long Beach. Ships in the Australian, French, Italian, Japanese, and Spanish navies also use the NTDS.



The Norwegian Army introduced a radar tank with its tank/infantry battalions, three per battalion, equipped with the Norwegian radar M/74. The radar unit is located at the rear of the vehicle. The antenna is mounted on a mast that is extendable to approximately 45 feet. The radar set is comparable to the German/French radar RATAAC.



The 1.5-ton truck Pinzgauer 712 is equipped with a container-type cabin. Its ambulance version, which can be airlifted by helicopter, makes the Austrian armed forces more flexible in deploying their medical troops in mountainous terrain. The cabin has its own independent heating system.

Egyptian T-62 tanks have been equipped with the British antitank missile system, "Swingfire." The missiles are contained in boxes in pairs and mounted on both sides of the turret. The T-62 tank does not have a range-measuring device and the tank gun has a range of only about 4,800 meters. However, the addition of the antitank missiles with their individual sighting device effectively increases the range of the tank system.



Information courtesy of Soldat Und Technik



NO SOFT OPTIONS: THE POLITICO-MILITARY REALITIES OF NATO; by *British Admiral of the Fleet, Sir Peter Hill-Norton*. McGill Queen's University Press, Montreal, Qubec, Canada, 1978. 172 pages, \$12.95.

Reviewed by  
Lieutenant Colonel C. R. Gorddard

This is a book by the immediate past chairman of the NATO Military Committee — the highest military office in the Alliance — who probably knows as much about the NATO of today as anybody. The book is addressed equally to expert NATO-watchers and to those who know little but would like to know more.

It is not a definitive book about NATO. Nor is it a manual or text book but rather an attempt to describe how NATO came into being, has developed to the present day, and why its future strength and influence must be of overriding importance to all its members.

The author traces the evolution of NATO military strategy resulting from changing circumstances. He begins by describing the weakness of the Western Nations who disarmed soon after World War II. As the threat of Soviet expansion became apparent, NATO, using its nuclear superiority, based its defense on the "trip wire principle" in which any aggression would be met by massive nuclear retaliation. He goes on to explain how this policy became obsolete as the Soviet nuclear arsenal reached parity with the West. Emphasis is placed on the flexibility of NATO under its changing circumstances as demonstrated by its adaptation of a new defensive strategy based on forward defense and flexible response.

A great deal of the book is devoted to an analysis of the problems within the Alliance. The first, and probably the overriding issue, concerns complacency. In the first 30 years of NATO's existence, not a shot has been fired, not a man killed, or a square millimeter of ground lost to external aggression. Due to this success, many of the governments within the Alliance are tending to put defense on a lower priority than more vote-catching policies such as social welfare and improvements in the standard of living. The author emphasizes that important as these issues are, there are "no soft options" in providing a viable defense that will deter Soviet military aggression.

Sir Peter devotes considerable space to family problems within NATO. These include the withdrawal of French forces from the integrated mili-

tary structure, the Greek and Turkish dispute over Cyprus, and the possible consequences of Euro Communism within the Alliance. He explains that, difficult as the problems might be, the structure and policy making bodies have sufficient flexibility to evolve solutions which so far have not significantly weakened the Alliance.

The author describes the ever widening gap in defense expenditure between NATO and the Warsaw Pact countries. To counter the inevitable numerical advantage in equipment, the West must maintain a superiority in quality and design. Added to this, NATO should provide better value for money by standardizing equipment and doctrine. Sir Peter believes that this is an area where there are signs of dramatic improvement. The US is becoming aware that for a standardization policy to work, there must be a "two way street" across the Atlantic when procuring equipment. The next step is for the European defense industry to put aside national jealousies and cooperate among themselves to manufacture products in sufficient quality and quantity to be competitive with American industry.

In a look ahead to future threats that may face NATO, the author turns to problems outside Europe. He describes the rapid expansion of the Soviet maritime force and concludes that as the Warsaw Pact countries have no trade routes to protect, the task of the Soviet Navy is to provide a threat to western supply lines, particularly in the area of the Persian Gulf and Southern Africa. He argues that this, together with Soviet military initiatives within Africa, should be countered by enlarging the responsibilities of NATO south of the Tropic of Cancer. This controversial issue must be faced soon, before the potential threat becomes a reality.

The book gives a very good insight into the strength and weaknesses of NATO. It should be in the possession of every Western political leader who is under the mistaken belief that social welfare and food stamps should have a higher priority than collective military security. Our future existence may well depend on it.

*Lieutenant Colonel Gorddard is a member of the British Royal Regiment of Artillery and for the past two years has served as United Kingdom Liaison Officer to the US Army Air Defense Center. A graduate of the Military Academy, he has served in such diversified areas as Malaya, Lybia, Korea, Egypt, Cyprus, and Hong Kong.*

THE F-15 EAGLE IN DETAIL AND SCALE, by Bert Kinzey, *Detail and Scale Publications, El Paso, Texas, 1978. 45 pages, \$3.75.*

Reviewed by Tom Wiggins

Representing a new approach to presenting reference material on military aircraft, this is the first book in one of three series being published by Detail and Scale. This new approach emphasizes the many details of an aircraft rather than the usual historical approach, or one that emphasizes the markings carried by a given type of aircraft.

While designed primarily for the scale modeler, this book will also have a great deal of appeal for the general aviation enthusiast as well. Details such as cockpit interiors, open access panels, engines, radar antenna, and much more are profusely illustrated in photos and drawings. Five full views of scale drawings are also included in the popular 1/72nd scale used by modelers. Also included are kit and product reviews of available models of the F-15, along with such items as decal sheets and special paints that are available to match the exact colors used on the real F-15 aircraft.

A narrative explaining the capabilities of the newest Air Force fighter is supplemented with a data table and external stores armament table. Line drawings show the markings carried by several F-15s now in service.

The book is packed with photos and drawings with captions that explain changes made to the aircraft since the prototype aircraft were developed. A special feature is the six full color photographs on the back cover that show cockpit interiors, including the rear cockpit of the F-15B, open access panels showing the "black boxes," and the electronics area behind the pilot's seat on the F-15A.

This new approach of illustrating a great amount of detail of a single type of military aircraft in one concise book is bound to be appealing to anyone who has an interest in military airpower.

MOSQUITO AT WAR. (Third Printing) Chaz Bowyer Charles Scribner's Sons, 1977. 144 pages. \$14.95.

Reviewed by Bert Kinzey

Chaz Bowyer has gone far beyond the usual presentation afforded most military aircraft that served in the past. Much more than technical data and performance characteristics are given for this famous British aircraft of World War II. Interwoven throughout the book is a unique personal touch that gives the reader a sense of the close personal relationship that existed between the Mosquito and the crews that flew it.

Capabilities of the aircraft are pointed out not by the usual data tables or performance figures, but through accounts of missions flown, which are profusely illustrated with photos of the actual event. Among the highlights of the book is one such account of the famous raid on the Amiens Prison. This raid demonstrated the precision

bombing capability of the aircraft in an attempt to blow holes in the prison wall so that French prisoners could escape execution by the Nazis. The bombing had to be so accurate as to cause the walls to be destroyed without harming the prisoners inside. In the account of this raid, and throughout the book, Mr. Bowyer skillfully tells the story in such a way that the reader gets to understand the airplane, the men, and the mission. This blending of aircraft, history, and human drama is rare among books on military aviation. It makes this book recommended reading for the aviation buff, military historian, and adventure lover alike.

A RUMOR OF WAR, by Philip Caputo, Holt Rinehart and Winston, New York, 1977. 346 pages, \$10.00.

*A Rumor of War* is the personal account of the experiences of a young midwestern American who became a US Marine and served both in the military and later as a newspaper reporter in Vietnam during the war. While the backdrop for his story is the Vietnam War, it could relate to any war. The tedium of war is ever present throughout the book. The killings, injuries, sacrifices, families torn apart, the bravery, and the fear are packaged together and it all spells war. At sometime in our history, someone was quoted as saying, "War is hell;" from Caputo's book, war hasn't changed. If anything, it has become more brutal and uncivilized.

As a young Marine, Caputo looked forward to war as a challenge, a way to prove his manhood and a release valve for his pent up emotions. However (like so many others), after experiencing war, he became disillusioned and hated all that war represented. He felt obliged to record his memories in a book as a memorial to all the men with whom he served.

Considering Caputo's training and background (soldier and author), he probably could write an acceptable history of the Vietnam War. However, *A Rumor of War* is not a historical account of that war. Rather, it is an emotional report of his experiences before, during, and after participating in a war. It is the impact of war as seen through the eyes of a young American torn between duty to country and finding the answer to: Why war? It was not much different from other wars Americans have been involved in. Unfortunately, as he put it, he had to be in the only war the United States lost.

Caputo's book is written in an easy to read style. As a Marine lieutenant, he describes his adventures into the "bush," the patrols that never returned, and the dreadful killed in action scoreboard that seemed to change with each burst of fire or skirmish. He tells how he had to be trained to kill and then how it became a case of kill or be killed.

Caputo's account of why he was transferred from line duty to the position of Assistant Adjutant of Regimental Headquarters is not clear. Was

he a better administrator than a combat leader?

However, Caputo does tell us that he later volunteered and did return to the Vu Gia Valley where he once again became part of the "real war."

*A Rumor of War* relates easily to many young American males. A young man is taken from a civilian role and rather quickly transformed to a fighting machine. A role he does not feel he is really prepared for. In war, however, the author tells us you learn fast and you age the same way. In later life, as you recall the war and the people you met, the places you've been, the situations you faced, these things all bring back cold chills and sweaty palms. But also, you remember the exploits while on liberty from the front lines and the friends you made, and then you settle down again.

The author is the first to admit that there are some redeeming features gained from being in combat. Lessons are learned quickly, comradeships develop that last a lifetime, and one develops the ability to make sacrifices one never realized were possible. Heroes and cowards come face to face.

Caputo's *A Rumor of War* is a powerful story. It should be compelling reading for anyone who doubts that, "war is hell." If the book causes some decision makers to take a long hard look before committing men to war and, if committed, to give them the authority and equipment to win it, then *A Rumor of War* has done a great service to the country.

NOTE: Dr. Joe P. Dunn was erroneously credited with reviewing *Webster's American Military Biographies* in the July-September 1978 issue of *AD Magazine*. Actually, the material was furnished by the publisher.

ADDITIONAL SELECTIONS:

ANTIQUÉ FIREARMS, by Frederick Wilkinson, Presidio Press, San Rafael, California, 1978. 265 pages, \$14.95.

Frederick Wilkinson presents a detailed account of the evolution of firearm mechanisms over five centuries, from the earliest cannons that shot arrows from their vase-shaped barrels up to the 19th century when mechanization began to replace the handcraftsmanship of earlier years. Every weapon was unique and differed subtly from others of the same basic type.

One can almost read the history of weapons evolution simply by observing the transition from the old to the new.

The wealth of information, definitive illustrations, and vivid color plates make "Antique Firearms" a book to treasure, of interest to the general reader, and essential to the collector.

VETERAN AND VINTAGE AIRCRAFT (Revised Fourth Edition), by Leslie Hunt, Charles Scribner's Sons, 1974. 336 pages, \$12.50. Forward by Marshal of the Royal Air Force, Sir John Grandy, G.C.B., K.B.E., D.S.O. Listings of preserved aircraft throughout the world including 9,000 entries. Information includes where the aircraft are located, what condition they are in, and who owns them. Contains many photographs of the actual aircraft.

# AIR DEFENSE

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