

Anti-aircraft **JOURNAL**

*Gift from
Col. Eddy
Dec. 1953*



NOVEMBER-DECEMBER, 1953

UNITED STATES ARMY
THE CHIEF OF STAFF

17 November 1953

Dear General Lewis:

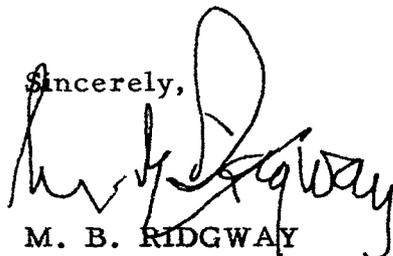
I recently wrote to the Association of the U. S. Army, of which I have long been a member, to express my view of the importance of the Association's work and to encourage its continued support by all of us in the Army.

I also want to express my great interest in your association and every association which is dedicated to advancement in the fields of the various arms and services of the Army. I know of no more significant bond between men and women who have the progress of our Armed Services at heart than to be fellow members and supporters of these outstanding organizations. To join an association of this nature and participate actively in its functions means to promote cooperation and good will, to exchange and disseminate valuable professional information, to develop esprit and mutual respect - in effect measurably to strengthen the national capability for defense.

In particular, I want to emphasize the role of the association journals. These journals not only make a significant contribution to current thinking in the arms and services but provide a unique opportunity for the professional development of the contributing members.

I strongly urge the support of these fine military associations and their outstanding publications.

Sincerely,



M. B. RIDGWAY
General, United States Army
Chief of Staff

Lieutenant General John T. Lewis
President
U. S. ANTI-AIRCRAFT ARTILLERY ASSOCIATION
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The JOURNAL prints articles on subjects of professional and general interest to personnel of the Antiaircraft Artillery in order to stimulate thought and provoke discussion. However, opinions expressed and conclusions drawn in articles are in no sense official. They do not reflect the opinions or conclusions of any official or branch of the Department of the Army.

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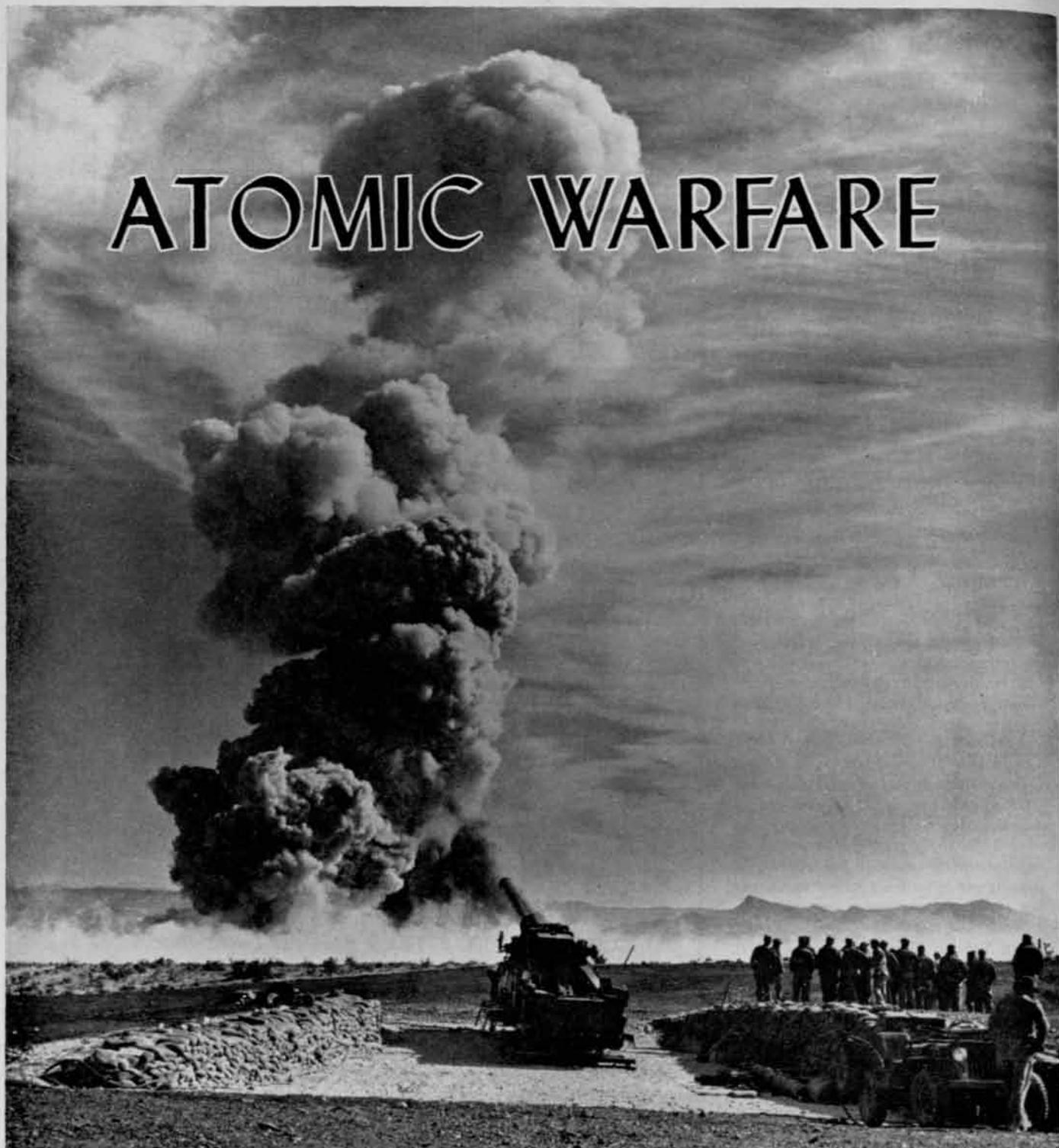
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ATOMIC WARFARE



USAF Photo

The first atomic artillery shell burst and the 280mm gun, Las Vegas, Nev.

By **BRIG. GEN. THOMAS R. PHILLIPS, U.S.A. (Retired)**

Military Analyst of the Post-Dispatch

General Phillips was formerly an anti-aircraft officer and also a well known Leavenworth instructor. For years he has been building his reputation as a military student and forthright spokesman. He presents here his own views.

AWESOME but very general statements about new weapons and their effect on military plans and costs coming out of Washington, primarily from high civilian officials who attend meetings of

the National Security Council, do not refer to any new or unknown weapons. They refer to atomic explosives which

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are hardly in the new category.

What is new and revolutionary is that the atomic explosives are becoming available in such quantity that they can be substituted for conventional explosives at less cost wherever the target is large.

One atomic artillery shell can be substituted for 10,000 conventional shells to lay down a carpet barrage through enemy lines.

One city-buster bomb can do more damage than a 1,000-plane raid with conventional explosives.

It has become possible to adapt atomic explosives to almost any weapon. Guided missiles, torpedoes and mines can be atomic. It is even possible to make an atomic shell for the 105mm and 155mm howitzers. The guns can then fire either conventional or atomic explosives depending on the size and importance of the target.

It is quite apparent that if a formation of 15 planes carrying one atomic bomb can do more damage than 1,000 planes loaded with conventional explosives, fewer aircraft are needed for the job of strategic bombing.

Likewise, if one artillery shell can be substituted for 10,000, the Army's requirements for artillery, for reserves of shells costing billions of dollars, for ammunition dumps behind the lines, and for rail, sea and truck transportation to get shells to the front, can be extensively reduced.

May Cut Back on Shells

Thinking along these lines in the top councils of the nation has gone so far that serious proposals have been made to cut back production of shells for the war reserve which was used up in Korea.

It was with all this in mind that President Eisenhower at his press conference last Wednesday said that to say that new weapons "would have no effect on the composition of the military forces would be shutting your eyes to all history and to the logic of a situation of which certain facts are rather apparent."

The officers of all three services have been caught by surprise by the secrecy which has surrounded the rapidity of atomic development. They still are thinking in terms of atomic scarcity.

Whereas every officer of the land, sea and air forces should be attempting to solve the revolutionary changes in a war in which atomic explosives are plentiful, few have given it a thought.

Gen. Alfred M. Gruenther, Supreme Allied Commander, Europe, has had his multi-nation staff war-gaming the atomic battlefield, some speculation has been undertaken at our Command and General Staff College, and senior planners in the Pentagon are scratching their heads over it, but the vast majority of the officers are still unaware that they should be thinking of a new kind of warfare which may make many of their weapons and tactical ideas obsolete.

No greater indictment of the excessive secrecy surrounding atomic development can be made than this:

The mass of the military know so little about atomic development and the possibilities of weapons being made for them to use that they still are plugging along on traditional lines with never a thought that war may be so changed in two or three years as to bear no resemblance to the one they are training for.

The exception to this is in the Air Force where they are fully alert to the possibilities of strategic atomic bombing, although they are quite unprepared mentally to exploit the possibilities of tactical bombing with atomic weapons.

Three Schools of Thought

There are three schools of thought about war with plenty of atomic explosives.

The first, found mostly in the Air Force and among senior Republicans, is the familiar one that strategic bombing will bring the enemy to his knees and will be decisive without the need for serious ground combat.

The second, prevalent in the Army and Marines, discounts the idea that war can be won by strategic bombing alone and believes that atomic weapons can be adapted to the conventional battlefield and conventional tactics.

The third likewise discounts the idea that strategic bombing alone can win a war, but believes that tactical atomic weapons may so change the nature of the battlefield that many of our conventional weapons and conventional tactics are outmoded.

These are differences of the utmost importance. The war could be lost if the concepts for which we provide weapons and munitions are wrong.

For example, if ground and sea forces are neglected and strategic bombing fails or is thwarted by new defenses, Europe could be overrun with ease; or, if great

emphasis is placed on winning the land battle with the help of atomic artillery used on conventional lines and the enemy knocks it all out with tactical A-bombs, the ground battle could be lost.

The disaster that would ensue as a result of a false estimate of the capabilities and effects of the various atomic weapons indicates that any clear-cut decision to concentrate solely on atomic strategic and tactical weapons is unlikely. We probably shall continue to prepare both for atomic war and conventional war while we gain experience and think through the problems posed by new weapons.

Historically, the military have been far more receptive to new weapons than they have been to new ideas for their use. Even today our military schools place their map problems in the standard frame of past situations, with troops in contact and the war already under way. The writer has never seen a map problem dealing with the outset of war although this is the only way the changes brought about by new weapons can be considered.

Air Strikes First

The important initial action in a war today would not be the movement of troops toward the borders, it would be the strikes of the strategic bombing forces. Our first targets now are the Soviet long-range airdromes and nuclear production facilities. This is a protective action to prevent bombardment of the United States. When the Soviets had no atomic capability, our first targets were their industrial and communications centers.

By the same logic, the Russians' first targets would be our strategic air bases, probably the peripheral air bases around the world.

There is a significant by-product to this change in the situation. Formerly we planned to retaliate against Soviet aggression on Soviet industry, which of course means cities, with massive atomic attacks. ✓

Suppose the war did not start with attacks on cities. If our President unleashed an attack on Soviet cities, and he is the final authority, he at the same time could expect the Russians to retaliate on United States cities. His order to bomb Russian cities would be the equivalent to an order to bomb American cities. Would he give the order? Would the

Russians bomb our cities if we did not initiate it? No one knows. If he decided not to, the whole theory of winning a war by strategic bombing falls flat.

Important Opening Moves

What will be the opening of the atomic battlefield? Troops move toward the borders. The greatest threat to them is tactical atomic bombing. This can be prevented, not by defenses, but by destroying the enemy aircraft and facilities on the ground. So the most important initial action in the ground battle would not be the contact of troops, but the mutual bombardment of each other's airdromes.

Airdromes are perfect targets for tactical atomic bombs—one bomb, one airdrome and everything on it. The opposing air forces would rapidly diminish.

There is an overwhelmingly important conclusion to be drawn from this mutual effort to destroy each other's air forces—the side which starts with air superiority should win the battle of mutual destruction and come out of it with air domination.

Air domination means freedom to use atomic weapons on the enemy ground forces. Without it, the ground battle almost certainly would be lost. We are inferior in the air in Europe. The tactical atomic bomb has not decreased the requirement for tactical air—it has increased it, and if superiority is not held at the outset, it may never be attained.

The old linear battlefield, clearly marked, with troops echeloned in depth, with artillery farther to the rear and supplies and transportation in dumps, is a worthwhile atomic target in time of atomic plenty. Tactical bombs will completely wreck the conventional battlefield, including any atomic cannon that may be on it.

Air-atomic power can now do what its protagonists have long claimed, but which it never before was able to accomplish. It can wipe out the opposing ground forces on the conventional battlefield.

Necessary Rearrangements

If this is the case, the old-style battlefield will change. The nature of the change can be foreseen. Troops will be in small units, self-contained, concealed and so widely dispersed in depth that they do not provide a target. This sort of a battlefield might be 50 miles deep.

Ground warfare would be more like guerrilla war than like the old wars we use as a pattern. It appears that guerrilla formations might be adopted at the outset of a war to prevent atomic destruction of the forces.

If one side gets reasonably complete air domination, with the atomic threat removed, it then might begin to operate in more conventional ways. The battlefield of past wars has the great advantage that it protects the rear and allows free movement of supplies and forces in relative safety. Standard troop formations would easily overcome lightly armed guerrilla detachments.

It is apparent that the atomic battlefield will not dispense with the need for troops. As Gen. Omar N. Bradley, former Chairman of the Joint Chiefs of Staff, once remarked: The Russians could put their men 100 yards apart and march across Europe regardless of atomic bombs, if there were no ground forces to stop them.

The size of the ground forces may not change greatly, but their composition will. When atomic shells are provided for the smaller and more maneuverable cannon, the field artillery can be greatly reduced in size, possibly by three-fourths. This will bring a great reduction in the rear services, since conventional artillery uses shells in millions of tons. The present atomic cannon will allow a substantial decrease in our long-range heavy artillery very soon.

But with the reduction in field artillery, there will have to be an increase in antiaircraft artillery. The threat of the tactical atomic bomb is so great that every possible defense will be required. Airdromes will be heavily defended, troop areas must be protected. It is not unlikely that increased need for antiaircraft artillery and guided missiles will use up the savings in field artillery.

The atomic bomb has reduced the size of the strategic bombing force already. We forget that we and the British were using 14,000 bombers against Germany in 1945, where, because of short distances, these bombers could fly twice as many missions a month as we now can fly against Russia.

The strategic bombing force comprises about 1,500 planes. If this is reduced by half, on account of the great distances to be flown, for comparison with the World War II bombing force, it can be seen that

it is approximately one-twentieth, in effective numbers, to the air forces used against Germany. Further decreases on the ground that atomic weapons increase its power do not seem to be warranted.

As to tactical support aircraft, it has already been shown that they will have to take over most of the ground support of the troops by use of tactical atomic weapons. There may be modest decreases in this requirement, but in view of the greatly increased losses to be expected from the use of atomic bombs on airdromes and from stronger air defenses, it would be rash to start cutting down.

Because of the constant threat of tactical atomic attack and the disaster that would result from such attacks, more interceptors for air defense will be required. On the other hand, due to the effectiveness of tactical atomic attack, it may be that the numbers of fighter bombers for isolation of the battlefield attack on enemy airdromes and rear installations may be decreased.

On balance, it does not appear that any substantial reductions can be made in air forces, but the composition will change with increased emphasis on defensive interceptors.

Balancing New Factors

This is the type of complex balancing of new factors and their effects that is going on in the top levels of the Pentagon. It is doubtful that any firm conclusions have been reached.

The tendency is definitely to find a way to reduce over-all military expenditures by taking advantage of atomic capabilities. There is always the danger that enthusiastic civilians without an adequate military background will fix their attention solely on the possibilities of atomic warfare to the exclusion of limiting factors which the military can see.

There is danger both of going too fast and of clinging to the outmoded. The military and civilian views in the Pentagon will probably meet by adopting the new weapons that are surely an advance while retaining the old that may be required.

As to the three views about the effect of atomic plenty on warfare, some tentative conclusions can be drawn.

Those who believe that strategic bombing with nuclear weapons will be decisive argue that we actually are pursuing an air-atomic strategy at the present

(Continued on page 39)

Guided Missiles*

Comments on Surface-Based Antiaircraft Missiles

By HENRY H. PORTER

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Introduction

GUIDED MISSILES is a broad field. Its possibilities have caught many imaginations, and guided missiles have been dreamed up for every conceivable use and every pocketbook, provided, of course, that the pocketbook is big enough.

It would be futile to try to cover the whole field so I shall limit my remarks primarily to surface-based antiaircraft missiles.

All weapons should start from a tactical need, and each weapon, if effective, is soon met by countermeasures. Early in the first World War planes were used primarily for reconnaissance. However, the sporting blood of the pilots called for combat, and it is said that the first missiles used were bricks. Thus, the lowly brick is a direct ancestor of the modern guided missile. Sometimes missiles seem to behave like their ancestors and fly like bricks. Subsequently, pistols and machine guns were used in air-to-air combat, and antiaircraft guns were used from the ground.

Since then, antiaircraft guns have been greatly improved; proximity fuzes have increased the effectiveness of the system; radar accurately locates the target; computers, from a knowledge of the shell trajectories and the past target course, predict the point of intersection and aim the guns. But this is a losing battle. The increased speed of planes, plus the possibility of guiding bombs to the target, a possibility that would permit them to remain at long ranges, will render antiaircraft guns ineffective. At a range of 5 miles, a fast plane will fly over 2 miles after the shell leaves the gun and before it arrives at the plane, and few pilots are skilful enough to fly that distance accurately enough to be hit by a perfectly aimed shot. These considerations show the need for guiding the missile to the target.

The primary characteristics needed in a guided missile are range, accuracy, and damage potential. To be tactically useful, other requirements are: speed, automatic control, traffic capacity, reliability, and low cost for the effect achieved.

Fortunately, scientific progress has developed in many fields to the point where it is possible to combine and extend them to make guided missiles work. These fields include rocketry, jet propulsion, supersonic aerodynamics, structures, miniaturized electronics, servo-mechanisms, electronic computers, and radar.

Address delivered to the Washington Section, Institute of the Aeronautical Sciences, December 2, 1952, Washington, D. C.

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Design of an Antiaircraft Missile

Let us make a rough preliminary design of an antiaircraft missile to get a feeling for the problems.

First, we must provide an air frame, light yet tremendously strong and rigid, with lifting and control surfaces capable of high maneuverability at great altitudes, yet controllable also at sea level—that is, through a range of air densities of about 10 to 1.

We must also provide a warhead. Present antiaircraft shells weigh from 15 to 100 lbs., but, since we are using a much larger and more costly missile, we want to assure high kill probabilities. Also, airplanes are becoming more rugged. We will probably want to allow something in the neighborhood of 100 to 500 lbs. for the warhead.

To guide the missile to within lethal distance of the target we must provide room for an amazing guidance system. It must be accurate; it must average out the errors fed to it; yet, it must be fast enough to follow the target's evasive maneuvers.

We must also allow space for the control system. This includes the power and mechanisms for moving the control surfaces, plus the computers to make the missile stable and maneuverable at all altitudes and yet prevent excessive aerodynamic forces from being imposed at low altitudes.

Propulsion Systems

We must also provide space for a propulsion system. As a first approximation, let us assume a missile diameter of 2 ft. If we optimize the length and shape and provide lifting and control surfaces, this missile will have a drag of about 6,500 lbs. at a velocity of twice the speed of sound. This will require a propulsion system capable of providing over 25,000 hp., packaged inside our 2-ft missile, yet one that is light and reliable.

The first propulsion system that comes to mind is a rocket, which has the characteristics of thrust and size needed. The solid rocket is quite simple in principle. It consists of a chamber in which the propellants burn at high pressure and a nozzle through which the jet acts. In going to large sizes, the chambers become heavy since the high-pressure chamber, which must contain the propellants, becomes large. In a liquid rocket, the combustion chamber can be kept comparatively small and light since the propellants are stored outside the chamber, but this requires pumps, fuel metering, and other complications. All this has favored the use of solid rockets for small, short-range uses and liquid fuels for larger rockets. The German

V-2 was a liquid-fuel rocket. Recent advances in the techniques of solid-fuel rockets, however, have made them competitive, particularly if the handling problems of the corrosive liquid propellants are considered. By its nature, a rocket must also carry the oxidizer, as well as the fuel. Since this is several times the weight of the fuel itself, only a rather low specific impulse of 200 lbs. sec. per lb. of propellant is attained—i.e., 1 lb. of propellant will supply 200 lbs. thrust for 1 sec. or 1 lb. thrust for 200 sec. If we assume a time of flight of 60 sec., which means a range of about 20 miles for the hypothetical missile we were designing, we will require about a ton of fuel and oxidizer ($6,500 \times 60/200 = 1,950$ lbs.).

This rough approximation shows that, while rockets are good for short-range missiles, the propellant weight becomes excessive where long range is needed. By far the greatest amount of the propellant is the oxidizer. Thus, if we could use air as the oxidizer, the amount of propellant to be carried would be greatly reduced. Engines that do this are the pulse-jet, the turbojet, and the ram-jet (Fig. 1). These are modifications of the rocket idea to admit air into the combustion chamber to burn with the fuel.

The pulse-jet operates intermittently, admitting air to the combustion chamber through valves that automatically close to contain the explosion pressure and force the jet out the nozzle. The pulse-jet was used by the Germans in the V-1. It is not an efficient propulsion system for supersonic speeds.

The turbojet, which is now commonly used in jet aircraft, uses a turbine compressor to force the air continuously into the combustion chamber under sufficient pressure to eject the jet of combustion products through the nozzle.

At supersonic speeds, the ram pressure of the air due to the velocity of the missile will provide enough pressure to make the jet engine effective. The ram-jet is thus a simplified turbojet in which the compressor is not needed, but

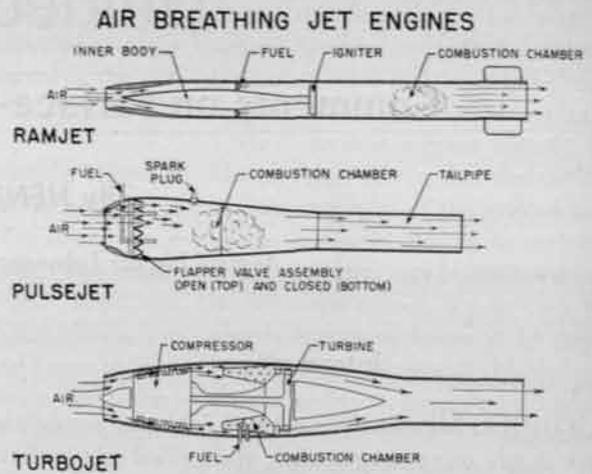


Fig. 1

it only gives thrust at high velocities and is ineffective much below its designed speed. Because of its simplicity, however, the ram-jet can be very light, providing several horsepower per ounce. Its fuel economy also is good, since it attains a fuel specific impulse of about 1,200 lbs. sec. per lb., or about six times as much as a rocket. It therefore needs to carry only about one-sixth of the propellant a rocket requires, or, in our hypothetical missile, a ram-jet would only need about 330 lbs. of fuel instead of a ton. The propellant weights are estimated for low-altitude flight. At high altitudes, the drag is less, and less propellant is needed.

Thus, it appears that the ram-jets (Fig. 2) are much better than rockets. However, the decision is not always so simple. For this comparison, we have assumed an aerodynamic flight path, one similar to the flight an airplane would make. If a ballistic trajectory similar to a shell is considered, this considerably modifies the comparison in favor of rockets and extends the range at which rockets are competitive, but this in turn imposes certain limitations on

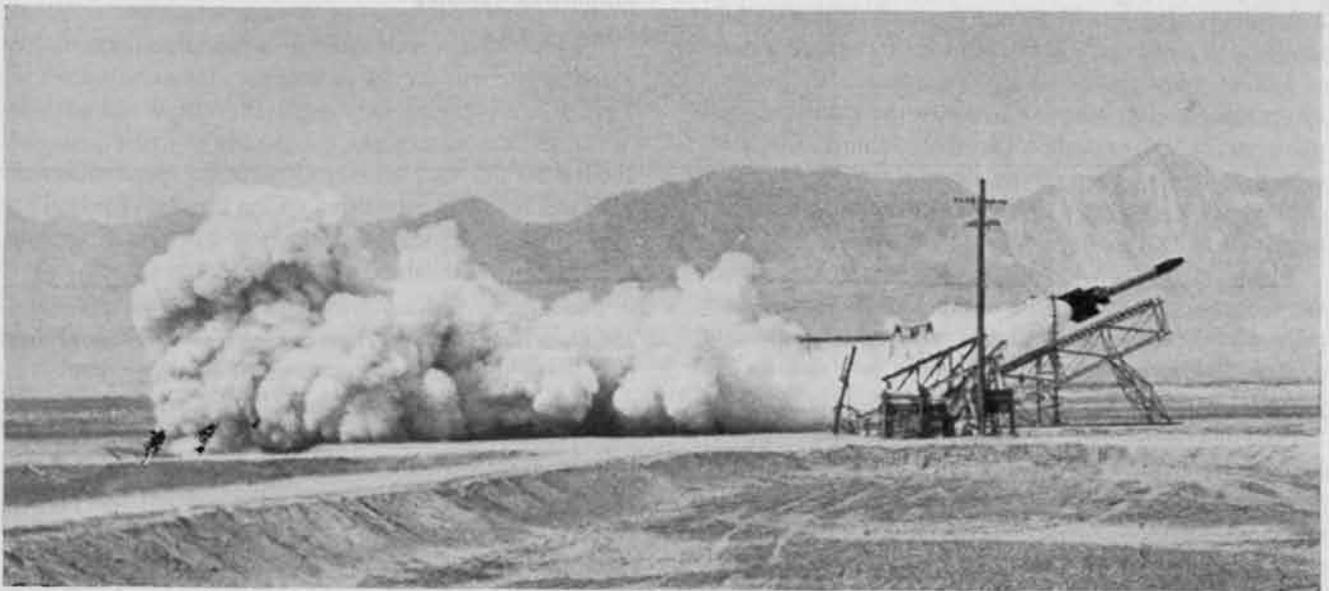


Fig. 2. Large ram-jet launched at the Naval Ordnance Test Station, Inyokern, Calif. Its velocity was "far into the supersonic range." The ram-jet is boosted to near the speed of sound by a solid-propellant rocket, which falls away, and the ram-jet engine takes over. It was developed for the Navy Bureau of Ordnance by The Johns Hopkins University Applied Physics Laboratory and its associate contractors.



Fig. 3.

the guidance system. In all, the rocket seems best for short-range and the ram-jet for long-range anti-aircraft missiles. The only discussion is over the range at which this division comes.

So far we have only considered the missile in flight. There is also the problem of launching the missile and accelerating it to flight speed. For anti-aircraft use, where time is of great consequence, it is important to spend as little time as feasible in attaining flight velocity. This is being done by means of large rockets (Fig. 3) which accelerate the missile to flight speed in a few seconds and then generally separate, leaving the missile to fly on unencumbered.

Guidance Systems

There are a number of possible guidance systems. The choice varies with the tactical conditions and the philosophy of use. These can be divided into systems where the

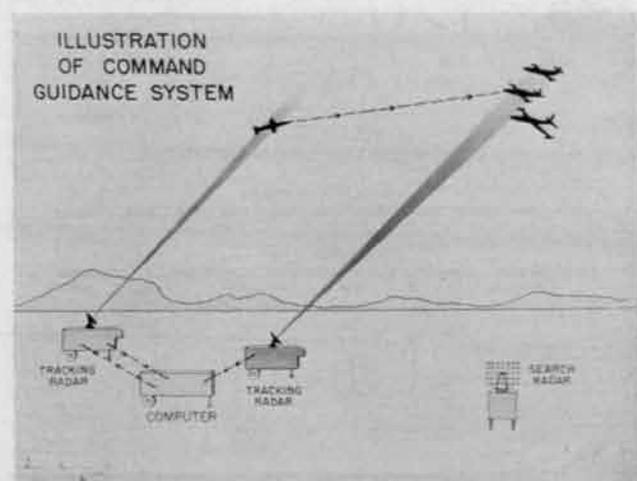


Fig. 4.

brains are built into the ground equipment, into the missile, or divided between them.

One philosophy is to make the missile as moronic as possible so that as little as possible is lost with each missile. Therefore, the brains are built into the ground equipment, and the missile only has to follow orders. It therefore is generally known as the Command System (Fig. 4). The ground guidance installation must include: equipment for tracking the target, generally a radar; another equipment for tracking the missile; a computer to determine the commands that should be given to guide the missile to the target; and a communication link to the missile. In this system, the compromise has been made in favor of complicated and expensive ground equipment that can be used many times over.

Another system is to divide the brains between the ground equipment and the missile so as to reduce the ground equipment without overcomplicating the missile. The Beamrider is an example of this (Fig. 5). Here, the ground guidance equipment consists of a radar that tracks the target. The missile has enough intelligence to center itself in the radar beam. In both the Command and Beamrider systems the accuracy falls off at long range.

The final step is to put the brains in the missile. This means building a target-seeking system into the missile (Fig. 6). This will prove necessary in very long-range missiles, since homing accuracy is not necessarily dependent on the distance from the launching site. These systems are complicated, however, and often need mid-course control to guide them to the vicinity of the target. The homing problems can be appreciated when you consider that the missile and target are closing at a rate of about 1 mile every 2 sec. so that little time is available for the homing system to locate the target and make all corrections required to achieve a "hit."

Air Defense

Guided-Missile Systems

So much for the missiles themselves. They are only a comparatively small part of a guided-missile system. I have mentioned the guidance equipment required, but, in addition, launchers, handling equipment, stowage, and test equipment are necessary. Even all this is only a part of the system. It must be integrated into an overall air-defense system, including detection of enemy attack, identification of the attackers as hostile, display of the situation, analysis of the attack, and allocation of the role each defending unit is to play.

To see what is involved in such a defense system, let us make some assumptions and view the overall situation. It must be remembered that there is no such thing as a static defense. A defense today may be useless next year. All we can do is plan our defenses to meet the attack that an enemy can throw against us. Therefore, I shall make assumptions for a hypothetical situation, not based on any particular developments or time, primarily to select round numbers that make the calculations simple. Let us assume that the attacking planes fly at 600 miles per hour or 10 miles per min., that the guided missiles fly twice as fast as the planes, and that they have a range of 50 miles.

Since the bomb travels some distance after release, we must destroy the attacker before he reaches the bomb-release line, which is at least some 5 miles from the target (Fig. 7). An important target will probably be defended by several missile sites surrounding the city, about 25 miles out. Since the missile range is 50 miles, the first missile will intercept the attacker 75 miles from the defended point, or 7 min. from bomb-release. Moreover, since the attacking planes fly 25 miles during the time the missiles are flying 50 miles, the missiles must be launched when the planes are 100 miles from the target.

If the missiles must be fired when the attackers are 100 miles from the target, the missile site must be warned earlier in order to man the equipment, ready the missiles, and fire (Fig. 8). If we allow 5 min. for this, the missile site must be alerted when the attackers are 150 miles from the target, or 14.5 min. from bomb-release line. Furthermore, in order to alert the missile site, the enemy planes must be detected and tracked; the attack must be analyzed, and the defense moves allocated to the defending units. Time allowance for this means that the enemy should be detected 225 miles from the target.

Interceptors

So far, we have considered only the guided-missile systems, but we will also want to use interceptors (Fig. 9). They should operate beyond the range of the guided missiles; so they must complete their attack before missile-intercept range, 75 miles from the target, to avoid confusing the defense. If we allow 10 min. for the entire interceptor engagement, they must intercept the attackers at 175 miles. Now, the interceptor bases need alerting to provide time for the interceptors to be manned and climb to altitude; therefore, they must be alerted when the attacking planes are 300 miles from the target. Time for

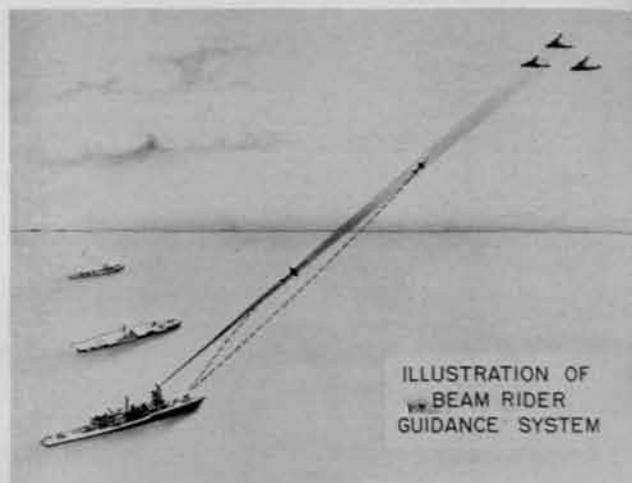


Fig. 5.

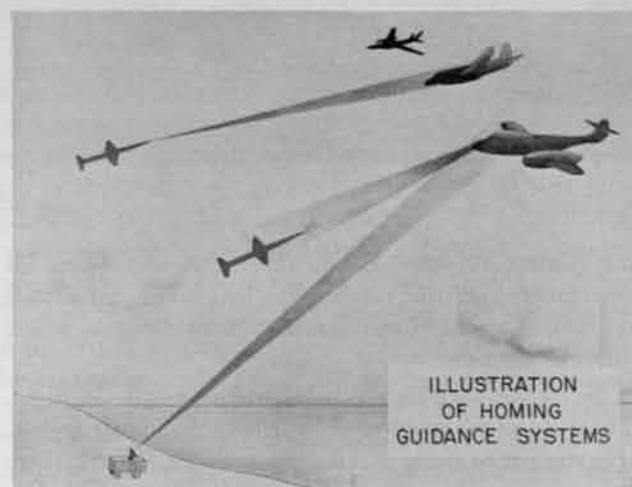


Fig. 6.

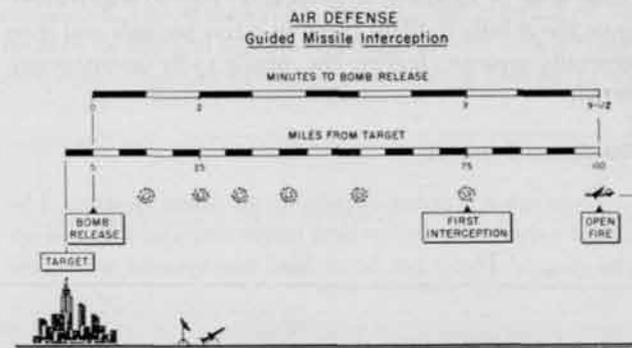


Fig. 7.

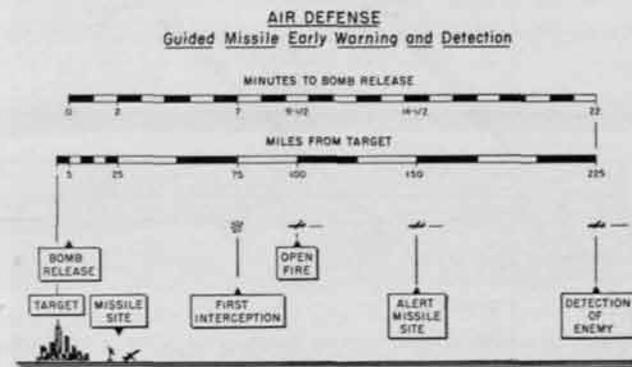


Fig. 8.

AIR DEFENSE
Fighter Interception and Guided Missiles

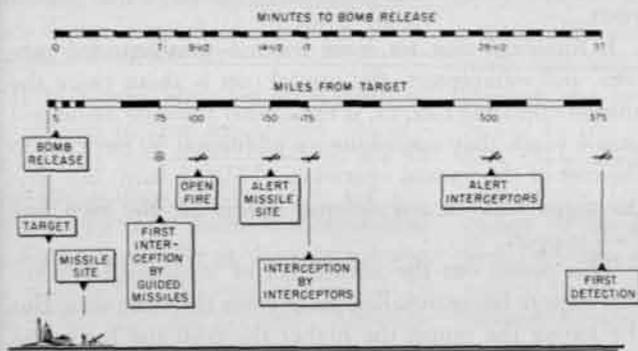


Fig. 9.

early warning, identification, and display means that the enemy must be detected about 375 miles from the target or 37 min. from bomb-release.

These distances sound big, but, to get a clear realization

of how big, let us take Washington as the enemy's target and use various points northeast of Washington to indicate how far away each stage of the attack takes place (Fig. 10).

The enemy attack must be detected over Boston. The interceptors' base must be alerted when the enemy reaches Hartford, Conn. The interceptors reach the enemy over Newark, N. J. The guided missile site is alerted as the attackers reach Trenton, N. J.; the first missiles are launched as the enemy approaches Wilmington, Del., and the first enemy planes are shot down by guided missiles near Elkton, Md. This is the scale of the action under the hypothetical conditions we have assumed.

Costs

It would not be complete to discuss guided missiles without giving some consideration to the economics involved. One is too prone to compare the cost of one missile to the cost of one shell and feel convinced that one cannot afford to use them. This is not a reasonable com-

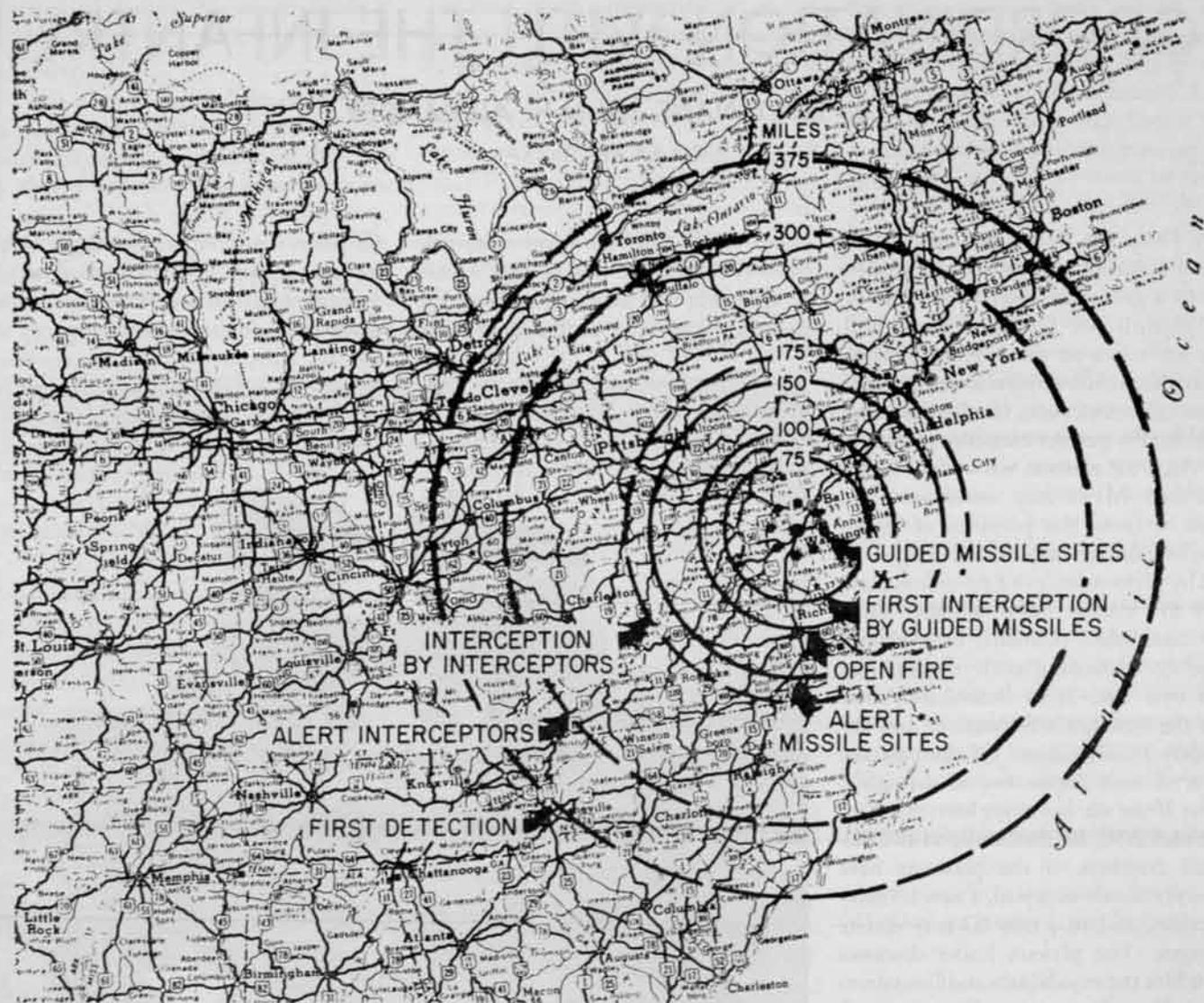


Fig. 10.

parison. At the least, one should compare the cost of destroying an enemy plane by each method. Since, at the altitudes of expected attacks, guns do not have a high probability of kill per shot, it is not surprising to find that guided missiles will bring down more enemy planes than guns for a given amount of money expended for ammunition. In other words, a stock of guided missiles will shoot down more enemy planes than a stock of antiaircraft shells of equivalent cost.

It is true that in a single heavy attack a far greater cost could be expended by the guided missiles launched than that expended by any available number of guns. Under these conditions, too, guided missiles cost less per plane shot down, and the high cost is a criterion of the extremely high level of defense. Past experience has indicated that an attrition level of 5-10 per cent provided an adequate defense, but now a near-perfect defense is needed. Guided missiles give promise of such a defense.

But the missile cost is only a part of the economic situation. The cost of the equipment and the annual cost of operation must also be considered. For frequent heavy at-

tacks, the missile cost is important, but for few small-scale attacks it may account for less than 10 per cent of the overall cost, even if the capital costs are amortized over several years.

It turns out that for most systems—guns, guided missiles, and interceptors—the capital cost is about twice the annual operating cost, or, if the capital costs are amortized over 4 years, they contribute an additional 50 per cent to the cost of the annual operation. Thus, it turns out that the major costs of any defense system are the men and their support.

This points out the advantages of long-range systems that require fewer installations to cover the same area. But the longer the range, the higher the cost; the fewer the installations, the more easily they can be saturated or destroyed. The basic problem is to use the funds available to provide the best defense for the attacks the enemy can make. This defense must include all weapons that contribute usefully and must provide for continuing improvement to meet the threat of a possible enemy's increasing capabilities.

COORDINATION WITH THE INFANTRY

By **LIEUTENANT JOHN H. ALEXANDER**

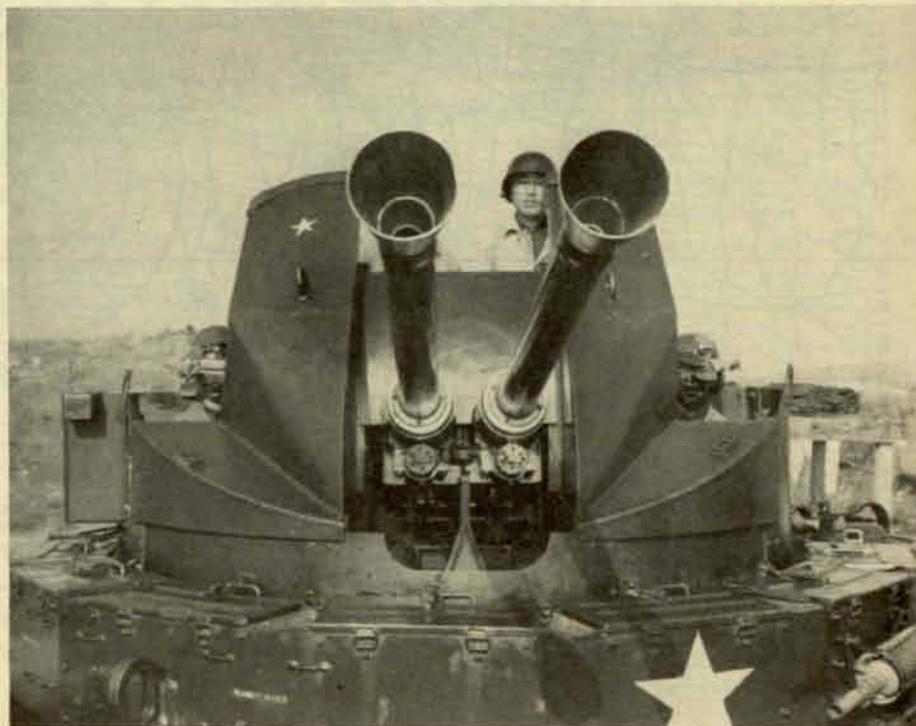
3rd AAA AW Bn (SP)

IN Korea the liaison between the infantry battalion and supporting artillery has in a great way been responsible for the gigantic toll United Nations artillery has taken on the enemy. This coordination involves precise timing, adequate communication, careful planning, and, finally, perfect execution. And for the AAA SP platoon, whose four M16's and four M19's may encompass four miles of front, the problems of proper coordination are manifestly enlarged.

The platoon leader's first commitment in a SP platoon move—whether going into established positions, in a platoon rotation; or moving with the infantry into new sites—is to immediately contact the battalion's S3 section, and the artillery liaison officer. Of the two, the S3 is of most importance in the initial move. If the site has never been occupied by AAA AW, he decides upon the platoon's positions; if the positions have been previously occupied, a new infantry battalion, and/or a new S3 may dictate changes. The platoon leader discusses with him the capabilities and limitations of tracks and weapons. Can the track "pull" this hill which would offer good position; can the "forties" effectively cov-

er hill "325"; will the quad mount depress enough to hit this possible avenue of approach; will harassing and interdiction fire be effective at this range? The

S3 learns the number of tracks available for the support of his battalion sector. From him, the platoon leader learns how many tracks are to be used primarily for



Cpl Kim Hang Sik, 3rd AAA AW Bn gunner, ready with twin 40mm guns on M19 mount.

defensive fire, and how many are to be employed for offensive work—bunker “busting,” sniper shooting, harassing fire, and direct support of infantry patrol action.

If in a new area, tentative positions are chosen by map work, then, the proposed sites are reconnoitered by the S3 and the platoon leader. Here the platoon leader must know the capabilities of his weapons; for at the selected site, he must tell the S3 exactly what can be effectively hit and covered. Although the field of fire may be good, perhaps the targets, on close observation, do not warrant emplacement of a track; or maybe an outdated map has not detailed terrain features, or does not show recently constructed roads which might make a position accessible; or perhaps there is a question as to the effectiveness of an M19's long-range fire on a “76” position. Together they must decide if a commitment of a track on the site is advisable.

Once it has definitely been determined to occupy the position, there are other considerations. An overhead for the track is always advisable, but sometimes impractical. If the position is temporary, often an overhead is not worthwhile; again, perhaps all the firing is to be done at night, and the track is removed from firing position during daylight hours; or perhaps the overhead restricts the field of fire, or prohibits high-angle, 50-caliber, plunging fire. The S3 can inform the platoon leader of the enemy's artillery activity in the area. If the two deem an overhead mandatory, plans for its construction are laid.

Through the S3, arrangements for the feeding of the crew, and bunker “accommodations,” are made with the infantry company commander whose people occupy the area. Targets of primary interest are pointed out by the S3 to the antiaircraft platoon leader, on maps and at the position. Areas for harassing and interdiction fire are noted. If the position is primarily defensive, the time and place for supporting fires are designated. The S3 provides the platoon leader with overlays and all counterattack data; it is the latter's responsibility to see that the movement of his tracks at such an emergency is closely coordinated with the proposed infantry action. And lastly, once the positioning of the tracks has been definitely established, the platoon

leader must submit to the infantry battalion an exacting overlay of their locations and fire concentrations.

Once the platoon is established, virtually all coordination is carried on through the artillery liaison officer attached to the infantry battalion. With him, the platoon leader reviews prospective targets. Details are thoroughly discussed. If the LNO wants an area “H and I'd,” the quantity of ammunition needed to do the job effectively is considered. Generally the liaison officer has a specific time when he wants fire in a certain area for harassing work. Perhaps enemy patrols are known to be using a certain path down a finger at dusk each evening; or a draw is being used as an assembly area. With such objectives in mind, a harassing and interdiction program is set up by the platoon leader and the LNO. They decide how much ammunition is to be expended on specified targets; how long in one area the fire is to continue, and in what volume; the most advantageous time for fire; and how the fire is to be conducted—whether, for instance, with the M16's, it might be better to fire four hundred rounds sporadically over a half hour period, with the probability of minimizing activity in the area for that period of time; or whether it might not be more advantageous to fire all four hundred rounds in a five minute period, with the possibility of finding an enemy troop concentration in the open. A “harassing and interdiction” schedule, on either a nightly or weekly basis, is arranged. A weekly schedule, with times of fire and targets varying nightly, generally more efficiently precludes the possibility of error and misunderstanding with the crew. With this schedule, and an overlay of the SP positions, the liaison officer can make changes through the platoon leader, should any of the scheduled fire interfere with friendly patrol action.

To complete the coordination, the platoon leader must contact the forward observers who will be directing fire for the tracks; the observers will be located by the liaison officer. From the observation post, and on the maps, the platoon leader designates the desired targets. Often these are supplemented, and altered by the forward observer. A schedule and overlay are given the observer, and arrangements for target registration are

completed. Usually each evening the weapons are reregistered on the targets to be “H and I'd” during the night. And, of course, the observer periodically registers on his “direct fire” targets. The platoon leader can often be of great aid to the observer in the registration of the platoon's weapons. For instance, it may be helpful to tell him with ranges of 3500 yards and up, the “50's” can be most easily registered at dusk or early dark, when the flash of the hitting rounds may be readily located, long after tracer burn-out. Further, the observer must be aware of proposed locations of the tracks, should they move to alternate positions to take up defensive roles. And again the platoon leader reviews, with the observer, the firing capabilities and characteristics of his weapons.

Because of the length of front encompassed by the SP platoon, coordination difficulties are constantly arising, even with the platoon positioned, registered, and functioning normally. The greatest of these involves communications. Lines between liaison officer and platoon leader, and between platoon command post and tracks, must at all times be intact. The lateral lines, between the observation posts and tracks, are particularly subject to enemy fire. Alternate routes between all parties must be established. Should line communication fail, radio contact must be maintained. This communication is imperative for control and coordination. With a harassing and interdiction program, the platoon leader must check daily with as many as three different liaison officers. Invariably the program involves firing from one battalion sector into another; and patrol clearance must definitely be established with each infantry unit. Should an emergency arise, displacement of tracks must be cleared through the infantry battalion; and critical targets must be designated. Firing information for patrol and armor support must often be relayed. And of course the observer's adjustments must be transmitted to the crew. Thus communication between the SP platoon, the liaison officer, the observer, the S3, and the tracks is imperative for the coordination so essential to effective operation.

Overall coordination requires the constant attention of the antiaircraft platoon leader. First, his platoon is positioned

(Continued on page 23)

"SHARPEN YOUR BAYONETS"

By LT. COLONEL OTHO ANTHONY MOOMAW

601st AAA Gun Battalion

SHORTLY after my arrival in Korea in May 1952, I was assigned to the 3d AAA AW Bn (SP), 3d Infantry Division, I Corps, Commanded by Lt. General John W. (Iron Mike) O'Daniel. Very soon I noticed that the motto of the I Corps was "Sharpen Your Bayonets." At first I thought this was a rather silly motto but somehow it impressed me—at least it impressed me enough to make me study and analyze its true meaning and what the man who chose it was thinking about when he decided to use it as a motto. I am sure he was trying to get a point across, which was to stress the "IMPORTANCE OF FUNDAMENTALS."

About four weeks after first seeing this motto I decided to learn if it had a true meaning. Headquarters Battery, 3d AAA Bn (SP) was scheduled for a Battalion Command Inspection soon. A few days before the scheduled inspection, I instructed the Battery Commander to try to have maximum attendance and to make special effort to have each man, so authorized, to wear his bayonet. The inspection was held as scheduled; 89 men out of an assigned strength of 107 stood the inspection, 79 men had bayonets, the other 10 being truck drivers were not authorized bayonets. Out of the 79 bayonets inspected, 21 were defective, six had about $\frac{1}{2}$ inch broken off the point, seven had badly bent and marred points, and the remainder were either dull, rusty or had loose handles. I was rather amazed to find that such a small piece of equipment—a bayonet, an article which is not used on the average of once in a lifetime, could be in such a poor state of maintenance. Furthermore these were not even front line troops. They would only upon rare occasions have use for the bayonet. I might add that the appearance of the soldiers

in ranks and their quarters looked just about like their bayonets.

After the inspection, instructions were given that all bayonets would be straightened, cleaned and sharpened. In those cases where abuse was evident, the soldier was held pecuniarily liable for the cost of a new bayonet. The next Battalion Command Inspection was held 5 weeks later. Not only were all bayonets inspected in a good condition but where combat boots were just passable before, at this inspection they were shining, brass was gleaming, the soldiers had a bright countenance and their posture was erect. Now I really knew what "Sharpen Your Bayonets" meant and what was more pleasing, I realized that these soldiers also had learned.

With this I Corps motto in mind, I instructed my staff to start inspecting everything that should have a sharp or square point on it and insist upon cleaning and sharpening all weapons and tools. We concentrated upon screwdrivers, chisels and axes. Many screwdrivers had broken and bent points, chisels were dull and frayed, presenting safety hazards in some cases, and axes were in a deplorable condition. They had loose handles, were rusty, and had dull and chipped bits, caused by striking stones and chopping into the ground. I know of no one tool that gets more abuse than the average axe in the hands of a 20th Century U. S. Soldier. Not only was this true in Korea but the same condition was later found to exist in the Battalion to which I am presently assigned here in the United States.

The U. S. Soldier does not like to dig. He has the ready answer, "Sir, we have requested a bulldozer," or "Sir, we do not have any picks." However, when the shells fall close or someone in the squad gets killed or wounded they dig

like gophers. I recall a twin 40mm M19 Squad of Btry B which was supporting the 2nd Battalion of the 15th Infantry last March. The weapon was emplaced near the Main Line of Resistance (MLR) in a shallow position. I urged the squad leader to dig the position deeper. However, a later inspection revealed only small signs of an improved position. The squad leader said the position was used only at night and the enemy never fired any weapons at the position. Then one evening at dusk, just after the weapon went into the position, the enemy fired just two rounds of 76mm artillery at the position. One round was "over" and the second round just "short," throwing stones and shell fragments into the position and wounding one of the ammunition handlers. The next evening I inspected the position. Without question it was by then one of the best prepared positions in the sector. No further lectures were needed by this squad on the subject of digging in.

Storing and policing ammunition on the battlefield, laying and picking up field telephone wire and the use of sand bags, for other than fortification purposes are some of the other problems a combat commander is confronted with in the combat zone. With the fundamental principle of "Practice Supply Economy" drilled into the minds of all key personnel these critical items can be controlled satisfactorily.

And so we stress the importance of fundamental teaching. "Take care of the small things and the large things will take care of themselves."

If you want to find an efficient soldier, look for one with a sharp bayonet. If you have a dull battery or battalion and would give it zest, "sharpen your bayonets."

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ELECTRONICS—TOO TOUGH FOR GI's?*

Machines of modern warfare have become so complex that training men to operate them is a major problem

By RICHARDS W. COTTON

Chairman, Electronics Production Board

AS a whole, the armed forces of the United States are not now qualified to handle at top efficiency the advanced electronic equipment our scientists have given them. We are not training enough men in this complex science to operate and maintain what has been developed.

But what makes these statements so vital is that we are making still another mistake. To most Americans the average Russian is a bearded, bomb-throwing dullard whom our highly trained and well equipped troops could quickly knock out. That just is not so at this time. Russia has a huge armed force of highly skilled and trained men whose electronic equipment compares favorably with our own. It is true that their equipment may not be as technically perfect, nor as expensive as ours, but it is designed for the intelligence level of her operating troops. They should get between 80 and 90 per cent maximum utility out of their electronic gear. Ours is unquestionably superior—but, combat officers tell me, too often we only get approximately 60 per cent of its potential value. This is caused by insufficient training, and equipment which is overly complex, especially from a maintenance standpoint.

Our readiness for an electronic war, even after two years of Korea, can only be described as half-and-half—we are half trained and half equipped.

Let us admit that soldiers cannot be made into proficient technicians in a two-year draft. But I am not recommending extension of the draft period.

Lt. Gen. Orval Cooke of the USAF points out that we do have tremendous national assets in the basic trainability of our men—if they can be held in serv-

ice long enough—and in the potential output of our production lines.

"These," he says, "compensate for the fact that the so-called American inventive genius is not what we like to think it is. Who invented jet aircraft? Radar? The British. Who invented such things as the recoilless cannon? The Germans and the Swiss. But we are great borrowers and producers. Our strong points are in the quantitative field rather than the qualitative."

Admitting that in the past 20 years the world's greatest inventions have not been American and our forte is mass production, I also believe that we are improving our position qualitatively, both in industry and in the training of our troops in electronic warfare.

The hard core of modern electronic war is the vacuum tube, or "bottle" as the GI calls it. Military electronic gear requires a high degree of training, not only to operate it, but also to service it either behind the lines, or in actual combat. For instance, normal attrition accounts for a daily loss of three tubes out of every 200 in normal rear echelon military bench use. The B-36 carries 2,700 tubes of all sorts, so you could expect 40 to blow every day. In each case the trouble must be diagnosed, located and repaired, while under way or even under fire.

Freeing the armed forces from the need to contract for civilian electronic experts to perform necessary maintenance work will require far more than the two years a draftee is now required to serve. Industry and the armed forces, meeting on equal terms in the Electronics Production Board, agree that it takes not less than five years of intensive training to make an across-the-board electronics man out of a high school graduate with a good IQ.

AFTER a draftee has finished his first nine weeks of basic training and finally has started on his "common block," or basic, electronics, he finds many other distractions which take him from the classroom. All these demands may be important in themselves, but, together, they mean that a draftee can only be trained on a single phase in the electronics field. On this single piece of gear he gives the service only an average of ten months usefulness out of his two-year hitch.

Of course there are solutions for these problems. Some are in industry, some in the armed forces—but most are—rightfully—in the laps of the American people. It's their survival and the survival of their sons which we are really discussing and it will be their responsibility to see that we take remedial action.

The meaning of all this might be made clearer by going back to an incident in World War II.

At that time, the gunnery officer on H.M.S. *Hood* was looking with vexation at the radar reading given by his newfangled electronic fire-control system. It couldn't be right, he thought, so he took an optical reading, transmitted the data to the gun turrets, fired at the distant German battleship *Bismarck*—and missed. In the next few seconds the *Bismarck's* radar-directed salvo crashed inboard and the *Hood* was doomed.

Military electronics—of which radar is one of many—actually came into being in World War II, principally the brain child of Sir Robert Watson-Watt. The impact upon our world has been prodigious. Because of electronics—and nuclear fission—we, as a nation, are in much the same position as the *Hood's* gunnery officer—in the next war there will be no time for a mistake.

*Reprinted from April 1953 issue of *Nation's Business*.

Before the war Mr. Watson-Watt was trying to measure the exact distance between the earth and its encompassing ionosphere with a carefully timed transmitter-receiver. It seemed that every time he got his instruments set and began transmitting, a plane would roar overhead from a nearby airfield. Out of patience, the young scientist called up the Air Ministry and complained. The planes caused what he called "disturbing echoes."

"Echoes?" echoed the Air Ministry incredulously. "From planes in flight? Are you sure?" Watson-Watt was quite sure. "We'll be right around," said the Air Ministry.

That was the beginning of radar.

IONOSPHERIC measurements were relegated to an assistant and the young scientist became a full-time "Top Secret Boffin," or top echelon "Back-Room Boy," working on the development of the devices which were the forerunners of those now torturing the minds of our young enlistees.

The Germans later developed a microwave radar and, until effective countermeasures were developed, they made life miserable for our bombers, patrol craft and raiders. The famous Dieppe raid, when so many British and Canadians died on what seemed a useless mission, actually was not just another raid. Our Intelligence knew that the Germans had something new in radar. If we were to learn how to jam it we had to get in to see it. The Dieppe raid was set up to take a certain stocky, medium-sized, ruddy Scotsman ashore and let him look-see. Actually, the raid was a success. But, for security reasons, we could not explain at that time.

I feel that I am somewhat qualified to comment briefly on the current situation. I have been engaged in electrical engineering and electronics all my life, I believe I was the only American ever to serve as an official of the British Government—during the last war I was appointed controller of signals and equipment in the British Air Commission. Shortly after my return to this country, I was asked to become director of the electronics division of the National Production Authority and chairman of the Electronics Production Board, one of the arms of our defense mobilization effort. Having lived with electronics

ever since it was wireless and having worked on its military application all through a war and a half, I must confess that I feel a considerable alarm over the immediacy of the problem of electronic-atomic total war.

Let us start with equipment.

Once a Brass Hat came back from a naval maneuver, a faraway look in his eyes. "If I only had a piece of equipment that would spot a snorkel at 100 miles without picking up waves or driftwood, we could lick the world." His dreamboat idea went in time to the research people. Smart and capable, they are, however, not always practical. The researchers designed a monster which would do all that was asked of it and perhaps a bit more, but it was so complex that only the designers themselves could operate or maintain it.

Finally it got to the manufacturer who said it must be simplified for production. The simplifying procedure continued as the production engineers pointed out flaws. The design for a piece of electronics frequently comes from research including a type of vacuum tube that does not even exist, except as an equation on paper.

In making it, the manufacturer's engineers may find that 99 ohms perform better than the 100 ohms the specifications call for. The resulting paper chase may require weeks—even months.

And, always, before we get into full production we must solve two severe problems—complexity of design and contract formalities. I am reminded of a wartime example of what happens when, as an air vice marshal on General Eisenhower's staff said to me, "the Boffins forget that the ultimate product must be suited to the mentality of the sergeants' mess."

In World War II, the United States obtained the sonar target depth determining device from the British. It contained something less than 30 vacuum tubes, took up little shipboard space, and needed one crewman. Since the war we have "improved" it. Our version has about 235 tubes, takes up half a room, and requires two more men just to keep it operational. Its increased efficiency is slight.

A good rule-of-thumb is that, for every man aboard a fighting ship, you have to add eight tons displacement for such things as fuel, water, food, clothing and gear. On top of that is the new

electronics equipment itself, the additional tubes and spares necessary for day-to-day maintenance.

The electronics industry, left free to use its own ingenuity, moved in the opposite direction. The typical television receiver of 1949 used 26 tubes. Today's typical set uses 21 tubes, gives better performance, has simplified controls, more reliability and easier maintenance.

A radar device of considerable complexity was installed in a ship whose identity isn't important here. Its captain brought the vessel into a navy yard and the electronics technical officer hurried aboard to check on performance. The captain was almost ecstatic. He pointed with pride to a steadily rotating scanner on his mast.

"Couldn't get along without it," he burred. "Marvelous thing." Elated by this praise, the ETO went below and found a young lieutenant with a couple of ET-3s (electronic technician, third class) poring over a massive volume of circuits. The ETO asked how the equipment was operating. One technician carefully closed the door.

"That thing!" grated the lieutenant. "It hasn't worked for three days. I just kept the scanner rotating to please the old man. He sees it going around and around and thinks everything is dandy."

THE ETO sent one of his Tech Reps, known as contract engineers, aboard and in a day he had it working properly. These contract engineers—averaging ten years' experience in maintaining all types of electronic gear—go to the armed services from the electronic industry to teach the officers and crew how to maintain and operate their own equipment. But in practice they often wind up doing the repair work themselves and rarely have time for instruction. When I complained of this to one admiral he insisted that it was necessary because he "had to maintain constant battle readiness."

I pointed out that, in demanding battle readiness, he was losing his war readiness. There simply would not be enough men to do a full wartime job if enough enlisted men were not trained to meet the vastly increased demands of an all-out war.

While an Army hitch is likely to be two years, a Navy cruise is for three or four and an Air Force enlistment for

four years. A draftee's service in any branch is for two years. The latter two services obviously have a much easier time licking the training problem if they obtain all the men they want.

Both the Air Force and the Navy are "very, very nice" to the boys the last few months of their terms of enlistment. If they can get a man to stay on for two enlistments they know that, at worst, they have a fully trained electronics man in the reservoir of the nation's reserve manpower. At best they have been able to show him that, after completing eight years, he is nearly halfway to the 20-year retirement period—which means a basic retirement pay of more than \$50 a week and a completely learned trade at a probable age of only 38. He is then in a position to go into private business in a field which is now avid for stable and knowledgeable young men.

If we are forced into a war in Europe it is important to us that electronic gear supplied to our allies be kept operable. Where we are providing our allies with such equipment, it seems to me with the draftee's length of service in NATO countries being only 18 months, it is vital that we also provide the necessary electronic engineers to train allied personnel.

We have spent more than \$15,000,000,000 on military electronics since the war and are now up to a national annual expenditure of \$2,500,000,000 a year. This is very big business, as well as a vital part of our survival. It is reasonable to state that, if electronics alone can't win a war, no modern war can be won without it. It thus ceases to be a purely military problem. We cannot surrender our civilian control of well planned military progress. We must demand that it be properly managed and fully exploited.

THE Germans standardized their manufacture for wartime on 16 types of vacuum tubes. On our JAN (Joint Army Navy) preferred lists are more than 300 with probably another 1,000 or so special purpose tubes. The huge number complicates both production and usage.

Such a list needs ruthless editing. I speak both as one with some governmental background and also as a practical industrialist.

Simplification in maintaining and operating the flying and fire control systems of supersonic aircraft must begin with the designer and continue even after the prototype has been accepted and the device placed in service. One answer is to extend "The Little Black Box," or the "Go, No-go" technique of maintenance.

"The Little Black Box" is a complete unit which can be plugged into a circuit or system. Using such a box, all the operator maintenance man has to do is to plug a mobile testing console into each box on a "Go, No-go" test. If it is a case of no-go, the faulty box is ripped out as a complete unit, replaced with a perfect one and the failure sent back to the factory.

Many oppose this policy of immediate return to the factory, but, as a factory man, I know that we frequently get conflicting reports of equipment failures from the fighting front. This is especially true when field repair work has been attempted. But, as one pilot put it, "When you are traveling 600 miles an hour it is a bad time to be in a quandary." If "The Little Black Box" is returned to the factory, persistent breakdowns can be isolated and remedial measures taken.

The Air Force is improving this system. In World War II, it hauled out whole engines or gun assemblies and replaced them; the repairs or cannibalization coming later, at leisure and in the rear. The Navy complains, however, that carrying "The Little Black Boxes" aboard ship is tantamount to carrying another radar or sonar set on an already overcrowded vessel. The Army contends, with wisdom, that it is logistically impossible to send the boxes back across a sea for repair and that we must establish small shops in rear areas, which in effect would be little factories.

We have already taken one long step toward efficiency and simplification. We are getting away from the cry of "security" every time a nonmilitary man makes a suggestion or asks a pertinent question. But, in the solution of this overall problem, industry must have an increasing voice and the opportunity to make changes in design. Incentive contracts should be let which would reward the contractor for recommendations and actions leading to reductions in the number of operational controls, size, weight, the number of components

and cost in a device which will still produce the same or a better operational result.

The present system of contracting is one of the major faults in the world of military electronics. Frequently one company receives a research and development contract, completes it satisfactorily and then finds that the manufacturing contract is awarded elsewhere. The reason is an archaic lowest-bidder law. In the past few months I have seen more than \$6,000,000 of contracts awarded to companies that were unable to carry them out. Two companies, in fact, went bankrupt in their efforts to carry out contracts which, for their own sakes alone, they never should have been allowed to undertake.

Such contracts should be awarded only to qualified electronics manufacturers. I have recommended that, in our all-important guided missile program, it should be mandatory that the work covering electronic research, development and production be subcontracted only to qualified manufacturers.

THE guided missile known as the Matador, for example, presented such a problem in the early days that 95 per cent of the tubes delivered for use had to be rejected. A guided missile delivers such a terrific shock in its period of initial fast acceleration that a whole series of new problems arise. The missile at one time required a lieutenant commander and his staff to check it out electronically for flight; it now takes one chief petty officer and a mobile console testing unit. I asked a chief one day what he thought of the complete box unit and the "Go, no-go" theory.

Grinning, he said, "Nobody dismounts a tire and patches the tube on the road any more, does he? He just takes the tire off, slaps another one on, and sends the old one in to the experts for repair, *nicht wahr?*"

The next time I saw that chief with his scraps of various foreign languages picked up in six years of service, he was in civilian clothes, doing about the same sort of job. I asked him about it. The answer was simple.

"More money, Skipper."

He had left the Navy and joined the field staff of a major manufacturer at nearly double the pay.

There, for one example, is the type of

problem over which I could develop a fine case of schizophrenia. As a manufacturer, I know that my industry as a whole is understaffed for engineers; we go to great lengths to obtain trained men. At the same time, as a part-time government official, I am anxious that the services obtain and retain the tremendous numbers of electronically trained men they require now—a need which will be multiplied in wartime.

Maj. Gen. Kirk B. Lawton, recently deputy chief signal officer and now commanding general of the Signal School at Fort Monmouth, N. J., and I were discussing this problem recently. I asked him where he thought he was going to find the men to operate and repair his equipment if war came. He grinned, then said: "Where will we get them—? From you. As things stand now we'll just have to draft them right out of industry." I pointed out that, if all the affected services did that, they would soon find that no new electronic equipment was being delivered to them. Again, in this scarce field, industry and the services must collaborate and not compete.

Let you get the impression that modern electronics is a mass of popping tubes and inadequate personnel, let me state that large numbers of competent men, both in and out of the services, are seriously trying to solve the riddles. However, they are restricted in their efforts by enlistment and draft periods, limitations on promotions, pay and other considerations which only Congress can correct.

But ridiculous things can happen, too, to leaven the urgency of the search. Take the strange case of the USS *New Jersey*. The *New Jersey* steamed out of the Gulf of Panama and swung northwest for Sasebo, Japan. Her search radar began going a little erratic. Some days it would be effective for 80 miles, other days it would drop to a mere ten or 20.

After a time in which the watch seemed inadequate to locate the trouble, an officer and the electronic crew of 33 specialists went to work without results. Then the ship reached Sasebo. A young civilian expert came aboard and, in a short time, was climbing up the mast

grinning broadly. There was the waveguide—a small screen about five by eight inches and similar to the one you might have on your television—and in it was a small dead Panamanian crow. The bird had been caught in the waveguide while the *New Jersey* was going through the locks and had been fried to a crisp. The search radar continued to work after a fashion, but, whenever it rained, the bird's body picked up moisture which shorted out the set until the sun and electric current dried it out again.

ONE fleet commander estimated that, mostly due to incompletely trained personnel, ten per cent of his electronic gear was always out of commission, that another 50 per cent was unreliable. Thus, in that fleet 60 per cent of the total of vital electronic equipment in service was in poor condition.

The Navy is not unique in this. Electronics are new and most of the officers of today are not. The majority went through their academies before ultra-high frequencies were common; most of the rest have received basic training with a lot of theory enabling them to administer installations, but not really to teach and carry out detailed repair work under field conditions. Pity, then, the enlisted man whose basic training is not adequate to cure promptly a complex disorder in a unit of vital equipment, and whose officers angrily demand that it be fixed immediately. By working all night he may stumble across the answer. That answer may be to get out of the Navy.

The new bombsight in our B-36 plane is basically an electronic device. It costs about \$250,000, as contrasted with the \$8,000 bombsight of World War II. The new bombsight is only one of dozens of items of essential combat equipment. Some of these items on the B-36 cannot be reached from inside for repair while in flight. But most of the vital equipment can be, and redesign has spread it around the inside of the aircraft in such a manner that one shell or rocket hit will not disable the plane's entire system.

In arguing for simplicity of equipment as a first step toward breaking

the personnel training impasse, it must not be misunderstood that we want to hold back the scientist in his development of new weapons. It is, perhaps, a matter of conditioning our young men to modern progress. I cannot believe that the young men of today are any brighter than those of 25 or 50 years ago—and they certainly are no duller.

Human capacity to absorb new knowledge will, in time, reduce today's problem in electronics to nothing—but that makes today's problem no less real, its solutions no less urgent.

But, meanwhile, it is my belief that, when an idea for a new military item is given to the research and development engineers, it should be clearly spelled out that the resultant equipment must be such that it can be operated efficiently and maintained readily by men with an average level of intelligence and training such as presently constitute our armed services.

I do not agree with the recent Assistant Secretary of Defense, Anna M. Rosenberg, when she replied to a letter of mine on this subject, saying: "The services' career programs have developed ample promotion opportunities for qualified personnel." Nor do I agree that she is correct when she insists that the services have been able to supply sufficient personnel to conduct their operating electronics programs.

This attitude on personnel is unrealistic and the services know it. Not only must our draftees and enlistees be given more in-service inducements to take up the severe mental strain of this career within the Army. A man must also be attracted to it because of its identification with high-paying civilian jobs, when and if he should return to civilian life.

One plan that has been suggested is that after a man has been in the Army for a year and shown some aptitude for this type of work, he should at that time be given opportunity to re-enlist for a period of four or five years to obtain this training in full, including the necessary math for true proficiency—and all with the proviso that he will remain available in the reserves when he takes his acquired skills into private industry.

No man is fit to command another that cannot command himself.—William Penn.

AIDS FOR THE RANGE UMPIRE

By MAJOR WILLIAM H. LAMBERT and MAJOR JOSEPH S. EDGAR

AS a battalion or battery commander, have you silently "cussed" the records section when the BC scope operators were unable to find the sleeve? Or, as a records section officer, have you frantically attempted to assist the O₂ station in locating the target, being able to give only vague directions in purely descriptive terms? This situation arose frequently at the Katakai Firing Range on the east coast of Japan. (The range is operated by the 138th AAA Group under the command of Col. H. B. Hudiburg.) Scattered clouds, or extra bright days, when no white sleeves were available, contributed to this difficulty.

The problem was overcome by the creation of a simple plotting board, which could easily be made for any AAA range. The instrument (christened locally, the "Pogo Stick") consists of 3 pieces of plexiglass. One is in the shape of a cross section of a gymnasium dumbbell with an etched center line representing the base line. It has an azimuth circle etched on each end, in proper orientation with the base line. A hole for a bolt is drilled at the exact center of each azimuth circle, and the center of each hole represents one end of the O₁-O₂ line. A scale of 1 inch = 1000 yards was used for the base line and for graduating the two range arms, which are one inch in width and thirty inches in length. The range arms are bolted to the base line piece, but are free to rotate easily. Each arm is graduated in 1000 yard increments, with the left edge delineating the line of sight of each azimuth BC scope.

When the O₂ station loses the target at the far end of the course, the observer

notifies a computer at O₁ by telephone. The computer quickly obtains azimuth and slant range from the unit radar by telephone. He sets the left edge of the O₁ arm at the radar azimuth and sets the O₂ arm to intersect the O₁ arm at the slant range from O₁. Then he reads the azimuth under the left edge of the O₂ arm and transmits it to the O₂ operator. The O₂ BC scope searches on this azimuth. The O₁ computer keeps obtaining azimuth and slant range from the radar and sending new azimuths to O₂, until the target is found. The O₂ operators are able to estimate the elevation closely enough to bring the sleeve within their field of vision, as long as they have an azimuth to search on, and easily locate the target.

The "Pogo Stick" also provides a quick and convenient means of checking the pointing data computed for O₂ prior to firing calibration or trial fire problems. Inexperienced range officers occasionally make errors in these computations, but the "Pogo Stick" reveals the mistake at once.

This simple instrument could be elab-

orated to have the base line and azimuth circles adjustable so that it could be readily adapted to any AAA range. It could also be machined with such precision that O₂ pointing data could be taken from it directly and lengthy computations avoided.

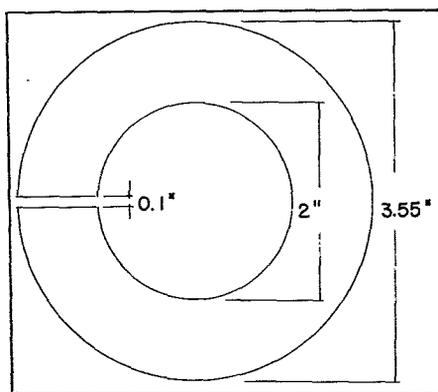
Another scoring aid improvised for the Katakai Range was a bore plug of plexiglass for scoring the emplacement test. Under the scoring system outlined in TM 44-234, October 1952, the umpire must determine whether the target is carried in the inner one-half bore radius or outer one-half bore radius of the gun tube.

The bore plugs, for both 90mm and 120mm guns, were made in the shape of a flattened doughnut, with the center hole the exact size of a circle having a radius equal to one-half of the bore radius. The outside diameter of the bore plug is slightly larger than the muzzle of the gun tube, and a ¼ inch gap is cut completely through each plug. This permits it to be compressed slightly when being inserted in the muzzle end of the tube, and expansion holds it firmly in place.

The umpire then has a clear hole for viewing targets carried within the center one-half of the bore radius, and targets carried in the outer one-half will be viewed through the plexiglass.

Gun batteries of the 138th AAA Group firing at Katakai Firing Range are thus assured of minimum delay due to the O₂ station failing to find the sleeve, and of a fair score on the emplacement test phase of the service practice. Guesswork on this part of the scoring is totally eliminated.

Bore Plug 90mm



WRITE FOR AND SUPPORT YOUR JOURNAL

RADAR CAMOUFLAGE

By LT. COL. LEONARD M. ORMAN

IT was inevitable that with the firm establishment of radar in the family of military detecting devices, considerable thought should be given to means to thwart this instrument. Both active and passive measures have been used. The active measures consist of some method of creating signals on the scope of the radar, either to hide the real signal or to create a deceptive signal. The hiding of the true signal is called JAMMING. This may be done either *electronically* or *mechanically*. *Electronic jamming* is accomplished by the transmission of modulated radio signals. *Mechanical jamming* is performed by dropping window or some similar substance. The active measures, by this date, are well known to radar operators since instruction in them is included in all radar courses. (See "Radar Countermeasures"—*Coast Artillery Journal*, Sept.-Oct. 1946.)

Passive Measures. However, little has been published about passive measures. These have two general categories, *evasion* and *camouflage*. Evasion consists of tactics that are designed to take advantage of the limitations of radar to prevent or postpone radar detection, or to avoid revealing the true position of an attacking force. If attacking planes take evasive action it may be impossible to determine the height at which they are flying or the planes may be detected too late for an adequate defense to be made ready. It is common practice for planes to approach "on the deck" thus exploiting both the poor low coverage of low-frequency, long-range radars and limita-

tions of coverage imposed by curvature of the earth.

Camouflage. Camouflaging a target consists in finding a means of reducing the radiation returned to the receiver of the radar set which illuminates the target. This radiation may be either absorbed or reflected away from the radar. Both methods of camouflaging have been considered.

Absorption of incident radiation may be accomplished by a "paint" (which more nearly resembles linoleum in its mechanical properties). Such paint is sensitive to wave length, so that in general only one band of radar frequencies can be effectively nullified. Physical limitations on a reasonable thickness for this absorbent coating indicate that it would be useful in only the microwave region (about 10cm or less).

During the war the Germans used an anti-radar coating on their Schnorkels. Their material was about $\frac{3}{4}$ " thick and reported to be effective at both S- and X-bands. Comparison of the radar signals from the coated and uncoated sides of an object showed that this paint is effective in reducing the strong broadside signal but that it does not reduce the signal at angles more than a few degrees off broadside.

It is doubtful if such material will be used on airplanes. The speed and range of aircraft would be considerably reduced by the application of paint this thick. Then too, as indicated above, even with the anti-radar coating the aspect of the target plays a large part in the size of the echo. Since aircraft change aspect much more than surface vessels, the reduction of echo from a plane by the application of an anti-radar paint is extremely dubious.

In general, the use of anti-radar paint may prove useful in some special applications, but its rather critical dependence on wave length and angle of incidence, and its present limitation to the microwave region, make its general use for camouflage of doubtful value. A com-

bination of anti-radar paint and shaped surfaces might be used.

Effect of Shape on Reflection. Both aspects of this problem are of interest, i.e., *increasing* a radar echo and *decreasing* a radar echo. There are many applications of devices which have been

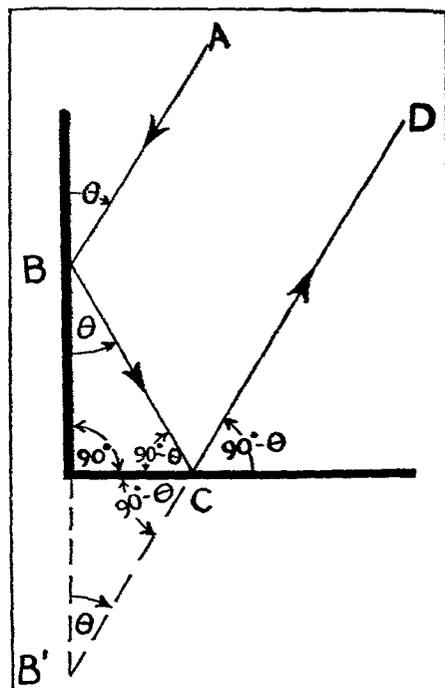


Figure 1. Illustration of basic principle of corner reflector.

built to deliberately give good echoes. Corner reflectors are being used to provide good echoes from meteorological balloons, from AA targets, as aids in locating rafts at sea, as orienting devices for radars, as markers for channel buoys and obstructions to marine navigation. The principle used is illustrated in Figure 1 and is easily understood. Other devices such as the use of metal mesh interwoven with cloth materials have been used to increase radar reflectivity.

The decreasing of radar echoes has also been investigated. The energy returned to a radar set by a target may be divided into two types: the *specular reflection*, which occurs at those areas at which the radar beam strikes the target

Lieutenant Colonel Orman has been a frequent author of articles on radar in this Journal since 1944, a number of which (including "Radar Countermeasures") were selected for publication in the Journal pamphlet, Radar. He is also author of the book, *Electronic Navigation*. USMA graduate in 1940, he has attended radar courses at Harvard and M. I. T. and took his master's degree in electronics at Pennsylvania in 1951. He now serves on AFF Board No. 4, at Fort Bliss, as Chief of the Test Group.

surface normally; and *diffraction*, which occurs at the edges of a target. Specular reflection of a radar beam has its optical analogy in the reflection of light by a mirror. If a beam of light falls perpendicularly on a mirror, the light is strongly reflected back toward the source. Optical diffraction may be observed by holding a razor blade in a beam of light; the edge of the blade will appear as a bright line.

Specular reflection, which accounts for much of the radar signal from ordinary targets, may of course be eliminated by

simply tilting all surfaces away from an incident beam (if possible). The remaining part of the signal (that due to diffraction) may be diminished by "rounding off" all the edges of a target.

In conclusion it may be said that a great deal may be done to diminish the radar echo of targets, thereby reducing their range of detection. It appears unlikely, however, that much will ever be done to decrease the range of detection of aircraft. The anti-radar paint used by the Germans on their submarines was

quite thick and would affect considerably the range and speed of the aircraft. One most effective defense against this subterfuge is the use of a multiplicity of radars on widely separated frequencies since this anti-radar paint is a function of frequency. Planes present a constantly changing aspect to a ground radar set, hence little can be done about changing the angle of incidence of radar rays. Furthermore, flight characteristics are of paramount importance in the design of aircraft.

CAPTAIN CANNON TAKES OVER

**Lieutenant Bright and Sergeant Gunner found
that old Captain Cannon was no smoothbore.**

By CAPTAIN BENSON E. BRISTER

NRI Department, The AA and GM Branch, The Artillery School

I REMEMBER the day old Captain Cannon took over Battery B in our 90mm gun battalion. He didn't look too sharp but you could tell he was strictly regulation. His brass was shined and so were his combat boots. The way he walked was military but suggested ease and power. He reported to the battery on the second day of its second service practice firing. After meeting the officers and some of the men, he told them to go ahead and said that he would just observe.

Captain Cannon was relieving Lieutenant Bright who had been the BC since the training started and it was with some resentment on Lieutenant Bright's part that he had to give up his battery. Lieutenant Bright was proud of his accomplishment; the battery was really a sharp outfit.

During his first day of observing the battery, Captain Cannon asked a few questions but kept out of the way. That night he asked Lieutenant Bright to assemble the officers and key noncoms. He made a very short talk about taking over and then said he would like to discuss

some AA problems and test the general knowledge of the officers and noncoms. At first this sounded like he was going to pick the battery to pieces, and one could almost feel the resentment, but this didn't last long. Within an hour there was a different attitude, and everyone was glad to know old Captain Cannon would be around. We all formed a circle and the discussion began—

Captain Cannon—"Why did we rough-level with the gun tubes elevated?"

Sergeant Gunner—"Because it is much easier to turn the jack handles with the gun tube elevated because the weight is balanced."

Captain Cannon—"Correct. Why did you check each fuze?"

Sergeant Gunner—"Because they need to be set exactly on safe, and frequently need restaking."

Captain Cannon—"Correct again. When you were preparing the ammunition for firing why did you remove the firing mechanism and preload each round by hand-ramming?"

Lieutenant Bright—"We have found

so many large rounds that cause stoppages that we preload every round. We remove the firing mechanism so there won't be an accidental firing, and hand-ram so the round will not become stuck in the chamber or bore."

Captain Cannon—"I noticed that the gunners removed their hands from the firing lever after firing each round, is that for safety reasons?"

Lieutenant Cantel—"No, although it is a safety precaution it is primarily to insure that the gunner does not try to fire before the gun is fully in battery. Many of our men thought they would increase the rate of fire by holding the lever so that it would trip the firing mechanism on the way into battery, but this only caused a stoppage at a critical time, and the firing mechanism had to be recocked in order to fire the round. Our rate of fire is just as fast now, and we have no more stoppages from this cause."

Captain Cannon—"I wonder how many gunners know that. I noticed that the gun generator operator did not stay with the generator at all times, is that wise?"

Lieutenant Bright—"No, it isn't. I will correct that because a generator can be ruined in a very short time if something goes wrong and there is no operator present to stop it."

Captain Cannon—"What method of orientation do you prefer?"

Lieutenant Bright—"The known datum point (KDP) method has the advantage of speed because the guns and fire control equipment can be oriented at the same time and independently of each other. Also there is less chance of an error. However I personally like the backsighting method because you don't have to obtain data to the KDP, and it is possible to backsight when weather conditions prevent the use of the KDP or celestial body methods. This battery can use either method accurately but it took a lot of training to become proficient in all three methods."

Captain Cannon—"What is the horizontal plane?"

Sergeant Range—"The horizontal plane is a flat surface that is tangent to the earth's surface only at the reference point (radar site). This is the base or bottom of the rectangular coordinates that the computer uses to solve the AA problem."

Captain Cannon—"Do AAA computers correct for curvature of the earth's surface?"

Lieutenant Cantel—"No, the horizontal plane or flat surface is the basis for computations."

Captain Cannon—"Why is it absolutely necessary to group guns?"

Lieutenant Bright—"If there was only one gun in a battery and we knew the developed muzzle velocity (DMV) for that gun and ammunition lot, there wouldn't be any problem. However, since we have four guns, we must not only know the DMV to set into the computer (battery DMV), but we must have guns which develop a muzzle velocity as near the computer setting as possible. That is why we group guns by velocity."

Captain Cannon—"I see what you mean, but would you explain what would happen if we had a battery DMV of 2,700 f/s where two guns of the battery developed 2,720 f/s and the other two guns developed 2,680 f/s?"

Lieutenant Bright—"First let's take the situation where no fuze calibration corrections are used. If all guns fired at the same instant, the 2,720-f/s projectiles

would burst at some distance beyond the predicted point. The 2,680-f/s projectiles would burst at the same instant but at some distance short of the predicted point. None of the fire would be effective. Now let us say we used fuze calibration corrections. For the 2,720-f/s projectiles the burst may be at the predicted point but before the target arrives and therefore ineffective. With the 2,680-f/s projectiles, the burst may also be at the predicted point but after the target has passed and therefore ineffective. Now let's suppose we have used VT-fuzed ammunition—The 2,720-f/s projectiles would have passed before the target arrived, and the 2,680-f/s projectiles after the target had passed. You can see now why there is only one solution to the problem; to group guns by velocity so that they will not vary too much from the computer DMV setting."

Captain Cannon—"Thank you, Lieutenant Bright. You know gun grouping is not a new idea, but it certainly needs a good airing by AAA personnel. You mentioned fuze calibration corrections, and although training literature says they should not be used, I see some batteries still using them. Will you state why you don't use them?"

Lieutenant Bright—"As I pointed out before, it is the time of flight of the projectile that throws it off. You can correct for range with a fuze calibration correction but not for time of flight. When we group guns, the matter of fuze calibration corrections is taken care of because if all guns have approximately the same muzzle velocity there is no need for fuze calibration corrections."

Captain Cannon—"What do you consider the best methods of determining velocity?"

Lieutenant Bright—"The chronograph, velocity fire, trial fire, and other types of velocimeters all can accurately determine velocity if properly conducted and if no errors are made. I prefer velocity fire because we can conduct it whenever the need arises without having to request and wait for outside assistance."

Captain Cannon—"Before we leave calibrations, I would like to know what you think of calibration corrections in azimuth and elevation."

Lieutenant Bright—"We do not use calibration corrections at all. I will tell you what happened to us when we fired calibration fire. When we completed

calibration fire all of the guns appeared to need calibration corrections. This did not sound good to me because all of the guns had approximately the same DMV and I could not see why we should need calibration corrections. We had a meeting of the officers and key NCOs to discuss the results of the firing. It was decided to recheck all of our preparations. We found that each of the guns and the radar was off a few mils in level, and there was a small error in computing the parallax; it was just lucky that the bursts were even in the radar scope.

"Of course we started over and double-checked each step. As for level—we set up plumb lines at 1,600 mil intervals in azimuth, traversed the gun or radar until the vertical hair line was on the plumb line and then elevated from zero—to 900 mils. When the hair line stayed on the plumb line in all four directions we knew the piece of equipment was level.

"To check orientation in elevation we set up the aiming circle on the same level as the guns and read the elevation to the KDP, which happened to be plus 25 mils. Three of the guns had the same elevation to the KDP as the aiming circle (plus 25 mils), but one gun had a reading of plus 21 mils. The readings from the guns were taken from the gunner's quadrant. We had ordnance personnel correct the leveling seats of the gun that was in error.

"After we were satisfied that we had corrected our mistakes we refired calibration fire and found that we did not need any calibration corrections.

"I have learned recently that the AA & GM Branch, TAS at Fort Bliss conducted many tests to determine the validity of calibration corrections in azimuth and/or elevation. So far they have not found a gun which needed a calibration correction."

"I should point out that if a gun has a trunnion tilt (one trunnion lower than the other) this error can not be corrected for by a calibration correction because at zero elevation the correction needed may be one mil while at a higher elevation the correction may be 10 mils or more. The only way to correct this is to have ordnance personnel correct the trunnion tilt.

"The way I see it, Captain Cannon, is that calibration corrections in fuze, azimuth, and elevation are out like wrap leggings, and although people will re-

member them, the only place you will see them is with people who just never get the word."

Captain Cannon—"Thank you, Lieutenant. It is getting late so here is my last question: how much dead time do you set into the computer?"

Lieutenant Bright—"0.6 seconds using

the M20 fuze-setter-rammer; 2 seconds using the M13 fuze-setter and power-ramming; 3 seconds using the M13 fuze-setter and hand-ramming. But don't take these as permanent settings because they will vary with the climate, and the condition and attitude of the men. We have used the stop watch and tried to regulate

the dead time by speeding up the slow guns and crews and slowing down the fast guns and crews so that they will all have the same amount of dead time."

Captain Cannon—"Thank you very much. I am proud of the efficiency and general knowledge of the officers and men of this battery."

CRUSADE AT CAMP STEWART, GEORGIA

ON the night of September 7th, Brigadier General Richard W. Mayo, Commanding General, Third Army AAA Training Center at Camp Stewart, Georgia, addressed the Lions Club in Hinesville on the subject of the moral conditions about Camp Stewart and appealed for their aid to clean up the "dives and honky tonks" just outside the camp gate. His address was reported and quoted in full in the next day's *Savannah Morning News*. By the 9th many newspapers throughout the country had carried the Associated Press dispatch and the *Savannah Morning News* reported that General Mayo had "fired a shot that was heard around the World in his blast at conditions on the fringes of the big Army base in Liberty County." The *London Daily Mirror* had called the *News* for further details. The *Atlanta Constitution* and the Hinesville Lions Club had rallied to the General's support.

For a concise report of the development we quote from *Newsweek*, October 12, 1953:

A General Routs Vice

Liberty County, Ga., a small flat county on the Atlantic Coast between Brunswick and Savannah, has lived up to its name for years. During most of the last decade it has been wide open. At times it has had as many illegal slot machines as registered voters. Occasional clean-up campaigns changed the situation but little—except for the worse whenever Camp Stewart, the big anti-aircraft training post within its boundaries, filled up with soldiers.

Paul Sikes, sheriff for the past seventeen years, was decisively re-elected in 1948 while a defendant in a suit accusing him of allowing illegal operation of



Brig. Gen. Richard W. Mayo

slot machines in the county. Recently he answered an attack on gambling with the explanation that the gambling devices were taxed \$10 a month by the county, that the Federal licenses had been paid, and that the machines had been there for 35 or 40 years. Sikes, a mannerly, winning sort of fellow, is said not to be afraid of the devil himself, as long as he's in Liberty County. And until recently there seemed to be nobody who could challenge him there.

But on Sept. 7, Brig. Gen. Richard W. Mayo, commander of Camp Stewart, made a speech to the Hinesville Lions Club blasting conditions in Liberty County. He said the roads between Camp Stewart and Hinesville "are blighted by dives and honky-tonks. These places flout the law by using barmaids in shorts to serve whisky, and thus seduce the soldiers. The ill repute of an area one-half mile from Gate 1 on Highway 196 is indicated by the nickname 'Combat Alley.'"

On the night of Sept. 9, *Atlanta Constitution* reporter Jack Nelson and a photographer toured some of the honky-tonks described by General Mayo. They found them operating full blast with illegal whisky sales, barmaids, and gambling machines. There were even twelve gambling machines on the courthouse square in the middle of Hinesville. The joints ringed Camp Stewart so closely that a man could stand outside Gate 2 and touch the camp fence with one hand and the nearest dive with the other. Teen-age girls were dealing out whisky in the joints and propositioning soldiers for "entertainment" after work.

The *Constitution* articles set off a series of further charges, denials, rumors of political pressure on General Mayo, and, finally, action. Maj. Gen. Joseph B. Fraser, owner of a Hinesville lumber company and commander of the Georgia National Guard 48th Division, headed a citizens' committee "to get our laws enforced." On Sept. 21, a Liberty County grand jury, including many of the leading citizens of Hinesville, was impaneled. It ended its investigation on Sept. 23, returning 43 indictments, the largest number in the county's history, and a presentment charging that the sheriff "has knowingly failed and neglected" to enforce the state liquor laws. This is the sole charge under which a Georgia governor is empowered to remove a sheriff without declaring martial law.

Reporter's Arrest: The same day, Nelson, *The Constitution* reporter, was allegedly assaulted by one "Slim" Dykes, the 250-pound operator of a tourist court that had been placed off limits by Camp Stewart officers. A mob Nelson estimated at 50 to 100 people muttered threats against him. Later, Nelson himself was served with a warrant charging

him with disorderly conduct. He was freed on a \$300 bond posted by Fraser.

During the days that followed, some members of the grand jury hid out, and the homes of soldiers who had testified before the jury were heavily guarded. The Camp Stewart Provost Marshal, Maj. A. J. Carey, had four guards around his residence day and night.

But last week, after the grand-jury findings and recommendations were sent to Gov. Herman E. Talmadge, a member of the Georgia Bureau of Investigation served Sheriff Sikes with an order to "show cause" why he should not be removed. The governor himself planned to preside over a hearing of Sikes scheduled for this Wednesday.

✓ ✓ ✓

General Mayo's address to the Lions Club, as reported by the *Savannah Morning News*, was as follows:

"What I shall say this evening stems from two factors. One is my responsibility as commander of troops at Camp Stewart—the other is a father's interest in his son, who I am sure will some day be drafted or undergo training through the Universal Military Training Program.

"Thirty years ago, I entered the Army as a private. In 18 months I had taken the necessary examinations and entered West Point. Four years later, I was commissioned in the artillery and was sent to Fort Bragg, N. C. For the next 10 years, I was a lieutenant—generally in mounted organizations. It was during that period that I was indoctrinated with the principles which I now champion. I was told that the first thing a soldier did before he took any action to care for his own personal needs, was to groom, water, and feed his horse; that before an officer took care of his own personal needs, he saw that his men were fed and were properly bedded down; that as a commander of any unit, a platoon, or battery, or larger, I was responsible for the health and welfare of my men. I had to interest myself with their problems, pat some on the back, punish others, watch out to see that they did not

become sick on marches and maneuvers because of their being inexperienced, and in general, to be the transplanted parent of each and every one of them. This I have tried to carry out throughout my service in peace or in war.

"The second factor which enters into this talk is that as a father, I feel that Army camps should be run in such a manner that the inductee or recruit is given at least the same moral and religious atmosphere that was available to him in the home and community from which he came. As a father, I want to know that my boy is being looked after by some discerning officer who will give him sound advice which I might give if I were there.

"We who are stationed at Camp Stewart come from every state in the Union. Some of us have been in the Army for years and have lived in every section of the United States and many foreign countries. Others have just been drafted and are taking their initial training here. For many, this is the first time away from home and the security of parents, church, and community. It is important that the troops feel welcome in the neighboring community, and that the community provide for their religious, moral and physical needs. When moral pitfalls exist, the progressive community eliminates them, remembering that their sons may be faced with the same temptations near another camp. How many of the better people in this vicinity have checked on the honky tonks between Hinesville and Camp Stewart to see what goes on? Blinding oneself to the situation will not clean up a condition which is as detrimental to the morals of the community which tolerates them as to the soldiers of Camp Stewart. Being a good soldier is being a good citizen and includes respect for law and order, having a good character and a high standard of ethics. How much do the surrounding communities of Camp Stewart aid the average soldier in his formative, impressionable years? In his movements from camp to town, what greets him on Memorial Drive and some of the other exit roads?—a landscape blighted by garish whisky signs. The low repute of an

area one-half mile from Gate No. 1 on Highway 196 is indicated by the nickname of Combat Alley. Realizing the seriousness of world conditions, it is time that parents and all law-abiding citizens take a personal interest in the condition existing near some of our military posts where their sons eventually will be stationed.

"Military commanders are interested in the health, welfare, and living conditions available to their men. One of the most important programs of the Army today is that of character guidance. Character guidance councils are active at all levels at Camp Stewart from the battery to post headquarters, and I personally attend the latter. Every idea which might help the soldier improve his mental and moral outlook on life is studied and those that are good are implemented. But our work in moulding character is severely handicapped when 'dives' and 'honky tonks' are allowed to flourish just outside the boundaries of the camp. These places flout the Georgia law by using barmaids in shorts to serve whisky and thus seduce the soldier.

"I am serious in my endeavor to make Stewart and its facilities so necessary to the Army that it will become a permanent post. It would seem that the citizens of Liberty County, realizing that their future prosperity may well depend on the permanence of the post, should cooperate fully in making the county morally attractive to the Army. * * *

"Very soon, 250 families will be living in the new housing project at Camp Stewart. Children from the camp will attend schools in Hinesville. Their parents will patronize Hinesville business establishments. Will they grow indifferent to the disturbing influences near Camp Stewart, or will they ask for a compassionate transfer and later advise their friends against being stationed here?

"I feel strongly that the citizens of a state whose heritage is as glorious as that of Georgia should be alerted to this danger. We at Stewart are anxious that wholesome influences are provided in the area surrounding the camp. Only through cooperative community action can this be accomplished."

DID YOU LET US KNOW YOU MOVED?

Notify the Journal of Your Address Change

ASSIGNMENTS OF OVERSEAS RETURNEES

By **LT. COL. HERBERT T. CONDON, JR.**

Infantry Branch, Career Management Division

I JUST got my new ZI assignment, and darned if I'm not being sent halfway across the country. Why can't those people ever assign me near home?"

That is a typical wail; so, this article will tell you something of what goes on in your Career Management (CMD) branch when you are reported available for an assignment in the United States, after you've had a long, tough stint overseas. All officers should realize that there must be a tie-in between three important factors—the officer's wishes, the development of his career, and the requirements for officer personnel in the major CONUS commands.

Here is how you are picked for your new post. About four months before you complete your overseas tour you are reported for reassignment by the overseas commander to the Department of the Army. Your career branch then consults your Form 66 to determine what civilian and military education you have had, what MOS's you are qualified in, where you have been assigned in the past, and a variety of other pertinent facts concerning you. It is still an axiom in the service that "the needs of the service must be considered first," although Career Management tries to assign an individual as closely as possible to his area of preference. Assignment officers must consider many factors. For example, if you are 1st Lt. Brown, an Infantry officer, and most of your time in the service has been spent as an Athletic Director, MOS 5661, it would not be logical for us to assign you to a unit near your home town as a National Guard Organization and Training Advisor, MOS 2150. You aren't qualified for that duty. But you may be assigned as a platoon leader (Armored Infantry Unit Commander, MOS 1560) in order to make you a better infantryman. Or, if you are primarily an Artillery Unit Commander, MOS 1193, and you are needed at Fort Sill, Oklahoma, it would not make sense to assign you to Fort Dix, New Jersey as an Information and Education Officer, MOS 5004, just because your home is in New-

ark and there is a vacancy for an I and E officer at Dix. If in the latter case, however, you had had a good amount of experience in both MOS's, you might very easily be assigned to the vacancy which coincides with your desires. And so it happens frequently. But, human nature being what it is, we seldom hear about that.

MANY of you desire to attend your branch school for one course or another, and you note this fact on your Preference Card. If you are qualified, some of you will wonder why you don't get to attend school on a TDY basis, en route to your new assignment. You know full well that going to school TDY en route is the most economical way to go, and we know it, too. But the time element is very important when we talk about schooling. For example, if you are forecast for return in September and the class you should attend doesn't start until 4 January, it is out of the question to order you to school 45 to 90 days early. You will have to go directly to your next post, and apply for the school at a later date.

Believe it or not, an officer's preference card is consulted prior to each assignment and, whenever consistent with the requirements and with the qualifications of the individual officer, he is assigned according to his preferences. In fact, your statement of preference is considered so important by CMD that a new form is being designed which it is expected will render greater assistance to assignment personnel, and will facilitate the proper expression of preference by officers.

Always remember that there are six Army Areas in the United States, each of which has submitted a requisition to CMD branches for officers they need by grade, branch, and MOS. In addition, there are requisitions from Chief, Army Field Forces, Military District of Washington, and staff sections in the Pentagon. It is through these requisitions that those in the Personnel assignment busi-

ness know what officers are needed at what posts, at what time, and in what MOS.

Here we should mention another important factor—priority of needs. Each requisitioning agency lists its requirements on the requisition according to the immediate need for a certain position, and we try to heed that priority. Closely allied to this priority is the fact that some jobs require a higher degree of skill and experience than others. For instance, we would hardly assign a young Lieutenant with only a high school education to fill the requirement for a college ROTC instructor.

The assignment business is not arbitrary. The officers in CMD have hearts, and if they know what you want they may be able to get it for you. But they can't read your minds. Be sure your Preference Card states your desires clearly. If you aren't sure what you asked for on your old card get a new one from your adjutant and mail it to the Chief of your Branch. If necessary attach a note setting forth clearly any compassionate or special consideration. [Colonel D. D. Martin is Chief of the Artillery Branch.—ED.]

Coordination With The Infantry

(Continued from page 11)

by the S3 of the supported infantry battalion; and it is the S3's prerogative to request movement of the platoon, or single tracks, any time he deems such action may increase effectiveness. Once positioned, the platoon leader operates primarily through the liaison officers; there platoon fire is set up. The details involving fire control are worked out with the forward observers. And tying in all, there must be an efficient communication system, properly laid and carefully maintained. Thus, the effectiveness of the platoon depends principally on the platoon leader's efficiency in coordinating his action through supported infantry and attached artillery.

ASSIGNMENT OF AAA OFFICERS IN AFFE

By **LT. COL. R. R. COREY**

Assistant G1

THE company grade officer ordered to AFFE will in all probability receive a troop assignment if his MOS so indicates. The majority of these officers will go directly to Eighth Army, with some of their number attending short term schools in Japan prior to this assignment. There is a limited requirement for company grade officers for troop units in Japan and Okinawa and a portion of those assigned to FEC will go directly to these units; however, second lieutenants who have not yet completed 90 days as a platoon commander, and are so designated on DA orders, will receive a 90-day period of training with AAA Units, usually in Okinawa, and then be re-

assigned on the same basis as other company grade officers.

Field Grade Officers

As with captains and lieutenants, the bulk of the field grade officers are assigned to units in Korea. However, there is less assurance of obtaining a troop assignment for them. Some of the field grade officers who have had a staff background, graduates of C&GSC and others with staff experience, are needed to fill staff requirements for combat and support organizations in Korea. A small number of field officers are selected for direct staff assignment in Japan and Okinawa; however, field grade officer

requirements for these areas are generally filled by intra-theater transfers, in the same manner as with company grade officers.

Intra-Theater Transfers

After serving 10 months in Korea, military personnel may request an intra-theater transfer to Japan or Okinawa. Such requests are approved providing there is a suitable assignment available for the individual. Requests may be submitted 45 days prior to completing the 10 months in Korea, and must contain a statement that the applicant will serve an additional twelve months in the area of new assignment.

MAGGIE'S DRAWERS

By **LIEUT. COL. EDWARD D. LUCAS**

Armor

It's Range Day and Maggie's Drawers are flying everywhere and no one seems to know why. I think I can tell you why and I'll also give you a sure cure to keep those flags from waving so profusely.

First of all if a man cannot make a triangle with a sighting bar and if he cannot squeeze a trigger which can be proved by the dime trick (see below) then it is not time to take him out on the rifle range. However, let's say that he can do both of the above and we now take him out to the range. He should be allowed to shoot only at a black dot on a white background just to see if he can make a decent shot group. Nothing more, and **DO NOT LET HIM TOUCH THOSE SIGHTS!** Now if his shot group comes within a decent circle we'll let him go on to familiarization. If he cannot, then he is not ready to go on and why some people make him go on and shoot more is beyond me. It is the easiest way in the world to insure that the newcomer never will learn to

shoot and will come to hate the sight of the rifle. Take him aside or even back to camp and give him some more triangulation and squeeze until he is ready for another try.

Again he goes back to the range and again he must make a shot group which is passable. If he doesn't then it will be necessary to work harder on the fundamentals for a few but at the same time not slowing down the whole group for a few. However, let's say that his shot group is now acceptable and he moves on to familiarization and record.

To this final phase I have what I believe is my strongest recommendation. Every coach must be required to sign his name to the bottom of each score sheet indicating that he is responsible for letting the student move the sights in the direction they were moved. That night the company commander calls in each student together with his coach and has a critique, with the score book in front of them. Now try this for improvement of scores.

The Dime Trick—for Trigger Squeeze

The first step is to obtain an M-1 rifle, for this trick will not work on any other kind of weapon. If there are none in the outfit then it is worth borrowing some for the training season. Next cock the gun and place a dime on the muzzle of the piece, just ahead of the front sight making certain not to have the dime touching any part of the sight. At this time the student is told that if he properly squeezes the trigger at the off-hand position (standing) then the dime will not fall off.

The trainee then concentrates on nothing but the trigger squeeze which is the goal desired. He may show more interest if the dime on the muzzle belongs to him and it is understood that if it falls off he loses it but that if he manages to make it stay up then he will receive an extra dime in addition to getting his own back.

Public Relations In Dearborn, Michigan

By *PRIVATES FIRST CLASS KEITH FELCYN and HARRY ROER*

AN appeal to the community for shoe scrapers may seem like a feeble start for a large-scale public relations program, but for the Headquarters—Dog Battery site of the 504th AAA Battalion, Detroit, Michigan, it was the beginning of a program which vastly improved both the site and the morale of the troops.

In a matter of weeks the near indifferent attitude of suburban Dearborn, where the site is located, became a firm feeling of friendship and cooperation with the batteries.

The program has paid off handsomely. From one of the muddiest and most miserable installations in the Detroit defense network, the batteries have literally pulled themselves out of the mud and now boast of dry, livable sites with a consequent overall betterment of morale.

When the unit moved to the site and made a semblance of permanency by putting up tents, the Civil Defense Director made a move to contact the "settlers" on his own hook. He was rebuffed, being told that it was a "top secret" installation and that the city had no jurisdiction over it.

The negative situation prevailed until one muddy day late in February, 1953, when Major John A. Elledge, then the Executive Officer, made his appeal to City Hall for shoe scrapers and other aids in establishing mud control measures.

That seemingly insignificant request sparked the initial contact and set the battalion's positive program of Public Relations in motion.

A friendly chat by the genial Major with the Mayor's assistant resulted in the assignment of a liaison representative to work between City Hall and the

504th. Mayor Orville L. Hubbard, his secretary, and the appointed representative, Mr. George Martin, returned that same day to the Headquarters and Dog Battery site for dinner and a tour of the base.

The following day Mr. Martin brought the head of the Dearborn Chamber of Commerce, the staff of a local radio station, and a Dearborn newspaper editor to the site to become acquainted with the problems of the battalion. It was during the tour of the battalion that arrangements were made for Major Elledge to be interviewed on local radio station WKMJ to explain the mission of the AAA in the Detroit area and to request the community's aid in making the sites more comfortable. A local businessman donated as much of his daily radio time as the Major felt he needed and offered similar assistance to the Army in the future.

Next a meeting of the City Engineers and Army personnel was held and a program for improving the Dearborn site

was formulated. It was decided that the number one project should be the roads, motor pool, and parking lots. Major Elledge and Mr. Martin contacted the Edward C. Levy Company, contractors, and spoke to Mr. Harris, vice president, who agreed to donate 200 tons of coarse slag to form a bed for the road.

The city contributed a grader and operator to spread the slag while the Levy Company got in touch with Great Lakes Steel Corporation and obtained permission for Army trucks to haul slag five hours per day from the steel mills. Since the Levy Company is paid on a ton basis for removing the slag, permission was necessary for Army trucks to haul it.

Clippert Brick Company agreed to donate 100 tons of broken brick to be used as a base for the motor pool. And when Mr. Levy returned from a vacation, he increased the initial donation of slag from 200 to 2,000 tons and added a bulldozer and operator to work weekends on leveling the motor pool.

The total amount of slag and fill do-



Major John A. Elledge explains the operation of the 90mm AA Gun to four inquisitive boy scouts and their scoutmaster, Dearborn official George A. Martin.

The article prepared by Privates First Class Felcyn and Roer of Headquarters Battery, 504th AAA Battalion, is indicative of the overall public relations program of the 28th AAA Group in Detroit. Similar activities are currently sponsored by other units of the Group. Detroit and its outlying suburbs have responded magnificently to these overtures. In fact, men in uniform attend baseball and football games free of charge, ride trolleys and busses without payment of fare and attend theatres only for the cost of taxes.

nated by Great Lakes Steel, Ford Motor Company, Edward C. Levy Company and Clippert Brick was more than 40,000 tons.

An important step in the development of the public relations program was the establishment of the Joint Civilian Military Advisory Council (JCMAC).

Early in March Captain Autrey B. Harmon of the Dearborn Marine Reserve was invited to inspect several sites of the 504th. Captain Richard T. Hart, then battalion S3, mentioned that he had difficulty getting slides and a projector for aircraft recognition classes. Captain Harmon said his unit had such material and that he would gladly lend it to the 504th. Captain Harmon further suggested that representatives from the Dearborn Naval and Air Force Reserves be invited to the Marine base and that possibly all branches of the service in the area could pool their equipment.

This was the beginning of the JCMAC.

Mr. Martin, the liaison man from Dearborn, talked to representatives of the different services, the Director of Civil Defense, members of the USO and the Red Cross and invited them to a meeting. The first get-together of the representatives of the civilian and military organization was held 16 March at Headquarters of the 504th and the name Joint Civilian Military Advisory Council adopted.

As an inter-service coordinating body, the JCMAC carries out the Armed Forces unification program on a grassroots level. The lending of the Aircraft recognition equipment referred to is typi-

cal of the reciprocal dealings effected by the council. In return for this equipment, for example, the 504th furnished a number of vehicles to the Dearborn Reserve Units for their Memorial Day celebrations and for trips to their summer training camps.

No longer is there a competitive struggle for material from local organizations, because donations of slag, lumber, furniture and similar supplies and equipment are now channelled through the JCMAC and shared by all the military organizations.

In return the 504th performs various civic functions for the citizens of the area, such as furnishing firing squad details for military funerals conducted by local veterans' organizations. And the JCMAC aids in the planning and scheduling of blood drives and similar public-spirited undertakings, substituting cooperation for duplication of effort.

A typical project of the council was the 504th's Blood Drive and Open House held on 22 June of this year. The JCMAC obtained the cooperation of many civic and military groups, such as an Air Force Band from Selfridge Air Force Base, tents from the Boy Scouts of America, airplanes for fly-overs from the Navy, and volunteer helpers from the Red Cross, as well as lining up donors from all military installations and the civilian population.

Unique in its non-official capacity, the council makes no "official" decisions; participation is strictly on a voluntary basis—members attend meetings and work for the council on their free time. Although nothing in violation of mili-

tary or civil regulations can be undertaken, the council is not hamstrung by red tape.

In summary, the 504th AAA Gun Battalion, as indeed most other on-site AAA units, was in need of establishing a sound public relations program as its proximity to populated areas virtually made it an integral part of the community.

It was felt that good community relations would effect a dual purpose. In the first place, by gaining the friendship and cooperation of the community, it would minimize the friction that might arise from the presence of barren Army encampments in attractive residential areas; secondly, it was necessary to solicit the aid of the community to improve the physical condition of the sites and the morale of the troops.

It was found that the civic administration welcomed the request for aid from the AAA as offering the public a means for exhibiting their patriotism.

Moreover, organized requests for material and aid through a coordinating JCMAC were seen to be a better method of approaching business and civic organizations than a program composed exclusively of scrounging.

Thus by establishing a civilian-military council to handle the critical problems of public relations and by making the individual enlisted man aware of these problems and of the importance of his personal behavior to the overall program, both the physical condition of the site and the comfort and morale of the soldier have been improved.

Camp Claybanks Firing Point

By 2d LT. DONALD D. ELLIS

Battery D, 99th AAA Gun Battalion

RECENTLY a new Antiaircraft Artillery firing point was established at Camp Claybanks, Michigan, on the scenic shores of Lake Michigan, approximately 35 miles north of Muskegon. The surrounding area is a nationally popular summer resort where many picturesque lakes are located.

This new firing point was heartily

welcomed by all antiaircraft commanders within the Michigan area as it shortened the travel time to the range. The range is also used by the National Guard and the Reserve. Units of the 28th AAA Gp around Detroit now easily drive to the range and get well started in one day.

The first Antiaircraft battery to use the new range was Battery D, 99th AAA

Battalion. Lieut. William H. Gowan, Battery Commander, and all the rest of us liked it from first sight. Good firing range, convenient, and located in a delightful community. Of course, we were in the field. However, facilities for mess halls and squad shelter are being constructed. We had shower facilities through the aid of the 588th Quarter-

master Bath Company.

Recreational facilities for troops on the range are superb. It didn't take the officers or men long to find the dancing at a local Dude Ranch, where there were plenty of attractive girls who also liked to dance. Then there was golf, fishing for those who like to catch bass, pike, perch and catfish, boating in many nearby lakes, many small beaches for

swimming and sun bathing. And for those with a different taste, at the camp itself a movie is shown three times weekly and volley ball courts have been constructed.

The firing line provides hardstand aprons for eight AA guns, and immediately behind each set of four, there are hardstands for gun laying radars. The firing is over Lake Michigan where the

commercial shipping normally passes out beyond gun range.

The battalions of the 28th AAA Group now keep the range busy. Colonel John G. Turner, group commander, has the plans set to use it well into the winter until every battery has demonstrated some high powered shooting proficiency in the freezing weather on Lake Michigan.

UNIT ACTIVITIES

HEADQUARTERS, ARMY ANTI-AIRCRAFT COMMAND

Colorado Springs, Colorado

Lt. Gen. John T. Lewis, Commanding

Colonel John T. Snodgrass, presently ARAACOM Chief of Staff, and a veteran around this headquarters since the early days, has received orders for Armed Forces Far East, to depart the latter part of December.

Major Leroy M. Ludwig will join the headquarters in January from ETO.

HEADQUARTERS, EASTERN ARMY ANTI-AIRCRAFT COMMAND

Brigadier General Frederick L. Hayden, Commanding

Stewart Air Force Base, Newburgh, N. Y., recently became the physical home as well as the post office address of Headquarters, Eastern Army Anti-aircraft Command. The move was made in September from rented quarters in nearby Middletown, N. Y.

Present key personnel at EASTARAACOM are Colonel Albert G. Franklin, Jr., Deputy Commander; Colonel Richard H. Comstock, Chief of Staff; Lieut. Col. Lee M. Kirby, G1; Major John A. Paddenburg, G2; Colonel Kimball C. Smith, G3; and Lieut. Col. Ervin H. Shumate, G4.

New additions to the staff include Lieut. Col. Maurice J. Palizza and Lieut. Col. Shumate, both from Okinawa; Captain Edward F. Moseley, from Korea; Captain Lawrence J. Howard, new EASTARAACOM Radar Officer, from the AA and GM Branch, The Artillery School; First Lieut. John R. Pirc, just back from Germany; First Lieut. Floyd

F. Hughes, Jr., back from Japan; and First Lieut. Paul E. Joyce, recent graduate of The Artillery School.

Recent losses to the EASTARAACOM staff include Lieut. Col. George F. Pindar, to command the 13th AAA Group at Camp Stewart, Georgia; Lieut. Col. William E. Holmes, to the Command and General Staff School; Major Paul S. Burger, Major William Lowe, and Captain Robert W. Ryan, all transferred to the Far East; and Captain Richard H. Dolson, Sr., now attending the Finance School.

HEADQUARTERS WESTERN ARMY ANTI-AIRCRAFT COMMAND

Fort Baker, California

By 1st Lieut. B. M. Berkowick, Acting G1

Colonel Daniel A. Ranney, former Chief of the AA Staff Section at Western Air Defense Force, departed in October for duty as Chief of the U. S. Military Assistance Advisory Group in Ecuador.

Colonel George R. Carey recently arrived from Japan where he served as Deputy G3, Eighth Army, and Commanding Officer, Camp Chickamauga successively.

Colonel Perry B. Priest is expected to join soon from the Office of the Secretary of the Army.

Also expected shortly is Lieut. Col. Benjamin M. Warfield, returning from the 45th AAA Gun Battalion in Germany.

Lieut. Col. Wiley F. Shaver, Jr., former AC of S, G1, left the headquarters in September to attend Command and General Staff College at Fort Leaven-

worth, Kansas.

Your reporter leaves in November to attend a Field Artillery Transition Course at Fort Sill before reporting to Camp Kilmer for overseas movement.



Col. Walter H. Murray, 30th AAA Group, presents "Best Battery" trophy to Capt. Francis J. Gramlich, CO, Battery D, 752nd AAA Gun Bn. Battery D won the trophy in September for the fourth time.

31st AAA BRIGADE

By Capt. W. F. Hewes

Brig. Gen. E. F. Cardwell, Comdg.

Major Edward Strongin, our S4 who recently joined from the Third Infantry Division, has since been decorated with the Bronze Star Medal for his service in Korea.

Major Lawrence J. Burger has joined the 5th AAA Group, Camp Hanford, Washington, and assumed duties as Group S4 from the Second Infantry Division FECOM.

Captain Eugene E. Powers has joined the 5th AAA Group from the 21st AAA AW Battalion and assumed duties as Group Adjutant.



The 32nd Army Band passes the reviewing stand at the Brize Norton A. F. Base in October when the US Army and the US Air Force combined forces to stage the review. Troop Commander: Lt. Col. Benjamin McCaffery, CO, 92nd AAA AW Bn.

The 10th AAA Battalion (75mm), Lt. Col. Samuel May commanding, has moved from Geiger Field to Fairchild Air Force Base in Spokane, Washington.

32nd AAA BRIGADE

*Col. Metticus M. May, Commanding
By Lt. Jack D. Peavy, PIO*

The Brigade Headquarters completed its move to its new location at Bushey Hall, Bushey, England on October 1st, when a special flag raising ceremony was held, at which Colonel May was host to Brigadier Blacker of the British AA Command, the mayors of Bushey and nearby Watford, and a number of other distinguished friends.

The 32nd Army Band from Brigstock, the Brigade's U. K. School Center, played for the ceremony, during which Colonel May took occasion "to express the sincere appreciation of our military personnel and their families for the enthusiastic welcome and friendly hospitality extended to us by the people of the nearby communities."

After the ceremony the guests joined Colonel May and his staff for a tour of the headquarters area and for tea and refreshments.

Colonel Ramon C. Dougan recently joined from the Naval War College, Newport, Rhode Island.

Lt. Colonel Robert H. Johnston from the 45th AAA Brigade and Major Quellen D. Boller from the Advanced Course at the Artillery School recently joined our S3 Section.

The Brigade will shortly lose Lt. Colonel Samuel E. Baker, CO, 6th

Chemical Battalion, who will be replaced by Lt. Colonel LaMonte A. Tucker.

34th AAA BRIGADE MG SCHOOL

The 34th AAA Brigade, Mannheim, Germany, Colonel Olaf Kyster, commanding, has just completed the AAA machine gun training of 4,000 gunners from non-divisional and non-AAA units in the Seventh Army. The planning started in June when Major Harold W. Gwinner and Captain Walter F. Pont of the Brigade staff were designated as the School Commandant and Executive.

The School was set up in August at Hohenfels, Germany where a suitable firing range, buildings, and other facilities were available. The 15 battalions of the Brigade furnished some 300 officers and men to make up Major Gwinner's

training and administrative staff. Lieut. F. W. Scheper, 7th AAA AW Bn, was the Adjutant and mess officer. Lieutenants R. F. Coady, L. V. Larsen, B. A. Manly, T. R. Callahan and R. O. Barrick commanded the five training batteries. One hundred caliber .50 guns and M63 mounts were furnished by the Brigade units.

On 30 August the first group of 500 men arrived, were divided into groups of 100 each and assigned to the five training batteries. Each battery had two platoons, each of which included ten squads of five trainees each. Each group had two days of preliminary and basic training, then three days of practical training on the firing range. Each man fired on three aerial courses with the M63 mount and two from the 2½-ton truck ring mount.

Each group completed its training and was returned to station by Saturday. On Sundays a new group arrived and this continued till eight groups, or a total of 4,000 men, had completed the instruction.

Although most firing was done at a sleeve towed by an OQ 19, some firing was necessarily conducted at the RCAT when the sleeve was lost during launching operations. Courses were flown from left to right and vice versa and were mixed in various combinations. The 53rd RCAT Detachment commanded by Captain William F. Schwab did an outstanding job and utilized two of the most experienced pilots in the business: M-Sgt J. D. Rugherford and Sfc Clair G. Shaw. Approximately 105 JATO takeoffs were effected. Flying a total of seventy-two hours and twenty minutes, the 53rd provided 4,500 firing courses.



Gunner fires at Sleeve Target

Instruction did not cease on the firing line. Assembly and dis-assembly, tracking and adjustments were continued in a rear area on a line of fifty machine guns. In addition one dug-in AA emplacement was constructed at each battery area. Tracking exercises were also accomplished on the firing line by non-firing crews. Each fired course was followed by a critique conducted by the squad leader to point out errors and to get the opinions of other squad members.

The time for training in target identification was limited, but stress was laid on the necessity for fire discipline to avoid tragic fire on friendly planes. Stress was also placed on the cleaning, adjustment and maintenance of the weapons, and most of all on LEAD THE TARGET—LEAD THE TARGET MORE!

General Crichlow

Many changes have occurred in the command structure of the 34th AAA Brigade during the past ninety days. The most important, of course, was the rotation to the United States of Brigadier General Robert W. Crichlow on 14 September to Walter Reed Hospital for observation and treatment. During General Crichlow's tenure as Brigade Commander he had endeared himself to all personnel of the command and his loss has been keenly felt. Colonel Olaf H. Kyster, Jr. is presently serving as Brigade Commander.

Other changes are as follows: Lt. Col. William H. Hubbard, formerly with O & E Div, Com Z, USAREUR to 40th AAA Gun Battalion; Lt. Col. Eugene F. Boomer, former commander of 40th AAA Gun Battalion to the AAA & GM Center, Ft. Bliss, Texas; Lt. Col. Lawrence N. Reiman, Executive Officer, 8th AAA Group to duty with Minnesota National Guard as Advisor; Lt. Col. William Y. McCachern, formerly Chief of Files and Records Div, EUCOM to 8th AAA Group as Executive Officer; Lt. Col. Raymond J. Raffaelli, formerly a staff officer in G-3 Plans USAREUR is now Commanding Officer of the 443d AAA AW Battalion (SP); Lt. Col. Thomas F. Gordan, former Commanding Officer of 443d Battalion exchanged positions with Raffaelli. Lt. Col. Elwood G. Schwartz, former Executive Officer of the 25th AAA Gun Battalion was re-assigned as Commanding Officer of the



34th AAA Brigade firing range, Hohenfels, Germany

63rd Battalion to take over from Lt. Col. Charles F. Coffey, who departed for an assignment with the 31st AAA Brigade at Camp McChord.

Col. Eugene E. Lockhart upon arrival from the Army War College was assigned as Commanding Officer, 12th AAA Group, Col. Calvin L. Partin, the former commander having received an assignment as PMS & T at Utah State College; Maj. Reno Mazzuchi, former S-3, 12th Group is now a student at the Command and General Staff School at Fort Leavenworth, Kansas; Maj. Council P. Rountree, S-2 with 12th AAA Group, is now with the Air Ground Operations School, Ft. Bragg, North Carolina. The latter two positions have been taken over by Maj. Leonard H. Sims, a recent arrivee, and Maj. Joseph J. Wiacek, who moved up from the 552d AAA Gun Battalion. Major Leo Moore, assistant S-3 with 12th AAA Group, has departed for an assignment as AAA Advisor with the South Carolina National Guard. Lt. Col. Paul R. Pigue, Commanding Officer, 95th AAA Gun Battalion, has been transferred to USAREUR Headquarters with duty in G-3 Operations. Lt. Col. Knute R. Nelson, former Executive Officer of the 95th Battalion and the recipient of a recent promotion, has assumed command of the 95th.

Lt. Col. Eric A. Rundquist joined the Brigade on 2 April 1953 and for the past six months has served as Chief of the Army Training Test Team. Upon completion of the tests, he has taken over command of the 91st AAA AW Battalion. Major William E. Hesser, who has been serving as acting commander of the

91st Battalion, has been transferred to Headquarters VII Corps. Lt. Col. Benjamin M. Warfield, Commanding Officer, 45th AAA Gun Battalion is being returned to the ZI for duty with the Western AA Command. Major Frederick Schumm, Executive Officer, 67th AAA Gun Battalion, has been moved up to take over the 45th Battalion.

Lt. Col. Norman E. Fisher, who has been serving as Comptroller of Northern Area Command with Headquarters at Frankfurt, has been assigned as Commanding Officer, 5th AAA AW Battalion. Major William K. Schmid has been acting commander of the 5th Battalion since Lt. Col. Shagrin was assigned to Headquarters Seventh Army. Major Hal H. Rich, formerly with Headquarters 6th AAA Group, and Major George H. Skitsko, with Florida Military District, have been assigned to 12th AAA Group. Major Skitsko is being groomed to take over as S-4 from Major Harry V. Davis, who will depart in December. Major Fred H. Baker, upon being promoted in the 45th AAA Gun Battalion, was moved to Brigade Headquarters to take over as S-2 from Major Stanley A. Gammon, who had asked for early release so as to return to his position with a Chemical firm in California. Major Fred O. Hayward joined the 1st AAA Group on 15 June and took over as S-3 from Major Arthur J. Ward, who was reassigned to the 7th AAA AW Battalion as S-3. Major Nathaniel H. Israelson, assistant S-3 and PIO of Brigade will rotate in December as will Lt. Col. Charlie E. Meadows, Commanding Officer, 62nd AAA AW Battalion.

All units of the Brigade, except those conducting firing practice at the ranges and those whose mission would not permit, took part in NATO Exercise "Monte Carlo" during the period 10-13 September. The 12th AAA Group, with the 552d AAA Gun Battalion and the 73rd AAA AW Battalion (SP), served with the Eastland forces representing the enemy. They were given quite a workout since the opposing forces (Westland) were about five times as strong.

During the period 13-17 October the 1st AAA Group, with the 7th, 62nd, 25th and 45th Battalions, took part in the VII Corps Exercise "Harvest Moon." The 8th AAA Group, with the 5th, 40th, 63d and 443d Battalions participated in the V Corps Exercise "Power Play" from 26 to 30 October.

With the completion of its firing test at Camp Todendorf on 4 October, the 25th AAA Gun Battalion marked the last unit to use the camp this calendar year. The weather on the Baltic from 15 October to about 1 March is such as to make it not worthwhile to send units to the range. Lt. Col. Richard W. Owen, formerly with the *ANTI-AIRCRAFT JOURNAL*, was assigned as Commanding Officer of Camp Todendorf upon his arrival in the theater on 24 June. He is now putting the camp to bed for the winter but will remain to supervise a detachment in making repairs and additions to the camp. Most visitors have been extremely high in their praise of Todendorf, particularly for the layout of the firing line itself. We in the Brigade take personal pride in Todendorf since we were responsible for the layout and facilities provided.

GUNNERS EXAMINATIONS IN THE 34th AAA BRIGADE

By Capt. Hugh S. Fite, 27th AAA AW Battalion; President, Examination Board

In an attempt to revive some of the fabled artillery knowledge of the Old Army, the 34th AAA Brigade has instituted its program of Gunners' Examinations. One of the most successful programs to be initiated by AAA in Germany, the Gunners' Examination program was first reported in the July-August *ANTI-AIRCRAFT JOURNAL*. The initial go-round of 2d Class Gunners' Exams was completed in June, 1953, having been administered to 1286 enlisted artillerymen.

The officers on the Board administered the examination to all units within the Brigade and thereby insured impartiality and uniformity. Members of the Board were released whenever the member's unit underwent unit tests or service practices. As a result an average of seven officers were present during the examination. The examination was completed in 25 working days with an average of 51 men being tested each working day.

In compliance with FM 44-19, unit commanders certified to the Board those men who had received sufficient training to pass the Second Class Gunners' Examination. These certificates were not essential in our case, as we also used a preliminary written exam for the same general purpose.

For statistical purposes the following information on each person was obtained: years in service; years in AAA; and AGCT score. There was found to be a definite relationship between individual scores and either the length of service or the AGCT score. Thus low AGCT scores were compensated by length of service, or short lengths of service were compensated by high AGCT scores. It was noted that no one passed the examination who had an AGCT score of less than 90 who had been in AAA less than 12 months.

The examination as administered consisted of two parts, a written test and a practical test. The written test was administered first and those who made a passing grade of 75 or more were given the practical test. Less than 3% of those passing the written test failed to pass the practical test. The question naturally arose as to how many of those who failed the written test could have passed the practical test. This was a fair question which unfortunately could not be answered due to the time limitations.

The validity of the entire examination was attested to by the relationship between the number of men in a battalion passing the examination and the relative scores of that battalion in the AFF tests and service practices. Without exception the results of the Second Class Gunners' Examination were substantiated by the other tests given by other officers, which indicates that the more Second Class Gunners there are in a battalion the more efficient that unit is.

At the conclusion of the examination

each battalion was given twenty-five complete sets of the examination as administered to the unit to be used as a guide for the next Second Class Gunners' Examination. The Board will make up another set of questions for the next examinations. It is the intention of the Brigade to utilize the Expert Gunners within the Brigade to administer the Second Class Gunners' Examinations in the future, thus giving additional training and recognition to qualified non-commissioned officers within the Brigade.

Two observations were made by the Board:

▶ That gunners' examinations should be given to all personnel at the end of the yearly training cycle and serve as a fitting individual test for the training during the year.

▶ That the Second Class Gunners' Examinations should be entirely of an oral or practical nature. The examination should be based upon the individual's knowledge of the equipment and this knowledge can be demonstrated better on the equipment than by answers to a written examination.

35th AAA BRIGADE

*Brigadier General Tom V. Stayton,
Commanding*

Lt. Gen. Floyd L. Parks, Second Army Commander, recently visited brigade headquarters where he conferred with General Stayton on the mission of the AAA within the Second Army Area.

Brig. Gen. Frederick L. Hayden, Commanding General, Eastern Army Antiaircraft Command, visited the 3rd, 17th and 19th AAA Groups in October.

The Brigade Headquarters took its annual Army Training Test during the first week in November. Brig. Gen. Harry F. Meyers served as the Chief Umpire. He was assisted by Colonel A. G. Franklin and Major J. T. deCamp, Jr., from EARAACOM Headquarters and Colonel A. J. Cooper, Jr., Hq, 45th AAA Brigade.

Major Victor J. Tuliszewski has recently joined the command and assumed duties as S4 after a tour in Austria.

Headquarters Second Army Special Services has made available a bookmobile with approximately 2000 volumes to supply reading material to personnel at on-site positions in the 17th AAA Group Defense Area. We hope to see the same service extended to other AAA units.



Brig. Gen. Tom V. Stayton presents trophies to 35th AAA Brigade golf winners. Left to Right: Capt. W. C. Martell, Hq, 35th AAA Brig., Major J. E. Gentle, 75th AAA Gun Bn., Sgt. Ezekiel Hepa, Hq, 35th AAA Brig., and CWO J. A. Ribinsky, 89th AAA Bn, winner of championship flight.

Under the supervision and encouragement of the Brigade Chaplain, batteries within the 35th AAA Brigade have initiated work in constructing an attractive Chaplain's Corner and Worship Center in their day rooms.

3d AAA GROUP

By 1st Lt. Allan D. Bell, Jr., PIO

Col. John S. Sabine, who, as Commanding Officer of the 3d AAA Group, is the Norfolk AAA Defense Commander, recently welcomed two new battalions to the Norfolk Area.

The latest arrival is the 550th AAA Battalion, commanded by Lt. Col. Frank E. Terry, who brought the battalion to Norfolk from Camp Stewart, where Colonel Terry was formerly the camp G4.

A short time prior to the arrival of the 550th AAA Battalion, the 38th AAA Battalion joined the Norfolk Defense. The 38th AAA Battalion is commanded by Lt. Col. R. T. Shugart, who assumed command of the battalion in July of this year. Lt. Col. Shugart was Executive Officer of the 13th AAA Group prior to joining the 38th Battalion. Major Albert A. Baray is Battalion Executive.

An older unit of the Norfolk Defense, commanded by Lt. Col. Mark A. Selsor, an Airborne Artilleryman, is the 56th AAA Battalion. Lt. Col. Selsor left the 150th AAA Battalion to assume command of the 56th AAA Battalion in January of 1952. Major Ray C. Barbee is the Executive.

The 179th AAA Operations Detachment is presently commanded by 1st Lt.

Cecil E. Johnson, who recently joined the Detachment in Norfolk upon his return from EUCOM.

Col. John S. Sabine assumed command of the 3d AAA Group shortly after its arrival in the Norfolk Area, succeeding Lt. Col. C. B. Cushing, who is presently Group Executive Officer. Other Group staff members include Major Wm. E. Garotala, S3 and Major Raymond F. Halton, S4.

17th AAA GROUP

Colonel Frank J. Zeller, Commanding

By Major Jess H. Mann, Adjutant

Colonel Frank J. Zeller has been ordered to duty with the Joint Chiefs in the Pentagon. Colonel Ethan A. Chapman, now on duty at SHAPE, will be the new group commander.

A recent addition to the staff is Lt. Col. James S. Young, Executive Officer, replacing Lt. Col. Robert R. Corey, now assigned to the G1 Section, Hq AFFE.

Major Ralph E. Young has been assigned to the Group as S3 after serving as Aide-de-Camp to Lt. Gen. D. O. Hickey in Far East Command.

Major David L. Case will report for duty with the Group in November from the G4 Section, Hq X Corps.

Captain James M. Lown and Lt. Fredrick M. Van Nsdale, recent graduates of the Arty Fire Control Officers' course, Fort Bliss, Texas, have joined the Group staff.

New Battalion Commanders include Lt. Col. Robert E. Frith, 602d AAA Battalion, who replaced Lt. Col. James S.

Young, the new Group Executive Officer.

Lt. Col. James Kravitz replaced Lt. Col. Thomas H. Barfield in command of the 89th AAA Battalion. Col. Barfield was transferred to Fort Bliss, Texas.

Lt. Col. Louis H. Kirk, who was presented an Oak Leaf Cluster to the Bronze Star Medal in October by Col. Zeller for services rendered with the Far East Command, replaces Lt. Col. William H. Price in command of the 35th AAA Battalion. Lt. Col. Price is assigned to G3 Section, Department of the Army.

During the month of September, C Battery, 89th AAA Battalion, sponsored a colorful ceremony honoring the late Sgt. William R. Jecelin, the only Maryland soldier awarded the Medal of Honor during the Korean conflict. Among the many distinguished visitors at the ceremony were Congressman Samuel Friedel from Maryland, Maj. Gen. Milton A. Reckford, Adjutant General of Maryland, and the Mayor of Baltimore, Thomas D'Alasandro.

THE 89th AAA BATTALION

Pfc Paul Nicholas and other radio operators in Battery C, 89th AAA Bn., operate an Amateur Radio Station and transmit messages all over the world. The station is under the control of Lieut. Murray B. Silverman, Battalion Adjutant, Fort Meade, Md.

On 7 October 1953, Lt. Col. James Kravitz, CO, 89th AAA Battalion, and a panel of three officers lectured on the AA defense of the U. S. to the 2101st ARASU in Baltimore, Md. Col. Kravitz's talk covered the overall defense against enemy air attack of the Zone of Interior. He was followed by Lt. Eugene P. Flanagan, CO, Battery C, who covered the mission of AA batteries in the defense of metropolitan areas such as the Baltimore area. Radar concepts and fire control were covered by Lt. Edward Fluevog, Battery C, and the operation of the 90mm Gun was discussed by Lt. R. C. Cecil.

The lecture was followed one week later by an on-site inspection when 100 officers of the Baltimore ARASU unit showed up at the Battery C Site in Pikesville, Md. There Lt. Flanagan and his battery staged a battle alert and gave the visiting officers an opportunity for firsthand observation of the guns, power plants, radar, and fire control.

19th AAA GROUP

Colonel Stuart M. Alley, Commanding
By Capt. Murray L. Richmond,
Radar Officer and PIO

The firing batteries are now taking their turn on the firing range at Bethany Beach, Delaware. Throughout the Group the 90mm and 120mm guns have been grouped and reassigned to batteries in accordance with the latest School doctrine. This grouping was completed on the basis of pull-over gage readings. The batteries are practicing to master the techniques of velocity fire. Some still conduct calibration and trial fire for instruction purposes, but for battle readiness they are getting in step with current School teaching.

Under the guidance of Captain Walter R. Haden, Group Construction Officer, the batteries have now completed the main phase of the site housing program. And this has resulted in a noticeable improvement in appearance, comfort and morale.

Today the batteries are housed in Southern States type prefabricated buildings on grassy battery sites with hard surfaced streets, accomplished largely through the efforts of the men in the battery. Increase in battery morale is reflected by attractive dayrooms, lawns and landscaped areas.

On 30 October, 1953, units of this command participated in a parade honoring General Mark W. Clark, on the eve of his retirement. Looking sharp in their immaculate OD's with red scarves at their necks, Battery A, 601st AAA Battalion, and Battery D, 75th AAA Battalion, paraded their motorized equipment past the reviewing stand where the Honorable Robert T. Stevens, Secretary of the Army, General Charles T. Bolte, Army Vice Chief of Staff, and General Clark took the review.

Major Robert N. Howard, Group S3, is now one of the old-timers on the staff. Captain Kincheon H. Baily, Jr., is the Asst S3, having relieved Captain Thomas F. Ruane, who departed for FECOM. Captain James T. Wortham is S4.

The 36th AAA Battalion

The 36th AAA Battalion (120mm Gun), under Major Godfrey V. Gabor-sky, is now at Fort Meade undergoing an intensive training program. Corporal Fred Kabonick was recently awarded the



Colonel Galloway is briefed on AAA gun operation by Battery C, 14th AAA

Commendation Ribbon for his service in Korea.

The 14th AAA Battalion

On Saturday, September 26th, "C" Battery, 14th AAA Battalion, participated in the businessmen's parade held as a part of the celebration of Annandale, Virginia's annual "Annandale Day." Following the parade, refreshments were served to the men, and they joined in the festivities of the evening, which included competitive games, a carnival, and a street dance. Incidentally, Charlie Battery was designated as the best marching unit in the parade.

Lieut. Col. Tom B. Strother, commanding, 14th AAA Gun Battalion, has recently made a special Best Soldier award to Pfc Carl Annalora, battery clerk, Battery C.

Recently all the batteries of the 14th were honored by an inspection by the capable Fort Myer Post Commander, Colonel Donald Galloway.

The 71st AAA Battalion

The 71st AAA Battalion baseball team recently made a clean sweep of the post tournament at Fort Belvoir to win the championship. Outstanding player: Pitcher Milton Bayne, Btry C. Lieutenants Donald Harnish and Robert Gorman were the coaches.

Lt. Col. McDonald's battalion has also

been active in the blood donor program. Battery D led the list with 51 contributors.

The 601st AAA Battalion

Lt. Col. Otho A. Moomaw arrived in August to take command.

The batteries are now taking turns for their service practices at Bethany Beach, Delaware. Major Frank R. Kane, Jr., Battalion Executive, is serving as the Range Officer; WOJG Elmer Saxton, as the Supply Officer.

Other recent arrivals include Chaplain Dearl D. Richardson and CWO Wilson L. Hoffer, Battalion S1. Major Ralph M. Powers and Lt. Robt. A. Bailey have left for school courses at Forts Leavenworth and Bliss, respectively.

47th AAA BRIGADE

Fort MacArthur, California

The Brigade recently staged a rousing sendoff parade for Colonel Gerald G. Gibbs, brigade commander since the reactivation at Camp Stewart in 1951.

Colonel Gibbs has been assigned as the post commander at Fort Dix, N. J.

Brigadier General Francis M. Day has succeeded Colonel Gibbs in command. General Day has just returned from Korea where he commanded the 45th Division Artillery. In World War II he commanded the 26th Division Artillery in Europe.

52d AAA BRIGADE

Col. Richard S. Spangler, Commanding
By Major W. P. Schmader, S2 and PIO

Sites of the 52d AAA Brigade have been used during the past month as locations for filming portions of the movie "The Steel Ring," which is being prepared for television presentation to give the public a more thorough understanding of the AAA and its role in the defense of cities of the United States. The picture depicts the everyday life of the men at on-site positions as well as scenes showing the men going into action when the alert signal is given.

The 52d AAA Brigade is cooperating with First Army in its program of preparing a series of tape recorded programs by service men. Upon the completion of the recordings, they will be sent through the Hometown News Service to radio stations near the homes of the men involved, where they will be broadcast during the Christmas season.

A retreat parade and review was held on 19 October. During the ceremonies, the Brigade Commander presented the Commendation Ribbon with Medal Pendant to Major Donald LeMonier, and the Bronze Star Medal to WOJG Thearon E. Thompson, both members of the 52d AAA Brigade.

Our firing range at Camp Hero, Montauk Point, Long Island, will close on 19 December and units of the Brigade will not resume firing until 1 March 1954. Recent shoots, using velocity fire, have proven highly successful and the units are making high scores.

It's nip and tuck for the Brigade's Best Battalion of the Month plaque. Lt. Col. Carl Chirico's battalion now has possession of the Best Battalion plaque, having taken it away from the 69th AAA Battalion. Colonel Spangler made the award at the last battalion commanders' meeting. The Brigade Commander also selected Corporal Robert H. Shell, Battery D, 12th AAA Battalion as the Best Soldier of the Month.

Colonel Spangler addressed members of the Senior ROTC Class at Fordham University on 19 October, and described the present role of AAA in the defense of the United States and the mission of the 52d AAA Brigade. He informed the students that ROTC graduates were being assigned to the Brigade and that a number of them might expect similar assignments to the New York Defense.



Lt. Col. Carl F. Chirico (center) and personnel of 41st AAA Battalion display the Brigade Best Battalion plaque, which they have won again!

On 28 October the senior ROTC of Fordham was conducted on a tour of one of the Brigade's sites.

The Brigade has been making a constant improvement in its public relations. Units of the Brigade have been the recipients of numerous gifts of furniture and equipment, given to them by appreciative citizens and organizations of the communities in which they are located. The public has also shown its interest in AA and the men manning the guns by turning out for the open house program sponsored by this command, welcoming the men into their churches, clubs, etc., and contributing generously toward the provision of recreation and entertainment for the men at the sites.

Lt. Col. DePalo, assisted by Capt. Angelo Monti, Brigade Commo Officer, 1st Lt. James E. McNamara, Asst Brigade S3, and Master Sergeant Joseph Weidel, Brigade Operations Sergeant, have constructed a training AAOC at Brigade headquarters, which is being used to instruct battalion commanders, S3's, commo officers, radar officers and Battalion AAOR personnel in a new control system. This program has proved very successful to date.

Colonel Charles E. Roden, former Executive Officer of 24th AAA Group, Swarthmore, Pennsylvania, has joined the Brigade to become Executive Officer. His predecessor, Lt. Col. Robert W.

Molloy, is now the Brigade S3, replacing Lt. Col. William A. DePalo.

Colonel Henry M. Spengler, Commanding Officer 80th AAA Group, conducted another AFF field exercise with his Group, the 12th Battalion, and the 326th AAA Operations Detachment at the Brookhaven maneuver area during the period 19-23 October. Lt. Patrick Scorese, Assistant Brigade S2, commanded an aggressor force during the problem which added more realism to the test. As predicted, many improvements over the previously reported exercise were noted throughout the entire maneuver. Luck was with us; the weather was perfect.

Lt. Col. James N. Lewis has joined the 80th AAA Group and is now the Group Executive, replacing Major Gerard Burke, who is now the Group S3. Lt. Col. Lewis will soon take command of the 98th AAA Battalion, replacing Major Charles F. Jackson.

Major Francis M. Connelly, former 80th AAA Group S3, is now the Brigade Special Projects Officer. Major Richard G. McEwan, former Projects Officer, has been in the hospital but is now back to duty and is assisting Major Connelly. Capt. Joseph Pilkington, Asst S4, is also assisting with the Special Projects.

Major James J. Reid, Executive Officer, 505th AAA Battalion, has departed for EUCOM.

Major William G. Matthews has as-

sumed command of the 511th AA Operations Detachment, replacing Major Gerard Burke, S3, 80th AAA Group, who had command as an additional duty.

Lt. Col. George W. Kenna has assumed command of the 749th AAA Battalion.

WEST POINT CADETS RECEIVE AAA INSTRUCTION ON SITE

By Lieut. Col. W. A. Smith, Arty.,
United States Military Academy

This year, for the first time, cadets of the Class of 1956 of the United States Military Academy received familiarization training in antiaircraft artillery at tactical battery positions in the New York City area. Heretofore, the cadets participated in training conducted at West Point by the Artillery Section, with the assistance of attached officers and enlisted specialists from units of The Eastern Army Antiaircraft Command.

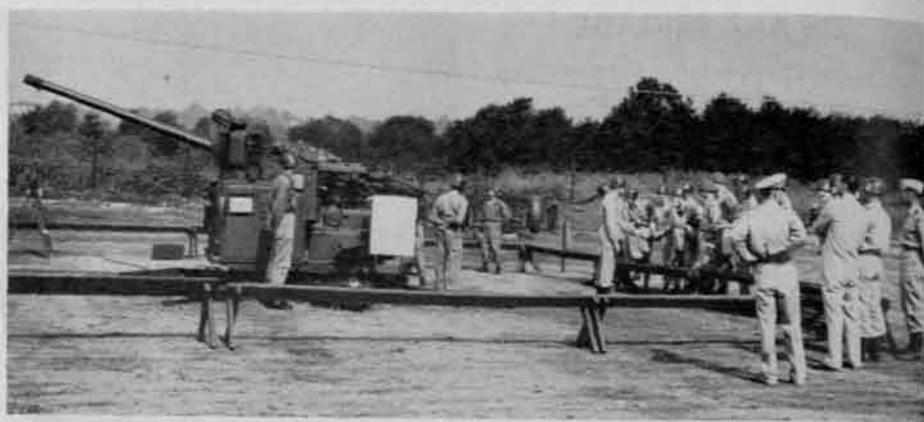
Last spring Brigadier General Harry F. Meyers suggested that the yearlings visit operational batteries of the New York defense instead. He thought that the cadets would obtain a far better appreciation of the antiaircraft by training with a tactical unit in the actual conduct of the air defense mission, and General Irving, the Superintendent, agreed.

Antiaircraft instruction for the cadets was scheduled for the month of August, while the Third Classmen were training at Camp Buckner. Light AAA familiarization was given at position areas set up near the summer camp site; gun unit training was given in the tactical positions in the New York area.

The 52nd AAA Brigade, commanded by Colonel Richard S. Spangler, coordinated the training. Three days in August were set aside for the gun training at battery tactical positions. Two cadet companies received training on each of these days.

Battery "A," 526th AAA Gun, commanded by 1st Lt. Stanley Ellerthorpe, and Battery "C," 749th AAA Gun Battalion, commanded by Captain William F. Britton, were designated as the units to conduct cadet instruction. One cadet company trained at each position during the morning period. The two companies then changed positions for the afternoon training.

The instruction, as presented at "C" Battery, 749th AAA Battalion, consisted



USMA Cadets study the AAA radar controlled Skysweeper with Battery A, 526th AAA Battalion.

of a county fair type of demonstration, with the introduction by Colonel Spangler. The cadets were grouped into four sections and visited the following stations: 90mm Gun Section; M-33 Fire Control System; Battery Motor Maintenance Section and Power Generators; and the battery headquarters, supply room, barracks, mess hall and the recreational facilities. In addition to instruction on operations and equipment, the cadets were briefed on the duties of the personnel and the problems that must be solved in the normal conduct of battery operations.

At "A" Battery, 526th AAA Battalion, similar instruction was given with the introduction by Colonel Henry M. Spangler, Commanding Officer of the 80th AAA Group. The cadet company was divided into five groups and rotated through the following stations: 120mm gun section; 75mm skysweeper station; M-55 machine guns; TPS/1D Acquisition radar; and the battalion AAA operations center.

The highlight of the instruction at each battery position came at 1115 hours when a practice alert was ordered. The cadets, seated in grandstands, were able to watch all elements of the battery go into a simulated Battle Alert, beginning with the starting of the generators, orientation and synchronization checks, simulated firing of settling rounds and preparatory fire, and finishing with the gun battery automatically tracking an aircraft target. General Meyers was able to make arrangements for one Skysweeper unit and crew to be made available during the cadet training.

The self-propelled weapons instruction covering the T-141 dual 40mm gun carriage and the M-16 quad .50 cal.

half-track, was given to the cadets at Camp Buckner by the Artillery Section. The Third Classmen were given familiarization training on these weapons during a two-position reconnaissance, selection and occupation of position by a provisional Field Artillery 105mm Howitzer Battalion. Two sections of self-propelled antiaircraft artillery were attached to the Field Artillery Battalion, and cadets, designated as crewmen, were rotated through the AAA section during the RSOP problem. The cadets were instructed in both the air and ground mission of the SP-AAA.

Comments from cadets who received the on-site training, from officers of the Military Academy who observed the instruction, and from men and officers of the 52nd AAA Brigade, indicate that the innovation was most successful. The opportunity of observing training in a battery tactical position aroused genuine interest.

24th AAA GROUP

Col. Joseph C. Conell, Commanding
By Captain Francis A. Honodel, PIO

Brigadier General Louis T. Heath, 53rd AAA Brigade commander, recently presented the Brigade quarterly awards

Change of Address

Moving? Please send us your change of address. Use the enclosed postage-paid card. Just mark it "Change of Address"—and print your name and new address on it.



Brig. Gen. Louis T. Heath presenting 53rd AAA Brigade awards for Best Battalion and Best Battery Mess to Lt. Col. Wm. F. Horton, CO, 738th AAA Battalion and Lt. Robt. M. Stapleton, CO, Btry D, 738th AAA Bn.

to unit commanders of the 24th AAA Group as follows:

Best Battalion—738th AAA Battalion, Lt. Col. W. F. Horton, Commanding.

Best Gun Battery—Operational Readiness, Btry A, 19th AAA Battalion, 2nd Lt. J. N. Musti, Commanding.

Best Battery Transportation—Btry D, 19th AAA Battalion, Capt. N. Dunda, Commanding.

Best Battery Mess—Btry D, 738th AAA Battalion, 2nd Lt. R. M. Stapleton, Commanding.

Best Battery Administration and Supply—Btry C, 51st AAA Battalion, 2nd Lt. T. A. Gamble, Commanding.

The 51st AAA Battalion Baseball Team won the trophy as the group champion for the season.

56th AAA BRIGADE (STATIC)

*Brigadier General Harry F. Meyers,
Commanding*

Hq & Hq Btry satisfactorily completed its annual Army Training Test during the period 6-8 October. Administered by representatives of Eastern Army Antiaircraft Command, it proved valuable due to its realistic situations. We are now preparing the training tests to be administered to the senior unit of each defense area which in turn will administer the test to units in their command.

The Commanding General is continuing his helicopter trips, this time at Niagara, New York. On one of his in-

spection there, Lt. Gen. Kepner (Air Force Ret'd), now an executive with Bell Aircraft, had him picked up at the Buffalo airport in one of the Bell helicopters and his whole inspection trip was made by this mode of transportation, accomplishing in a leisurely two hours what should normally have taken the better part of two days.

Capt. Jack R. Lary is now attending a four-weeks' course on safety at North-

western University. CWO Ralph E. Knapp is the Acting Adjutant during his absence.

Capt. Thomas O'Connor replaced WOJG Anthony Buckley in the Motor Officer position when Mr. Buckley was recently transferred to Fort Devens.

Hq Btry came through to win the trophy as the champions of the Fort Totten intrapost softball league.

2nd AAA GROUP

By Captain J. R. Ormsby, PIO

Rapid strides have been made toward the final rehabilitation of Fort Niagara, now Headquarters for the 2nd AAA Group under command of Col. Maurice P. Shaver. The group, under 56th Brigade, is charged with the defense of the Niagara Frontier. The first brick barracks building was occupied this month, with other units scheduled to occupy permanent quarters as they become available.

Executive Officer Lt. Col. Kenneth E. Tiffany, also deputy Post CO at the Fort, was instrumental in helping the NCO's secure prefabricated buildings for the newly completed NCO Club.

Col. Shaver and the Group have been active supporters in the Red Cross Blood Drive in nearby Youngstown. The offi-



Gun crew of Btry A, 605th AAA Bn stage gun drill on their Boston area site for General Lewis, Army Antiaircraft Commander. Col. Foote, 15th AAA Group Commander and Capt. Paul Wood, Battery Commander also look on. This battery recently fired a high record score of 97.6 in record target practice at Camp Wellfleet.

cers and men have donated in large numbers.

The gigantic Air Force base at Thule was the subject of an interesting talk to the Sojourners given recently by Colonel Shaver. A large group of officers from the surrounding area were on hand at the Officers' Club and witnessed a recently reclassified film on the subject.

Lt. Col. Thomas C. Murray, CO of the 44th AAA Bn., addressed members of the Youngstown Lions Club at a dinner recently on the subject of our modern AAA defenses in the Niagara area.

A group of Cub Scouts, accompanied by their fathers, all ex-AAA men, were entertained recently by B Battery, 606th AAA Bn., at their site on Grand Island, N. Y. Lt. Col. John C. Bolton, CO of the 606th, was on hand to witness the delight of the youngsters.

CAMP STEWART, GA.

Lieut. Col. George F. Pindar recently assumed command of the 13th AAA Group. Colonel W. C. Mahoney, former commander, has been transferred to First Army Headquarters, Governors Island, N. Y.

The 80th Airborne AAA Battalion of the 82nd Airborne Division, Fort Bragg, N. C., is now at Camp Stewart for six weeks training in service practices and AAA tests. Lieut. Col. Stephen G. Sil-

vasy is the CO. Major Bob G. Olsen is Executive.

65th AAA GROUP

Colonel Ben E. Cordell departed in August for duty with Headquarters Fourth Army at Fort Sam Houston, Texas, pending his retirement from active duty on October 31st. Colonel and Mrs. Cordell will make their home in San Antonio.

Colonel Harry S. Tubbs arrived in September to take command of the Group.

Key staff members of the Group include: Lt. Col. Reinhard L. Speltz, Exec. O.; Major Walter E. Badger, S1; Major Louis D. Fournier, S2; Lt. Col. Veto Blekaitis, S3; Capt. John B. Hall, Asst. S3; Major David L. Dickinson, S4; Capt. Wilbert G. Saal, MTO; Capt. Charles B. Gibson, Comm O.

Captain Douglas A. Armstrong, Radar Officer, is preparing to assume the responsibilities of Major Badger who is scheduled to depart from this command next month for assignment to the 5th AAA Group, Camp Hanford.

68th AAA GROUP

Fort Richardson, Alaska

Colonel William B. Hawthorne, the Group Commander, recently presented a

set of shining eagles to Lt. Col. Ralph E. Hood and a set of silver leaves to Major LaFiece D. Collins. Congratulations to the new colonels.

Lt. Col. Robert D. Harlan, recently from the Command and General Staff College, has been assigned duty as Group Executive Officer, replacing Lt. Col. William I. King who rotated to attend the Command and General Staff College.

Major Harold G. Wilson was recently assigned the duty of Group S3, replacing Major Richard F. Cox who has returned to the States.

243rd AAA GROUP, R.I. N.G.

Colonel P. E. Donnelly, Group Commander, reports that the commanders and staff officers of the 243rd AAA Group, 243rd AAA Gun Bn, and the 705th AAA Gun Bn of the Rhode Island National Guard had a splendid two-day tour recently with the 15th AAA Group in the AAA defenses of Boston. Colonel S. W. Foote and his staff gave them a good inspection of the defenses and orientation in the operations.

NOTIFY THE JOURNAL

WHEN YOU CHANGE ADDRESS

Fort Bliss News

105th Anniversary

Fort Bliss celebrated its 105th anniversary, November 7, with a military review on Noel Field and the placing of an anniversary wreath at the foot of the Memorial Flagpole.

Six battalions, with Colonel Ara G. Lindley as commander of troops, participated in the review, which was attended by hundreds of spectators.

Mayor Fred Hervey and a group of El Paso civic leaders were in the reviewing party with Major General Stanley R. Mickelsen.

The El Paso Chamber of Commerce presented the beautiful wreath, which framed a composite picture of the early-day Fort Bliss and today's antiaircraft artillery and guided missiles center.

Fort Bliss was established by War Department Orders No. 58 on November 7, 1848. Troops to set up the post had to march more than 650 miles across the wilderness and deserts of West Texas to reach the location of what is now El Paso. Setting out in the spring of 1849, they reached the "Pass of the North" in September and set up the Military Post of El Paso, which a few years later was re-named Fort Bliss.

Army Field Forces Board No. 4

Colonel Arthur L. Fuller, Jr. is the new director of the Test Facilities Section of Board No. 4. He succeeds Colonel W. M. Vestal who has assumed direction of the Antiaircraft Service Test Section.

Colonel John A. White is expected to arrive soon from the Pentagon.

Key assignments at the Board now are: President—Col. A. H. Bender
Executive—Col. John H. Kochevar

Secretary—Lt. Col. A. A. Kopsak
Directors:

Test Facilities—Col. Fuller

Test Group—Lt. Col. L. M. Orman

Support Group—Lt. Col. W. B. Sell

AAA Service Test—Col. Vestal

Heavy AA—Lt. Col. H. M. Clanton

Light AA—Lt. Col. F. J. F. Polifka

GM Service Test—Lt. Col. W. S. Penn, Jr.

SAM Group—Lt. Col. C. C. Young

SSM Group—Lt. Col. J. T. O'Keefe

AAA RTC

Colonel E. W. Heathcote, able and aggressive commander of the AAA RTC since its organization, has received orders for duty in the Far East. His successor has not yet been named.

New assignments for one colonel, six lieutenant colonels and four majors marked personnel changes in the AAA RTC recently.

Col. Melvin McDuff was en route to the 4070th as of October 17.

Lt. Col. Howard H. Ruppert is now executive officer of the 1st Group, with Lt. Col. Albert O. Chittenden as his new assistant.

New battalion commanding officers include Lt. Col. William H. Hancannon, Jr. for the 9th, Lt. Col. Arthur F. Schaefer for the 5th, and Major Osvaldo M. Izquierdo for the 4th. Major Robert B. Jaffa is now 5th Battalion executive officer.

Other new assignments to RTC Headquarters are: Lt. Col. Dudley O. Rae, Inspector; Lt. Col. Kenan M. Rand, Transportation; Major Leslie C. Hunter, Headquarters Commandant; and Major Fred R. Whitehead, Sr., Assistant S3.

AA & GM Branch, TAS

Numerous changes of assignment, many of them from one position to another within the School, have marked the early fall season in the AA & GM Branch, TAS.

Col. Ara G. Lindley, former assistant coordinator of instruction, has transferred to the Department of Nonresident Instruction, where he is executive officer.

The following officers are now assigned to the newly-created Combat Developments Department:

Col. William A. Hampton, Director, Lt. Col. Robert J. Tolly, Lt. Col. William T. Russell, Lt. Col. Jack H. Remele and Majors Hugh Mease, Jr., Malcolm C. Spalding, John L. Butterfield, Donald B. Millar, Joseph X. Gillen and John B. White.

In the Department of Guided Missiles, Colonel John H. Swenson is the new chief of the Tactics Section.

Lt. Col. Raymond J. Belardi, formerly with Gunnery and Matériel, has been re-assigned to the Nonresident Instruction Department.

The Gunnery Department has also lost three instructors. Major Charles A. Buck and Major Arthur H. Jemmott are now assigned to Fort Leavenworth, Kansas, while Major John W. Grantham is now with the Tactics and Combined Arms Department.

New personnel gained in the Gunnery Department are Major William T. Harvey and Major Roland R. Stroud, both of whom are instructors.



Architects' drawing of the new academic building now under construction at Fort Bliss for the AA and GM Branch, TAS. The building will stand in the area south of Howze Stadium and north of the Post Theater, facing west on Sheridan Road, with the old Post Headquarters building in the background.

The Electronics Department has lost the following instructors recently: Major James T. Sheehan to the Far East Command; Major Joseph R. Dalton to the European Command; Major Roy B. Card and Major Victor A. Franklin to the Tactics Department.

Major Charlie D. Scott, formerly S4 for the AA & GM Branch, TAS, has left, via the Infantry School, for the Far East Command. Major Del Monte F. Berg has been re-assigned to Fort Leavenworth.

The Nonresident Instruction Department was saddened by the loss of Lt. Col. John K. Frei who died on October 24.

Nonresident Instruction has a new training publications officer Major James G. Barr.

Promotions

Three key officers at Fort Bliss have been promoted to the rank of Colonel. Wearing the new eagle insignia are Colonel Ben D. Culleton, Colonel Thomas W. Ackert and Colonel Roy A. Tate.

Colonel Culleton is the post Adjutant General.

Colonel Ackert, formerly CO, 78th AAA Gun Battalion in Korea, a JOURNAL author, and Silver Star wearer, is now assistant director of the Department of Tactics in the School.

Colonel Tate is assistant director of the Guided Missile Department. He,

too, is a veteran of Korea, where he served as CO, 26th AAA AW Battalion with the 24th Division, won his Silver Star and also wrote for the *ANTI-AIRCRAFT JOURNAL*.

Other Changes

In the 1st Guided Missile Brigade, Colonel Joseph C. Moore is now the executive officer. He was formerly G3 with U. S. forces in Austria.

Major John J. Maykovich, formerly S4 of the Brigade, has been re-assigned to the Detachment of Patients, William Beaumont Army Hospital.

Major Victor Olls has been assigned to the 1st Composite Group as S4.

Congressional Medal Winner Honored

A six-battalion review honored Sgt. Hiroshi H. Miyamura, Japanese-American Congressional Medal of Honor winner, who received his honorable discharge at Fort Bliss, October 9.

A veteran of World War II, he earned the nation's highest award when, as a member of the 3rd Infantry Division, he made a heroic stand against a Chinese Communist night attack in April 1951, in Korea. He accounted for approximately 60 of the enemy with his bayonet and machine gun fire, before he was severely wounded and captured.

Fort Bliss officials prepared a full-scale "VIP" reception for Sgt. Miyamura

when he arrived at the post with his wife, father and cousin, all of whom were guests of the Commanding General at luncheon and at the review.

Awards to Bliss Personnel

(For Korean Service)

BRONZE STAR FOR VALOR

1st Lt. John E. Ryan
PFC Allan H. MacRae

BRONZE STAR

Major Melvin C. Robinson
Capt. John L. Weems (OLC)
Capt. William L. Depew
Capt. Judd J. Harris, Jr.
1st Lt. (Chaplain) Lawrence R. Rast
1st Lt. Garland E. McMeans
1st Lt. George E. Walters
CWO Thomas J. Burdette
M/Sgt. Jack S. Ray
M/Sgt. Paul Z. Cooke
SFC William G. Hudgins
Sgt. David E. Hawkins
Sgt. Arturo Perez
Cpl. William L. Stephenson

COMMENDATION RIBBON WITH PENDANT

M/Sgt. Harold H. Hughes (OLC)
CWO Joe Leslie Hurd
M/Sgt. Charles H. Nieman
Pvt. Dale F. Walker
Capt. Robert L. Smith

Premiere Held for Bliss-Filmed Show

Fort Bliss officers and their wives were honored guests at the September 21 world premiere of "Take the High Ground," Metro-Goldwyn-Mayer's new production. The show, which depicts the

training of Army recruits, was filmed largely at Fort Bliss.

Military officials, Hollywood stars and directors, and community leaders participated in the premiere ceremonies held at the Plaza Theater, in El Paso, Texas.

Maj. Gen. S. R. Mickelsen, Fort Bliss Commander, and Mrs. Mickelsen and other Fort Bliss couples were introduced in traditional Hollywood manner as they entered the theater. Brig. Gen. Frank Dorn, Army Deputy Chief of Information, was a distinguished visitor.

Richard Widmark, Elaine Stewart and Russ Tamblyn, stars of "Take the High Ground," Dore Schary, producer, Richard Brooks, director, from M-G-M, and George Murphy, master of ceremonies, represented Hollywood in the opening ceremonies.

Filmed with a new color process and replete with human interest and humor, "Take the High Ground" shows how a platoon of recruits is turned into alert soldiers during the 16 weeks of basic training. Widmark stars as the "tough sergeant" who drives the men relentlessly to prepare them for combat.

Preceding the premiere, Producer Dore Schary received the Army's Certificate of Appreciation in a brief ceremony at Fort Bliss. Presentation of the award was made by General Mickelsen, who cited the Hollywood official's work in enhancing the prestige of the Army through his films.

Following the presentation, a luncheon was held at the Fort Bliss Officers' Club for the Hollywood visitors, military officials and special civilian guests.

New Reception Center

Army inductees from throughout New Mexico, Arizona, and Western and Central Texas are now reporting from their local induction centers to a new Reception Center at Fort Bliss.

At the Fort Bliss Reception Center, which is attached to the Antiaircraft Artillery Replacement Training Center, the inductee will receive an orientation on Army procedure, an initial issue of uniforms, part of his first month's pay, and physical and dental examinations.

He then will go to an RTC training unit for eight weeks of basic training. During this time he is given the Army General Classification Tests to determine which jobs he is best fitted for in the Army.

By the close of eight weeks, the men will have been divided into groups by the Department of the Army. For the concluding eight weeks of their basic training, part of the men will be retained at Fort Bliss for training in Antiaircraft Artillery, while others will be sent to other posts for training in other branches of the service. Between the two periods of training, the men will each receive two weeks' leave.

At the end of the 16 weeks' basic training, the soldiers will be given permanent assignments.

Cavalry Reunion

Cavalrymen who once stabled their horses in areas now occupied by antiaircraft artillery and guided missiles at Fort Bliss came back to the post to hold a memorial service for departed comrades during the Sixth Annual Reunion of the 1st Cavalry Division at El Paso, Texas, September 4-5-6. Among the visitors were Maj. Gen. Innis P. Swift, Ret., and Maj. Gen. Hobart R. Gay.

General Mickelsen in a brief address gave them a warm "Welcome Home" to Fort Bliss, home of the Division until World War II.

Their celebrations at the Fort included an impressive Memorial service at Memorial Circle, with music by the 65th Army Band; a tour of the post, including stops at the Fort Bliss Replica and the grave of "Garry Owen," famous Seventh Cavalry horse; dinner in one of the new mess halls; Post Theater showing of the technicolor picture, "Here Comes the Cavalry"; a polo game on Armstrong Field, and a barbecue.



United Nations Day at Fort Bliss, October 24th. Reviewing Officer: Brig. Gen. W. E. Waters, 1st G. M. Brigade. Commander of Troops: Colonel Daniel O'Connor, 1st G. M. Group. Participating U. N. Members included Canada, Chile, China, Denmark, France, Mexico, Netherlands, Norway, Thailand, United Kingdom and Yugoslavia.

Airborne Combat Show

Antiaircraft artillerymen from this post joined forces last week with antiaircraft paratroopers from Fort Campbell, Ky., and Air Force men from four bases to stage one of the biggest training demonstrations seen in this area since War II.

Primary purpose of the demonstration was to train the AAA men in principles of close air and ground support. More than 10,000 spectators, many of them from El Paso, witnessed the show.

Led by 1st Lt. L. N. Emmons, who was making his 213th jump, 43 paratroopers from Campbell's 88th Abn. AAA Bn., dropped from Air Force "Flying Boxcars," behind a vanguard of Air Force Pathfinders. Moments later, the troopers had set up a perimeter defense, using the light equipment bundles, including machine guns, dropped with them. Lt. Col. Everett L. Cormier, CO of the 88th, was the Airborne Commander.

Other "Boxcars" followed minutes later, dropping two trucks, a jeep, a 40mm gun and two quadruple mount machine guns, which the troopers quickly added to the defense.

On the heels of the drop, men and vehicles from the 59th AAA Bn. of Bliss, in support of the paratroopers, were landed in the drop zone by a C-122 troop carrier plane from Stewart AFB, Tenn.

An exhibition of an air strike and anti-aircraft artillery in close support of attacking infantry followed the airborne demonstration. Eight fighters dropped napalm bombs and fired rockets, then dive-bombed and strafed the simulated "enemy" positions. After the aerial "softening up," the 90th AAA Bn. delivered a heavy barrage in conjunction with mortar and automatic weapons fire from the 59th AAA Bn. Then infantry troops, armed with flamethrowers and other assault weapons, moved in under the artillery cover to take the positions.

In a concluding demonstration at the Bliss Hueco Ranges, 90th AAA Bn. troops fired their 90mm and 120mm guns and 59th AAA Bn. troops fired automatic weapons against aerial targets.

New Type Electronic Breadboards

During the past school year Lieut. Col. Edward J. McGrane and Mr. Baldo G. Sullivan, Electronics Department instructors in the AA & GM School, have



Paratroopers of the 88th Airborne AAA Battalion prepare for action after a "heavy drop" at Dona Ana Dry Lake.

designed and perfected a highly flexible breadboard for student experimentation. The new breadboard lends itself readily to rapid changes in circuit components as well as actual variations in the circuit, itself. It also eliminated the cost of a large number of broken resistor and capacitor leads when changes were made with the old type.

Reservists Attend Class

Members of the Army Reserve components in the area received instruction in a special class given at Fort Bliss, September 28, by a Fourth Army Mobile Instructional and Demonstration Team from Fort Sill, Oklahoma.

The class, on the use of fire-support coordination centers at corps, division, regiment and battalion levels, demonstrated to the Reservists the fire-support system used recently with considerable success in Korea. It explained how the combat infantryman in the front lines can call for available supporting fire, including mortars, artillery, close-support aircraft and naval gunfire.

Atomic Warfare

(Continued from page 4)

time. They believe that the threat of atomic retaliation has prevented Soviet aggression and that atomic destruction of Soviet industry would destroy the Russian war-making capacity. Why, they ask, should we pursue both an expensive atomic program and an expensive conventional arms program?

The fallacy of this argument lies in its assumptions, first that war has been pre-

vented by the threat of atomic retaliation and, second, that strategic bombing alone would be decisive. Neither assumption is provable and neither, as a theory, is worth risking national survival on. New defenses may cripple the power of strategic bombing. We cannot be sure that our own strategic bombing force might not be crippled in an aerial Pearl Harbor. Finally, a decision not to initiate the horror of the burning of millions in atomic fires in crowded cities may be the decision finally made.

Those who believe that the traditional battlefield will be maintained in an atomic war base their estimate on the possibility of greater dispersion, deeper digging and increased air defense. They point to the fact that the ground soldier has been able to protect himself from the machine gun that threatened his existence, from massed artillery fire of hundreds of cannon, from aerial bombardment, and they are confident he will be able to survive atomic attack.

Those who think that nuclear weapons will transform the nature of the battlefield contend that the more conservative view fails to take into account the power of atomic weapons and the awful destruction they make possible over large areas. These thinkers are convinced that movement into battle on conventional lines would set our forces up as an atomic target and insure their early defeat.

Increasingly the dispute will be made the subject of map problems, war games and maneuvers.

Here again the stakes are too important to make a decision based purely on theory.

General Weible, Deputy Chief of Staff, Promoted General Milburn Decorated



Lieutenant General Walter L. Weible

Major General Walter L. Weible was promoted to the grade of lieutenant general on October the 23rd when he took over his new assignment as the Army Deputy Chief of Staff for Administration and Operations. He replaced Lieutenant General Anthony C. McAuliffe, who took command of the Seventh Army in Europe.

General Weible's last assignment was with Headquarters Fifth Army in Chicago, where he had served as the Deputy Army Commander since last April. Prior to that he had served under General Ridgway, Army Chief of Staff, both in Japan and at SHAPE Headquarters in Paris.

In 1950 when the Eighth Army Headquarters moved to Korea, General Weible organized and took command of the Japan Logistical Command, in which he directed the logistical support for operations in Korea and also all the Army occupation duties and operations in Japan. For outstanding performance in this command he was awarded the Distinguished Service Medal (OLC).

After General Ridgway took command at SHAPE in 1952 General Weible was ordered directly to SHAPE to serve as the chief logistical officer, an assignment which he held until last Spring when he returned for duty with the Fifth Army.

General Weible enlisted in the Coast

Artillery Corps in 1917. Earning his commission in 1918, he continued to serve in the Corps till World War II, when he served on the War Department general staff, and later as Director of Training, Army Service Forces. In 1945 he went to the Pacific for logistical duty in the invasion of Japan. He later commanded USASCOM "Olympic" with the Sixth Army in Japan until its inactivation, and then took over USASCOM "Coronet" for all logistical functions for the Eighth Army until 1947.

After a short tour in the States he was back in Japan on a second tour in 1949.

General and Mrs. Weible now reside at Fort Myer.

When Major General Bryan L. Milburn completed his tour of duty in the Far East in September, General Mark Clark presented to him the Distinguished Service Medal for his outstanding service as G1 and later as Deputy



Major General Bryan L. Milburn

Chief of Staff of FECOM. The presentation was made in a ceremony at Pershing Heights, Tokyo.

General Milburn has taken over his new duties in Washington as the Special Assistant to the Chief of Staff for Reserve Components. General and Mrs. Milburn reside at Fort Leslie J. McNair.

Permanent Major Generals

Brigadier General Robert W. Crichlow, Major General Stanley R. Mickelsen, and Major General Bryan L. Milburn were recently selected for permanent promotion to two star rank, according to a late White House announcement.

Recent Assignments

Brigadier General Hobart Hewitt, Assistant Commandant of the AA & GM Branch of the Artillery School since July 1952, flew to the Far East in October for his new assignment as Commanding General, Division Artillery, Third Infantry Division.

Colonel Cyrus Q. Shelton, Chief of Staff of the AA and GM Center, is now the Acting Assistant Commandant.

Colonel Charles B. Duff, Executive, 45th DivArty is now the acting CG.

Colonel Peter Schmick, Executive, 2nd DivArty, is also now acting CG.

Colonel W. H. Brucker, to Hq MDW in Washington.

Colonel Melvin R. Russell to FECOM.

Colonel S. W. Foote, 15th AAA Gp to Military Attaché in Burma.

Colonel Phillip B. Stiness to the 15th AAA Group, Fort Banks, Mass.

Colonel Donald J. Bailey from Central Army AA Command to FECOM.

Colonel J. B. Carroll to Sr. Army Instructor, Pa. ORC.

Colonel Ira G. Lindsey to G3, Pentagon.

Colonels Clyde G. Young and Richard Longanecker to the AA & GM Center, Fort Bliss, Texas.

Colonel Harry R. Boyd to JAMAG, Saudi Arabia.

Colonel Francis A. Liwski to IX Corps in Korea.

Colonel James F. Eason from OSD, Pentagon, to 13th AAA Group, Camp Stewart, Georgia.

Colonel Paul A. Harris retires November 30th at Carlisle Barracks, Pa.

News and Comment

For the Association President and the Executive Council we express our genuine appreciation of the letter of encouragement from the Chief of Staff of the Army which we have reproduced on the inside front cover for your information. This letter clarifies the purposes of the JOURNAL and also typifies the active and warm interest which General Ridgway has in the Antiaircraft Artillery.

From this letter we can well draw inspiration to redouble our efforts in carrying on and lifting the high standards of the JOURNAL in stimulating thought, discussion and action to keep pace with the problems and developments of our times.

We concur with Colonel Lanza (on this page) that the need for an Artillery Journal continues. And that is not to argue here for or against the proposed merger with the *Combat Forces Journal*. We recognize also the need for a strong association and journal to represent the entire Army, and we have hoped that the needs for both might be worked out in one journal. However, the point we make here is that the JOURNAL has contributed well toward the *esprit* and efficiency of our arm of the service, and that we still need a journal devoted clearly to our cause as much as ever, whether it be the ANTI-AIRCRAFT JOURNAL or another.

Major General Charles E. Hart, formerly the Assistant Commandant of the AA & GM Branch of The Artillery School at Fort Bliss (1947-1949), and presently Chief of USMAG in Greece, has been assigned as the commanding general of the Artillery Center at Fort Sill, Oklahoma, and the commandant of The Artillery School, succeeding Major General A. McK. Harper, who will retire on December the 31st. Brigadier General Thomas M. Watlington is the assistant commandant.

FROM A SENIOR SUBSCRIBER

The May-June number of the ANTI-AIRCRAFT JOURNAL contains an excellent article regarding AAA under Atomic attack. We have in this city a local college—St. Anselm's—which for the first time is presenting an undergraduate course

for educating officials for Civil Defense.

On my recommendation the College Professor of Physics has adopted part of Major Wreidt's article as part of his instruction. A copy of Professor Steinmetz's abstract of his lecture is enclosed herewith.

I am aware of the Report of the Los Alamos Scientific Laboratory on Effects of Atomic Weapons, but have recommended to the college that this be used for advanced students. Major Wreidt's article is much more suitable for the average person, including military, who desires a general idea of Atomic Warfare.

* * *

I take this opportunity to present my views on the proposed absorption of the ANTI-AIRCRAFT JOURNAL into the *Combat Forces Journal*. I voted against union of the old *Field Artillery* and *Infantry Journals*, but was hopelessly outvoted. A recent editorial in *Combat Forces Journal* claims that opposition to a single service journal, instead of separate ones for each arm, is limited mostly to the older officers. Yet I as one of the old officers—I have subscribed to the ANTI-AIRCRAFT JOURNAL and its predecessor the *Artillery Journal* since 1899 inclusive—still believe that the Artillery is important enough to have its own journal, whose greatest value lies in its professional articles relating to artillery. In this line the ANTI-AIRCRAFT JOURNAL is now the only representative and I should hate to see it disappear.

I have been a field artillery officer most of my life. But I am not entirely ignorant on antiaircraft matters. During World War I, acting as G3, I supervised all the AAA batteries of the First Army in its campaigns. Ever since I have followed the antiaircraft service with continued interest. My personal preference would be to have a single *Artillery Journal*. My ideal is to have all batteries available and qualified for any enemy in war, regardless of whether it appears in the air, on the ground, or in the sea.

COLONEL CONRAD H. LANZA
USA, Retired
Manchester, N. H.

To the Editor:

All officers of the Battalion were briefed in the worthwhile purpose of the JOURNAL, and in the discussion which took place, the following questions and general comments were made:

All officers wished to know when a merger of the JOURNAL with the *Combat Forces Journal* might occur.

If the merger occurs and if an officer already is subscribing to both the AA JOURNAL and the *Combat Forces Journal*, will the remainder of his AA JOURNAL subscription be extended on his *Combat Forces Journal* subscription?

Many officers complained that when they subscribed to the JOURNAL, they did not receive all and in some instances any, copies of the JOURNAL.

Some officers felt that the JOURNAL's articles represented AA policy and doctrine and were reluctant to subscribe in consideration of some articles which had appeared in the JOURNAL and which represented writers' opinion only. This is indicative of two things:

More articles which *do* represent AA doctrine would be welcomed in the JOURNAL.

The fact that the JOURNAL is an outlet for procedure which can in the future become doctrine. This was explained.

A question arising from this is whether the JOURNAL has close liaison with the AA & GM School or AFF, wherein changes and new developments in doctrine can be disseminated within security requirements.

Herewith 16 new subscriptions which are enclosed. Add the 95th to your Honor Roll.

In our future training and firing, we will endeavor to secure photographs and possibly articles which the JOURNAL might use.

LIEUT. COL. KNUTE R. NELSON
Commanding, 95th AAA Battalion

[The merger negotiations have been suspended since last June when the *Combat Forces Journal* editor, Colonel Joseph Greene, died suddenly. It is contemplated that the negotiations will be reopened when the new editor is selected. There are some matters still to be resolved; accordingly, no prediction is offered. However, whenever the merger may be effected, ANTI-AIRCRAFT JOURNAL subscribers will get a new or extended



BALLOT

UNITED STATES ANTI-AIRCRAFT ASSOCIATION

The Vice President and four members of the Executive Council are to be elected on this ballot to replace officers whose terms of office expire December 31, 1953.

Please record your vote by making an "X" in the appropriate square or indicate your choice by writing the name of your candidate.

Each candidate was considered in connection with the geographic location of his residence. The Constitution of the Association requires that at least five members of the Council reside in the Washington area, and that at least three of them be on active duty, in order to facilitate the transaction of business.

Balloting closes December 31, 1953.

Use the ballot below or prepare one to indicate clearly your vote. Mail to the ANTI-AIRCRAFT JOURNAL, 631 Pennsylvania Avenue, N.W., Washington 4, D. C.

FOR VICE PRESIDENT (1954-1955)

Lieut. Gen. Lyman L. Lemnitzer,
Deputy Chief of Staff for Plans and Research:

FOR MEMBERS OF EXECUTIVE COUNCIL (Vote for Four)

- Colonel Darwin D. Martin,
Career Management Division.
- Colonel George V. Selwyn,
260th AAA Group, D.C.N.G.
- Lieut. Col. John E. Connor, Jr.,
Research & Development Div., G4.
- Lieut. Col. Otho A. Moomaw,
601st AAA Gun Battalion.

(SIGNATURE)

(RANK & ORGANIZATION)

(ADDRESS)

(PLEASE PRINT OR TYPE)



subscription for an equal period with *Combat Forces Journal*.

All subscribers are urged to notify the JOURNAL promptly of their address change. Do not expect the postmaster to forward the JOURNAL. Our diligent circulation manager, SFC Plumly, watches the addresses closely but he needs your cooperation.

The JOURNAL does maintain close liaison with the Antiaircraft and Guided Missile Branch of the Artillery School. The Commandant and the faculty have been most helpful toward keeping JOURNAL articles generally in line with anti-aircraft doctrine and its development. This is particularly true of the Director of the Gunnery and Matériel Department and his staff. We try to avoid publishing unsound or confusing articles; however, one of our best purposes is to encourage ambitious Artillerymen to develop and present sound and progressive solutions when needed, even before they may be adopted as standard.—Ed.]

To the Editor:

You asked me to put it in writing. Here it is.

I have a few young relatives in the service, who tell me their troubles, hopes, and fears. They tell me too of the "bull sessions" with other young officers. They are all disturbed, and many discouraged at the conditions and attitudes they face today. Some are about to resign now. All are apprehensive of the future.

Let me emphasize that these are Regulars, young men who have been proud to consider themselves professionals. Included are some strong men from such schools as West Point, V.M.I. and our better colleges. In short, the very people on whom we must rely if our army is to remain a worthwhile factor in this troubled world.

Here are some of the points they bring up. You may, or may not, agree with their views, but a glance at the list will show that there is enough factual reasoning to make the situation worthy of serious study.

1. Uncertain and short length of tour at all stations in the States, making family life difficult.

2. Constant changing and vacillating policy regarding: retirement benefits; medical and dental care, particularly for dependents; Commissary and PX privileges. All of this results in the loss of security that has been the one big sales

point of army life.

3. Gradual breaking down of prestige officers used to enjoy.

4. Lack of adequate quarters for bachelor army officers, and refusal to grant rental allowances so they can provide some themselves.

5. Uncertainty of quarters situation for dependents, and inadequacy in those supplied for junior grades at many posts. Also separation from dependents for long periods on departure for overseas service.

6. Uncertain and changing policy on uniforms, making it hazardous for officers to purchase many items.

7. Unrecognized extra expenses an officer is subject to, such as necessity of using own car in his work and unremitting extra expenses always necessary in moving a married officer on change of station.

8. Efficiency report system unduly shaped toward the development and promotion of "yes men."

9. Seeing labor get regular periodic raises on demand, yet any efforts for Army pay increases promptly killed.

10. Progressive weakening of the company commanders' powers for enforcing discipline, to the detriment of efficiency and morale in his unit.

11. Foolish emphasis on fad ideas like TI & E and EM welfare.

12. Gradual abandonment of military customs and traditions fostering pride of unit and service.

13. Unnecessary waste and expense observed, such as "show jeeps" for VIP reviews and other shows and presentations for VIP's which are staged and not representative of war training.

14. Uselessness and detrimental effect of many reports that can be rigged to make a showing, such as the court-martial record report, which causes commanders to kill charges that should be pressed, just to keep the record low; or the AWOL report, which causes the application of special local rulings to improve the record.

I was delighted to see that General Ridgway mentioned some of these points in discussing the recent ban on Commissaries in the current *Army Times*. It is a morale factor throughout the army in all grades and ranks. Let us do what we can to emphasize its grave importance.

LT. COL. CHARLES O. LAWES
Richmond, Va.

BOOK REVIEWS

THE SOLDIER PAYS*

THE RIVER AND THE GAUNTLET. By S. L. A. Marshall. William Morrow & Company. 395 Pages; Maps; Index; \$5.00.

The comments that follow on the effects that discipline and training or lack of these essentials of military success have on the soldier in combat are based on Colonel Marshall's excellent story of the defeat of the Eighth Army by the Chinese Communist Forces during the last few days of November, 1950 in the battle of the Chongchon River. In one sense, therefore, this is a book review, but in a more important sense it is critique of combat operations that, I hope, may be helpful and constructive.

Colonel Marshall himself almost never fails to be helpful and constructive in his writings on military subjects. Neither he nor this book needs much introduction to regular readers of this magazine. General Marshall is said to be the chief editorial writer of *The Detroit News*, but he has also been, among other things, the Chief Historian of the European Theater in World War II, Operations Analyst with the Eighth Army in Korea, and the author of many official and unofficial military books. Among his current jobs is that of consultant for the Operations Research Office. It may well be that he has to introduce himself when he visits his newspaper.

His latest book is based on the technique of after-battle group interviews—a technique which Marshall did much to develop and one which tends to bring out combat facts with brutal clarity.

One basic fact about the Chongchon River battle did not need any interviews to establish it:

"Deployed in line to the south of the river, the United States Eighth Army was an open book. Its battle objective and hour of movement had been published to the world; war correspondents had described in intimate detail the strength and location of its forces. Concentrated in a tight maneuver mass, guarded by an entrenched screen, north

of the river, the Chinese Communist Army was a phantom which cast no shadow. Its every main secret—its strength, its position, and its intention—had been kept to perfection, and thereby it was doubly armed."

American newspapers please copy. And politicians, editors, and columnists who have screamed about censorship and freedom of the press, read on as Marshall tells the story of heroism, death and suffering.

Lack of secrecy about the Army's strength and movements was not, however, the only cause of trouble for the fighting troops. The over-all picture was one of efficiency, good leadership, and courage, but throughout *The River and the Gauntlet* are incidents which reflect failures in enforcing discipline, in the making of firm decisions, in applying under the stress of combat the training lessons learned in garrison and in field exercises, and in constant supervision and inspection of the maintenance and condition of motor vehicles and all types of weapons.

Before going on to cite some specific examples, it is only fair to say that the officers and men involved were often tired, hungry, cold, shocked and in some cases wounded. It is much easier to be critical pounding a typewriter in a comfortable room than it is to maintain standards of discipline, maintenance, and training when someone is shooting at you.

Let's take a look at conditions in the infantry company which was first to fight in the Chongchon River battle:

"All but twelve men had thrown away their steel helmets; the pile cap was better insurance against frostbite and the steel helmet wouldn't fit over it. Only two men—new arrivals—carried the bayonet. The grenade load averaged less than one per man. Some rifle and carbine men carried as much as two extra bandoliers or six full clips. Others had as little as sixteen to thirty rounds on their persons. About half of the company had dispensed with entrenching tools."

The shortcomings here are obvious. Steel helmets, as it turned out, were very definitely needed. Inspection and super-

vision by officers and noncoms would have assured that they were being carried. Ammunition loads should have been prescribed and frequently checked. It takes guts for tired company officers to do these things; the officer and noncom who set requirements and enforce them won't be popular; but the soldier will have a better chance when the enemy suddenly hits as he did in those November days in Korea.

Then there is the case of a noncommissioned officer who was sent to run a telephone line from the battalion CP to a company:

"He was given 'heavy wire' instead of the light 130 which is useful on such missions. So he couldn't carry it over the hills and thereby take the shortest line between two points. Instead, he followed the waterline, and his wire ran out before he had covered two thirds of the distance. There his personal striving ended, and with that failure King Company, left alone in a great void, ceased to operate as the outpost of an army."

The whole story is of course not here. Who failed to provide proper communication equipment and alternate means of communication? Why did the sergeant end his "personal striving"? Why did the battalion commander and his staff officers accept the situation of no communication with a vital outpost? Perhaps no one failed; the fates may have ganged up as they did on everyone's efforts to warn Hawaii on the morning of December 7, 1941. But again there is no need to belabor the point; it takes constant effort to make things go according to the book; when they don't the soldier up front suffers.

Examples of superb leadership and of sorry leadership can be found throughout Marshall's book. Courage was not the main lack in the bad examples. Rather they stemmed from failure to enforce the simplest rules of local security, lateral liaison, and good use of ground. In one case the responsible officer seems to have been more influenced by the desirability of having soft ground to dig into rather than by the requirements of observation, concealment and fields of fire.

The problem of training a unit so that it can react to the shock of a surprise attack from an unexpected direction is of course a complex one. It involves initial alertness to minimize the degree of sur-

*Reprinted from *Combat Forces Journal*.

prise, good communications and their prompt use to get accurate information back to the various headquarters in the chain of command; the ability on the part of commanders from the squad on up to estimate the situation correctly, make prompt decisions and get orders out. As Marshall says, "Men and squads can topple one another just like a column of dominoes unless they react to the crisis with greater unity under the persuasion of strong leadership." The know-how of proper and prompt reaction has to be developed on the training field or the soldier pays in combat.

The number of weapon failures reported seems excessive even considering the extreme cold. The tired soldier doesn't want to clean and oil his weapon; the tired noncom doesn't want to make him do it; weapons will fail for reasons other than dirt and lack of lubrication but not often. Who pays? Marshall tells the story of a soldier almost face to face with Chinese soldiers. "He pulled the trigger on his M1; there was a soft click, but no explosion. He tried again with no better success; the shells ejected but they did not fire. (Probable explanation: the chamber needed cleaning.)" This soldier got away with minor injuries. Others in a like situation didn't.

Motor maintenance is a hard struggle in garrison: it takes all of the best efforts of drivers, motor sergeants, and officers of all grades when troops are in combat. A company was to be moved by three trucks in the Korean battle. Only one truck arrived, the others having broken down en route. Cold, the rough terrain, old age? More likely, a failure to conform to prescribed inspection routines. "The company arrived at the appointed ground one half hour behind time."

The night that the Chinese struck, one company commander faced a difficult problem. "The night was cold. The men had neither bedrolls nor overcoats. So the company was authorized to light squad fires. It was a mistake." It was an understandable one, but even after some indication of trouble came in, the squad fires were not extinguished. The company's position "would hardly have been better revealed had the ridge been floodlighted." As Marshall says later, "on the record, it is self-evident that these were good fighting men deserving of a much better fate."

At one stage of the battle, the issue

rested on how long a lone infantry company could stand unaided in defense of a solitary hill. When a situation of that sort develops it is too late for battalion, regimental, and higher commanders to do much. The discipline and standards which the company officers and noncoms have established or failed to establish determine the outcome.

The over-all outcome of the Chongchong River was inevitable. As one corporal said: "Our error was that we had too few men, too few automatic weapons, and too much territory." As Marshall says of an attempt to slow the Chinese advance by committing the Turkish Brigade: "It was like applying an aspirin bottle cork to the bung hole in a beer barrel." All this inevitability of defeat doesn't alter the fact that military readers of this book, and particularly junior officers, can hardly fail to be impressed with the seriousness of their responsibilities in maintaining the highest standards of discipline, training and maintenance of vehicles and weapons.

These comments have highlighted the failures. The book has more examples of things well done and some heart-warming stories. One example: A badly wounded lieutenant limped forward to see what was holding up traffic in a narrow pass. He soon found the trouble. Two riflemen were half-carrying, half-dragging a third who was shot through both legs. The lieutenant told the soldiers to get off to the side to let the column pass. There were high words (perhaps low words would be more accurate) and one of the soldiers threatened to shoot the officer. The lieutenant, pistol in hand, enforced his order, and then stayed with the men in the ditch while he urged the column to double-time by him. One of the riflemen said to the lieutenant: "I was wrong. I beg your pardon." Everyone shook hands all around and the wounded man said: "I feel better already."—MAJOR GENERAL H. W. BLAKELEY.

COLLIER'S NEW WORLD ATLAS AND GAZETTEER. Collier & Son. 472 pages. \$15.00.

This is an up-to-date and comprehensive reference book. There are maps—32 for Eurasia, four for Africa, four for Australia and Oceania, eight for South America, seven for North America, besides separate maps of the states of this

country and the provinces of Canada, and six of the major divisions of the world.

There are also maps showing the political boundaries in Europe and Asia in 1914, 1938 and 1950, plus authoritative comments on the effects of these changes.

More than 5,000 cities and towns throughout the world are described.

FROM DOWN UNDER TO NIPPON. The story of Sixth Army in World War II. By General Walter Krueger, United States Army, Retired. Combat Forces Press, 1953. 408 Pages; Index; Maps; Illustrated; \$6.50.

General Krueger states, in his introduction, that "instead of publishing my personal reminiscences of the events in which I participated, I decided to write the story of the Sixth Army." The book is, he says, "an unadorned narrative" of the long struggle of the Sixth Army against fanatical resistance as it fought its way from Australia to Japan. And that is exactly what it is. As a factual record of the operations of a major military unit the volume has rarely, if ever, been equalled.

Veterans of the Sixth Army's operations in New Guinea, Morotai, Leyte, Mindoro, and Luzon will find this book to be a valuable record of their experiences and there is much of professional value in General Krueger's statements of his reasons for decisions, and in his comments on staff procedures. He writes with clarity and no evasions.

We wish General Krueger had given more attention to some personal angles about his comrades and himself. Born in Germany, he served two years in the ranks in the 12th Infantry before he began his rugged career as an officer. When World War II came he was the Army's top man in training Infantry divisions to fight.

The record of the Sixth Army in its island-hopping campaigns in the Pacific is far different from that of any in Europe.

SOVIET MILITARY DOCTRINE. By Raymond L. Garthoff. Illustrated and Indexed. The Free Press, Glencoe, Illinois, \$7.50.

This authoritative book on the doctrines of the Soviet armies is readable

and thoroughly documented.

The overall conclusion this book will induce is simply that Soviet Military Doctrine is sound, is based primarily on Clausewitz, and resembles our doctrine in most phases. But there are extensive and interesting differences in emphasis and application. The basis of all Communist attitudes, military, political, economic or any other, is complete faith in the necessity for a "basic unalterable conflict to annihilation of the two basic hostile forces," whether they are called "classes," "systems" or "camps." On the one side is Communism; the other is any and all enemies of Communism, with immediate emphasis on the principal current threat, be it Trotskyism, Fascism, or Capitalism. There is continual emphasis on the near identity of political and military strategy, and on the combining of political, economic, psychological and other non-military forms of struggle with armed conflict.

There are three components in the Soviet concept of the military art: strategy, the "operating art" and tactics. The operating art is "the theory and practice of organizing and conducting Front (Army Group) and Army operations," and therefore partakes of the nature of both strategy and tactics as generally understood in the West. Military Science is considered to include all three components of the military art plus economic and morale capabilities.

After establishing the bases of Soviet Military Doctrine in Part I, Part II examines in detail Soviet Principles of War. The Soviet equivalent of established principles of war are the five "permanently operating factors" established by Stalin, plus one which Voroshilov had the temerity and the good sense to add. But also discussed are the transitory factors, such as surprise, and certain other principles of accepted stature in the Soviet science of war.

Particularly interesting is the emphasis the Soviets place on the offensive, on mandatory annihilation, on determination of the direction of the main blow, and on the organizing ability of the command personnel. The reader will conclude that the Soviet principles are a combination of sound analysis and a close knowledge of certain inherent Soviet weaknesses. To at least some extent they tend toward courses of action that would be most effective against them-

selves, an error not entirely confined to their side of the Iron Curtain.

Part III concerns itself with the employment of the combat arms of all three services, and with special operations, with a separate chapter on Partisan Forces. While each reader will find special interest in his own arm and service, they all deserve reading and study. Their use of Cavalry, for example, was highly successful, in contrast to the futile charges of the Polish lancers against the German Panzers. An entire Cavalry Corps operated in the German rear areas in every year of the war, except 1945, not momentarily, but for periods of 8 to 135 days, and returned to their own lines successfully.

So long as Soviet Russia appears so adamant an enemy in all political fields, military men of the West can afford to overlook no source of knowledge of the Soviet Armed Forces. "Soviet Military Doctrine" is a textbook and reference book on the subject, is a "must" for planners at all levels and is a useful and interesting book for all in the military.

COL. M. R. THOMPSON, G.S.C.

FROM LENIN TO MALENKOV. By Hugh Seton-Watson. Praeger, 877 pages, \$6.

Hugh Seton-Watson carries on the tradition of his father, a distinguished Slavic scholar. The history of world communism in Russia and abroad covered in this book is an ambitious project. The reader will get a clear idea of the motive forces in Europe and Asia and of Communist methods in subversion and force. Nothing about Communism in America. The author's knowledge of Russia is first hand, and he has a delightful habit of calling a bolo a bolo. We find, too, a pungent humor: "To distinguish accurately between hyenas, jackals, running dogs, paper tigers, reptiles, misanthropes, cannibals, and other disagreeable animal types, requires a mental subtlety to which the non-Stalinist infidel can hardly attain."

Authors find, of course, a distressing scantiness of historical material about the most secretive dictatorship in history and about an international movement which has always been an underground conspiracy. There are no uninhibited memoirs or histories, no impartial and free newspapers and magazines. So, the student resorts to conjecture to explain why

one Communist leader after another may have been in favor one year only to be disgraced and purged in the next. Under these circumstances the author clearly demonstrates the advantage of a long family background in the study of Russia, its rulers and its peoples. Seton-Watson has given us a well documented and sound historical study, one we found readable and entertaining. We recommend it highly to Army readers.

THE FALL OF THE PHILIPPINES. By Louis Morton. United States Army in World War II; The War in the Pacific. (Washington, Superintendent of Documents, 1953. PP xvii, 626. \$5.25.)

Here is the first complete account of the biggest military disaster suffered by U. S. forces in World War II. It is the story of the Philippine campaign from Pearl Harbor to the surrender of an army of 120,000 men, the largest single surrender in the history of the United States. The central figures in this tragic story are Generals Douglas MacArthur, Jonathan Wainwright, and Edward King.

Dr. Morton presents this tragic story in clear and interesting fashion. Of all the volumes on World War II history this is one that the Army officers should read. Major General Orlando Ward tells why in the foreword:

"The soldier reading these pages would do well to reflect on the wisdom of the statement exhibited in a Japanese shrine: 'Woe unto him who has not tasted defeat.' Victory too often leads to overconfidence and erases the memory of mistakes. Defeat brings into sharp focus the causes that led to failure and provides a fruitful field of study for those soldiers and laymen who seek in the past lessons for the future."

THE SPIRIT OF ST. LOUIS. By Charles A. Lindbergh. 562 pages. Scribners. \$5.00.

This is the story of the first trans-Atlantic flight from its inception to the climactic reception of the author by the French people, told in Lindbergh's interesting and modest style.

The book has received almost every recognition that is available, including a Book-of-the-Month Club selection. The future likely holds for it a long period on the best-seller lists and a place in the literature of flight.

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228th AAA Group
Col. T. H. Pope
107th AAA AW Bn (M)
Lt. Col. E. R. McIver
305th AAA Group
Col. J. S. Mayer, N. Y.

Separate Commands

AAA Repl Training Center
Col. E. W. Heathcote
Hq AAA Command
Lt. Gen. J. T. Lewis
Central AAA Command
Col. D. J. Bailey
Eastern AAA Command
Brig. Gen. F. L. Hayden
Western AAA Command
Brig. Gen. E. J. McGaw
Hqs. Far East AAA Spec. Sch.
Col. F. E. Day
Dept. of Gen. Subs.
Lt. Col. R. M. Page, Jr.
Electronics Dept.
AAA & GM School
Col. Arthur Kramer
Non-Resident Ins. Dept.
AAA & GM School
Col. T. H. Watkins

Brigades

31st AAA Brigade
Brig. Gen. E. F. Cardwell
32nd AAA Brigade
Col. M. W. May
34th AAA Brigade
Col. O. H. Kyster, Jr.
44th AAA Brigade
Col. C. G. Dunn
45th AAA Brigade
Col. F. F. Miter
47th AAA Brigade
Brig. Gen. F. M. Day
52nd AAA Brigade
Col. R. S. Spangler
56th AAA Brigade
Brig. Gen. H. F. Meyers
105th AAA Brigade
Brig. Gen. A. H. Doud, N. Y.
107th AAA Brigade
Brig. Gen. J. W. Squire, Va.
108th AAA Brigade
Brig. Gen. G. J. Hearn, Ga.
111th AAA Brigade
Brig. Gen. Chas. G. Sage, N. Mex.
112th AAA Brigade
Brig. Gen. J. W. Cook, Calif.
261st AAA Brigade
Brig. Gen. J. B. Moore, Del.

Groups

5th AAA Group
Col. H. G. Haskell
6th AAA Group
Col. A. A. Adams
8th AAA Group
Col. O. H. Kyster
10th AAA Group
Col. J. C. Bane
13th AAA Group
Lt. Col. G. F. Pindar

18th AAA Group
Col. R. W. Rumph
19th AAA Group
Col. S. M. Alley
26th AAA Group
Col. E. R. Hempstead
29th AAA Group
Col. A. S. Buynaski
30th AAA Group
Col. W. H. Murray
41st AAA Group
Lt. Col. A. D. White
65th AAA Group
Col. H. S. Tubbs
68th AAA Group
Col. W. B. Hawthorne
138th AAA Group
Col. H. B. Hudiburg
142d AAA Group
Col. R. M. Hardy, Ala.
197th AAA Group
Col. A. S. Baker, N. H.
200th AAA Group
Col. C. M. Woodbury, N. Mex.
205th AAA Group
Lt. Col. J. H. Pindell, Wash.
211th AAA Group
Col. D. MacDuff, Mass.
214th AAA Group
Col. J. G. Johnson, Ga.
218th AAA Group
Col. V. P. Lupinacci, Pa.
220th AAA Group
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224th AAA Group
Col. E. W. Thompson, Va.
233rd AAA Group
Col. W. T. Stone, Calif.
243rd AAA Group
Col. P. E. Donnelly, R. I.
250th AAA Group
Col. R. B. Williams, Calif.
260th AAA Group
Col. G. V. Selwyn, D. C.
302nd AAA Group
Col. J. M. Welch, Ohio
313th AAA Group
Col. A. F. Hoehle, Pa.
326th AAA Group
Col. M. D. Meyers, Pa.
328th AAA Group
Col. C. C. Parrish, Kans.
374th AAA Group
Col. T. F. Mullaney, Jr., Illinois
515th AAA Group
Col. F. G. Rowell, N. Mex.

Battalions

1st AAA Training Bn
Col. J. H. Doyle
2nd AAA AW Bn
Lt. Col. R. O. Van Horn
3rd AAA AW Bn
Lt. Col. A. E. Biegelow
4th AAA AW Bn
Lt. Col. E. O'Connor, Jr.
5th AAA Bn Training
Maj. F. S. Whitehead, Sr.
7th AAA AW Bn
Lt. Col. H. E. Michelet
8th AAA AW Bn
Lt. Col. W. A. Stricklen, Jr.
10th AAA AW Bn
Lt. Col. Samuel May

12th AAA Gun Bn Gn
Maj. H. Landsman
14th AAA Gun Bn
Lt. Col. T. B. Strother
18th AAA Gun Bn
Maj. G. W. Seabrook, III
20th AAA Gun Bn
Lt. Col. C. F. Ottenger
21st AAA AW Bn (SP)
Lt. Col. R. E. Deems
32nd AAA AW Bn
Lt. Col. E. F. Moody
39th AAA AW Bn (M)
Lt. Col. F. D. Pryor
41st AAA Gun Bn
Lt. Col. C. F. Chirico
46th AAA Bn AW
Lt. Col. F. H. Herb
48th AAA AW Bn
Lt. Col. D. W. Malane
49th AAA Gun Bn
Lt. Col. R. P. Bonasso
50th AAA AW Bn
Lt. Col. W. C. Boyce, Jr.
52nd AAA Bn Gn
Lt. Col. F. A. Werner
56th AAA Gun Bn
Lt. Col. M. A. Selsor, Jr.
63rd AAA Gun Bn
Lt. Col. E. G. Schwartz
64th AAA Gun Bn
Lt. Col. C. E. Berkeley
66th AAA Gun Bn
Lt. Col. J. C. Wilkerson
70th AAA Gun Bn
Lt. Col. C. F. England
71st AAA Gun Bn
Lt. Col. V. A. MacDonald
74th AAA Gun Bn
Lt. Col. R. S. Reilly
76th AAA AW Bn
Lt. Col. K. R. Philbrick
77th AAA Gun Bn
Lt. Col. R. M. Nelson
78th AAA Gun Bn
Lt. Col. C. E. Dunlap
83rd AAA Gun Bn
Maj. D. M. McCann
93rd AAA Bn Gn
Lt. Col. C. A. Anderson
94th AAA Bn Gn
Lt. Col. A. K. King
95th AAA Gun Bn
Lt. Col. K. R. Nelson
96th AAA Gun Bn
Lt. Col. R. E. Hood
97th AAA Bn Gn
Lt. Col. W. F. Corcoran
102nd AAA Gun Bn
Maj. E. R. Welte, N. Y.
120th AAA Gun Bn
Maj. F. G. Young, Jr., N. Mex.
125th AAA Bn Gun
Lt. Col. T. J. Buntin, Va.
126th AAA AW Bn
Lt. Col. R. C. Carrera
129th AAA AW Bn
Lt. Col. G. D. Eastes, Va.
130th AAA Bn AW
Lt. Col. W. Lamont, Jr., N. C.
133rd AAA AW Bn
Lt. Col. E. J. Modjeske, Illinois
140th AAA AW Bn
Lt. Col. L. H. Ripley

145th AAA AW Bn
Maj. P. L. LaPlant
168th AAA Gun Bn
Lt. Col. M. C. Macy
243rd AAA AW Bn
Lt. Col. E. E. McMillan
245th AAA Gun Bn
Lt. Col. C. Davidson
271st AAA AW Bn
Lt. Col. V. S. Mathews, Calif.
340th AAA Gun Bn
Lt. Col. R. T. Bard, D. C.
387th AAA Gun Bn
Lt. Col. R. Wetherall
418th AAA Bn Gun
Lt. Col. W. K. Adams, Va.
443rd AAA AW Bn
Lt. Col. R. J. Raffoeli
464th AAA AW Bn
Maj. W. J. Munroe
466th AAA AW Bn
Lt. Col. S. M. Arnold
495th Missile Bn
Lt. Col. B. H. Backstrom
501st AAA Gun Bn
Maj. D. M. Green
502nd AAA Gun Bn
Lt. Col. P. J. Maline
505th AAA Gun Bn
Lt. Col. M. E. Chotas
506th AAA Gun Bn
Lt. Col. J. H. Valliere
507th AAA AW Bn
Lt. Col. J. A. Laing
513th AAA Gun Bn
Maj. C. W. McDonald, Jr.
518th AAA Gun Bn
Lt. Col. G. Kushner
519th AAA Gun Bn
Lt. Col. A. E. Holt
526th AAA Gun Bn
Lt. Col. W. T. Lind
531st AAA AW Bn
Col. P. J. Gundlach
550th AAA Gun Bn
Lt. Col. F. E. Terry
552d AAA Gun Bn
Lt. Col. Z. L. Strickland
554th AAA Gun Bn
Lt. Col. F. J. Lagasse
697th AAA AW Bn
Lt. Col. W. E. Thompson, N. Mex.
698th AAA Gun Bn
Lt. Col. F. Monico, Illinois
701st AAA Gun Bn
Lt. Col. F. F. Quist
705th AAA Gun Bn
Lt. Col. F. O. Roever
716th AAA Gun Bn
Lt. Col. R. E. Howell, N. Mex.
717th AAA Gun Bn
Lt. Col. E. D. Pelzer, N. Mex.
719th AAA Gun Bn
Lt. Col. W. W. Morse, Calif.
720th AAA Gun Bn
Lt. Col. G. A. Duke, Calif.
724th AAA Gun Bn
Lt. Col. E. H. Hahn
725th AAA AW Bn
Maj. J. C. Maultsby
726th AAA Gun Bn
Lt. Col. M. I. Tillery, N. Mex.
737th AAA Gun Bn
Lt. Col. B. W. Perry

HONOR ROLL

739th AAA Gun
Lt. Col. D. F. Van Gundy

746th AAA Gun Bn
Col. K. S. Gray, Calif.

764th AAA Gun Bn
Lt. Col. E. D. Winstead

768th AAA Gun Bn
Lt. Col. T. H. Kuyper

804th AAA AW Bn (M)
Maj. S. Caudill, N. Mex.

865th AAA AW Bn
Lt. Col. W. L. Nelson

867th AAA AW Bn
Lt. Col. W. R. Parr

903rd AAA AW Bn
Lt. Col. F. J. Petrilli

933rd AAA AW Bn
Lt. Col. T. F. Penney

950th AAA AW Bn
Lt. Col. J. P. Wallis, Ga.

951st AAA Gun Bn
Lt. Col. W. G. Babbitt

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34th AAA Opns. Det.
Maj. J. Swerdya

114th AAA Opns. Det.
Maj. G. F. Kelley, Jr., Del.

131st AAA Opns. Det.
Maj. W. C. Fore, S. C.

151st AAA Opns. Det.
Maj. F. J. Slivka, Penn.

177th AAA Opns. Det.
Capt. J. J. Niehoff

181st AAA Opns. Det.
Maj. R. H. Moses, N. Mex.

184th AAA Opns. Det.
Capt. M. C. Teschendorf, Calif.

286th AAA Opns. Det.
Capt. H. J. Tarves

302nd AAA Opns. Det.
Maj. N. L. Funke, Jr.

327th AAA Opns. Det.
Maj. P. Lanasa

500th AAA Opns. Det.
Maj. C. O. May

501st AAA Opns. Det.
Lt. W. K. Merrill

502nd AAA Opns. Det.
Capt. J. R. Myers

508th AAA Opns. Det.
Capt. G. J. Lahey

509th AAA Opns. Det.
Maj. J. P. Bodkin

514th AAA Opns. Det.
Capt. H. A. Metzger

515th AAA Opns. Det.
Capt. C. R. Northop

517th AAA Opns. Det.
Lt. A. R. Omph

525th AAA Opns. Det.
Lt. R. A. Durkin

30th AAA Btry
Lt. R. A. Headland

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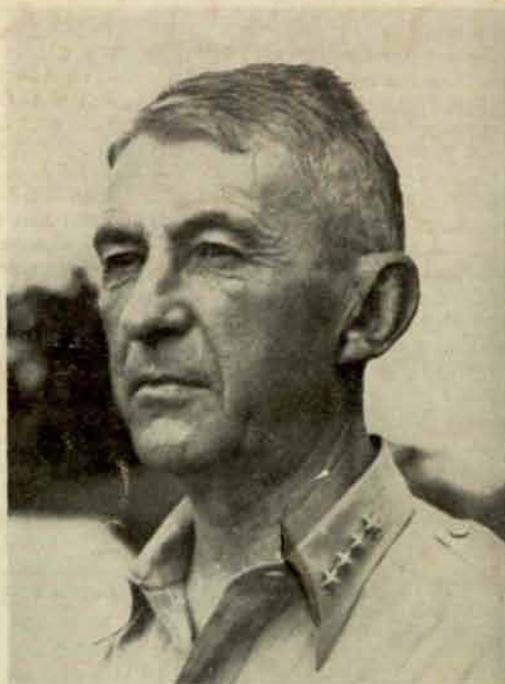
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