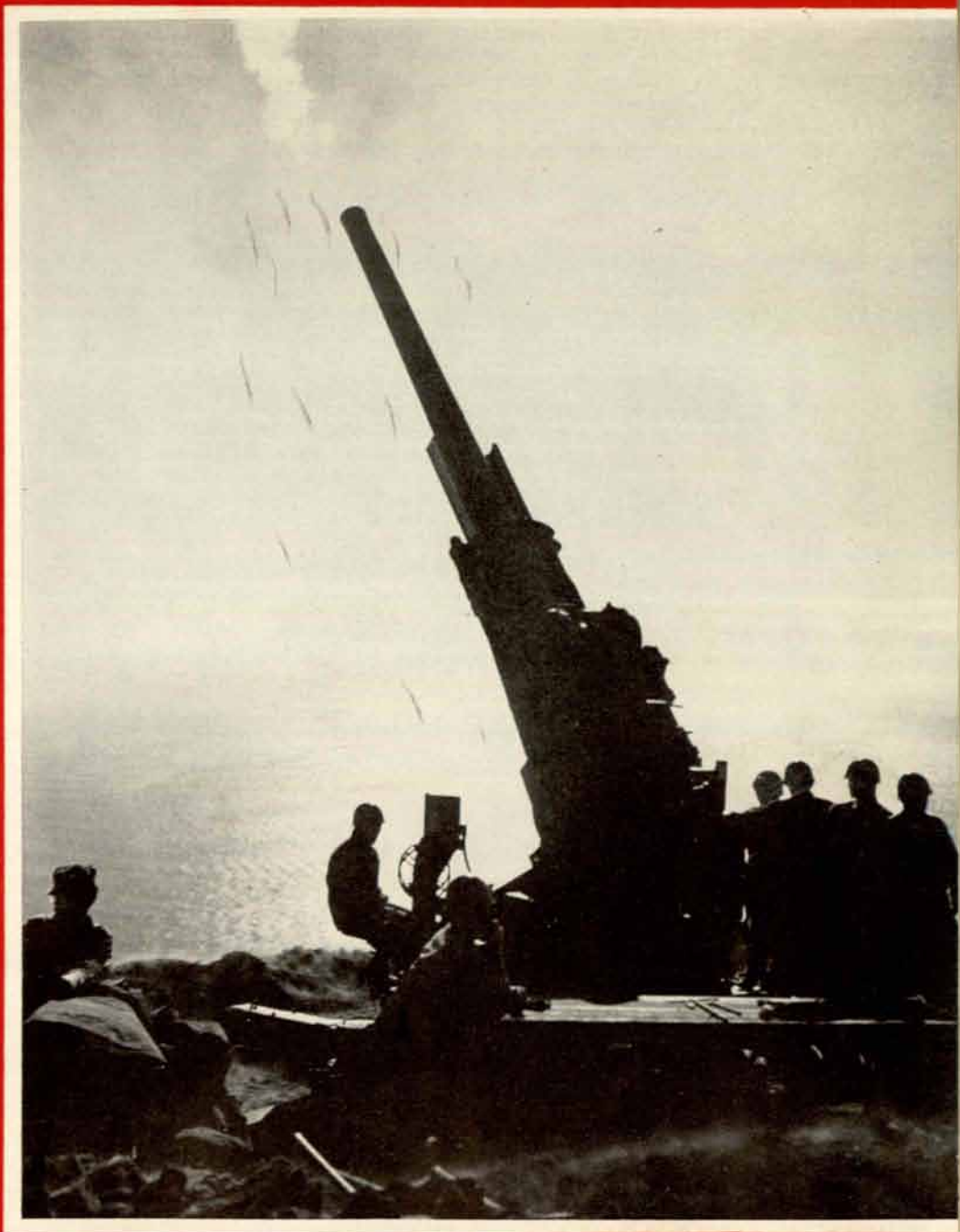


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SILVER STAR

Sgt. JOHN FINNIGAN, U.S. Army, a member of Hqs, Btry., 15th AAA AW Bn., attached to Co. C, 31st Infantry, distinguished himself by gallantry in action near Naedong, Korea. On 2 November 1951, while attempting to maneuver his halftrack to within close proximity of a combat patrol which was engaged in a firefight with the enemy when a call for litters reached him. Immediately, he secured the litters and made his way on foot through a hail of enemy small arms, automatic weapons, and mortar fire to reach the medical aidmen. Leaving the litters with the aidmen, he began maneuvering so as to draw the enemy fire from the wounded men's area. With complete disregard for his personal safety, he continuously exposed himself to the concentrated enemy fire and engaged the hostile force in a heavy firefight and succeeded in lifting the enemy's fire from the casualties. The quick thinking and intrepid actions of Sgt. Finnigan enabled the medical aidmen to successfully evacuate 15 men from the dangerously exposed area. The gallantry displayed reflects great credit on himself and the military service. x x x

BRONZE STAR MEDAL AWARDS

82nd AAA AW BN (SP)

1st Lt Henry S. Dunbar III (V)
Sfc Bernard W. Wylie
Sgt Garland L. Frye (V)
Sgt Rex E. Jenkins
Sgt Ernest C. Phelps
Cpl Marvin G. Neiberger (V)
Cpl James B. Sayre (V)

15th AAA AW BN (SP)

1st Lt George E. Mitchell
Sgt Paul E. Jenkins
Cpl Perry Davis, Jr.
Pvt Arthur E. Castro
Pvt Franklin R. Kuhn
Pvt Elverd C. McLamb
Pvt Michael J. Ryan
Pvt Casey A. Stallworth

PURPLE HEART AWARDS

15th AAA AW BN (SP)

Capt Henri F. Wroblewski
Sfc Wayne M. Robinson
Sgt Curtis C. Yenney

Cpl Stafford D. Shipley
Pvt Philip G. Bank
Pvt Albert T. Bazor
Pvt Leon A. Reglec

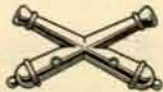
COMMENDATION RIBBON WITH METAL PENDANT

82nd AAA AW BN (SP)

Capt Donald E. Smith
M-Sgt George A. Santoy
M-Sgt Edmond W. Spradley

Sgt Donald C. Cole
Sgt James W. Everett
Sgt William E. Vernon
Cpl Kenneth K. Ellis, Jr.
Cpl Harry C. Walter

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The purpose of the Association shall be to promote the efficiency of the Antiaircraft Artillery by maintaining its standards and traditions, by disseminating professional knowledge, by inspiring greater effort toward the improvement of matériel and methods of training and by fostering mutual understanding, respect and cooperation among all arms, branches and components of the Regular Army, National Guard, Organized Reserves, and Reserve Officers' Training Corps.

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SUPPLY REORGANIZATION FOR WORLD WAR II

By Lieut. Gen. LeRoy Lutes

War Department is reorganized as war begins. Army Service Forces created to control all the technical services and to supervise and direct all supply and logistic activity.

AS the Japs struck with devastating surprise and effect in December 1941 to plunge us into World War II, the War Department had already become a rather unwieldy organization. Some sixty odd separate offices and agencies were reporting directly to General George C. Marshall, the Chief of Staff.

For the great number of officials engaged in preparing studies, programs, projects, and plans there were entirely too few prepared to make decisions and initiate action. General Leslie J. McNair, then with GHQ, was already saying that it was more difficult to get a project approved by the War Department than it was to get a bill through Congress.

At any rate, early in 1942 a sweeping change was made in the organization of the Army, but not without creating jealousies and resentments in a number of places, which, to some extent, still exist.

General Marshall had the vision to realize that the burdens of mobilizing, training, administering, moving and equipping a huge Army would be so great that they would materially interfere with his more important duties with the Combined and Joint Chiefs of Staff concerning military strategy, unless he took steps to delegate these burdens to competent subordinate leaders.

To meet this situation he directed and approved a reorganization of the Army into three major commands; i.e.,

As Director of Operations in the Army Service Forces Lieut. General Lutes organized and supervised the system of supply for our field armies in all of the far flung theaters. He was the master trouble shooter and expediter for all the bottlenecks and growing pains in the expanding supply and transportation systems.

As the war ended he relieved General Somervell as the commander and took over the task of returning troops and supply stores to the States, of closing out this vast empire, disposing of surplus properties, factories, and supplies, and reorganizing the Army's supply system to a peacetime basis.

From his memories and personal diary he writes a series of articles highlighting the main problems encountered and the solutions applied. His informal and interesting notes on his contacts with MacArthur, Eisenhower, Nimitz, Bradley, and other commanders enliven the story and throw new light on important decisions and the turn of events.

This is the first article to be published. A second, The Spring of 1942, will appear in the next issue.

the Ground Forces, the Air Forces and the Service Forces, each to have its own commander and staff with sufficient autonomy to carry out the operations charged to each.

The War Department General Staff was intended to remain small as a super policy and supervisory staff. It was originally assumed that a grand decision such as the invasion of Africa would be made by the Combined Chiefs of Staff; that the United States Army General Staff would prepare the United States Army's general plan, including the organizations and strength to participate; that the Army Service Forces would

work up the plans for the logistic support and submit them to the General Staff. Alas! it did not work that way. The General Staff not only grew in size but tried to hold on to many administrative details. It could not overcome the formed habits of running all the details of the small peacetime army.

Already General Marshall had GHQ for the Ground Forces under the command of Lieut. General McNair and the Air Forces under General "Hap" Arnold. The Service Force was to be the new organization, the commander of which was to take over the vast administrative and supply functions from the burdens of the Chief of Staff. General Marshall shrewdly chose for the commander of his new Army Service Forces a dynamic regular officer of the Engineer Corps, then Brigadier General Brehon Somervell (now General Somervell, retired, President of Koppers Company). General Somervell had supervised the construction of the mobilization camps and installations, and at the time was Assistant Chief of Staff, G-4 (Logistics). He was to be known later as the builder of the famous Pentagon, now headquarters of all the Armed Forces. The men who occupy this building today no longer quip about it. They are glad Somervell had the vision to build it.

ON taking command of the Army

Service Forces, General Somervell did not have time to form the type of organization he considered best to meet the situation. The urgency of war prevented. He had to be content with a loose confederation of so-called Technical Services, consisting of the Ordnance Department, the Engineer Corps, Quartermaster Corps, Signal Corps, Chemical Corps, Medical Corps, and Transportation Corps. Also embraced were such miscellaneous administrative services as the Judge Advocate General (Law), Post Exchange Services, Adjutant General (Records), Finance Department, and Provost Marshal. Had time permitted, I think he would have preferred to reorganize along functional lines, grouping common activities of the Technical Services. Such a drastic change could not be made at the operation levels

but was made at the Army Service Forces staff levels.

To assist him in his duties of command coordination of this huge organization, he formed a functional staff consisting first of Colonel Delp Styer, Chief of Staff (now Lieut. General, retired); Lieut. Colonel Lucius Clay (now General Clay, retired) to coordinate procurement; Brigadier General Joseph Dalton (now Major General, retired) to supervise personnel matters; Major General James L. Collins (now retired) (brother of the present Chief of Staff) to coordinate miscellaneous administrative services; Brigadier General Walter Weible (now Major General) to supervise training programs; Major General George Grunert (now Lieut. General, retired) to administer the eight (later six) geographical service commands in the United

States; and the writer as Director of Operations.

By the Spring of 1945 I was to succeed General Styer as Deputy, and in October 1945 to succeed General Somervell. In addition to the foregoing elements, General Somervell created an important division in his own office, the Control Division under Major General Clinton Robinson, to study and constantly improve organization and management methods. Through the war a considerable number of changes occurred in personnel and organization, but the foregoing gives a simple outline of the general organization, omitting the ramifications and breakdowns of the subordinate sections under these major activities.

The dynamo was Somervell, who drove himself harder than he drove any of his subordinates and whose strongest

Rations for the troops: A shipment arrives in Japan.





Jerry cans in Italy: A QM company fills 20 thousand a day.

characteristics were evidenced in his slogan to the command, "The impossible we do at once—the miraculous takes a little longer." I well remember his first instructions to me, pointing his finger as he said: "I hold you responsible for seeing that supplies and equipment reach the troops in the field throughout the world. Get things done—you will make mistakes—but get them done. I will not kick if 54% of the time you are right." His energies were always directed toward getting the true facts in each matter and then making speed to accomplish results.

THE Technical Services did not relish being placed under a commander and staff. During the long years of peace and our short wars since 1776, they had built up vertical empires, each entrenched in its own system of organization and procedures. Each with powerful industrial associations prepared to protect the autonomy of the separate Technical Services in order to gain and maintain business favors. True, each had fine traditions of service, but different contractual methods, different stock control systems, competitive buying of common items and many other different procedures which made these seven separate systems wasteful of personnel, funds, materials and supplies. Throughout the war and until June 1946, the Army

Service Force headquarters struggled to standardize the administrative procedures of the services and with considerable success. However, the resistance of the Technical Services was always smoldering. Each longed to shake loose from this driver who set goals for their accomplishment and then required checkups to prove whether or not they made their goals. Each longed for the day when they could once more, as an independent organization, report directly to the Chief of Staff.

So, when the returning combat commanders came back after the war ended in Europe, boards were formed to determine whether the Army Service Forces should be continued. One board was chaired by Major General "Sandy" Patch and the other by Lieut. General William Simpson. Most of the other returning commanders had understood the old army organization before they went overseas and never bothered much about logistics of supply. They had left that throughout their younger years to the Technical Services. Moreover, even though they ranked as corps and army commanders, in such a large army they were on the receiving end and had no responsibility for initiating logistic policies or procedures. Most of them little understood under what system in World War II they had been moved, supplied and maintained.

However, there was one—General

Dwight D. Eisenhower, the top commander who in his younger years had gone to the Army's Industrial College and served a while under the Under Secretary of War—who realized that the world had witnessed the greatest military supply operation in history—a worldwide logistic operation of unparalleled magnitude. He stated that no commander had ever received better support than he. Although he yielded to the recommendations of the Patch and Simpson Boards and to the pressure from Technical Service officers, to recommend to the Secretary of War the abolishment of the Army Service Forces, as such, he directed that an embryo headquarters of the Army Service Forces be planned and maintained at least on paper in order to revive this or a similar organization in case of a major war. However, on General Eisenhower's retirement, even this embryo and the old procedures were abolished.

I am now reminded of those days because I have recently read House Report No. 658, dated 27 June 1951, from the Committee on Expenditures in the Executive Departments, subject, "Federal Supply Management." This report states in part, "The subcommittee was particularly impressed with the difficulties of coordinating supply activities among the military departments and with civilian agencies in view of the evident fact that the Army Supply System itself suffers from a severe lack of internal coordination. The seven Technical Services or Corps—Ordnance, Engineering, Quartermaster, Medical, Chemical, Signal and Transportation—are each a separate and distinct operating activity."

So we find in 1951 that the clock has been turned backward. At this writing it appears that Congress has found that since June 1946, when the Army Service Forces were dissolved, the old competition and uncoordinated activities have been renewed. It was repeatedly predicted by General Somervell and others that this would happen unless steps were taken to maintain some type of organization similar to the Army Service Forces in order to provide central direction in procurement and distribution of supplies, standardize common procedures and eliminate competition in the procurement of common items, facilities and personnel. Competition in civil

life is the life of private enterprise, but competition in some activities within the government could consume wealth faster than private enterprise can create it.

AT the time of Pearl Harbor, I had only vaguely heard of General Somervell. Our paths had never crossed. I was then commanding the 37th Anti-aircraft Artillery Brigade with the Fourth Air Force at Los Angeles, but that was soon to change. In January 1942, I was called from command of my brigade on the Pacific Coast to report to Major General Richard C. Moore, Deputy Chief of Staff to General Marshall. General Moore was a quiet, ruddy-faced engineer officer with bright intelligent eyes, under bushy blond eyebrows. He said, "General, you may not realize it, but as a lieutenant colonel in the Louisiana Maneuvers, you were the first man in the Army since World War I to plan and supervise the movement, supply and maintenance of half a million men in the field." He referred to my duties as G4 of the Third Army in maneuvers in Louisiana through 1940-41. "I have told Somervell," he continued, "that he should get you in here at least for a while to give him the field viewpoint."

With a few other remarks, he dismissed me with instructions to report to Brigadier General Somervell, Assistant Chief of Staff, G4, and a few minutes later, I stood in front of Somervell's desk. He was writing, and I looked him over carefully before he glanced up. Immaculate, quick of action, lean, gray hair, close cropped mustache, and two years younger than myself, I thought, "He is a tough driver." On looking up he cracked, "Well—you finally got here." He quickly outlined what he thought I should do first; i.e., prepare a general plan under which all supply distribution operations from the United States to overseas areas could be guided, supervised, and properly controlled. A large order, but instinctively I knew I could work for him loyally. He was the type I liked and respected—smart, dynamic and practical.

With the help of some of his staff, I supervised the preparation of a general logistics plan for the support of our overseas operations throughout the world, which, with later refinements, served successfully throughout the war. In

fact, General Somervell, after the war, referred to it as the most successful and lasting of all the Army Service Force plans and operations. The basic plan was fairly simple, but the procedures and refinements became complex—too much so to fully describe here.

In the basic plan we divided the world into major segments in consonance with the boundaries of the military theaters of operation and allocated each one of these major segments to a port in the United States for support. For example, Europe and the Mediterranean to New York; Alaska and the Aleutians to Seattle; the South and Southwest Pacific to San Francisco, and Los Angeles; the Caribbean area and South to New Orleans; West and Northwest Africa to Norfolk, etc. In each of these ports we placed a competent group of staff officers and technical service officers. These staffs were to receive from our Washington office the policies and directives governing overseas supply and also to receive from overseas commanders their requisitions for supplies in the priority of need. From Washington we tightly controlled items in short supply in order that they could be used most effectively. To illustrate—until a weapon such as the then new bazooka was in production sufficiently to equip all combat troops entitled to it, we informed each port the limit that could be shipped to each area.

We also prescribed to the ports the

general level of all supplies authorized for each area such as General Eisenhower's command or General MacArthur's command. If we had not done this, it is obvious that either MacArthur or Eisenhower at various times would have been unduly short of critical items. By the same token, the staffs in all ports had to maintain records of the strength of each overseas area allocated to them for support and were required to limit shipments accordingly. These supply staffs in the ports, while under the port commander (a Transportation general) were actually directly under the Director of Operations, Headquarters ASF, for logistic supply direction after the ASF was formed March 9, 1942.

The Overseas Supply Staffs in the ports would interpret requisitions from overseas for thousands of items into approved priorities and quantities and send them on to filler depots designated by the Washington office as the backup depots for specific ports. If these depots could not fill the requisitions, they were sent on to special key technical service depots handling such items. A running card system in the port told the status of the call for each major item; i.e., when and where it was called for and when it would be due into port for out-shipment. These requisitions were translated by the port staffs into ship cubages and tonnages. The ships were then called for by the port commander through the



Supplies for the 7th Division at Kwajalein.

Chief of Transportation, Washington, and arrangements were made for Navy convoy.

Sounds simple, but the system required careful, constant direction and coordination. Through the system, I could put my finger on any depot in the United States that failed to honor a requisition on time. By inspection of port records, I could tell whether Eisenhower or MacArthur were being short changed or whether they were overstocked in anything from shovels to trucks or bombs to beans. When troops overseas complained of shortages and the port records here showed otherwise, I would go overseas and check from the front lines back to the overseas depots and bases to find where the break occurred. As Somervell said later, it really worked. When it is remembered that we shipped 135 million ship tons overseas in nearly six million different types of items, the magnitude of the problem begins to dawn on us.

But the magnitude of these operations was not the only headache! To distribute to areas from Iceland to Africa, Newfoundland to Brazil, Alaska to Guadalcanal and New Guinea—to India, to China, and dozens of other smaller areas and stations—in priorities that met the emphasis of the strategic plans called for refinements in the techniques of planning and operating that were to be real tests of professional skill and physical stamina of many key officers. To Major General William M. Goodman belongs considerable credit for the development of a sound operating procedure within the Port of Embarkation of New York. As the war progressed, he developed the statistical system in the port to a high degree and we later installed it at other ports.

After preparing the general plans and setting up the system for supervising

the overseas distribution, my office tackled the next job of attempting to streamline distribution to troops within the United States. We called it then "The Direct System of Supply," whereby the old corps area staffs were eliminated from the channels of supply and troops authorized to place their requisitions directly to designated depots. Although the corps area commander was relieved from actual supply operations, he was not relieved of responsibility to troops in his area for checking and reporting on the status of equipping troops.

One of the first things we discovered in the Operations Division of the Army Service Forces was that the General Staff had made no provision for service troops to support the Army and Air Force as a whole. They had provided in the tables of organization service troops for each separate field army and corps but none for construction, for general storage, for operating expanding schools, camps, ports, ships, and myriads of other activities.

When we brought this to the attention of G3 of the War Department early in 1942, the General Staff was quite embarrassed. They had submitted their requirements for the draft to President Roosevelt and had promised him they would need no increases for nine months or more. They did not want to return to the President with further requests for draftees, but we had to have some action. The matter was argued back and forth from March 6, 1942 until June 1942. Our world-wide requirements for these purposes initially had been estimated to be over 600,000 troops.

We finally got a promise of deferred draftees in the number of 475,000, but they would not begin to come into our control until August 1942. To this delay can be attributed the poor quality of service troops later supporting the

early days of the North African expedition. Luckily, the invasion did not meet immediate stiff resistance, but for one example, it was noticeable that many Signal Corps men had been in service but a few weeks and were not qualified in the use of radio or wire communications. The Army found itself dependent upon the Navy for ship to shore and vice versa communications. This tendency of the General Staff to discount the importance of service troops was to be encountered many times in various ways before the war ended.

Soon after the organization of the Army Service Forces, my Operations Division found itself swamped with a vast number of activities that involved coordination with the various divisions of the Army Services Forces and matters requiring coordination with the General Staff, the Air Forces and overseas commanders.

I prepared a rough draft of a standing operating procedure for equipping and checking the preparations of a division for overseas movement. It was written on about four pages, legal cap size. I selected a young lieutenant colonel of the Staff—William E. Caraway—to take it at once to Fort Dix, New Jersey, and obtain the views of a division commander there awaiting time of departure with his division for overseas movement. Colonel Caraway returned saying the division was enthusiastic about the guidance contained in the paper. Under Colonel Caraway and Colonel Oliver Troster, this short paper was developed with refinements to become a booklet and later a Technical Regulation or Manual, the substance of which continues in use today. Eventually, it had to be broadened to cover code markings for secret movements, packaging for special amphibious operations, and many other important instructions.

Army Emergency Relief

THE 1951 joint fund campaign of Army Emergency Relief and Army Relief Society was closed with the most gratifying results. The total contributions amounted to \$554,517.42 which is indicative of the increasing interest and support by members of the Army. Army Emergency Relief is recognized by commanders at all levels as an important

instrument of morale and welfare to their commands.

The largest single contribution was made by the Far East Command, which amounted to \$280,505.00. Of this amount the Eighth Army in Korea contributed over \$137,000.00. Other commands throughout the Army responded with generous contributions.

A joint campaign is conducted each year to raise in a single campaign the funds necessary to permit both organizations to operate, without incurring an annual deficit and to keep the Army informed concerning their work. Through the campaign, the aims, accomplishments and capabilities of both organizations were made known.

Colonel Hennig and the 10th AAA Group

COLONEL WILLIAM H. HENNIG, veteran commander of the 10th AAA Group and senior AAA commander in Korea since September, 1950 has departed for his new assignment with Army Field Forces Headquarters at Fort Monroe, Va.

A summary of the achievements of the 10th AAA Group under his command can well begin on 14 September when the group moved to Taegu to operate in a field artillery role and reinforce the artillery fires of the 1st Cavalry Division in its operations in the now famous "Bowling Alley." The group included the 68th AAA Gun Bn., Lt. Col. R. C. Cheal, commanding and the 78th AAA Gun Bn., Lt. Col. T. W. Ackert, commanding. Both the group and the battalions were commended for this action by the commander of the 1st Cavalry Division.

On September 19, the group and its battalions were placed in support of the 1st ROK Division then to the right of the 1st Cavalry Division. Because of the critical situation, Colonel Hennig moved the guns of the battalions around the right flank of the 1st ROK Division to take up exposed positions of advantage near Sinwon. From these positions the fires of the 90mm guns became extremely effective and knocked out enemy supporting elements in front of the 1st Cavalry Division then held up at Tabu-Dong. This action paved the way for the division to roll north some twenty-six miles to the Nakdong River crossings.

Continuing in support of the 1st ROK Division, the 10th Group helped block escape routes of the demoralized North Korea Divisions permitting them to be surrounded and captured. The 1st ROK Division took thousands of prisoners and the 10th Group units themselves captured more prisoners than the total group strength. With the 1st ROK Division the group pushed north to the parallel, crossed it and continued the fight toward Pyongyang. After a series of sharp engagements through Korangpo-Ri Sibyon-Ni, Singye and Taedong-Ni, it arrived at Pyongyang on 19 October and rolled into the North Korean Capital with the leading tank and infantry units. On arrival the group headquarters had to clear the enemy out of the position to be occupied as its command post.

For the actions from Taegu to Pyongyang, Colonel Hennig was awarded an oak leaf cluster to the Legion of Merit and the group headquarters was awarded the Korean National Colors by General Paik-Sun-Yup.

Because of communications difficulties, the group headquarters was constantly pushed well forward during this operation so that Colonel Hennig could keep in close touch with the situation. The presence of the group headquarters so far forward increased the confidence and morale of the ROK infantrymen.

During this period a firm and lasting friendship developed between Colonel Hennig and General Paik, commander of the ROK Division.

From Pyongyang the group pushed north with the division to Kunu-Ri and Unsan where they hit the Chinese Reds in force. Here the division was so outnumbered it was compressed into a narrow horseshoe defense. This stunning development of Chinese Red Forces was first reported to the Corps Headquarters by the radio of the 10th AAA Group and by a map overlay which Colonel Hennig sent to the Corps chief of staff by his liaison officer, Capt. Rawcliffe. Information got through to the Corps moments before the road to the rear was cut.

Two Chinese Red Armies were in Korea on October 25, but this apparently was known only to the 1st ROK Division. Three of the divisions of these armies were deployed against the 1st ROK Division. The division attacked to expand its perimeter and then held for a week through sheer bluff and determination. On 2 November one regiment was overrun and the ammunition ran out. Intelligence reports indicated that some 500 Red Chinese dead were hauled away per day during this period mostly due to the effective artillery fire.

At the end of the period the division withdrew without the loss of a single piece of artillery except for mortars. The only artillery casualties suffered were in the 2d Chemical Mortar Battalion which had one company overrun in the bitter fighting.

For his action in the Unsan operation, Colonel Hennig was awarded the Silver Star.

Early in November 1950 the group acted as division artillery for the 1st Cavalry Division and for Task Force Allen in the vicinity of Kunu-Ri. It then moved back to the 1st ROK Division and the "Reconnaissance in Force" of 24 November which uncovered several hundred thousand Chinese Reds. During the withdrawal, the artillery of the 10th AAA Group held off the superior numbers of the enemy and enabled elements of the 24th Division and the 35th Infantry Regiment and finally the 1st ROK Division to withdraw across the Chongchon River without incident.

At Yongyu General Paik gave his gold ring to Colonel Hennig to signify permanent friendship and the two parted company.

Colonel Hennig's 10th Group then moved some 220 miles south to Seoul to establish the AA defenses of Korea. There the 10th AAA Group expanded by additional battalions deployed its units to meet the growing air threat that was expected to come from the area north of the Yalu River. Thus far there has been no real air raid launched against these defenses but only harassing attempts by lone obsolete North Korean aircraft flown at very low altitudes at night.

The officers and men of the 10th Group will long remember Colonel Hennig as a keen artilleryman with the courage of his convictions, a natural leader, and a two-fisted commander.

ANTIAIRCRAFT A

By Major General

THERE are three things the Anti-aircraft troops in Korea are waiting for as this ninth report goes to press—the long sought truce, some lucrative targets till then in the air or on the ground, and the ANTI-AIRCRAFT JOURNAL. In all seriousness the JOURNAL serves to show them convincing interest back home, and they like it.

It is gratifying to note the increased interest displayed by the young anti-aircraft officers and men in writing articles for the JOURNAL covering in detail the more interesting episodes of combat action in Korea. These fine stories have done more than just help to break the monotony of the dreariness in the battle area. The men get a fine boost in morale and they also get copies to send home. That is the reason why the AAA troops in

Korea consider the ANTI-AIRCRAFT JOURNAL their very own.

As winter draws to a close, it is found that the UN Air Force has completely thwarted the efforts of the Communist air units to maintain operating bases close to the front lines from which they could launch mass or sneak attacks against our forces or installations. Even air-against-air combat has gravitated northward toward the Yalu River sanctuary with its obvious advantages for the enemy. Our magnificent airmen grapple with the Communist pilots over his own defenses and consequently get hit by the hostile ground fire and anti-aircraft artillery. The enemy airplanes, however, do not cross our front lines except at most infrequent intervals as a result of which our anti-aircraft artillery-

men get pretty tired waiting for targets that seldom show up.

The nearest thing to an anti-aircraft defense combat situation developed when three itinerant hostile planes of obsolete types flew over an airfield. Two were damaged by anti-aircraft weapons and disappeared quickly and the other managed to drop some bombs around the perimeter of the area. A few other sporadic efforts of this nature have occurred but, in the language of the anti-aircraft artillerymen, "the greatest damage inflicted is to our reputations—we can't hit them if they don't come in and fight."

With the UN infantry static warfare continues. There are raids in force, pushes here and there to improve positions or to drive the opposition out of a particularly favorable area. The front,



Lt. Col. Charles E. Henry decorates two *Journal* authors: 1st Lts. Paul S. Vanture (left) and Robert C. Morrison (right), 21st AAA AW Bn., won Silver Stars for gallantry in action in Korea.

ARTILLERY IN KOREA

William F. Marquat

PORT

however, is close to stabilized. The "flak wagons" are being used to the usual advantage in the various types of close support described so many times before in this series. The mutual confidence among members of the infantry-armor-antiaircraft team continues to develop in rapid strides and is manifested in the perfection of new techniques in laying down and shifting of infantry support fires. In defensive operations, the placement of intensive automatic weapons fire on short notice has salvaged many a critical situation.

All in all, things are about the same with the antiaircraft troops—except for one thing. Colonel William H. Hennig, veteran commander of the 10th AAA Group has been "rotated." This senior commander of antiaircraft forces in Korea since the early days has been outstanding among troop commanders. A graduate of the Class of 1928 at the Military Academy, Hennig has participated in all the normal types of antiaircraft artillery employment and not a little of the unorthodox use of these weapons. In the early days of rapid advance and just-as-rapid retirement, Hennig commanded a group organization of 90 millimeter antiaircraft battalions which was used entirely as field artillery. The batteries did not even carry with them their motor generator sets, their radars or their director equipment. With attached field artillery battalions, the group provided artillery support for the 1st Cavalry Division and later became the divisional artillery for the First Republic of Korea Division under Major General Paik Sun-Yup.

It was in those days that the antiaircraft artillery in ground support role made history under the title of "Auto-

matic Artillery" as first reported in this series of articles. A very appropriate summary of the achievements of the 10th AAA Group under Colonel Hennig's command is appended to this report.

The 10th AAA Group Headquarters presently is commanded by Lieutenant Colonel Werner L. Larsen, himself a veteran of the Korean war action, and commander of the 50th AAA AW Battalion. Larsen collaborated with Colonel Hennig on many of his basic policies and is an ideal man to carry on with the 10th Group. The 50th AAA Battalion is attached to the 10th Group.

The group has concentrated on polishing up the firing techniques of the battalions in anticipation of some air attacks from the Red Air Force during the period when it was concentrating strength and attempting to build operable forward operating strips. As a result the antiaircraft was never better prepared to meet any such hostile efforts as may develop in the future.

In conducting practice firings at ground targets, the batteries under 10th Group training instruction were introduced to the novel method of firing at live enemy installations instead of the usual dummy targets. This is possible in a stabilized warfare situation and full opportunity was taken of the advantages offered. Batteries were moved forward to positions where observed fire could be undertaken and scheduled practices were carried out. Air and ground spotters reported 20 bunkers destroyed, all occupied by enemy troops; eleven others damaged; seven machine gun emplacements destroyed; two others damaged; one antitank gun emplacement destroyed and fifty-seven hostile troops killed by fire directed at personnel targets in addi-

tion to others killed and wounded during engagement of the other installations mentioned above.

Lieutenant Colonel George Webster's 68th AAA Gun Battalion had a break in the monotony of target waiting when it engaged some bogies on one occasion. The enemy immediately took evasive action and disappeared. The initial approach was at just over treetop height and ground clutter bothered the radar operators but they are getting used to tracking through light ground haze and refuse to alibi at all on this score.

All batteries of this battalion are constructing what is termed the "Poor Man's T-33." This is accomplished by combining the radar and computer vans into a single fire control center, thereby eliminating the need for a separate Battery Commander's CP. The location of the battery commander in close proximity to the heart of the battery's operations makes for greater coordination and closer control.

Lieutenant Colonel Webster decorated First Lieutenant Carl E. North, Jr., with the Soldier's Medal for outstanding heroism in rescuing a wounded member of a group of British engineer troops, who was located in a barbed wire entanglement. Lieutenant North has returned to the United States since the event.

The 78th AAA Gun Battalion, commanded by Lieutenant Colonel Daniel G. Grandin, has been engaged in anti-aircraft defense of harbor installations in a critical area. Lieutenant Colonel Grandin replaced Lieutenant Colonel John B. Parrott who has been transferred to the Zone of Interior for assignment.

The 865th AAA AW Battalion (SP)

is providing defense for an Air Force base but things have been relatively quiet of late. There was one low level bombing attempted by a hostile itinerant light plane but no significant damage was done either by attacker or defenders in this instance.

One automatic weapons section, consisting of one M-34 and one M-16, supported a 90mm gun in forward area artillery action. The results of the support mission were recorded as 22 enemy killed in action, 2 bunkers destroyed, 2 machine guns put out of action and an unknown number of enemy wounded.

The 933rd AW Battalion (Mobile) under Lieutenant Colonel Charles E. Roden report "business as usual," but no special incidents of note.

THE 3rd AAA AW Battalion (SP), commanded by Lieutenant Colonel John P. Goettl, has been providing defense for the 3rd Division CP, Corps Artillery units in the division sector and the 99th Field Artillery Battalion which for a time was under operational control of the division artillery. The battalion's M-39 vehicles have been performing outstandingly with front line infantry regiments in supply and evacuation functions.

Two M-19 weapons, one from each of Batteries A and D, fired at targets of opportunity from positions on the 15th Infantry main line of resistance. The results were highly satisfactory. Battery B engaged in similar activity on another occasion and expended 323 rounds of 40 mm ammunition in neutralizing nine bunkers and inflicting ten enemy casualties.

Battery A of the 3rd AA AW Battalion supported the 7th Infantry Regiment in one company size raid against an enemy held position. Captain Kenneth D. Biersack made a forward area reconnaissance and located his CP with the infantry commander from where it was possible to obtain perfect coordination of infantry and antiaircraft ground support fires. Lieutenant Walter A. Guy distinguished himself during this action.

On the night of the raid, the infantry reached the objective without difficulty but was taken under heavy fire as it returned to the friendly area. Battery A took the opposition elements under fire and quickly silenced the hostile small

arms and automatic weapons fire. Lieutenant Ludger Conyers, Sgt. Billie E. Drummond and Corporal Donald P. Wichman were outstanding in the operation.

Battery B, under Captain Glen H. Wilson also fired considerably from the MLR positions during the period since the last report. Lieutenants Robert Wright and George T. James alternated their platoons in one period of concentrated action in which Sgt. 1st Class Alvie A. Bullock, Sgt. Dale McKessor and Corporal Ernest J. Lucero did some outstanding shooting.

D Battery, under Captain Richard Pride, a veteran of Korean service, likewise participated in this type of action against the enemy. Some new replacements in Lieutenant Robert Steelman's platoon performed outstandingly in their first action against the enemy.

The 15th AAA AW Battalion (SP), commanded by Lieutenant Colonel James M. Moore, is engaged in direct support of the 7th Infantry Division, general support of the division field artillery and the antiaircraft defense of the division zone of action.

Harassing and interdiction fires were put down in the forward infantry areas. To reinforce the artillery fire in support of the infantry, two 90mm T-8 guns have been attached to the battalion. These two guns were operated as Battery "Y," under Captain Wroblewski. More than 45 enemy bunkers have been destroyed by this improvised unit with attendant excellent results in enemy killed and wounded.

On January 5th Brigadier General Harry McK. Roper, 7th Division artillery commander, presented the silver star to Sergeant John Finnigan of Headquarters Battery. Six purple hearts were awarded to members of the battalion during the past two months period.

LT. COL. CHARLES E. HENRY turned over command of the 21st AAA AW Battalion (SP) to Lieutenant Colonel James L. Crane in January. During the first part of this reporting period, the batteries were attached to the 25th Division field artillery as supporting elements. Later on they reverted to antiaircraft defense roles except Battery A which was supporting a forward infantry element.

A Platoon of Battery B under Lieutenant Pirkel supported an infantry patrol and engaged in a short but spirited action. During this action four of the enemy were killed in action.

Brigadier General William E. Walters, commanding the 25th Division Artillery, presented decorations to several members of the battalion. Major Robert R. Taylor, Jr., received a third Certificate of Achievement and Captain Jack R. Lary, Michael B. Kaminski and Raymond L. Snider and Sergeant Anselmo L. H. Untalan, who entered the US Army from Guam, received Bronze Star medals. Cumulative awards in the battalion are: Silver Star 20; Bronze Star (V) 49; Bronze Star (M) 36, Soldier Medal 2; Commendation Ribbon 2; Purple Heart 139. The total decorations number 248.

THE 82nd AAA AW Battalion (SP), commanded by Lieutenant Colonel Howard A. Geddis, has been engaged in both ground support and air defense of the 2nd Infantry Division and the IX Corps Headquarters. Because of the large number of replacements for this battalion, it has been necessary to hold frequent target practices at the 10th Group range, but the respective batteries now are well trained and ready for any type of combat they may be called upon to perform.

So another cycle in the activities of the antiaircraft artillery in Korea has been completed. From the initial stages of combat when all operations were in the role of ground support and no antiaircraft defense at all was established, the antiaircraft troops later were divided into the orthodox categories of air defense and ground support units but since the ground situation was a dynamic one at that time, the balance in employment of ack ack units was still heavily directed toward ground fire missions. As the ground force action became more stabilized, there was a return to complete normalcy with even the divisional antiaircraft elements being assigned to air defense missions in addition to providing close support fire. The ability of these troops to adapt themselves to such changes in conditions is a tribute to the training and efficiency of the officer and enlisted personnel of the United States Army Antiaircraft Artillery.

AIR DEFENSE MORE DIFFICULT FOR RUSSIA THAN FOR U.S.

Targets in America So Far From Kremlin's Bases That Most Raiders Could Not Return—Soviet Union

Weak in Capacity to Absorb Attack.

Courtesy of the St. Louis Post Dispatch

By Brig. Gen. Thomas R. Phillips

AIR defense is much more difficult for the Soviet Union than for the United States. The United States is able to launch innumerable missions against Russia and Siberia while the Soviet Union can send few against the United States, and most of these without any possibility of return to home base.

Newfoundland, where United States bombers would refuel on the airway to Russia, is about 3500 miles from Moscow. Our 10,000-mile B-36 heavies could make the round-trip with ease. Great Britain is only about 1600 miles from Moscow, France 1350 miles, North Africa 1600 miles, and Turkey 1100 miles. All of these distances are within round-trip of the B-29 and of the B-47 and B-52 jet bombers.

From the Soviet side, Seattle is 2150 miles from Northeast Siberia, San Francisco 2750 miles, Chicago 3540 miles, and St. Louis 3600 miles.

From Eastern Germany to New York is 4050 miles and from Murmansk to Chicago is 4200 miles.

The Soviet copy of our B-29 bomber may be able to make a round-trip between Eastern Siberia and Seattle or Hanford, although we do not know enough about its performance to be certain of this, but the distances to all other critical areas in the United States are so great that any bombing missions against this country, except to the Pacific Northwest, would be one-way flights in which the plane and the crew would be lost.

Such Sacrifices Unlikely

If the Soviet Union, as reported, has fewer than 500 medium bombers, it is unlikely that many will deliberately be sacrificed on such missions.

It is easy to magnify the over-all importance of our cities and industry as a target for enemy bombing. The reality is that the Soviets will be fighting a major war in Europe and initially, at least, the most important targets for Soviet bombers will be the British and French ports and our overseas air bases from which our bombing retaliation would be conducted.

The difficulty of bombing the United States may turn Soviet thoughts to other methods of delivery of their bombs. It is perfectly feasible for them to use submarines to launch V-1 type of guided missiles with atomic warheads against coastal cities. It is possible for them to direct atomic torpedoes into harbors. Their atomic mines can be laid from apparently innocent merchant ships.

Defense against such possibilities is just as important as defense against air attack.

Two Air Bases In Siberia

There are at least two air bases on the northeast tip of Siberia. They probably are not fully equipped bases, since there is no railroad in the area and the harbors are frozen about half the year, but the air fields could be used for refueling of planes based farther inland. Since they are only a short distance from our bombers in Alaska, it is unlikely that the Soviets would station any planes there waiting to be destroyed.

Any flight from Northeast Siberia must pass over the Aleutian islands or Alaska to reach the United States. Here we have the advantage of knowing, even from the time the enemy leaves the ground, that the flight is being made. Our fighters in Alaska may be able to intercept, but if not, ample warning is assured, so the enemy planes can be tracked and interceptors alerted in Canada and the United States. With the United States and Canadian defenses now being prepared, enemy bombing from Siberia will at least be very costly and possibly completely thwarted.

Missions From East Europe

In bombing missions to the United States from Eastern Europe or from northwestern Russia—the area of Murmansk and Leningrad—the Red planes would be picked up in Norway or Western Europe. They would be tagged again from Great Britain, the Faeroes islands, Iceland or Greenland, depending on the route. They would be picked up again in Newfoundland or Labrador and even then would still have 1200 miles to fly to reach New York.

With so much warning and any reasonable defense, it should be possible to intercept and destroy them.

The geographical characteristic that so greatly favors United States air defense is that any area from which Soviet planes can take off for the United States is at the narrow point of the arc—that is, the spread between Chicago and San Francisco is about 2000 miles, whereas the spread in Alaska between the routes to these cities is not more than 100 miles.

The same characteristic is evident, al-

Brig. Gen. Thomas R. Phillips, USA Ret., noted anti-aircraft artilleryman, is now military analyst for the St. Louis Post Dispatch.

though to a lesser degree, for the routes to the United States from European Russia. It is unlikely that West Germany, France and Great Britain, with their fighter forces and warning systems, would be flown over en route to the United States. From Northern Russia the arc would be narrow over Norway and only 500 or 600 miles wide at Iceland and Greenland.

Raids Against Soviet Union

The opposite is the case for our missions against the Soviet Union. From bases in Turkey, Africa, Europe and farther North, our bombers can enter the Soviet Union anywhere on a perimeter of about 6000 miles.

Whereas our forward air defense requires only narrow arcs of vigilance, Western Russia must attempt to cover its great perimeter from the north, west and south against our entry. The distance is so great that forward air defenses are impossible. The United States can establish very effective defense thousands of miles outside the country while the Soviet Union must make the best defense it can well within its territory.

This is done by setting up strong

close-in defense forces around critical areas. Moscow, for example, is reported to be ringed by 17 airdromes. Other cities and industrial areas are protected in the same manner.

This defense requirement is one reason for the design of the MIG-15, the Soviet interceptor being used in Korea. In the MIG straying power has been sacrificed for rapid climb and great speed. As a result, it cannot stray far from its airdromes in Korea.

The MIG has been quite successful at interception at the single locality it is defending—the so-called MIG-alley. The Reds know where our targets are, they have ample warning, and are in the air to meet our planes when they arrive. Perhaps MIG-alley is a trial run for the defense of Moscow.

MIG is Not a Night Fighter

But the MIG is not equipped for night fighting. It is unlikely that our slow B-29 and B-36 bombers would be used over the Soviet Union in daylight and it is probable that our jet bombers could evade the MIG's in daytime.

Allied to the problem of air defense is the vulnerability of a nation's trans-

port and industrial systems. Although there are a few serious bottlenecks in the American transportation system, the network as a whole is so great and presents so many alternative routes that serious interference for any length of time is almost impossible.

The Soviet Union, on the other hand, has a very limited rail net and almost no paved roads. If the rail net were cut and kept interrupted, the effect on Soviet supply services would be very serious. The wide dispersion of Soviet industry makes it peculiarly dependent on its railroads.

With a few critical exceptions the United States has many plants devoted to the same kind of product. If one were destroyed, others could fill in. The Soviet Union is particularly weak in this respect and is correspondingly vulnerable to industrial bombardment.

On balance, the United States has a little-understood but tremendous advantage vis-a-vis the Soviet Union in every factor relating to strategic bombardment, air defense, vulnerability, and capacity to absorb attacks.

Perhaps this is one reason why the Kremlin has not risked war.

BEST AIR DEFENSE OF U.S. IS BY BOMBER OFFENSIVE

New Weapons, Despite Effectiveness, Are Too Costly and Require Too Much Manpower to Be Used Except to Protect Most Important Localities.

FULLY effective defense is impossible as long as the enemy has suitable airplanes and fields from which to operate. There are two reasons for this: Firstly, the comparative ineffectiveness of all air defense measures, either interceptor aircraft, antiaircraft artillery or antiaircraft rockets; secondly, the magnitude of the defense which would be required to cover the principal areas of any nation.

In the United States, for example, there are 232 cities with a population of more than 50,000 and there are probably a greater number of critical industrial communications points which should be defended. A minimum average defense for each locality would require about 5000 antiaircraft and interceptor personnel; if 600 localities were to be defended the personnel requirements would amount to 3,000,000 men, while the quantities of aircraft and antiaircraft

artillery would be several times greater than we shall ever have.

St. Louis as an Example

Actually, we shall use a much less force and defend only the most important areas. Close-in defense of a locality, such as St. Louis, is a sort of last-ditch defense. St. Louis also would be defended by interceptors on the Canadian border, or in Canada, or in Alaska and Europe. And finally most effective defense of all would be given by our bombing operations against the enemy air bases from which he would take off for the United States.

Speed Increases Problem

One of the problems of air defense is to determine where to make the effort. Should offensive operations be depended on for defense? Should our principal

effort be made outside of the United States, in Alaska, Canada and Europe? Or should we depend principally on close-in defense in the United States?

The answers today are a compromise. Offensive operations will be undertaken against enemy bases. Some defense will be provided outside of the United States. And in the United States the probable lines of approach, and the most important areas and localities will be protected with interceptors and antiaircraft artillery and rockets.

The technical complexity of air defense has increased with the speed of aircraft. A jet bomber flies at a speed of eight miles a minute while the jet fighter rushes at more than 10 miles a minute. If they are approaching, they are 18 miles apart when within a minute of each other and interception without guidance would be most unlikely.

Importance of Radar Net

Guidance is provided by radar. Radio instructions to the interceptor pilots tell them which way and how high to go to meet the enemy. At present-day speeds the interceptor may find them, and may not. The differential in speed between the jet bomber and the jet interceptor is not great enough to provide any assurance that contact will be made.

There is a better chance if sufficient advance warning is received. Warning is provided by still another radar set which can pick up high-flying planes at distances up to 200 miles. This is the search radar which composes the American radar screen just about completed on the air avenues of enemy approach.

For highly critical areas interceptor defense may be provided well forward from the locality as well as close to it. However, the more important close-in defense is a function of antiaircraft artillery and rockets.

The high speed of planes increases the complexity of the always difficult antiaircraft gun problem. Also altitudes of 40,000 feet take the bomber out of the range of our excellent 90-mm antiaircraft gun. Heavier guns which can reach to higher altitude are very costly and cannot be made in large numbers.

Antiaircraft Rockets

The antiaircraft rocket, when per-

fected, will undoubtedly replace the gun for higher altitudes. Development has proceeded far enough so that it is certain that rockets will be much more effective than guns at great ranges and altitudes. Two types are most promising. One is a small rocket, little more expensive than a shell, which is effective to an altitude of 60,000 feet.

Whereas a shell starts out with a velocity of 3000 feet per second, this rapidly decreases until the remaining velocity at 30,000 feet is less than 1000 feet per second. This makes the time of flight to a point in front of the gun, at 30,000 feet of altitude, about 30 seconds. In 30 seconds a 500-mile per hour bomber would have traveled 7500 yards so that the gun-aiming device must predict the position of the plane that far in advance and aim five miles ahead of the plane. The rocket, with a constant velocity of 5000 feet a second, takes only one quarter of the gun's time of flight and thus reduces the lead needed and the chances of error due to a change in the bomber's course.

The small rocket is not guided, but it has a proximity fuse and can be fired simultaneously in great numbers. Its accuracy is less than that of the gun, but its effectiveness should be greater at all altitudes.

The most promising antiaircraft device is a large guided rocket. Its range

is adequate for any conceivable advance in aircraft. It is guided from the ground, may also have a homing device which comes into play when it gets close to the target, and may or may not be equipped with a proximity fuse. Its accuracy, as determined by test firings, is so great that destruction of located enemy aircraft is almost certain. If guided rockets fulfill their present promise, they are quite certain to supersede aircraft for all close-in defense.

For lower altitudes, the new skysweeper antiaircraft cannon is sure death for enemy planes. It is a three-inch fully automatic gun firing an unbelievable number of shells per minute. It requires both a search radar and a tracking radar, the latter taking over from the former when the plane is within firing range. The radar data is electrically fed through a computing device and an electrical system which aims the gun and fires it without any human assistance. All the gunners need to do is to feed clips of shells into the loading trough.

In spite of the effectiveness of new weapons, antiaircraft defense can never be fully effective. They are too costly and use too much manpower ever to be used to protect more than a limited number of the most important localities. Our most effective defense will be the offensive of our own bombers to destroy the enemy aircraft before they take off.

CIVILIAN AUXILIARIES

By Major General Paul W. Rutledge

IN 1944 and 1945, when we were scraping the bottom of the manpower barrel, we learned that our nation's manpower resources were not inexhaustible; and, it is now apparent that the same situation may arise again.

Confronted with this situation, our military planning must explore every possible source or means of more efficient utilization of our available manpower. In our antiaircraft defenses in the Zone of the Interior, there exists a tremendous potentiality for the exploitation of sources of manpower not normally considered in the military service pool. Many positions in an antiaircraft artil-

lery unit serving in home defenses can be filled by women; many other positions can be filled capably by men who are not otherwise qualified for full military duty—men who are over-age, draft exempt, or physically handicapped.

In the event of an all out war, with its attendant demands for physically qualified men, it may become desirable, or even imperative, to utilize such substandard personnel in either or both of the following categories:

Category I: Personnel enlisted for full or part-time duty in a military unit and subject to complete military control. This would include full military status

with rights, responsibilities and benefits thereof.

Category II: Personnel recruited on a purely voluntary and part-time basis, not subject to full military control, and formed into civilian auxiliary units. Such personnel would continue their normal civilian pursuits and activities, except in times of emergency.

The vital difference between Category I and II lies in the element of military control. Category I personnel could be utilized in a regular military organization, while the Category II personnel, formed into civilian auxiliaries, would retain a purely voluntary status with

only such military stature and posture as the loyalty of each person would direct. It is generally agreed that militarily no major difficulties will be presented in utilizing Category I type personnel. However, with Category II personnel or the civilian auxiliaries, we are faced with new and peculiar problems, many of which will demand completely new approaches in our military thinking and concepts.

Before proceeding further let us examine past experience in this field. Both Great Britain and Germany made extensive use of substandard or nonmilitary type personnel in the AA defenses of their homelands in World War II.

BEGINNING in the early days of the war, the British trained thousands of women and used them in mixed batteries with male personnel. As the war progressed, more and more able-bodied men were screened out of antiaircraft batteries and sent into other combat units. They were replaced by women or by men incapable of general military service. The results testify to the tremendous possibilities of such measures.

The Germans likewise resorted to the utilization of women and men with physical limitations or those over-age for military service. Workers were pressed into service in part-time antiaircraft auxiliaries; even prisoners of war, foreign nationals and the very aged were forced into service. However, low morale caused by the specter of impending defeat, and

an ineffectual organization, produced less successful results than in Great Britain.

Our own manpower situation in the United States late in World War II forced us to utilize limited service men in antiaircraft units and some noncombat organizations. From this we learned it could be done, particularly in our Zone of the Interior with the physically limited personnel under military control. But, can purely volunteer personnel (Category II) be organized into civilian auxiliaries which are capable of operating successfully in our AA defenses? In arriving at an answer to this question, let's look at some of the problems to be solved in utilizing civilian auxiliary organizations.

Our first problem is one of procurement. Can we secure the volunteers for civilian auxiliaries? How can we recruit them? What inducements are needed to attract volunteers? Certainly the motivation will be greatly different under peacetime or pre-hostility conditions than it will be after the first bombs fall.

Perhaps patriotism will provide that motivation, especially in the case of former servicemen not physically qualified for active service in the Armed Forces. Perhaps cold anger and a desire for revenge will be the motivating force after hostilities start. Maybe a distinctive uniform, social opportunities, financial benefits such as pay, medical care, hospitalization, veteran's rights, or pensions will be the inducements. But whatever the reason or reasons, it is immediately apparent that creation of such

inducements will demand legislation and executive action at the highest national level.

Whether or not these matters are used as recruiting inducements, they will still require solution by their very nature, before civilian auxiliary organizations can be formed. For example, will a civilian in an AA auxiliary be entitled to the free \$10,000 government insurance? Will he or she be entitled to a pension for an injury incurred in a volunteer status during a training session? Will prior physical disabilities, aggravated by volunteer service, later be the basis for claims for veteran's compensation?

Then too, the program for recruiting civilians for AA auxiliaries will probably have to be restricted to certain manpower pools. Obviously, we cannot entice Civil Defense personnel from their highly important tasks; doctors, policemen, firemen, members of reserve or National Guard military units are obviously required elsewhere in an emergency. But here again, a policy decision must be made at very high level.

ANOTHER problem is that of siting the antiaircraft batteries to facilitate reliance on volunteer personnel. The manning personnel must come from the immediate vicinity of the site if they are to be available when needed. It will probably be impracticable to site many batteries by industrial plants to utilize the employees as part-time auxiliary men; however, it should be practicable to

General Rutledge Leaves Eastern AA Command



Photo courtesy of Army Times

Maj. Gen. Rutledge on the eve of his departure for EUCOM takes the salute at a farewell review in his honor on 9 Feb., with Col. Robin B. Pape, CO of the 80th AAA Group. The 526th, 69th and 259th AAA Gun Bns. paraded at Fort Totten, N. Y.

locate many batteries in residential areas. By using three or more shifts of personnel some degree of readiness can be maintained daily around the clock. Of course this volunteer duty will eventually interfere with sleep and rest, often just due to a false alarm.

Also we may as well face squarely one of the trying problems in antiaircraft defense, that is the utter monotony, confinement, and boredom of standing alerts day after day and month after month when the enemy attacks fail to develop. We may well anticipate a real problem in maintaining the enthusiasm among volunteers.

What dependability can we expect from civilians during an attack? Can we expect them to forget all else and repair to their battle stations in time of emergency? Or are they more likely to want to be with their families in time of emergency or threat of impending atomic attack? With no military controls—or at best with limited control of such personnel—how effective can we expect a civilian auxiliary unit to be when they are most needed?

Early in the planning we should decide:

a. How much warning of an enemy air attack can we expect?

b. What time tolerance must we allow a civilian auxiliary from sounding of alert until unit is prepared to deliver fire?

Obviously, with civilian auxiliaries, we must be prepared to be more liberal in our requirements on these points than with a military unit. But can we afford this differential—this time loss in operational readiness—in our initial defense before hostilities? Can we gamble on a capability to bring destructive AA fire upon the first enemy plane—especially when that plane may be carrying an atomic bomb? Perhaps not initially, but later, when the threat to our homeland is minimized and our offensive effort is mounted, can we afford *not* to utilize such civilian auxiliary units in our ZI defenses?

Closely coupled with the personnel problems already discussed, is the security angle. It is almost certain that subversive elements would be attracted quickly to a civilian auxiliary unit. An organization which could be easily infiltrated, it would afford an extraordinary opportunity for sabotage, for undermin-

ing a defense, and for securing valuable information. It is most apparent that some security clearance program would be advisable for all personnel and an absolute necessity for key specialists, such as radar personnel.

Such a security program demands diplomacy as well as effectiveness. For although a civilian auxiliary organization might attract subversive personnel, it would also attract people of the highest patriotic motives who might easily be offended by a security investigation if the necessity therefor were not fully explained.

Some of the training problems to be solved include:

(1) Acquisition of adequate training facilities—classrooms, training aids, and equipment at each battery site.

(2) Carefully planned training schedules especially for those activities requiring outdoor time (service practices). Scarcity of AA firing ranges near metropolitan areas in the United States emphasizes this problem.

(3) Well organized and clearly presented instruction. Part-time duty means that training must be reduced to barest fundamental skills.

(4) Methods of alerting personnel for duty in an emergency to get speed and simplification.

(5) Security and maintenance of equipment deployed on a defense site. A certain number of full-time personnel will be necessary to perform these functions.

(6) What time tolerance can be allowed in manning equipment? How much will this tolerance vary prior to and after the outbreak of hostilities? Can we afford to utilize personnel who are further removed from their post of duty than short walking distance? How will traffic conditions during and just prior to an emergency affect this time tolerance?

(7) Will this time tolerance dictate that civilian auxiliary units be used only to augment and not replace army units in a defense?

(8) Can military control and discipline be maintained—in other words, can a civilian auxiliary unit be developed to the point where it

has military stature? Or will discipline be lost when the first bombs fall, with personnel abandoning their posts to assist and be with their families in time of great danger?

(9) Can absenteeism be controlled to the point where effective teams can be developed?

(10) Can units be developed, capable of delivering accurate, effective antiaircraft fire?

THESE, then, are but a few of the questions to be considered in the utilization of civilian auxiliaries. Many of these difficulties can be overcome, as a test conducted in the Panama Canal Zone last summer proved. It was my good fortune to observe the culmination of this Panama Antiaircraft Civilian Auxiliary Program last August (ANTI-AIRCRAFT JOURNAL, September-October 1951). I sat in on training classes and observed the enthusiasm engendered among the volunteer civilians; I watched them go through the various drills and duties of artillerymen; and I observed, not without a good deal of admiration, these same civilians fire AW and 90-mm service practices with a degree of skill comparable to that expected of a regular military battery. The Panama tests pointed up our military thinking on the whole problem and gave us a base upon which to construct further plans and tests.

It is not my purpose here to present a case for or against the utilization of civilian auxiliaries. Rather, it has been merely to stimulate discussion and thought by presenting a few aspects of the problem.

Let me repeat, in conclusion, that our manpower situation will be such in any future war that undoubtedly antiaircraft artillery will be called upon to utilize some "substandard" personnel, at least in our Zone of Interior defenses. Utilization of that manpower—females and physically handicapped, over-aged males—will pose many problems. Some of those problems will, of necessity, be solved in high level policy decisions; others will require special enabling legislation; but a vast majority of them will be successfully overcome only by the hard work and experience of those of us who will actually have to cope with them!

FIRE CONTROL SYSTEM SCR-584

By Major Francis M. Connelly

S3, 245th AAA Gun Bn.

Figure 1 shows complete assembly using the Remote Data indicator placed on top of the Fire Control and Status Box.

The Fire Control and Status Box includes a battery of switchboard lights in the vertical plane at the left of drawing, and a battery of switchboard lights in the horizontal line at the right, to indicate status of guns, and radar "On Target."

The left battery of lights is operated manually by five 6 amp toggle switches, purchased locally for 25¢ per switch. The "On Target" light and all gun lights are energized manually by switches at their respective locations, i.e., radar and guns.

The "Fire" button, located on top of front panel-board, is used to fire the guns by means of a 6 inch Bell 24V, AC, located at each gun (purchased locally at \$1.25 each). A safety feature has been built into this button by connecting the power to the "Battle Stations" switch, thus the battery cannot fire until a "Battle Stations" condition has been indicated. See figure 2.

The "Alert" button (purchased local-

ly at 35¢ each) when pressed on "Stand By" condition of readiness, energizes a factory type klaxon horn to alert the batteries (present price is \$16.00 wholesale). The horn must be 24V, AC, to fit in with the power output of the transformer in the unit. Due to the cost of the horn, other means of alerting the batteries may have to be used.

The remaining feature is the Target Rate Indicator. By using three Ord Cat No. 7574115, and one Ord Cat No. 7574116 millimeter gauges, we have taken the exact data from the computer by means of connecting the corresponding dials of the target rate indicator to those of the Computer. This should be acceptable to Ordnance since we make no changes or modifications to the computers, but merely "tap" the data at its source.

This improvised instrument is located in the command post.

The Vertical Correlation Board, supported vertically by a suitable 2" x 4" wood frame, is composed of transparent material, such as two pieces of glass, 24 x 30 inches. Lucite is really better due to its ability to carry light laterally and

better illumination through the material but the cost is high, \$1.73 per Sq Ft., delivered. It can be obtained from the Du Pont de Nemours Co., Plastics Division, ATTN: Sales, Wilmington, Delaware. This puts the total cost of the board at \$20.76 for two sheets, exclusive of light sockets and bulbs. Choosing the cheapest way out, this Battalion used plate glass obtained from Ordnance under salvage conditions. The total cost of the board, using plate glass, was \$3.10 for the sockets and lamps.

The inside portion of one glass has a grid system painted on it, as well as the gun and radar rings. The other piece of glass is placed against the painted side of the first piece, and fitted into its frame of 2 x 4s. This allows writing on both sides of the board without rubbing or chipping off the grid system. A molding is placed around the frame of the glass to finish the board and hold it in place.

The "I" Plotter and the Radar Plotter, using different colored grease pencils, plot their respective information on opposite sides of the glass (one of the two plotters must write and plot backwards). This system gives the battery commander at a glance the information he must have before he can fire, and it also indicates to him visually whether his radar plots are correlated with the plots from AAOC. He can also see when the plane is in range of his radar and guns.

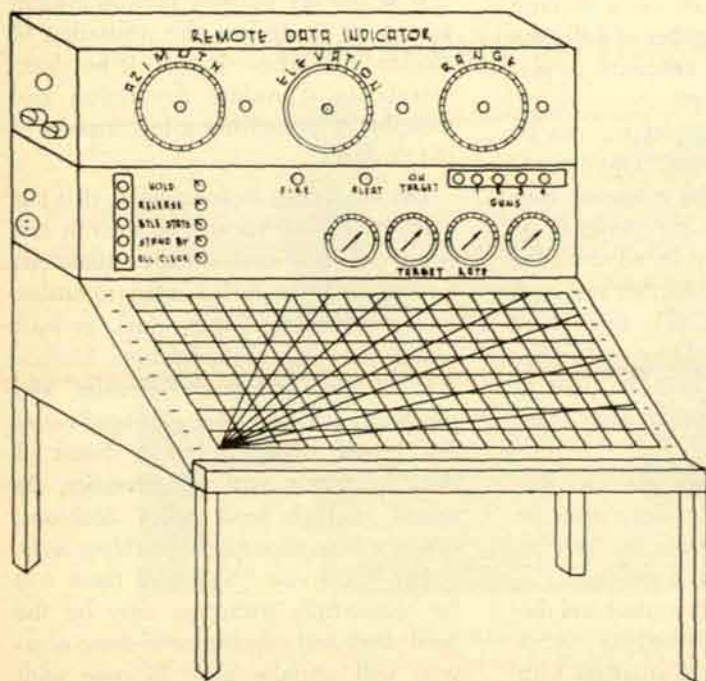


Figure 1—Fire Control System.

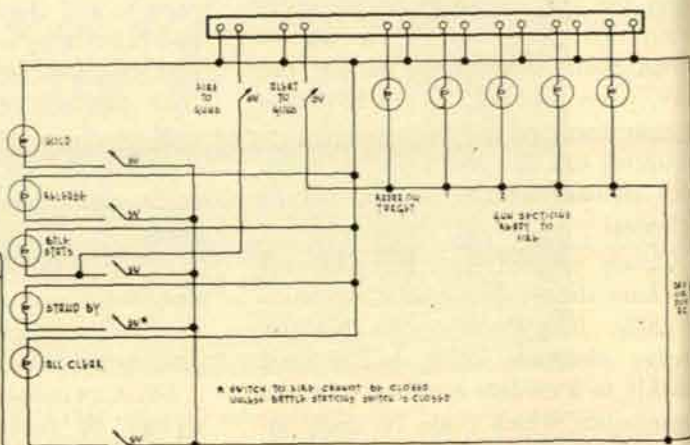


Figure 2—Wiring Diagram, Fire Control Box.

AIDS TO TARGET SELECTION

By Major M. R. McCarthy, Artillery

ONE problem of the AAA gun battery commander in battle is that of target selection. With a number of targets coming in range the problem becomes very complex indeed. Training Circular 18, 27 December 1950 teaches that:

1. Each fire unit should be assigned a primary sector and a contingent sector of fire.

2. If only one target appears in the primary sector of a fire unit, it should be engaged as long as possible.

3. If more than one target appears in the primary sector, the commander should engage effectively the maximum practicable number.

4. If none appears in the primary sector, the maximum practicable number in the contingent sector should be engaged.

5. Approaching targets are more profitable to engage than receding targets.

6. Each target should be engaged up to the final moment of bomb release by at least one fire unit.

TC 18 then goes on to state that: "The AAA defense commander should establish rules for the selection of targets within the primary and contingent sectors . . ." It is the purpose of this article to suggest one approach to that problem.

We shall consider the gun battery equipped with the SCR-584. Once a target is being tracked for engagement, the radar is blind to any other threats against the area. This necessitates that

a plotting board be maintained in each gun battery command post on which to plot the locations of other aircraft, hostile or unidentified, within range of the defense as received from the AAOC. By consulting his plotting board and applying his rules for target selection, the battery commander can determine the proper moment to cease tracking the target then being engaged and transfer to a new and more profitable target.

THE PROBLEM

CONSIDER a simple defense consisting of four gun battery positions, as shown in Figure 1.

Notice that a primary sector has been assigned for each battery. For A Battery, for example, the primary sectors of the other three batteries constitute the contingent sector. It has been found less confusing to intersect primary sectors at the optimum range.

This organization into sectors provides in itself a basic coordination in the fire distribution of the batteries. If there is only one suitable target in the normal sector, the battery commander's choice is simple. But if two or more suitable targets are in the normal sector, then we need a further basis for determining priority.

Such a range priority may be based on what we shall call the optimum range. This range is defined as that range at which the decision must be made to engage so that fire may be brought to bear on the target at maximum range of the battery. Optimum range may be calculated by the following procedure:

1. Determine the expected target speed and altitude of attack. (Assume here a speed of 400 miles per hour and an altitude of 30,000 feet.)

2. Compute the travel of the target during the time between the battery commander's decision to engage and the time the radar reports

"on target." This time is established by experience with each battery. Assume here the time to be 20 seconds. Therefore, the distance covered in this time is 3920 yards ($196 \text{ yds/sec} \times 20 \text{ sec} = 3920 \text{ yds}$).

3. Compute the travel of the target during the period from radar "on target" until the battery fires. This time duration includes slewing time, settling time and drill time, and is also determined from battery experience. Assume here the time is 30 seconds. The distance covered then is 5880 yards ($196 \text{ yds/sec} \times 30 \text{ sec} = 5880 \text{ yds}$).

4. Compute the travel of the target during the time of flight of the projectile to the predicted position of the target at the maximum range of the battery. Here we take the time of flight to be 30.11. The travel during this time is 5902 yards ($196 \text{ yds/sec} \times 30.11 \text{ sec} = 5902 \text{ yds}$).

5. Determine the maximum horizontal gun range corresponding to an altitude of 30,000 feet and a fuze range of 30 seconds, which in this case we find to be 7280 yards.

The total of the values determined in steps 2, 3, 4, and 5 above establishes the optimum range, in this instance 22,982 yards.

The validity of the optimum range so determined can be verified from experience. If we find we are not ready to open fire at maximum gun range, the optimum range line is too close. If we find we are ready before the target is within fuze range, the optimum range is too great.

Referring to Figure 1, a target on or near the optimum range is a better target than either one further out, or one closer in.

SINCE there is an optimum range, there must also be an outer range, that is, a range beyond which a target is of

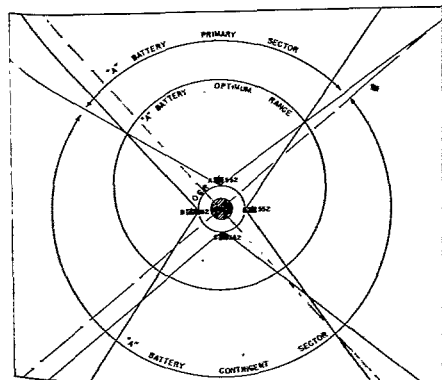


Figure 1.

no immediate interest from an engagement point of view, and an inner range, that is, a range within which an engagement is just barely possible.

The difference between optimum range and outer range is the distance which a directly approaching target can cover during the entire time taken by the gun battery to pick up and effectively engage another target. This time again will be determined from experience. However, it will be about 100 seconds. Outer range would then be 19,600 yards beyond optimum range, or at a range of 42,582 yards.

Inner range is computed as follows:

1. Compute the travel of the target during the pick-up period, using the same assumptions as above in computing optimum range, to get the same value, 3920 yards.

2. Compute the travel of the target during the settling and drill time, same as for optimum range, value 5880 yards.

3. Compute the travel of the target during the time of flight to the point on the trajectory located by the arguments of 30,000 feet altitude and maximum elevation of the gun. At a value of 75°—approximately 1300 mils—the time of flight is 22.94 seconds. The distance covered is 4496 yards (196 yds/sec x 22.94 sec = 4496 yards).

4. Determine the minimum horizontal range for an elevation of 75° and an altitude of 30,000 feet. From FT 90-AA-B-3, this distance is found to be 3780 yards.

5. The inner range is the total

of the items determined in steps 1, 2, 3, and 4. In this instance, the inner range is found to be 18,076 yards. It should be noted that if the decision to track is given at inner range, time should permit an engagement of one salvo.

These outer, optimum, and inner range priority arcs should be plotted on any equipment showing target location and to be used in target selection. Included in this category would be battery plotting boards, radar PPI scopes if used for target selection, and AAOC operation boards.

The AAOC will seldom designate specific targets to an indicated battery, but, in some instances, it may be necessary.

Now that all of the aids are available to assist in target selection, formulation of specific rules for target selection is possible.

RULES FOR TARGET SELECTION

1. Engage approaching targets in preference to crossing or receding targets.

2. Engage as many targets as possible—keep the guns firing!

3. As first priority, engage targets closest to optimum range and within the primary sector.

4. If none, engage targets outside the primary sector and closest to optimum range, provided that it is possible to fire at least one salvo at such a target before any target within the primary sector reaches optimum range.

5. Outside the primary sector

give preference to targets closest to the primary sector.

6. Next target priority is one within the primary sector and closest to outer range.

7. Targets outside the primary sector are discarded when other targets reach a higher priority.

8. Give targets approaching inner range or inside such range a low priority.

EXAMPLE

FIGURE 2 shows an assumed situation as displayed on the battery plotting board.

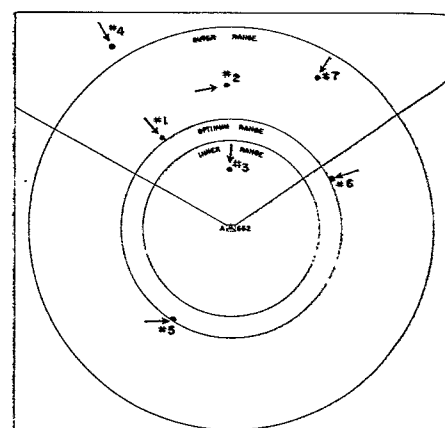


Figure 2.

After considering the rules for selection of targets, it can be seen that targets numbered 2, 3, and 4 are not considered suitable for engagement at this instant.

Target number 1 is the first priority target since it is within the primary sector and closest to optimum range.

If target number 1 did not exist, target number 6 would probably be considered as first priority since a short engagement would be possible on this target before target number 7 reached optimum range in the primary sector. At that instant, engagement of number 6 would be stopped and the order given to pick up target number 7.

Target number 6 is much preferred over number 5, even though both are outside of the primary sector and at optimum range, for two reasons: first, number 6 is closer to the primary sector, and second, number 6 is an approaching target whereas number 5 is apparently on a crossing course.

Study and practice in this matter is excellent training for the battery officer.

Life in the White House with—

MR. PRESIDENT

By William Hillman

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General Porter Makes History!

By Jerome Kearful

IN 1882, General Ulysses S. Grant vindicated former General Fitz John Porter with an article entitled "An Underserved Stigma," that appeared in the *North American Review* for December of that year. During the twenty years that had intervened since Second Bull Run, the ex-general's reputation had been under a cloud, in which time many of Porter's genuine merits and accomplishments had become obscured and forgotten.

Among Fitz John Porter's unique additions to the military history of the Civil War was a solo flight in a free balloon over enemy lines and back again safely to his own base! Here is the story of that remarkable event, that took place just ninety years ago.

A man by the name of George Alfred Townsend, correspondent for the *New York Herald*, saw the whole affair. Among other activities, Townsend had made a friend of Thaddeus S. C. Lowe, first "aeronaut" of the United States Army, and, with the help of Joseph Henry of the Smithsonian Institution, organizer of the Balloon Corps. Behind the Federal lines at Yorktown, Virginia, Townsend watched interestedly as Lowe patiently showed the "ropes" of balloon observation flight to General Fitz John Porter, chief in command in the area. Both Porter and Lowe were natives of the state of New Hampshire, a circumstance which seemed to increase their mutual respect.

George Townsend noticed that, after a few trips aloft with Lowe, General Porter began to demand that he should make observation ascents alone, at such time as he might feel inclined. There seemed little enough danger, since the Federal balloons were always safely moored at a height and beyond the range of Confederate fire.

One day, General Porter appeared, in a considerable hurry, and ordered that a balloon be immediately prepared for ascent for his use. He wanted to observe at first hand the location of certain Con-



federate batteries. Balloon Corps men scurried about, hastily preparing one of the oil-covered canvas bags and an observation car for the General's use. At the first possible moment, Porter, carrying a long black telescope, clambered into the car and ordered the rope cable payed out with dispatch.

Now, in their haste to get the General aloft, the balloon crew overlooked the fact that this rope, that was the sole means of keeping the balloon from drifting away, and carrying General Porter with it, had recently accumulated several

acid burns and was, in one place, rather weak as a consequence. This faulty rope was payed out, with the General shouting downwards his encouragement.

General Porter was about fifty feet in the air when the taut cable parted with an explosion like a bursting shell. Just before correspondent Townsend had turned to speak to a companion. The portion of the rope attached to the earth, suddenly freed of its strain, struck him across the face and felled him to the ground!

As Townsend struggled to his feet, he heard gasps of surprise and curses of chagrin. As soon as his vision cleared, he looked upwards. General Fitz John Porter, his balloon rocking like a feather in the breeze, was making a speedy ascent without even a thread to tie him to his comrades on the ground below!

THADDEUS LOWE, violently agitated, cupped his hands together and bawled into the sky, shouting instruction to Porter to "climb-to-the-netting-and-reach-the-valve-rope." Either General Porter heard the aeronaut, or some of the rudimental flying instruction he had received came to his mind. For he did attempt to reach the valve rope, as Lowe had directed. But it was too high for him, and the balloon was rocking so that he could not accomplish his aim. As the balloon rose higher, Porter abandoned his attempt and, appearing at the side of the car, made gestures of failure and resignation to the comrades that he was so unexpectedly leaving behind him.

For several minutes that seemed like hours, the freed balloon and the reluctant aeronaut continued their ascent, almost directly above the spot whence the strange flight had started. What would happen next? A silence settled over the watching party. Every eye was strained skyward.

Then the upper air currents began to take charge of the errant aerostat. At first, the Federals noted with satisfaction

that the balloon seemed to be headed in the direction of Fortress Monroe, on a southeasterly course that lay within the Federal lines. A shout of relief arose as it appeared that General Porter was safe from enemy hands.

Then, with the vagary of the winds up in the region where the balloon was floating, a new and stronger current caught the canvas bag and—this time, it was driven directly toward the Confederate lines! Dragging the appendage of its parted mooring rope like a piece of spaghetti, it headed for Yorktown like a homing pigeon.

Before this, the Confederates had taken note of the strange phenomenon behind the enemy's lines. Alarm signals had sounded, and there was a sudden hustle and bustle among the soldiers in grey. As the wayward balloon continued its westward flight and passed over the last Federal outposts, there was a unanimous groan from General Porter's comrades and the sound of rifle fire from the Confederates.

HAD there been antiaircraft weapons that day, General Porter and his balloon would have met their end in short order. But the rifle fire failed of its mark, and the perverse balloon continued its flight

until it came to a standstill directly over the great Confederate works ringing the village of Yorktown!

The Confederate rifle fire ceased. Awe and amazement gripped both contending armies, as a hundred thousand men forgot their other interests and fixed their fascinated gaze on that strange drama in the sky.

Every available telescope in both armies was brought to bear on the balloon. Observers noted that General Porter, floating unattached above the Confederate Army, seemed to regain his composure. Apparently resigned to whatever end fate might have in store for him, he decided to put the remaining interval to good use. He calmly unlimbered his own, long, black telescope, started making careful observations of the Confederate works, and jotting down his findings in a notebook!

But the suspense could not continue indefinitely. It seemed that General Porter was lost, when it appeared that the balloon was gradually settling earthward. The Confederates anticipated the gift of a balloon and its pilot, though they little suspected that this pilot was the commander of the great force opposing them!

All seemed to be over, when the unpredictable air currents again took a

hand. Now, more rapidly than General Porter had been carried westward over the Confederate lines, a contrary wind suddenly began to bear him back and downwards to his comrades! Animated hope again spread throughout the Federals.

The air current that was effecting Porter's rescue did not fail him. Once more, the balloon passed over the Federal outposts. It continued into safe territory!

But General Fitz John Porter wisely was taking no chances. With alacrity and greater assurance than he had shown before, he climbed to the netting to reach the valve rope. This time, he was successful. The valve opened, and the balloon plunged to earth like a bird shot on the wing.

The speed of the descent was such that the General might well have been injured on reaching the ground. But his luck still held. His fall was broken when the car struck the top of a tent and lightened his impact with the earth to the extent that he was able to pick himself uninjured out of a tangle of canvas and netting. Within seconds his hand was wrung with delight by his comrades while shouts of congratulation filled the air.

General Fitz John Porter had made history!



With The 15th AAA AW Battalion (SP)

By Capt. Charles F. Farber

THE self-propelled AAA battalions have proven in the Korean conflict that they are indispensable to the infantry division. The firing batteries consist of eight M19s, eight M16s and three M39s (personnel carriers). Although the M39 is not considered as a weapon it has been

used very advantageously as an armored ambulance, an armored vehicle for bringing infantry troops up and through the front lines and an armored patrol and communications vehicle.

The fire power and mobility of all these weapons have been like big brothers to the doughboys; they feel as though these weapons are, in effect, a lifesaver to them and it was with warm feeling that they applied the term Flak Wagon to this equipment. No matter what phase of battle is in progress, the infantry looks

to the self-propelled outfit for close fire support.

The morale of the men in the 15th AA AW Battalion (SP) was the highest I have ever seen anywhere. Some of the reasons for this were the high degree of confidence they placed in their equipment plus the knowledge of its devastating effect on the enemy. Whenever there was a lull in battle you could see the crews climbing all over the equipment—maintaining and preparing it for action even before they took a much

Capt. Farber served in Korea as a battery commander with the 15th AAA AW Bn. (SP) and on the staff of the 7th Division. He is presently instructor of tactics at the AA & GM Branch, TAS, Fort Bliss, Texas.



One of the M16's of the author's battery being repaired near Suwon, Korea, after its track had been damaged by a road mine. This is typical of roadside repairs made by the unit.

needed rest. They used their ingenuity in making makeshift repairs of all kinds to keep these weapons rolling whenever there was a lack of spare parts. For example, a power charger on an M16 turret burned out rendering a sorely needed weapon useless and out of action. Since there was no replacement, a scheme was devised whereby a 210 charger (Little Joe) was mounted on a frame welded to the rear of the turret; this still allowed for 360° traverse and although the tracking rate was slower, it was able to fulfill its ground support mission. The infantry is proud to have a self-propelled unit with them and the men and officers are proud to be in this type unit.

Our unit was used in all phases of combat and even though these vehicles presented a high silhouette and were "thin skinned," the casualty rate was extremely low. The high morale, high state of training and terrific fire power are responsible for the low casualty rate. Some of the missions successfully accomplished were:

1. Maintaining area and security patrols;
2. Direct support of infantry in bridge crossing, advances and withdrawals;
3. Clearing out hills and pillboxes;
4. The establishment of road blocks;
5. Covering avenues of approach and defiles;

6. Convoy protection against air and ground attack;

7. Defense of field artillery positions and division installations.

The enemy is afraid of these weapons; once ferreted out they cannot withstand the withering and devastating fire that they are subjected to.

In the early stages of combat self-propelled units were misused by the RCTs because of a lack of knowledge and experience as to the limitations of the weapons and their proper usage. When the RCT commander saw that the "Flak Wagons" had such terrific fire power and maneuverability, they were inclined to use them in any eventuality without due thought to their vulnerability. Oftentimes they were placed in outpost positions or sent on patrols in guerrilla infested country with no riflemen for protection; often they were called upon to lay on sustained fire without appreciating the rapid ammunition expenditure. When the battle took its worst turn they were kept on the move night and day without opportunity for the maintenance so necessary to keep them active as fighting machines. This misuse was corrected when both the infantry and AAA commanders learned that they should be used much the same as an infantry heavy weapons company. Self-propelled units should never be sent on a mission without adequate rifle protection nor to a position from which they cannot make a rapid withdrawal.

THESE were not the only problems facing the unit in the early stages of combat. Another important problem was that the TO&E for a self-propelled unit was drawn up primarily for AA defense and not for continuous support of the infantry in a ground role. As a result the field artillery battalions were hard pressed to keep attached self-propelled batteries supplied with gasoline and ammunition, and very often could not meet the demand. The headquarters battery of the self-propelled battalion assisted when possible but this was

extremely difficult because the vehicles authorized were insufficient. Oftentimes, 2½ ton trucks could not reach positions of the M19s or M16s because of terrain difficulties. This problem was overcome by using the M39 as an ammunition carrier. Gasoline was a very difficult problem especially on a long move. Borrowed trucks loaded with 55 gallon drums followed the column. The gas was pumped by hand into the combat vehicles. Hand pumping of approximately 110 gallons of gasoline into each of the eight M19s and M16s was a herculean task and delayed convoy movement considerably. Another major problem involved the limitations of the single tank retriever in headquarters battery. Very often a battery would be with a task force many miles from battalion headquarters and would be in dire need of the retriever in the battalion headquarters motor pool. Because the retriever could not always reach the disabled vehicle in time, the vehicles had to be destroyed.

After much thought I have concluded that the headquarters battery should be converted into a combined headquarters and service battery. This could be done economically by the addition of a few men and necessary additional vehicles. Track laying ammunition vehicles should be added to the TO&E and a 750 gallon gasoline truck to each firing battery. At least three tank retrievers should be included in the battalion motor pool rather than one as is now the case.

I would also suggest the mounting of caliber .30 machine guns on all jeeps in the battalion. Very often these vehicles are used as scout vehicles ahead of the column or are used on patrols. Many times the machine gun mounted on a jeep has proved invaluable. This addition, of course, should only be used in combat theaters.

Self-propelled light antiaircraft units are versatile and useful in any phase of combat whether in an air defense mission or in the ground role. With only a few necessary modifications, those units organic to the infantry will be able to do an even better job.



The Saga of "Whistling Dick"

By Major John B. B. Trussell, Jr.

IN a story which he called "The Burial of the Guns," Thomas Nelson Page told of Confederate artillerymen in the days just before Appomattox. Rather than surrender to the enemy the cannon which had been their charge and pride, they manhandled them to the edge of a cliff and pushed them over, into the river below. This may be a sentimental story, but it illustrates the attachment which grows up among gunners for their weapons, prompting men half humorously but half seriously to christen their cannon, to endow them with individual personalities, to paint devices on the tubes to show the achievements credited—note it well—not to the crew so much as to the guns themselves. It is part of that age-old artillery tradition—that within the limits of human capability, a cannon must never fall intact into enemy hands.

Whether Page's story was suggested by the legend of "Whistling Dick" or whether this legend is a mere transplanting of the story from Virginia to Mississippi is probably impossible to tell. There are, certainly, marked similarities between the two. True or not, the "Whistling Dick" legend could have happened. Even though the smoke of battle and the haze of time obscure some of the details, perhaps we can decide whether there is any truth in the story that used to be told by the old men who in their youth wore the gray.

"Whistling Dick" was an 8-inch Blakely rifle. Cast at the Low-Moor Iron Works in England early in 1861, it was brought to the Norfolk, Virginia Navy Yard. On the word of no less an authority than Admiral David Porter, it was with the abandonment of this yard by U. S. naval forces on April 20, 1861 that "Dick" went over to the Rebels and transferred from the Navy to the Army.

After this, for a full two years "Dick's" record is blank. However, there is a definite record that by May 18, 1863 "Dick" was in Vicksburg, Mississippi, one of two pieces manned by Company E, 1st Louisiana Heavy Artillery. Sited on the

bluffs above the Mississippi, the cannon hurled their shot at Flag Officer Porter's gunboats on the river. Apparently it was then that "Dick" earned its name. The hoarse scream of its projectiles flying through the air at the then-remarkable range of three miles was so characteristic as to draw special attention. And Company E's gunners made good practice, for one historian credits the fire of the guns, the Blakely being outstanding among them, with defeating General Grant's early assaults on Vicksburg.

But Grant was not a man to be easily discouraged. Moreover, Vicksburg dominated the Mississippi. Control of the river would cut off from Virginia the supplies coming in from the unravaged fields of Texas. Vicksburg had to be taken. So, fighting his way in a wide swing from the south, by May 18 Grant invested Vicksburg with 71,000 Federal soldiers and 248 cannon. The 18,000 Confederates held positions along an entrenched line bent for eight miles like a huge bow, protecting the town, with the river as a bowstring.

The Southern artillery on the river line concentrated its attention on the Navy. We know from the Official Records' rueful testimony that "Dick" helped to make the waters of the Mississippi, if not too hot, at least uncomfortably warm for the Union gunboats. The batteries' fire, in fact, was sufficiently irritating to provoke Porter into seizing the first promising opportunity of carrying out a concentrated attack upon them. On May 22 Grant requested naval mortar support for an assault he was hurling at the Southerners' lines. Besides the mortars, though, and without being asked, Porter sent three gunboats to bombard the Confederate artillery positions. One of them concentrated exclusively on "the main work (. . . the battery containing the heavy rifled gun)" and silenced it.

Grant's assault failed except for a temporary breach in one of the Confederate redoubts. The attacking force was decimated. But in the engagement with the

gunboats "Dick" had been put out of action. A section of the muzzle was blown off, though whether a projectile exploded inside the bore or whether a shot from the river struck the piece we do not know. "Dick's" disability, however, was only temporary. With supreme disregard for the laws of exterior ballistics the crew simply sawed off the damaged part and made the best of what was left. The gun was in action again on May 27, when a gunboat reported being engaged by it.

WHISTLING Dick's" subsequent movements are controversial. The historical tablet marking the position of Company E, 1st Louisiana Heavy Artillery at Vicksburg states flatly that on May 28 the gun was moved to a position in support of Lee's Brigade, near the center of the defense line, too far away for it to fire effectively on river targets. It is understandable that General Pemberton, the Confederate commander, would divert every piece of ordnance that the river defenses could spare to strengthen the lines, for by repeated if costly assaults Grant was hammering away at the Southerners' will to resist. But meanwhile, Porter's river force bombarded the town almost continuously. The Federal vessels could move quite freely, for the river batteries mounted only thirty-five guns (two of which burst), and the ammunition shortage demanded that every powder grain be hoarded. The result was a reluctance to weaken the river defenses more than was absolutely unavoidable. It cannot be said, therefore, that there were military considerations determining beyond argument that one line of defense or the other was the place to concentrate the heavy artillery.

Actually, there is evidence completely contradicting the statement on the historical marker. On June 4, a gunboat captain reported to Porter that "When firing upon the city last night 'Whistling

Dick' gave each of us a shot, fortunately not striking us." Again, on June 17, there is the naval officer's report that a round from "Whistling Dick" had struck one of the Federal cannon. There is, therefore, some reason for doubting whether the Blakely gun was moved from its site on the bluffs until after the middle of June, if, indeed, it was moved at all. The question is not merely academic, for it helps determine which of the various stories about "Whistling Dick's" ultimate fate is more probably correct.

The most popular legend is that on the night before the surrender, a detachment of men moved "Whistling Dick" from its position onto a raft, ferried it out into the current and pushed it over into the river. There is even a participant's account, by one A. P. Leech, during the siege a sergeant of Company K, 35th Mississippi Infantry. In 1900, when he described the affair, he was an ordained minister. Sergeant (or Reverend) Leech's statement contains a preciseness of detail that lends it a distinct air of validity. He remembers that there were fourteen men in the detail and that the raft was made of two small coal barges lashed together. He recalls that the projectiles were oddly shaped—"square-cut with pointed ends." It is to this peculiarity that he attributes the gun's characteristic sound.

Dissidents find several flaws in this version. By July 3, the night before the surrender, the siege had lasted more than six weeks. The Confederates (never well fed) had long been on extremely short rations, even for them. How, it is asked, could fourteen men, weak from starvation, manhandle a piece of heavy ordnance from a position near the entrenchments to the river's edge, especially down the steep bluffs of Vicksburg's river front? This argument has considerable strength, though it is weakened somewhat if (as the naval reports

indicate) the gun remained on the bluffs above the river, as the distance over which it would have to be moved would be considerably smaller.

Also, when Mr. Leech's story was published, Lieutenant A. L. Slack, who had served as an officer of the 1st Louisiana Heavy Artillery, denied it categorically, stating that the gun was moved to the support of Lee's Brigade, and surrendered there on July 4. This is the version which has been officially accepted. Certainly, some gun passing as "Whistling Dick" was surrendered with the garrison on July 4. The Vicksburg National Military Park has a photograph taken just after the surrender, showing a Blakely rifle. The photograph is labelled "Whistling Dick." Today, at Trophy Point on the grounds of the U. S. Military Academy, a gun with a metal plate identifying it as "Whistling Dick" lies on a metal rack, trunnion to trunnion with other cannon captured in battle by U. S. troops. Their touchholes plugged, their flaring mouths stilled, the old guns keep silent vigil above the Hudson. Is the one called "Whistling Dick" really what it purports to be, or is it an impostor? To an artilleryman, the gun looks as if a considerable length of the muzzle is missing, for the barrel seems surprisingly short compared with the breadth of the breech. And it is no mortar, for the riflings of the bore are plain to see.

PERHAPS, after all, the gun at West Point is the same which, nearly ninety years ago, hurled shrieking defiance at the enemy below. But one does not have to be an arrant sentimentalist to prefer to believe that the gun which became so important a symbol to the defenders of Vicksburg was in fact thrown into the river to keep it from falling into the enemy's hands. There is logic as well as sentiment to support this contention.

Certainly there is a sound military case for preventing usable equipment from being captured, though this alone is not enough to support the legend—if this had been a command policy, it might be asked why all of Vicksburg's cannon were not destroyed. The best explanation for singling out the one gun would seem to be the fact that "Whistling Dick" was a symbol, not only to its crew but to the whole garrison, in an age which was especially subject to romantic gestures. It is quite logical, therefore, that only the one gun would be destroyed and the others surrendered.

We know, too, that there is so much confusion about the date when "Dick" is supposed to have been moved from the river to the land defenses as to throw serious doubt on whether it was moved at all. And if it remained on the river bluffs, it seems probable that hauling it to a raft and ferrying it into the stream would be within the physical capabilities of fourteen men, starved though they might be. Added to these facts is the artillery tradition of keeping the guns from the enemy even in defeat, a tradition which never flourished stronger than among Confederate gunners. Taken all together, the weight of the evidence is such that one can be morally sure of the truth of the "Whistling Dick" legend, even if it may not be possible to prove incontrovertibly that the gun was not surrendered.

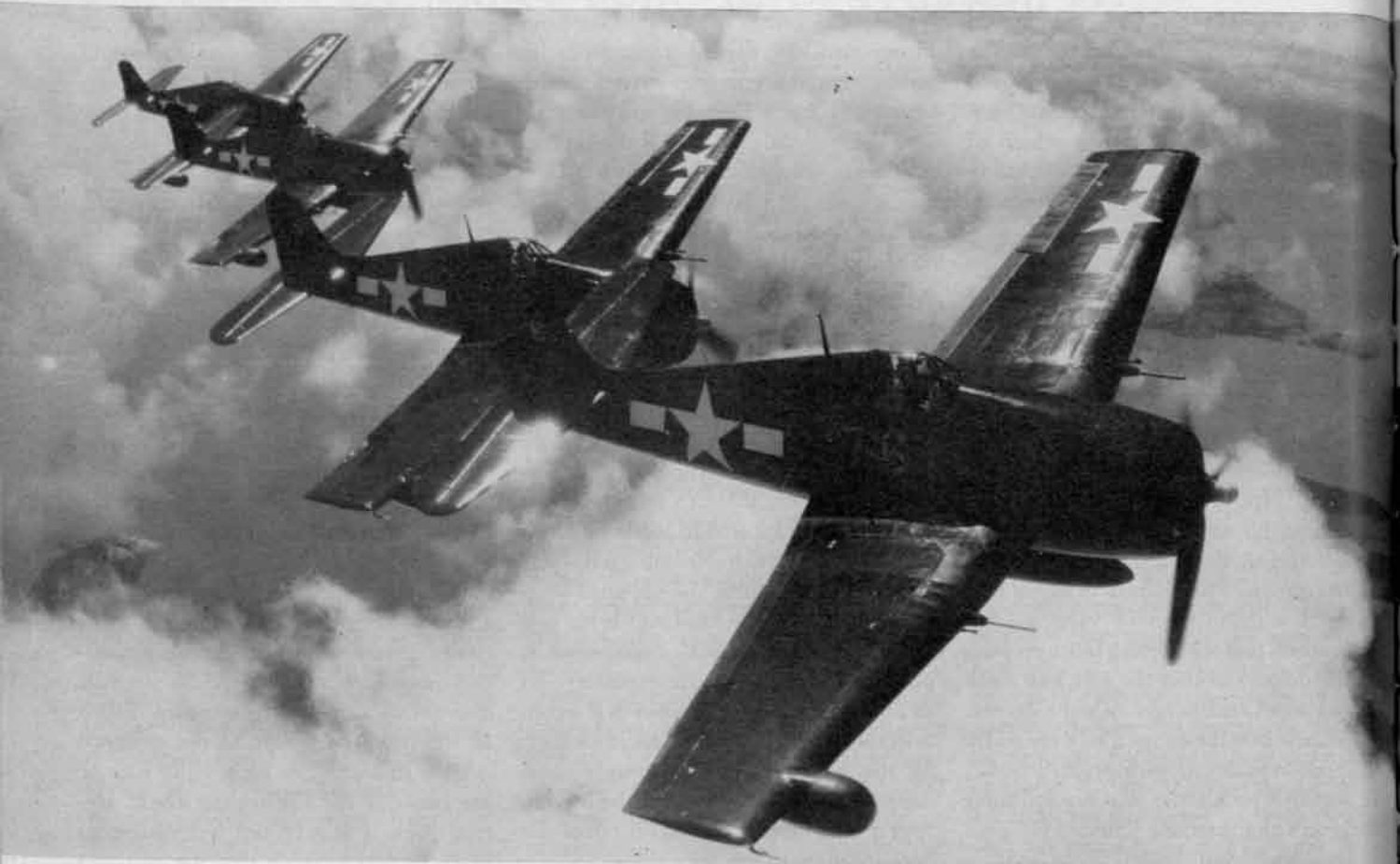
Whatever was done with the Blakely gun, the very growth of the legend itself is an indication of the attachment which fighting men develop for the cannon they serve. Whether "Whistling Dick" lies on the muddy bottom of the Mississippi or under the trees of Trophy Point, it stands for a story which typifies a glorious tradition. It has earned its retirement. With the gallant men who served it and the equally gallant men who fought against them, may it rest in peace.

On one bright 25th of April, a member of Congress addressed the House of Representatives as follows:

"I would ask, in a few words, if we ought to continue this establishment (the Navy) in its present state? For the expense of a Navy has been proved to be in inverse ratio to its utility. To what purpose do we keep up the Marines—another branch of the Establishment? If I am correctly informed, these men are willing to run away whenever they have a chance to desert—if they can get an opportunity—and I am willing that they can quit the service, without being exposed to be brought to a court-martial for desertion."

That speech was delivered in 1810. Four years later an enemy landed on the shores of Chesapeake Bay, marched to Washington and burned the building in which those words were spoken. —Admiral William M. Flechteler, Chief of Naval Operations, Chicago, Ill., 7 Mar. 52.

KNOW YOUR F



Grumman "Hellcat," designed, in World War II, for carrier or land based operations, is still in use for training.

"Mars" is the largest flying boat in operation by the Navy.



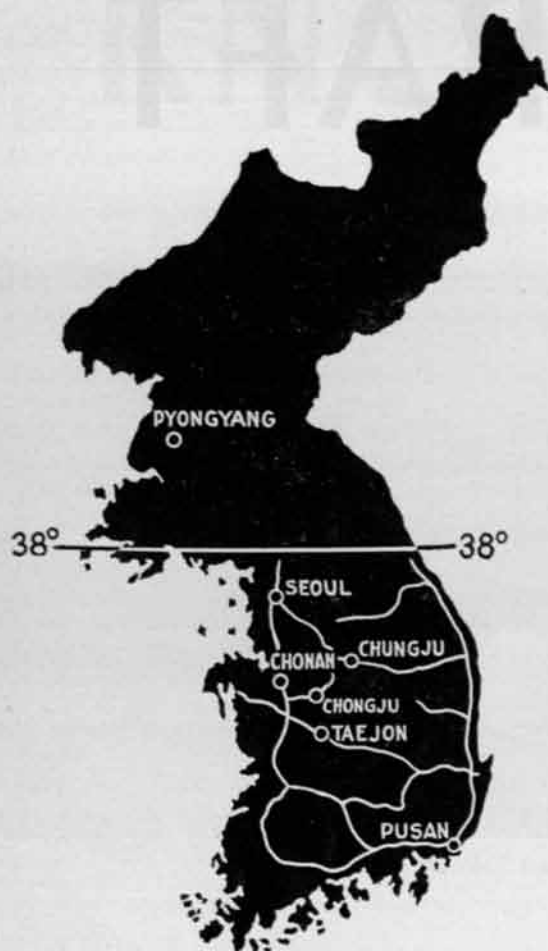
endly AIRCRAFT



Navy's PBM "Mariner" uses a JATO (Jet Assist Take-Off).

Carrier based fighter planes, Navy "Panthers" of the jet family.





Major General William F. Dean

THE FIRST DAYS IN KOREA*

• The overconfidence we had when we entered Korea in June 1950 was soon replaced by stubborn determination, professional competence and uncommon valor

By Brigadier General George B. Barth

A MIDNIGHT phone call on 30 June 1950 sent me to temporary command of the artillery of the 24th Division (its commander, Brigadier General Henry J. D. Meyer, was on leave in the United States). Four days later, after seeing all my artillery loaded on ships, my plane landed at the air strip in Taejon. In the single room of the South Korean government building used as Major General William F. Dean's headquarters, there was an air of suppressed excitement. The first U.S. troops, a skeleton battalion of the 21st Infantry with one battery of the 52d Field Artillery Battalion, were to go into action the next day far to the north at Osan. General Dean had flown in ahead of his staff and taken over command from Brigadier General John Church who, with a small staff, remained on as General MacArthur's rep-

*Reprinted with permission from the March, 1952 issue of *Combat Forces*.

Brigadier General George B. Barth was General Dean's artillery commander during the first days in Korea. He later went into Korea as the artillery commander of the 25th Division. General Barth graduated from the Military Academy in 1918.

resentative to assist General Dean. The two generals were studying a large wall map. General Dean, a big robust six-footer with a bristling crew cut, was decisive; determination and leadership flowed from him. General Church, slim, wiry and somewhat stooped, revealed a calmness almost amounting to unconcern, as he went over dispositions and plans. I'm sure he had no such feeling inside for he had been through much in the past few days. He had seen the lightning thrusts of the North Koreans rout the Republican forces and drive them out of Seoul. Stopping at Suwon he had conferred with General MacArthur, but shortly thereafter had again been forced to leave.

As I watched Dean and Church I had the comfortable feeling that even though we were entering the Korean War on a

shoestring, our leadership would be top notch. The South Korean Minister of Defense occupied the adjoining office. Upon learning that I was to go forward to Osan, he provided me with two jeeps driven by Korean MPs. He also gave me Lieutenant Colonel Yim who was a graduate of The Infantry School and spoke very good English.

We left Taejon about three in the afternoon and by midnight were in Pyongtaek where I met Lieutenant Colonel Charles B. Smith, commander of the 1st Battalion of the 21st Infantry. Young, clean-cut and vigorous, Smith was my man from the minute I saw him. He probably had no more real idea of what lay ahead than I did but his quiet confidence was assurance that his men would give a good account of themselves. As we rode forward to Osan where his

battalion was already in position, I shared the prevailing overconfidence. I remember that Smith and I tried to prevent South Korean engineers from preparing several bridges for demolition. We finally ended up by throwing boxes of dynamite into the river from one bridge. No thought of retreat or disaster entered our minds. Shortly after daylight on 5 July I inspected the defensive position with Smith, found it on very strong ground but pitifully weak as to numbers since the battalion had been flown in without being brought up to strength and was short about three hundred men and about a third of its machine guns and mortars. He was ordered to hold in place to gain time even though his force was surrounded. The 34th Infantry was unloading at Pyongtaek and I expected to get them forward the next day in case Smith needed help. How wrong I was!

SOON after we arrived at the battery gun position, "Fire Mission" came over the phone from a forward observer. At 0816 5 July the first American round of the Korean conflict was on the way, fired by the second gun section of Battery A, 52d Field Artillery. The target was eight tanks. The observer reported fire well adjusted but ineffective, the tanks kept coming. Soon a total of forty was observed and reported. Enemy counter-

battery fire came down on our battery within two minutes after we opened up, but it was not effective. We left the battery position and returned to Pyongtaek to alert the 34th Infantry. It was apparent that the bulk of the tanks would break through and must be engaged farther back.

The 1st Battalion of the 34th Infantry, commanded by Lieutenant Colonel Harold B. Ayers, was in position just north of Pyongtaek. The other battalion began arriving by rail and was sent to garrison the road center at Ansong, ten miles to the east. The remainder of the regiment was due to arrive at Songhwan during the night. In those days our "economy" regiments only consisted of two battalions instead of three, so we had no reserve to reinforce either of the widely separated battalions. Before the 34th could get bazooka teams forward, the leading tanks of the enemy came out of the town three miles north of the position. Upon being fired upon they returned to the south edge of town and remained there all day. Ayers's men attempted to stalk them but the 2.36-inch bazooka shells just rattled off their hulls. Large patrols attempted to enter the town but were driven off by small-arms and tank fire. This indicated that the enemy was building up strength and waiting until his infantry finished off Smith's battalion.

The day dragged on with no news of the fight at Osan. There was no radio contact and we had no Cub planes to scout ahead. By evening, movement in the town where the tanks were located plainly indicated that we could expect an attack early the next morning. Ayers's position was not a strong one, either flank could easily be turned. Three bridges along his front were prepared for demolition (stark reality had quickly changed my ideas about blowing up bridges!). Ayers prepared for defense, but my orders to him were different from those given to Smith. We could not afford to sacrifice a second battalion at this time. Ayers could only hope to hold out for a few hours if the enemy got around his flanks. So he was ordered to hold until envelopment was threatened and then delay in successive positions to gain time. It was apparent from the first day's action that the enemy's tanks would break through and go until stopped by some obstacle and then hole up and wait until their infantry caught up. We therefore had to block the forward bounds of the tanks as often as possible.

HOW was Smith doing? Through the long hours I waited and hoped, dreading the news that by now, I felt was sure to come. Finally, toward midnight four of the survivors came in ex-

After fighting a gritty, rocklike defense for three days the undermanned and overgunned 21st Infantry was forced to retreat from north of Chonan on 10 July.



hausted and hardly coherent. A minute later Lieutenant Colonel M. O. Perry, who had been at Battery A's position throughout the fight, arrived. He was calm and collected and from him and the other four we pieced together the ghastly story.

The leading wave of tanks had been followed by swarms of Red infantry. The tanks ran past Smith's position heading down the road to the south at top speed. The infantry formed up in the protected ditch along the road at the base of the hill, attacking on bugle-call signal. The fire of our infantry drove them back but they re-formed again and again. Finally the entire position was surrounded and after about six hours our ammunition gave out and Smith had given the order to come off the position in small groups. No one surrendered, but the casualties were heavy and many wounded were left in enemy hands. The position was lost and with it all the machine guns and heavy equipment of the battalion; but when all the survivors had come in several days later only 145 of the original 500 men were unaccounted for (these are approximate figures). Smith's men had fought a magnificent, unequal fight and had gained one day of precious time. They had done all that was humanly possible. (Several months later I was glad to be at the command post of the 21st Infantry when Major General John Church pinned the Distinguished Service Cross on Smith for his gallant leadership in the Osan fight.)

From the stories of Colonel Perry and the others I learned that the first tanks came down the road near the artillery position shortly after I had left and continued to appear in small groups for several hours. The battery engaged them at a range of about a hundred yards, the tanks stopping to return fire and then moving on. Our men stood to their guns in the face of the point-blank fire of the tanks and succeeded in knocking out five of them by hits on the treads or by setting them afire. We had no armor-piercing ammunition or incendiary shell, and our high-explosive could not pierce the tank armor. When Perry finally saw that the infantry was running out of ammunition and would be forced to give up the positions, he removed the sights and breechblocks from his guns and led his men out of the position. (During the fight Perry had led bazooka teams out into the open and within fifty yards of enemy tanks. For his gallantry he also received the Distinguished Service Cross.)

General Dean arrived at our headquarters in time to hear the reports of

Perry and the other survivors. He checked and approved our plans for the next day and returned to Taejon. As Perry stood up to leave I found that he had been wounded in the leg but had said nothing about it and refused evacuation. Early on the morning of 6 July, Ayers prepared to evacuate his headquarters south of the river while I went back to Songhwan to find the regimental commander of the 34th Infantry.

I FOUND the 34th headquarters in the process of moving to Chonan. After acquainting Colonel Jay B. Lovless, the regimental commander, with the situation and the orders I had given to Ayers, I left for Chonan to reconnoiter further delaying positions and arrange for the detrainment of two troop trains that were expected to arrive at any time. The remainder of Smith's battalion, consisting of Companies C and D, and part of the headquarters had arrived in Chonan. I selected a defensive position for this force about two miles south of Chonan, so that if the 34th Infantry was forced back their withdrawal would be covered. I then went on back along the railroad looking for other defensive positions and for the 63d Field Artillery, the next unit due to arrive. We stopped at a railroad station and put in a call for General Dean at Taejon. Colonel Yim, speaking Korean, was able to get through and have the stationmaster at Taejon send for a staff officer from our headquarters. This was our only means of communication since Signal Corps units had not yet arrived. We located the 63d Field Artillery and had them detrain at Chochiwon and move forward.

By the time I returned to Chonan it was early afternoon. There I was much surprised to find Ayers's battalion retreating through the town. I found Lovless, who reported that Ayers had been attacked and was being heavily pressed, with his rear guard at that time just north of Chonan. I took the reports at face value, gave orders that Ayers's battalion would tie in with the defensive position already being established south of Chonan by Company C of the 21st Infantry and, since his other battalion at Ansong was now outflanked, sent Lovless to move it by motor to the Chonan position to deepen the new defensive position. I sent my aide, Lieutenant Boyd, to General Dean to give him firsthand information of developments.

I know now that I made a grave mistake by accepting the reports of Ayers's situation without finding him and verifying them. Actually he had been attacked



On 3 July elements of the 24th Division were waiting for a boat at Japanese port.

By the 6th of July elements of the 24th Division were being flown into Korea.



Trucks and guns moved northward by rail toward the 24th's thinly held lines.





Overconfidence disappeared when bodies of Americans were found shot through the head with hands tied behind their backs.

at Pyongtaek and had blown the bridges in front of him which caused the enemy tanks to be held up all day. The Red infantry had enveloped his left flank just as we had feared and he had withdrawn his force south of the river to prevent encirclement. The enemy had stopped south of the river to wait for their tanks to cross, allowing Ayers to break contact. Ayers must not have understood that to gain time he should defend on the first available position from which he could physically block the tanks by demolitions. There were two such locations between Pyongtaek and Chonan. Instead, he had come all the way back through Chonan. I probably could have stopped him and gotten his battalion on a position north of Chonan by dark. The next day the other battalion of the 34th did get back to such a position, but met the enemy before it had time to dig in and prepare a strong defense.

TRAINS swarming with refugees and others loaded with South Korean troops moved south all day. Since the railroad coming from enemy-held territory was still intact, I feared that the North Koreans might load a train with their own troops—you couldn't tell the difference between North and South Korean soldiers—and run them through us to the rear. We had no explosives but we pulled up sections of track south of Chonan to prevent any such surprise.

That evening Boyd returned bringing General Dean to the 34th's headquarters. General Dean was much disturbed by the withdrawal and ordered one battalion to advance early the next morning, north of Chonan. I remained until the order was carried out. Then, since Smith's battalion was gone and there was no need for coordinating the action of forces of two different regiments, I returned to Taejon to resume my artillery duties, leaving with the bitter feeling that I had failed General Dean by not staying with Colonel Ayers and keep-

ing him north of Chonan at all costs.

On the 7th contact was made and in the next several days the 34th was badly mauled in heavy fighting around Chonan. But valuable time was gained. The 34th retreated through Chonan taking up positions on the Kongju road, west of Chochiwon, on the 10th. By that time, Smith had returned and reorganized his battalion; new guns had been given Battery A of the 52d Field Artillery and the 21st Infantry was fully concentrated around Chochiwon. The main attack drove against the 21st Infantry's positions, where, for three days, that fine regiment held like a rock under the inspired leadership of Colonel Richard W. Stephens. Rugged, bluff and dynamic, Stephens sparked the 21st with determination and courage. Almost overnight "The Gimlets" became one of the staunchest of the regiments that saw service in Korea. His leading battalion was surrounded but held while the rear battalion fought its way up and relieved it. It was there that we first encountered the savage brutality of the enemy—six of our soldiers dead with their hands tied behind them and bullets through their heads. When the 34th Infantry was attacked and forced to withdraw across the Kum River into Kongju, Stephens's flank was exposed and he withdrew south of the river in good order. By 14 July, the 19th Infantry had arrived and taken up positions south of the Kum River for the final defense of Taejon. Meanwhile, the 34th was driven out of Kongju and retired east to Nonsan with their line facing west.

While the Reds were crossing the river and attacking the 34th Infantry's position, they also sent a force into the hills about three miles south of the town and attacked the 63d Field Artillery battalion from both flanks and the rear. Our men were caught by surprise and were driven from their position in confusion. All the guns and most of the transportation were lost. This was the first of many infiltration attacks against our

artillery positions. Profiting by this early disaster, we learned that there were no "front lines" as we had understood them before. Artillery batteries had to be trained to fight as infantry in defense of their guns. Batteries had to establish observation posts, and security detachments on the hills overlooking gun positions. Furthermore, we saw that infantry commanders must plan to have tanks and mobile infantry go to the assistance of artillery in case of serious attack. After the 63d was hit we reorganized it, borrowed six guns from the other batteries of division, and got it back in action armed with two three-gun batteries in twenty-four hours.

In about two days' time I had a third battery of 155mm howitzers thrown together by drawing officers and men out of other batteries. Their gun drill consisted of firing against the enemy. They learned fast.

By such improvisations we created units missing as a result of "economy."

THE ring of steel was tightening around the doomed city, and it was apparent that the battered 24th Division could only hold out a little while. Another division, the 25th, had landed at Pusan and was on the way, but it could not arrive in time to save the hard-pressed 24th.

On 14 July, General Meyer returned to his division. My job with the Taro Leaf was over and I returned to my old command—the 25th Division. I was glad to be back among the men I had trained and worked with so long; but I had gone through trying times with the 24th and had formed a strong attachment for it. The wearers of the Taro Leaf patch had been thrown in piecemeal and sacrificed to gain time. They had contended stubbornly against overwhelming odds and I left them with the feeling that they were writing a page in American history that should be remembered.

HONOR ROLL

Original Honor Roll

88th AAA Airborne Bn
Lt. Col. R. B. Barry, Jr.
228th AAA Group
Col. D. W. Beilhe, Jr., S. C.
107th AAA AW Bn (M)
Lt. Col. T. H. Pope, Jr., S. C.
305th AAA Group
Col. John S. Mayer, N. Y.

Separate Commands

Army AAA Command
Maj. Gen. W. W. Irvine
Third Army Training Center
Brig. Gen. C. H. Armstrong
East AAA Command
Brig. Gen. Wm. H. Hamilton
Central AAA Command
Col. D. J. Bailey
West AAA Command
Brig. Gen. R. W. Berry

Guided Missile Dept.

AA & GM School
Col. F. M. McGoldrick

Brigades

32nd AAA Brigade
Col. M. W. May, Jr.
34th AAA Brigade
Brig. Gen. R. R. Hendrix
35th AAA Brigade
Brig. Gen. Homer Case
38th AAA Brigade
Col. K. R. Kenerick
40th AAA Brigade
Brig. Gen. James G. Devine
47th AAA Brigade
Col. G. C. Gibbs
56th AAA Brigade
Brig. Gen. H. F. Meyers
104th AAA Brigade
Brig. Gen. V. P. Coyne, Mass.
105th AAA Brigade
Brig. Gen. A. H. Doud, N. Y.
107th AAA Brigade
Brig. Gen. J. W. Squire, Va.
111th AAA Brigade
Brig. Gen. Chas. G. Sage, N. Mex.
112th AAA Brigade
Brig. Gen. J. W. Cook, Calif.
114th AAA Brigade
Brig. Gen. G. W. Fisher

Groups

1st AAA Training Group
Col. E. W. Heathcote
2nd AAA Group
Col. C. G. Patterson
10th AAA Group
Lt. Col. W. L. Larsem
16th AAA Group
Col. F. J. Woods
19th AAA Group
Col. O. D. Martin
65th AAA Group
Col. S. J. Goodman
97th AAA Group
Col. E. H. Walter
197th AAA Group
Col. A. S. Baker, N. H.
200th AAA Group
Col. C. M. Woodbury, N. Mex.

204th AAA Group
Col. F. C. Grevemberg, La.
205th AAA Group
Col. V. G. Hines, Wash
207th AAA Group
Lt. Col. R. G. Irish, N. Y.
208th AAA Group
Col. H. S. Ives
209th AAA Group
Col. E. J. Welte, N. Y.
211th AAA Group
Col. G. F. Lineham, Jr., Mass.
214th AAA Group
Col. J. G. Johnson, Ga.
216th AAA Group
Col. W. E. Johnson, Minn.
218th AAA Group
Col. V. P. Lupinacci, Pa.
220th AAA Group
Col. R. H. Hopkins, Mass.
224th AAA Group
Col. E. W. Thompson, Va.
226th AAA Group
Col. John D. Sides, Ala.
227th AAA Group
Col. P. L. Wall, Fla.
250th AAA Group
Col. A. M. Lazar, Calif.
302nd AAA Group
Col. John M. Welch, Ohio
313th AAA Group
Col. A. F. Hoehle, Pa.
326th AAA Group
Col. M. D. Meyers, Pa.
374th AAA Group
Col. T. F. Mullaney, Jr., Illinois
515th AAA Group
Col. F. G. Rowell, N. Mex.

Battalions

3rd AAA AW Bn
Lt. Col. J. B. Goettl
3rd AAA Tng. Bn.
Lt. Col. E. E. Twining
4th AAA AW Bn (M)
Lt. Col. R. J. Connelly
9th AAA Gun Bn
Lt. Col. H. D. Johnson
15th AAA AW Bn (SP)
Lt. Col. Jas. M. Moore
21st AAA AW Bn (SP)
Lt. Col. J. L. Crane
35th AAA Gun Bn.
Maj. A. H. Stamwood
39th AAA AW Bn (M)
Lt. Col. P. J. Lacey, Jr.
46th AAA AW Bn (SP)
Lt. Col. P. A. Anson
48th AAA AW Bn.
Lt. Col. O. K. Marshall
50th AAA AW Bn (SP)
Lt. Col. W. L. Larson
60th AAA AW Bn
Lt. Col. R. T. Cassidy
62nd AAA AW Bn (SP)
Lt. Col. C. E. Meadows
63rd AAA Gun Bn
Lt. Col. B. I. Greenberg
64th AAA Gun Bn.
Lt. Col. R. A. Lanpher
65th AAA Gun Bn
Lt. Col. H. C. Brown
68th AAA Gun Bn
Lt. Col. G. B. Webster, Jr.
71st AAA Gun Bn
Maj. J. H. Felter
75th AAA Gun Bn
Lt. Col. J. T. H. Spengler
78th AAA Gun Bn
Lt. Col. D. G. Grandin
79th AAA Gun Bn
Lt. Col. F. E. Pratt
80th AAA Airborne Bn
Lt. Col. L. W. Linderer
82nd AAA AW Bn
Maj. H. A. Geddis
91st AAA AW Bn
Lt. Col. R. A. Clafee
95th AAA Gun Bn
Lt. Col. L. S. Daugherty
101st AAA Gun Bn
Lt. Col. H. J. Ellis
102nd AAA Gun Bn
Lt. Col. M. H. Roesser, N. Y.
115th AAA Gun Bn.
Lt. Col. W. D. McCain, Miss.
120th AAA Gun Bn
Lt. Col. H. C. Gray, N. Mex.
126th AAA AW Bn
Lt. Col. R. C. Carrera, Mass.
127th AAA AW Bn (SP)
Lt. Col. H. G. White, N. Y.
133rd AAA AW Bn
Lt. Col. E. J. Modjeske, Illinois
142nd AAA AW Bn
Lt. Col. C. Beckman, N. Y.
150th AAA Gun Bn
Lt. Col. L. O. Ellis, Jr., N. C.
238th AAA Gun Bn.
Maj. T. P. O'Keefe, Conn.
243rd AAA AW Bn.
Lt. Col. E. E. McMillan, R. I.
245th AAA Gun Bn
Lt. Col. C. M. Brown, N. Y.
250th AAA Gun Bn
Lt. Col. A. J. Twiggs, Ga.
256th AAA AW Bn
Lt. Col. R. W. Hoag, Minn.
260th AAA Gun Bn
Maj. P. Scott, D. C.
337th AAA Gun Bn.
Lt. Col. J. H. Valliere, Pa.
340th AAA Gun Bn
Lt. Col. G. V. Selwyn, D. C.
369th AAA Gun Bn.
Lt. Col. C. S. Heming, N. Y.
385th AAA AW Bn
Maj. D. K. Scott, Illinois
398th AAA AW Bn
Lt. Col. L. B. Dean
420th AAA Gun Bn.
Lt. Col. G. S. Green, Wash.
443rd AAA AW Bn (SP)
Lt. Col. B. A. Spiller
489th AAA AW Bn
Capt. J. E. Cornish, Illinois
502nd AAA Gun Bn
Lt. Col. P. G. Brown
507th AAA AW Bn
Lt. Col. S. J. Paciorek
685th AAA Gun Bn
Lt. Col. C. A. Fraser, Mass.
697th AAA AW Bn
Maj. W. C. Thompson, N. Mex.
698th AAA Gun Bn
Lt. Col. F. Monico, Illinois
707th AAA Gun Bn.
Lt. Col. F. Fulton, Jr., Pa.

708th AAA Gun Bn
Lt. Col. P. L. Getzinger, Pa.
709th AAA Gun Bn
Lt. Col. S. L. Cone
710th AAA Gun Bn.
Lt. Col. C. C. Berkeley, Va.
711th AAA Gun Bn
Lt. Col. N. J. Walton, Ala.
712th AAA Gun Bn
Lt. Col. H. H. Taylor, Jr., Fla.
713th AAA Gun Bn
Lt. Col. B. N. Singleton, S. C.
715th AAA Gun Bn
Lt. Col. H. B. Reubel, N. Y.
716th AAA Gun Bn
Lt. Col. Joe R. Stewart, N. Mex.
717th AAA Gun Bn
Lt. Col. E. D. Pelzer, N. Mex.
718th AAA Gun Bn
Lt. Col. J. J. Loughran
720th AAA Gun Bn.
Lt. Col. G. A. Duke, Calif.
726th AAA Gun Bn
Lt. Col. C. F. Arnold, N. Mex.
728th AAA Gun Bn.
Maj. G. C. Moore, Calif.
730th AAA Gun Bn
Lt. Col. C. D. Holliday, Calif.
736th AAA Gun Bn
Lt. Col. F. T. Lynch, Dela.
745th AAA Gun Bn
Maj. E. Mountain, Conn.
747th AAA Gun Bn
Lt. Col. J. F. Kane, Mass.
753rd AAA Gun Bn
Lt. Col. W. H. Nicolson
764th AAA Gun Bn
Lt. Col. Wm. J. Bennett
768th AAA Gun Bn
Lt. Col. T. H. Kuyper, Illinois
772nd AAA Gun Bn
Col. F. S. Grant, Mass.
773rd AAA Gun Bn
Lt. Col. G. F. Slavin
804th AAA AW Bn (M)
Maj. S. N. Caudill, N. Mex.
867th AAA AW Bn
Maj. S. M. Arnold
903rd AAA AW Bn
Lt. Col. J. D. Shearouse
30th AAA Lt. Btry
Capt. W. A. Brant

Operations Detachments

102nd AAA Opns. Det.
Capt. G. J. Lahey, N. Y.
115th AAA Opns. Det.
Lt. A. Dillon
177th AAA Opns. Det.
Maj. W. F. Hale, Va.
181st AAA Opns. Det.
Maj. R. H. Moser, N. Mex.
184th AAA Opns. Det.
Maj. C. Morrill, Calif.
186th AAA Opns. Det.
Maj. Wm. S. Wall, Calif.
286th AAA Opns. Det.
Capt. F. R. Kane, Dela.
501st AAA Opns. Det.
Maj. E. F. DeLeon
503rd AAA Opns. Det.
Capt. L. Koenitsberg
510th AAA Opns. Det.
Maj. E. F. DeLeon

JOURNAL HONOR ROLL CRITERIA

- To qualify or to requalify for a listing on the Journal Honor Roll, units must submit the names of subscribers and a roster of officers assigned to the unit on date of application.
- Battalions with 80% or more subscribers among the officers assigned to the unit are eligible for listing, provided that the unit consists of not less than twenty officers.
- Brigades and groups with 90% or more subscribers among the officers assigned to the unit are eligible for listing, provided that the unit consists of not less than seven officers.
- Units will remain on the Honor Roll for one year after qualification or requalification.

Officer Candidate School at Fort Bliss

By Capt. Joseph E. Melanson, Jr.

THE present Antiaircraft Artillery Officer Candidate School was inaugurated 14 October, 1951, when Colonel Robert H. Krueger was informed that he was to be the director of this new department of the Antiaircraft and Guided Missiles Branch, The Artillery School. At the same time Colonel Krueger was advised that the annual quota of the school would be 2,500 candidates and that three classes would be in operation by Christmas.

A cadre of operating personnel was obtained at once by levy upon the staff and faculty of the school. This gave enough key people to initiate plans for the OCS and its expansion.

Officer teams were sent out to study the operation of other officer candidate schools and soon returned with volumes of instructional material and forms, and also with some good ideas, too.

Soon the program of training as well as the administrative features were well under way toward solution.

The location for the new school was found in the old station hospital area at the northeast extremity of the main post facing Biggs Field. This area had been used by the German scientists after the war and more recently by the First Guided Missiles Group. Soon the carpenters, painters, plumbers, and electricians were in the area busy rehabilitating it in a suitable fashion.

The mission of the school is to:

- ▶ Develop in the candidate physical proficiency and the qualities of character, leadership, loyalty, and discipline required of an officer.
- ▶ Provide the candidate with the fundamental knowledge required of a junior officer in antiaircraft artillery.
- ▶ Determine whether the candidate meets the requirements of military lead-

ership and possesses officer potential.

To meet this standard the program of instruction covers a period of 22 weeks, 44 hours per week. The departments of Tactics, Gunnery, Electronics, and General Subjects of the Antiaircraft and Guided Missiles School give to the OCS students instruction equivalent to the associate officer's basic course.

The administration, supervision, and additional instruction in the general courses such as army administration, military sanitation and first aid, and mathematics are responsibilities of the Department of OCS.

To meet the mission, six instruction teams were organized, each consisting of a major, senior team instructor; a captain, executive officer; and six lieutenants, team instructors. The teams, lettered A through F, have the responsibility of instructing the candidates assigned them.

Class Number 1, assigned to instruction team A, arrived at Fort Bliss 15 November 1951 and was scheduled to begin classroom work 19 November. The basic organization of the class is a battery, and the first three days were used

in organizing it, in quartering and indoctrinating the candidates in the rigorous standards demanded.

One of the most important hours during the initial processing is a conference devoted to the code of honor under which the candidates live during their 22 weeks of training. An honor system similar to that employed at the Military Academy is in effect. The functioning of the code of honor is left entirely to the candidates and the over-all coordinating agency is the candidate honor committee comprised of three members from the senior class and one member from each of the junior classes. One of the three members from the senior class is designated president of the honor committee and all members are elected by their fellow candidates. The duties of the honor committee are to investigate all alleged violations of the honor code, interpret the code for the candidates, and set needed precedent.

The candidate's day begins with reveille at 0530. From reveille he goes to breakfast; then some housekeeping and a period of exercise before his first class at 0800. With an hour for lunch



Col. Krueger congratulates candidates and instructors on 100 per cent donations to the Fort Bliss Blood Bank. Left to right: Major F. I. Rettgers, Candidates L. S. Bunch and J. C. Caldwell, Jr. with Col. Krueger.

Captain Melanson, USMA 1945 and a Wisconsin graduate with MA in Journalism, 1949, is now serving as Assistant S3 with the OCS.

he attends classes until 1700, five days a week. Each Saturday a session is devoted to indoctrination in supply economy, and four hours of prescribed academic work. During the afternoon he participates in a parade and undergoes an inspection in ranks.

The candidate has few off-duty privileges during his first four weeks. He is not allowed to leave the immediate area nor has he much free time to escort visitors. He has study hall periods from 1800 to 2000 daily. After the completion of four weeks, privileges are granted at the discretion of the senior team instructor and may be as elaborate as a weekend pass.

During his stay at the school, the

candidate is placed in many positions of responsibility. The functioning of the candidate battery is entrusted to the candidates. All of the positions of command in the structure of the battery are rotated weekly among the candidates so that each candidate has ample opportunity to demonstrate his ability in the art of leading men.

To graduate, a candidate must meet the required standards in his academic work, leadership, and physical proficiency. If he is found deficient in any one of the three, the candidate becomes acquainted with the Officer Candidate Board. While this is not always a pleasant acquaintance, the Board is often able to salvage the situation and help the

candidate get on a more successful course.

During his 19th week, he becomes a senior candidate. At this time he is granted extra privileges and emphasis is placed on preparing him for the duties which will confront him upon his graduation. He is given a distinguishing insignia which requires a salute from members of the junior classes. He assists in the inspections of the junior classes and much of the responsibility for maintaining the decorum of the candidates rests in his hands.

After 22 rigorous weeks, he is commissioned a second lieutenant of Artillery in the ORC. He is then assigned to active duty immediately with an AAA unit.



Major General Terry Allen, USA Ret., conducts his leadership conference with OCS students at the AA & GM School, Fort Bliss, Texas.

By Maj. Gen. Terry Allen

MILITARY leadership has been studied and analyzed throughout the ages. We know that any military commander must have proven ability to lead the men entrusted to his command. The actual methods of exercising command and leadership will vary in accordance with the personality and characteristics of each commander. However, we do

know that, first and foremost, any commander must be able to instill in his soldiers: *THE WILL TO FIGHT*

You can't put this over by "bluff or bluster." The commander himself must be imbued with a competitive fighting spirit. He must know his job, and the needs and capabilities of his men. As

for the psychology of military leadership, we must consider this vital question:

WHY DOES THE AMERICAN SOLDIER FIGHT?

The average American soldier is a self-thinking individual, with basic motives of patriotism and love of country. But, once his own unit is committed to battle, his most urgent incentive is the fact that:

HE IS FIGHTING FOR HIS UNIT

Therefore, every American combat leader must, by training and by his own personal example, instill the highest degree of combat efficiency and self-confidence into the soldiers of his command, so that: *HIS UNIT IS WORTH FIGHTING FOR*

REQUIREMENTS OF A COMBAT UNIT

By first examining the basic requirements of a combat unit, namely: *DISCIPLINE, TRAINING, TEAMWORK*, and a "*BELIEF IN THE UNIT*," we can more readily visualize the essential attributes of a combat leader.

DISCIPLINE

DISCIPLINE is the foundation of teamwork and efficiency in any organization. Military discipline has been defined as being a mental attitude, which renders proper military conduct instinctive on the part of the soldier. It further signifies a deep sense of loyalty and co-operation, and cheerful obedience to constituted authority.

With so much talk today of the need for social reforms, military discipline has often been maligned and criticized by

an unthinking public, who connect the term "discipline" solely with military punishment. Whereas, *DISCIPLINE*, in its true sense, really means cooperation and teamwork. The American youth learns team discipline on school athletic teams, where he must "Play ball, for the good of the team"; or "Turn in his suit."

Discipline cannot be attained by fear of punishment. It can only be attained by the precept and example of the leaders. For that reason, any military leader must make sure that his orders and instructions are sound and explicit; and that they are issued with firmness and impartiality towards all concerned.

With honest forthright leadership the men soon realize that the demands made upon them are made in their own best interests. The American soldier is often a rugged individualist; but, deep down in his own heart, he takes pride in serving in a tough, well-disciplined outfit; where duty and training requirements are sound and exacting; and where his own needs are skillfully attended to.

DISCIPLINE enables green troops to withstand the first shock of battle, to react under fire like veterans, and to win when the odds are against them. Excessive casualties are the exception in a well-disciplined unit, which has been trained to react instinctively under any emergency.

A well-disciplined combat unit can be recognized by its alert confident bearing, and by its efficient functioning in the field. One cannot expect officers or soldiers to maintain a parade ground appearance during the stress of front line combat conditions. But, an alert soldierly bearing should be instinctive, even under the most trying conditions. Some individuals are inclined to become slovenly in their performance of routine duties, when the going gets tough. But this slipshod attitude is never condoned in any outfit which has a deep pride in itself.

The NCO's are the backbone of any military organization, in maintaining high standards of discipline and training. Give them definite responsibilities, honest support, and authority to act on their own initiative. But, make sure that this authority is intelligently and rightfully exercised.

TRAINING

TRAINING must be realistic, with

emphasis on combat technique and teamwork. Every soldier in the outfit must know "WHY" he is doing "WHAT." Top physical fitness must be stressed. A soldier's technical expertness is nullified unless he has the physical stamina and guts to sustain all-out efforts, when the going is tough. Officers or enlisted men who cannot survive a tough training program have no place in combat.

The slogan, "get smart and get tough," summarizes unit training needs. *MISTAKES MADE IN TRAINING CAN BE CORRECTED. MISTAKES MADE IN BATTLE ARE PAID FOR IN THE LIVES OF YOUR MEN.*

TEAMWORK

TEAM SPIRIT is essential to battle success. There must be an abiding confidence in the leader, and assurance that all units and individuals are "putting out for the good of the team." This sense of teamwork must apply to the administrative, supply and service elements, as well as to the combat elements of the command. Likewise, attached supporting units must be considered as integral parts of the team.

BELIEF IN THE UNIT

"*BELIEF IN THE UNIT*," otherwise known as morale, is an indefinable quality, attained only in certain units. It indicates pride and confidence, and is the most essential combat attribute. It is not a cheap commodity, built up on free cigarettes, free beer, free shows and other bargain counter inducements. It is built on *DISCIPLINE*, *TRAINING*, *TEAMWORK*, and on *CONFIDENCE* in their leaders. This type of unit esprit is accomplished by the combined efforts of officers and enlisted men.

When American soldiers are imbued with an intense belief in their outfit, they will never let their units down, regardless of their fatigue or battle weariness. They wear their division insignia with a fierce pride, and will fight for their outfit, "At the drop of a hat." Units with this pride of accomplishment have a cocky self-assurance, all their own, which pays off in battle.

History is replete with examples of American combat units which have overcome insurmountable obstacles, because of their unit esprit and their intensive belief in themselves.

LEADERSHIP REQUIREMENTS

American combat units all have the same potential capabilities. Their combat efficiency and esprit will depend on the leadership of their commanders. A "sorry outfit" means a "sorry commander."

To uphold high standards of combat efficiency, the leader must be a man of positive *CHARACTER*, with outstanding *SOLDIERLY ABILITY*. His personality should be such that he is able to "*KNOW THE MEN OF HIS COMMAND*," and to acquire their confidence. Soldiers will follow a colorful competent leader, however tough he may be, provided they believe in him, and feel that he knows his job.

CHARACTER

A leader must have determination, and sincerity of purpose. If he is guided by selfish ulterior motives, he will soon lose the confidence of the men under his command. He is not expected to be a pantywaist; but he must be a square shooter, and have high personal standards. A sense of humor that enables him to laugh off petty annoyances, is helpful to any leader.

A leader must be forceful, but he must be fair and impartial. He must be quick to award for duty well done; likewise, he must be quick to take sharp corrective measures for any neglect of duty.

SOLDIERLY ABILITY

A military leader must be able to lead and direct his troops decisively in battle. He must have hard common sense and a practical working knowledge of his job. He must know the combat functioning, capabilities, and weapons of his own unit, of the next higher unit, or of any supporting unit that may be attached to his command. He must have sound judgment: but he should also have imagination, bold initiative, and the faculty of being able to beat the enemy to the punch.

It is the leader's responsibility to prepare his men for combat, and to make sure that none of his men die in battle because of stupid leadership. He should strive to attain his combat objectives by smart quick maneuver, with maximum damage to the enemy, and with minimum damage to his own troops. To get the job done quickly, with a minimum of battle casualties and other losses, is

the true test of battle leadership.

The leader must inspire confidence, and set an example of cheerfulness and fortitude, even after prolonged exposure to hardship, danger, and fatigue. Top physical fitness and the ability to take it should be a matter of personal pride with every combat officer.

KNOWLEDGE OF HIS MEN

The leader must know his men, their needs and capabilities, and know what they are up against. To have belief in his outfit, the American soldier must know and have confidence in his leaders. He depends on the fact that his officers and NCO's know what they're doing.

Company and battery officers are directly responsible for the immediate needs of their men; for their living conditions, their food, their health, their recreation, their equipment, their training, and their discipline. Higher commanders have the same over-all responsibility towards their entire command. The needs and welfare of their sick and wounded should always be a matter of deep consideration.

The preparation for combat of battle replacements is a matter of immediate concern for all commanders. The effective preparation of these new men for their arduous combat tasks will boost their morale and confidence, and will raise the battle efficiency of the entire command.

All commanders, regardless of grade, should frequently visit their forward elements on the battlefield, to inspire confidence and to get firsthand combat information.

CONCLUSIONS

Victory in battle is dependent upon skillful planning by the high command. But, it is the unsung heroes of the combat units—the battle-wise company and battery officers, the faithful NCO's, and the fighting GI's who make victory possible. It will be your job to lead and direct our soldiers in battle. Make sure that you are fit and prepared to do so.

THE ULTIMATE TEST of any military leader is in actual combat. This determines whether the training of his unit has been practical, realistic, and sound; whether he has instilled discipline, confidence, and esprit in his unit; and whether he has the guts and ability to "call the signals" on the battlefield.

THE BATTLE IS THE PAY-OFF.

Training in The 35th AAA Brigade

By Major Villa Carter

WHEN the sinister muzzles of 90 millimeter AAA guns suddenly poked out of sandbag revetments overnight over the nation's capital and its environs recently, police headquarters was swarmed with anxious calls.

People wanted to know what was going on. Why had the Army moved in? The answer was that it was just regular training for the 35th AAA Brigade.

Surprise practice movements, field exercises, artillery drills, tracking missions and antiaircraft firings are features of the training program. The units of the brigade have completed their initial training at training centers. Consequently the training consists mainly of field exercises of this kind and other advanced training.

Highlighting the garrison training are surprise practice movements and occupation of gun positions. They serve to keep batteries operationally ready and to improve efficiency in the rapid occupation of positions and accurate orientation and synchronization of equipment.

Each week one battery of a battalion is ordered to move to another area on the post, where it becomes operational as quickly as possible. The surprise order is given while the batteries are performing normal training. The battery's guns, directors and radars are in the firing position in the gun park. The battery march orders its equipment and moves to the selected area.

With the coming of winter, a plan was initiated to winterize one on-site training position per battalion so troops could be kept in the field during cold weather. Second Army and Military District of Washington engineers cooperated in preparing plans for flooring and framework for squad tents, mess halls, battery CP and orderly rooms.

Funds were obtained for lumber and to provide 110-volt single phase power to each of the winterized sites. Material was delivered to Fort Myer, Virginia, where the post commander and post engineer supplied power saws and shops for pre-cutting the lumber. Troop labor was used to erect the framework for the winterized tents. The enthusiastic soldiers did a professional job, and their work saved considerable time and money.

With winterized sites completed, each battalion now sends its batteries to the field regularly. To minimize movement of equipment with consequent damage to positions, the length of stay of each battery in the field has been increased.

Supplementing the field training, air defense exercises and tactical field exercises, are called from time to time with the entire brigade moving into on-site training positions.

With the considerable time spent "on-site," each battery has improved its training position to a point where enlisted personnel enjoy comfortable living in the field.

A continuing program of field and garrison training, highlighted by surprise movements, is keeping the brigade on the alert at all times.

BRIGADE NOTES

Taking over the antiaircraft defense of Baltimore, the 208th AAA Group under Col. Howard S. Ives, moved recently to Catonsville, Md. where it will be based for the duration of its active federal service. A Connecticut National Guard unit, the 208th will revert to nonactive status in May 1953.

Col. D. D. Martin has assumed command of the 19th AAA Group. The commander and his staff are dividing time between training sites of the units of the group and the AAA firing point at Bethany Beach.

Col. Harold P. Gard has been ordered to Alaska and he has been replaced as brigade executive by Col. Francis A. Liwski who joined the brigade from the Artillery Section of the Career Management Branch in Washington.

The 35th AAA Gun Battalion arrived at Fort Meade from Camp Stewart under Major Arthur H. Stamwood. Lt. Col. George W. Best was recently assigned to command the 36th AAA Gun Battalion.

The 260th AAA Gun Battalion, commanded by Major Paul Scott, and the 208th AAA Group were awarded battle streamers for their unit's participation in World War II. The organizational Colors of the two National Guard units were decorated at an evening parade ceremony at Fort Meade.

FORT BLISS ACTIVITIES

FORT BLISS gained another artillery unit on February 1, with the activation of the 6th Antiaircraft Artillery Group. Commander of the new Group is Col. William J. Wuest, formerly deputy post commander at Fort Bliss. His adjutant is Lt. Harold W. Boone.

Col. Charles G. Dunn succeeds Col. Wuest as the new deputy post commander at Fort Bliss. Coming to the post in November 1951, he served briefly as commanding officer of the 226th AAA Group before taking over the duty of comptroller of the post. He will hold the comptroller position concurrently with his new assignment.

PIO Overseas

Major Louis B. Wantuck, post public information officer at Fort Bliss for more than two and a half years, left the post January 29 for leave before reporting overseas in the Far East Command in March. He was succeeded by Major Charles J. Brandt, who recently returned from service in Europe.

Major Brandt is well-known in the El Paso area, having served as public information officer here from 1946 to 1948. He went from the Bliss assignment to Athens, Greece, where he served as PIO for the U. S. Military Group during the Greek Guerrilla War. He also served in Trieste as Superintendent of the 4,000-man civilian Venezio-Giulia Police Force for the Allied Military Government.

Awards

The Silver Star posthumously awarded to Sergeant Frank R. Salgado, Jr., of Marfa, Texas, was presented to his father, Francisco Salgado, Sr., in a ceremony at Fort Bliss, January 18.

The award was made to Sergeant Salgado for his heroic actions at Poncho, Korea, on September 5 and 6, 1951. After being wounded and having his

wound dressed at an aid station, he returned to his position and directed the fire of the mortars until further wounded by flying shrapnel.

Major General John T. Lewis, Commanding General of Fort Bliss, made the presentation of the Silver Star to the hero's father.

Other awards presented in January included Bronze Star Clusters to Major J. W. Spellman and Capt. J. H. Fluston, for service in Korea. Col. A. C. Ramsey, post quartermaster at Fort Bliss, made the presentations.

Nineteen-year-old Corporal William P. McCraney, now assigned to the 716th AAA Gun Battalion at Fort Bliss, received the Distinguished Service Cross, the nation's second highest award for valor, and the Purple Heart with two Oak Leaf Clusters in a ceremony at the post, February 9. They were awarded for wounds received in three different engagements while a member of the 35th Infantry Regiment, 25th Infantry Division, in Korea.

Brig. Gen. Frederic L. Hayden decorated the young soldier at a formation in recognition of his "extraordinary heroism in action."

On the same day in another ceremony at Fort Bliss, Master Sergeant Wilbur F. Thater, first sergeant of Battery B, 728th AAA Gun Battalion, received the Bronze Star Medal for service with the 57th Field Artillery Battalion in Korea. Col. W. B. Logan, commanding officer of the 11th AAA Group, presented the decoration.

School Activities

Seventeen classes opened during the week of January 7 in the Antiaircraft and Guided Missiles Branch of the Artillery School at Fort Bliss. Total enrollment in the group was 612, the number being divided almost equally between officers and enlisted men.

Classes opening were: Associate Battery Officers Course No. 38; Associate Antiaircraft Artillery Officer Advanced Course No. 8; Artillery Fire Control System Officer Course No. 3; Fire Control System Transition Course No. 7; Gunnery Control Course No. 30; Operations Chief No. 4; Transition Officer (Korea) Medium and Heavy Antiaircraft Artillery Course No. 1; Transition Officer (Korea) Light AAA Course No. 1; a Fire Control System Range Officer or Operator Course; four Artillery Fire Control System Specialist Courses; two Antiaircraft Artillery Mechanic Courses; a Fire Control Electrician Course; and an Artillery Integrated Fire Control System Course.

Students from seven Allied nations; Italy, Turkey, France, Canada, Denmark, Portugal, and the Netherlands were included in the class rolls.

Major General Roscoe C. Wilson, U. S. Air Force, Commandant of the Air War College, and Brig. Gen. Fritz A. Peterson, commanding general of the 47th Division Artillery at Camp Rucker, Alabama, headed the list of senior officers who attended a guided missiles orientation course at Fort Bliss, January 23-26. Sixty-five officers were enrolled in the class which witnessed a firing demonstration of antiaircraft artillery on Fort Bliss Ranges and visited White Sands Proving Ground, New Mexico.

A special guided missile orientation course for senior officer personnel at Fort Bliss was a feature of January activities. Approximately sixty officers attended the three-day course which was designed to orient post officers on the latest developments in guided missiles.

One hundred and eighty officers were graduated from Associate Battery Officers Course No. 36 on January 31. The students had completed a 15-week course stressing antiaircraft gunnery and tactics, communications and guided missiles.



PLOTTING BY VIEWCASTER

By Sgt. William J. Tobin

IN a command post tent in the gun park of the 736th Antiaircraft Artillery Gun Battalion, experimentation is being conducted in the use of a new method of plotting for a 90-mm gun unit. This new method, employing the Overhead Projector PH-637—commonly called a viewcaster or Vu-Graph—has been in use for some time, and has been found to meet all the requirements placed on a battalion operations center in a tactical position. The experimental work is directed toward improving and streamlining AAOC procedures.

The July-August 1951 issue of the *ANTI-AIRCRAFT JOURNAL* presented a new type antiaircraft artillery operations center in use by the 503d AAA Operations Detachment in permanent tactical position. The AAOC described is suited to a large tactical operation as conducted by the 503d. However, such an elaborate operations center is not practical for units of a lower echelon.

Antiaircraft battalions have as T/O&E equipment the plotting kit AN/TSA-1. This kit includes four 4-foot by 4-foot boards which join to form the plotting table. It is designed for transportability and use in field positions. However, many of the same objections hold for its use by a battalion as for use of the slightly more complete AN/TTQ-1 by an operations detachment.

The table itself, once assembled, is large and unhandy to work around. Plotters must either crawl across the board to place the arrows which mark the route of the target plane, or else shift telephone headsets to another side of the board, meanwhile losing any plots which are reported in the interim.

The equipment itself, when packed for movement, is heavy and cumbersome. The plotting oftentimes is slow and not too accurate, due to the margin of error introduced in the placement of the marking arrows on the board. Raid stands also must be made up and moved along with the arrows, giving data on that particular series of plots.

To compensate for these drawbacks, and obtain a system which is more accurate, more rapid, requiring less space, easy in assembly and much more transportable, the 736th Battalion developed the use of the overhead viewcaster. The viewcaster instrument is not T/O&E property; it was obtained on memorandum receipt from the Second Army Photo Laboratory and Film Library.

The instrument packs for traveling in a portable case weighing approximately 30 pounds—one man can handle it without difficulty. The projector itself is broken down into the projector proper, the reflecting mirror and a steel mounting rod which supports the reflecting mirror above the projector. The projector is powered by a generating unit PE-75, which weighs approximately 315 pounds. Used with the projector is a portable movie screen of the standard type which fits into a canvas carrying case.

In operation, the projector is placed on a folding field table, with a plotter

seated at each side, their backs to the screen. A positive reproduction of the defended area, approximately 10 x 10 inches square and bearing the GEOREF Grid, is mounted on the glass top of the viewcaster. Cellophane, wrapped on rolls and attached to the sides of the viewcaster, is rolled across the grid. The plots are recorded on this transparent sheet with wax pencil, and are projected to the screen along with the grid.

The grid in use by the 736th Battalion was prepared under the direction of 1st Lt. Kenneth C. Johnson, who conceived the method of using the viewcaster. The grid was taken from the one in use on the plotting board, reduced in scale, and drawn on tracing cloth. From there it was photographically reproduced by the Signal Corps onto the transparent positive which is used on the projector. A more rapid method, but less permanent, is to simply reproduce the grid directly onto a piece of acetate with drawing ink.

The distance between the projector



The Viewcaster Projector. Corporals George Schreiber and Stuart Allen man the 10-inch "plotting board" which is projected on the portable screen in background.

and the screen can vary to any reasonable distance. In the 736th, the projection normally was cast over the T/O&E plotting table, with the screen set up at the opposite side of the table. This results in a projection distance of approximately nine feet, making a picture approximately 9 feet square.

Telephone lines bring the intelligence line from the AAOC to one of the plotters, and the operational control line from the battery radars to the other plotter. If written records of the plots are desired, two other recorders may be tied into the same lines and seated in any convenient place in the battalion AAOC.

Permanent records also may be kept from the cellophane roll, with time and date noted and with appropriate tick marks to identify the location on the grid. This latter method actually preserves a picture of the mission for future reference.

The ease in plotting by this method is a marked improvement over the standard plotting board. The plotter on the intelligence line, when receiving a plot, marks it with a dot directly over the proper grid area. A series of these plots, connected with a solid line, gives an accurate picture of the raid, clearly visible at a distance. The radar plotter

records the various batteries' plots in a similar manner from the opposite side of the viewcaster. When a battery reports on target, he merely places a check mark beside the code number of that battery. This code number list is placed at any spot on the cellophane transparency and also projected on the screen.

Colonel Lynch and Lieut. Johnson are not yet ready to recommend their equipment and procedures for standardization, but they are well convinced that they are working in the right direction for improvement in AAOC procedure, particularly for the gun battalion operating independently.

56TH AAA BRIGADE

By 1st Lt. Donald E. Harkins

Aide-de-Camp

THE 56th AAA Brigade was reactivated at Camp Edwards, Mass., in February and has been under the command of Brig. Gen. Harry F. Meyers since 11 March, 1951. Before the headquarters and headquarters battery completed its individual basic training, Army Field Forces gave the brigade the responsibility of formulating and supervising training of all AA units at Camp Edwards. Continuous assignments of units were made to the brigade until it consisted of three groups, eleven battalions, four AA operations detachments, and four signal radar maintenance units. The brigade completed its Field Force Training Test on the 16th of August 1951 and continued to train subordinate units until its transfer from Camp Edwards.

On 5 November, 1951, the brigade headquarters moved to Fort Devens, Mass. With this assignment it assumed the mission of AA defense of vital areas located in the northern sector of the Eastern Army Antiaircraft Command.

General Meyers, also commands Fort Devens. For this responsibility, however, he has a post staff separate from the brigade. Colonel Edward B. McCarthy is the post executive.

The 197th AAA Group under Colonel Albert S. Baker at Fort Banks, Mass., is a part of the command. It includes the 685th AAA Gun Battalion under Lt. Col. Carl A. Fraser, the 704th AAA Gun Battalion under Lt. Col. M. S. Hoffman, and the 745th AAA Gun Battalion under Major Earle Mountain.

THE 2nd AAA Group, Col. C. G. Patterson, commanding, and the following battalions in training at Camp Edwards are also a part of the 56th AAA

Brigade:

336th AAA Gun Bn., Lt. Col. Addison M. White

380th AAA Gun Bn., Lt. Col. John W. Walker

44th AAA Gun Bn., Major Herbert G. Cummings

398th AAA AW Bn., Lt. Col. Louis B. Dean

Lt. Col. Paul A. Harmon, S2, and Major Worth C. Connor, S1 are now attending the Command and General Staff College, at Fort Leavenworth, Kansas.

CHANGE ON OKINAWA

Colonel Joy T. Wrean turns over command of the 97th AAA Group on Okinawa to Colonel Eugene H. Walter. After almost three years in command, Col. Wrean moves on to the AA & GM Center, Fort Bliss, Texas. Col. Walter's previous assignment was with Headquarters Army Field Forces. The group comprises: 22nd AA AW Bn., Lt. Col. H. P. Wills, commanding; 65th AAA Gun Bn., Lt. Col. Harry C. Brown; 705th AAA Gun Bn., Lt. Col. W. F. Kuhn and the 507th Operations Detachment, Major J. C. Maris.



CAMP STEWART ACTIVITIES

FEBRUARY marked the departure of ten AAA battalions from Camp Stewart for new stations in the Eastern Army Antiaircraft Command, taking their places in the continental air defense system.

Col. Gerald G. Gibbs, commanding officer of the 47th AAA Brigade, prior to his departure for his new station at Sixth Army Headquarters, Presidio of San Francisco, Calif., stressed the need for maintaining a high degree of combat effectiveness in his farewell message to the units.

The 43rd RCAT Detachment recently launched successfully the R-Cat towing a flag target for the regular target practices of the 256th AAA AW Battalion.

The main idea in the scheme is to save precious time on the range by eliminating delays incident to shooting down the RCATS when the gunners get too hot. The flag target is not quite so vulnerable.

Lieut. John R. Spitz, 43rd executive, said that the R-Cats maneuverability is not much hampered by the tow target, which is attached on a cable and trails the plane by 500 yards.

Brig. Gen. Clare H. Armstrong presented the General Clare H. Armstrong Trophy for proficiency in gunnery to the 337th AAA Gun Battalion, the 712th and 698th. Battery D of the 27th AAA AW Battalion was also awarded the trophy.

ORC and Guard Training

Tentative plans call for annual two-week training for more than six-thousand National Guard and Organized Reserve Corps officers and enlisted men at Camp Stewart between June 15 and August 31. This will include eighteen AAA battalions from Georgia, Alabama, Tennessee, North Carolina, Mississippi, South Carolina and Florida which comprise the Third Army area.

Largest element of the training units are from Alabama with 1900, including the 312th AAA Brigade with five battalions.

Arrivals

During the week of February 19, the 38th AAA Gun Battalion, commanded by Lt. Col. Stanley R. Kelley, arrived from Camp Edwards, Mass., to train at Stewart.

In January, the 256th AAA AW Bat-

talion came to Stewart for three weeks of firing. During the period they completed their first year of training in federal service. Lt. Col. R. W. Hoag commands the Minnesota National Guard unit which is based at Camp Ruckner, Ala.

Post Economy Board

In seeking methods to conserve manpower and supply, the post's recently appointed board of officers started a series of studies to make sure that all enlisted men are employed in the most essential MOS categories. Consideration was being given to the possibility of reassigning certain enlisted occupations to civilian employees and instituting new efforts for better use of equipment and supplies.

The board recommended to General Armstrong that all activities not specifically considered as "on-the-job" training be suspended during the work week and held on Saturday mornings. This would include inspections, I&E, character guidance and physical training, using the weekdays solely for military purposes.

Polaroid MG Trainer

The Polaroid machine gun trainer currently in use for training gunners on the caliber .50 weapons is one of five allocated to the Army. The device permits "firing" on a target which is flashed across a screen by means of a motion picture projector. As the trigger is squeezed, tracers appear on the screen and when hits on the target image are scored, sound

(Continued on page 39)



U.S. Army Photo

Brig. Gen. Clare H. Armstrong, commanding general, Camp Stewart, Ga., presents the General Clare H. Armstrong Trophy for proficiency in firing to Major Christopher S. Hill, commanding officer of the 337th AAA Gun Battalion. The 90 millimeter unit had the best over-all record in five service practices. At right is Major Frank M. Buchanan, of the 712th Battalion, receiving two cups for placing first in the Army Training Test and for winning the advanced service practice. Behind the general is his aide, 1st Lieutenant Frank Shaw.

WATCH YOUR RCAT'S

By Major Theodore Wyckoff

34th AAA Brigade and

1st Lt. Charles A. Dennen

49th RCAT Det.

34th Brigade Notes

UNITS of the 34th AAA Brigade, commanded by Brig. Gen. R. R. Hendrix, have recently completed an air defense exercise held jointly with French AAA and U. S. and French air forces. Operation Cirrus was coordinated with the French Army ground problem. Exercise Jupiter and this interallied maneuver was followed by an all-American problem involving U. S. Army and Air Forces in the American zone in Germany.

High priority has been given to the establishment of brigade's Artillery Electronic Maintenance School which is operating at Karlsruhe under Major Joseph J. Wiacek. The school will furnish a steady supply of radar mechanics and fire control electricians to AAA and Field Artillery units of the Seventh Army.

Among the units of the brigade participating in air defense are: 260th AAA Group, Col. LeRoy H. Mann; 46th AAA AW BN., Lt. Col. Paul A. Anson; 48th AAA AW BN., Lt. Col. O. K. Marshall; 62nd AAA AW BN., Lt. Col. C. E. Meadows; 95th AAA Gun Bn., Lt. Col. L. S. Dougherty; 443rd AAA AW BN (SP), Lt. Col. B. A. Spiller and the 91st AAA AW BN., Lt. Col. R. A. Claflee.

The 552nd AAA Gun Battalion recently celebrated its third anniversary since reactivation. Gen. Hendrix was on hand to join the celebration and to pin on Lt. Col. Lawrence N. Reiman, the commander, the new battalion insignia.

Camp Stewart

(Continued from page 38)

effects produce a peep. The course of the tracer stream is observed through polaroid glasses.

Machine gun crews will all receive instruction with the trainer prior to actual target firing and periodic practice with the device will be required during the training program.

Stewart Newspaper Honored

The Camp Stewart Rocket, published weekly at Jesup, Ga., was named as the outstanding all-service civilian enterprise for the month of December by the Armed Forces Press. Colonel Franklin S. Pruyn, chief of the AFPS, awarded a certificate of commendation to the publishers.

ALMOST everybody in antiaircraft comes in contact with RCAT's—radio-controlled airplane targets—sooner or later. They are mighty nice things to have around—they'll fly on rainy days when towed sleeves are out of the question, and they'll fly maneuvering courses, which towed sleeves can't—But there is one thing about RCAT's: they're not cheap. The OQ-19 costs \$2,350.00, and an AW battalion after it has finished its initial training program, is authorized to expend 24 of them every year. That is \$56,400 worth of targets per year per battalion.

The key point of my whole thesis will be the importance of having adequate spare parts. Now, depending on whether the S-4's and Air Force procurement people in your area are on the ball or not, you may or may not get two spare parts kits. Air Force stock number 5300-497780, which cost \$6250 a piece, and which are issued on the basis of one per twelve OQ-19's. If you get them, they are issued to the RCAT detachment which supports you. Let's see what difference it makes.

An OQ-19 can be made to fly an average of three times, if a skilled crew, such as the 49th RCAT Detachment, is good at salvaging batteries, repairing wings, and replacing propellers and parachutes from targets shot down. This is what the 49th had to do last summer, when there were no issued spare parts available in Europe, and so the average cost per RCAT flight was \$780, or \$783.33, to be exact. From your total annual allowance—to train all your 64 gun sections—you get only 72 flights—a bare 1½ flights per section.

But if you get the spare parts, (as the 34th Brigade did this year,—thanks to Major Robert W. Fiske, S4) see what happens? The detachment can then exactly double its efficiency and it immediately starts making each of your 24 targets fly six times instead of three, and

you get 144 launchings per year for your battalion. And each of these launchings, far from costing \$780 a piece, now costs only \$480 a piece—\$478.47 to be exact—a saving of three hundred and four dollars every time a target is put in the air.

What's more, if the RCAT Detachment is in business as a going concern, it can begin to economize on certain spare parts which it doesn't use so frequently: engines, which cost \$739 a piece, for example. Over a period of time the principal requirements for spare parts turn out to be for batteries, \$40 each, parachutes, \$296 each, and props, \$15 each. As these economies are effected the cost per launching drops, and in proportion, the RCAT Commander's efficiency report rating for "economy" goes up.

Watch your RCAT's and get your spare parts!

There is one other important thing that you can do to effect economy. That is to schedule your automatic weapons firing so as to put 40's first and .50 caliber machine guns second, and on fifties to fire only two weapons at a time, one or two barrels per weapon. The reason for this is that the RCAT attrition rate for forties is much lower than for fifties, and the RCAT pilot can maneuver away from two tracer streams without difficulty, but not from more than two.

This way you can stretch the useful life of the plane on each launching as nearly as possible to the maximum flying time on a tankful of gas, which is an hour and five or ten minutes. So, if you fire forties for about 35 or 40 minutes, and then switch to fifties for 20 or 25 minutes, or as long as the plane lasts, your chances of getting maximum use out of your target are good.

And above all don't permit easy courses just to boost gunner morale. We need training—not braggadocio!

88th Abn AAA Battalion — Exercise Snowfall

By Captain Blaine Young

THE 88th Airborne AAA Battalion, Lt. Col. Robert B. Barry, Jr., commanding, completed in February its participation in Exercise Snowfall with the 11th Airborne Division. Other Army units participating included the 3rd Armored Cavalry, the 278th RCT as Aggressor, and the 306th Logistical Command supporting both sides.

The 18th Air Force provided the Troop Carrier Command, the Tactical Air Command, and units to operate the Joint Operations Center, Tactical Air Control Center, and other required services.

Incident to the Exercise the author and Captain John Crawford had to start on planning early in October. Changes in loading plans and air loading plans were necessary due to the new 2½-ton truck and 1½-ton trailer. Variations had to provide for air movement in the C-46, C-82, C-119, or C-124. Before it was over every officer and man in the battalion was involved.

Right after Christmas Captain John Adams, S4, led the advance parties to Fort Drum, N. Y.

During the air movement of 10,000 troops from Fort Campbell to Fort Drum the batteries flew in with their RCT's. Captain Owen flew the Hq. Battery in with Division headquarters.

Immediately upon arrival all were issued arctic equipment, including the sleeping bag, shoe pacs, parka, mittens, snowshoes, warming tents and stoves. During the training phase all were given intense training in Arctic survival by Lieut. Hart's trained team. During the same period the batteries participated in RCT problems and began to experience the cold weather difficulties in radio operation.

As the main maneuver began Captain Patrick Malone's Baker Battery air landed at Wheeler-Sac AFB and set up the AA defense. Lt. Col. Barry, Capt. Vandervort, Lt. Vranish, and a small battalion advance echelon came in same time to set up the AAOC, keep pace with the TACC and provide AAAIS.

Lieut. Dorsey Morgan led Charlie Battery in to parachute on the DZ on



Quad fifty turret mounted on snow sleds.

X plus 1 and set up AA defense there.

Captain James Bouknight brought Able Battery in to air land at Wheeler-Sac AFB on X plus 2, and on the same date the remainder of the battalion also came in. Thereafter some elements moved as necessary, but the entire battalion continued in the AA role.

By this time the cold weather and snow arrived with a vengeance. Temperatures dropped to below zero every night and ranged in the teens during the day. Special arctic equipment plus Yankee ingenuity came into full play and

personnel of the battalion were all relatively comfortable in improvised lean-tos, snow huts, and deep fox holes. Those who were fortunate enough to be near one of the arctic type warming tents were indeed lucky. For extended periods in extreme cold, an arctic type shelter tent is required for each gun section.

The exercise served to show again that our airborne AA weapons leave a lot to be desired. The mounts for the 40mm as well as for the caliber .50 weapons can be air dropped, but they are sensitive to damage. Once dropped these mounts give no real mobility. The only really suitable mount as now used is the M-63 mount for the single caliber .50 machine gun.

Exercise SNOWFALL did wonders in rounding out the training of this battalion. By the end of the exercise the unit was functioning as a smooth working team. Morale had reached a high point and the personnel could look back on a very tough job well done.



Brig. Gen. William M. Hamilton, 102nd AAA Brigade, and Col. Fred J. Woods, group and post commander, congratulate Chief Warrant Officer Roy A. Moore, 16th AAA Group, at Fort Hancock, N. Y. upon the award of the Bronze Star Medal (OLC) for combat service in Korea.

EXERCISE "HELPFUL"

By Colonel C. G. Patterson

EXERCISE "Helpful," conducted at Camp Edwards, Mass., 18-20 December 1951, was conceived and executed primarily to provide personnel of the 151st Aircraft Control and Warning Group with experience in their air-ground operation role in "Snowfall." The entire exercise was planned, executed, and critiqued within a period of three weeks.

On 30 November, Major Gouchoe, A3, 151st AC&W Group, asked if 2d AA Group could arrange to ration and quarter two forward air control parties (FACP) at Camp Wellfleet firing range. He explained that they were planning to use the Wellfleet area to give the FACP personnel experience in selecting ground targets for air attack and in guiding aircraft to the target. We replied that we would be happy to make such arrangements, but hastened to point out that the land area in that vicinity is very limited and that ground attack aircraft in the area might interfere with the AA firing range. As an alternative, it was suggested that the Camp Edwards area presented much more suitable terrain for air-ground operations and, in addition, 2d AA Group was anxious to participate in a joint air-ground exercise.

As a result, early in the week of 2 December, Lt. Colonel J. W. Connelly, CO, 151st AC&W Group, and Colonel C. G. Patterson, CO, 2d AA Group, agreed to conduct a joint air-ground exercise at Camp Edwards, outlined their concept of the exercise, and initiated joint planning. Colonel A. T. Bowers, S3, Camp Edwards, accepted the responsibilities of senior ground force commander and detailed his assistant, Major J. W. Anderson (now S3, 2d AA Group), as G3 Air on the joint staff at the Joint Operations Center (JOC). Utilizing the 151st AC&W Group and 2d AA Group staffs, a joint staff was organized and given a concentrated briefing on capabilities, limitations, responsi-

bilities and procedures in air-ground operations.

GENERAL PLAN

THE general situation was based on Aggressor launching a three-pronged amphibious and airborne assault along the Massachusetts coast in the vicinity of Boston on 11 December. After consolidation of the beachheads, Aggressor launched an attack generally west and south to secure the Southern New England area as a base for further air-ground operations. The "Twenty-Fifth Army," supported by the "Ninth Air Force," conducted a strategic withdrawal against numerically superior Aggressor ground and air forces while building up resources for a counteroffensive. The "XL Corps," with Headquarters at Camp Edwards, defended the southern end of the line with two infantry divisions (336th & 259th) and one armored division (658th) and provided ground and AA defenses of the vital targets in the Cape Cod area. The "259th Infantry Division," 2d AA Group, most of the "XL Corps Artillery," and the 151st AC&W Group were located in the vicinity of Camp Edwards. F-51 aircraft, based at Dow AFB and Grenier AFB, were to be available for ground support missions.

While the disposition of forces left much to be desired from the strategic standpoint, this artificiality was accepted in order that maximum benefit might be derived from the exercise. In addition, the JOC was to operate at the Corps rather than Army level. Other than units of the 2d AA Group, ground forces were represented by one officer with a radio jeep (CG 259th Division) to work with the TACP. Headquarters 2d AA Group represented Headquarters XL Corps Artillery, while Headquarters XL Corps was represented by the G3 Air at the JOC. One AT-6 aircraft of the

151st Group was made available to act as air coordinator.

THE 151st AC&W Group provided: Space, facilities, and personnel for the JOC, their own Tactical Air Control Center (TACC), two Tactical Air Direction Centers (TADC), one Tactical Air Control Party (TACP), one Tactical Air Directing Party (TADP) utilizing an SCR 584 of the 704th AAA Gun Battalion in lieu of an MSQ type radar, and necessary early warning radar. Communications were installed between the JOC and Headquarters 2d AA Group and between the TACC and 302d AAOD operating the AAOC for 2d AA Group.

The 633d and 704th AAA Gun Battalions were deployed to provide AA defense of the vital installations in the vicinity of Camp Edwards and to support Corps Artillery from position. The 398th AAA AW Battalion established a visual AAAIS but did not deploy fire units. However, convoys from the 398th and 151st were utilized to represent Aggressor forces during the course of the exercise. They were attacked by F-51 aircraft when available, and at other times by an AT-6. When convoys were not in the area, one sergeant with a jeep, plus a ¼ ton trailer full of smoke grenades, represented the Aggressor forces in the Camp Edwards range impact area. On radio instructions from the TACP, he set off various colored smoke candles to represent targets for air attack.

Two types of air missions were utilized—preplanned at the JOC, based on the reported situation, and targets of opportunity as called for by the TACP. When aircraft were not in the area, or when requested missions were not deemed appropriate for air attack, targets were assigned to AA gun batteries thru "XL Corps Artillery" and 2d AA Group.

THE general plan for Exercise "Helpful" was issued to all units on 15 December, together with Intelligence Estimate Number One. By this date, three Intelligence Bulletins had been distributed and all personnel were familiar with the general situation and enemy activities. A joint briefing for commanders and staffs of participating units was held on 15 December. At this time, it was again emphasized that the purpose of the exercise was, primarily, to assist the 151st AC&W Group in getting ready for "Snowfall" and, in so doing, AAA units could gain valuable experience in the air-ground, as well as in the antiaircraft role. Everything was in readiness for the exercise to begin at first light on the 18th; that is, except the weather.

The 704th made a daylight move to positions on 17 December and checked out operation of the SCR 584 to be used as the TADP. Communications by telephone and radio were installed to TADC No. 1. The 633d made a night move on 17 December, since they were also going thru the tactical phase of their Army Training Test. The 398th AAAIS was established prior to dawn on 18 December.

The low overcast and intermittent rain on the Cape on the 18th was snow and ice at Grenier AFB and Dow AFB, and friendly aircraft were unable to take off. However, the AT-6 used by the air coordinator was diverted to the attack role, thus providing an excellent opportunity to check communications and air-ground operations procedures. The 633d and 704th were assigned a considerable number of ground fire missions in the absence of aircraft.

The night of the 18th, the weather turned clear and cold—changing the myriads of puddles into solid ice. On the 19th, the runways at Grenier and Dow were still covered with ice, so again the AT-6 acted as the air attack force, while a C-47 acted as the Aggressor air force. Both preplanned and targets of opportunity targets were attacked, and interceptions run against the Aggressor aircraft. Successful preplanned missions were flown against the Bourne and Sagamore Bridges across the Cape Cod Canal in an effort to halt the amphibious-airborne operation launched at the base of

Cape Cod early on 19 December. The TADP in the SCR 584 brought the attacking aircraft directly over the target on blind bombing missions.

On 20 December, the F-51s at Grenier were still grounded by icy runways, but Dow AFB was clear and F-51s appeared over Camp Edwards in flights of four aircraft beginning at 0900. Aircraft were available until 1420 engaging preplanned and call mission targets. The 398th and 151st convoys were dive-bombed and strafed the entire time they were traversing the impact area. The AT-6, in addition to acting as air coordinator, carried out blind bombing missions under radar control from the TADP. The C-47 representing Aggressor penetrated the area several times, each time being intercepted by a flight of F-51s under the control of TADC No. 2. In addition to air strikes and interceptions, the F-51s were utilized to make dive bombing and strafing runs on the various AA gun positions. During such attacks, the F-51s were designated as Aggressor aircraft. The exercise ended on the afternoon of 20 December and all units returned to base.

CRITIQUE

THE following comments during the critique are worth mentioning.

► Close support aircraft are not always available due to other commitments, weather, or other factors. Artillery is still the main reliance.

► Information must flow up and down. Too frequently spot reports and other information died at the end of a telephone line or in a journal.

► Adequate, reliable, and flexible communications are the single most important factor in air-ground operations. The purpose is to assure instantaneous communications with all elements of the air-ground team.

► Communications are vulnerable to saturation and jamming.

► Tactical air power is a powerful weapon of opportunity.

To the antiaircraft troops the exercise was primarily practice and a test in air-ground communications and coordination. We learned a lot about the air support problems, the required teamwork, and the language and procedures in use.

BOOKS TO GET AHEAD ON

These military books are best sellers today. Thousands of officers and men—old-timers and those returning to active duty—are building their military libraries with these up-to-date editions. Some buy a book a month; others a book every quarter.

The Officer's Guide	\$3.50
The Noncom's Guide	2.50
Company Administration and the Personnel Office	2.50
The Serviceman and the Law ..	3.50
Index-Digest to the Uniform Code of Military Justice	2.50
New Drill Regulations	1.50
Cadence System of Teaching Close Order Drill	1.00
Map and Aerial Photograph Reading, Complete	2.75
Basic Training Guide	2.50
Essentials of Military Training ..	3.75
Kill—Or Get Killed	3.75
Modern Judo; 2 vols., each	3.00
Small Arms of the World	6.00
The Military Staff	3.00
Intelligence is for Commanders	3.85
Income Tax Guide (for military personnel)	1.00
Principles of Insurance75

and 2 background books that point the way

The Red Army Today, by Ely ..	3.50
The army you may someday have to fight.	
The Price of Survival, by Sweet	2.85
A clearly marked course for the future.	

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BOOK REVIEWS

DOUGLAS MacARTHUR. By Clark Lee and Richard Henschel. Henry Holt and Company. 370 pages; illustrated; index. Price: \$6.00.

It's time we had a reasonably complete and undistorted life of General MacArthur and this is the nearest to it so far. The authors know a lot about the man they describe, they write of him warmly and make of him the remarkable flesh-and-blood person he actually is, rather than the artificial stiff-natured person some writers have depicted him as being. Lee and Henschel show him to be a great and able leader, and they show it so thoroughly and clearly that even those who disagree with the General's political viewpoint and his general world view must feel the degree of his greatness.

These authors do largely agree with him but make no big point of it. They cover his whole life story with such competence and in such interesting detail that the man is made clear as an admirable American servant of his country. There is a lot of new material here. Mr. Henschel does a superb job of telling the General's life in pictures. He has assembled several hundred illustrations which are well arranged with well-done captions in a section of 128 pages. Both text and picture life are good, and army families will be drawn to the book by this splendid picture section.

General MacArthur is of course a first class subject for a book of first class interest. His purposeful and active life had been filled with controversial interest long before he tangled with the present administration. And the authors go out to make the most of it.

As a curtain raiser we get a fascinating account of the first MacArthur's feud with William Howard Taft in the Philippines. Then on to Douglas MacArthur in the Rainbow Division, his tiffs with Pershing and Billy Mitchell—his first marriage, and "MacArthur and Politics."

Clark Lee spreads no oil on the water in his chapter on the Marshall-Mac-

Arthur Feud. This part may be lacking in documentation, but not one bit in interest.

Marching on through the Clark Field debacle, the Comeback, Japan, Korea, and the Firing Squad, the authors do a great job of giving the reader the inside scenes on this stirring story of a great general.

MASTER SPY. By Ian Colvin. New York: McGraw-Hill Book Company, Inc., 1951. 286 Pages. \$3.50.

After a war a trend usually develops toward the glorification of former enemies. Rommel has already been elevated to the Luckner-Richtofen pedestal. Superficially, it might appear that the same treatment is being given to Admiral Wilhelm Canaris, Germany's World War II Chief of Military Intelligence. But Ian Colvin does far more than write sympathetically of a senior German officer; he aims at no less than showing that Canaris seized every opportunity short of open rebellion to sabotage Hitler's aggression.

Such a contention regarding one of the German General Staff's ranking members is startling, but Colvin sustains it convincingly, although some of his evidence is based on inference. The motive attributed to the Admiral is a conviction dating from 1938 that Germany faced inevitable defeat. In retrospect, the facts seem obvious; nevertheless, few other German military men appear to have understood them. What trains of thought, what personality traits combined to make Canaris believe and act as he did? This book's failure to answer such questions is its greatest shortcoming. In short, as a biography it is unsatisfactory. We are given some account of what Canaris did, but only the haziest picture of the sort of man he was.

Military readers will find the book's chief value in its presentation of certain aspects of two intelligence organizations—the German, composed of jealous, competitive agencies; and the conservative, tradition-bound British service. The

limited success of Canaris' efforts to aid the Allies was due to the caution of British Intelligence, Colvin says. This is an age-old intelligence problem. Information is seldom lacking, but there must be discrimination between the good and the bad. Colvin freely condemns British intelligence for its failure to make full use of the Admiral's assistance, but he offers no solution to the problem. He only underscores it. Therefore, this book constitutes merely another monograph on one more of the many ramifications of the unfolding history of World War II.

LT. COL. JOHN B. B. TRUSSELL, JR.

MEN OF WEST POINT. By Col. R. Ernest Dupuy, USA (Ret.). William Sloane Associates. 486 pages. \$5.00.

The author has produced a book that is fully as important to the military scholar as Clausewitz. It is more than a study of graduates of the Military Academy in war and peace. It is a history of the founding of a great nation and the proud part played in the American saga by West Pointers since the first class of ten cadets were authorized as a part of the newly established "Corps of Engineers" in 1802.

An important niche in America's history has never been adequately accorded to Dennis Hart Mahan, father of the great naval strategist and professor of engineering and military science, Col. Dupuy gives full treatment to one of the nation's most gifted teachers. Mahan's profound influence upon generations of West Pointers from 1826 to 1871, had a great effect upon the military destiny of the United States and upon military thought and practice the world over.

America's great leaders as well as the exploits of unrenowned soldiers are all examined in relation to the manifold contributions made by Academy graduates to the growth of the country's greatness.

Men of West Point is worth-while reading.

News and Comment

Executive Council

The Executive Council of the United States Antiaircraft Association held its annual meeting at Fort Leslie J. McNair on the evening of March 11, 1952.

Lieutenant General LeRoy Lutes, who resigned as President of the Association incident to his recent retirement, was elected Honorary President. General Lutes, now an official with the Pacific Tire and Rubber Company in Oakland, California, was unable to attend.

Major General Willard W. Irvine, Commanding General of the Army AA Command, was elected President.

One matter of interest to the members is the decision reached on subscription rates. Most of the service journals have already increased their rates to meet the rising publication costs since the war. Our council, however, has had some latitude in this matter due to the sound financial status of the Association.

Accordingly the Council has consistently placed the emphasis on increasing the circulation and held the domestic subscription price at \$3.00 per year. This rate has been in effect since 1919. The results have been quite favorable, too. Last year the number of subscribers climbed rapidly almost to the 8,000 mark.

Unfortunately, the publication costs also climbed and the JOURNAL came to the end of the year with a small deficit.

Facing further cost increases, the Council decided to stick by its guns, to hold the current subscription rates, and to continue the emphasis on increasing the circulation.

Other Association members participating in the meeting included Major Generals Robert T. Frederick and Stanley R. Mickelsen and other AAA officers in the Washington area.

Also attending were Brig. General Homer Case, Col. Harold P. Gard and Major James C. Todd of the 35th AAA Brigade; Col. Howard S. Ives, 208th AAA Group and the following battalion commanders: Lt. Col. George W. Best, 36th; Lt. Col. Frank T. Lynch, 736th; Lt. Col. William D. McCain, 115th; Major Joseph H. Felter, 71st, and Major Arthur H. Stamwood, 35th.

ANNUAL FINANCIAL REPORT

In accordance with the constitution of the Antiaircraft Association, the following annual statements of the Association and Journal are published for the information of all Association members and subscribers.

ANTIAIRCRAFT JOURNAL BALANCE SHEET—DECEMBER 31, 1951

ASSETS

CURRENT ASSETS:

Cash on deposit	\$ 6,161.45	
Office cash fund	25.00	
Accounts receivable:		
Merchandise accounts	\$1,417.83	
Subscriptions	1,000.00	
	<u>\$2,417.82</u>	
Less reserve for bad debts	578.82	1,839.01
Inventory of books, held for sale		73.20
TOTAL CURRENT ASSETS		\$ 8,098.66

FIXED ASSETS:

Office furniture and equipment	\$8,320.34	
Less reserve for depreciation	8,132.61	187.73

DEFERRED CHARGES AND OTHER ASSETS:

Inventory of office supplies	\$1,597.29	
Deposit with U.S. Government Printing Office	51.62	1,648.91
TOTAL ASSETS		\$ 9,935.30

LIABILITIES AND NET WORTH

CURRENT LIABILITIES:

Accounts payable	\$ 129.29	
District of Columbia sales tax	1.86	
TOTAL CURRENT LIABILITIES		\$ 131.15

DEFERRED INCOME:

Unexpired subscriptions	10,605.33	
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NET WORTH:

Surplus, balance December 31, 1950	\$2,366.55	
Less: Net loss for the year ended December 31, 1951,		
per Exhibit B	3,167.73	
Deficit, balance December 31, 1951		801.18
TOTAL LIABILITIES AND NET WORTH		\$ 9,935.30

THE UNITED STATES ANTIAIRCRAFT ASSOCIATION BALANCE SHEET—DECEMBER 31, 1951

ASSETS

Cash in bank	\$ 652.27	
Investments:		
U.S. Government bonds, Schedule 1	\$63,933.13	
Common stock	160.00	
	<u>\$64,153.13</u>	
TOTAL ASSETS		\$64,805.40

NET WORTH

SURPLUS BALANCE, December 31, 1950	\$65,176.92	
Less:		
Excess of disbursements over receipts for the year ended Decem-		
ber 31, 1951, for Exhibit B	371.52	
SURPLUS BALANCE, December 31, 1951		\$64,805.40

AAA Officers Head N.G. Divisions



Gen. Henagan



Gen. Fraser

Brig. Gen. John C. Henagan of Dillon, S.C., well known World War II antiaircraft commander, took command of the 51st Infantry Division (S.C.-Fla. N.G.) on January 31.

Since 1947 General Henagan has served as Assistant Division Commander and also found time to serve as an outstanding member of the United States Antiaircraft Association Executive Council.

He came on active duty in 1941 in command of the 107th AA Battalion from his home town, Dillon, and commanded that battalion with distinction in England, Algeria, and in the Tunisian campaign. He later landed at Salerno in command of the 5th AAA Group, participating with the 5th Army in the Italian campaigns.

During the invasion of Southern France General Henagan commanded the AAA with the VI Corps as it spearheaded the Seventh Army drive up the Rhone Valley, across the Vosges mountains, and the Rhine. In 1945 he was assigned to the XXI Corps where he commanded its AAA till the end of hostilities.

War decorations: LM, BSM, Croix de Guerre, France, and Italian Military Valor Cross.

Brig. Gen. Joseph B. Fraser, commanding general of the 108th AAA Brigade and the AAA Defenses in the Philadelphia Area, was appointed to command the 48th Infantry Division (Ga.-Fla. N.G.) on 3 March 1952.

A resident of Hinesville, Ga., and prominent in business, civic, and educational affairs in Georgia, General Fraser brought his brigade on active duty at Fort Bliss, Texas, in August, 1950. In April, 1951, the brigade was transferred to Swarthmore, Pa., where General Fraser organized and has since commanded this important element of the Army AA Command. He expects to be released from active duty in April to take over his new assignment as 48th Division Commander.

Serving with field artillery in France in WWI and the 108th Cavalry (Ga. N.G.) between the wars, General Fraser took the 101st AAA Bn to the Southwest Pacific in February, 1942, where he commanded a Provisional AAA Brigade at Port Moresby till April, 1943. Returning to the States he took the 23rd AAA Group to England in 1943 and joined the XV Corps in 1944, where he commanded General Wade Haislip's AAA through France and Germany till the end of the War. War decorations: LM (OLC), BSM, Croix de Guerre with Palm, France, and Oak Leaf Emblem, Australia.

General Officer Promotions



Gen. Mickelsen



Gen. Milburn

Brigadier Generals Stanly R. Mickelsen and Bryan L. Milburn were recently promoted to the grade of Major General.

General Mickelsen, entering the Army in 1917 from Minnesota, won his regular commission in the CAC in the First Officers Training Camp.

His first assignment was with the AAA Board at Fort Monroe, Va., and early thereafter he was sent to the Panama Canal Zone to aid in organizing its AAA defenses.

Among his assignments between the wars, he served as an instructor with the Connecticut National Guard and later at the Coast Artillery School. Upon graduation from the War College in 1938 he served with the War Department General Staff.

He was promoted to Brigadier General in 1942 to command the 47th AAA Brigade in Iceland. He later commanded the AAATC at Fort Bliss, Texas. In 1944 he went to Europe where he served as Chief of the Displaced Persons Branch and later as director of the Civil Affairs Division of the European Command.

In 1947 General Mickelsen returned to serve as the Assistant Commandant of The Artillery School at Fort Sill. Since 1950 he has served in the Pentagon as the Deputy Assistant Chief of Staff, G-3, for Guided Missiles.

War decorations: DSM, LM.

Major General Milburn entered the Army from Arkansas in 1917 and won his regular commission in the CAC in The First Officers Training Camp.

Among his early achievements in the Coast Artillery, he commanded Battery C, 65th C. A. in Panama in 1928 when that battery won the Knox Trophy in its Antiaircraft target practices. His various assignments before World War II included tours of duty as an instructor both at the Coast Artillery School and at the Command and General Staff School.

During the War General Milburn commanded the 39th AAA Brigade at Seattle and served later as Commandant, the AAA School at Fort Davis. In 1944 he went overseas to serve eventually as Chief of Staff of the U. S. Group Control Council in Germany and later with the Berlin Command.

After serving as Chief of Staff at the AA and GM Center at Fort Bliss from 1948 to 1950 General Milburn transferred to Tokyo where he now serves as G1, GHQ, Far East Command.

War decorations: LM (OLC), BSM.

Col. Argo Retires

Colonel Reamer W. Argo retired in Washington, D.C., for age on February the 29th after almost 35 years service in the Army. For the past three years Colonel Argo has served as Chief of the Manpower Branch, Management Division of the office of the Army Comptroller.

Mrs. Argo died in the Naval Station Hospital at Annapolis in January and was buried in the Arlington Cemetery.

Colonel Argo and his daughters, Mary Ellen and Marjory, continue to reside in their home at 9 Maryland Avenue, Annapolis, Maryland.

Bliss Library Receives *Journal* File

The library of the AA and GM School has just acquired a complete bound set of the *Journal of the U. S. Artillery*, 56 volumes, 1892-1922, and the *Coast Artillery Journal*, volumes 57 through 90, 1922-1947.

This acquisition gives the School library a complete record of the ANTI-AIRCRAFT JOURNAL and its illustrious predecessors through 60 years of continued publication.

These volumes were presented to the library by the President of AFF Board No. 4. They were originally a part of the records of the Coast Artillery Board when it was located at Fort Monroe, Va.

Report of Air Losses

The Secretary of the Air Force Thomas K. Finletter recently reported: "As of January 31st the USAF had knocked down 279 Communist planes in air-to-air combat and had destroyed an additional 70 on the ground. During the same period, the USAF lost 58 planes in air-to-air combat, 336 to enemy ground fire plus eight others to unknown causes. Of this total, 65 planes were lost in close support operations and 296 in interdiction operations, while the Communists have lost no planes at all in close support or interdiction."

Chicken Feathers Save Wool In New Sleeping Bag

The Army has recently announced that chicken feathers, so plentiful in U.S.A., can now be converted to valuable use in the new sleeping bag to keep the serviceman warm. This will not only operate to save wool but the report also indicates that the feather insulation makes the sleeping bag twice as warm.

Field Expedients

To the Editor:

The following items may prove of interest to other AAA battalions.

Captain Vincent E. Cahill and Sgt. Donald Wills of Battery C have found that by placing two 24v light bulbs opposite the edge of the plexiglass on the T-33 plotting board, plots made by china marking pencils instantly become luminous. This eliminated the necessity of turning on the ceiling lights in order to see the plotting board while tracking, and of course permitted better observation of the various radar scopes.

The 24v current may be obtained by connecting a single line to the lower terminal on the power ringing switch on the switchboard. By grounding the sockets when they are mounted the circuit is completed. The lights are mounted with the bulb to the front of the board. There are some small holes about 3/16 of an inch in diameter in the frame of the plotting board which can be used. These holes should be scraped to remove all paint so a good contact can be made.

By bending the small mounting tip on the socket outward and inserting it in the small hole in the frame a convenient ground is provided and it also serves to steady the socket in mounting. The lights are connected in parallel by connecting the single wire to both lights. A toggle switch is installed in the line to facilitate turning off the lights.

Lieut. Col. Maynard G. Moyer, has demonstrated that another time and labor saving device which may be of interest to units in static position within the ZI is a speed wrench for use in opening sealed ammunition boxes in a hurry.

The handle may be made from the rod that runs through the center of the ammo box, heated and bent in the shape of a speed wrench. The wrench itself, or the business end, is made from 3/4 inch pipe. This is slit on two sides in order to fit over the wing nuts on the ammo box. It has been found that the use of these wrenches has greatly reduced the time necessary to open and prepare for action ammunition which has been sealed for some time.

MAJOR ROBERT E. RANDOLPH
69th AAA Gun Bn.
Fort Totten, N. Y.

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