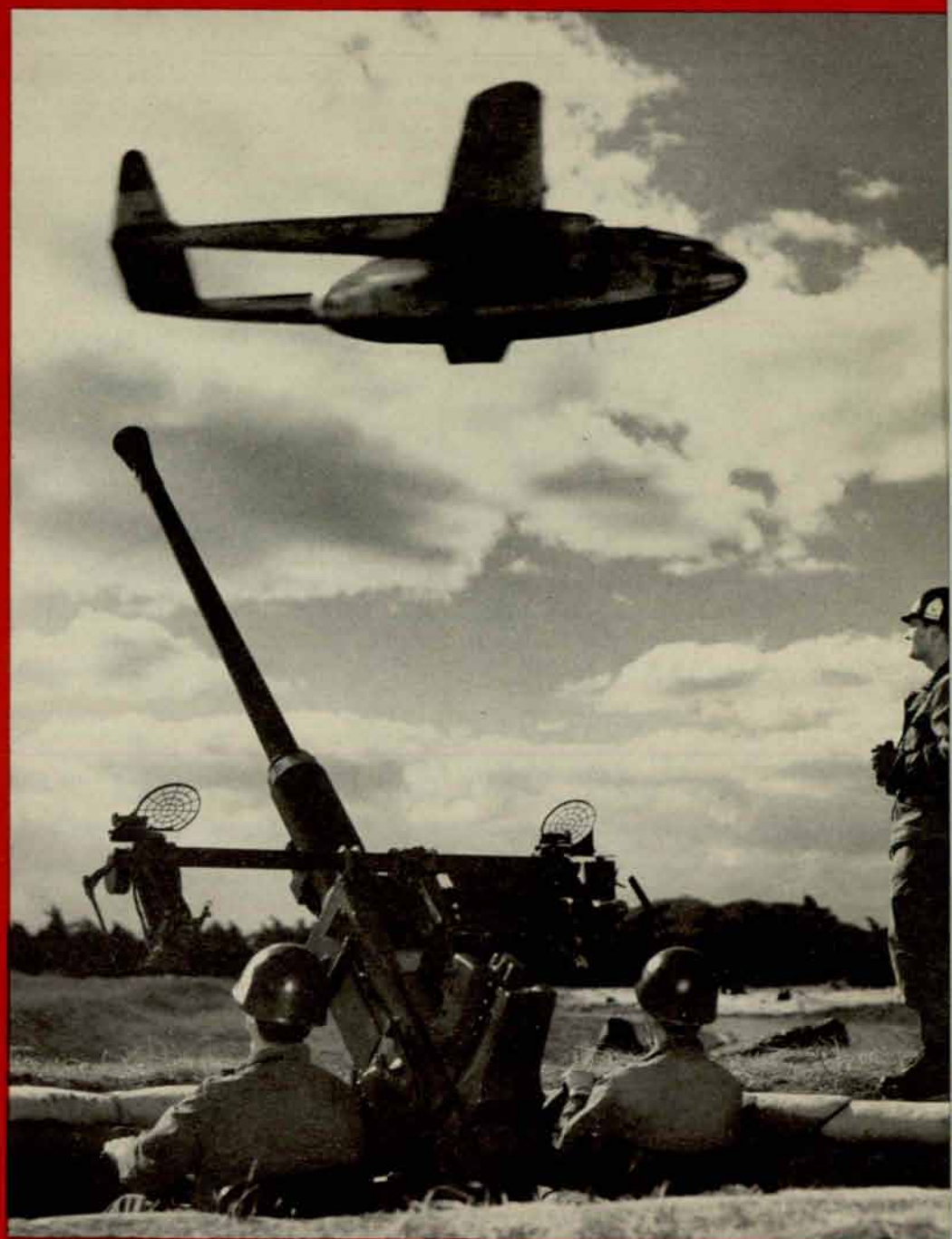


Anti-aircraft **JOURNAL**



**MARCH-
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1951**

AAA IN KOREA

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BRONZE STAR MEDAL AWARDS

15th AA AW Bn. (SP)

Cpl. Raymond A. Krieger
1st Lt. Clarence C. Ballard
2nd Lt. Clyde P. Chapman
1st Lt. Wellington S. Jones
M/Sgt. Hollis Powell—KIA
Cpl. Herbert M. Kiek—MIA
Cpl. Gerald A. Madera
Sgt. William A. Waselewskie—MIA
Cpl. Lawrence Dotson—MIA
Cpl. Marion L. Elmes
Capt. Arthur M. Meranski
Maj. James N. Hickok
Capt. Alvin D. White, Jr.

50th AA AW Bn. (SP)

M/Sgt. James R. Caveness
Capt. Kenneth W. Swayze
1st Lt. James R. Scott
Capt. Thomas O'Conner

68th AAA Gun Bn.

Lt. Col. Raymond C. Cheal
PFC Francis M. Dugan

82nd AA AW Bn. (SP)

Lt. Col. Walter Killilae—OLC
1st Lt. Paul G. McCoy
SFC Merrell Brown
SFC Lewis Chaney
Sgt. Grant Christiansen
Sgt. Bobby Dill
Cpl. C. Huerta
Cpl. Lawrence Chapman
Sgt. John Moore

3rd AA AW Bn. (SP)

Sgt. Harry P. Butt
Sgt. Adrian H. Fields
Sgt. John H. Downing

PURPLE HEART MEDAL

68th AAA Gun Bn.

PFC Francis Gonzales

15th AA AW Bn. (SP)

Capt. Arthur M. Meranski
Capt. James R. McClymont
2nd Lt. Clyde Chapman
M/Sgt. Robert Slater
Cpl. George J. Auger
PFC George E. Merica

PFC Robert L. Olson
PFC Paul J. Black, Jr.
Cpl. Raymond D. Atkinson
Cpl. Joseph A. Rusak
1st Lt. Clarence L. Guffey
PFC Frank E. Clark
PFC Albert W. Marshall

50th AA AW Bn. (SP)

Sgt. Norman O. Erickson
Pvt. Wentzel M. Ware

SOLDIER'S MEDAL

50th AA AW Bn. (SP)

SFC Woodrow Kitchens

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AUTOMATIC ARTILLERY

By Major General

THE third summary of antiaircraft artillery activities in Korea can well open with the statement:

"Situation: Static; beginning to move; potentially explosive."

The southward surge of the Chinese Communist forces has been blocked definitely; the enemy has been hit hard and has withdrawn to reorganize his battered legions after surrendering the initiative and at this writing the northernmost front has been stabilized roughly from Seoul to Kyongpo.

It is still a David and Goliath affair in which maneuver, precision and striking power are proving effective against superior numbers and fanatical attempts to crush a determined opposition. In the parlance of the fighting front it is a "screwball war" in which single outfits find themselves fighting on two fronts 180 degrees apart; it is a type of "circus" action with three rings active all the time on the main front, but with plenty of side shows. Action involving full corps and divisions is in progress in isolated

combat areas within the UN communication zone in which Communist forces are attempting to fight their way through forward positions and back to their own lines. You can find fully manned road blocks almost anywhere in Korea.

Localizing the situation to the antiaircraft area of operation we find the troops definitely employed according to doctrine in fixed air defenses and in somewhat less orthodox use in ground support roles. In the organic divisional organizations, batteries are being employed in terms of

General MacArthur with General Ridgway visits the front above Suwon.



ARTILLERY IN KOREA

William F. Marquat

REPORT



Maj. J. C. Maldonado, S3 of the 82nd Bn. at Changnyong.

single or multiple firing units as components of patrols or task forces, to the horror of academic tacticians but to the complete satisfaction of the force commanders concerned.

The units in air defense activities, having had a taste of ground combat in the earlier days, are chafing to get back in on the slaughter of the hostile concentrations going on in the forward areas. In the advanced units the personnel have no complaints but would welcome just a brief period in a heated tent or hut to read the mail from home, write some letters and make some adjustments on their war weary weapons. But war is like that no matter whether you are fighting in Korea or elsewhere. The main point is that morale remains high and the will to fight and to win permeates the splendid Antiaircraft troops in Korea.

The weather has been bitter cold—but the U.S. and UN troops have outlasted the enemy in exposed types of action.

The numerical odds against our troops have been tremendous—probably the greatest in history—but this setup has provided magnificent targets for artillery and air in which both have taken an unbelievable toll of the enemy never before exceeded in military records. The antiaircraft artillery is performing prodigious tasks of destruction of enemy personnel and material in its usual matter-of-fact and efficient manner.

The battle against typhus—historically one of the greatest antagonists of military forces—is under control and the Medical Corps deserves plenty of credit for its outstanding, though unheralded, performances. While the enemy has suffered emasculating losses from disease the UN forces have observed preventive measures and discipline under guidance of the omnipresent “medicos” and have overcome another enemy of grave battlefield proportions.

RECOGNITION for acts of heroism by antiaircraft troops has been accorded in terms of hundreds of recommended and awarded decorations. Among the outstanding decorations was that of the award of the bronze star to Major (Chaplain) Arthur F. Weaver, 37th AAA Gun Battalion, for acts of exceptional bravery with the 24th Division in Korea, whose heroism exemplifies the stalwart participation in combat of these leaders of the Christian faith. They are as vital to our army as the rifleman or the cannoneer. Their contribution to the inherent excellence of the American soldier is outstanding; they are real comrades in arms.

In the last narrative report on the antiaircraft activities in Korea a brief account was given of the terrific combat of the 82nd AAA AW Battalion, under command of Lt. Col. Walter Killilae, organic



Chaplain Ray L. Allen holds Sunday services for 10th AAA Group.

antiaircraft organization of the Second U. S. Division. The Second Division to date has been engaged in most of the hot spots of the campaigns and Killilae's outfit has been right in the thick of the operations all the time.

After being shot up considerably in the action in the withdrawal from the most forward advance of the United Nations forces, that outfit reorganized, re-equipped and on 28 December Battery C, attached to the 38th Infantry, made contact with the North Korean forces in the Tanyang area in patrol actions. When the Second Division occupied the Wonju salient toward the end of December the batteries of the battalion were distributed among the various regimental combat teams except for Battery A which performed normal ground and air defense missions of the division headquarters and air strip areas. The winter road conditions were such that initially only the M16 units were taken with the task forces, the M19 material being grouped with the armored task force with all the tanks of the division. Later on, the two types of weapons were regrouped.

Battery D, supporting elements of the 9th Infantry on many patrols, accounted for 425 enemy killed in action during the period from the 15th to 25th of January. All members of the two M16 squads were recommended for decorations by

the Commanding Officer, 9th Infantry.

Battery C was engaged in patrol action with the 38th Infantry and on one occasion it eliminated more than 50% of an enemy company caught in column formation on a road covered by the patrol. Colonel Killilae also tells of an occasion when some of his elements were in Ye-chon in reorganization and training activities when a raider force was organized to flush out a guerrilla outfit. Two M16 units accompanied the raiders and are generally accorded credit for most of the 210 counted dead in the brief but conclusive action which wiped out the enemy with many prisoners captured.

Since the 25th of January the major portion of ground action has been with the 23rd Infantry with Battery B in support. It was in this sector that the vicious hand-to-hand fighting of the 23rd Infantry and the French Battalion against the enemy took place. The anti-aircraft battery participated in the tremendous slaughter of the enemy which marked this action. It was one of the outstanding probing actions of the period.

COLONEL Robert W. Hain, commanding the 15th AAA Battalion (SP), reported that "we are spread out, and it is tough getting to our outfits which are employed in whole or in parts as the occasion demands. The guerrillas have roadblocks along almost every road and we just have to check the reports continuously to find out what is going on. The elements of the battalion are engaged fully and are doing a grand job.

"On the push northward our Battery A with the 17th Infantry had one M16 unit on patrol with the infantry which suddenly ran into an enemy force of 350 North Koreans. The M16 opened at once at close range and before the rest of



Staff of the 15th Bn.: Maj. J. N. Hickok, Capts. A. D. White, G. B. Sage, Charles F. Farber, Col. Hain, Capts. R. D. Motan, E. C. Ireland, J. H. Fiser, T. G. Taft, A. M. Meranski and WOJG M. Dadich.

Silver Star

PRIVATE FIRST CLASS ROBERT L. OLSON, Battery D, 15th AA AW Bn. (SP), distinguished himself by gallantry in action near Sendai-ri, Korea, on 1 December 1950. On this date, Private Olson was a member of an automatic weapons crew which was protecting a convoy of trucks evacuating wounded from the Chosin Reservoir area. An enemy road block had been reported destroyed by our troops, and Private Olson went forward to verify it. Upon passing the point where the road block had been, the party suddenly received heavy automatic weapons fire from a hitherto unseen enemy position. While the rest of the party took cover, Private Olson singlehandedly, and with utter disregard for his own personal safety, attacked the enemy position. By his extremely heroic action, he killed the enemy gunner notwithstanding the fact that at the time it was dark and he did not know how many enemy were present in the position. The enemy weapon was silenced and the convoy was able to proceed on its way. His display of gallantry on this occasion reflects great credit on the military service. Entered the military service from the State of Iowa.

the group could get into action, had dispersed the hostile group leaving 300 dead behind it. Upon another occasion a section of the battery with the Third Battalion of the 17th Infantry discovered a North Korean force about to attack the battalion CP. In the action it killed 30 of the enemy who broke and fled after reaching a point within 50 yards of their objective. Capt. George H. Worf commands Battery A which has recorded a distinguished record in combat action."

Colonel Hain, who has recently received his promotion to full colonel, reports that the division has recommended one man of Battery D for the Medal of Honor, 18 for the Silver Star and four for the Bronze Star for their participation in the Chosin Reservoir action. The names of those recommended are withheld pending final approval of the recommendations.

Hain reports difficulty in keeping material in shape due to the perennial shortage of spare parts under a situation where the troops are on the move most of the time.

Major Charles E. Henry, commanding the 21st AAA AW Battalion (SP) organic with the 25th Division, reports that after an eventful road march from Pusan, his outfit again is engaged in the forward area in ground support role and is achieving marked results. The various batteries and separate or multiple units have been used for overhead fire for infantry advances, wiping out road-

blocks, operating with infantry against pockets of resistance and silencing numerous machine guns and other hostile weapons.

On February 1st, two M16 units of Battery C with the 35th Infantry found themselves fogbound for a period of time. As the fog lifted about 300 Chinese Communist troops could be seen clearly at about 1,500 yards range. Fire immediately was opened and the enemy dispersed but not until the ground was strewn with dead and wounded who could not be carried away because of the suddenness of the action.

Two platoons of this battalion were proceeding toward Seoul with the armored units well in advance of the infantry forward elements. Only slight hostile resistance was encountered, however, although numerous small engagements were undertaken.

General "Bill" Kean, Division Commander, is enthusiastic over the performances of his division and the effective support of the anti-aircraft units.

Major Henry's battalion has installed a caliber .30 water-cooled machine gun on top of the cab of the M16 half-track vehicle, to cover the vulnerable dead area forward. The weapons have been used in action and have proved valuable in covering an enemy until the vehicle can be turned across the road to permit the action of the caliber .50 multiple mounted weapons.

Lt. Colonel Charles W. Stewart's 3rd AAA AW Battalion, organic with the Third U. S. Infantry Division, has been busily engaged with the infantry forces and is continuing its splendid record in combat action. This also applies to the separate batteries representing organic battalions with the 24th, 25th, 1st Cavalry Divisions and the 187th Airborne Regimental Combat Team. These batteries and their commanders are: Battery A, 25th AW Bn. (SP), Capt. Lowell H. Bielsmith; Battery A, 26th AW Bn. (SP), Capt. Charles W. Harrison; Battery A, 92nd AW Bn. (SP), Capt. Roger W. Miller and Battery A, 88th AB Bn. (SP), Capt. Blaine E. Young. Separate batteries in Korean air defense installations are Battery D, 865th AW Bn. (SP), Capt. George W. Eisemann and Battery A, 933rd AW Bn. (SP), Capt. Joseph A. Harris. Hq. & Hq. Battery, 52nd AW Bn. (SP), of the 24th Division has arrived in Korea giving Lieut. Col. Roy A. Tate his battalion head-

quarters organization.

The 10th AAA Group, commanded by Colonel William H. Hennig, presently consists of the 78th AAA Gun Battalion, commanded by Lt. Col. Thomas W. Ackert; 68th AAA Gun Battalion, commanded by Lt. Col. Raymond C. Cheal; 76th AAA AW Battalion (SP), commanded by Lt. Col. Troy A. Barker and the 50th AAA AW Battalion, commanded by Major John A. Paddenburg, which claims the honor of being the last anti-aircraft unit and a component of the last UN unit to depart from Hungnam.

This group is engaged in air defense missions at the various fields in South Korea operated by the Fifth United States Air Force. The organizations are being dug in for anti-aircraft action and disposed to cover the ever-present threat of guerrilla action against the valuable military targets in the various air installations. They have had time to renovate their equipment which is in splendid condition and the troops are itching for a few targets to appear so that they can prove their worth.

The hostile air action has increased considerably in proportion and there are daily threats over the Communist-controlled radio as to further projected air action. The activities to date have been confined to attacks against the UN air activities in North Korea where the MIG and YAK jet jobs of the enemy make fast passes at our planes and streak for the sanctuary across the Manchurian border. There have been a few night bombing attacks against isolated UN areas known to be undefended by anti-aircraft artillery. These attacks have been impotent to date but the possibility of serious damage to the heavy traffic on friendly fields makes air defense a highly valuable asset to our activities.

Colonel Hennig and Lieut. Col. J. B. Coontz made a flying trip to Japan for some advanced planning activities but returned promptly to Korea to resume their duties with the Group. New personnel assigned to the 10th AAA Group Headquarters are Lieut. Col. Charles L. Andrews and 1st Lieut. Robert S. Collins. First Lieut. John H. Daniels has been reassigned as assistant S3 of the group.

The new rest and recuperation policy is meeting with great favor in Korea and

some of the anti-aircraft air defense units have been able to send officers and men to Japan for a period of ease and comfort. In Japan they wear special insignia to identify them as Korean war veterans and they are treated royally by all with whom they come in contact.

Lieut. Col. Thomas W. Ackert of the 78th AAA Gun Battalion reports his unit equipment in splendid condition due to some exceptional work by SFC Robert C. Nichols, B Battery fire control electrician, who has performed alleged miracles in repairing and renovating damaged



Lts. Berkowick and Carlisle sworn by Lt. Col. Parrott.

and war weary vital parts. Major Walter S. Ride, S3, and Capt. Don McClelland, S1, have carried the bulk of responsibilities in the many reconnaissances required in the numerous moves made within the past two months. Special attention has been given in siting both 90mm and automatic weapons to provide a tight defense against guerrilla attacks on the air installations being protected. Patrols are sent to the hills frequently to locate signs of unfriendly congregations preparing for attack.

Lieut. Col. Raymond C. Cheal's 68th AAA Gun Battalion claims the honor of having made the first battlefield promotions among the anti-aircraft units in Korea. Second Lieut. Benjamin M. Berkowick was sworn in as battery officer of Battery A and 2nd Lieut. Thomas M. Carlisle as a battery officer in Battery C by Lieut. Col. John B. Parrott, battalion executive. Berkowick has served as the battalion sergeant major and later a warrant officer. Carlisle was commissioned from his assignment as first sergeant of Battery D.

Sergeant Harry C. White, RA 12338890, member of Battery C, was awarded the Soldier's Medal for heroism

during a terrific fire in a gasoline car parked at a railway station among other cars loaded with ammunition.

The battalion is engaged in routine but important duties in air defense assignments.

THE 50th AAA AW Bn. (SP), formerly commanded by Lieut. Col. Charles S. O'Malley, was relieved from front-line action and assigned to air defense duties. This battalion has served with the Marines and in the Hamhung-Hungnam area since landing at Inchon. O'Malley feels that the M19 units are better suited for anti-aircraft and ground support roles with infantry divisions than in static defenses; however, the organization is prepared to put up a devastating fire against any hostile aircraft that might appear. The outfit boasts of many decorations and many letters of praise from the commanders under whom it has served. It is presently engaged in the defense of one of the most important air installations in Korea but is all prepared to displace forward immediately should the occasion arise.

In summary, the report this time is concerned with a much more static situation than heretofore.

However, the anti-aircraft troops are there spread out all over Southern Korea, performing their duties in a veteran manner. Those with the division are very busy and on the go. All of them have learned to withstand the penetrating cold weather and other conditions incident to Korea. All have learned to watch the streams of refugees to minimize the danger from Communist guerrillas.

Come what may, these officers and men are ready to meet it—with fortitude and resourcefulness that makes them the soldiers they are. In a little more than a month the spring thaws will begin and the scene will change from one of ice-coated dilemma to the sloshing mud churning movements of men and machines along morasses indicated on maps as roads, across swollen rivers and streams and through places that were cities and villages before the shadow of war cast itself over this former peace-loving nation of Far East Asia.



AAA IN CLOSE SUPPORT OF AN INFANTRY ATTACK

By 1st Lt. I. M. Sarmiento

THE attack launched by elements of the 23rd Infantry Regimental Combat Team, 2nd Infantry Division, along its sector of the Nakdong River front on Saturday, 16 September 1950, was another instance in which the AAA was retained under artillery control while furnishing close support to the infantry. That operation was important in AAA tactics, not only because it demonstrated the effectiveness of fire power delivered by the AAA in close support of the infantry in the attack, but also because it showed how a working AAA radio system could successfully fill in the gap when other means of communication between elements of a RCT, or between the RCT and higher echelon, fail or break down.

In that operation, B Battery of the 82nd AAA AW Battalion (SP), was given the mission of supporting the advance of the 23rd Infantry RCT. The infantry attacked at 0630 hours.

Artillery support of the RCT was provided by the 37th FA Battalion firing 105mm howitzers. However, due to a temporary shortage of 105mm ammunition, the 37th FA Battalion was directed to fire on definitive targets only. For other targets, therefore, 40mm fire of the AAA was called upon before the infantry jump-off.

The attack started with the 1st Battalion on the left flank, the 2nd Battalion on the right flank and with the 3rd Battalion in rear. The 1st Platoon of the AAA battery supported the 2nd Battalion; the 2nd Platoon supported the 1st Battalion.

The 1st Platoon (1st Lt. Joe Seymour) had one M39, three M19's, four M16's and one jeep.

The 2nd Platoon (1st Lt. Clyde T. Hathaway) had four M19's, four M16's and one jeep.

Captain Kenneth L. Boullion, B Battery's commander, with one M39, two jeeps and two 2½-ton trucks loaded with ammunition, established his CP with the

commander of the RCT—Colonel Paul Freeman. All firing and utility vehicles were equipped with SCR 508.

In the rear, bivouacked with division artillery on a river bed, was the CP of Lieut. Colonel Walter Killilae, the commander of the 82nd AAA AW Bn. (SP), with two M39's and one jeep equipped with SCR 508's. In the course of the operation he was in direct radio communication with the commander of B Battery and with the commanders of the two AAA platoons. At the same time, he was in direct telephone communication with the commander of division artillery—Brigadier General Loyal M. Haynes—furnishing him an account of the progress of the operation.

In addition to the 40mm fire delivered before the infantry jump-off, .50 caliber fire from the M 16's using indirect fire, was also provided. The procedure was worked out between B Battery commander and his two platoon commanders.

As soon as the infantry battalions proceeded on the attack, fire support from the AAA was delivered as directed by the infantry units. Fire direction was accomplished in three ways: (1) by means of tracer fire by the infantry (2) by the marking of targets by flares and (3) targets were described to platoon commanders who described them by radio to the individual gun squad commanders. All three methods were successful.

The elements of the RCT attained their objectives ahead of schedule. The 1st Battalion, on the left, advanced to its first objective, a distance of about 2,000 yards. The 3rd Battalion, advancing from the rear, passed through the 2nd Battalion, at which time the 1st Platoon of B Battery passed to the support of that unit, and pushed on to its first objective, a distance of about 1,000 yards.

From there, the 3rd Battalion advanced to its second objective, a distance of about 2,000 yards; and then to the third objective, a distance of about 3,000

yards without undue incident.

The 2nd Battalion then advanced to the regimental objective—6,000 yards from the initial position. The 1st Battalion was held up in its advance due to increased resistance encountered by another unit on their flank. At that point, it was possible to shift the whole fire support of B Battery to the 3rd Battalion sector.

Throughout the operation, B Battery provided close fire support with the heavy mortar and heavy weapons companies of the battalions concerned.

At one point in the operation, when G Company was unsuccessful in getting tank fire on desired targets, the M19's of B Battery's 2nd Platoon substituted effectively. The RCT commander reported on one occasion that AAA fire was causing the enemy to abandon positions.

Due to the speed of the infantry advance, communications contact was lost between elements of the RCT, and between the RCT and division commander—Major General L. B. Keiser. The SCR 508's of the AAA Platoons and B Battery CP, supplied the links between the elements. The commanding officer of the AAA battalion, being in direct and constant radio contact at his CP, with the commander of B Battery and the commanders of the two AAA platoons, was able to furnish the division artillery commander by telephone, with a blow-by-blow account of the battle operations in the 23rd Infantry RCT sector. The division artillery commander, in turn, relayed the information to the division commander.

It is noted that the platoons of B Battery were in support of the infantry battalions throughout this operation. It was possible to shift the 1st Platoon to the 3rd Battalion as that unit passed through the 2nd Battalion, and finally, to shift the 2nd Platoon to the 3rd Battalion as well. This could not have been accomplished had the platoons been attached to the infantry battalions.

OPERATION "WE GO"

By Lieutenant Colonel Thomas W. Ackert, Artillery

MOBILE means movable; moving readily, according to Webster. In the 78th AAA Gun Battalion (90mm), "mobile," we wonder if anyone had in mind our mission in Korea. In its first 59 days in combat, the battalion occupied thirty different firing positions. Frequently one of the firing battery officers will start a conversation with a staff officer—"remember the position we were in just south of a river with that big mountain on our right?" . . . Did you ever try to recall one of 120 battery positions located in a country studded with hills, mountains, rivers and valleys, where everything looks pretty much alike? Surprisingly enough, most of us can remember the different positions because of some event that occurred there.

"WE GO" started at Fort Lewis, Washington, when all the firing batteries rolled out on a field problem as individual batteries, though each battery was at less than half strength. The real story began to unfold in Pusan, when our guns rolled off LST's on the night of 15 September, bound for Taegu, where the guns were emplaced in the "Bowling Alley" prior to midnight on the 16th, as long-range, ground mission artillery.

We remember that sandspit in the river bed west of Taegu because it was there that we organized our fire direction center, fired our first mission, hit our assigned targets, and literally beat our brains out trying to figure out how an AAA battalion could operate an FM radio net to Div Arty, supported units, OP's, both ground and air, and to our firing batteries, all with one (1) SCR 608 radio.

Our next position, some 12 miles north of Taegu, is best remembered for the impossible road we traveled, built and rebuilt, to our positions; solving the problem of installing many miles of wire with our one wire team in a matter of minutes. Also, we remember this position because there we had our first gun drop through a Korean bridge. Of course the gun didn't drop through the bridge

Silver Star—MIA

SERGEANT FIRST CLASS ERNEST D. DENHAM, while a member of Battery D, 15th AA AW Bn. (SP), distinguished himself by gallantry in action near the Chosin Reservoir in Korea on 29 November 1950. On this date, the platoon of which Sergeant Denham was a member was providing close support fires to protect nearby infantry and field artillery elements. Between the hours of 0030 and 0730, the enemy attempted to pierce the perimeter defense around the position by grouping in and near an abandoned house under cover of heavy automatic weapons and small-arms fire provided by other enemy elements. With complete disregard for his own personal safety, Sergeant Denham voluntarily exposed himself to fire for a long period of time by mounting the side of his tank in order that he might better direct its fire accurately and avoid hitting our own troops who were located in the line of fire near the house occupied by the enemy force. As a result of his personal daring, all enemy troops in the house were killed, others in the sector were forced to abandon the attack, and the position was saved from penetration. Sergeant Denham's display of gallantry on this occasion reflects great credit on himself and the military service. Entered the military service from the State of Illinois.

that we had just rebuilt some forty feet away from a Class 40 bridge; it went through the Class 40 bridge! Henceforth, it was a common occurrence to have the roads and bridges collapse beneath the weight of our equipment. Though, admittedly, it was a bit of a shock when one of our guns went through a big beautiful concrete Class 50 bridge in Pyongyang, about a month later. It was understandable however, when one of the officers pointed out a sawmill with its sawdust pile a short distance away—probably the source of the building materials used in the construction of the bridge!

The position at Sinnyong is memorable because it was there that we first fired in direct support of infantry, and, according to the chief of staff of the 6th ROK Division, were instrumental in regaining some 3,000 yards of lost ground. Our type guns are normally employed in a general support role, with howitzers fill-

ing the direct support role. The officers and men still shake their heads when they recall the statement made by the infantry, "we were about two hundred yards away from the hill when you started firing, and as your fire moved up the hill, we followed behind it."

It was at Sinwon that we organized our battalion survey team under 1st Lt. David W. Hughes, commanding officer of our attached Signal Radar Maintenance unit. This battalion, instead of borrowing help from FA units, performed the assigned mission with its own organic personnel and equipment. Lt. Hughes, Sgt. Donald, and Corp. O'Connell made a big pretense of being unhappy about not working on radars, but they were obviously happier with us than they would have been sitting with the radars in Pusan.

The town of Sinwon stands out for many reasons. It was at this position that Major Ride, the S3, left us to become a liaison officer for the 10th AAA Group, with the 1st ROK Division, and Captain David H. Robertson took over as Battalion S3. For the second time, we were the recipients of enemy shelling but, unlike the Bowling Alley, we had our first casualties. Fortunately, the injuries were slight, and no equipment was damaged. We were kept quite busy at Sinwon, firing for both the 1st and 6th ROK Divisions. Major Sorenson, KMAG Officer with the 6th ROK, took to the air as observer and adjusted our fire. All of us remember his comment, "Right 50, add 50, repeat fire for effect. That's it. Ahhh, they (the bursts) are blossoming and blooming beautifully, right among four to five hundred of them; give them another helping." Another time, "They are running up the hill; now they're running down the hill; now they are trying to dig in with their hands, let's help them . . . repeat fire for effect!"

OUR supply problem began to rear its ugly head. There were no parts avail-

able for our equipment, or at least we were unable to locate any. The worst supply problem commenced here: that of hauling rations, gasoline, and ammunition for miles over makeshift roads with our small supply section. Dozens of times our supply run was two and three hundred miles long. The strength of the supply section was utterly inadequate in personnel and equipment. I must say, however, that Captain Mike Malone and his men kept us supplied, but I don't know how they did it.

Our next position, at the junction of the Sinwon and Taegu-Waegwan roads, is best remembered for two reasons having little to do with artillery. At the intersection we were then some 15 miles from Taegu, but had traveled some 46 miles to get there. Secondly, we had to park there until the 1st Cavalry Division rolled by. We soon got used to that.

Several positions later, we made a long stopover at Poun. We, and the infantry, really learned to appreciate the 90mm gun at Poun. Fire missions were requested at nearly every point of the compass. It was not unusual to fire one mission at zero mils azimuth, and the very next one at 3600 mils. On our third night, a party of Reds made the mistake of trying to get by one of Baker Battery's outposts. Cpl. Colomo's M-55 and M-63 crews killed two and captured one.

Our S2, Captain Bill Yamaki, was worth his weight in gold to us here. He was busy day and night, ferreting out information, questioning prisoners, and seeking targets. One of our convoys, with 1st Lt. Jorgensen in charge, ran into a hornet's nest. The one M-55 with the convoy gave the enemy a hard time, but it was forced to withdraw. Then a task force under command of Captain Howard Pierson, CO of A Battery, was organized and they completely smashed the Red roadblock. The enemy headed for the hills in panic when the M-55's opened up on them. The number of enemy killed in action and taken prisoner by the battalion had reached an impressive total by now. We left Poun reluctantly, because we were afraid that we would never again have such juicy targets available.

At Chongju, we watched M/Sgt. Hall of the Medical Detachment, although wounded himself, capably administer first aid to four headquarters men injured by an enemy missile. It was while he was administering blood plasma to

Silver Star

FIRST LIEUTENANT JOHN O. ALLYN, Battery C, 15th AA AW Bn. (SP), distinguished himself by gallantry in action against an armed enemy near Sendong-Ni, Korea, on 26 November 1950. On this date, Lieutenant Allyn was a member of a reconnaissance patrol which was reconnoitering north toward the Yalu River. This patrol encountered intense enemy fire from commanding ground to the front, rear and flanks. This intense enemy fire pinned down the forces, preventing movement in any direction and necessitated additional fire power being brought to bear upon the enemy occupied terrain. Lieutenant Allyn, commanding three sections of antiaircraft artillery automatic weapons tracked vehicles, voluntarily and without regard to his personal safety, abandoned his position and cover and moved down the column of vehicles. Maneuvering the weapons into firing position, Lieutenant Allyn provided a covering fire allowing the reconnaissance patrol to withdraw. His gallant action and exemplary leadership reflect great credit on himself and the military service. Entered the military service from the State of New York.

SFC Brookfield, that we noticed that "Doc" Hall's shirt was soaked with blood. His comment was "No time for that now." A Soldier's Medal was never awarded to a more deserving soldier.

IT was "We Go" until we reached the Imjin River, north of Munsan-Ni. The 10th AAA Group was bivouacked just across the river at Sanggorangpo, a veritable hornet's nest. We were firing just a couple of thousand yards past their location. In the midst of the scramble, communication with all but one of the infantry regiments went out. That one regiment gave us enough targets, however, to keep us pretty busy. One mission alone resulted in over four hundred dead. When on the next day, we moved again, two of our M-55's proceeded with the 1st ROK Division spearhead, in a support role. We were very concerned about our men, because a 2½-ton truck, in which the M-55's were mounted, is quite vulnerable.

Although one truck was shot out, none of the men were injured. They did a wonderful job, as attested by the many bronze star medals awarded to various members of the crews. (M-55 crews were rotated every few days.) The employment of M-55's with the Division advance column ceased just before entering Pyongyang.

The division had hoped to enter Pyongyang on 18 October, but we didn't

quite make it. On the 16th and 17th, the battalion had been hard pressed to keep up with the infantry who were really rolling. Col. Bill Hennig authorized us to pick up and move very early in the morning of the 18th inasmuch as we were now firing only at night and spending our days chasing the infantry. At about 1400, 18 October, the battalion was parked on the road some three thousand yards southeast of a roadblock that had halted the advance. We had, for the last several miles, pressed through extremely hilly country. There were many suitable howitzer positions but no gun positions other than a large valley we were just entering.

Approximately 4,500 yards ahead of us was the great plain that lies east of Pyongyang. We were informed that airstrikes had been requested and at least one battery of 155 how's would be emplaced, in addition to the division's organic 105's, to smash the road-block. We were to move forward immediately if the road-block were smashed. As it turned out, though, this was no ordinary road-block, but a major effort on the part of the Reds to halt our advance. We did not mind the wait as things were a bit lively. As the valley curved to the right, we were reasonably well-screened from the enemy. Shells coming down our way hit the hills on the opposite side of the valley. Even mortar fire landed out in the valley, and not on the road. The emplacement of the howitzers and the movement of the tanks and the infantry a few hundred yards enabled us to move well up into the valley.

When it became clear that the road-block would not be reduced that evening, we were ordered to emplace. The lead battery turned off the road and moved two or three hundred yards back down the valley. The other batteries just turned off the road, and emplaced where they were. We had tanks, 155 and 105 howitzers, and 90mm guns scattered all over that valley. A platoon, or possibly it was a company, of tanks moved back, and parked just behind our two forward batteries. The valley echoed and re-echoed that night! It was the nearest thing to bedlam one could imagine. By morning, resistance had been cleared up, and we were on the move again.

Sergeant Les Daughtry got in some good shooting just outside Pyongyang. He killed two and wounded one of a party of Reds that tried to slip into head-

quarters battery area. On our way out of Pyongyang on the night of the 21st, we were delayed about an hour when one of B Battery's guns went through a bridge, as mentioned previously.

AT Kunu-ri we were fortunately able, as a result of Lieutenant Bill Pendergraft's alertness, to assist five American soldiers. Pendergraft and his men, while on the way to transport some ROK infantry troops, noticed some Korean villagers assisting five very tattered looking individuals. Thinking that there might have been an accident, Bill halted his convoy and investigated. As he approached the group, he asked, "Are you GI's?" His answer came when one of the men threw his arms about him and said, "My God, an American!" The five were all that were left alive out of a group of seventy-five American soldiers. When the Reds took their prisoners out of a cave in groups of twenty or so, and slaughtered them, these five had been left for dead. One of the boys had nine bullet wounds; all were emaciated and very ill. We searched the surrounding hills and villages as the men felt there might be two more alive. At the last village searched, some of the natives stated that they had found two soldiers and had placed them on a southbound truck. Sure hope the story was true. Captain Pearce, our six-foot-five surgeon, and "Doc" Hall did everything they could for the men, then bundled them up and we escorted them to the hospital in our ambulance, with two M-55s with picked crews, to assure safe arrival. We do not know whether the two Reis boys, not related, or the other three men, are all right now, but we trust that they are fully recovered.

From Kunu-ri to Ipsok we traveled on a very poor road. There was one stretch, about two miles, where our tractors and guns had to creep along. We could not by-pass the road, inasmuch as the status of the MSR, some three to four thousand yards to the west, was rather uncertain. As a matter of fact, all too often the MSR was in possession of the enemy. It was necessary for us to maintain an all-out alert status during our one-night stand at Ipsok. This was due not so much to the frequency of our fire missions that night, but because a Chinese division had cut the MSR directly to the west of our position. There were two of

Silver Star

SECOND LIEUTENANT JAMES C. GLASGOW, Battery D, 3d AAA AW Battalion (SP), 3d Infantry Division, United States Army. On 2 December 1950, near Hukhuri, Korea, Lieutenant Glasgow was assistant platoon leader in charge of an anti-aircraft automatic weapon section, which was furnishing protection at the rear of a convoy. Lieutenant Glasgow found a portion of the rear elements cut off by an enemy road block, and the infantry pinned down by enemy automatic fire. Under continuous enemy fire and with complete disregard for his personal safety, he directed two infantry mortar squads to fire on an enemy position. He then instructed the squad leader of the anti-aircraft weapon to lay fire on the enemy, at the same time instructing the mortar squad on the ground to continue firing on the enemy positions. Lieutenant Glasgow then directed the anti-aircraft weapon and two mortar squads to move ahead in order to shield the medical corps men in a jeep ambulance, who were giving first aid to the wounded. Lieutenant Glasgow's actions resulted in either silencing or pinning down the enemy thus effecting a successful withdrawal of the infantry with very few casualties. Lieutenant Glasgow's outstanding initiative, fearless leadership and gallantry reflect great credit upon himself and the military service. Entered the military service from the State of Mississippi.

our infantry regiments to our front, one of which was isolated from the other by enemy action, and one regiment to our rear. Although we established an all-round perimeter defense, dug trenches, and established strongpoints on the adjacent high ground, we were well satisfied that the Reds did not test our defenses.

Our arrival at the Samtanchon River, at Unsan, coincided with an air-drop of gasoline and ammunition to the beleaguered regiment to our northwest. Shortly thereafter the infantry broke through the enemy to the east and to the south, re-established the front and opened the MSR. For five days and nights we fired battery and battalion volleys at enemy attacks to the east, north, and west. We fired a minimum of harassing and interdiction fire because of the difficulty of replenishing our ammunition.

We had to send our ammunition trucks to Pyongyang, a 170-mile round trip. Rations and gas were picked up at Sukchon, a 120-mile round trip. QM, Signal, Engineer, and some Ordnance supplies had to be trucked all the way from Seoul, a round trip of 450 miles. In addition, we loaned trucks to the field artillery to pick up ammunition, and to the infantry to move troops. On about

the fourth night our ammunition consumption got ahead of our re-supply. We were saved, however, by a provisional truck company from our comrades in arms, the 68th AAA Gun Battalion. Captain "Stevie" Stevenson and his men from the 68th did not know to whom they were hauling the ammunition, but they seemed pleased when they found out it was the 78th; they weren't half as pleased as we were to have them show up in the nick of time.

THE situation at Unsan had not looked bad, but just difficult. When the 1st Cavalry Division arrived on the fifth day to help out, we had a feeling that everything would work out fine. The morning and the afternoon of the last day in Unsan were comparatively quiet. Toward evening, we received more and more fire missions. A 4.2 mortar company was set up immediately to the rear of our rearmost battery. It was a bit confusing to have 4.2 mortars firing over the heads of 90mm gun batteries, but the officers and men just shrugged, "Oh well, this is Korea." As the night progressed it became very apparent that the Reds were intent on pushing the UN forces out of Unsan.

Between 1830 hours and 2320 hours, a four hour and fifty minute period, the battalion fired seventy-seven separate and distinct fire missions. A withdrawal was not very pleasant to contemplate, but began to appear as a possibility. All of us had hoped that we would be able to continue the drive northward and close out the campaign. In addition, the thought of having to go back down a road that we had barely been able to navigate under ideal conditions, was very disagreeable. By 2230 the position of the 10th AAA Group in Unsan and one forward battery position became untenable.

After both units march-ordered and had crossed the Samtanchon River, the other forward battery was given cease fire and march order. Four M-55's had been sent forward to assist in covering the withdrawal of the forward batteries (a total of 12 M-55's present with the forward elements). The remaining M-55's were sited to cover the left and right flanks at the river crossing, as the MSR to our west was in enemy hands, and the enemy was exerting very heavy pressure to the east. At 2300 the battalion was ordered south to Yongsan-dong.

The emplacement of C Battery was halted, and the battery was march-ordered again about 2330. By this time, the fire missions coming from the infantry were prefaced with the remark, "We must have artillery fire to halt the enemy attacks. Have you any ammunition?" Each time we assured them that we had ammunition, although much earlier in the evening we were firing battalion-5 instead of battalion-10, and battery-4, instead of battery-8. We could have easily expended another 2,000 rounds if we had had it. There were 160 rounds of APC on hand in the battalion, but we had no tank targets.

Even though we were firing smaller concentrations than those requested, we were told "You broke that one up," or "You smashed that attack, but here comes another." By the time D Battery crossed the river, requests for fire missions had about come to a halt. Baker Battery was given march-order, but a fire mission came in. March order was cancelled, the mission assigned, and fired. After firing the mission, Baker had a total of eight rounds of PD or MT ammunition. Baker and Headquarters Batteries, except for the FDC and the Communications section, were march-ordered. At about this time, a visitor to our FDC would have seen Captain Robertson, the S3, unconcernedly sweeping out the FDC and straightening things up, while muttering to himself, "I don't know how things gets so damned messed up in this joint!" His coolness under all circumstances was a major factor in the efficient operation of the fire direction center.

By 0030, Able Battery had only 17 rounds of ammo left, and were given march-order. All remaining M-55's traveled with A Battery. It was felt that echeloning the withdrawal would permit us to fulfill our infantry support mission, and also help to insure the safe withdrawal of all elements of the battalion. The withdrawal was orderly, and the only things left behind were two 1-ton trailers that could not be towed since that battery had four trucks out on other missions. The infantry had used twenty-one of our trucks that day for movement of troops, and many did not return until after our move. In view of the road conditions, the speed of all the battery convoys was kept to 10-12 miles per hour.

While at Unsan, where the battalion was located at the junction of three valleys, many times we had fire missions in

Silver Star—MIA

PRIVATE JAMES C. DUNCAN, while a member of Battery D, 15th AA AW Bn. (SP), distinguished himself by gallantry in action against an armed enemy near the Chosin Reservoir in Korea on 28 November 1950. On this date, the command post of the 1st platoon of Battery D was taken under heavy attack by the enemy, and the personnel at the command post were in grave danger of being overrun by the enemy. When the battery commander called for volunteers to join a patrol to go to the assistance of the platoon command post, Private Duncan unhesitatingly volunteered. While crossing open ground in the attack on the enemy force, the patrol was pinned down by intense enemy fire from one of the flanks. Private Duncan, with complete disregard for his own personal safety, immediately ran toward the strong point from which the enemy was firing, and with his carbine and a hand grenade neutralized it. As a result of his gallant act, the patrol continued the attack on the enemy and succeeded in killing or driving off all those who remained. The personnel in the platoon command post were thus rescued. Private Duncan's outstanding display of gallantry on this occasion was in keeping with the highest traditions of the military service. Entered the military service from the State of Kentucky.

all three areas at once. The flexibility of the 90mm gun really paid off at this position.

Later the same day, 1 November, we fired from Yongsan-Dong into our old positions at Unsan. Our move that night to a position between Kunu-ri and Anju was one of the coldest rides we had ever had. We were not dressed for the cold weather and the sharp drop in the temperature was an unpleasant experience. The farther south we went, the colder it got.

SHORTLY after our arrival at the Chong-chon River, we were assigned to Task Force Allen, and we shifted position closer to Kunu-ri. Here we had the pleasure of working with one of the finest artillery units we met in Korea, the "Triple Nickel" 555th FA Battalion. For a while, we wondered if we were going to be involved in another Unsan. An infantry battalion, not a Task Force Allen unit, moved back through our positions. However, in the end, everything turned out all right.

At our position south of Kunu-ri, we had the pleasure of furnishing support to the 1st Cavalry Division again. It was like old-home week. It seemed as though ages had passed since we were last attached to it at the Bowling Alley. We

had some good shooting here and we thoroughly enjoyed it. This included firing at Hill 606 for our old neighbors from Fort Lewis, the 9th Infantry.

We made our longest stay at Sinanju. While there, we were issued a few tents. Together with the parachutes we had rescued from air-drops, we were now able to house a goodly portion of our battalion. In addition to the parachutes, some of our men constructed satisfactory shelters out of the canvas and felt ammunition wrapper utilized for airborne resupply. We had the pleasure of renewing our acquaintanceship with the 24th Division, to whom, as with the 1st Cavalry, we had been attached way back in the days of the Bowling Alley.

International relations were slightly strained as a result of the firing at Pakchon during our second ill-fated advance. Our choice of firing positions was severely limited because of extensive rice paddies, or steep hills, neither of which were suitable for our heavy equipment. Two of our batteries were, therefore, placed adjacent to an Allied unit. We explained that we would fire the batteries only when absolutely necessary, and would give the unit prior notice. Further, we said that we would move into our division (1st ROK) sector as soon as possible.

When it was time to register the batteries, we phoned our neighbors; no answer. The operator was told to try the other circuit, and to keep ringing. In the meantime, we went ahead with the registration problem. We fired; then the phone practically jumped off the wall. "You fired; you said you wouldn't except in an emergency. Is this an emergency? You gave us your assurance, and then you fired right over our heads; I suppose next time you will fire right into us!" Our explanations were of no avail. Fortunately the two offending batteries were on their way to their next mission.

South of Taechon, we increased our



'Chutes used for tentage.

score of enemy killed and wounded. We again had the satisfaction of knowing that we had disrupted many enemy attacks and were of assistance to our infantry in recovering lost ground. Lieutenant Richards, of the 17th Ordnance, caught up with us and with his team, replaced the gun tubes in one battery. They had arrived at Unsan, and at Kunu-ri, just prior to the deterioration of the UN positions there. Upon this arrival everyone said, "Here we go again," and sure enough, late in the afternoon—"March Order." We were surprised, as just an hour or two earlier, reports indicated that the situation was well in hand. It turned out that the right flank was falling back under heavy communist pressure.

BACK at Pak-chon, again, we fired on the approaches to, and into, Yongsan-Dong in support of the 1st ROK's counteroffensive. We shuddered later when the ROK's told us that they had halted on the edge of the town and called for our fire two hundred yards from their positions. Many times the infantry errs by not calling for fire close enough to their position, but the 1st ROK Division could never be accused of that. With the 90mm guns we felt it not advisable to fire closer than 400 yards to troops at 15,000 yard range. Guns, unlike howitzers, have an inherently large probable error. Also, our guns were well worn. We had no cause for complaint, however, as the infantry took the town, and we didn't hit any of our own troops.

From here on we kept displacing to the rear, until our surface mission was ended on 1 December. We were at Sukchon when the order arrived to move south and revert to an AA role. Thus began another story.

The term "WE GO" is by courtesy of Brigadier General Paec, CG, 1st ROK Div. We would be firing away, and the General studying the maps and the reports from the front. Without warning, he would announce, "WE GO"; and go we did. "WE GO" took us from Taegu, on the old "Pusan perimeter" of last September, to Unsan and Taechon. Sergeant First Class Neill, of the battalion supply section, became imbued with the "We Go" spirit at an early date. One day while on reconnaissance, we looked up upon hearing a truck approach. It was Neill with tomorrow's rations, re-

Silver Star

PRIVATE GEORGE E. MERICA, while serving as a member of Battery D, 15th AA AW Bn. (SP), distinguished himself by gallantry in action near the Chosin Reservoir in Korea on 1 December 1950. On this date, the M-19 gun carriage of which Private Merica was a crew member was leading a convoy of trucks loaded with wounded along a road when an enemy road block was encountered. This road block was heavily defended by the enemy. Inasmuch as the M-19 had expended all of its 40mm ammunition, it was necessary to reduce the road block by some other means. Private Merica, with complete disregard for his own personal safety, procured a 3.5-inch rocket launcher and four rockets, and under intense enemy automatic weapons fire, courageously made his way on foot to a point of vantage. Here he loaded and fired the four rockets at the road block, reducing it to such an extent that it was possible for the M-19 to knock aside the remaining debris. The convoy of wounded was thus permitted to proceed past the enemy positions. Private Merica's heroism in the face of almost certain death on this occasion reflects great credit on himself and the military service. Entered the military service from the State of Michigan.

turning from a long supply run. The main body of the battalion was two hours behind us on the road, and we were within 2,500 yards of the front.

THERE was an engineer unit that was an integral part of "We Go." From Sinnyong to Sinwon it was necessary for us to proceed through a pass only 100 inches wide. Captain Goss, Lieutenant Tyner, and their men from the 14th Engineer Combat Battalion came to our rescue. They blasted and chopped away until we had a minimum of 110 inches clearance. From Sinwon to the junction of the Taegu-Waegwan roads, they rendered invaluable assistance to us. Captain Goss and his men rejoined us at the 38th parallel. From then on, they appeared at the most opportune moments, including the night we left Unsan. About the same time that the battalion S4 informed us that a bridge was out along the only road over which we could withdraw, the engineers arrived. They had been improving the river crossing, where the ford was deep and the water fast-running. Prior to 2300 the engineers repaired the bridge, with the result that all units were able to move south without difficulty. Captain Goss' Company A not only expressed the thought that service units and ground combat units are in the same army, but they lived it. Never in our

experience had we worked with a more cooperative and able unit.

We have not yet learned it all, but our 76 days of continuous combat did give us an opportunity to learn a great deal.

We almost invariably emplaced the firing batteries in pairs . . . A and B, C and D . . ., with only three to four hundred yards between A and B, or C and D. Then we located headquarters battery adjacent to one of the pairs of firing batteries, had the nearby firing batteries run wire to the FDC while the battalion wire crew ran wire to the farthest pair of batteries. In a fast moving situation, all firing missions came to FDC over our FM radio, and all firing data from FDC to the batteries via wire. We did use AM radio (AN/GRC-9) to one or two of the batteries many times when we first arrived at a position, but it never worked very well. More often than not the radios were inoperative from the bouncing, or dust from the ride, or else radio entertainment, friendly or enemy, came in better than our transmissions.

Artillery units were continually being overrun in Korea, and it was advisable to maintain a strong perimeter defense. Siting the batteries in pairs assisted in the establishment of this strong perimeter.

Battery commanders did not normally emplace their guns in line but rather in an arc, or a W formation. This was necessary because batteries were usually assigned a 90 to 180 degree field of fire. Continuous firing of one gun over another not only deafens the gun crews, but dulls them, slows up their reaction time. At times it didn't matter how one located the CP with reference to the guns. When the principal field of fire is to the north and a fire mission is assigned directly to the south, it tends to cancel out any siting plan.

Although we expended about 22,500 rounds in our ground role, we could have easily fired many more rounds except for our resupply problem. The long distances we had to travel to get ammunition were entirely too much for a battalion to cope with, without outside help.

This story would be incomplete if it did not include a reference to Colonel Bill Hennig's invaluable assistance and guidance to us all the way through. No obstacle that showed up in our path was too formidable for him to tackle, and somehow he put us through.

Artillery Repulses Chinese Attack

By 1st Lt. Robert Dall'Acqua, Artillery

HELL, they look like Chinks!"

Advance elements of 2,500 enemy troops were trotting their way into the 61st F.A. Battalion's area during the heavy fighting in the vicinity of Pakchon, north of Korea's waistline, when the commander of Battery A made this remark. Within one minute an M16 quad fifty was firing upon the infiltrating Reds . . . the single action perhaps saved many lives and the artillery supporting the British Commonwealth Brigade on the morning of 5 November 1950.

Moving the previous night into positions extending over two miles on the Anjou-Pakchon highway, individual batteries determined that a perimeter defense for the entire battalion was not feasible. Spread out in a generally north-south line paralleling the Taenyong River, each unit set up its own defense perimeter. Headquarters battery and CP were located on the left (north) flank about 1½ miles south of Pakchon with Battery B approximately 500 yards south. Battery A located itself 700 yards further down, while Battery C covered the right flank of the battalion one mile south of Battery A.

Knifing their way across the flats from the covering hills to the east at 0815 hours, the enemy opened fire on Battery C with small arms and automatic weapons only 100 to 150 yards from the battery perimeter. At the same time, Able Battery commander identified an enemy force advancing at a trot into a draw to the rear of his position, bearing light machine guns. Recognizing the attack, batteries immediately deployed all overhead personnel to outposts originally established as routine defense, while 105mm howitzer and AA gun crews manned their weapons. The instantaneous firing of M16 quad fifties and 37mm M15s by their crews from Battery A, 92d AA AW Battalion (SP), made the enemy seek cover in the ditches. This gave the necessary time for



Enemy dead examined where they fell under the withering fire of the artillery they attacked.

the batteries to man their local defense positions, thus blunting the initial assault.

An objective of the attacking force was the destruction by demolitions of two bridges on the highway, one between Batteries A and C and the other south of Battery C. Successfully accomplished, this action would have severed the MSR and prevented the evacuation of the British Brigade and attached units. Similar action in past operations has proved successful in the isolation and overrunning of rear units with the ultimate decimation of forward elements. The vigorous defense of units under attack caused the enemy to abandon their demolition plans.

Within the first thirty minutes of attack, the enemy had committed approximately 500 troops, well equipped with automatic weapons and mortars. During this time, Battery C was encircled while a roadblock was set up by the enemy between that unit and the bridge north of it. Meanwhile Batteries A and B were contained by aggressive enemy attacks, preventing reinforcement and assistance to the encircled unit to the south. To assist in the defense of the firing batteries, small detachments of headquarters personnel were dispatched almost immediately after the initial action.

Throughout the entire action, Headquarters Battery, supplemented with only one M16, successfully maintained the left flank preventing penetration by enemy troops attempting to infiltrate from the hills to the north and east.

Employing light machine guns and mortars, the attackers gained favorable positions as the attack mounted, while

new elements estimated at approximately 2,000 troops by air observation, were advancing from the trails which honey-combed the hills to the east. The intensive firepower of AA weapons, supplemented by carbine and machine-gun fire, denied the enemy entry into the individual battery defense perimeters, despite his proximity and although he was gaining strength as his reinforcements arrived at the scene of action.

Shifting trails on the 105 howitzers and moving AA half-tracks within the besieged battery areas, enabled the separate batteries to fire on the attacking force in their immediate vicinity upon instructions and observations of the individual battery commanders. Guns not employed for their own battery defense were controlled and adjusted on the enemy attacking other battery positions, by the battalion liaison pilot in contact with battalion FDC.

Both WP and HE were used effectively in the supporting cross fire. The devastating effect of combined AA guns and howitzers employed at close range, halted the enemy attack and finally forced his withdrawal eastward from the vicinity of headquarters and Batteries A and B. Guns of the two latter units were then turned in support of still encircled Battery C to the south.

After several hours of intensive action, British infantry units accompanied by several platoons of tanks moved north and south simultaneously, forcing the enemy to abandon the southern roadblock and encirclement of Battery C. Driven into the hills to the east, with the British in close pursuit under the supporting fire of the combined batteries, the enemy left approximately 500 of his dead surrounding the various battery areas. Most of these were attributed to the direct action of AA guns and howitzers. Casualties were exceedingly light for the battalion under fire with an almost negligible loss of equipment.

The attack thus neutralized, the artillery battalion evacuated the area for new positions to the south under covering fire of tanks and British infantry, as well as air support by strafing F-80s and B-26s . . . just one of the many combat incidents confronted in Korea.

Lieut. Dall'Acqua is a member of an Ordnance Technical Intelligence Team in Korea. His camera was smashed in this attack. Later he was wounded and hospitalized in Japan.

THE 68th IN KOREA

By Lieutenant Colonel R. C. Cheal, Artillery

THE UN military forces which were dribbling in to strengthen the crumbling ROK divisions had finally halted the Red avalanches from the north along the banks of the Naktong and just north of Taegu. The build-up of allied strength was now considered sufficient to consider the attack. At this critical time the 68th AAA Gun Battalion arrived in Korea.

The battalion landed in Korea beginning 6 September 1950 and closed 11 September 1950. Charged with an AAA defense role, initial reconnaissance showed the great difficulties which were ahead. The maps showed roads that simply didn't exist, and, in many instances, the Koreans had built houses in the middle of old Japanese roads and had constructed rice paddies across others. The existing roads were narrow, rutted and had flimsy bridges which were geared to Korea's oxcart economy. And the odors! After considerable trouble, sites were selected on the most accessible hill-tops, and the battalion had just completed moving into position when orders were received on 14 September to move to Taegu and go in a ground support role as general support artillery under the 10th AAA Group commanded by Colonel W. H. Hennig, in support of the 1st Cavalry Division.

This had been anticipated and a field artillery school set up by Major Harry Landsman, S3 of this battalion. Firing was conducted with one gun which had been moved from its AA position and placed to fire into an uninhabited area. The school was conducted both to instruct forward observers and to smooth out the functioning of the FDC and gun



68th AAA Gun Battalion position on the Naktong north of Waegwan.

Silver Star

SERGEANT GRANTFORD R. BROWN, while a member of Battery D, 15th AA AW Bn. (SP), distinguished himself by heroic action against an armed enemy near the Chosin Reservoir in Korea on 29 November 1950. On this date, the M-19 gun carriage which he commanded was defending a sector of the defense perimeter established to protect elements of the 57th Field Artillery Battalion. Between the hours of 0030 and 0730 the enemy made repeated attacks against Sergeant Brown's position. In spite of very heavy enemy mortar, automatic weapons, and small-arms fire, Sergeant Brown exposed himself without regard for his own personal safety in order to direct the fire of his weapons more accurately. By courageously moving on the ground to various positions of vantage he was able to direct the fire to enemy targets which were most dangerous. After being hit in the leg by a mortar shell fragment, Sergeant Brown valiantly stayed at his post until the attacks by the enemy ceased. His outstanding and devoted leadership caused the enemy to be killed in large numbers and forced them to abandon the attack. Sergeant Brown's display of gallantry on this occasion reflects great credit on himself and the military service. Entered the military service from the State of Illinois.

crews for the new role. This training was fortunate as many of the officers had had no previous field artillery experience and the battalion had fired as field artillery only once before during its training at Fort Bliss in 1949.

The battalion moved to Taegu and went into position under cover of darkness on the night of 13 September. Registration of the battalion was accomplished by air observation the following day and the 68th AAA Gun Battalion chalked up another "First"—being the first AAA Gun Battalion to fire in Korea. The battalion occupied positions in the "Bowling Alley" and the race track area in Taegu proper. From these positions it supported the breakout by the 1st Cavalry Division on 15 September. It became necessary to move two batteries of the battalion—displacing them forward so that they could bring their fire to bear on the Walled City of Tabu-Dong. Both A and B Batteries were moved farther up the "Bowling Alley" in

the river bed where they were taken under enemy artillery fire, Battery A sustaining the battalion's first casualties of six men wounded—fortunately none seriously. The enemy self-propelled gun that fired on these batteries was spotted by an air observer of the 1st Cavalry Division and Battery A had the pleasure of demolishing that weapon and giving the enemy a warning of things to come. During this period the 1st Cavalry Division was awarded the Korean Presidential Citation as was the 68th AAA Gun Battalion.

IN the early stages of the breakthrough, the battalion leapfrogged from the Bowling Alley over the "Burma Road" to Waegwan and the Naktong River. Here it left the 1st Cavalry and joined the 24th Infantry Division for a short time and then went in direct support of the 27th British Brigade. Along the Naktong River line, the battalion again fired, causing the enemy many casualties and knocking out valuable pieces of his equipment, tanks, and guns. It was a source of great satisfaction to us to see matériel that we had knocked out, when we advanced over the same territory a few hours later.

During part of the period the battalion supported the 27th British Brigade, firing was held to a minimum due to many friendly patrols in the target area. In order to keep active the battalion sent out foot patrols and combed the hills, captur-



Father Murphy, Chaplain of the 68th, conducts services during a lull in the firing in the Taegu breakthrough.

ing a number of prisoners. This became standard procedure with the battalion as the infantry units had advanced so rapidly through areas where we were set up, that many communist soldiers had been by-passed. Even later on when we were busy firing we still sent out patrols in our immediate area.

While the battalion was with the British, higher headquarters called on the battalion to furnish a provisional truck company to haul supplies for "a few days." These "few days" extended to over six weeks and practically immobilized the unit. The provisional truck company under Captain E. H. Stephenson did an outstanding job hauling supplies, being in many instances among the first troops in enemy held towns. This unit was highly commended by the I Corps Commander for this valuable work. While the virtual immobilization of an artillery battalion was no doubt necessary, it almost ruined its transportation, a thing which was felt keenly later on.

After being grounded, the battalion moved to Kaesong on October 19th, about sixty miles north of Seoul, where we instituted a program of maintenance, schools, and training.

On 12 November the battalion's transportation was returned and it limped with broken springs northward to Sinanju, where began the final phase of the unit's employment as field artillery. Attached again to the 24th Division, the battalion went into position north of the Chongchon river and accompanied the Division to the vicinity of Chongju when the Chinese struck and the great withdrawal began. At this point the Chinese attempted to move a cavalry force of several thousand toward the Chongju-Napchongjong road. This move was completely thwarted by friendly air action which routed the formation when they had reached about three thousand yards from the battalion command post. One



The British were high in their praise of the effectiveness of the 90s.

of the Chinese horses wandered into the CP area the following day.

In a twenty-four hour period the battalion moved four times, finally lining up along the Chongchon where we were released from the 24th Divarty control and rejoined the 10th AAA Group as part of the divisional artillery for the 1st ROK Division. During the night of 30 November the battalion fired constantly, covering the withdrawal of our units. The 1st ROK Division credited the battalion's fire with breaking up Chinese attempts to cross the river near Pakchon thus allowing the safe withdrawal of many of our units.

From the final firing on the Chongchon river line, the battalion withdrew southward along jammed highways and was ordered to resume the AAA role.

During the period of activity as a ground support unit, we learned many lessons worth recording. In order of importance they are as follows:

(1) *Discipline.* Strict discipline must be maintained in all respects. The actual combat discipline was generally good. Convoy discipline and supply discipline left much to be desired.

(2) *Night Training.* Ability to work and move at night is of utmost importance. Training on this should be emphasized—particularly night reconnaissance.



Field Expedients

CO-DESIGNERS Sergeants First Class Malcolm D. Cooper (left) and Robert E. Patton (right) both gun commanders in Battery D, 68th AAA Gun Battalion, assisted by Corporal Roy E. Tudor, also of the unit, are shown with a

rack for a gun cable which they designed and attached to the front bogie wheels of all guns in the battery. This time and space saving device was conceived and constructed in Sasebo, Japan while the 68th AAA Gun Battalion was

Silver Star

SERGEANT (THEN CORPORAL) RALPH H. KIEFERLE, Battery A, 3rd AA AW Bn. (SP), 3d Infantry Division, United States Army. On 6 December 1950 near Koto-ri, Korea, Sergeant Kieferle was on a mission to rescue a convoy that had been ambushed and was under a heavy concentration of enemy fire. Sergeant Kieferle immediately brought fire on the well emplaced enemy. In complete disregard for his personal safety, Sergeant Kieferle went out under heavy small-arms fire to remove a wounded man to cover where he could receive medical aid. Sergeant Kieferle then backed his vehicle out of a narrow mountain road and continued firing at the same time to allow the convoy to withdraw. Due to the coolness and leadership of Sergeant Kieferle, the mission was a success. The gallantry and intrepid action of Sergeant Kieferle reflect great credit upon himself and the military service. Entered the military service from the State of New York.

(3) *Map Reading.* We need more competent map readers.

(4) *Field Expedients.* This battalion saved some of its guns from capture when M-4 tractors became inoperable, by pulling them with 2½ ton trucks over very rough terrain.

(5) *AAA Guns in Ground Role.* The 90mm AAA gun is an excellent weapon and can be efficiently employed in the ground role. Its traverse and range astonished all non-AA men. Its weight, with complex and delicate on-carriage equipment, make it more of a special purpose general support weapon than one which should be regularly employed as such. Its large flash and flat trajectory make it an extremely hard weapon to emplace for cover and concealment.

Many non-AA Artillerymen knew very little of the capabilities of the AA gun—either as AA or as an FA weapon. More emphasis should be placed on this subject in the Artillery School.



Cable rack in action.

cable to the junction box. Photos were taken when the battalion was attached to the First Cavalry Division as field artillery, in position in the now famous Bowling Alley, near Taegu, Korea.

This same device can be constructed and employed on the M-7 trailer for either the M-7 or M-18 Generator for easy access to power cables. A simple steel rack on the rear of each M-4 tractor provided another space-saving device for the gun tool box.



Position on front bogie.



OPERATION ROADBLOCK

By Lt. Col. Walter Killilae

ON 30 November 1950 all elements of the 2nd Infantry Division participated in the forcing of a Chinese roadblock between Kunu-ri and Sunchon, Korea.

An enemy attack in overwhelming numbers against the division and other United Nations forces on its right flank that began 25 November forced the division back slowly about twenty miles along the Chon-chon river in northwestern Korea to positions in the vicinity of Kunu-ri. This slow withdrawal was characterized by successive delaying actions which permitted other United Nations forces to escape from a giant Chinese pincer move.

Increased pressure on the division's right flank indicated a further withdrawal southward to Sunchon, a distance of 21 miles. On 29 November an enemy roadblock was encountered along the only through road available. A relatively small force from the division was unable to dislodge the roadblock that day. It was decided that the division would force its way through on the 30th. All elements were to be prepared to fight if necessary.

The division order directing the withdrawal set up the following formation:

1st Serial: Attack force—two battalions of infantry supported by two companies of tanks.

2nd Serial: One regiment of infantry.

3rd Serial: Command group—division and division artillery headquarters with recon company, military police company

Silver Star

FIRST LIEUTENANT GEORGE A. KELLER, a member of Battery B, 82nd AA AW Bn. (SP), displayed gallantry in action against an armed enemy in the vicinity of Singye, Korea, on 5 December 1950. On this date, Lieutenant Keller was proceeding south on the main line of supply in an M-19 self-propelled anti-aircraft gun when he came upon an estimated enemy company, firmly entrenched in a village and the surrounding vantage points, attacking a friendly convoy. Lieutenant Keller organized elements of the convoy and deployed them as skirmishers while he dismounted and led the M-19 on foot against the enemy with the deployed troops following behind. In spite of the intensity of fire Lieutenant Keller immediately and with utter disregard for his personal safety moved forward down the road while directing the fire of his M-19 employing 40mm twin Bofors and a .50 caliber machine gun. The fight lasted twenty-five minutes. During this time Lieutenant Keller, still on foot, maneuvered his M-19 through the village and directed fire against the most concentrated enemy fire and positions. The heavy casualties suffered by the enemy as a result of Lieutenant Keller's act caused the enemy to disperse and prevented the remainder of the convoy from being ambushed by the enemy. His heroism and gallantry reflect great credit on the military service. Entered the military service from Texas.

and part of the signal company.

4th Serial: Attached heavy (8" How) artillery battalion.

5th Serial: Remaining portions of infantry regiment used in the attack force, one light artillery battalion, headquarters battery AAA battalion.

6th Serial: One medium and one light artillery battalion.

7th Serial: Engineer battalion less heavy equipment which had already cleared area.

8th Serial: Rear guard—one regimental combat team with all normal attachments.

The combat elements of the AAA AW battalion were integrated into the column. The second and eighth serials each had the AA battery normally attached to each regimental combat team. The third serial had the platoon normally attached to the headquarters elements. The fifth serial contained the remaining three AA platoons. Serials 1, 4, 6, and 7 were not provided any AAA vehicles because they had sufficient ground support weapons of their own.

The attack force met heavy enemy resistance and, despite air support as well as the fires of one light and one medium artillery battalion, did not succeed in reducing the block. At about noon, 30 November, it was decided that the remaining elements of the division would fight their way through the block.

AAA elements with the second serial were those in Battery C of this battalion. Enemy targets were not plentiful for those vehicles. The infantry, the air, and the artillery kept the Chinese action to a minimum while this serial passed through the block. One M-19 squad was credited with knocking out three Chinese machine gun positions. Upon clearing the ford at the southern extremity of the block area two sections of the bat-

tery were pulled out of the column and placed in an emergency assembly area with some tanks. These vehicles were given the mission of assisting others in getting out. Twice the M-19s reentered the roadblock area to silence enemy fire and tow other vehicles through the ford.

The third serial met increased enemy fire from mortars, automatic weapons, small arms, grenades and possibly rockets. The platoon from A Battery was reinforced during the action by two additional AW squads and two MG squads from D Battery, further back in the column. AAA vehicles with this serial had lots of action, as was indicated by Major General Marquat in the January-February issue of the JOURNAL. Several impromptu techniques were developed which proved successful. The AAA combat vehicles placed throughout the column would advance into areas where enemy fire was being received; draw fire; return the fire; silence whatever was sending it; then remain in the exposed position while unarmored vehicles passed. The next AAA vehicle or tank to approach the position then took over

and the first vehicle moved on to a new position. It would appear with such a procedure that the leading AAA vehicle would receive all the action; however, such was not the case, as the situation was extremely fluid throughout the day. As soon as the initial enemy positions were eliminated others were established and often these new positions went into action as the center vehicle of a serial passed. In addition to automatic weapons and mortar positions, Chinese infantry were constantly reinforcing the roadblock positions. Another method of pinpointing enemy positions was used. An AAA vehicle was placed near an open area in which enemy fire was expected, then an unarmored vehicle was dispatched at a high rate of speed (the higher the better) across that area. If the enemy opened fire (and he usually did) the AAA vehicle immediately opened fire. Many enemy troop concentrations and AW positions were eliminated in this manner, while surprisingly few unarmored vehicles were lost; however, that procedure is recommended only in case of dire emergency. Incidentally one of

the unarmored vehicles participating in this experiment contained the battalion chaplain.

Darkness closed in while the fourth serial was negotiating the block. With the approach of night the enemy became bolder; his AW crewmen were able to move their weapons close to the road and for the first time his infantry was able to approach the road in strength. These factors, coupled with the lack of friendly air support and the inability of air OPs to adjust artillery fire, accounted for many friendly vehicular casualties—so many that M-19s were used as bulldozers in many instances and as tow vehicles in others. These chores were in addition to their normal fire missions.

The rear guard, including the attached Battery B, received permission and proceeded southward by another road; thus it did not directly participate in the operation.

It is the consensus of opinion that elements of this battalion rendered conspicuous service during the roadblock. To date fifteen members of the battalion have been recommended for awards.



COMMAND POST LOCATIONS

By Lt. Col. Walter Killilae

THE selection of battalion command post locations for self-propelled battalions organic to infantry divisions, posed four problems which do not exist to the same degree in other type antiaircraft units and are materially different from those encountered in field artillery battalions. Those problems are (1) Mission—AAA or ground support. (2) Command, control and communication. (3) Supply and maintenance. (4) Security.

The mission assigned to a self-propelled battalion will often be the deciding factor as to the CP location. When the unit is performing an AAA mission the problem resolves itself into one of central location relative to the firing batteries. When employed on an AAA mission, command, control, communications, supply, maintenance, and security are all purely battalion problems, and only incidentally involve other elements of the division. Since the organic AAA

battalion is part of division artillery, it may be well to locate the CP adjacent to the artillery commander's command post.

When the self-propelled battalion is employed on a ground support mission with the primary purpose of providing ground defense for field artillery units of the division, the problem is equally simple and the ideal location is with division artillery headquarters.

The third possible mission is perhaps the most difficult. When the battalion is employed in close support of the infantry regiments of the division the batteries are usually attached. Direct command is exercised by the regimental commanders, class I, III, and V supplies are usually handled by the regimental S4 and his service company, communications are principally with the infantry, some maintenance is taken care of for the batteries by the service or tank companies. In some instances administrative matters are

handled through the regimental combat team. Experience gained in Korea, however, has again pointed up the fact that while these matters are often handled in part by, and through, the RCTs they are not fully handled.

Just as the division artillery commander exercises some command functions over the artillery battalions when they are attached to RCTs, so must the self-propelled battalion commander exercise certain command functions over his troops even though they are not under his tactical control. The many functions of command continue despite the loss of tactical control—those responsibilities cannot be passed on. From a view of that consideration, it would appear that some point between the division artillery command post and the regimental command posts (where an SP battery normally sets up its CP) would be the ideal location for the battalion CP.

The logistical problems affect the situation. Class I is normally handled by the unit to which batteries are attached, but experience has taught that supervision is required by the parent battalion, particularly in regard to such items as conditions and PX supplements. In some instances in Korea it has been necessary for the S4 of self-propelled units to draw PX supplements for the full strength of his battalion while he may have been drawing rations for only 40% of his battalion. This practice was encouraged by division quartermasters who could not begin to follow the myriad changes in assignment of AAA units during certain phases of operations. Class II and IV are nearly always handled by the parent battalion. As has been previously mentioned, class III and V are normally handled by the supported unit. Despite this, it has been necessary on many occasions for the parent battalions to augment gasoline and ammunition supplies for their batteries. Reason for that situation was often caused by excessive distances to supply points and limited transportation facilities over poor roads. That con-

sideration proved too much for many infantry service companies. From a supply point of view then the battalion command post should be somewhere between the regimental service areas and the regimental command posts along the axis of supply.

The maintenance problem in a self-propelled battalion is complex because of the full and half-tracked vehicles of the unit. The only support available is that provided by the division ordnance company. True, regimental tank companies and the tank battalion may be called upon for assistance at times, but they have just as many problems as the AAA and can only be depended upon in an emergency. The maintenance considerations then would place the battalion command post along the axis of ordnance evacuation between regiment and the ordnance company.

In order to keep the supply and maintenance portions of the headquarters battery as far to rear as possible and permit the rest of the battery to be as far forward as possible, attempts have been made to separate the service elements of

the battery and form a provisional service battery, similar to that in the field artillery battalion T/O&E; however, this requires additional overhead and for that reason is not practical.

The last factor to be considered is that of security. Where guerrilla activity is prevalent, this consideration often approaches major proportions. Generally speaking a small unit is more likely to be attacked by guerrilla units than is a larger unit, therefore it is desirable to locate the CP adjacent to another unit thereby increasing the protection available to both. Tying this factor in with others the best location for the CP is with division artillery.

For communication facilities a location near the Divarty CP provides particular advantages. There the AAA battalion can utilize the excellent artillery communication net to all artillery battalions, and through them to the infantry regiments; to the division CP and through it to the service echelons. This same location also gives good geographical location with reference to the batteries.

A RELIEF OPERATION

By 1st Lt. William C. Warlick, Jr., Artillery

IN the late afternoon of 13 January I received orders to take two M16's from our battalion to assist a company of the special activities group (a raider unit) which was on the way to Osang-ni to relieve one of the SAG battalions which had been surrounded by the enemy. The two M16's were integrated into the column with B Battery's vehicle near the head and C Battery's near the center.

The convoy advanced toward the surrounded battalion's area under blackout conditions. The company commander had received information from villagers, about five miles from the area, that they had seen enemy troops laying mines in the road over which we were to travel. The convoy commander instructed a mine detection team to precede the M16 which had been placed at the head of the column. We got under way again, and approximately three miles from Osang-ni at 2130 the convoy was ambushed by an enemy force using small arms and ma-

chine guns. We stopped. The M16s fired on the hills on both sides of the road. While moving to a better firing position the B Battery M16 ran over a mine, blowing the right front wheel completely off. It was on a very narrow part of the road. As it was impossible to pass the disabled vehicle and we then intended to proceed, we pushed the crippled vehicle off the road with the remaining M16. Fire was directed into the enemy positions by the C Battery M16 for about thirty minutes. The SAG company delivering fire with their organic weapons during the period. At midnight firing ceased and a defense perimeter was established by the convoy. The M16 was used in that perimeter.

At first light the following morning our M16 again fired on the surrounding hills where the enemy might be hiding. We received a few scattered rounds of rifle fire in return. The SAG company then flushed the hills and the column

proceeded. We reached the surrounded battalion at about 1030, 14 January 1951, with no further difficulty.

WE spent the rest of that day and the night with the SAG unit. On 15 January a convoy was formed with my M16 near the lead, and the SAG infantry elements deployed along the high ground on both sides of the road. We advanced that way for approximately three miles until we reached the area where the roadblock had existed. There 209 enemy dead were counted. Most of them were credited to our M16s.

As we abandoned the disabled M16 on our trip forward the gunner had rendered the weapon useless. It was still in the same shape; so we stripped it of all parts needed for spares and otherwise banged up the wreck thoroughly. We then returned without further action.

CHONGCHON WITHDRAWAL

By Captain William F. Brown, Arty.

GETTING there "fustest with the mostest" has long been a classic formula for American success in battle. But when the enemy grabs that end of the stick in a big way, a wrinkle in the reverse may be indicated:—to get the heck out of the place in a hurry and yet make the enemy believe you are still there. That was basically the situation that confronted Colonel W. H. Hennig's 10th AAA Group the latter part of November in the vicinity of Pakchon, Korea.

Let us backtrack briefly. On 24 November General Douglas MacArthur personally visited the Korean battlefield to launch a major offensive designed to push whatever Communist forces there were in Korea all the way back across the Yalu. It was hoped that this would bring the present conflict in Korea to a speedy conclusion.

The Eighth U.S. Army in Korea lined up with General W. F. Milburn's I Corps on the left, the U.S. IX Corps in the center, and the II ROK Corps on the right. From left to right we find the 24th U.S. Infantry Division, the 1st ROK Infantry Division, the 25th U.S. Infantry Division, the 2d U.S. Infantry Division, and the divisions of the II ROK Corps, believed to be the 6th and 7th. The 1st Cavalry Division was in Army reserve. (Figure No. 1.)

The attack jumped off on schedule. The 24th headed due west, with Chongju as its first objective, where it would continue north; the 1st ROK, for which the 10th AAA Group was acting as division artillery, attacked northwest, with the mission of capturing Taechon; the 25th hoped to wreak vengeance on Unsan, former home of the 10th AAA Group for a memorable week in October; other units on the right were to attack in a northerly direction, with orders to proceed forward "with elbows locked."

Optimism ran high as all units moved forward with little or no opposition the first day. Darkness found the 24th in possession of Naechongjong and the 1st ROK a few thousand yards short of Taechon. Friendly elements reported no enemy in the latter city, but the 1st

ROK was taking no chances and decided to wait until units on the flanks could catch up. In general, the line bent to the southeast from our advanced position, with some trouble apparently developing in the sector of the II ROK Corps.

DURING the night the enemy, who had devised several well-conceived traps in anticipation of our ill-fated attack, placed his huge forces in motion. Two entire armies (39th and 66th CCF) cut off Taechon and occupied it; strong guerrilla action and flank attacks in the II ROK Corps sector caused concern in that area. Ugly rumors from the east flank, rampant for some time past, apparently were beginning to take concrete form.

The next day the 24th took Chongju; the 1st ROK still waited for the gap between them and the 24th to be filled; the 25th and 2d edged forward; and the II ROK Corps became involved in a life and death struggle.

The next day, 26 November, the enemy struck. One Chinese division hit



Pakchon—12th Regiment (ROK) CP. Left to right: Colonel Kim, C.O. 12th Regiment (ROK), Colonel Hennig, Major John B. Coontz, group liaison officer with 1st ROK Division, General Paik Sun Yup (*bending over map*); unidentified members of regimental staff.

one regiment of the 24th and the 12th ROK Regiment and was repulsed; another division pounded the 11th ROK Regiment and forced it to the east some 8,000 yards. The 15th ROK Regiment, in reserve, was rushed to the scene and stopped the Chinese advance. On the right all units were beginning to feel heavy enemy pressure. In the II ROK Corps sector the situation went from bad to worse, with reports of large enemy

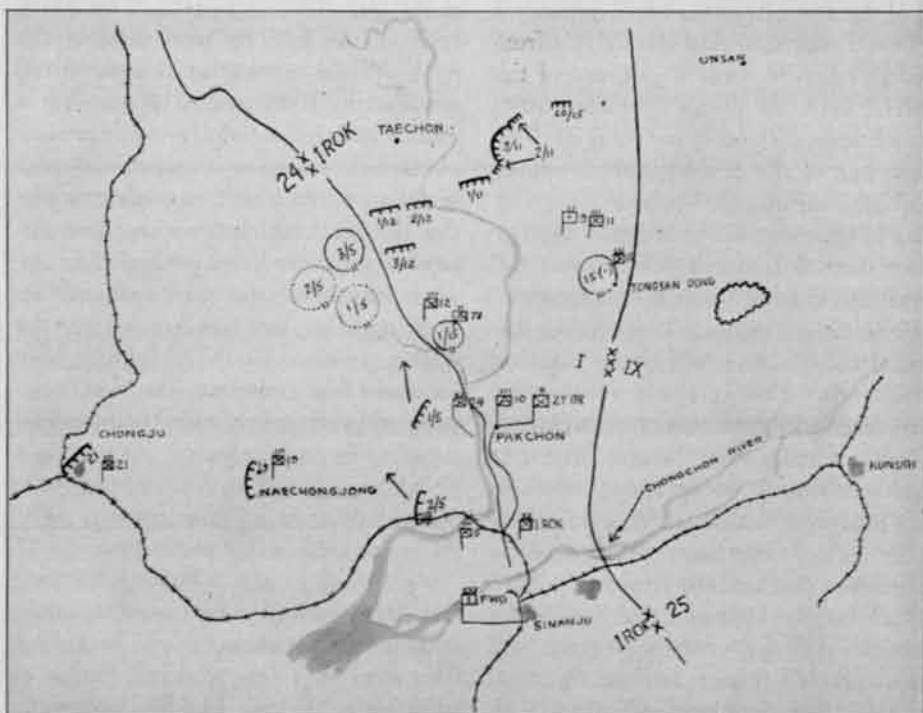


Fig. 1.

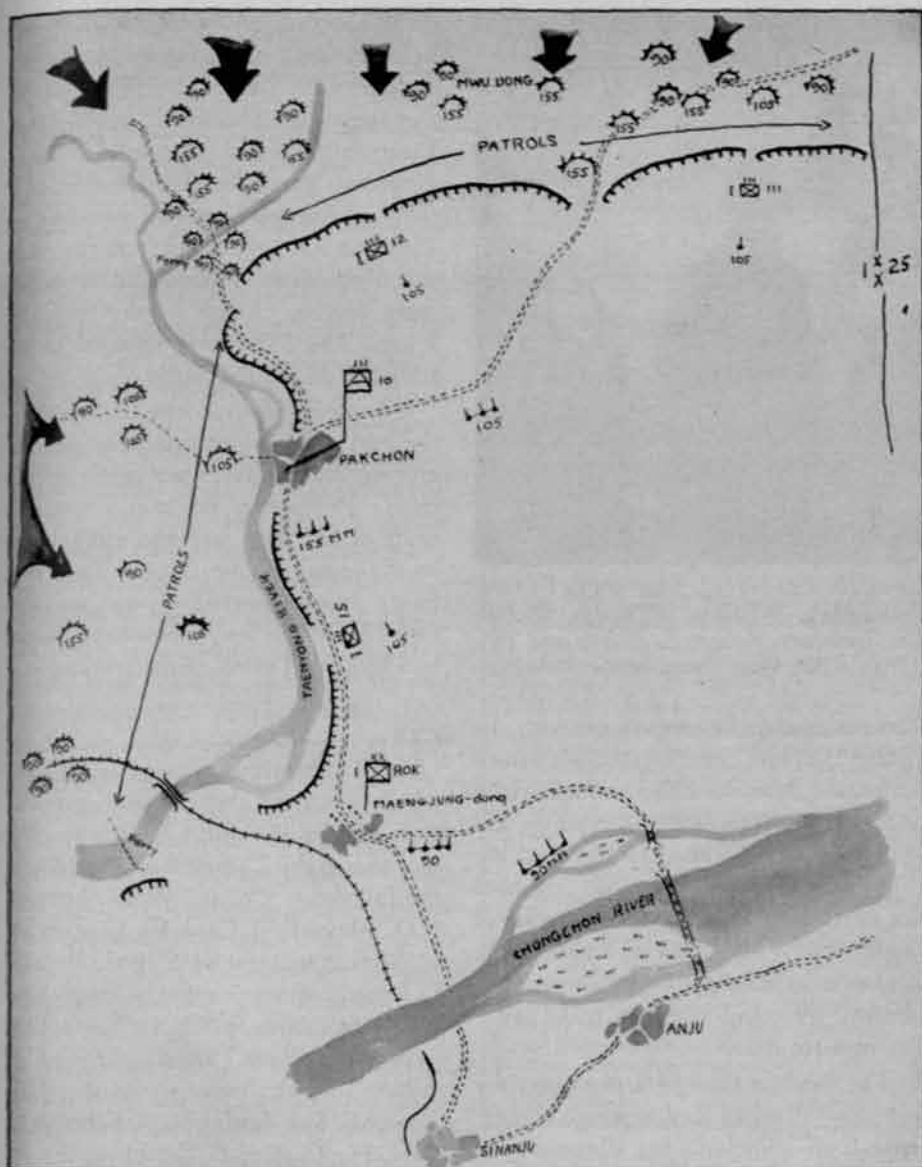


Fig. 2. Disposition of friendly troops as of 0900 hours 29 November 1950.

forces breaking through and proceeding south.

Fighting was almost continuous from this point on, with the situation becoming increasingly serious. On the night of 26-27 November, the 78th AAA Gun Battalion, commanded by Lt. Col. Thomas W. Ackert, was ordered to fire seven unusual missions in a desperate attempt to break the enemy's hold on Taechon. The battalion marked targets for our Air Force, using white phosphorus. Our night flying planes thereupon bombed and strafed the marked areas. Prior to this occasion, no close support missions of this type had been attempted by our Air Force during hours of darkness. Hundreds of enemy dead were reported by our patrols as the result of these missions.

About noon of the 28th, the Chinese hordes cracked our northern defenses

(11th and 15th ROK Regiments), overrunning both CP's, and started to regroup behind our friendly infantry. This called for some rapid decisions and movements on the part of our artillery. The 78th AAA Battalion was ordered to Pakchon from its exposed position to the northwest where it was supporting the 12th ROK Regiment; the 9th FA Battalion (155 Howitzer) was ordered to execute an end-run and take position just northeast of the same city; the two northern ROK batteries of the 17th Field (D/S) were ordered to the general vicinity of the 9th FA Battalion. A U.S. rocket battery on its way to Yongsan-Dong was ordered back to the vicinity of Pakchon, and group headquarters, less the FDC and a small command group, was ordered to Maengjung-Dong, the location of the division CP.

GENERAL Paik, CG of the 1st ROK Division, accomplished the impossible that day, with the help of the 10th AAA Group. With his two regiments cut off and decimated, minus their regimental commanders, he went forward personally and reorganized both regiments, bringing them back so the enemy was once again to their front, then counterattacking to re-establish our former line and recapturing Yongsan-Dong, enabling the 35th Regiment of the 25th Division (cut-off) to withdraw through the town. Four hundred Chinese dead were counted in Yongsan-Dong by our entering infantry elements, who attributed this heavy enemy loss to our artillery fires (mostly 90mm).

General Milburn, who visited our CP twice that day, had seen and heard enough to convince him that a withdrawal was in order. Apparently Eighth Army thought likewise. So the entire front was ordered back. The principal motivating factor was not the pressure on our front, however. It was the ominous and dangerous threat to the Army's flank and rear (to which the 2d Infantry Division fell heir a day or so later).

Troops were withdrawn until the line in the 1st ROK Division sector was roughly as indicated in Figure No. 2. As will be noted, the ROK's were to cover the withdrawal of the 24th through Pakchon.

Possibly in appreciation of the difficult task thrown on the 10th AAA Group, I Corps now made available another 105 Howitzer Battalion (555th) for reinforcing missions, and the 68th AAA Gun



105mm Howitzer of 17th FA (ROK) Battalion firing during withdrawal. While under operational control of the 10th AAA Group, they fired over 3,000 rounds in 48 hours.



Colonel W. H. Hennig awards Bronze Stars to (left to right): Sgt. James R. Graham, Cpl. Alfredo Solis, Pfc William T. Redden, William E. Webb, Melvin Vanover (behind Col. Hennig), J. C. Dwain Grammer, Robert R. Roark and Pvt. Gerald A. Pflaegar of A and C Batteries, 78th AAA Gun Battalion, at Pakchon.

Battalion, with a sound and flash battery thrown in for good measure.

That night, the group commander and his FDC moved to Maengjung-Dong, joining the remainder of group headquarters. This group was hungry and tired but the FDC was set up immediately (wire lines had already been laid) and control reestablished. The FDC of the 9th FA Battalion, commanded by Major Thomas A. Arnold, carried on for group during the displacement.

THE next day the enemy probed our new defense line to the north and the 24th successfully completed its withdrawal thru Pakchon. It now became our turn to withdraw across the river, with the 5th RCT giving us an assist at the bridges. Our problem was made interesting by the fact that, according to POW information, the entire 39th Chinese Army planned to attack the 1st ROK later that day and drive to the river. If this plan of the enemy's had been permitted to materialize, the withdrawal of the 1st ROK could easily have been converted into a disastrous rout. Patrols and friendly air reported that in the sector abandoned by the 24th, large groups of the enemy were already on the move south.

That night saw the most carefully planned concentrations and interdiction fires laid down by group during the entire campaign. Group liaison officers with the ROK regiments sent in requests for punishing defensive fires; Major John B.

Coontz, group liaison officer with 1st ROK Division, sent in requests which emanated from the CG and his KMAG Advisors; National Police visited the CP and gave us additional targets, and the FDC superimposed numerous targets of its own, so as to cover every avenue of approach. With plenty of ammunition, and more at Sinanju, on our line of withdrawal, we could afford to really lay it on, and we did.

The need for these fires, of course, was obvious: We had to discourage the enemy from launching his all-out attack; possibly we could make him believe we were about to launch an attack of our own. This was to be accomplished while our infantry withdrew, with nothing but patrols between us and the enemy. It was a rather dangerous game for group to be playing, but the 10th Group had proved itself to be a cool, calculating organization on previous occasions, particularly at Unsan, and thoroughly enjoyed this type of assignment.

The artillery fires began shortly after dark, coincident with the withdrawal of the infantry, and continued throughout the night. The problem now was to withdraw the artillery without reducing the range—which might indicate a withdrawal—and without materially reducing its volume. This was done by leapfrogging the units back, keeping enough 90mm in action to hit the farthest targets, at the same time increasing the volume of fire of units in position.

The 78th was the first to move, followed in order by the 17th FA (ROK)

Battalion, the 9th FA Battalion, group headquarters (rear), the rocket battery, and the 68th Battalion. The most distant targets were hit as late as 300400 by Lieutenant Colonel Raymond C. Cheal's 68th Battalion, when they left their positions to cross the river. By that time the 78th and 9th were firing from the south side of the river. Throughout the period there was no change in the tempo of firing. The 555th was released to the 5th RCT during the course of this action.

Of special interest was the effort on the part of the enemy to cross the Taenyong River in force just north of Pakchon. Repeatedly he would assemble units of battalion size and attempt the crossing, only to be thrown back with heavy losses inflicted by our artillery. Until 300400 at least, observers reported him to be still north of the crossing site.

THE command group and FDC which remained behind and gambled their lives on the ability of their artillery fires to stop the Chinese hordes, included the following: Colonel W. H. Hennig, C.O., Major R. B. Card, S3, Captain W. H. Morris, assistant S3, Captain Richard D. Speer, communications, Captain John C. Davis, assistant S2, 1st Lieutenant George J. Porter, radio officer, SFC Bobbie Strohl, message center, Cpl. George S. Van Arsdale, Cpl. Kenneth C. Case, Pfc Carlton L. Struble, radio operators; Sgt. James B. Rauh, radio repairman; Cpl. Lawrence L. Christy, Cpl. James H. Stinnett, Pfc Robert P. Ward, wire crewmen; Pfc Bradley L. McDonald, Pfc Donald V. Barnes, switchboard operators; Pfc Robert T. Kuntz, Pfc Francis L. Ricci, drivers; and Sgt. Andrew G. Oxley, Cpl. L. D. Lakey, Pfc Frank G. Walichnowski, Pfc Earl B. Eldridge, Pfc Richard D. Hockenbraugh, Pvt. Lucas M. Altoonian, Pfc George Tedder, Pfc Gino Biasi and Pvt. John R. Makee, local security guards.

When this weary aggregation finally left Maengjung-Dong at 300700, all artillery units had successfully crossed the Chongchon River and the last foot elements were marching down the road in orderly fashion. By 0900, before the outwitted enemy could gather his senses, the entire 1st ROK Infantry Division was across the river and headed for Sukchon and our new defense line. A difficult withdrawal had been accomplished.

DO IT NOW

By Colonel Robert W. Hain, Artillery

THE antiaircraft automatic weapons battalion with a division in combat is a busy unit. With the division it is constantly on the move in constantly changing situations. Most of the batteries will be out providing close support for the regimental combat teams, task forces, or other units most of the time. Sometimes they may be a hundred miles apart. New situations keep coming up. The crunch is on. The job will tax the ability and ingenuity of every officer in the battalion. You have no place for the mediocre and indifferent type.

Commanders in the ZI will do well to observe their officers and evaluate them carefully now. You don't have to shake the battalion to pieces right off the bat, but eventually you will need to make changes. Get it well in hand before you reach the port. My observation has been that people don't change much in the combat zone. If they are good there, they'll be good here; if doubtful there, they will probably be misfits here.

Get rid of the alcoholics and the unstable who get in hot water constantly with their personal problems. They will let you down at critical moments in combat. Get rid of those who fail to develop decision, vigor and push. Don't worry about their feelings. Paper work follows you in combat; if you keep the misfits, you will spend time on their affairs that you can't afford to spend.

Put your best officers on key staff jobs and in command of the batteries. In combat they are on their own most of the time. You know the importance of the executive, the S3, and the commanders. I wish to emphasize a few other jobs, too.

Colonel Robert W. Hain commands the 15th AAA AW Battalion (SP), 7th Division. His battalion has participated in a variety of operations in Korea, including the Inchon operations and another landing in the northeast, the advance to the Yalu, the Hungnam evacuation and the current struggle in central Korea.

Silver Star—KIA

WARRANT OFFICER JUNIOR GRADE ROSCOE M. CALCOTE, while a member of Battery D, 15th AA AW Bn. (SP), distinguished himself by gallantry in action against an armed enemy near the Chosin Reservoir in Korea on 28 November 1950. On this date, the command post of the 1st platoon, where Warrant Officer Calcote was located was taken under attack by a large enemy force which was firing mortars, automatic weapons, small arms and hand grenades. The enemy succeeded in closing in to extremely close quarters and began throwing hand grenades into the command post. Warrant Officer Calcote, with complete disregard for his own safety, heroically threw a number of the hand grenades back at the enemy. Eventually one of the grenades exploded in his hand before he could throw it, wounding him severely. Despite his serious wound, Warrant Officer Calcote continued firing his pistol at the enemy until he was killed by the fire of an enemy automatic weapon. His heroism saved many of his comrades from being wounded or killed. His display of gallantry on this occasion reflects great credit on himself and the military service. Entered the military service from the State of California.

First, the battalion S4. He will be one of your busiest captains and should be one of your most resourceful. You may shed property responsibility in one form when you enter the combat zone, but you acquire a much greater actual responsibility. Supplies and equipment are not to be had in this war the way they were in the last. In addition to thorough familiarity with all regulations and procedures, the S4 needs resourcefulness in contacts and in applying every legal stratagem to fill shortages. He also needs to keep an ear to the ground for the low-down on the actual supply situation in the units so that he can hasten to the rescue for bona fide needs, or beware of those who throw away or waste government property. He needs to know all there is to know about plans and projected operations. It will pay to put the task in capable hands.

THE battalion motor officer is another

important staff officer. He needs automotive experience and he will also need a lot of stamina to work days on end with little rest. A good maintenance section can keep worn vehicles running somehow. Parts will be in very short supply, but you will need to have all combat vehicles in service all the time. It isn't like the way the Air Force does it, with a certain number of aircraft in the shop at any one time for maintenance and overhaul. First echelon maintenance can help lighten the motor officer's job a great deal, but it will by no means eliminate it. Vehicles wear out under the heavy stresses of combat, some are damaged by enemy fire, and still others become casualties through accidents beyond the control of anyone. All these vehicles have to be put back into service in the shortest possible time.

The motor officer frequently has to extend his repair functions to third and fourth echelon in order to satisfy tactical requirements. He must be in the closest touch with Ordnance agencies and he has to keep the pressure on them constantly regarding his requisitions for parts, tracks and the like. The motor officer at times will find himself where the shells are bursting or the bullets flying in retrieving vehicles damaged by enemy action. At other times he will be out with his wrecker or his M32 on an icy mountain pass pulling a vehicle out of a chasm. He will use the wreck as a source for parts if he can't get it repaired. On long trips the motor officer will spend long hours without rest, shuttling back and forth bringing in broken-down vehicles. He will be the hardest working officer on your staff in combat.

Your liaison officer will represent you at division artillery. He should be thoroughly familiar with all aspects of the tactical employment of automatic weapons in the AAA role as well as in the support of infantry. He should also have a knowledge of the tactics and technique of infantry and field artillery. He

needs to know the exact status of your troops and your matériel at all times. To that end he will spend a lot of time on the road between the two headquarters, and he can't be fussy as to where he lays his weary head at times. Your battalion will be judged in part by the impression made by your liaison officer. Pick a man with the above attributes and be sure he is tactful and knows how to get along with senior officers.

If you have any choice in selecting any of your officers, you will find that it is fortunate to have some who have previously served in the infantry or field artillery. This is especially true when it comes to the lieutenants. They are the ones who will be in actual physical contact with the infantry. A knowledge and understanding of the employment of infantry is extremely helpful in furnishing close support for them.

Your adjutant will be a key staff officer in combat, too. You don't leave all the administration and paper work at the dock. Records, reports, histories all assume real significance in combat. Plan to

have an officer who can write take care of preparing recommendations for decorations. The higher headquarters don't just come around pinning medals on your heroes at your request. You have to do plenty of writing and legwork in securing these. Above all, don't be the lazy commander who stands around complaining about other units getting so many decorations, instead of getting busy and writing up the recommendations on your own officers and men. And that includes awards for meritorious service as well as for heroism. Groom one of your writers for this assignment. He'll be of great value to you at a time when you are busiest. He can keep up your battalion history, too. You have to put things down right after they happen because they happen fast and current events crowd past history from the memory.

In connection with the records, one thing my unit didn't do was to procure and bring with us a set of photographic supplies so that we could take and print pictures in the field. It will pay big divi-

Silver Star—MIA

SECOND LIEUTENANT FRANKLIN D. JOHNSON, while a member of Battery D, 15th AA AW Bn. (SP), distinguished himself by gallantry in action near the Chosin Reservoir in Korea on 28 November 1950. On this date, the command post of the first platoon of the battery was taken under heavy enemy attack, and the occupants of the command post were in grave danger of being killed or captured. The battery commander called for volunteers to go to the relief of the besieged command post. Although just previously wounded in the shoulder by enemy fire, Lieutenant Johnson unhesitatingly joined the patrol and proceeded at great personal risk to cross open ground under intense enemy automatic weapons, small-arms and mortar fire to carry out an attack against the enemy force. He courageously took a number of enemy under fire with his carbine and killed them. As a result of his courage the patrol was successful in destroying many of the enemy and forcing the remainder to flee, thereby saving the personnel still alive in the platoon command post. The actions of Lieutenant Johnson on this occasion reflect great credit on himself and the military service. Entered the military service from the State of Tennessee.

dends to have such equipment with you. Put it on your POM list.



ENROUTE TO THE YALU

By Captain George H. Worf, 15th AAA AW Battalion

EARLY in the morning of 19 November a task force of the 17th Infantry approached Mapyong-ni on its march to the Yalu. Two sections of Battery A, 15th AAA AW Battalion under Lieutenant Stephen Matejov were attached, each manning an M19 and an M16.

Here the road ran along the left bank of a river about 100 yards wide for a mile or so to a point where the stream curved to the left and the road crossed to the right on a bridge. The valley was narrow with steep hills on both sides.

On the narrow road two tanks led the column followed by one AAA section and a platoon of infantry, with the infantry dismounted and deployed along the flanks of the road. The second AAA section was in front of the main body.

As the column reached the bridge to

find it blown out the enemy opened fire from camouflaged positions to the right across the river. Entrenchments and pillboxes could be detected there about 400 yards away on the slope and extending in both directions parallel to the stream.

The tanks were not effectively firing because the enemy were dispersed in the trenches, but that situation was made to order for our automatic weapons. Two days earlier the crews had routed the North Koreans at Sogu-ri. The first section in the point returned fire on the pillboxes and raked the trenches with 40mm and machine gun fire while the second section moved forward to firing position.

The 40mm fire shattered the heavy logs over the trenches and cut lanes through the pillboxes. This and the machine gun tracers started fires in the de-

bris and logs. The enemy, unable to stand the heavy pounding, swarmed to the top of the hill leaving their trenches. Then, the quad-fifties literally mowed them down. After flushing the entrenchments directly opposite the fire was shifted to flush other parts of the line.

When the infantry reached the hills twelve shell shocked prisoners were captured and ninety were found dead. Several suffocated in the fires.

The ammunition expenditure amounted to 180 rounds of 40mm and 2400 rounds of caliber .50.

This one action has made the deepest impression upon the infantry. It did eliminate a tough battle for them across that river and probably saved many lives.

On the rest of the march to the Yalu the enemy offered little opposition.

WITH THE MARINES

By Captain Hal H. Rich

ON 2 December 1950, Battery A, 50th AAA AW Battalion (SP), was in ground defense positions around Hungnam as a part of the X Corps Security Force. That morning Lieutenant Colonel O'Malley, the battalion commander, ordered us to assemble at once, move to Koto-ri, and report to the commanding officer, 1st Regiment, 1st Marine Division.

The advance detail, under First Lieutenant Branch, departed Hungnam at 1315 hours and the battery serial left at 1530 hours.

The battery, delayed by other traffic, finally reached Majon-Dong that night and bivouacked with the 3rd Battalion, 7th Infantry, when it was learned that the enemy blocked the road ahead. There the battery sent out two M 16's under Lieutenant Anderson and Sergeant Marshall, to support an infantry company in protecting a bridge two miles north on the MSR. These crews were soon in action participating actively with the infantry, finally driving off the Chinese attack, but not until after the enemy succeeded in blowing a charge under the bridge.

On the following day the engineers constructed a ford across the river enabling the battery to cross at noon and proceed to Chinhung-ni. Meanwhile Lieutenant Branch reported that in his effort to advance to Koto-ri the Chinese forces had engaged the advance detail, disabled his M 16, killed two of his cannoneers, and forced his return to Chinhung-ni. At Chinhung-ni the battery was ordered to remain with the 1st Marine Battalion and was incorporated in the perimeter defense there.

On the morning of 6 December, three ammunition trucks and a jeep were ambushed by the Chinese at the Su-Dong power station, two miles below Chinhung-ni. The battalion commander promptly dispatched a Marine platoon and two M 16's under First Lieutenant Bickerdike to rescue that party and the ammunition.

Upon arrival at the Su-Dong power plant, all but one squad was deployed behind a heavy concrete wall along the

road by the power plant. The remaining squad occupied positions on a ridge 400 yards to the west, overlooking the town. A brief fire fight ensued between the infantry platoon and the Chinese Communist Forces, during which the ammunition trucks were able to withdraw from the ambush. When the principal enemy position was detected in the upper part of a large, three-gabled house in the center of town the Marine platoon commander called for M 16 fire on the house. Lieutenant Bickerdike moved one M 16 to a position in front of the power plant on the road and immediately opened up on the structure. This firing stopped all enemy fire from that quarter. The platoon then withdrew and returned to the 1st Battalion perimeter at 1300 hours.

AT approximately 1430 hours, a Marine engineer platoon at Su-Dong reported that they were under heavy attack by the Chinese Communist Forces and had two men seriously wounded. The same Marine infantry platoon was again ordered to Su-Dong and two more M 16's were sent by the 2nd Platoon, under the command of 1st Lt. Anderson. The Marine platoon, thus reinforced, proceeded to a point about 400 yards north of Su-Dong. Here the platoon began to draw heavy sniper fire. One squad deployed across the river bed on the high ground immediately overlooking the spot where the engineers were pinned down. Another squad took up positions behind the power station to provide security to the rear. The remainder of the platoon was held in reserve.

With the Marine platoon thus deployed, Lieutenant Anderson chose an exposed position on the road by the power plant for the M 16, which afforded an excellent field of fire covering all of the high ground from which the Engineers were receiving fire. The first M 16 was backed into the selected location while the second was held in reserve in rear of the power plant close by. The forward M 16 opened fire on the ridges and hillsides from which the enemy fire

was emanating. The terrific volume of fire laid down by the M 16 immediately neutralized the hostile fire. To enable the engineers to withdraw, it was necessary to sustain a volume of fire from the M 16's for approximately one and a half hours. As one M 16 expended its ammunition, the other M 16 moved into position and picked up the fire enabling the original M 16 to withdraw and reload. At one time during this action, the guns on the forward M 16 overheated and jammed. Due to the stoppage, the Chinese Communist Forces were immediately able to open fire on the forward M 16 from a building in front of, and slightly below the exposed vehicle, wounding the right cannoneer. The reserve M 16 went into action and neutralized the enemy fire, enabling the exposed M 16 to remove the wounded man and get their weapon back into action.

Due to an extreme range of 1,500 yards and the disposition of enemy troops, observation was very limited necessitating the majority of the M 16 fire to be directed at large area targets. However, on two occasions during the operation, the M 16's were able to concentrate their fire on specific enemy strongpoints, which were designated by tracer fire from the engineers. The ability of the M 16's to pin down the Chinese Communist Forces enabled the engineers to successfully withdraw all of their personnel and most of their equipment. The M 16's remained in position until the Marine infantry and engineer platoons had completed their withdrawal.

ON 8 December the 1st Marine Battalion moved north to take the high ground commanding the south side of the pass from Koto-ri to aid the withdrawal of the 1st Marine Division. Three sections of the 1st Platoon were attached each to a rifle company for the operation. The deployment was accomplished in a snowstorm. In the early evening the weather cleared and the temperature dropped to 23 degrees below zero during the night. With no battle action in progress, several crew members voluntarily

climbed the tortuous mountains to help evacuate wounded and frost-bitten casualties.

The 1st Marine Battalion artillery, Battery F, and the rear echelon remained at Chinhung-ni. The rest of the AAA battery also remained to provide ground defense. They drove off a light attack on the afternoon of 10 December. About 0330 on the 11th the Chinese opened up with automatic weapons on the artillery position from the high ground to the west. At the same time another Chinese

force made an assault on the south end of the artillery perimeter. Again the Marine artillery and the antiaircraft troops teamed up to repel the assault with the M 16's bearing the brunt of the action. Pfc Horst of this battery, manning a light machine gun, was also very effective in driving off the attack on the south end of the perimeter.

At dawn on 11 December the 1st Marine Division had cleared Chinhung-ni in its withdrawal from Koto-ri. Battery A continued to support the 1st Marine Bat-

talion, which now formed the rear guard in the march to Oro-ri. Enemy sniper fire and automatic weapon fire were encountered at Su-Dong and Yondae-bong. However, the 3rd Division troops were now patrolling the ridges on the flanks and engaging the Chinese Communist troops. Although several vehicles were hit, we had no action of particular interest, or casualties.

The next day we rejoined our battalion at Yong-po Airfield. It was a good show and one we will long remember.

TROPIC LIGHTNING AAA

By Captain Lowell H. Bielsmith

MY last report covered the advance of the 25th Division to positions north of the Chongchon River. Shortly thereafter in late November, we started the long retrograde movement when the Chinese Communist Forces struck in overpowering strength.

The withdrawals were made in a series of short movements, well planned and in good order. However, they continued without much break until early January, when we reached the area south of Suwon. Most of the time the elements of Battery A were attached to artillery battalions or to the division aviation. In the movements AAA self-propelled weapons were employed with the artillery that supported the rear guard action. We lost four mounts due to breakdowns when time and enemy action did not permit repair, but in general our losses were negligible. En route we participated in operations about Pyongyang, Kaesong, and Seoul.

In our division the situation was well in hand at all times; so we kept up our morale. However, those dreary, cold marches in the wrong direction were not just what you would call morale builders. By early January we stopped, tightened our belt, turned to the offensive, and the *esprit* bounced in the right direction.

Battery A, 25th AAA AW Battalion (SP), had been in combat action since 18 July 1950. As an organic part of the 25th Division the battery was awarded the Korean Presidential Unit Citation for outstanding and heroic performance of duty during the period August 1-11, 1950.

Meanwhile Major Charles E. Henry's



Sgt. Enos on guard.

21st AAA AW Battalion (SP) has arrived on the scene and gone right into action. We are very happy to become an organic part of Major Henry's battalion.

In the winter operations we have had some interesting service with the Turkish Armed Force Command. The first job was to assist in training their anti-aircraft troops in the employment of the self-propelled weapons. With one interpreter and a liberal use of the demonstration method of instruction, 1st Lieut. Alfonso J. Iaderosa, our men, and theirs made famous headway despite the language barrier. All of them soon became quite adept at exchanging ideas by basic grunts and gestures.

We have also had action with a task force with a strong tank complement. They don't expect the AAA weapons to knock out enemy tanks, but they like to have some up front because they are quick on the draw against banzai attacks or enemy resistance from caves, wooded areas, and ravines. We have also had further experience in giving the engineers ground protection at river crossings.

By now all of us have learned to travel light and to conserve ammunition. We have also learned the importance of aggressive attention to maintenance and repair.

The following members of Battery A have been decorated:

Silver Star (Posthumous)

Sergeant Thomas J. Julsey
Van Fleet, Mississippi

Bronze Star (OLC) (Meritorious Service)

Lieutenant William D. Corley
Lieutenant Charles Mugford

Bronze Star (Valor)

SFC Oliver W. Slaughter
Cpl. Bonnie C. Lewis, Jr.

Bronze Star (Meritorious Service)

Lieutenant Alfonso J. Iaderosa
M/Sgt. Lonnie E. Adkins
M/Sgt. Paul R. Houck
M/Sgt. George Shin
M/Sgt. Richard W. Smith
Captain Leonard W. Pederson
SFC John L. Jones
SFC Cecil H. Marcum
SFC Bridge F. Ragland
SFC Peter P. Quattrociochi
Sgt. Nobuto Oda
Cpl. John J. Chesser
Cpl. Leonard Edenfield, Jr.
Cpl. Peter S. Hanson
Cpl. Lewis L. Ingold
Cpl. Clyde J. Rice

Purple Hearts

Cpl. Emanuel Heinze
Cpl. John J. Church
PFC Rhett G. Kemmerlin
PFC Lawrence A. Kinnally
PFC Hugh L. Robertson

Commendation Ribbons

WOJG Stanley L. Kurtz
Cpl. Henry Ostrowski

The Trial Shot Problem

By 1st Lt. Merton R. Ives, U.S.M.C.

The author makes a critical study of trial fire and suggests a procedure to get better corrections for wind errors and true muzzle velocity effects.

IN our efforts to obtain initial firing data as nearly correct as possible, we fire the Trial Shot Problem. Let us list the factors that make a Trial Shot Problem necessary:

- (1) Orientation errors
- (2) Synchronization errors
- (3) MV estimate in error
- (4) Inherent errors in fire control equipment
- (5) Changes in meteorological conditions since last message
 - (a) Air density
 - (b) Air temperature
 - (c) Wind speed
 - (d) Wind azimuth
 - (e) Powder temperature(Ref. Special Text AA&GM-3 February 1949)

Now let us consider each of the above factors separately; keeping in mind its effect, the necessary corrections, and the effect these corrections will have at other points in the field of fire.

(1) *Orientation Errors.* These errors are caused by small errors in the sighting, or in the setting of dials. In azimuth they cause errors to the left or right and in elevation, errors above or below. If we apply a correction in one direction it will hold throughout the field either in azimuth, or in elevation.

(2) *Synchronization Errors.* These errors are caused by errors in the setting of dials and transmission or reception gains or losses. Their effect, necessary corrections, and effect of these corrections are the same as for orientation. Cor-

rections in the same amount and in the opposite sense eliminate the errors throughout the field of fire.

(3) *MV Estimate.* An error in the MV estimate will cause increases or decreases in horizontal range, slant range, altitude, observed elevation, and fuze settings. The presently used method of firing a Trial Shot Problem converts the overage or shortage of slant range to a MV correction. Consider that since the receipt of the last met message, the one we have set in the director, the wind has changed in direction and speed so that we now are firing into a greater head wind. The director has not received this information and as a result we are short in slant range. We correct for this error by decreasing the MV setting. This corrects the error at the Trial Shot Point. Now, having set in this decrease of MV, say we fire at a point that is 180 degrees away in azimuth. Here we have a tail wind and a resulting increase in slant range. Here our correction should be an increase setting in MV. By the TSP correction we have decreased the MV setting and the result for this second point is that we have doubled the error. Not only does this give bad initial firing data for points other than the Trial Shot Point, but it gives an inaccurate MV estimate for later analysis. If we could eliminate all errors that cause apparent errors in MV except the actual MV error we could apply a correction that would place our MV setting at the actual MV. Using the present TSP method we do not separate these other errors.

(4) *Inherent Errors In Fire Control Equipment.* These errors can be considered in the same light as the orientation and synchronization errors discussed above.

(5) *Changes in Meteorological Conditions Since Receipt Of Last Meteorological Message.*

(a) *Air Density.* Using the present method of firing the TSP we correct for this error by elevation and MV corrections. Inasmuch as the air density effects are very similar to muzzle velocity effects, these errors can be corrected satisfactorily for all points by the change of MV setting. For later analysis, however, this procedure will give a fictitious value for the muzzle velocity due to the error in the air density assumed.

(b) *Air Temperature.* The error is corrected for in the same manner as for error in air density. The same remarks apply.

(c) *Wind Speed and Wind Azimuth.* From the latest met message we set in a wind speed and azimuth. The changes in these two factors that we do not set into the director cause errors that are much different from the errors discussed before. In the coverage of muzzle velocity above, we saw that in using the present method we correct for increases in respect to head or tail wind by MV settings that are good for only the Trial Shot Point. We also correct for these errors by azimuth and elevation settings that at other points in the sky are incorrect. The actual corrections necessary to correct for all points in the sky would follow a sine curve. Example: an increase in head wind. For firing into the wind we have to correct to get a greater altitude and horizontal range. Firing with the wind we need a correction that would decrease the altitude and horizontal range. At a point 90 degrees from the wind no correction would be necessary for altitude or horizontal range. The corrections necessary for increases or decreases in a cross wind also follow a sine curve. Using the present method of Trial Shot Problem we are correcting only for the one point and making bad corrections elsewhere to a maximum of doubling the error in the opposite direction.

(d) *Powder Temperature* changes

First Lieutenant Merton R. Ives was commissioned from the University of Texas ROTC in 1946. Having served with the Marines at sea on shipboard AA and graduated in the Basic Course at Fort Bliss, he now serves in the 2d 90mm AAA Gun Battalion, Fleet Marine Force, Camp Lejeune, North Carolina.

cause changes in the MV; so, the correction in MV is proper.

GROUPING these factors we find that at the present time we are making corrections for orientation, synchronization, muzzle velocity, inherent errors of fire control equipment, air density, air temperature and powder temperature, that are reasonably accurate throughout the field of fire. The only major error that we have left pertains to the wind azimuth and speed. From the discussion on this factor we found that we are correcting for it in the sense and magnitude that is necessary for only the Trial Shot Point. At other points the corrections are too small or too large, to the extreme of doubling the error at points in azimuth 180 degrees away from the Trial Shot Point.

In a recent discussion with several officers at Fort Bliss on this subject, one officer made the statement that ninety per cent of the error in the average TSP was due to wind changes since the receipt of the last met message. This officer was proposing the idea that Trial Shot Problem corrections be set into the computer as corrections to parallax. This interesting suggestion raises problems which we shall not discuss here other than to say that it would lead us into unacceptable solutions for ballistic changes other than wind changes.

Would it not be a much better solution to separate the error due to the one factor, wind changes, from the error caused by the other factors and correct for them separately in a manner that would be correct for all points and not double any of the errors? To do this we would have to find the total error, and the part of the total error due to wind. Having this we could apply corrections in the presently used manner for the errors caused by factors other than wind, and correct for the error due to wind changes by a method that would compute accurate corrections for all points. And that method would be to make the correct setting of the actual wind speed and azimuth on the director.

Our problem now can be set forth in four steps. Number one being the separation of the errors due to changes in wind speed and azimuth from all other errors. Number two is setting corrections for the latter into the director in azimuth,

elevation, and MV as in the presently used method. Number three is to take the errors due to wind and determine the true wind speed and azimuth. Number four is to set this true wind data in the director.

The effects due to wind are opposite in sense for two points opposite in azimuth at the same altitude. If we fire a TSP in one direction and another at the same altitude and range but 180 degrees away in azimuth and average the observed errors, we will in effect let the two opposite wind errors cancel each other. We will strip out the wind error and the average observed errors will indicate the errors due to all other sources. The difference between the average and the results obtained for either of the TSP's will indicate the wind error.

PROCEDURE

REF: FT 90 AA-B-3

Let us assume that two trial shot problems are fired, one right after the other, at an altitude (H) of 5,000 yards and a horizontal range (R) of 8,000 yards; that the met message wind of 20 mph from azimuth 800 mils is set in the director; that the firing azimuths for the two problems and the deviations of the centers of burst are as indicated below:

	Firing Az.	Azimuth	Vertical	Range
CB-1	1600	R 5.9	A 1	Over 110 yds.
CB-2	4800	L 1.7	A 5	Over 25 yds.

Construct a trial shot chart for this TSP in the normal manner. Add the wind differential effect line W-W from

data in Part 2, Table IXa, FT 90 AA-B-3. (See Figure 1.)

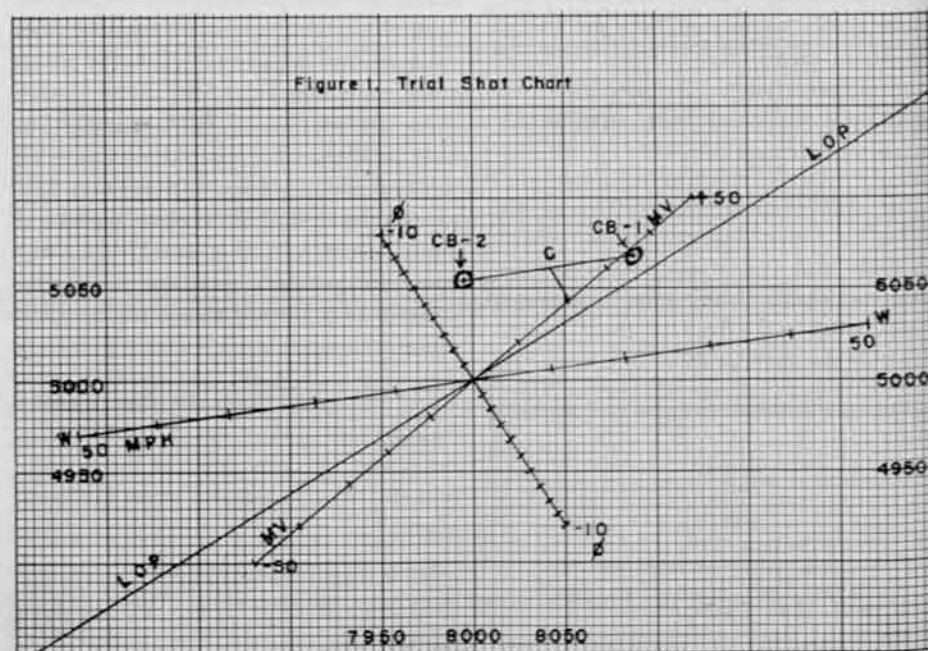
Plot on the chart the burst centers CB-1 and CB-2. Draw a line connecting the two and mark the midpoint C. This point indicates the average results obtained in range effects. It indicates the point where the CB for either of the two problems should have plotted if there had been no wind error. In theory the line from CB-1 to CB-2 should plot parallel to W-W. If there is a wide variance, check for errors.

Step No. 1. The location of point C with reference to the TSP indicates the errors due to sources other than wind errors. The location of C with reference to CB-1 indicates the wind error in the first problem; with reference to CB-2, the wind error in second problem.

Step No. 2. From point C determine the trial fire corrections in elevation and MV in the normal method and set in the director. In this case the elevation correction is minus 2 mils and the MV correction is plus 21 f.s. The azimuth correction is determined from the algebraic average of the azimuth corrections for the two problems. In this case it is left 2 mils.

Step No. 3. To get the magnitude of the range wind error in MPH scale the

distance from C to CB-1 and measure it on the wind differential effect line W-W. Or scale the full distance CB-1 to CB-2,



measure the wind value on line W-W and divide this value by two. In Figure 1 we get 11 MPH. Determine by inspection whether the wind error is a head or tail wind. Figure 1 indicates that the wind error for the first TSP was a *tail wind*, 11 MPH (from 4800).

To get the cross wind error in MPH take the algebraic difference in azimuth deviations for the two problems (7.6 mils) and divide by two to get 3.8 mils. Part 2 Table X, FT 90 AA-B-3 shows for the H and R of the TSP that a 10 MPH cross wind causes an azimuth deflection of 4.5 mils. By computation we find the cross wind error to be 9 MPH. By analysis we find the wind error for CB-1 from the LEFT (from 6400).

By vector analysis determine the true wind azimuth and speed. See Figure 2. Plot the wind applied in the director from the origin to point 2. Azimuth 800 mils, 20 MPH. Plot from point 2 to 3 the range wind error parallel to the line of fire. Tail wind 11 MPH (from azimuth 4800). Plot from point 3 to 4 the cross wind error perpendicular to the line of fire. 9 MPH from the left (from azimuth 6400). From the origin to point 4 measure the speed and direction of the true wind, making sure to record the azimuth from which the wind blows. Azimuth 90 mils, 23 MPH.

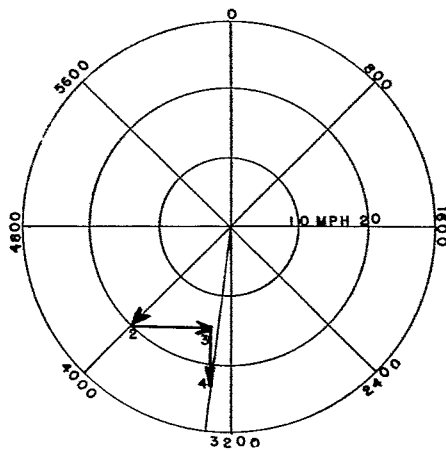


Figure 2.

Step No. 4. Set this value in the director.

We have now applied in the director corrections that should be good for all azimuths and ranges at the approximate altitude of the TSP.

DISCUSSION

I do not feel that this suggested procedure offers the ultimate that can be done to prepare the battery for opening fire with good initial data, but do feel that this solution is worthy of consideration and experimentation.

It offers particular value in situations where reliable, accurate, and timely wind

data is lacking. In such cases it is much safer to determine the wind error in this method than it is to assume that the enemy air attack will come from a certain direction. Actually one battery could fire the trial fire to determine the true wind speed and azimuth and all batteries in the immediate area use that wind data. All of the batteries would normally be using the same met message.

The requirement for trial fire at two points 180 degrees apart may make such test impracticable on most of our training ranges. However, it should be practicable on some of them, and if so, the results of tests under the outlined procedure should prove to be very interesting and valuable.

EDITOR'S COMMENT

We agree with the author in the need for accurate muzzle velocity determination in trial fire. Indeed, that is the main purpose of such fire, and it cannot be achieved in the normal procedure with inaccurate wind data. The proposed trial fire tests at two like points 180 degrees apart should give results of practical value and interest. As a standard solution we believe that timely and accurate meteorological data can be made available to the batteries for such fire. To that end we hope soon to publish a sound article on that subject.—ED.



Cullum's New Biographical Register of Officers and Graduates, U.S.M.A.

VOLUME IX (Supplement 1940-1950) of *Gen. Cullum's Biographical Register of the Officers and Graduates of the United States Military Academy* is now under preparation at West Point. It includes the records of all those graduated since 1940, and the Class of 1950. It continues the records of all other graduates. Since this ten-year period, 1941-1950, includes World War II and the war service of the thousands of graduates who served therein, it will be one of the most important editions yet undertaken. In scope and detail the Register has no counterpart as a publication. For many years its successive editions have served

as a standard reference in many agencies of Government, including the Departments of the Army and Air Force.

Since the best source of information about a graduate's record is the graduate himself, a comprehensive form to obtain this information was mailed last fall by the Superintendent, U.S.M.A. to every graduate whose address was then known at West Point. The response to this request of the Superintendent has been most gratifying. Many graduates all over the world have completed their forms and mailed them in. More than 7,000 individual records, including many from Korea, have already been received and

are being processed.

But in these times of sudden changes in the addresses of many officers, the Superintendent's request has probably failed to reach many graduates whose records are needed to complete the book. A note stating his present mailing address, from any graduate who has not yet received the Superintendent's request, to *The Editor, Cullum's Biographical Register, West Point, N. Y.*, will bring a form to him by return mail.

This edition of the Register must soon go to press. Prompt action by each graduate is essential to insure inclusion in the book of his complete record.



U.S. Army photo

THIRD ARMY AAA TC, CAMP STEWART, GEORGIA

By Colonel James H. Fish, Artillery

LAST August when several AAA groups and gun battalions of the National Guard were called into Federal Service for training at Camp Stewart, the camp was not quite ready to receive them. The bulk of the units were ordered to Camp Gordon under Brigadier General Charles C. Curtis, commanding the 51st AAA Brigade, for their cadre and filler

training activities. Meanwhile a great deal of rehabilitation was undertaken at Camp Stewart in the mess halls, headquarters and supply buildings, latrines and dayrooms, theaters, service clubs, post exchanges, chapels, and other facilities. Early in October when Camp Stewart was ready for occupancy, General Curtis moved the units by motor

march from Camp Gordon to Camp Stewart. There he assumed command of the post in addition to his duties as brigade commander. For three months, he conducted a strenuous program, training all components of the brigade. Many problems presented themselves during these first weeks of training. For instance, very few of the ranges were suitable for

training, and battle indoctrination courses just were not in existence. However, with Third Army and Engineer Corps cooperation, a program of construction was initiated and ranges were soon either operable or under construction. Service school quotas were established, brigade and group schools scheduled, training areas, gun parks and motor pools were organized. Gunnery instruction teams were sent from Fort Bliss, latest school doctrine in AAOC instruction was initiated, radio controlled drones (RCATS) were furnished and Camp Stewart, once again, became a busy training camp. The brigade was provided with ordnance maintenance support, and an Army band was ordered to active duty there.

Brigadier General Curtis has since moved with the 51st AAA Brigade Headquarters to the Fifth Army area. However, the development which he promoted at Camp Stewart continues.

On December 27th, Brigadier General



U.S. Army photo

Brig. Gen. Clare H. Armstrong, Commanding.

Clare Armstrong assumed command of Third Army Antiaircraft Training Center, Camp Stewart, Georgia. The staff is being organized with Colonel William Q. Jeffords as Chief of Staff and Deputy

Post Commander, Colonel Lloyd B. Corkan as G3, and Lieutenant Colonel Robert Jones as Assistant G3.

All AAA troops are housed in squad tents with cement floors. Winterizing is fast being accomplished. With the number of troops now in training at Stewart, housing capacity is at its limit and should an expansion program be promulgated, further work will be necessary. All ranges are now complete and are being utilized. Hunter Air Force Base at Savannah bases a tow target flight for tracking and towing missions. There is no holdup in firing due to commercial air routes or shipping; thus, from a firing angle, Camp Stewart is an antiaircraft artilleryman's paradise.

The Third Army Commander has been instrumental in aiding the growth and early operation of the camp. An Artillery Branch of G3 was activated at Third Army Headquarters last August, headed by Colonel James H. Fish, Artillery.



LATE BOOKS

THE RIDDLE OF MACARTHUR: JAPAN, KOREA AND THE FAR EAST. By John Gunther. 254 pp. Published by Harper & Brothers. \$2.75.

MacArthur, says Mr. Gunther, "has plenty of defects, and is fiercely hated as well as loved." He is disliked partly because, in a civilian country, he personifies the ideas of military caste and is guilty of "theatricality: what can only be called his hamminess." There is also one other reason which the author sums up this way: "One reason why so many people dislike MacArthur is simple enough—they are jealous of his superiorities which are, indeed, extreme. He was first in his class at West Point; his performance there was the most brilliant in many years, and in some details has never been surpassed. His over-all scholastic record for four years was 98.14 per cent, and in several courses he was the only cadet ever to enter the Academy who made perfect marks—a flat 100 per cent. He was the youngest division commander in France in World War I, the

youngest superintendent West Point ever had, the youngest active major general in the Army, the youngest Chief of Staff, and the youngest man ever to become a full general. He is the only soldier in American history whose father was also Chief of Staff, and the first full general to win the Congressional Medal of Honor—his father won it, too.

The General's work hours are roughly from eleven in the morning until nine at night, every day. As Mr. Gunther points out, this is not only hard on his staff, it is murderous.

As the subtitle indicates, this book is not entirely devoted to the subject of MacArthur. Nearly half of it deals with current conditions (current as of December, 1950 that is) in Japan, Korea, and the Far East. As Mr. Gunther sees the picture, the primary driving forces among the bulk of the people of Asia are desire for economic amelioration and national freedom. We'll lose the struggle against communism in Asia in the long run if we cannot do more for Asia than

the Russians do.—MAJ. GEN. BLAKELEY, *Armed Force*.

ARMY ALMANAC. 1014 pp. \$3.00.

Newly published by the Armed Forces Information School, the *Army Almanac* contains a wealth of facts and statistics not only on the Army but much material on the Navy, Air Force and Veterans Administration.

The book is a valuable collection of data primarily compiled for reference purposes. Military officials will find it a useful source of information on the National Defense Establishment and its associated agencies.

Part IV of the book is devoted to wars and campaigns with a full listing of battle credits to units participating in World War II.

Subordinate commands of the Regular Army and background material on the civilian components are covered in detail. Included under a miscellaneous heading are such topics as the Geneva Convention and extracts from the United Nations Charter.—R. W. O.

KNOW YOUR Fr



Lockheed's XF-94 is a modified version of the F-80 Shooting Star with a new electronic nose for night flying. In the 600 mph class, it is an all-weather fighter with a ceiling of over 40,000 feet.



With speed of over 650 mph and a ceiling of 45,000 feet, the North American F-95-A is designed to climb quickly to extreme altitudes on intercept missions.

endly AIRCRAFT



The XF-89, Northrop in the all-weather fighter family, has a speed and ceiling comparable to the XF-94. Its combat radius is over 600 miles.



Official Air Force Photos

North American's Twin Mustang has a rate of climb of more than 5,000 feet a minute. It carries up to fourteen caliber .50 machine guns or eight MG's plus a supply of HVAR rockets.

Psychiatry In The Korean War*

By Colonel Amos R. Koontz, M.C., Maryland N.G.

MAJOR General Edgar Erskine Hume, Chief Surgeon of the Far Eastern Command, has recently been quoted in the daily press as saying that psychiatric casualties might be expected to be heavy in the Korean war, due to the nature of the war. General Hume is certainly one of the outstanding medical soldiers and scholars of the world today and my admiration for him is unbounded. However, I think that his statement was unfortunate because it suggests the opportunity for a psychiatric release from the horrors of war. By its very nature every war in which men stand up and shoot at each other is apt to breed psychiatric casualties, and this is especially true when there is a possibility of a psychiatric evacuation from the scene of war. If there is no possibility of such an evacuation, the men are much more apt to stand up and shoot it out than to succumb to "battle fatigue" or "war neurosis."

A Colonel in the Medical Corps of our Regular Army told me the following story. During World War II he attended a meeting of the Allied Medical Association in London at which a whole afternoon was spent with papers on the psychiatric problems of the war. At the end of the series of papers, the chairman called for discussion. A stubby little British colonel of the R.A.M.C., with a stubby little mustache, got up and opened the discussion in an equally stubby fashion. He said: "For two years I was chief medical officer in Malta. We had no psychiatric problems. Everybody got equally bombed every day and there was no place to run away from the bombing. And every morning every man who was physically fit went to duty, whether he had had an unhappy childhood or not."

The Federal soldiers who ran all the way from the Battlefield of Bull Run

*Reprinted with permission from the December 1950 issue of *The Military Surgeon*.

into Washington in 1861 were undoubtedly psychiatric cases (scared to death) at the time of the running. However, they did not remain psychiatric cases and were not hospitalized with any of the modern psychiatric diagnoses. As soon as they had recovered their wind and their composure, they were ready to fight another day, and did so, and in most instances very well indeed.

Now why is it that we have been more pestered with "psychiatric" cases in recent years, and especially in World War II, than ever before? I venture to suggest that there are two reasons for this. First, the blight to our patriotism, caused by the insidious creeping socialistic philosophy which has pervaded our politics in recent years, has prepared the ground for any excuse for lack of performance of duty to our country. The doctrine has been that we owe nothing to our country, but, on the other hand, our country owes everything to us. Our country should furnish us every opportunity and make living exceedingly soft for us. This type of philosophy breeds soldiers who are ready to succumb to a "psychiatric" escape. Individual self-reliance and toughness have become archaic due to the promises and efforts of the modern political planners. If people are not taught to be tough in civil life, as they always had been prior to the last decade or two, how can they be expected to be tough in war?

ANOTHER thing which I believe has predisposed to the great number of "psychiatric" cases in wartime in recent years is the fact that too much emphasis has been laid on such conditions as psychoneurosis, neurasthenia, and minor psychiatric conditions in general in both the medical and lay press. This has set everyone to thinking about these conditions and has undoubtedly resulted in many *planned* and *rehearsed* attempts, on the part of men about to be inducted

into the service, to feign psychiatric conditions and thus escape service. The credulous attitude of the psychiatrists has made this very easy for them. The same credulous bent on the part of psychiatrists during World War II enabled many men to escape from combat zones who should have never been away from the front line.

The figures bear out the statements of the preceding paragraph. The incidence of psychiatric cases was over 100 per cent more in World War II than in World War I. I believe that the increased incidence in World War II over World War I was due to the reasons briefly stated above.

Our record of psychiatric cases in World War II has put the psychiatrist upon the defensive. And apparently quite rightly so in view of the questionable quality of the military psychiatry that was furnished. What is the explanation of this? Psychiatry itself is immature as a science. It is a complicated specialty and one of the highest importance. The recognition of that importance in war put upon the specialty a duty and responsibility it was not prepared to handle. The expansion of the service brought in men without the necessary background of knowledge of people and general medicine. Psychiatric training should be based on sound medical experience and years of contact with patients, as well as with normal people. If a prospective psychiatrist were required to have ten years of medicine before going into psychiatry, the roster of psychiatrists could not be weighted with men who do not think that there is such a thing as a normal person. On the contrary, we allow youngsters just out of medical school to start their psychiatric training at once without having had any experience in order to show them what the norm is. They have to establish their own norm, and that is as variable as it is fanciful. The result cannot be satisfactory.





ANZIO ANTICS

By Colonel Linscott A. Hall, USAF

SEVEN years ago in January a force of American and British soldiers went ashore near Anzio, Italy, to establish a beachhead and to threaten the German line anchored at Cassino. This force included the 3rd Division, 45th Division, British 1st Division, CCA, 1st Armored Division and the 35th AAA Brigade. It soon built up to a strength of over 100,000. Many stories have been written about the exploits of our troops there; however, few of them combined the terror and humor that everyone who was there experienced.

One of the first clues, that indicated this operation was going to be different, was the relative lack of organized resistance to our assault units. Several German officers were captured, enjoying

their vacation, while another was confronted by American rangers as he was strolling with his lady friend. However, the reaction of the German high command to this landing was speedy and intensive and, during the next one hundred and twenty days, many strange things occurred.

Anzio was a refreshing little community to most of the men who went ashore there in that last week of January. These combat veterans had been fighting for months, first in the dust and heat of Sicily and southern Italy and later in the cold, mud, and rain of that section just south of Cassino. Here the country was free of war damage; the little villages of Anzio and Nettuno were clean, white, fresh appearing, and the weather, instead of being cold and wet, was clear, crisp and sunny.

I went in commanding the 434th AA AW Bn (SP) attached to the 1st Armored Division. Our landing craft which carried Batteries A and D, was scheduled to disembark us early in the evening of the day the first troops had secured a foothold; however, a storm delayed us and the remainder of Combat Command A until midnight of the day following.

As we were moving toward shore our vessel struck a sandbar several hundred yards out from the beach. In spite of all the commander's efforts the craft stuck fast, so the decision was made to lighten the ship.

Beach charts indicated that the sea bottom was level and that it might be possible to wade ashore from our present position. Unfortunately my jeep was loaded last, which automatically placed it in the first position when the bow ramp was lowered. As guinea pigs my driver and I were prepared to swim if our jeep disappeared beneath the waves; so in that frame of mind we started down the ramp. As the hood of the jeep began to slide under the water, my driver, Corporal Fred Danay, and I jumped up and sat on the backs of the seats, and there we perched as the jeep slowly disappeared between the waves. Fortunately, it was not too deep and Fred had done a remarkable job of waterproofing; also before he jumped to the back of the seat he had put the jeep in gear and pulled out the throttle. The result was that the totally submerged little jeep slowly moved shoreward, chugging along on one cylinder, with the two of us apparently

Colonel Linscott A. Hall graduated from the US Military Academy and entered the CAC in 1937. He served on General Eisenhower's Staff in North Africa and commanded the 434th AAA AW Battalion (SP) attached to the 1st Armored Division in Italy.

After the war he served as an instructor at USMA, then transferred to the Air Force and now serves on the Air Staff in Washington.

sitting on top of the water urging the little car along with all our hopes.

The fact that we made it speaks highly not only for the jeep that continued to serve us so faithfully for many months, but also for the planners who picked such a fine level beach for our exit.

We had been ashore only a few hours when the German Air Force came overhead on the way to the little port of Anzio. I was inside our half-track CP at the time and was startled by the very sudden appearance of our Catholic Chaplain. This "padre" was a wonderful guy and was worshipped by all the men; if they could have seen the look on his face at this time, however, they certainly would have been as amazed as I. He was most serious and his voice a little hoarse as he said, "Colonel, you won't believe me, but I am telling the truth. I just saw one of those German airplanes give birth to a baby airplane that flew off toward the port with fire in its tail." Together we figured out that he had seen one of the new German radio controlled rocket bombs. On another occasion it was reported that one of these bombs was hit and damaged by our flak and when last seen was chasing the mother ship which was taking violent evasive action!

ONE of the first things we noted about the beachhead was its flatness. Those of us from the Cassino area had a great respect for hills, particularly when they provided adequate defilade for our vehicles, guns, and ourselves. Here on the beachhead we eagerly sought out the most insignificant knoll and there was intense competition for any topographical feature that might have been a hill in the geological past. In addition, the Germans, as usual, had already seized and secured all the hills to our immediate front and were looking right down our tonsils. Some parts of the beachhead were cut up with deep ravines, but unfortunately for us these hidden assets were in the British sector. The ravines, although providing defilade, proved something of a detriment as the enemy frequently sent raiding parties down these avenues of infiltration and could only be driven out by mortar, small arms fire and hand grenades.

The only immediate solution to the lack of defilade in our sector was to dig in—and dig in we did. Fortunately the soil was sandy; shovels and muscles were all

that were necessary. It was quite easy to estimate how long an outfit had been on the beachhead by the depth their vehicles were dug in. For instance the first two or three days the new arrivals had dug only shallow foxholes for themselves and nothing for the vehicles. A few days later the vehicles were dug in up to the tops of their tires and the foxholes had grown to two-man dugouts with cardboard or canvas roofs.

By the end of a week the vehicles were dug in up to the radiators and covered with camouflage nets, while the dugouts had expanded into underground homes complete with lights, log roofs, homemade radios and pin-ups. It was amazing to watch this progress and if one made periodic visits to the same unit you would get the impression that the topsoil covered quicksand into which vehicles, men, and equipment were gradually disappearing.

The reasons for this back to earth movement were several, but the dominant ones were enemy artillery and the small anti-personnel bombs dropped in clusters by the German Air Force. Once we had gained a secure foothold on the beachhead and were able to make effective use of our air OPs (Cub aircraft) most of the artillery came over at night when the little "Maytag dive bombers" had gone home to roost. It usually began about half an hour after dark with particularly heavy concentrations on our AA outfits just before an air raid. The stuff came in in all shapes and sizes, all night long, with only occasional mass concentrations on any one sector. One of the worst places to be at dawn or dusk was down in the dock area where the really big ones, Anzio Express, used to wham in with so much damage to buildings and nerves. I know that those of us who were well dug in near the front used to dread going "downtown."

THIS gradual process of digging in had some interesting results. During March and April we began an exchange of personnel between air and ground people. The purpose being to let everyone see how the other service operated. Almost without exception after the three or four day exchanges had been made, men from both sides were firmly convinced that the other service had it much the worse. We on the beachhead, however, were unable to convince our flying

visitors that they must dig adequate protection for themselves while they were our guests; eventually one Air Corps man was killed and another seriously wounded while sleeping in a too shallow trench with no overhead cover.

THE number of stories about artillery and bombs are as many as there were soldiers and nurses on the beachhead, since nearly everyone had at least one narrow escape. Two or three incidents will indicate the trend. One night in April we were attending a movie in a small shack near our CP in the 1st Armored Division area. This so-called building had been our movie theater since a group of Italians had been evacuated several weeks previously. Naturally the luxury of a movie was greatly appreciated and the "theater" was usually packed. This particular evening the movie had just begun when a small caliber artillery shell burst over the theater. The show was stopped and the operator asked if anyone would care to leave. A few decided that they had business elsewhere, but nearly everyone concluded that it was just another stray round and elected to remain, so the movie continued.

Less than five minutes later a single shell exploded just at the back of the shack. The noise was no greater than many other shells which had been striking in the vicinity for several days but the results were horrible. The blast practically demolished the closed building and huge slivers of wood flew in all directions. In all, nine men were killed and some 27 wounded. One of the jarred but otherwise uninjured men was probably the closest to the explosion yet men on both sides of him were killed instantly and were so badly mutilated that it took several hours to identify them. Obviously that ended our theatrical performances.

There are numerous incidents of shells or small bombs entering foxholes and dugouts and the men within living to laugh about their narrow escapes. One huge shell struck Captain Howard Blanchard's "denthouse" and though it did not explode, it literally tore the dugout to pieces. Captain Blanchard's assistant, W.O. Ellis, who was standing near the entry when the shell hit, was thrown some thirty feet and was in the hospital for two months just from shock. Blan-

chard, my supply officer, had retired and was completely buried among the logs, sandbags, dirt, all his forms, records and typewriter. It was only after considerable difficulty that he was eventually dragged out, unconscious but otherwise uninjured.

On another occasion a shell made a direct hit on my operation sergeant's dug-out and completely destroyed it. He was mourned for some time until we realized that he was on duty in the CP that night.

Perhaps the most spectacular events on the beachhead were the initial air attacks on our bivouacs. They were beautiful but terrifying as well. They formed a regular pattern in that first, the enemy would start increasing his artillery, then a pathfinder aircraft would come over and drop "window" to jam our radar and also white and green flares to mark the targets. Shortly afterwards the attacking enemy aircraft would enter the area and be greeted with a red umbrella of machine gun, 37, 40 and 90mm AA fire. This concentrated fire directed by Brigadier General Aaron Bradshaw's 35th AAA Brigade frequently drove them off, but when it didn't, the aircraft would zoom in firing greenish white 20mm tracers before them. Finally each airplane would drop a load of violent little anti-personnel bombs which burst like miniature volcanoes all over the countryside. Each plane had its own roar or whine and as it sped away, there usually came the too familiar cry of, "hey medic."

WE had a fine person for a chaplain. His best known trait was that he talked a great deal. One morning he was parked where most of us visited briefly, at least as briefly as possible, once a day, when a shell struck and exploded just in front of him. Fortunately no one received any major wounds but our good friend was silenced for a while at least. A small shell fragment had gone through his mouth making neat holes in both cheeks and his tongue, but missed doing serious damage because he was talking. Another time two of us were enjoying a late afternoon game of horseshoes. We had just gathered up our shoes for the return pitch when a shell made a ringer in the far pit. Needless to say the game was called because of interference.

I don't believe anyone appreciated the efforts of the Air Corps any more than

we did on the beachhead. Every clear day we were awakened by the roar of American and British fighters and what a wonderful sound it was. We used to take such a shellacking at night that whenever the Air Force put on a real effort, everyone came out of their holes and cheered them on. Two remarkable events will always stand out in my mind. The first concerns the crew of a B-17 who didn't make it and the second concerns the crew of a B-26 who did.

In February 1944 the Germans launched their big offensive to push us into the sea the precise day that we had decided to launch a major attack at them. Fortunately their attack came straight down the road where we were strongest and expected the attack, while our attack was a spearhead into their left flank. In laying on our attack we requested air support and it had just started when a mass of B-17's started in. In spite of the fighting in progress on the ground and the artillery coming in, everyone who was standing up and yelling like fifty for the bombers to give 'em hell, give a taste of the stuff we took last night, and so forth. Suddenly there was stunned silence and then a murmur of keen concern.

I looked up and saw one of the B-17s had been hit and was on fire. I could hear the man next to me murmuring like a prayer, "Get out, get out, you're on fire, get out you sonofagun, get out, hurry, get out, get out." Then there was a burst of flame, the wings tore off, the fuselage twisted and turned earthward; four or five little black balls fell away from the fuselage, but there were no parachutes. Again the stunned silence and then the dull roar as a wave of smaller bombers, B-26s this time, came over. Again one was hit fairly early in its approach to the target, but this time only silent prayer followed that brave crew as it went right on to the target, dropped its bombs, returned over the beachhead where the entire crew bailed out leaving the faithful bomber to go to its watery grave alone, still smoking.

ANOTHER time we had an uninvited guest in the form of a huge B-24. Today a B-24 doesn't seem large with the B-50s and B-36s, but that day it was awfully big. This plane had been heavily damaged and the crew bailed out

over the beachhead. The pilot then set the controls, certain that it would go out to sea. However, the plane loved that crew and decided that it wanted to visit the beachhead with them. At any rate the ship circled the beachhead about four times getting lower each time and finally made a perfect landing right in the middle of the beachhead. It skidded several hundred yards, just missed a house with about thirty soldiers in it, struck a slight ditch, stopped, exploded and burned, emitting huge pillars of smoke and flame and providing a Fourth of July fireworks display of exploding ammunition.

I HAD previously mentioned the gallant little air OPs which were so effective in providing us protection by their spotting of enemy artillery in the daytime. The Germans realized their effectiveness and put on a couple of campaigns to drive them from the air. Through such efforts and a couple of mishaps, we lost seven of them in a week's time. The Germans developed a technique of sending their fighters in on the deck where they could spot our cubs, come up underneath them and shoot them down before the liaison pilots ever saw them. We lost three of them this way before we developed a "flash boogie" system which alerted every air OP the moment anyone saw a German fighter; in that way the cub could get down lower or even land before the German fighter could reach him.

One of our little cubs had the unfortunate experience of being struck by one of our own artillery shells. The little airplane had just taken off and was on its way to the front and passed over and slightly ahead of one of our field artillery batteries just as it fired a salvo. One of the shells struck and exploded against the left wing at the fuselage. It knocked off the wing and the plane dropped to the ground. The pilot and observer lived only a few hours.

Another incident concerns quite a different category of war material—fresh eggs. Fresh eggs were a real rarity and only occasionally were we able to get some by trading such souvenirs as German helmets for them to ships crews that came in to the little port. This particular morning in early May, however, the cook placed two fresh fried legitimate eggs right in front of me as I sat down for

breakfast. I was a little startled and started to say something when I noticed the look of hatred on the face of the officer who had just sat down opposite me. He obviously was thinking "Who did that so and so bribe to get those eggs and why does he have to eat them right in front of me?" He continued to glare at me until the cook to his immense amazement set a plate of eggs in front of him. Since he was once more my friend, I called his attention to the same reaction of several other officers as they came in and we had a good laugh to ourselves.

Our laughter was suddenly interrupted by several shells which burst quite near by. Instead of diving under any convenient object, however, everyone grabbed his dish of eggs and ran for cover carefully holding on to the dish. My dugout was within a few yards and I was soon surrounded by several officers all frantically eating before anything happened to "them eggs."

There were many other remarkable incidents which made the Anzio Beachhead different. It was here that the first remote controlled miniature tank was

tried by the Germans; we also developed explosive "snakes" to clear mine fields, and then, here was that unusually clear day when the clouds vibrated and shimmered whenever a gun was fired or an airplane passed near them. These tales are now all memories to us—but may be actualities to those on other beachheads on the other side of the world. In the words of one unknown egoist, "This beachhead is the most important spot in the world because I'm on it." So it seemed to us then and I'm sure other individuals feel the same way now.



KOREA NEWS PHOTOS



Above: Cpl. Leonard Gutterage of B Battery, 82nd AAA AW Bn. guards against snipers from his well camouflaged M19.



The new sniperscope M2 rifle now in use in Korea, tested by Corporal Walter A. Dyson of the 25th Infantry Division.



U.N. troops in Korea learn the 40mm AA gun. The Philippines, England, New South Wales, Australia and South Korea, all are represented at the demonstration by U.S. personnel.

U.S. Army photos

Field Artillery Gunnery Training For AAA Units

By 1st Lt. William B. Campbell, Artillery

THE effective operations of the 10th AAA Group in Korea have emphasized the requirement for field artillery training in the heavy AAA gun battalions. While the subject is taught in the AA and GM School at Fort Bliss, there are still a number of antiaircraft officers who are not familiar with the simplified procedures now prescribed. Fortunately, the field artillery gunnery and the firing procedures have been simplified to the point that the essential rudiments can be learned by antiaircraft personnel in a reasonably short time.

Most of the gun battalions in training will need to conduct a school to provide basic training for all officers who have not had such training. They will also need to conduct enlisted schools to reach the S3 section and the battery range sections.

The battalion S3 is responsible for the operation and coordination of the fire direction center when in the ground support role. So, he is the logical person to organize and run the schools.

Text And Reference Material necessary for the instruction is now available in one book, Special Text 44-4-3, Field Artillery Gunnery For Heavy AAA, The Artillery School, AA and GM Branch, Fort Bliss, Texas. It is available at the School Book Shop, 60 cents per copy. The text is taken from FM 6-40, Field Artillery Gunnery, and modified for adaptation to AAA use.

Training Equipment required includes graphical firing tables, range deflection fans, target grids, firing charts, and other T/O & E equipment normally in the hands of the units.

RECOMMENDED COURSE

Courses for officers and for enlisted men are now being conducted in the 40th AAA Brigade Training Center. They are designed as basic courses for personnel without previous training in the subject. They cover the essential matter, leaving refinements and advanced training for later development in the batteries and in practical application. The courses are completed in one week of 35 instruction hours. They can be conducted as part time courses over a longer period with the same number of instruction hours.

The following schedule is used for the officer course, with all text references applying to ST 44-4-3:

Period Hours

Period	Hours	Subject
1	1	Introduction to Field Artillery Gunnery. Text: pars 4-7; 21-25.
2	1	Forward Observer Party. Organization; procedure; terms. Text: pars 26-47.
3	5	Conduct of Fire, Observer Procedure. One hour conference; 4 hours practical work on terrain board, or actual service practice. Text: pars 48-61.
4	1	Organization of Fire Direction Centers. Battalion and battery; duties. Text: pars 87-90.
5	1	Duties of S2 and S3. S3 fire order. Text: pars 71-78; 91-93.
6	2	Duties of S3, Precision Fire. Text: pars 98-102.
7	6	Duties of the Horizontal and Vertical Control Operator. Two hours conference; 4 hours practical

8	6	Duties of the Computer. Conference and practical work. Missions sent to students who perform all computer duties. Text: par 96.
9	9	Forward Observer and Fire Direction Teams in Operation. Practical exercises. Two five-man fire direction center teams are organized with remaining students as forward observers. Students are rotated. Text: pars 103-105, and review previous assignments.
10	2	Examination.
11	1	Critique of the examination and the course.
Total	35	

LESSON PLANS

In addition to the examination, the students can well be required to accomplish written work sheets in connection with periods 3, 6, 7, and 8. Short five minute quizzes can also be used well with the same periods.

[The Director of the Department of Gunnery, AA and GM Branch, TAS, Fort Bliss, Texas, has kindly offered to furnish to battalion commanders on request one copy of lesson plans for periods, 1, 3, 6, 7, and 8. Ed.]

The course for enlisted men is similar to that for officers with the same total required time. Period 3 is reduced by three hours with the practical work reduced to one hour of blackboard shooting. One hour is added to each of periods 7, 8, and 9.

1st Lt. William B. Campbell is an instructor in Field Artillery courses at the 40th AAA Brigade Training Center.

FIELD ARTILLERY TRAINING

The above school course provides an excellent preparatory step for battery and battalion training—no more. It should be followed by battery instruction and training, culminating in a battalion service practice.

Thereafter the training should be supplemented by periodic refresher training. Otherwise both the officers and the men

forget it, and teamwork disappears. The S3 section and the battery range sections require about eight hours per month in team practice and training to maintain efficiency.

For refresher training and advanced training, Field Manual 6-40 outlines on pages 443 to 453 excellent courses as follows:

Liaison and Forward Observer Personnel

Fire Direction Personnel (Individual)

Fire Direction Personnel (section)

Obviously, actual service practices should be repeated as often as practicable.



HIGH ANGLE FIRE

When the 90-mm AA Gun is employed in the surface role, the flat trajectory poses some limitations. In the first place it cannot be fired from defiladed positions except at extreme ranges and is sharply restricted in fire at defiladed targets; secondly, range dispersion at low angles is appreciable; and finally, the fragmentation effects against some targets may be less at a low angle than from a high angle of impact.

Accordingly, tests have been con-

ducted by the AA & GM Branch, TAS, to determine the practicability of firing the weapon at angles above 800 mils.

The tests were actually conducted at angles of elevation from 1,150 to 1,400 mils, using M71 HE Shell with M48 PD fuzes. The tests gave excellent results at elevations from 1,150 mils (18,700 yds) up to 1,350 mils (11,590 yds). In this range the average range deviation was 66 yards; the average lateral deviation, 19 yards. The ammunition func-

tioned properly in all respects.

At elevations above 1,350 mils too many of the projectiles tumbled, to give duds or low order detonations and excessive range deviations.

The School has recommended that the firing tables be amended to include firing data for elevations above 812.6 mils.

Major Kenneth H. Bayer and 1st Lieut. Ralph J. Swann were active in the conduct and analysis of the firings.

Notify the Journal of Your Address Change



AAOC 65th AAA Group, Colonel Sanford J. Goodman, commanding, in the Panama Canal Zone.

Electronics Career For The Soldier

By Captain Robert C. Mitchell, Artillery

ELECTRONICS offers a fascinating career for the soldier of today's Army. Not so long ago it was considered a rare skill, hard to obtain. The thought of electronics brought to mind masses of wires, tubes and gadgets.

Today this picture has changed, for so many devices in the Antiaircraft Artillery involve electronics, that almost all antiaircraft artillerymen need a lot of know-how in order to use the equipment. The army, especially the artillery, needs well trained men for this field; and that is why we have the Electronics Department of the Antiaircraft and Guided Missiles Branch of the Artillery School at Fort Bliss, Texas. The graduate of the Electronics Course is a well trained repair and maintenance technician with a sound background for an active and prosperous career ahead—in the army or out.

Our electronics soldier, as we shall call him, for he is a good soldier, too, has a definite key position to uphold in this modern army. Army Field Forces directs attention to schooling in the technical skills immediately after our prospective electronics soldier has finished basic and branch training. An education in electronics will qualify him for an important assignment in the army with responsibility and opportunity for advancement.

This article is written for the young

soldiers in our artillery batteries who are intelligent, ambitious and willing to work with their brain and hands to prepare for a career in electronics. Many of our former enlisted men of the Coast Artillery rose to high ranks during the last war, largely because of their knowledge and ability in the electronics field. The staff and faculty of the Electronics Department today bear this out, and it is further evidenced by the responsible positions held by these individuals on various test boards, experimental laboratories and research detachments assigned to various civilian electronic industries.

For the soldier who plans to return to civilian life there is before him the entire radio and television field, the electronics manufacturing field and the electrical accessory field. Large corporations involved in the manufacture of electronic devices and equipment for the army are in constant liaison with the using arms, and many of their leading men are ex-service men who were trained in the electronics field during the last war.

Today the army has the last word in up-to-date electronics development in its gun-laying and target acquisition radar. American electronic equipment is the best in the world. For military results obtained, the Antiaircraft Artillery has only to point to its record in World War II



U.S. Army Photo

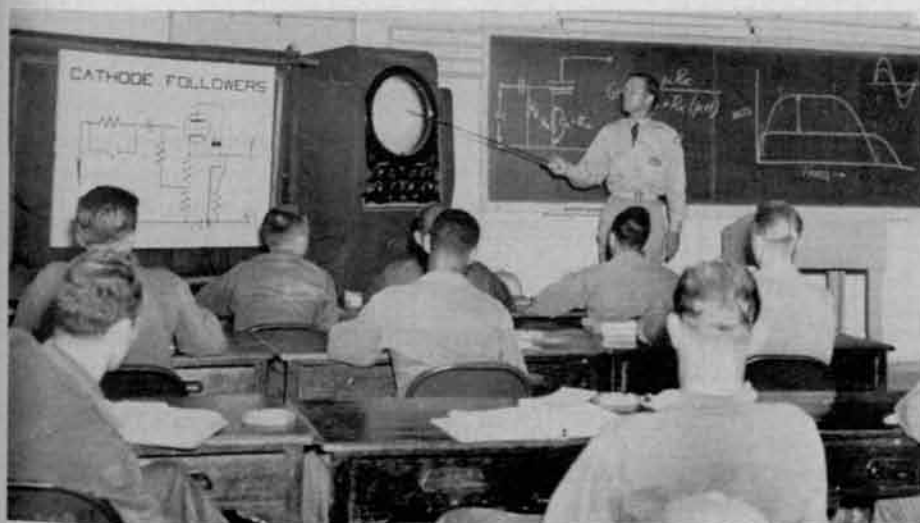
Checking operations of radar.

and the events now taking place in Korea.

The courses offered to you at the AA & GM Branch, TAS, in Electronics have three major channels of specialization. You may choose specialization in gun-laying and target acquisition radar, electronic integrated fire control systems, or in the guidance field of Guided Missiles Artillery. The instructors are equal to those of our finest colleges, particularly in the practical field, with a great many graduate and postgraduate electrical engineers. The staff of the school is further augmented by some of the best technicians and field men of the electronics manufacturing industry, who maintain contact with the latest technical improvements and developments.

Picture yourself as the chief radar repairman in a heavy antiaircraft gun battery. As the radar tracks the target, which is out of sight and out of sound range, it furnishes data to the guns which enable your comrades, the gun crew, to shoot down the enemy plane. A thrill of satisfaction runs through you, for you know that your commander and your comrades relied upon you to keep that radar right—and you did.

Your battery commander can advise you how to apply to attend the radar repair or fire control courses at the School. WD Pamphlet 20-21, August 1950, applies. If necessary, you can take USAFI courses to raise your educational level to qualify.



U.S. Army Photo

Class in basic electronics.

The Potentiometer Error Chart

By Captain Peter P. Genero, Arty.

IN early 1945 an instruction team from the AA School stayed at my gun battery for a week. This group taught many things which seem to have been forgotten since then. It was taught that every gun battery equipped with the M9 or M10 director and SCR584 should make potentiometer error charts. Basically, these charts graphically illustrate errors in the azimuth and elevation data pots of both the SCR584 and the tracking head.

To obtain the necessary information for the charts, the M9 and the SCR584 are properly oriented and synchronized. To obtain the tracking head data pot errors, the cloud switch is placed in track and the computer selector switch in the tracker test position. The computer servo dials should then read the exact elevation and azimuth shown on the tracking head dials.

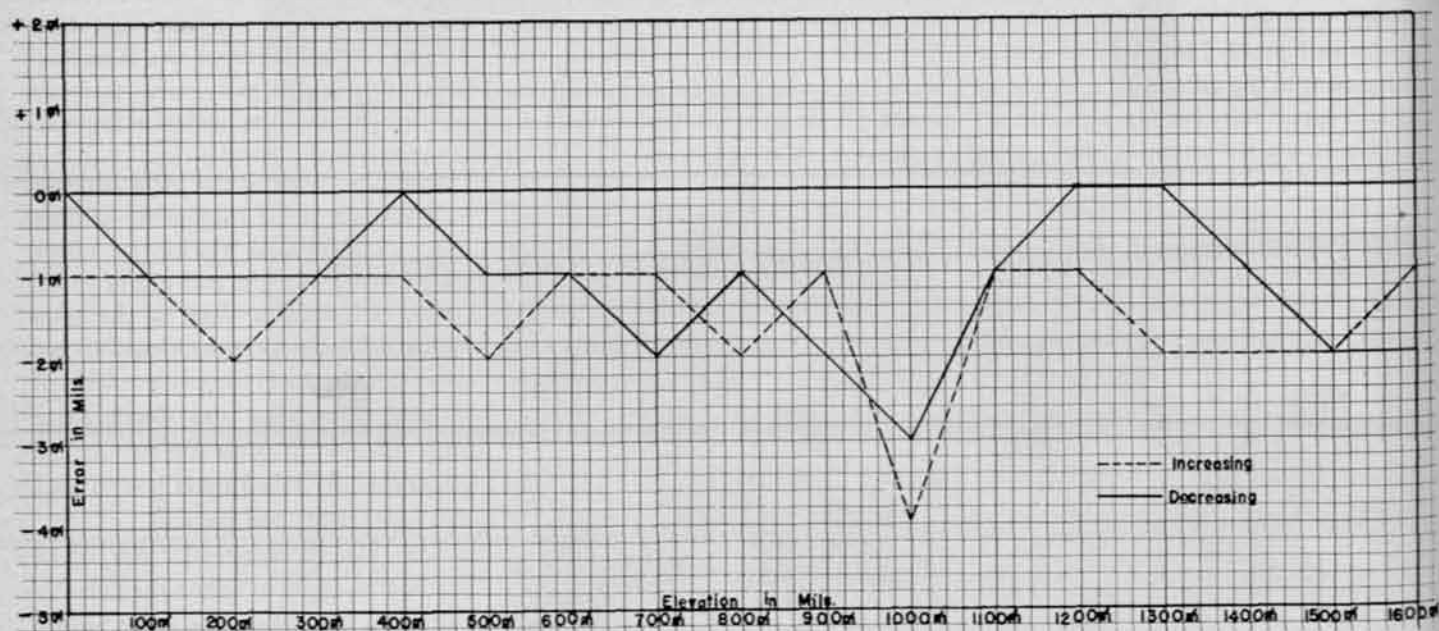
Traverse tracking head to zero azimuth. In setting the tracking head dials at zero, the mechanical pointer is moved up to the exact position and not beyond. If it is rotated too far, repeat the process. The deviation from true azimuth is read on the azimuth servo dial in the computer. This procedure is repeated every 100 mils to maximum. The tracking head is then traversed counterclockwise and in like manner the deviations recorded. Elevation data pot errors are similarly obtained. Care must be exercised so that when elevating, the elevation mechanical pointers do not go above the desired reading and conversely, when depressing, that the pointers

do not go below the desired reading at the tracking head.

The best method of obtaining the radar data pot errors, is to place the radar in remote and the cloud switch in the radar position. Since the radar and director have been oriented and synchronized, the exact position of the parabola may be read with the greatest accuracy by observing the electrical pointers at the tracking head. For ease in controlling the parabola, it is remotely positioned from the tracking head. The errors are read and recorded in the same manner as outlined in the preceding paragraph. It should be remembered that the electrical and mechanical pointers at the tracking head will not be matched due to the lag in remote operation, and that we are only concerned with the electrical pointer. A typical potentiometer chart is shown in the figure below.

The value of such a chart is obvious. It will aid in synchronizing the battery more accurately. Defective spots on pot cards can be readily detected. In a recent check the author found a -9-mil error in a segment of a potentiometer card that required a new data pot. The chart will explain why certain director test problems are not within tolerances when no other deficiencies can be found. It will aid range officers in determining spot corrections prior to firing for certain types of courses.

Anyone familiar with the material will find many more advantages to be gained from the potentiometer error charts.



Radar Elevation Potentiometer Error Chart.



France And The Western European Army

By Major John B. B. Trussell, Jr., Artillery

INTRODUCTION

NEXT to the Korean War, the North Atlantic Treaty powers' progress in forming an integrated army for Western European defense is probably of most compelling military significance. No national contingent in that army will have more crucial importance than the French. Upon France's ability to raise and train troop units, and upon the morale and will-to-fight of those units once formed, rests in large measure the North Atlantic Treaty Organization's chance of success.

The North Atlantic Treaty is essentially a defensive alliance: if one of its signatories is attacked within certain defined areas, the others are pledged to assist it by such action as they individually deem necessary. In the plans for implementing the treaty, a basic strategic decision was made—the United States would concentrate on naval and strategic air forces, Britain on naval and tactical air forces, and France on ground troops. No one nation is to specialize exclusively upon one type of force, but the general pattern is to be as indicated. The French contingent, to be ready by 1953, is to consist of twenty divisions. Even if West Germany is rearmed, there can be no West German army for many months to come, so it is clear that France not only is an important key to European defense,

but will continue to be so for a good while.

France's military importance makes it advisable to examine the French Army's ability to carry out its prescribed functions. Rather than try to assess over-all French military potential, however, this article will be limited to an attempt to answer two questions. (1) Have the French the manpower to provide their allotted share of divisions? (2) The geographical, political and economic conditions of France being what they are, what level of morale can be expected of those French divisions once formed?

MILITARY MANPOWER POTENTIAL

ANY examination of French manpower capacity is complicated by at least two factors. How much manpower can be diverted from industry into the Army without affecting the French economy adversely? And what effect does the drain of the costly war in Indo-China have on France's manpower potential?

Premier René Pleven has announced that, to meet her commitment to the North Atlantic Treaty Organization (NATO), France will have ten divisions ready before the end of 1951, five more next year, and the remaining five in 1953. Already in being, France has an army of about 504,000 men, but 150,000 of these are in Indo-China. She has three divisions with the occupation forces in West Germany and six divisions in France or North Africa. Announcement was recently made that two more divisions would be sent to Germany, presumably from among the six just mentioned. All told, the French have some 337,000 troops in Europe, though two-

thirds of these are conscripts doing their required military service.

These figures would indicate a division slice factor for the French Army in Europe of approximately 37,000. If we assume 40,000 as a maximum, France must provide a total force in Europe of 800,000 men, not counting the troops already committed in Indo-China or their replacements and reinforcements, to raise her quota of troops for the European Army.

France's traditional military personnel procurement system is peacetime conscription. In theory, when a physically qualified young Frenchman reaches age twenty he is called up for one year's service. Some exemptions are provided for workers in essential industries, and educational postponements are granted; but except for these and the physically handicapped, every Frenchman is supposed to perform his service. Some conscripts go to the Navy or Air Force, but as those services are highly professionalized the number of trainees they process is proportionally small. The bulk of each conscript "class" goes to the army.

AFTER his training the young Frenchman, though released from active duty, remains on call for three more years. In case of mobilization during that period he reports to a first-line unit. After this three-year term he is transferred to the "First Reserve" for sixteen years, which means that he is a member of a second-line unit, not intended for initial commitment on the outbreak of hostilities but for rapid mobilization and employment as a reserve. The next step, by which time our conscript is forty years old, is transfer to the "Second Reserve,"

Major John B. B. Trussell, Jr., served during World War II as the Flak Analysis Officer of the 67th Fighter Wing of the Eighth Air Force in the ETO. After the war he served as a member of the Okayama Military Government Team in Japan. He is presently studying at Columbia University.

which is a type of home guard, for maintenance of order, security guard, clerical and administrative duties, etc. Service of eight years here is followed by mustering out of the reserve altogether at age forty-nine.

It is true that this system's strength lies in the number of reservists provided. It is also true that while France mobilized 100 divisions in 1939, the reserve-training program was completely disrupted during World War II. However, through the years 1946-1950, some 864,000 men completed Army training—better than 50% of all men reaching age twenty during that period. On the basis of available population figures, corrected for average death rates for French males of pertinent age groups, it can be predicted that of the approximately 2,200,000 French boys between ages twelve and nineteen in 1945, considerably more than 2,100,000 will still be alive in 1953. Assuming that Army training continues at the rate of 50% of each "class," we can safely predict that by 1953 France will have a pool of at least 1,000,000 Army-trained men between ages twenty and twenty-eight alone. Obviously, therefore, twenty divisions are well within the country's manpower capabilities, for in addition to the 1,000,000 men mentioned, there are the men of older age groups, some of whom will provide the professional soldiers of the training cadres and of the forces in Indo-China, and the rest of whom fill the manpower needs of the civilian economy.

The case will not be altered even if it continues to be necessary to maintain the present commitments in Indo-China, as their size is relatively insignificant when compared with the total number of men who can be expected to be available. Under the leadership of General de Lattre de Tassigny, the French troops in Indo-China have lately been registering numerous successes against the Communist rebels. Increasing shipments of American equipment, improved morale as a result of victories, and ever larger forces of Indo-Chinese troops fighting on the French side should lessen any possible tendency of this war to develop into a serious manpower drain, although complete withdrawal of French troops will not be possible for several years. Even so, French manpower is sufficient to meet not only the current demands of the Indo-Chinese campaign but the anticipated requirements of the North At-

lantic Treaty Organization as well.

Of course, 800,000 reservists are a far different matter in terms of a national economy from 800,000 members of line units, and the NATO planners envision a force of twenty French divisions in being, not just a large number of trained reservists. Some changes in the conscription program, including retention of classes now undergoing training and recall of a number of recent conscript classes, are obviously unavoidable. Recall of reservists will be felt in the civilian labor market; nevertheless, without going into detail it may be stated that by absorption of the unemployed and of farmers released from the land by realization of agricultural mechanization plans, the required force can be maintained in Europe without seriously affecting the labor supply needed by the French economy.

WILL TO FIGHT

PREMIER Plevin recently said that "The best arms and matériel will be useless unless they are used by men who . . . have belief and confidence in their tasks." It is this crucial question of the state of mind of the men who will form the numerical backbone of the Western European Army which is the one we must try to answer. No attempt to assess French military capacity can ignore the collapse of 1940, qualified though it was by the FFI's splendid record. Moreover, there is in France a sizable body of communists and fellow-travelers. There is also a distinct current of pacifism which overlaps but is partially divergent from a feeling of antagonism to both East and West.

Regarding communism among French professional soldiers, some foreign newspapermen have suggested that as much as 3½% of all ranks are active Party members, and that still larger proportions (including 3 to 5% of the general officers) are fellow-travelers if not militant communists! Such accusations are so startling that their validity may well be doubted. But if we assume that they contain some truth, how could such a condition be explained?

One reason might be pay standards. For example, the monthly pay of a major general is \$244; of a lieutenant-colonel, \$157; and of a captain, \$123. A French private receives about two cents a day, and even with overseas and combat al-

lowances he draws only \$21 a month. Although French prices are lower than American, French Army pay still leaves much to be desired.

Another source of discontent in the French Army might be promotion, which some foreign observers say is affected by political considerations. A French general complained last year that ". . . Promotion in all the grades . . . is made at the pleasure of partisan influences." If true, these allegations and the low pay suggest reasons why French Army morale might be low.

Augmenting this is the fact that French troops in Indo-China are suffering significant casualties: annual losses of officers have been said to equal the National Military Academies' yearly output. A recent report puts average losses of officers at one per day. Of the war's 40,486 fatalities, over 10,000 have been Frenchmen (as distinct from native troops or Foreign Legionnaires)—on a population basis, the equivalent of 40,000 Americans!

Regarding communism among non-Regular troops, it is reasonable to assume that men called to the colors would represent a political cross-section of the nation as a whole. That is (according to public opinion polls), 25 to 30% of the conscripts would be Communists or fellow-travelers.

Opposed to this rather ominous looking situation is the apparent drop in communist influence. Primarily as a result of the Marshall Plan's success, the communists are losing ground: by their own admission, their membership fell from 1,000,000 after the Liberation to 700,000 in 1950. Despite violent communist opposition to Government efforts to curb sedition and sabotage and to insure rearmament, the defense bills presented to the Assembly for enactment have been approved. At this writing, the most recent example is the passage, by a vote of 333 to 181, of a defense appropriation for 1951 of 740 billion francs—a strong endorsement of Premier Plevin's rearmament policy. Though French officials anticipate that Communists may go underground to try to sabotage rearmament, the very necessity of such measures can be interpreted as a sign of communist weakness. The chief encouragement is to be found in the economic improvement, for communism will not flourish in a prosperous country.

As for communism among soldiers,

progress has been made in removing causes of discontent. Broad social security benefits have eased the economic lot of military personnel. Morale should also receive a boost from the increased administrative coordination to be expected now that supreme authority on military matters has been vested in General Pierre Alphonse Juin. Senior officers have expressed confidence that any communist sympathizers remaining in commissioned and noncommissioned ranks will be removed at the first sign of war, and that "the men will take care of" any communist privates. It is reasonable to suppose, too, that in case of actual conflict, most Frenchmen would put their loyalty to France ahead of their loyalty to a political party.

But the question of French will to fight is broader than conflicting ideologies. Because of a pacifism strengthened by historical experience, a traditionally defeatist mentality augmented by numerous fears, distrust of the other western powers' intentions and a feeling of being dragged helplessly to destruction, there is a current of opinion that the Atlantic Pact has placed France in a dangerously exposed position from which only strict neutrality between East and West can save her.

We must remember that French World War I losses were staggering. Some 1,500,000 Frenchmen were killed and 700,000 disabled. World War II took another 474,000 French lives, 95,000 of them civilian. The experience of 1914-18 did much to produce the attitude which contributed so largely to the 1940 debacle. However, as is obvious from their participation in the Resistance, many Frenchmen came to feel that loss of their liberties was worse even than war.

The French have long had the reputation, even in their own eyes, of defeatism. Years ago a French general wrote of ". . . our national character so impressionable, so ardent in exploiting a first success, so easily discouraged at the first defeat. . . ." While such generalization about national combat characteristics is dangerous, if it contains any truth it poses a particularly serious problem. Necessarily, any war between East and West would begin with hostilities by the Eastern bloc; the initiative would automatically be surrendered by the democracies, who would necessarily be placed on the defensive. Thus, Frenchmen would

be forced to fight in the psychological circumstances which are (traditionally, at least) uniquely disadvantageous to their temperament.

Nevertheless, it seems to be generally believed by Western military thinkers that, if war comes, most Frenchmen can be expected to defend their country against actual invasion. Only the communists might possibly welcome Russian troops. The French, notoriously legalistic, would resist an entry as an infraction of their sovereignty, if for no other reason. Initial French resistance to American landings in North Africa in 1942 points up this tendency. Of course, an army attacking from Eastern Europe would reach Western Germany first, thus gaining access to England and the sea. If France were by-passed she would certainly be assured that Russia had no designs on her, provided she maintained strict neutrality. This could be a very strong line for Russian propaganda to follow, and there are probably many Frenchmen willing to accept such a statement at face value; their voices would add to the clamor raised by the French Communists.

UNDENIABLY, there is in France a considerable body of articulate opposition to the Atlantic Pact. This is added to by fear and distrust. First of all, there is fear lest military commitments involve France in a quarrel which does not concern her. Frenchmen realize, too, that war between East and West, if France joined in, would probably make France again the battlefield. Moreover, however strong the defense on the Elbe or Rhine, France herself would still be vulnerable to atomic bombardment. Still another theme of opposition is that France has been allocated excessive responsibilities in view of the practical aid offered.

There is also considerable distrust of the intentions of France's partners, especially of the United States. There is fear that the United States would jettison France in case of war, not because of bad intentions but because of inability to bring adequate support to the Continent before Russian troops could overrun it. A variation on this theme is the idea that the French Army might be used as a rearguard, fighting while the other allies mustered their forces for a counterattack. Although France would ultimately be liberated, the French object (understand-

ably) to being occupied at all. Cyril Falls, a prominent British writer on military affairs, has pointed out that "American statements that a stand in Europe could be made only 'behind the Pyrenees' have contributed to this impression." Doubtless, one of the important reasons behind French anxiety for increased American garrisons on the Continent is that American planners might be less prone to sacrifice the forces on the spot, and American public opinion less likely to permit them to do so, if respectable numbers of our own men were involved.

There is, finally, the very important factor of French opposition to German rearmament. Three times since 1870 German armies have invaded France. The French feel that a revitalized Germany might constitute a threat second only to communist aggression. This fear is expertly played upon by French Communists, who hope to discredit the whole idea of the Western European Army.

Though described at length here, opposition to the Atlantic Pact is felt only by a minority of Frenchmen. Many leading French commentators have pointed out that Russia has demonstrated that trust placed in her promises to respect neutrality is folly. Besides, Frenchmen realize that their country's industrial capacity would be essential to a Russian war effort in a prolonged conflict; even if France attempted to stay neutral, Russia would try to get control of French industry.

Finally, thinking Frenchmen realize that the internal communist threat cannot be halted merely by a military divorce from the United States; it will continue so long as economic conditions permit communism to gain adherents. This point is the crux of the matter. The French economy's remarkable postwar recovery has had marked effects upon communist strength. The waning of communism in France represents an increase in the number of Frenchmen desiring continuation of the present economic and social system. It is reasonable to assume, therefore, that they will want increased security for the Western Democracies, and that they will accept their responsibility for furnishing an appropriate share of the forces to guarantee that security—provided they do not believe that the cause of the West is doomed to start with, and provided also that they feel themselves able to carry out the missions which considerations of

geography and population assign them. Conviction of Western power in general and of American good faith in particular should be strengthened, and confidence in French military capacity will be strengthened, by the increasing flow of American matériel and troops to Europe. As French divisions come into being, the French people's confidence in their own ability to discharge their responsibilities should certainly be reinforced.

CONCLUSIONS

FROM the considerations presented, several conclusions seem justified. First, it is apparent that France is fully capable of supplying her manpower contingent.

Second, while there is said to be some communism in the standing Army, its causes have been or are being removed and any communist sympathy remaining could probably be controlled if war broke out; communism in the country as a whole is already on the downgrade, and in time its influence should be considerably reduced. Third, most of the opposition to the Pact is based on fear that war in Europe inevitably means devastation of France, and on skepticism of the United States' ability to carry out its commitments, if not on distrust of American good faith; but the fulfillment of plans for American assistance, with the consequent increase in the actual military capability of the North Atlantic

Army for defending Western Europe, should allay both the fear and the skepticism. Fourth, indifference to the outcome of a war between East and West is being largely eliminated by economic recovery, which increasingly identifies the interests of the individual Frenchman with those of the other Western Democracies.

In short, it may be said with considerable assurance that, as economic recovery and defense preparations progress, Frenchmen will have the incentive, the numbers and the confidence, from which will come an ever firmer determination, to fight steadfastly against totalitarian aggression in case war breaks out again.

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RECOMMENDED BOOKS

THE HARD WAY HOME. By Col. William C. Braly (Ret.). An Antiaircraft Association book. . . . special. . . \$1.98	THE SOLDIER'S LOAD AND THE MOBILITY OF A NATION. By Col. S. L. A. Marshall \$1.00	CHIEF OF STAFF: PREPARATIONS AND WAR PLANS. By Mark S. Watson. Official History, Department of the Army \$3.75
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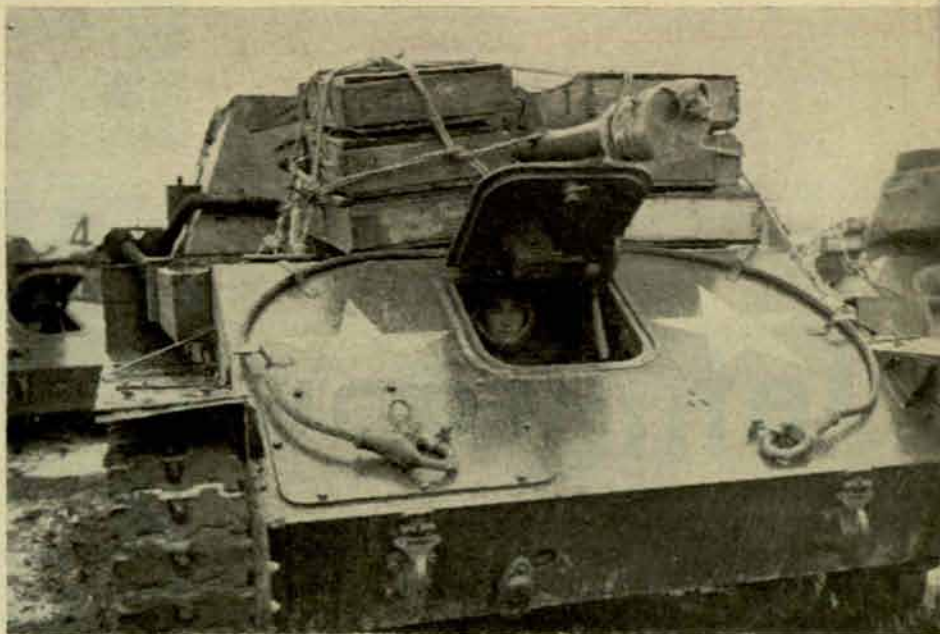
ANTIAIRCRAFT JOURNAL

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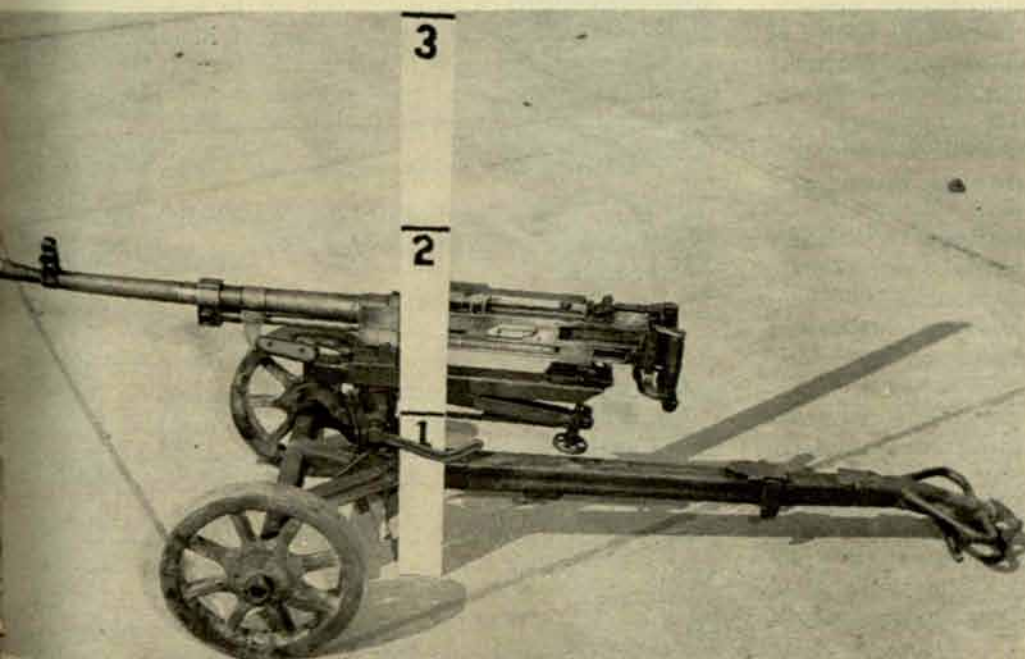
A Russian-made self-propelled vehicle, now in use by the ROK Army, was evacuated by LST from the Hungnam beaches.



Enemy 85mm gun captured near Pyongyang.



37mm antiaircraft gun captured by U.N. Forces in the Pyongyang area.



Shown to scale, an L. S. Goryunov machine gun, M1944 in use in Korea.



Jet Propulsion... Man's

Rocket guns and jet propelled vehicles are no longer only the imaginative properties of comic strip artists or Sunday supplement writers. Man's newest heat engine promises to revolutionize his future in terms of methods of travel, international economy, and world relationships. Necessarily and understandably closely guarded for security reasons, the actual methods of application of jet propulsion and of electronic controls to plane and missile are of top importance.

FOREWORD

IN view of the growing interest in guided missiles the following three articles are reproduced. They serve as a review for many of the principles associated with guided missiles. They originally were presented in the May 1950 issue of *Oil-Power*, published by Socony-Vacuum Oil Company, Inc.

Hats off to H. G. Wells and Jules Verne! As juvenile readers, most of us thrilled to their seemingly fantastic imaginings about journeys to the center of the earth and to the moon. Earlier critics undoubtedly credited these literary creations to at least a partially, if not wholly, distorted sense of the possible.

Yet today, the "dream" vehicles of those astounding tales of a generation or two ago have either become facts or are engineeringly feasible.

Actually, without intended disparagement, those writers were pikers! Compare their adventure tales with vehicles capable of transit from the U. S. to Australia in 79 minutes! Vehicles that can carry pay loads at the supersonic speed of 6,000 miles per hour! Vehicles already reaching altitudes of over 200 miles!

These things are not impossible. Recently, a rocket was clocked at 5,000 miles per hour, a speed that would carry to the moon in little more than two days elapsed time. The German V-2, during the latter part of the war, reached a height of 65 miles at the top of its trajectory, with sufficient power to carry it 200 miles in horizontal flight! While facts and figures concerning our own military developments are rightfully held in high secrecy, it is safe to assume that the V-2 is now obsolete.

Jet propulsion is not a single science. Rather, its development and subsequent use is a *dependent* science. The factual existence of jet propulsion has only been made possible by the metallurgist's development of high-heat-resistant metals; by the chemist's knowledge of fuels and oxidizers; by the aeronautical engineer and his progress in aerodynamics; by the electro-physicist's amazing contribution of radar control. These, and many other explorers of the world of physics are prying open the many doors to the unknowns of jet propulsion.

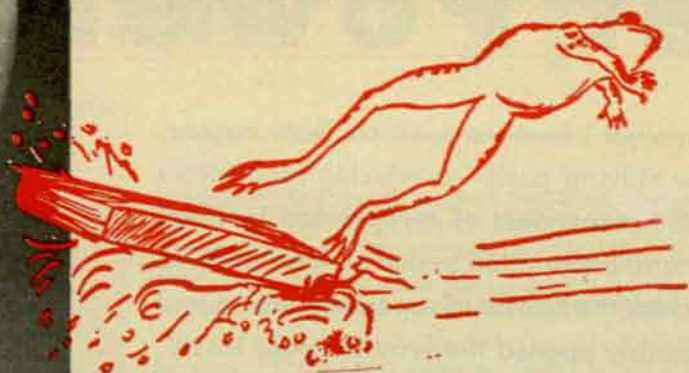
Jet propulsion deals with the seemingly fantastic. For example, a single German-launched V-2 developed the equivalent of 500,000 H.P.: converted enough chemical energy into heat each second to boil all the water used during that second by the whole island of Manhattan: created temperatures inside its motor of between 5,000° F. and 6,000° F.: produced a jet velocity seven times that of sound! And today, figures and rocket are obsolete!

THEORY OF JET PROPULSION

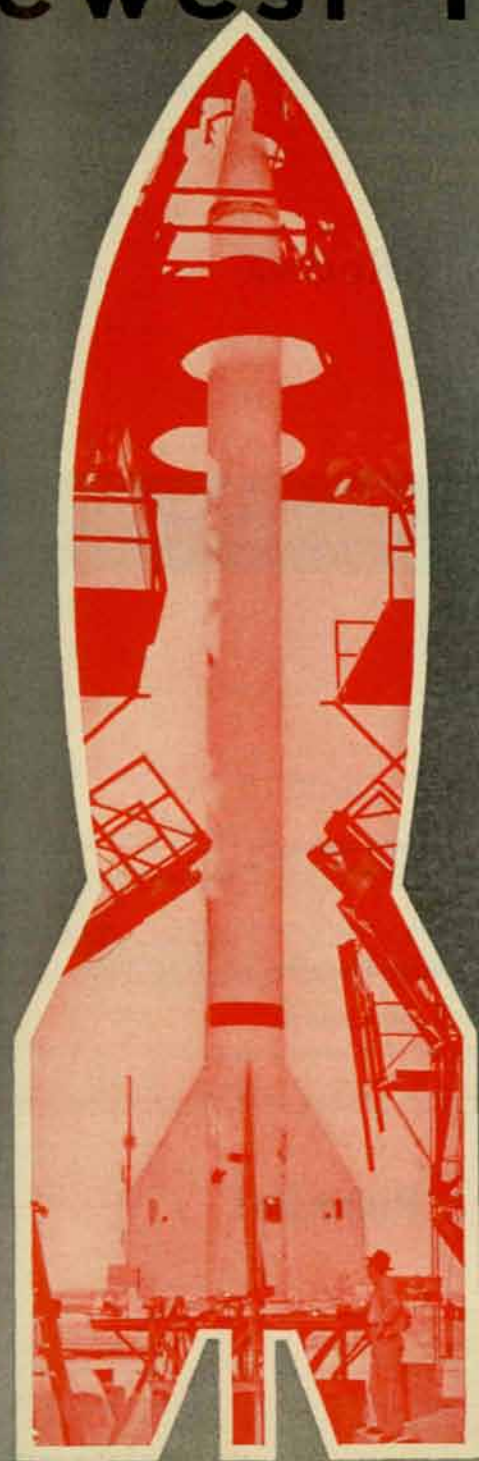
Jet propulsion is based upon Newton's Third Law of Motion—"Every action is accompanied by an equal but opposite reaction."

A simple and familiar example is that of a toy rubber balloon filled with air. If we let go of the balloon, the air under pressure, escaping from the filling tube, pushes the balloon around the room until the air is exhausted.

Another example of such "action and reaction" is shown by the frog floating on a piece of wood. The frog weighs one ounce and so does the piece of wood. The frog sees a fly a short distance away and jumps violently off the shingle. The frog, of course, gets the fly and the piece of wood gets elsewhere—in the opposite direction. Assuming in this case that the resistance of the water did not exist, the wood gets as far as the frog. If the frog, in pushing himself off, acquired enough speed to sail through the air



Newest Heat Engine!



a distance of four feet, the wood also was pushed four feet in the opposite direction, *both* (because of their equal weight) *moving with equal speed*.

Applied to jet propulsion, the engine and its vehicle are the piece of wood and its exhaust gases are the frog. The gases, in "jumping" away from the engine, "kick" it back (or ahead) moving the jet-powered vehicle a certain distance at a certain speed. It is important to note that the *amount* of "kick" is the same, in air or in a vacuum.

Note that the piece of wood actually does not travel as far as the frog because part of its reactive power from the frog is used to overcome the resistance offered by the water in which it floats, and by the air surrounding it.

OXYGEN IS ESSENTIAL

It will be appreciated that efficiencies of jet-propelled vehicles increase at higher altitudes, where thinner atmosphere offers less resistance. Hence, altitude of flight becomes important in two ways: First, the higher the altitude the less resistance; second, the less oxygen is available with which to burn the propellant fuel.

Here we must consider two classes of jet-propulsion engines: those that depend upon air to supply the oxygen with which to burn their propellant fuel, and those that are independent of an outside supply of oxygen.

The rocket is of the latter class, since it carries its fuel as well as its own oxidizing media with which to burn its fuel, regardless of degree of atmospheric density. It is the self-sufficient rocket that offers the possible answer to space and inter-planetary travel, since it can take full advantage of operation in vacuum, where resistance to motion becomes negligible.

The air-dependent jet-propulsion motors are of three general types—pulse jet, the ram jet, and the turbo jet.

MARTIN VIKING HIGH ALTITUDE RESEARCH ROCKET: Powered by alcohol and liquid oxygen, rockets like this 45 foot, 10,000 pound monster are reaching 200 miles in the air, at more than 5,000 m.p.h., carrying 1,400 pounds.

Jet Power Plants . .

The jet power plant—a reaction heat engine, with few moving parts—producing high forces of thrust, independent of complicated ignition, exhaust and carburetion systems—has enabled man to crack the barrier of supersonic speed and quite possibly opened the way to space travel.

Rocket

The rocket is the only form of jet propulsion that does not require gaseous air. Its propellant is either a solid, as powder in a "skyrocket," or a liquid such as gasoline,* kerosene, acetylene, alcohol or liquid hydrogen.

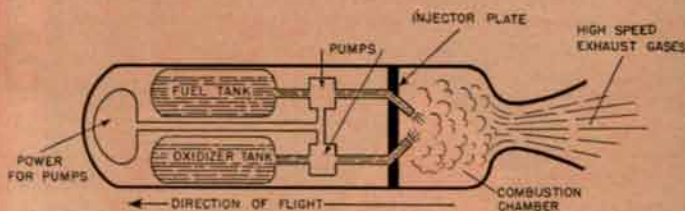
The liquid propellant rocket carries three tanks—one for fuel, one for the oxidizing medium (usually liquid oxygen) which enables the fuel to burn. The fuel and the oxidizer are fed into the combustion chamber by small turbo-pumps driven by the release of hydrogen peroxide in the form of steam, from a third tank.

Ignited in the combustion chamber, the propellants react to form the hot gases that are ejected at high velocity through the exhaust, and imparting a thrust to the system.

Such a liquid rocket engine is continuous in operation as long as the propellant supply lasts, burning about 1.5 pounds of fuel per hour per pound of thrust developed. The thrust is independent of velocity, and relative efficiencies improve with altitude.

In its present development the rocket is capable of speeds in excess of 5,000 m.p.h. for short duration.

*High octane fuel is of no advantage since the heat content of all gasoline is about the same.

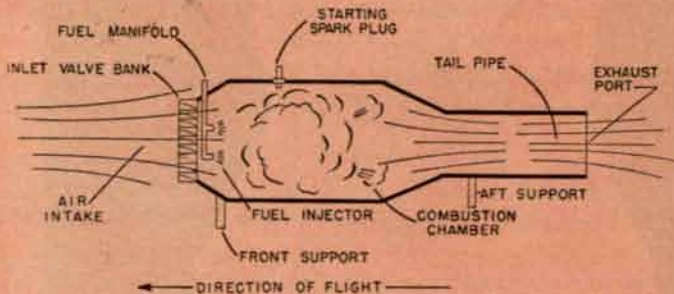


Rocket

Pulse Jet

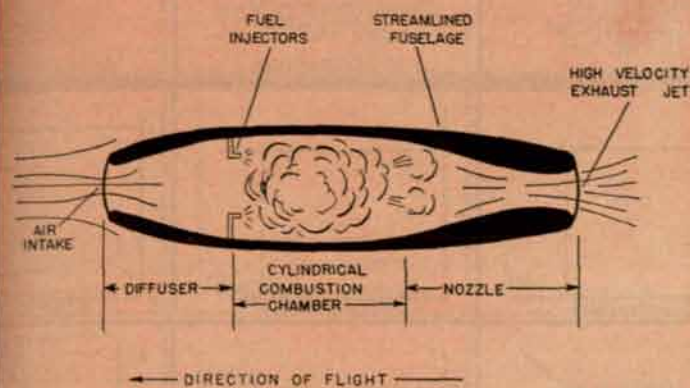
The pulse jet is an air ducted propulsion unit operating on an intermittent cycle similar to a conventional piston engine and is dependent upon the oxygen of the atmosphere for combustion of its fuel. The pulse jet does not require ram air to operate successfully, *i.e.*, it can be tested statically, an important advantage in testing.

At the front of the engine is a grill, with openings covered by shutter-like valves that open inwardly against spring pressure. As these shutters are forced open by the inrushing air, fuel is injected and the mixture ignited



Pulse Jet

Four Basic Types



Ram Jet

by an electric spark. The shutters are forced shut by the combustion pressure and the thrust-producing gases exhausted through a tail pipe or nozzle. As the departing gases create suction in the combustion chamber, the shutters reopen and the cycle repeats. No spark is required after initial starting, since the ignition is automatic.

The German Buzz-Bomb, powered by pulse jet engine, "fired" about forty times per second and travelled at speeds between 250 and 400 miles per hour, burning about 2.8 pounds of fuel per hour per pound of thrust.

Ram Jet

The ram jet or athodyd, sometimes called the "stove-pipe engine," is a continuous firing air duct engine looking like an elongated barrel with the ends knocked out.

Gasoline is fed through a ring of small orifices ahead of the combustion chamber located in the middle of the duct. Requiring a relatively high speed of travel to initiate operation, the air entering at the front is expanded and sped on its way, by the combustion of the fuel.

The increased velocity, induced by combustion, provides sufficient jet reaction to keep the device up to speed and produce power for the vehicle to which it is attached.

The unit is attractive, from an engineering and cost standpoint, since it has no moving parts, uses cheap fuels, and fuel consumption is only two pounds per hour per pound of thrust, at three times the speed of sound.

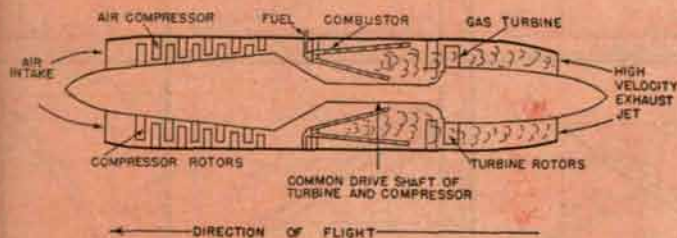
Turbo Jet

The turbo jet is quite similar to the ram jet except that it increases the air supply to the combustion chamber by use of a turbine-driven compressor.

A turbine in the exhaust section drives a shaft connected to a rotary air compressor in the forward end of the engine. The air is further compressed before it enters the combustion chamber. Because of this added compression, fuel can be burned at better economy.

This turbo jet type engine finds wide use in aircraft propulsion since it readily lends itself to various combinations with propeller drives. In addition, its use is not essentially limited to aircraft, since some forms have been adapted to the powering of locomotives.


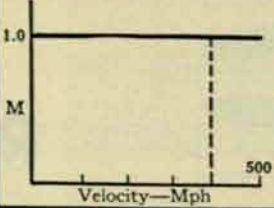
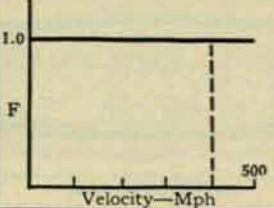
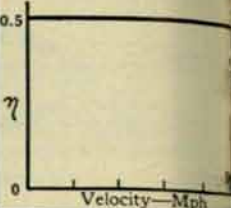

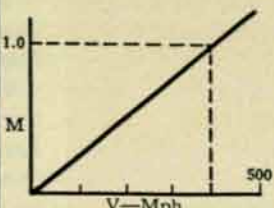
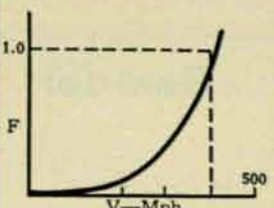
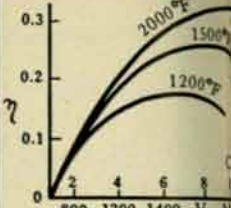

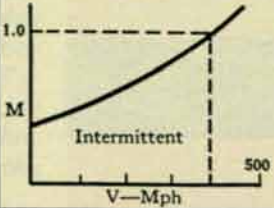
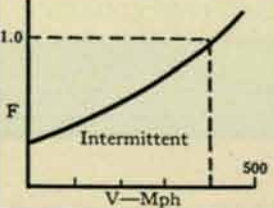
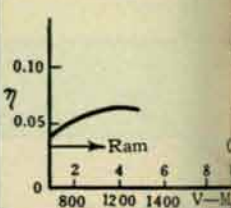

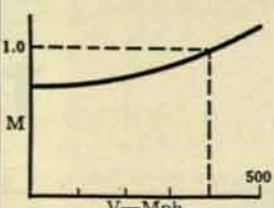
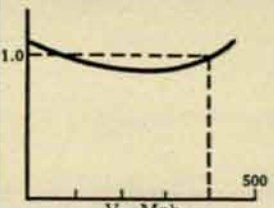
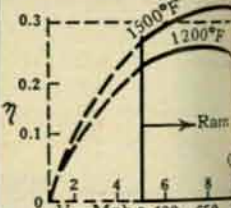
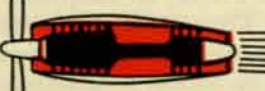
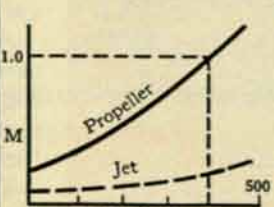
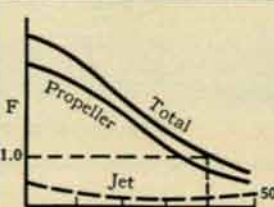
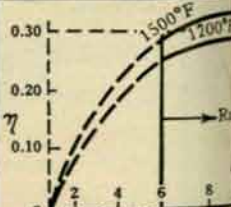
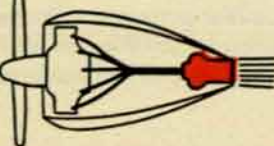
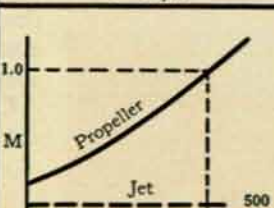
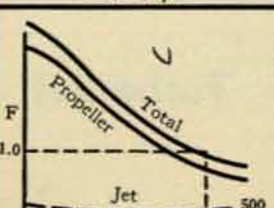
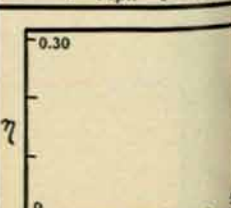
Operating by itself in the air at 400 m.p.h. it consumes about 1.2 pounds of fuel per hour per pound of thrust.



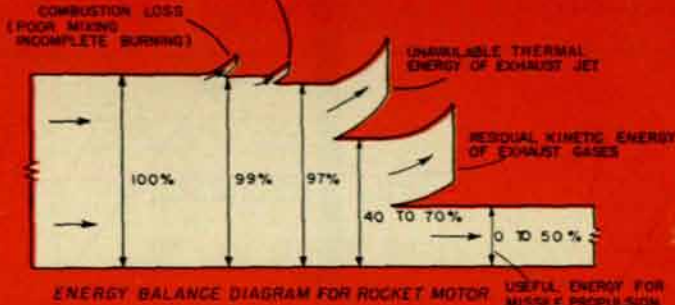
Turbo Jet

a Comparison

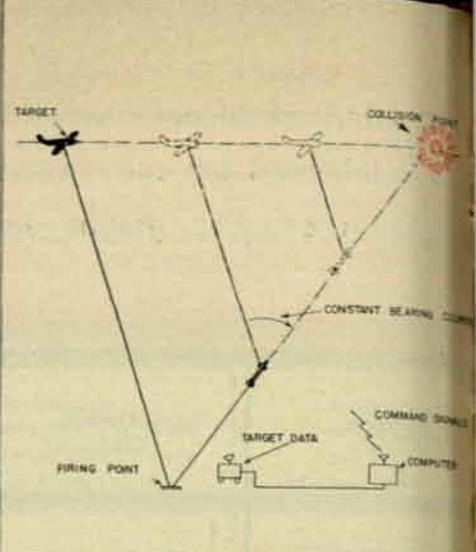
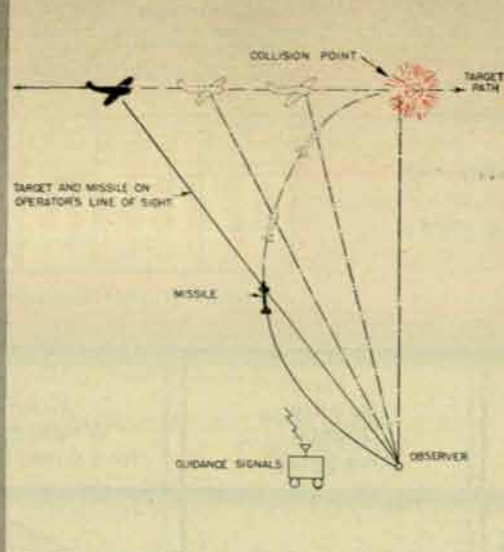
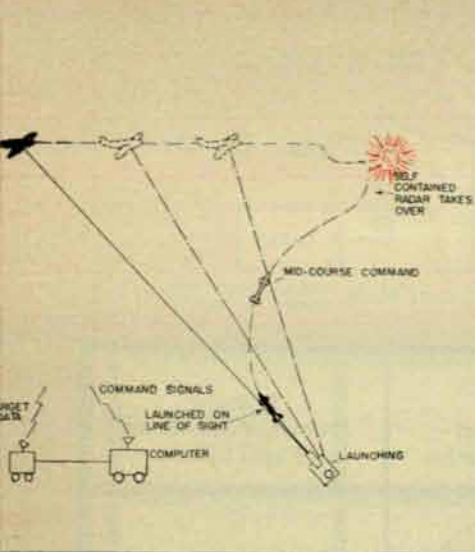
This chart is reproduced through the courtesy of the "Westinghouse Engineer" published by the Westinghouse

Propulsion Method	Picture	Mass of Air or Gas Handled M	Thrust—F Proportional to Mass Handled and Change in Momentum	Efficiency η of Converting Fuel Energy to Mechanical Energy
Rocket				
Ram Jet				
Pulse Jet				
Turbo Jet				
Turbo Jet Driving Propeller				
Supercharged Reciprocating Engine with Geared Propeller and Exhaust Jet				

Electric and Manufacturing Company.
 It is intended for our readers who delight in complex graphs and curves.



Propulsive Efficiency η_p	Overall Efficiency	Relative Frontal Area (Drag)	Relative Weight of Fuel for a Given Duration	Probable Range of Maximum Flight Speeds
				1—Above 600 Mph 2—For Aid in Takeoff 3—For Flying Bombs
				1—Above 500 Mph 2—For Flying Bombs
				1—300 to 600 Mph 2—For Flying Bombs
				400 to 700 Mph
				300 to 600 Mph
				150 to 450 Mph



Combination "Homing" Guidance

"Beam Rider" Guidance

Guidance by "Command"

Guided Missiles . . .

Here is a quick look at some of the amazing developments in the electronic implementation of guided missiles.

We are all familiar with the "automatic pilot," used to relieve the strain and monotony of continuous manual manipulation of aircraft flight controls. This device permits the pilot to leave his controls and know that his plane will automatically and accurately follow a pre-set compass course at a fixed altitude.

Similar automatic controls can be used in piloting robot planes, with electrical commands transmitted to order desired changes in course or altitude. The control engineer, either on the ground or in a "mother" plane, is able to control the robot's flight as long as he has it in sight, which, under ideal conditions, will approach a maximum distance of five or six miles.

Let us suppose the objective, or destination, of the robot, with its "pay load" of mail, weather reporting instruments, cameras, or explosives, is at a considerable distance from the ground control point and quite possibly in an area where a "mother" plane could not operate or might not care to operate.

TELEVISION GUIDANCE

Such difficulties of distance might be overcome by placing two television cameras in the robot, one focused on the instrument panel and the other "looking" ahead from the pilot's seat. The control engineer, equipped with synchronized television receivers, is now not only able to "see" where the robot is going, but also has a constant view of its instrument panel; thus enabling him to make changes

in direction, altitude or speed to bring the robot accurately to its objective.

However, the use of television has visibility limitations. Both fog and darkness will impair or void its efficiency. Distance, on the other hand, is no problem as the use of relay stations, either high in the air, or suitably placed on ground or ocean, would supply adequate reception from the robot or missile.

NAVIGATION GUIDANCE

It seems ridiculous to classify missiles, or robots, by degrees of intelligence, but believe it or not, missiles are so rated. The most amazing high I.Q. missile is one equipped to answer intelligently the questions "Where are you?", and "What are you doing?"

Initially aimed in the approximate direction of its target, and travelling at perhaps 2,500 miles per hour, such a missile is electronically asked for its location. Automatically it takes its bearings on the stars, exactly as a mariner uses his sextant. Not only does it report its computed bearings to the control engineer but it also gives information about its altitude, speed, fuel supply, temperatures of its various mechanisms, density of the surrounding atmosphere and many other recordings relevant to its progress of flight.

This information is automatically analyzed by the control point, an adjusted course to the target quickly computed, and a new set of navigational directions issued which are immediately obeyed by the missile.

COMMAND GUIDANCE

Of lower intellect than the navigational type, this missile carries only sufficient instrumentation to obey directions. A ground radio-radar station simultaneously "tracks" both the missile and its target (the latter perhaps an approaching plane). The radar readings of both are computed and plotted, and adjustments made in the missile's course to bring the two into collision.

BEAM GUIDANCE

A radar path, much like a searchlight beam, is directed from the missile-launching device directly toward the target, which may still be at a considerable distance. The "beam riding" missile is shot into this radar path provided with suitable mechanisms to keep it within the confines of the directional beam, until it arrives at the point of interception and collision.

HOMING GUIDANCE

Most all missiles successfully used to intercept targets travelling at supersonic speeds must be equipped with "homing" intelligence. This is accomplished by a radar unit carried by the missile that actually searches out its target.

To illustrate, such a missile is launched in the general direction of an approaching target. While in mid-course, it is controlled by one of the methods previously described.

During its flight, its own radar unit is sending out signals and, as it is guided closer and closer to its objective, its own radar begins to receive return echo signals. The closer the missile gets to its target the stronger become these echo signals, until finally they become strong enough to take over the controls completely. The missile now "rides" its own signal picked up from the target and follows it to a final collision.

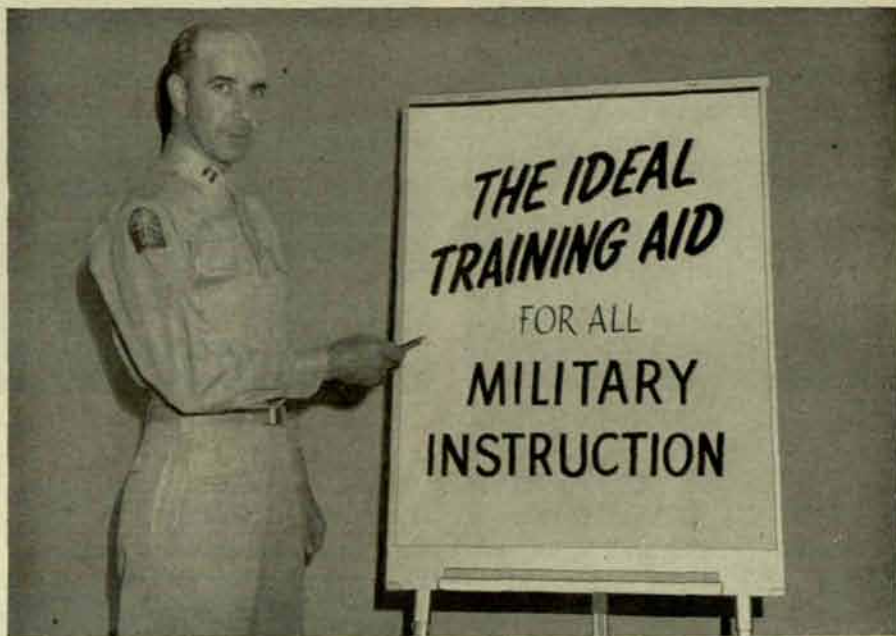
THE I. F. F. SYSTEM OF PROTECTION

When dealing in the supersonic speeds, time is at a premium. Unfortunately, until the "Identification, Friend or Foe" System was developed, radar pick-up of targets did not differentiate "friend" from "foe" and some self-inflicted mortality resulted.

Today, radar is so equipped that the return echo from the target is not only identified as a friendly plane, or missile, but is even used to "freeze" the plane's firing mechanism against operation by trigger-nervous gunners!

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PROMOTIONS AND ASSIGNMENTS

To Fort Meade, Md.
Brigadier General Homer Case



Brigadier General Case, whose promotion was recently announced, has been assigned to command the 35th AAA Brigade, Fort Geo. G. Meade, Maryland. During the war General Case commanded the 32nd AAA Brigade in New Guinea and through the Leyte campaign where he was awarded the Distinguished Service Medal. He later commanded the 101st AAA Brigade in Luzon. After the war he served with Sixth Army and in his last assignment with the Assistant Chief of Staff, G1 in Washington.

California AAA Guard
Commander



Brigadier General James W. Cook, commanding the 112th AAA Brigade, California National Guard, was federally recognized in October, 1950. General Cook began the last war commanding a battery in the 250th CA(155). Serving in the Aleutians he advanced to the grade of colonel as the executive officer at Adak, Alaska.

General Cook has been active in the California National Guard since 1917. In civilian life he is a construction engineer.

Major General Cortlandt V. R.
Schuyler



Major General Schuyler, whose promotion was recently announced, is now on duty in Paris with General Eisenhower in the SHAPE Planning Group. In 1943 and 1944 General Schuyler served as Chief of Staff of the Antiaircraft Command and later in command of the AA Training Center, Camp Davis, North Carolina. From 1944 to 1947 he served as the United States Military Representative on the Allied Control Commission for Rumania. Returning to Washington in 1947, he served as the Chief of the Planning Division in the G3 Office until his present assignment.

* * *

North Texas ORC Augments AA School At Bliss

The 4054th OR ASU, an augmentation unit for the AA & GM Branch, The Artillery School, was activated in Dallas, Texas, in October 1950. Under command of Colonel Allison F. H. Scott, this unit comprises 190 reserve officers of all arms in northern Texas. Predominantly artillery, this unit holds two meetings per month in Dallas, Fort Worth, Dennison, and Waxahachie. Brigadier General Jesmond D. Balmer, Assistant Commandant of the AA and GM School, recently visited the unit in Dallas where he picked up quite a historic weapon to supplement the modern equipment at Fort Bliss. Several officers of the unit are being ordered to active duty with the staff and faculty of the School.



Brig. Gen. J. D. Balmer (right) receiving a Sam Colt special .45 revolver, The Equalizer—adopted by the Army in 1880—from Col. Allison Scott (left) in Dallas. Col. Paul B. Malone, Jr., observes.

Brigadier General Morris C. Handwerk Retires

Brigadier General Morris C. Handwerk retired at Presidio of San Francisco, California, on February the 28th after more than 35 years of service.

During World War II General Handwerk commanded the AA Training Center at Camp Edwards and Camp Haan. He commanded the 53rd AAA Brigade in 1944 and 1945 in Hawaii and through the Okinawan Campaign, and later the 14th AA Command in the Far East. For his war service he was awarded the Legion of Merit (OLC) and the Bronze Star Medal (OLC).

Since April 1949 he has commanded the 40th AAA Brigade in the Far East.

Until they settle, General and Mrs. Handwerk are visiting with their daughter, Mrs. Beverly Duncan, Box 339, La Grange, Ohio.



40th AAA Brigade Party honoring Brig. General and Mrs. Morris C. Handwerk.

Late Orders

Colonel Harry F. Meyers to command the 56th AAA Brigade, Camp Edwards, Mass. Colonel Robert W. Hain to duty as executive officer, Division Artillery, 7th Infantry Division, APO 7.



U.S. Army Photo

Major General John T. Lewis, Commanding General of Fort Bliss, and the Honorable Oscar Soto Maynez, Governor of the State of Chihuahua, Mexico, pass the colors as they inspect an honor guard held at the post on the occasion of the Governor's recent visit.



Colonel William I. Brady,
Retired

Colonel Brady retired in Washington, 31 January 1951, after more than 30 years service. Our readers require no review of his forceful and successful operations as Editor of this Journal from 1946 to 1950. Hailing from Independence, Missouri, he graduated from USMA in 1920 and served since then in the Field Artillery and Coast Artillery. During the War, Colonel Brady served in Europe as Deputy Commander for operations of the 9th AA Defense Command. Colonel and Mrs. Brady have settled in their home at 5143 Ward Parkway, Kansas City, Missouri, where he will manage their farm and business interests.

News and Comment

260th AAA Group Ordered to Meade

Headquarters and Headquarters Battery, 260th AAA Group has been ordered to Fort Meade, Maryland from Camp Edwards, Massachusetts where it has been in training since September.

Colonel LeRoy S. Mann, commanding officer of the District of Columbia National Guard unit, will accompany the 260th when it arrives at Meade on April 15.

Armed Forces Day To Be Observed May 19

Armed Forces Day, established last year in place of the separate dates previously observed by the Army, Navy, Marine Corps, and Air Force, will again be the third Saturday in May, it was announced by the Secretary of Defense, General Marshall. May 19 has been designated, with the approval of President Truman, for observance by the military services and the public.

Reserve Forces will participate actively in observance of the day. State Governors will be invited to authorize National Guard participation.

Troop and equipment participation will be provided in as many cities as possible. At military installations, where practicable, open house activities will be scheduled and equipment demonstrated. A national allocation of Naval vessels, certain types of aircraft and airborne troops will, if possible, be made.

Combat Artilleryman Badge

To The Editor:

We read news items to the effect that interest in Department of the Army circles concerning the adoption of a combat artilleryman badge was only lukewarm. It seems to me that someone has missed the facts concerning the employment of artillery in Korea. I further believe that the matter should be reopened and investigated in the field.

The men of the AAA automatic weapons units assigned or attached to infantry

divisions in Korea have, in furnishing close support for the ground troops, been in as close touch with the enemy as have the supported troops. Our M-16s and M-19s have been employed with the infantry on patrols, road blocks, on the OPLR, on the MLR, with the point, with the advance guard, and elsewhere where they would qualify for the Combat Infantryman Badge were they in the infantry. Skeptics are at liberty to check this with the infantry whom we have supported. In any event, the 15th AAA AW Bn (SP) weapons crews have been in considerable close combat, have accounted for a very large number of enemy casualties, and have themselves suffered heavy casualties in carrying out their mission of close support of the infantry.

I strongly recommend that those of the "Automatic Artillery," as General Marquat so aptly terms them, be entitled to wear a combat artilleryman badge under conditions appropriately similar to those governing the award of the Combat Infantryman Badge. Further, I believe that commanders of F.A. battalions and 90-mm AA gun battalions will favor awarding such a badge to certain members of their units. Our enemy here directs special attention toward attacking all artillery. The combat artilleryman should receive recognition for his extremely valuable front-line service.

ROBERT W. HAIN,
Colonel, Artillery.

Korea.

46th Joins 4th Infantry

The 46th Battalion, now in training at Fort Bliss, received its banners and shoulder patches as a unit of the Fourth Infantry Division in ceremonies held at Oro Grande range, Tuesday morning, January 16. The battalion will join its parent organization when it completes the cycle of training here.

Presentation of the patches was made by Brig. Gen. Harlan N. Hartness, Commanding General of the Fourth Infantry Division, who also inspected the battalion and observed target practice firing.

Silver Star—MIA

PRIVATE FIRST CLASS FREDERICK A. HIGGINS, while a member of Medical Detachment, 15th AA AW Bn. (SP), distinguished himself by gallantry in action against an armed enemy near the Chosin Reservoir in Korea from 28 November 1950 through 1 December 1950. During this period, the battery to which Private Higgins was attached was furnishing close support for field artillery and infantry units and during this time was under numerous enemy attacks which caused large numbers of casualties. Private Higgins, without regard for his own safety, went through intense enemy fire on many occasions to render first aid to wounded men even though he was suffering from two broken ribs. He also repeatedly risked his life to assist wounded men to proceed from their positions to the aid station. His coolness under fire, his heroic self-exposure to almost certain death or disability, and his unselfish assistance to others despite his own injury were a source of great inspiration to all personnel in the vicinity. Private Higgins' display of gallantry on this occasion reflects great credit on himself and the military service. Entered the military service from the State of Washington.

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CORRESPONDENCE

To The Editor:

I am particularly interested in seeing another article from General Marquat or other AAA officers as to what part the AA played in the withdrawal from North Korea of our divisions. I should imagine that getting the 90's out in the face of a widespread attack would result in the loss of much heavy equipment. Hope that someone will see fit to give us more combat articles.

JULIAN S. ALBERGOTTI,
Col., Arty.

Hqs., Third Army,
Ft. McPherson, Ga.

To The Editor:

The JOURNAL was of immeasurable help in my conducting a staff officer's lecture on the capabilities of automatic weapons. The information contained, especially General Marquat's article, gave the lecture the added touch of realism that was needed.

HENRY W. TROTT,
WOJG

Jersey City, N. J.

To The Editor:

The January-February issue of the JOURNAL arrived yesterday and I think it is the best issue I've seen. In fact each issue seems better than the last. Congratulations!

D. W. BETHEA, JR.,
Colonel

228th AAA Group,
Camp Edwards, Mass.

To The Editor:

Congratulations on your latest issue. Bill Marquat's story and several others are mighty interesting. Keep up the good work!

WILLIAM C. BRALY,
Colonel, U.S.A., Ret.

Orinda, Calif.

Lèse-Majesté

To The Editor:

I congratulate Colonel Strode Newman on his fine article.

Too bad the army hasn't used this system so that the best officers would be promoted and not some of the drips we have today.

H. DEE

Claymont, Delaware

To The Editor:

Herewith 35 new subscriptions from this separate battery—100% of our officers and 26 enlisted men. Note that some desire the JOURNAL sent to their families.

Add us to your Honor Roll and keep up the good work.

LEONARD M. PEDERSON,
Captain, Artillery

Battery A,
25th AAA AW Bn. (SP),
Korea

Captain Lowell H. Bielsmith has since assumed command of Battery A and it is no longer a separate organization.—Ed.

To The Editor:

Your air mail copy of the January-February JOURNAL just received. It has aroused a great deal of interest throughout the battalion.

To show our pleasure in a more practical way, I am enclosing a list of 40 officers desiring to initiate or renew a subscription to the JOURNAL. See attached roster. Place us on your Honor Roll. It is particularly desired that each officer listed receive a copy of the January-February issue.

I am also enclosing a money order to cover cost of 525 single copies of the January-February issue requested by the enlisted personnel of the battalion.

Under separate cover, I am forwarding copies of orders on awards and decorations that have been received to date. There are a great number still in the mill which we will send on when received.

Permit me to voice the pleasure and thanks of the entire battalion for the fine coverage you have given us.

Sincerely,

C. S. O'MALLEY,
Lieutenant Colonel, Artillery

50th AAA AW Bn. (SP), Korea

To the Editor:

Enclosed find 67 subscriptions to the JOURNAL and remittance to cover. This includes all our officers and 36 enlisted men. The information in the JOURNAL has given the officers and enlisted personnel much valuable knowledge of present AAA operations in Korea.

CARL T. FERGUSON,
M Sgt, 713th AAA Gun Bn

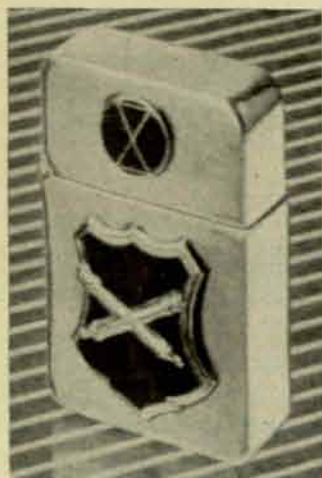
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ANNUAL FINANCIAL REPORT

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, 1950

ASSETS

CURRENT ASSETS:

Cash on deposit	\$5,197.13	
Petty cash fund	25.00	
Accounts receivable:		
Merchandise accounts	\$2,083.89	
Subscriptions	1,153.00	
Armed Forces Talk	480.00	
	\$3,716.89	
Less reserve for bad debts	578.82	3,138.07
Inventory of books, held for sale		101.67
TOTAL CURRENT ASSETS		\$8,461.87

FIXED ASSETS:

Office furniture and equipment	\$8,233.16	
Less reserve for depreciation	8,023.11	210.05

DEFERRED CHARGES AND OTHER ASSETS:

Inventory of office supplies	\$ 981.35	
Deposit with U.S. Government Printing Office	45.54	
Deposit for copyright	24.00	1,050.89
TOTAL ASSETS		\$9,722.81

LIABILITIES AND NET WORTH

CURRENT LIABILITIES:

Accounts payable	\$ 109.57	
District of Columbia sales tax86	
TOTAL CURRENT LIABILITIES		\$ 110.43

DEFERRED INCOME:

Unexpired subscriptions	7,245.83	
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NET WORTH:

Deficit balance, December 31, 1949	\$ 264.97	
Less: Transfer of funds from Antiaircraft Association	\$1,500.00	
Net profit for the year ended Dec. 31, 1950, per Ex. B	1,131.52	2,631.52
Surplus balance, December 31, 1950		2,366.55
TOTAL LIABILITIES AND NET WORTH		\$9,722.81

THE UNITED STATES ANTI-AIRCRAFT ASSOCIATION BALANCE SHEET—DECEMBER 31, 1950

ASSETS

Cash in bank	\$ 1,121.29	
Investments:		
U.S. Government bonds, Schedule 1	\$63,895.63	
Common Stock	160.00	
		64,055.63
TOTAL ASSETS		\$65,176.92

NET WORTH

SURPLUS BALANCE , December 31, 1949		\$71,132.45
Less:		
Contribution to Women's Army & Navy League	\$5,000.00	
Excess of disbursements over receipts for the year ended December 31, 1950	955.53	5,955.53
SURPLUS BALANCE , December 31, 1950		\$65,176.92

ARTILLERY ORDERS

DA Special Orders Covering January 1, 1951 through February 28, 1951. Promotions and Demotions not included.

BRIGADIER GENERALS

Case, Homer, to 35th AAA Brig, Ft Meade, Md.
Mickelsen, S. R., to Addition to his other duties is designated as a member of the Mil Liaison Committee to the AEC.

COLONELS

Albergotti, J. S., to 34th AAA Brig, Ft Wadsworth, N. Y.
Barton, C. T., to 8657th AAU Navy Amp Tng Comd US Atlantic Fleet, Little Creek, Va.
Bird, J. F., to NWC 8496th AAU, Ft McNair, Wash, DC.
Caever, G. A., to Second Army Hq VII Corps, Ft Meade, Md.
Collins, J. F., to Office Secy of Def, Wash, DC.
Cort, H., to OC of S, Wash, DC.
Fitch, A. R., to OC of S, Wash, DC.
Franklin, R. B., to 8452d AAU Sandia Base, Albuquerque, N Mex.
Gard, R. C., to Second Army VII Corps, Ft Meade, Md.
Hatton, R. E., to OC of S, Wash, DC.
Honeycutt, J. T., to VIII Corps Arty, Ft Campbell, Ky.
Humphrey, R. G., to Stu Det A Lang Sch, Monterey, Calif.
McLamb, N. A., to 1117th ASU Sta Comp, Cp Edwards, Mass.
Marr, R. S., to Second Army VII Corps, Ft Meade, Md.
Pape, R. B., to Office Secy of Def, Wash, DC.
Pearson, J. P., Jr., to VI Corps, Cp Atterbury, Ind.
Rainford, W. R., to OC of S, Wash, DC.
Sexton, W. T., to Third Army Inf Cen, Ft Benning, Ga.
Sweeny, K. S., to Third Army Inf Cen, Ft Benning, Ga.
Wertz, G. M., to WVa NG Instr Gp, So Charleston, WVa.

LIEUTENANT COLONELS

Bagley, L. W., to OC of S, Wash, D. C.
Ballagh, R. S., to Hq Army AA Comd, Ent AFB, Colo.
Barnes, N. P., to 5025th ASU CGSC Sch, Ft Leavenworth, Kans.
Bottomley, H. E., to Hq VI Corps, Cp Atterbury, Ind.
Browning, H. W., to OC of S, Wash, DC.
Bush, E. L., to Hq Army AA Comd, Mitchel AFB, N.Y.
Butler, S. J., to 31st AAA Brig, Ft Lewis, Wash.
Commas, P. H., to 4050th ASU Arty Sch, Ft Sill, Okla.
Cooke, L. C., to Hq VI Corps, Cp Atterbury, Ind.
Dalrymple, R. J., to 56th AAA Brig, Cp Edwards, Mass.
Eggers, F. W., to 8579th AAU, Ft. Holabird, Md.
Eubank, M. E., to 4th Inf Div, Ft Benning, Ga.
Guy, J. J., to Hq Army AA Comd, Stewart AFB, N.Y.
Hancock, F. J., to Hq VII Corps, Cp Campbell, Ky.
Harper, N. W., to EUCOM, Bremerhaven, Germany.
Helm, H. V., to Hq Army AA Comd, Stewart AFB, N.Y.
Herman, D. A., to Office Chief AFF, Ft Monroe, Va.
Jewett, L. G., to 11th Abn Div, Ft Bragg, NC.
Kerr, A. D., to Hq Army AA Comd Stewart AFB, N.Y.

Lattal, A., Jr., to Hq VI Corps, Ft Sill, Okla.
Levey, M. L., to Joint Mil Mission for Aid to Turkey, Ankara, Turkey.
Lewis, R. H., to 1000th ASU, Cp Roberts, Calif.
McGrath, D. B., to Hq Army AA Comd, Ent AFB, Colo.
Marr, H. E., Jr., to OAS of A, Wash, DC.
Myers, G. E., to Hq Army AA Comd, Stewart AFB, N.Y.
Parker, D., Jr., to OC of S, Wash, DC.
Pearsall, J. F., Jr., to Office Chief AFF, Ft Monroe, Va.
Pearson, H. J., to Hq First Army Governors Island, N.Y.
Pierre, G. H., Jr., to Hq Army AA Comd, Hamilton AFB, Calif.
Possiel, B. J., to Hq ASA Sch, Carlisle Bks, Pa.
Rue, C. H., to Hq ASA 8600th AAU, Wash, DC.
Russell, M. R., to OC of S, Wash, DC.
Sacerdote, S. E., to Office Chief AFF, Ft Monroe, Va.
Schnur, J. F., to Hq Army AA Comd, Hamilton AFB, Calif.
Schweidel, K. R., to 40th Inf Div, Cp Cooke, Calif.
Virag, A., to EUCOM Bremerhaven, Germany.
Wiedman, C. J., to Hq VII Corps, Cp Campbell, Ky.
Wood, J. E., Jr., to Hq Army AA Comd, Ent AFB, Colo.

MAJORS

Baker, M. W., to Hq VII Corps, Ft Meade, Md.
Barr, O. F., to Hq VII Corps, Cp Campbell, Ky.
Boisvert, J. R., to Hq VI Corps, Ft Sill, Okla.
Bricker, T. G., to 7689th Hq Sq USFA, Salzburg, Austria.
Britt, P. B., to Hq VII Corps, Cp Campbell, Ky.
Bruno, N. J., to Hq Army AA Comd, Stewart AFB, N.Y.
Bulmer, J. C., to Hq Army AA Comd, Stewart AFB, N.Y.
Campbell, G. L., to Hq Army AA Comd, Ent AFB, Colo.
Caruthers, L. H., Jr., to Office Asst Secy of Army, Wash, DC.
Cripps, G. W., to Hq Army AA Comd, Ent AFB, Colo.
Dahl, A. P., to Hq Army AA Comd, Hamilton AFB, Calif.
Dahlke, O. H., to Hq VI Corps, Cp Atterbury, Ind.
Denby, R. E., to Calif NG Instr Gp, San Diego, Calif.
Duparc, J. M., to Office Chief AFF, Ft Monroe, Va.
Durfor, W., to 2nd Armd Div, Ft Hood, Tex.
Edler, W. C., to Hq VI Corps, Ft Sill, Okla.
Flaherty, G. H., to Hq Army AA Comd, Ent AFB, Colo.
Fogel, R. U., to Hq VII Corps, Cp Campbell, Ky.
Freeman, W. E., to Hq VII Corps, Ft Meade, Md.
Gooding, E. R., to Hq Army AA Comd, Stewart AFB, N.Y.
Healy, P. J., to Hq VII Corps, Ft Meade, Md.
Hurley, J. E., Jr., to Hq Army AA Comd, Hamilton AFB, Calif.
Jackson, F. J., to Hq VI Corps, Ft Sill, Okla.
Kean, M. P., Jr., to OC of S, Wash, DC.
Knott, A. W., to Office Chief AFF, Ft Monroe, Va.
Koos, R. B., to Hq VII Corps, Ft Campbell, Ky.
Kyle, D. M., to Calif NG Instr Gp, Stockton, Calif.
Lewis, J. L., to Hq VII Corps, Ft Campbell, Ky.

Maynard, J. B., Jr., to Hq Army AA Comd, Stewart AFB, N.Y.
O'Donnell, C. F., Jr., to Hq Army AA Comd, Stewart AFB, N.Y.
Oram, H. E., to Hq VII Corps, Ft Campbell, Ky.
Petresky, J. J., to Hq Army AA Comd, Ent AFB, Colo.
Pierce, J. A., Jr., to Ill NG Instr Gp, Chicago, Ill.
Real, S. G., to Hq Army AA Comd, Stewart AFB, N.Y.
Rouse, E. B., to Hq MDW, Gravelly Point, Va.
Rudy, W. D., to Hq Army AA Comd, Hamilton AFB, Calif.
Russell, F. T., to London, England.
Sawbridge, J. J., to 4050th ASU Arty Sch, Ft Sill, Okla.
Schafbuch, D. V., to Hq Army AA Comd, Stewart AFB, N.Y.
Slaughter, C. T., Jr., to Minn USA and USAF Rctg Gp, Minneapolis, Minn.
Townsend, L. B., to Hq Army AA Comd, Ent AFB, Colo.
Wellman, W. J., to Hq VI Corps, Cp Atterbury, Ind.
Williams, H. G., Jr., to Hq VII Corps, Cp Campbell, Ky.
Witt, E. C., Jr., to Army Advisory Gp Air Univ., Maxwell AFB, Ala.
Woods, J. R., to Hq Army AA Comd, Stewart AFB, N.Y.
Zimmerman, R. H., to 34th AAA Brig, Ft Wadsworth, N.Y.

CAPTAINS

Alexander, G. E., to 4th Inf Div, Ft Benning, Ga.
Appleby, R. H., to Stu Det CIC Cen, Ft Holabird, Md.
Baker, C. D., to Hq VII Corps, Ft Campbell, Ky.
Barnes, M. J., to 4050th ASU Arty Sch, Ft Sill, Okla.
Baudoin, J. C., to Hq VI Corps, Cp Atterbury, Ind.
Benson, T. N., to OC of S, Wash, DC.
Betts, G., to Sandia Base, Albuquerque, N Mex.
Bozerman, S. L., to 2nd Armd Div, Ft Hood, Tex.
Brooks, C. A., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Brown, J. F., to 2nd Armd Div, Ft Hood, Tex.
Carpenter, R. D., to 5th Armd Div, Cp Chaffee, Ark.
Chambers, S. L., to Hq VII Corps, Cp Campbell, Ky.
Curtis, G. D., to 4th Inf Div, Ft Benning, Ga.
Davis, P. A., to 11th Abn Div, Ft Campbell, Ky.
Dillon, G. M., to 4053d ASU Bd No 1, Ft Bliss, Tex.
Dugan, E. F., to Stu Det AA and GM Br Arty Sch, Ft Bliss, Tex.
Donaldson, R. B., to 4th Inf Div, Ft Benning, Ga.
Downen, C. F., to 2nd Armd Div, Ft Hood, Tex.
Fink, P. M., to Hq VII Corps, Ft Campbell, Ky.
Fischer, K. P., to Hq Army AA Comd, Stewart AFB, N.Y.
Ford, R. G., to Hq VII Corps, Ft Campbell, Ky.
Francis, M. J., to 4th Inf Div, Ft Benning, Ga.
Germann, H. D., to USA Alaska, Ft Richardson, Alaska.
Gilmer, C. E., to 4th Inf Div, Ft Benning, Ga.
Harris, D. L., to Sandia Base, Albuquerque, N Mex.

Hesser, W. F., to Hq VI Corps, Cp Atterbury, Ind.
 Howard, A. J., to 2nd Armd Div, Ft Hood, Tex.
 Janik, J. J., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Johnston, A. B., to 11th Abn Div, Ft Campbell, Ky.
 Jurdak, F. E., to 115th CIC Det, San Francisco, Calif.
 Leavitt, W. E., to Hq ASA 8600th AAU, Wash, DC.
 Levin, H. N., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Loos, L. E., to Hq VII Corps, Ft Meade, Md.
 Lough, C. M., to Hq VI Corps, Ft Sill, Okla.
 Lowe, H. W., to Hq VII Corps, Ft Campbell, Ky.
 MacNeil, M. K., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
 McKesson, J. D., to OC of S, Wash, DC.
 Mackey, C., to 101st Abn Div, Ft Breckinridge, Ky.
 Medford, E. E., to Hq VI Corps, Ft Sill, Okla.
 Mowry, D. F., to Hq VII Corps, Ft Meade, Md.
 Neumann, H. O., to 31st AAA Brig, Ft Lewis, Wash.
 Newell, C. A., to Army Lang Sch, Monterey, Calif.
 Owsley, H., Jr., to OC of S, Wash, DC.
 Peters, H. T., to Stu Det AAA and GM Br Arty Sch, Ft Bliss, Tex.
 Phifer, P. H., to 8th AAA Bn, Cp Lucas, Sault Ste Marie, Mich.
 Pier, W. F., to Hq VI Corps, Ft Sill, Okla.
 Plowman, H. R., to Hq Army AA Comd, Hamilton AFB, Calif.
 Propst, C. H., to Hq VI Corps, Ft Sill, Okla.
 Robinson, M. C., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Seabrook, G. W., III, to Hq Army Comd, Hamilton AFB, Calif.
 Schick, C. F., to 330th Arty Bn, Cp McCoy, Wisc.
 Schmidt, W. C., to USA Caribbean, Ft Amador, CZ.
 Scott, D. J., to Hq VI Corps, Cp Atterbury, Ind.
 Snyder, H. R., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Stroud, W. R., to Stu Det AA and GM Br Arty Sch, Ft Bliss, Tex.
 Tappas, C. J., to Hq VII Corps, Cp Campbell, Ky.
 Tavormina, I. J., to Hq Sp Wpns Project, Wash, DC.
 Theil, R. L., to EUCOM Bremerhaven, Germany.
 Thorpe, C. E., to Hq VII Corps, Ft Campbell, Ky.
 Tomaw, D. W., to EUCOM Bremerhaven, Germany.
 Wagner, R. T., to 4050th ASU AA and GM Br Arty Sch, Ft Bliss, Tex.
 Watson, L. A., Jr., to Hq VII Corps, Ft Campbell, Ky.

FIRST LIEUTENANTS

Barth, T. M., to 3rd Armd Cav Regt, Ft Meade, Md.
 Bazzurro, D. P., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Bond, J. A., to 4th Inf Div, Ft Benning, Ga.
 Bowie, C. E., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Bradley, G. H., Jr., to Hq Sp Wpns Comd Candia Base, Albuquerque, N Mex.

Bunyan, E. X., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Butcher, W. P., to 8579th AAU, Ft. Holabird, Md.
 Carlson, K. O., to 2nd Armd Div, Ft Hood, Tex.
 Ciley, C. D., to Hq VI Corps, Cp Atterbury, Ind.
 Citron, J. H., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Clayton, H. D., to Hq VII Corps, Ft Campbell, Ky.
 Corbus, G. A., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Cowey, F. F., Jr., to Stu Det AA and GM Br Arty Sch, Ft Bliss, Tex.
 De Gil, B. F., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Doll, F. A., to 82nd Abn Div, Ft Bragg, NC.
 Dunn, L. W., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
 Hickey, D. W., to Hq Army AA Comd, Ent AFB, Colo.
 Hines, J. A., to Hq VII Corps, Ft Campbell, Ky.
 Hiscock, J. M., to 7th Armd Div, Cp Roberts, Calif.
 Hoff, F. E., to Stu Det AA & GM Br TAS, Ft Bliss, Tex.
 Kernstock, E. N., to EUCOM Bremerhaven, Germany.
 Kline, R. A., to Stu Det AA & GM Br TAS, Ft Bliss, Tex.
 Kopel, H. P., to 82nd Abn Div, Ft Bragg, NC.
 Kovac, M., to 238th MI Svc, Ft Meade, Md.
 Kren, R. E., to Stu Det AA & GM Br TAS, Ft Bliss, Tex.
 Lawrence, E. P., to Stu Det Sig Sch, Ft Monmouth, N. J.
 Madden, C. R., to Stu Det AA & GM Br TAS, Ft Bliss, Tex.
 Martell, D. L., to Army Lang Sch, Monterey, Calif.
 Myers, R. L., to Stu Det AA & GM Br TAS, Ft Bliss, Tex.
 Neely, W. V., to 4th Inf Div, Ft Benning, Ga.
 Neems, R., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
 Parker, W. R., to Stu Det AA & GM Br TAS, Ft Bliss, Tex.
 Patrick, T. E., to EUCOM Bremerhaven, Germany.
 Perry, C. L., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Peplau, W. C., to Hq VII Corps, Ft Campbell, Ky.
 Petzold, J. J., to Third Army 4th Inf Div, Ft Benning, Ga.
 Pilawski, J. A., to 2nd Armd Div, Ft Hood, Tex.
 Reid, W. G., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Roberts, J. F., to Stu Det Fourth Army w/sta Connally AFB, Tex.
 Savole, H. L., to 4th Inf Div, Ft Benning, Ga.
 Schaumberg, W. L., to 4th Inf Div, Ft Benning, Ga.
 Schroeder, G. R., to 1st GM Gp w/sta Naval Ord Test Sta Inyokern, China Lake, Calif.
 Sherman, R., to Stu Det Sandia Base, Albuquerque, N Mex.
 Sherwood, C. G., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Stein, R. W., to Hq VI Corps, Ft Sill, Okla.
 Swain, J. W., to 4054th ASU AA and GM Br TAS, Ft Bliss, Tex.

Ward, M. E., to Hq VII Corps, Ft. Campbell, Ky.
 Watterson, R. W., to 80th Abn AA Bn, Ft Bragg, NC.
 Wells, W. W., to 4052nd ASU AAA and GM Cen, Ft Bliss, Tex.
 Whetstone, C. S., to 4th Inf Div, Ft Benning, Ga.
 Winkel, J. A., to 4050th ASU Arty Sch, Ft Sill, Okla.
 Woodham, G. H., to Hq VI Corps, Cp Atterbury, Ind.

SECOND LIEUTENANTS

Akers, H. W., to 88th Abn AA Bn, Ft Campbell, Ky.
 Alderton, R. J., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
 Bates, J. D., to 2nd Armd Div, Ft Hood, Tex.
 Deiss, R. L., to 4050th ASU Arty Sch, Ft Sill, Okla.
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 Feight, V. B., to 82nd Abn Div, Ft Bragg, NC.
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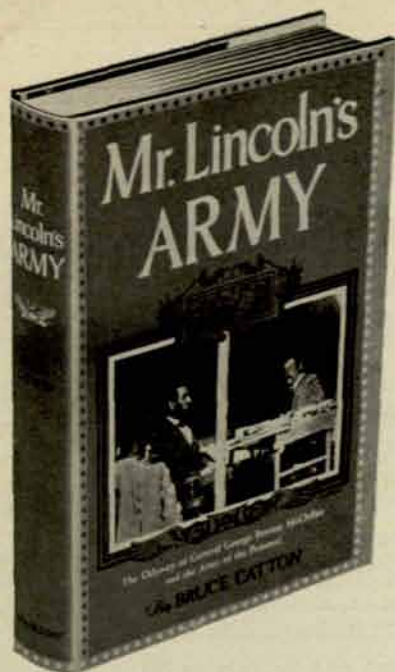
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