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JANUARY-FEBRUARY, 1951

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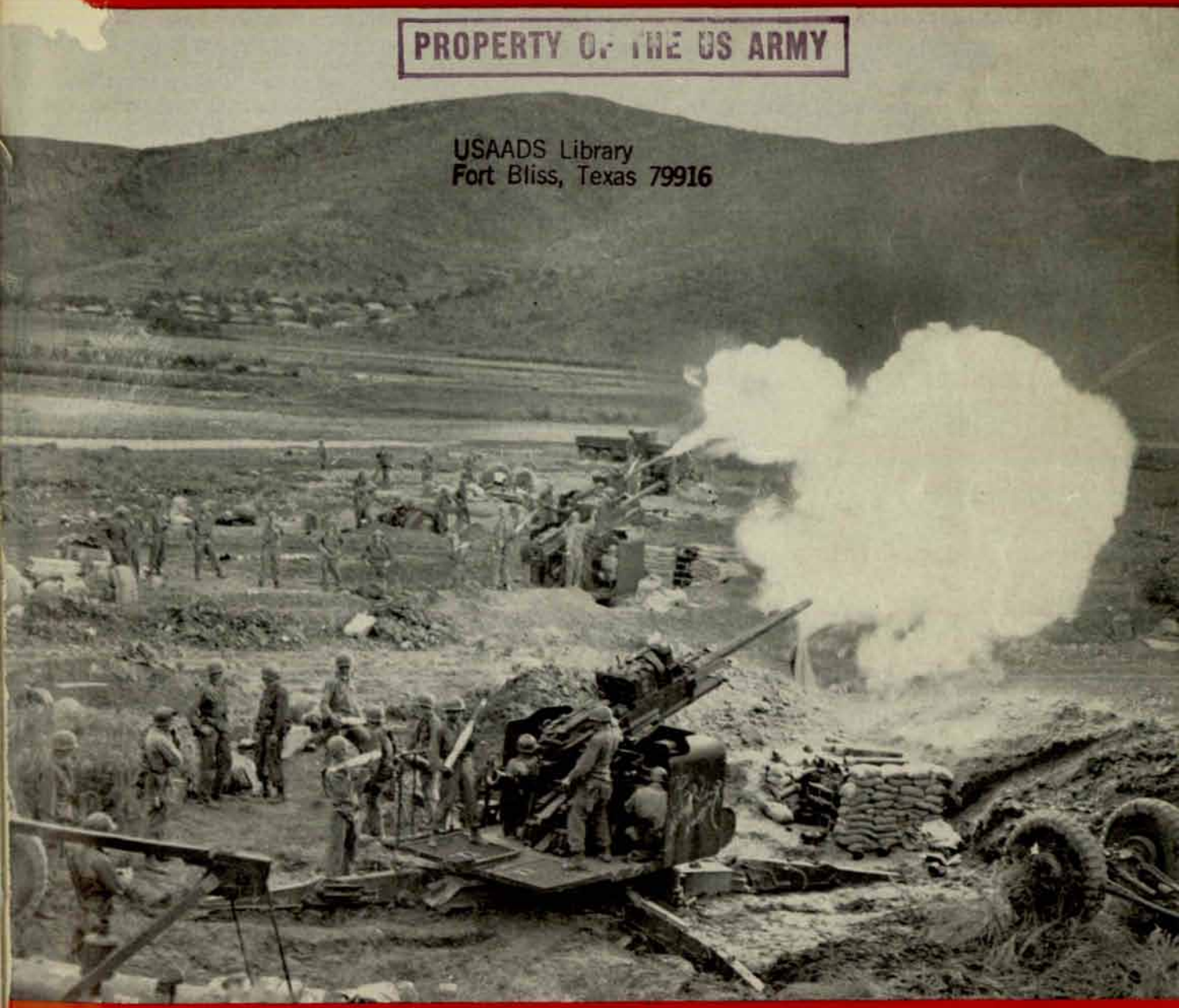

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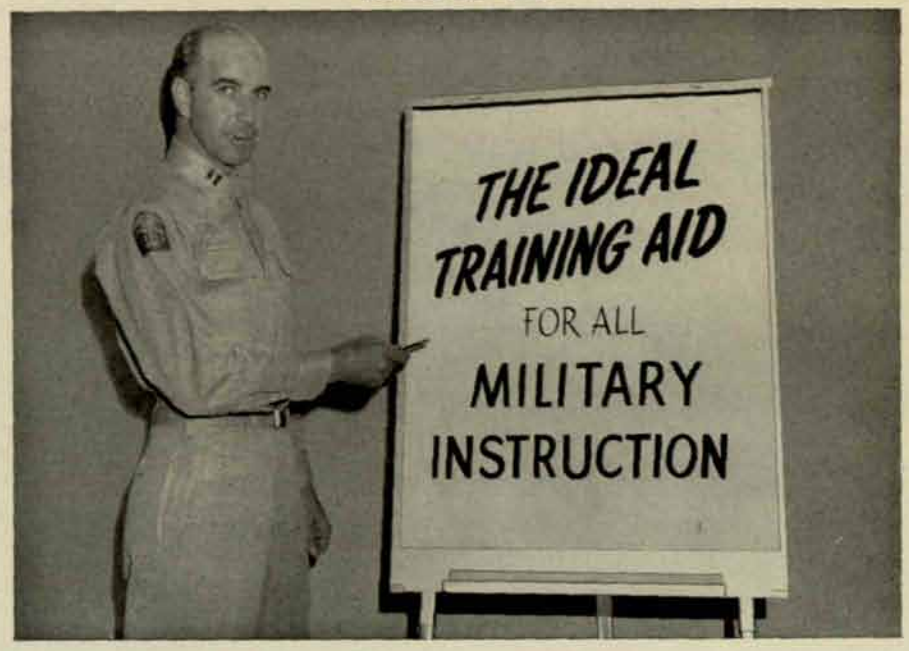

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AUTOMATIC ART

By Major Genera

SECO

THIS is a narrative account of the Antiaircraft Artillery troop unit activities in Korea during the second phase of the operation.

My first report to the ANTIAIRCRAFT JOURNAL covered the action from the start of the war through the period when the aggressor North Korean forces, in a power thrust, had driven the South Korean troops back toward the very tip of the peninsula; the introduction of United Nations forces into the fray spearheaded by United States troops, committed piecemeal to contain the onrushing enemy; the brilliant Inchon landing and subsequent advances of the United Nations forces in some places to the Yalu River, terminating in the total defeat of the hostile army.

Then began the undeclared Korean War with Communist China in which

U.S. Army photo

The 68th AAA Gun Bn. in action in Korea.

LLERY IN KOREA

William F. Marquat

EPORT

U.S. Army photo

". . . infantry commanders' only complaint . . . not enough artillery." Sgt. Russell C. Calanni, Pfc's Gerald Dugas and Ralph Wallace of the 3d AAA AW Bn. with three ROK members standing.

vast hordes of trained, combat-experienced Red Chinese troops were thrown into battle under a plan to trap and annihilate the victorious United Nations force, which plan was thwarted by a masterful withdrawal, climaxed by the spectacular evacuation of the Hamhung-Hungnam area. The highlights of the antiaircraft artillery participation in the new war are presented herewith as determined by a personal inspection of most all of the troop units in Korea during the middle of December. Even as this story appears in print the military situation will be further advanced as the Red Chinese, reinforced by a reorganized and reequipped North Korean army, continue their efforts to overrun the Republic of Korea. Whatever may be the circumstances at the moment it can be taken for granted that the antiaircraft troops are in the heat of the battle, defending installations or contributing their powerful support to the infantry-armor battle team of the United Nations force which is battling fiercely for the restoration of democratic freedoms to a war-jittery world of today.

What are the major changes in the general antaircraft picture since the previous review of activities? Briefly they are:

1. No longer is there a need for "selling" the antiaircraft artillery in ground support roles. These troops have proved their worth in multifold instances of terrific combat in which they suffered severe losses in relieving critical situations.

2. The return of enemy air elements has called for the redeployment of antiaircraft artillery units into air-defense installations.

3. Maintenance and re-equipment problems are increasing in prominence as machines wear out but men carry on.

ABOVE all else there is engendered in the heart of the veteran antiaircraft artilleryman an impelling pride in the equipment, employment doctrines and especially in the outstanding performance of the United States Army antiaircraft artillery soldier.

It is firmly established in all infantry and artillery headquarters in Korea that the antiaircraft units are valuable adjuncts to ground operations and are permanent assets to the "team." Antiaircraft weapons have been integrated into each tactical plan whether it be on the offense or defense. The recent use of the antiaircraft units on the march varied little from the semiexperimental employment reported in the last article. On many occasions the quad .50 machine-gun crews extricated troops from tight situations with fire of devastating effect. And the demands for these weapons were such that the crews rushed from one tough spot to another frequently with no time even to determine how many of the enemy they had slain.

It was gratifying to note the routine manner in which the artillery and antiaircraft artillery batteries were employed jointly in perimeter defenses—outstanding examples being noted in the Hamhung-Hungnam area. Out at the forward positions the infantry would entrench on top of the hills covering the direct enemy approaches. The field artillery would be located to place plunging fire in front of the infantry positions and over the hills on the flanks. The antiaircraft automatic weapons would be emplaced to cover the tops of the hills occupied by the infantry for the purpose of driving out hostile elements which might displace our troops during a night or a surprise attack. In the few instances where this type of action was called for, the automatic weapons never failed to make hilltop positions untenable to the enemy until our infantry could regain them. The antiaircraft guns also were sited to sweep the ravines on the flanks which were avenues of approach for hostile flanking movements. In other words, the high angle fire trajectories and the flat trajectories of the automatic weapons habitually were integrated into a perfectly coordinated pattern of artillery fire power.

Everywhere these matters now are taken for granted. There were no in-

U.S. Army photo

Lt. Col. Martz, Major Ride, Capt. Yamaki, Lt. Col. Ackert and Major Harris.

U.S. Army photo

Lt. Col. Cheal, Capt. Henry C. Turek and Lt. Col. John B. Parrott of the 68th AAA Gun Bn. with General Marquat.

stances where it was necessary to convince infantry commanders of the efficacy of combined field artillery-infantry-antiaircraft-armor employment. The only complaint the infantry commanders had was that there was not enough artillery of all kinds. And this appreciation of the close teamwork being developed within the artillery reached corps and army headquarters as well. Although not provided for specifically in tables of organization, the use of antiaircraft officers on higher artillery staffs was found to be of extreme importance—the next step is the formal placement of such positions in the TO's of organic headquarters.

THERE is a growing tendency to utilize antiaircraft artillery weapons for indirect fire when the range conditions and terrain will permit the accommodation of flat trajectory weapons to this type of action. Although there is a feeling among many antiaircraft gunnery experts that the extreme accuracy, rapid rate of fire and high muzzle velocity of the matériel make tracer adjustment preferable, familiarity with field artillery control procedures becomes definitely indicated for situations where ground and aerial observers are used for coordinated fire through organic field artillery fire direction centers. Of course indirect fire adjustment has been taught in artillery techniques for many years but it had not been extensively employed for automatic weapons in the earlier stages of the Korean combat.

Progressing now to a report on some of the activities of the various individual units it would appear to be appropriate to start with the 10th AAA Group Headquarters activities since this is the highest antiaircraft artillery headquarters in Korea. In this panoramic view of antiaircraft activities in Korea it is not intended to cover in detail all the special exploits of the units or individuals, but rather to highlight some of the outstanding combat activities in all sectors. There still remains a wide field in the ANTIAIRCRAFT JOURNAL for the units to give the blow by blow descriptions of the many dramatic engagements.

Colonel William H. Hennig has commanded the 10th AAA Group from the beginning of the Korean campaigns. Lieut. Colonel Forrest L. Martz is executive and Major John B. Coontz, assistant group executive. During my last trip to the combat zone the Group was moving forward in the "roll up" with the 68th and 78th Antiaircraft Gun Battalions and some field artillery units under its command. Colonel Hennig received a highly complimentary letter of appreciation from Brigadier General Paik Sun Yup—spelled Paec in some official records—when the latter was relieved from command of the First ROK Division. General Paik said in part, "The brilliant success of the 1st ROK Division during the advance from the Naktong area to Pyongyang (20 September to 19 October 1950) was due in large part to the splendid cooperation of the 10th AAA Group. I should be happy to have you convey this message of appreciation to your entire command."

On Thanksgiving Day, 23 November 1950, the diary of the 10th Group Headquarters contains the entry, "Thanksgiving—Turkey and all the fixings. Colonel Hennig presented awards of ten bronze star medals to the 78th Battalion personnel for heroism." Among others decorated or recommended for decorations are:

Bronze Star Medal with "V" device for heroic achievement:

1st Lt. Nicholas S. Nunzio, Btry A, 68th Gun Bn

Pfc John L. Osborn, Btry A, 68th Gun Bn

Pfc Harold L. Senkbeil, Jr., Btry A, 68th Gun Bn

Silver Star—Posthumous

SERGEANT FIRST CLASS DONALD C. LINDQUIST, RA17248989, Artillery, United States Army, a member of Battery D, 82d Antiaircraft Artillery Automatic Weapons Battalion (Self-Propelled), 2d Infantry Division, displayed gallantry in action against an armed enemy on 28 September 1950 in the vicinity of Togan-ni, Korea. On that date he voluntarily joined a section of his battery, composed of two antiaircraft firing vehicles, which was supporting a rifle company in a patrol along a mountain road. While moving forward on vehicles the entire column was ambushed by the enemy who was located on high ground along the road. From this position the enemy was able to drop grenades into the vehicles and spray the personnel with automatic-weapons and small-arms fire at point-blank range. The riflemen on the vehicles had deployed to the sides of the road upon initial contact with the enemy. Sergeant Lindquist immediately realized that the entire patrol would be annihilated unless reinforcements could be contacted. He remained exposed in the vehicle, manning his radio, and attempted to contact friendly forces. Finally the antiaircraft gunners had to abandon the vehicles when their guns were neutralized by the severe enemy fire. Still Sergeant Lindquist refused to abandon his post and, displaying complete indifference for his personal safety, remained at his radio until he successfully contacted a near-by rifle company who by proper maneuver forced the enemy to withdraw. When the enemy had been driven off Sergeant Lindquist's body was found near the vehicle. His unselfish sacrifice saved the entire patrol from annihilation and allowed several severely wounded men to be evacuated. The manifest courage displayed by Sergeant Lindquist on this occasion reflects great credit upon himself and is in keeping with the finest ideals of the military service. Entered the military service from Minnesota.

Pvt George R. Mauk, Btry A, 68th Gun Bn

Pvt James N. Taylor, Btry A, 68th Gun Bn

Sgt Robert E. Yount, Chief of Section of M55

Cpl Luis M. Colomo

Pfc John H. Morey

Pfc Carlton D. Tinker

Pfc Clifton F. Spencer

Sgt Joseph R. Brown

Cpl James R. Graham

Cpl Afredo Solis

Pfc William T. Redden

Pfc William E. Webb

Pfc Melvin Vanover

Pfc J. C. Dwain Grammer

Pfc Robert R. Roark

Pvt Gerald A. Pfleghaar

Pvt Willard E. Alphin

The Bronze Star Medal:

Capt. Walter Thayer Ride, Jr., 78th Gun Bn

Second Oak-Leaf Cluster to Bronze Star Medal:

Lt. Col. Thomas William Ackert, 78th Gun Bn

Soldier's Medal:

M/Sgt Paul Melvin Hall, Hq Btry, 78th Gun Bn

Of course there are many more by this time and it is impossible to keep up with the continuing list of decorations awarded for conspicuous action in combat. Most antiaircraft organizations in Korea have been recipients of organizational or individual citations.

WHILE General Frank Milburn was at the Group CP during its attachment to the I U.S. Corps, the 78th AAA Gun Battalion under command of Lieut. Col. Thomas W. Ackert fired twelve missions and reported destruction of enemy guns, trucks and ammunition and more than 100 enemy killed in action. The ROK field artillery accounted for 150 more dead and more destruction of armament at about the same time.

At one time the 10th Group CP near Unsan was abandoned at 2030 hours as an enemy advance reached a point 1500 yards away and rifle and mortar fire was falling in the area. The 78th AAA Gun Battalion also supported the First Cavalry Division, firing many missions and achieving highly successful results under control of the Cavalry Divarty headquarters. Captured Communist Chinese reported that their soldiers dug in and remained immobile during the daytime but suffered many casualties from the "automatic artillery" at night when they were assembling for attack or advancing toward UN positions. Road interdiction night fire was reported as highly effective.

U.S. Army photo

Lt. Col. Newbury, C.O. of the 3d AAA AW Bn. with General Marquat.

The activities of the 68th AAA Gun Battalion during the early days of the Korean action were in support of the 27th British Commonwealth Brigade where the batteries distinguished themselves in firing concentrations against hostile troop concentrations, artillery positions, tanks and in interdiction fire day and night. The highest praise was accorded to these units by the troop commanders of our distinguished British Commonwealth contemporaries.

Lieut. Col. Raymond C. Cheal reports some outstanding action by his battalion in breaking through road blocks, and covering retrograde movements by placing fire long distances behind the last points of contact to prevent the enemy from rushing up his striking forces and interfering with friendly withdrawals.

On 1 December the 10th AAA Group commander received orders to assemble the 78th and 68th AAA Gun Battalions and return to a southern area where the units would be returned to the Fifth Air Force control for employment in air defense around an important establishment. Thus ended a long and highly laudatory service in ground support roles for the 10th AAA Group Headquarters and the 68th and 78th AAA Gun Battalions during which many doctrines of employment were proved and others improved or completely developed.

WHEN contacted, the 78th and 68th AAA Gun Battalions previously mentioned, the 76th AAA AW Battalion under command of Lieut. Col. C. L. Andrews with Lieut. Col. T. A. Barker as assistant commander, and Battery D, 865th AAA AW Battalion, Captain George Eismann, commanding, were installing the first integrated air defense antiaircraft installation since the "roll up" period. It would be normal that serious delays would be encountered in reactivating the fire control mechanisms which had not been used, or even accompanied the units, during the ground defense role operations but this was not the case. These troops had collected and reassembled their radar and power units, shipped from Pusan, and within twenty-four hours, had some guns of the batteries prepared to fire.

Excellent judgment had been exhibited in leaving technical experts with the radar and power equipment at Pusan to service and operate these units periodically in order that they might not deteriorate before being called again into use. The considerable combat damage experienced by the guns during ground support operations was being reduced by the battery maintenance experts with ex-

Silver Star Award

PRIVATE VINCENT A. KREPPS, RA13272-331, Artillery, United States Army, a member of Battery D, 82d Antiaircraft Artillery Automatic Weapons Battalion (Self-Propelled), 2d Infantry Division, displayed gallantry in action against an armed enemy on 1 September 1950 in the vicinity of Yongsan, Korea. On this date his battery was preparing to defend its position against an enemy attack. Private Krepps, observing that an abandoned antiaircraft firing vehicle was obstructing the road and preventing a tank from passing, voluntarily left the security of his perimeter and moved over several hundred yards of terrain which was exposed to hostile fire. He was successful in moving the vehicle to the side of the road, allowing the tank to pass and complete its mission of neutralizing an enemy road block. He then performed emergency repairs on the vehicle, displaying complete indifference to the enemy fire which was sweeping the area, and drove it through an enemy road block. He successfully drove the vehicle to the safety of his battery's perimeter, although the entire route was subjected to intense enemy antitank gun and mortar fire. He then organized a crew to man the weapons of the salvaged vehicle and commanded that crew in the ensuing fight in which his battery repulsed the enemy. His daring and quick thinking saved a valuable vehicle which was of immeasurable aid to his comrades in their successful stand against the enemy. The gallantry displayed by Private Krepps on this occasion reflects great credit upon himself and is in keeping with the high traditions of the military service. Entered the military service from Maryland.

U.S. Army photo

Battery C, 3d AAA AW Bn., at Hamhung. Lt. Edward Pankin, SFC John D. Kinnan, Sgt. Richard Hartigan, Pvt. Earl Harvey and Pfc Andrew Yanik with three ROK gunners.

cellent support from active and most efficient Ordnance Department teams.

The terrain accommodated itself to the establishment of ideal antiaircraft artillery defense positions and the gun crews were anxious to test themselves and their equipment once more at flying targets of the Communist Chinese air force. Thus far, however, the Allied Air Force has engaged the Communist MIG-15s as soon as they crossed the Yalu where the hostile aircraft were either destroyed, damaged or driven quickly back into their "sanctuary" north of the Yalu. These tactics, unparalleled in military history insofar as there being provision for a safe haven for attacking enemy air elements is concerned, have kept the Red flying elements from penetrating deeply into our defenses. Future developments may change this picture, however, and the antiaircraft artillery must be prepared to meet all eventualities.

The following gun crews were visited in positions:

78th AAA Gun Battalion, Lieut. Colonel Thomas W. Ackert, commanding. C Battery: Capt. R. R. Cacchiotti, Battery commander, 1st Lt. Martin Kelly, 1st Lt. Kenneth McGeughey, 1st Lt. Jack Johnson, 1st Lt. George J. Holmes, SFC Willis Wheatley, Cpl. W. Holly, PFC Charles Simmons, Pvt. Clifford Wellmer, Cpl. Clarence Reese, Sgt. Kasinger, Sgt. Freddy Ferrs, Sgt. Charles Hamrick, PFC Thomas Whitely, SFC W. Atkins, SFC Aurboy Reeves, SFC Homer Cobb. B Battery: Capt. D. W. Meyer, Battery Commander, 1st Lt. Bert Bass, 1st Lt. John Engstrom, Sgt. Blair, M/Sgt. Cannon, SFC Nichols, Sgt. Colomo.

68th AAA Gun Battalion, Lieut. Colonel Raymond C. Cheal, commanding. D Battery: Capt. Richard E. Fazakerley, Battery Commander, 1st Lt. Shelton O. Mitchell, 1st Lt. David Duggan, 1st Lt. Donald Ritz, M/Sgt. Thomas M. Carlisle, PFC Dino Liverano, SFC Leo Hannibal, Cpl. Roy Hults, PFC Bennie Sanders, PFC Lawerence Hayes, Sgt. John Van Horn, Cpl. Dominick Macari. C Battery: Capt. Henry C. Turck, Battery Commander, 1st Lt. James H. Glandorf, 1st Lt. Alexander E. Shackleford, M/Sgt. George Dailey, Sgt. Harry C. White, Sgt. Edward Timmons, Sgt. Wm. Hurely, Sgt. Robert Roach, Sgt. Charles Egan, Sgt. Donald V. Murphy, Cpl. Richard Stranzenbach. B Battery: Capt. Boyd McGinn, Battery Commander, 1st Lt. Fred Renaud, 1st Lt. James Bluhm, 1st Lt. Robert Humphreys, 2nd Lt. Carl North, M/Sgt. John Pankratz, SFC Teofil Valent, SFC Dudley Von Gruengen, SFC Howard McLendon, Sgt. Charles Piotrowski, Pvt. Henry Hoffman, Sgt. Joseph Watson.

76th AAA AW Battalion, Lieut. Colonel C. L. Andrews, commanding. B Battery: Capt. Brady Dunlap, Battery Commander. Cpl. E. H. Kennedy, Sgt. James Ramsey, Cpl. Thomas Winston, PFC Johnston Thedadus. C Battery: Capt. Albert V. Dean, Battery Commander. Lt. Samuel E. Chumlen, Cpl. Albert Anderson, Pvt. Jerry Lyman, Pvt. William Bullock, PFC Joseph Harper, Cpl. Joyce Theregood, Sgt. James Dixon. B Battery: Cpl. Alvin Hallenger, PFC George E. Gaines, Cpl. Carl Hickerson, PFC Raymond Miller, PFC Billie Christian, PFC Issac Brown, Sgt. William Martin.

BATTERY D 865th AAA AW Battalion was the last American unit to leave Pyongyang when the United Nations forces pulled out. It had been engaged in airdrome defense throughout the UN occupancy of that area and had fired at itinerant hostile planes which flew over the area from time to time and which frequently dropped bombs but without doing damage to the defended installations. The men of one of the crews of this battery visited were Sgt. Ted Baca, Cpl. James Diddle, Cpl. LeRoy Crafton, PFC Ralph Adams and Pvt Donald Morris.

Leaving the 10th AAA Group new defense area I set out to locate Lieut. Col. Walter Killilae's 82nd AAA Automatic Weapons Battalion, the organic antiaircraft of the fighting Second Division, commanded by Major General Robert B. McClure. Brigadier General Loyal M. Haynes is commanding general, Division Artillery, and he had many com-

Silver Star Award

SERGEANT FIRST CLASS LAWRENCE F. MAURITZ, RA 36849733, Artillery, United States Army, a member of Battery C, 82d Antiaircraft Artillery Automatic Weapons Battalion (Self-Propelled), 2d Infantry Division, displayed gallantry in action against an armed enemy on 17 September 1950 in the vicinity of Chobi-gok, Korea. On this date he was commanding a self-propelled antitank gun. As the vehicle was advancing along a narrow road that ran through open country, it was fired upon by several enemy antitank guns and suffered two direct hits which immobilized it. Although the vehicle had been stopped in an exposed position, Sergeant Mauritz did not seek cover, but remained with the crew and continued to deliver effective fire upon the enemy. With complete disregard for his safety, he led his squad in wiping out by small-arms fire the crew of an enemy machine gun which opened fire on their flank. His gallant and determined action was a vital factor in eliminating the enemy and clearing the way for the advance of the infantry. The intrepid gallantry displayed by Sergeant Mauritz on this occasion reflects great credit upon himself and the military service. Entered the military service from Wisconsin.

ments on the magnificent performances of all "his men" in the division artillery which he had organized and led through some of the toughest fighting of the campaign thus far.

PFC David Garza, decorated with the bronze star medal for gallantry in action, guided me to the Battalion command post which was just being established in bitter cold weather. For the first time in months the men were afforded the luxury of being housed in tents and gradually stoves were put into action to provide them with heat after a freezing road march. In the kitchen tent, however, the cooks had prepared a delicious meal of chicken with raised biscuits and fancy dessert, in which environment was emphasized the tremendous morale value of the U. S. Army cook.

Colonel Killilae, Major J. C. Maldonado and recently promoted Major K. L. Boullion, the new executive, gave vivid descriptions of the hectic combat in which the troops had participated. It developed that the entire Headquarters Battery of this battalion had been lost in a roadblock action with the division south of SUNCHON. The action of 29-30 November on the road between SUNCHON and KUNU-RI in which both the 23rd and 9th Infantry regiments and the battalion suffered heavy losses was described in detail. The enemy, later identified as two regiments of Red Chinese, blew up two ammunition trucks in the division column and when the movement was halted they opened up with murderous mortar and automatic weapons fire and swarmed down from the hills on all sides with telling effect.

THE infantry, supported by antiaircraft artillery automatic weapons, fought bravely and finally extricated the column but not without great sacrifice. The 82d AAA AW Battalion lost twelve officers and 263 men, mainly from the Headquarters Battery which was caught in the most exposed sector of the road block. Sgt Bobby F. Dill, squad leader of an M-16 multiple .50 caliber machine gun unit, described how he had to shoot a way clear for General Haynes' jeep to get through some of the hottest action. After the Chinese attack had been driven off finally, the British reported extremely heavy losses to the enemy. One eyewitness told of finding a complete M-16 antiaircraft multiple machine gun crew dead beside its weapons and more than 500 dead Chinese troops distributed along the approaches to the weapon.

Some of the individuals interviewed were: Sgt Lewis E. Chaney, A Battery; Capt. Edgar L. Casey, Battery Commander, A Battery; Sgt. Bobby F. Dill; 1st Lt. C. T. Hathaway, Battery Commander, B Battery; Capt. Robert Adams, Battery Commander, C Battery; Capt. Simon Stevens, Battery Commander, D Battery.

Lieut. Col. Killilae was anxious to obtain replacements of men and weapons and get back into action with the division. All the men I talked to reflected the same attitude—morale was extremely high in this organization which had experienced some of the roughest combat in the Korean War up to that date.

Next a long and dusty jeep trip took me to the 24th Division where General John H. Church was planning new action for his division in his command post van. Brigadier General Henry J. D. Meyer, Division Artillery commander, sent for Captain Charles W. Harrison, commanding A Battery, 26th AAA AW Battalion—the only active unit in the battalion, by the way. Both talked about the splendid performance of the battery in support of the infantry and field artillery units. The men were in the best of spirits and raring to go.

Silver Star Award

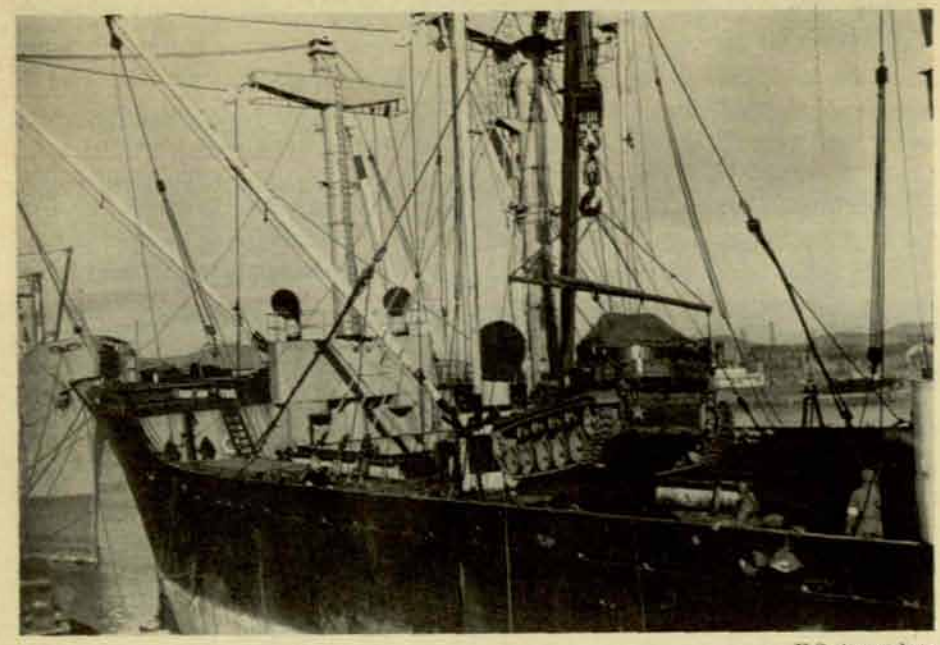
CORPORAL HAROLD M. OLSON, RA-17262076, Artillery, United States Army, a member of Battery B, 82d Antiaircraft Artillery Automatic Weapons Battalion (Self-Propelled), 2d Infantry Division, distinguished himself by gallantry in action on 1 September 1950 in the vicinity of Changnyong, Korea. On this date Corporal Olson was a squad leader of an antiaircraft firing vehicle attached to an infantry battalion which had been surrounded and was desperately defending its perimeter. At dark the enemy overran and captured a hill overlooking the battalion positions. From this point the enemy delivered devastating mortar and small-arms fire on the Battalion Command Post, the Battalion Aid Station, and the motor vehicles in the area. Ordered to place fire on the enemy position, Corporal Olson and his squad covered the positions with such intensity and accuracy that the enemy fire was silenced and thirty enemy soldiers killed and without regard for the fact that in order to do so they must expose themselves to the intense enemy fire. The hill was retaken a few minutes later by the infantry. The inspirational and gallant heroism displayed by Corporal Olson on this occasion reflects great credit upon himself and fully upholds the highest traditions of the military service. Entered the military service from Minnesota.

More jeep travel, dust and extremely cold weather took me to the CP of the 25th Division where General William B. Kean was preparing to visit his division front line troops in new positions. Captain L. M. Pederson, commanding A Battery, 25th AAA AW Battalion, the division organic antiaircraft organization of which A Battery only was active, was interviewed at the battery position defending the airstrip in one of the areas. His battery manned the M-15 A-1 37mm and M-16 quad .50 caliber machine gun equipment. At the position I talked to Pederson, Lieut. R. B. Myers, Sgt. McPhall, Cpl. Moody, Pvt. Coffman, PFC Porter and Private Incampo, all in fine physical condition and enthusiastic over their war experiences thus far.

At the command post of Brigadier General Frank S. Bowen, Jr. of the 187th Airborne Combat Team, I learned of the exploits of Battery A, 88th Airborne Antiaircraft Battalion under command of Captain Blaine Young. The general told of the magnificent performances of this unit in the very active assistance to the 187th Airborne Battalion since its arrival in Korea. As an additional duty Battery A of the 88th Airborne AAA AW Battalion was equipped with pack 75mm howitzers "to provide additional fire power" in moving situations. The battery is equipped organically with towed 40mm guns and the M-55 trailer mount quad .50 caliber machine guns. It is apparent that antiaircraft automatic weapons have a valuable role to play in airborne infantry operations but it would appear that specially designed antiaircraft weapons equipment is a matter for immediate future consideration.

GENERAL Hobart R. Gay's fighting First Cavalry (Infantry) Division was a continuous dust column moving south at the time I located it and I did not get to visit Battery A of the 92d AAA AW Battalion, Capt. Roger W. Miller, commanding. This battery also "ghosts" for the divisional organic antiaircraft battalion and has been in much of the hottest action of the campaign during which it has distinguished itself.

After a flight of more than three hours, deep over the enemy territory, in a T-6 piloted by Capt. F. E. Merritt, aide to General Earle E. Partridge, Commanding General, Fifth Air Force, who arranged the trip, I left the Eighth Army



U.S. Army photo

M-19 AA gun is hoisted aboard the *Clarksburg Victory* at the Hamhung evacuation.

command of the late General Walton H. Walker and flew as a guest of General Partridge to the X Corps sector in the Hamhung-Hungnam area.

Major General Edward M. Almond, commanding X Corps, set up a flight in an L-17 staff plane far into the reservoir area and over some of the most rugged country over which soldiers ever have been called upon to fight. The precipitous drop from the single track road over the "hump" defies description. The Chinese Communists could be observed advancing toward the perimeter set up by X Corps to cover the removal of men and equipment. Magnificently coordinated action between Army, Navy and Air completely thwarted the hostile effort and all personnel, thousands of refugees and all supplies and matériel were removed. The antiaircraft units were prominent in the final defense and were among the last troops to leave the area.

The 50th AAA AW Battalion, a corps reserve unit, commanded by Lieut. Colonel Stu O'Malley, landed at IWON with the X Corps and took up positions in the Security Force. Battery A, under Captain H. H. Rich, was attached to the 1st Marine Regiment and fought with the Marines in the famous Koto-ri area where history was made.

The hottest fighting of that campaign was around Hill 1081. Capt. Rich reported one occasion in this action when 500 Chinese swarmed down from the hills apparently aiming for one M-16 quad .50 caliber weapon. Two men were killed at the gun but combined action finally stopped the Chinese. Afterwards the United Nations force in the area was surrounded but finally fought its way to freedom.

One M-16 unit attached to a company of Marines worked with the rifle units in breaking up road blocks, knocking out an enemy position in one of the power plants and smashing suicide charges by Chinese fanatics. The M-19 twin 40mm was used effectively for long range interdiction against advances of the Communist forces spotted by "mosquito" airplanes. The Marines described the effect of these weapons against personnel as action "like throwing buckets of hand grenades into troop formations." When the Marines began their southward trek after being extricated from envelopment the antiaircraft weapons were attached to the rear elements and were effective in keeping the enemy from pressing too hard.

Crews of the 50th AAA AW Battalion were establishing an airfield defense when visited. At the time Battery A was completing its road march from the hills and going into temporary bivouac.

The following personnel were contacted: Lt. Col. C. S. O'Malley, Lt. Col. L. J. Lesperance, Maj. T. L. McNerney, Maj. J. A. Paddenburg, Capt. R. T. Stanek. C Battery: Capt. K. W. Swayze, Lt. J. J. Tighe, Lt. C. R. Breed, Sgt. A. E. Prince, Sgt. B. R. Kingsley, Cpl. H. Herring, Pvt. C. Spencer, PFC J. E. Brantley, Cpl. J. W. Grass, PFC H. M. Lyles, Cpl. M. O. Smith, PFC T. D. Turner, Cpl. D. P. Ortiz, Sgt. W. Sprague, PFC M. Sanders, PFC W. Lycans, Pvt. N. Ruiz, PFC C. Kohler, Pvt. H. Winfrey. B Battery: Capt. M. S. Eisenhart, Capt. R. E. Penner, Pvt. D. Lorenz. A Battery: Capt. H. H. Rich.

The next unit visited was the 3d AAA AW Battalion, organic antiaircraft of the Third U.S. Division. Major General Robert H. Soule, commanding the division, and Brig. General Roland P. Shugg, Division Artillery Commanding General, spoke in highest terms of the performances of the organic antiaircraft artillery units.

WHEN Brig. General Armistead D. Mead formed the famous "Task Force Dog" the headquarters, 3d AAA AW Battalion Headquarters, Lieut. Col. Alvin L. Newbury, commanding, was used as the Task Force Headquarters augmented by certain key staff officers from the division. With its organized communications and administrative sections, the headquarters battery performed a most useful function during all operations of this Task Force. Colonel Newbury also has developed an excellent procedure for firing at ground targets using orthodox field artillery methods of identification and location of targets. Mil scales

Silver Star Award

CORPORAL TONY GONZALES, RA19-338536, Artillery, United States Army, a member of Battery B, 82d Antiaircraft Artillery Automatic Weapons Battalion (Self-Propelled), 2d Infantry Division, displayed gallantry in action on 1 September 1950 in the vicinity of Changnyong, Korea. On this date he was a driver of an armored personnel carrier which was attached to a rifle company and assigned the mission of evacuating wounded men. He drove his vehicle two miles through enemy-held territory to the collecting station and safely delivered the wounded. He then tried to return to his unit but en route his vehicle was hit so repeatedly by enemy antitank fire and grenades that the vehicle was set afire. Despite the danger from the flames, he continued to drive until the vehicle could go no further. Despite heavy enemy small-arms fire, and with complete disregard for his personal safety, Corporal Gonzales attempted to remove from the blazing vehicle critical equipment and radio parts. After killing 14 of the enemy with his .50 caliber machine gun, he led his crew to safety. The gallantry and high devotion to duty displayed by Corporal Gonzales on this occasion reflect great credit upon himself and the military service. Entered the military service from Texas.

U.S. Army photo

Capt. Edwards of C Battery, 3d AAA AW Bn., in a forward defense area.

have been placed on all the weapons to facilitate this type of ground firing.

The antiaircraft artillery personnel performing staff duties for Task Force "Dog" included Lt. Col. Alvin L. Newbury, executive; Major Charles W. Stewart, assistant executive officer; Major Robert B. Hay, S4; Capt. Fred Patterson, assistant S3; Lieut. George C. Dorste, assistant S2; Lieut. Ollie A. Strickland, motor officer; M/Sgt. Robert C. Steelman, intelligence Sgt.; M/Sgt. Nathan M. Fisher, mess sergeant.

Battery A, 3rd AAA AW Battalion supported the 65th RCT along the MSR as far north as SUDONG. On 6 December the fourth section of the first platoon accompanied a patrol of Task Force Childs of the 65th RCT northwest of MAJONG-DONG with the mission of clearing the road for the passage of Task Force Dog en route to assist in the relief of the Marines. In the vicinity of YONDAC-BONG the group ran into a road block covered by heavy enemy fire. The antiaircraft immediately went into action and silenced the hostile fire, brought out some Marine wounded and furnished information upon which the Marines later cleaned out the road block. The equipment was hit three times during this engagement. Four days later a situation developed with similar results, in which the antiaircraft crew had one man seriously wounded in this encounter with the enemy.

U.S. Army photo

General Marquat with members of the 78th AAA Gun Bn.

Battery B, Capt. Stanley H. Alpaugh, assigned two M-16 units to accompany a convoy of the 15th Infantry about 29 November and ran into an ambush of a large body of enemy at "Ambush Alley." The first unit to go into action immediately had its squad leader wounded and Cpl. John Astle was finally left alone to load and fire the weapon. He remained in action in this manner for several hours standing off the enemy and holding the position until the column could reorganize and retire.

On the 28th of November Sgt. John E. Murley, squad leader of an M-16 unit, was on convoy duty with the 15th Infantry when guerrillas attacked. The unit was cut off from the rest of the force for three days during which the gunner was wounded and Sgt. Murley took over the firing duties. He later brought the weapon, the wounded and remaining crew members out of the ambush.

B Battery was emplaced in the ground defense of the YONG-PO Airfield in the HUNGNAM perimeter in support of Company "K", 15th Infantry.

Battery C of the 3rd AAA AW Battalion, commanded by Captain Dave W. Edwards, reported action 40 miles north of Hamhung while supporting the 3rd Battalion, 7th Infantry. A Chinese machine gun nest which was causing a lot of trouble was wiped out promptly. Lt. Glasgow and Sgt. Brott while supporting the 1st Battalion of the 7th Infantry in rear guard action were temporarily cut off from the column but promptly reorganized their group, picked up wounded and fought their way back to the main body.

SFC Hill of this battery on 30 November engaged a Chinese ambush with his single crew until a group of friendly ammunition trucks could clear an ambush, then picked up wounded and returned to the column. The wounded were transported out of the area on the half-track vehicle of the M-16 firing unit.

Sgt. Hamby also reported driving off an ambushing force after protecting a damaged field artillery unit, inflicting heavy damages on the enemy. SFC Caines and his crew manning a twin 40mm weapon located some enemy engaged in night attack maneuvers and fired into them intermittently until daylight, inflicting many casualties. His crew received mortar and rifle fire throughout the night.

Battery D under 1st Lieut. G. Higdon

U.S. Army photo

Capt. Boyd McGinn, C.O. Battery B, 68th AAA Gun Bn. and Major Harry Landsman, S3, with General Marquat.

defended air strips and supported divisional engineers' activities and infantry throughout this campaign. The First Marine Division successfully closed on Hamhung on 11 December and Task Force Dog was dissolved.

INDIVIDUALS of the 3rd AAA AW Battalion visited in forward area positions in the perimeter defense were: Col. Alvin C. Newbury, Battalion Commander. Major C. W. Stewart, Capt. Fred Patterson. B Battery: Capt. Stanley H. Alpaugh, Battery Commander. Lt. William S. Hill, Lt. Joseph J. Scott, Sgt. Ensling, Cpl. Bielby, PFC John Migneco, PFC Syzmcovich, PFC Rose, Sgt. John E. Murley, Cpl. Carl F. Reid, Cpl. M. G. Belknap, Pvt. A. C. Miller, PFC E. L. Campbell. C Battery: Capt. Dave W. Edwards, Battery Commander. Lt. Edward Rankin, SFC John D. Kinnan, Sgt. Richard Hartigan, Pvt. Earl Harvey, PFC Andrew Yanik, Sgt. Russell C. Calanni, PFC Gerald Dugas, PFC Ralph Wallace.

Maj. Kale, Executive Officer, 2nd Battalion, 7th Infantry Regiment, also was interviewed.

The 3rd AAA AW Battalion units were supporting the final evacuation from Hungnam and "loaded out" among the last U. S. units.

U.S. Army photo

82d AAA AW Bn. use their ten-ton wrecker to salvage a North Korean tank.

U.S. Army photo

General Marquat with pilot, Capt. D. E. Merritt, AF, with plane used in reconnaissance over Pyongyang.

The 15th AAA AW Battalion, commanded by Col. R. W. Hain, is serving as the organic antiaircraft organization of the Seventh U. S. Division. Several batteries of this battalion were conspicuously engaged in the Chosin Reservoir battle and in the early push to the Yalu River and the later retirement therefrom. Major General David G. Barr, Division Commanding General, and Brig. Gen. Homer W. Kiefer, Divarty Commanding General, verified the excellent performance of the 15th Antiaircraft Artillery Battalion units. Major D. S. Harwood and Major J. N. Hickok conducted the battalion commander and me to the batteries in position in the forward perimeter defense. This battalion also remained until late in the final evacuation of the Hungnam beachhead.

Capt. James R. McClymont, commanding Battery D, tells a dramatic story of his battery's action between 27 November and 2 December in the Chosin Reservoir combat area. The battery was attached to the 31st Infantry and reattached to D Battery of the 7th Field Artillery and moved with these units on a mission to relieve the Marines on the east side of the Chosin Reservoir, while the latter were regrouped to handle a hot situation on the west and south sides of the area. The troop units were on the march on the 28th of November when they were hit suddenly by Communist Chinese hostile elements.

Immediately upon being caught in heavy mortar, rifle and machine gun fire, Capt. McClymont organized a patrol to seek out the enemy, starting with eight men and increasing the patrol as he went along. They killed many and finally captured four Chinese who reported 4,000 CCF troops in the immediate area. The captured Chinese and many of the killed Chinese were armed with U. S.-made Tommy guns, Chinese-made light machine guns and rifles and wore heavily padded clothing and special winter shoes. They carried "potato masher" types of grenades which apparently did not carry too much of a charge as they did little damage to the men when exploding in the vicinity but not actually among them.

A heavy fire fight continued throughout the night of the 28th-29th with the antiaircraft automatic weapons taking a heavy toll of the enemy attackers but also losing heavily. One M-16 unit had its complete crew killed or disabled and the company clerk was the last man to shoot the weapon. The antiaircraft weapons fired into thatched houses to obtain night illumination with which to identify the attacking Chinese. The latter did not appear anxious to advance on the antiaircraft automatic weapons but concentrated fire on them to take them out of the combat.

Silver Star Award

PRIVATE JAMES E. BRISCO, RA18262947, Artillery, United States Army, a member of Battery D, 82d Antiaircraft Artillery Automatic Weapons Battalion (Self-Propelled), 2d Infantry Division, displayed gallantry in action against an armed enemy on the night of 31 August and 1 September 1950 in the vicinity of Yongsan, Korea. At approximately 2300 hours on 31 August 1950, the crew of an Antiaircraft Firing Vehicle was forced to abandon the vehicle by superior enemy forces. One man, Private Brisco, was prevented from leaving the turret by very accurate small-arms fire. While wave after wave of enemy troops passed by and around the vehicle he sat motionless in the turret. When two enemy riflemen prepared to destroy the vehicle with hand grenades, Private Brisco shot them. When the early morning light disclosed no enemy troops in the immediate vicinity, Private Brisco, though without training in the operation of the vehicle, realizing the critical need for combat vehicles of this type, resolutely decided to save the vehicle. He was successful but throughout the entire distance to friendly forces he was under intense enemy mortar and small-arms fire and was forced to drive the vehicle through at least one enemy road block. The devotion to duty and indomitable courage displayed by Private Brisco on this occasion reflects great credit upon himself and the military service. Entered the military service from Texas.

ON the night of the 29th-30th the Chinese attacked in force again and the antiaircraft battery weapons accounted for 150 Chinese counted dead in the area, including one enemy soldier who carried a bangalore torpedo to the very platform of an M-19 gun before he was killed. Sgt. Denham, during this engagement directed his gun on a house and killed forty Chinese before the remaining enemy could leave. When the battery men went forward to pick up U. S. wounded in the area they found a U. S. lieutenant alive but shaken, in the same area as the forty dead Chinese, separated only by a small ridge of earth.

During the night 30 November-1 December, the 31st Infantry started to regroup in the area but the Chinese attacked from midnight until dawn and heavy action ensued. M/Sgt. R. M. Slater, in charge of a section of two weapons, found his crew and himself in position well ahead of the infantry during the night but continued to fire until daylight defending an avenue of approach of the Chinese with telling effect. Sgt. G. R. Brown manned one of the guns and Sgt. Jack Hiday the other until the latter was hit and Slater took over. At daylight the friendly air came to the assistance of this particular sector of the reservoir action and a helicopter evacuated some of the men. The remainder of the wounded were zipped into their arctic sleeping bags and loaded into trucks for evacuation.

The evacuation road march started on 1 December with 25 truckloads of wounded from the engagement in the area. The automatic weapons were almost out of ammunition but the gunners mounted bazookas on the carriages and continued a running fight with the Communists. The enemy attacked the convoy and Sgt. Olson performed magnificently with a submachine gun that he had picked up when his own ammunition ran out.

During the hectic action the battery lost one officer and ten enlisted men killed in action, two officers and 38 enlisted men wounded in action and 32 missing. The heroic action of this battery

U.S. Army photo

A captured 37mm Russian-made gun.

U.S. Army photo

Three captured Russian-made 37mm AAA guns.

was highly lauded by everyone who discussed the incident.

Major John C. Hiles, then a captain commanding A Battery of the 15th AAA AW Battalion, told of the operations of his organization while attached to the 17th RCT, commanded by Colonel Powell who personally praised the unit in discussions with me when I visited his CP in the forward perimeter at Hungnam. The weapons of Battery A were used to support the infantry on numerous river crossings on the trip northward during which the twin 40mm guns proved deadly against enemy defensive strong points. It is reported that on one occasion a single burst took out a machine gun and four enemy. When the column hit an ambush, one of the M-16 units was rushed forward and took the area under fire. The enemy action was halted and 123 dead were found in the area.

At another point on the march, fire was directed on two leading tanks of the infantry advancing column and Lieut. Wellington Jones maneuvered two automatic weapons units across a bridge and to the flank of the action and shot out the hostile fortified position. Sgt. Edward Perkins later discovered a group of enemy on a hill, fired and drove them away leaving 80 killed in the area.

THIS unit was with the first 7th Infantry elements to reach the Yalu and were among the last to pull out from the area. SFC N. S. Osborne was section leader of the leading antiaircraft element to reach the Yalu. I saw members of this battery in position in the Hungnam defense in a well selected position supporting the infantry in collaboration with the field artillery.

Officers and men of this battalion to whom I talked were: Col. R. W. Hain, Battalion Commander. Major J. N. Hickok, Capt. C. F. Farber, Capt. T. G. Taft, Capt. G. B. Sage, Capt. E. C. Ireland, Capt. A. M. Meranski, Capt. A. D. White, Capt. J. H. Fiser, Capt. R. D. Moton, WOJG Mathew Dadich. D Battery: Capt. J. R. McClymont, Battery Commander, 2d Lt. C. P. Chapman, SFC R. M. Slater, Cpl. J. R. Dorsey, PFC R. L. Olson, Cpl. C. J. Auger, PFC C. E. Merica. A Battery: Sgt. R. E. MacDonald, Cpl. F. R. Olson, Cpl. O. R. Strand, PFC R. C. Wyant, PFC M. E. Blake, Sgt. W. J. Osborne, PFC R. Montpetit, Cpl. O. Cheek, PFC R. Huffman, PFC R. Baker.

This is a brief summary of the things I saw and heard on my second trip around to the antiaircraft units in Korea. During the first visit there were many youngsters in the units who were enthusiastically awaiting their first contact with the enemy—this time these same young men reappeared as seasoned veterans, matured by the realization of the combat action they had sought. Infantry, artillery and special troops all displayed a supreme confidence in their cause, their leaders, their weapons and their ability to win. The only complaints I heard were directed at the necessity for their withdrawal which, of course, was necessary to permit the regrouping and reemployment of the forces.

An army composed of men like these may be overrun temporarily by vastly superior numbers but it can never be defeated.

Silver Star Award

SERGEANT FIRST CLASS MARION A. QUILLEN, RA17250349, Artillery, United States Army, a member of Battery D, 82d Antiaircraft Artillery Automatic Weapons Battalion (Self-Propelled), 2d Infantry Division, distinguished himself by gallantry in action against an armed enemy on 1 September 1950 in the vicinity of Agok, Korea. On this date he was a section leader commanding two antiaircraft firing vehicles. At about 0300 hours when the leading elements of the attacking enemy came within range of his guns, Sergeant Quillen gave the order to open fire. The enemy continued to advance and as the attack developed, enemy fire became devastating. Although units to his right and left started to withdraw, his crews were stimulated by his leadership and indomitable courage and continued to fire smoothly and effectively until forced to withdraw because of ammunition shortage and a defective traversing mechanism. As a result of this tenacity great damage was inflicted upon the enemy. After withdrawing for a mile, they met a tank crew from whom additional small-arms ammunition was obtained. Sergeant Quillen and his crews again engaged the enemy with their individual weapons in his sector until forced to withdraw to avoid certain destruction or capture. Sergeant Quillen's gallantry and indifference to his personal safety were determining factors in causing the enemy's defeat on this occasion and fully uphold the finest traditions of the military service. Entered the military service from Nebraska.

Silver Star Award

CAPTAIN JAMES R. McCLYMONT, O-1059196, Arty., U.S. Army, while commanding Battery "D," 15th AAA AW Battalion (SP), distinguished himself by gallantry in action near Chosin Reservoir, Korea, on 28 November 1950. On this date the battery which he commanded was providing close support fires for infantry and field artillery units in positions east of the reservoir. From his location at the battery command post, Captain McClymont learned that the command post of his first platoon was under exceedingly heavy enemy fire and was in grave danger. Captain McClymont called for volunteers to form a patrol to go to the rescue of the platoon headquarters and then led the patrol to the vicinity of the action. He saw that his patrol was far outnumbered by the enemy attacking force, which was firing automatic weapons, small arms, and mortars and was throwing hand grenades. With complete disregard for his personal safety, Captain McClymont exposed himself to almost certain injury or death by leading his patrol of one officer and six enlisted men quickly into close combat with the enemy. Under his cool and aggressive leadership, the patrol killed or dispersed all of the enemy in the vicinity. Captain McClymont himself killed a number of the enemy. As a result of Captain McClymont's personal daring and resourceful leadership, the patrol rescued one officer and six enlisted men who were still alive, and recovered the bodies of one officer and four enlisted men who had been killed. Captain McClymont's display of gallantry on this occasion was in keeping with the highest traditions of the Army and reflects great credit upon himself and the military service. Entered the military service from Washington.

10th AAA Group—Divarty For First ROK Division

From Colonel William H. Hennig, Arty.

Kunuri, Korea, 10 November 50—We have been and still are too busy to write. The 10th AAA Group has been acting as Divarty for the 1st ROK Div.—from Taegu to Pyongyang to Unsan, where we hit about three divisions of Chinese and, as the enclosed extract from a battalion periodic report will show, bounced! Other battalions under Group included a 155 howitzer battalion and a 4.2 mortar battalion. ROK 105's were also assisted and supervised.

Periodic Report No. 7 — AAA Gun Bn (90mm), 5 Nov 50

MISCELLANEOUS: On the evening of 1 November 1950 the — AAA Gun Bn (90mm), including the — SRMU, was emplaced in the vicinity south of Unsan, Korea, at Hwaongjong, Sodang-dong and Samtan River bed. The battalion was in a general support role with the 1st ROK Division.

The enemy, an estimated two divisions of Chinese Communists, launched a three-prong attack at 1715 hours. The attack was directed against elements of the — Cavalry Regiment to the left of Unsan and the 15th, 11th and 12th Regiments of the 1st ROK Division, forward and to the right of Unsan.

The Battalion expended 1,151 rounds of ammunition on 92 fire missions during the 24-hour period ending 1800 hours 1 November 1950, the period prior to the general attack. These fire missions consisted mainly of harassing and interdicting fire against the enemy and repulsing enemy cavalry charges estimated at 1,000 strong.

Between 1830 and 2320 1 November, this battalion expended 1,319 rounds on seventy-five fire missions. This averages a fire mission every three minutes and fifty-one seconds. The targets were as follows:

Nature	*Number of concentrations*
No troops	8
En penetration	2
En Arty	2
En attack	55
Interdiction points	8

An example of the close range of the enemy infantry can be recorded from the fire direction center where fire missions were sent to the batteries with quadrant elevations of 71 mils. When M51 ammunition was expended the batteries fired M43 mechanical time ammunition. One battery commander stood between his center guns and was able to observe the shell bursts on enemy troops; had it been daylight he would have employed direct fire.

Throughout the enemy attack Liaison and KMAG Officers attached to the Regiments of the 1st ROK Division requested artillery fire and reported that the lines could only hold as long as firing continued. The — AAA Gun Battalion continued to fire until ammunition was expended. During firing, infantry elements fell back through this unit's position to regroup.

March orders were given to the batteries, one at a time, when ammunition was exhausted; vacated gun positions were overrun by enemy troops shortly after departure. The batteries proceeded to the Battalion CP area where a convoy was formed. Although personnel of the battalion were completely aware of the fact that the only route of withdrawal was over the same road that the battalion had been barely able to negotiate under ideal conditions on movement North into position, there was no panic or attempt to withdraw prior to fulfillment of the battalion mission. Battalion withdrew without casualties or loss of equipment to the area designated by higher authority.

FROM PUSAN TO UNSAN WITH THE 10TH AAA GROUP

By Captain Arthur C. Brooks, Jr., Artillery

WHEN a well organized antiaircraft group becomes a hybrid artillery organization assigned a mission unfamiliar to the majority of the officers, what happens? This was the problem that confronted Colonel W. H. Hennig, commanding officer of the 10th AAA Group, upon its arrival in the Korean theater of operations. The Group had been assigned to the 5th Air Force, but not being needed as antiaircraft artillery, it had been further assigned to I Corps as supporting artillery.

A survey was made to see how many of the officers had field artillery experience; the results were discouraging. It was apparent that the Group itself would be more directly concerned with setting up and operating a fire direction center. Together with Major Roy B. Card, Captain Bill Brown, 1st Lt. George Porter, and the author, Colonel Hennig started out to acquaint the rest of the officers with the basic principles of field artillery. There was time for two classes and the Group was on its way. They were ready and willing to undertake the assigned mission.

On 21 December Colonel Hennig reports the situation still unique and interesting, but no time to write!

During the campaign the 10th AAA Group has become a seasoned DivArty Headquarters. It has also functioned on occasion as task force and corps artillery. In addition to AW and AA gun battalions it has included three FA battalions, a mortar battalion, a rocket battery and other troops in antiaircraft roles.

Major Walter T. Ride, Maj. Harry Landsman, Col. Hennig, Major John B. Coontz, Lt. Col. Cheal and Capt. William F. Rawcliffe. The author, Capt. Brooks, seated.

Together with the 68th AAA Gun Battalion (90mm), commanded by Lt. Colonel Raymond Cheal, the 10th Group traveled over the winding dusty roads from Pusan to Taegu. Our mission was to support the fire of the 1st Cavalry Division.

On arriving at Taegu, the 68th Battalion set up in selected positions ready to fire into the now famous "Bowling Alley." Soon the word came from Brigadier General Palmer, Division Artillery commander of the 1st Cavalry, that the infantry was ready to "jump off." This was the long awaited breakout of the Taegu perimeter. A ten-minute artillery prelude was scheduled. For this opening barrage, the 68th was assigned 17 concentrations; a total of 272 rounds were expended. To "Charlie" battery, commanded by Captain Henry Turek, went the honor of firing the first 90mm AAA guns in the Korean Campaign. (See cover photo.)

The control of the firing of the antiaircraft guns was at the time vested in the Fire Direction Center of the 1st Cavalry Division Artillery. Colonel Hennig sent his complete S3 section over to the 1st Cavalry FDC with these instructions: "Keep your eyes open, learn what you can, help if possible, but stay out of the way!" This was done and many helpful hints were picked up. It could be said, perhaps, that the effective operation of the 10th Group DivArty can be traced to this helping hand.

On the morning of September 18, the 10th AAA Group was assigned to act as DivArty for the 1st ROK Division, commanded by Brigadier General Paik Sun Yup.

Assigned to the Group were the 78th AAA Gun Battalion (90mm), commanded by Lt. Colonel Thomas Ackert, and the 9th FA Battalion (155 How), commanded by Lt. Colonel John R. Magnusson. This was it; the first anti-

aircraft group ever to operate a field artillery direction center was opened for business in Taegu, Korea. But alas, the enemy had moved out of range. We did do some firing however. The 78th Battalion supported the 6th ROKs for some firing in their sector which, at the time, bordered on the 1st ROK Division right flank.

Our next move was from just outside Taegu to the Sinwon area. This end-run was a daring and well planned maneuver. At the time, the 1st Cavalry was engaged in a bitter battle just below Tabu-Dong. When the 1st ROK skirted the flank, they came close to the North Koreans that were holding the 6th ROK division on the right, and when they left the main road to cut across on the secondary road they were well up past the Tabu-Dong area. If the North Koreans in either the 6th ROK sector or the Cavalry sector had been spread laterally, they would have denied us this route. And it was from this position that elements of the 12th ROK Regiment took Hill 382, a height that dominated all the approaches leading to the North.

AT Sinwon, the 10th Group discovered that the enemy also had artillery. "Incoming Mail" was received by all elements of the Group. The firing was believed to have come from T-34 tanks and possibly 120mm guns. The FDC went into action. At first the fire control problem was such a novelty to the officers of the Group that the Fire Direction Center looked like a meeting of the Group staff. However, later when things settled down, most of the activities of the FDC were controlled by the S3 duty officer aided by M/Sgt Herman Schultz and SFC Julie Walkley.

The first assigned target was the approaches leading to, and the town of Kunwi. The four firing batteries of the 78th were assigned the town and the batteries of the 9th Battalion were assigned the approaches. Kunwi at the time was a suspected hotbed of North Korean activity. The damage done by the artillery was terrific. The 9th Field Artillery completely stopped two attacks coming from the town, and the 78th set the town itself on fire leaving it completely destroyed.

Throughout the month of September, the 10th AAA Group with its firing battalions chased the North Koreans. We never settled down for very long, because the enemy was always retreating. The roads on these hot September days were nothing but clouds of dust, and even the sands of Fort Bliss would have looked good to the Group about that time. How the guns and equipment of the firing battalions, especially those of the 78th, stood the strain of the daily moving was a source of constant amazement to the Group staff. It speaks well for the maintenance sections of the battalions.

The Group proceeded north, always trying to keep close to the 1st ROK headquarters. Like the rest of the divisions in the front, the 1st ROK had a division CP forward and a division CP in the rear. But we often found that the 1st ROK division forward was located in General Paik's hat, and many times we set up with division forward, only to find that we were with the advancing infantry elements. An odd place for a DivArty, with the infantry, and miles ahead of the artillery, but that is where the 10th Group usually could be found.

Perhaps we were lucky in not being overrun, but we like to think it is because of the wonderful protection always given us by the 1st ROK division. Our being that close to the front showed the Koreans that the artillery was right there to give them help and they in turn went out of their way to aid the Group. The 10th AAA Group was never safer than when it had a company of the 12th Regiment acting as its bodyguard. Everywhere the Group moved, Company 10 of the 12th Regiment moved too!

By this time, it became apparent to the Group communications officer, Major Kyle Davis, and radio officer, Lt. George Porter, that the radios used in the AAA role were not sturdy enough to take the pounding of the constant moving. A survey of the surrounding field artillery units was made and it was noted that the 608 radio stood up better than the rest. An effort was made to secure more of these radios.

In the meantime to maintain closer liaison with the ROK regiments, Colonel Hennig had sent Major Walter Ride to the Division headquarters; Captain John Davis to the 15th Regiment; and Captain Clarence Meyers to the 12th Regiment.

Major Ride was later awarded the Bronze Star for his work with the 1st ROK Division. After receiving the award, Major Ride made the remark that while he was with General Paik, he felt like an assistant platoon leader. It seems the General spent more time with the infantry platoons than he did in his division headquarters. Colonel Hennig could also verify this. One day while on an inspection tour of the front with the General, he found that he had followed the General into a town; a town that the infantry had not yet taken!

Of course, the Group also had its share of visitors. The most important of these was Major General William F. Marquat. Others were Colonel Hallack, artillery officer of I Corps, and numerous officers of the 40th Brigade, currently stationed in Japan.

We also found ourselves with other duties. Every time the 1st ROK Division would move, the trucks of the entire group moved day and night shuttling the ROKs in addition to the elements of the Group. As road block breakers, the laurels go to the M-55s. Whenever a road block was encountered, the quad 50's were dispatched to break it up. The North Koreans developed a healthy respect for that weapon. Once the quads opened up, the NOKs took to the hills.

WE entered Pyongyang with the advance element of the 1st ROK Division and the jeep carrying Colonel Hennig, Corporal William Souza and the author was just two vehicles behind the jeep of the 1st ROK chief of staff, when his vehicle hit a mine.

Our command post at Pyongyang is another unpleasant memory. Colonel Hennig in passing, had noted a building and mentally selected it as the group CP. When the advance was made through Pyongyang, he rode back to the building, alighted from the jeep, lit a cigarette, and watched the firing in the distance. The vehicles of the Group arrived, and as the Colonel moved down to greet them, the North Koreans came out of the building, out of the holes in the ground, and seemingly from every direction. That was one "Charlie Peter" we had to fight for. Luckily the NOKs were not very good shots. At the end of ten minutes of brisk firing, the NOKs were on the run, leaving three dead and nineteen prisoners.

At Pyongyang, the fire power of the Group was increased by the addition of the 2d Chemical Mortar Battalion, commanded by Lt. Colonel Edgar V. Bell.

After Pyongyang, it was back to the wheels. The enemy was retreating as fast

Sfc. Richard W. Rognrud eats his turkey dinner on his M-19.

as he could possibly move. We chased him, and the supply of gasoline was our biggest problem. Then we hit Unsan, and as it was so aptly put, the United Nations drive came to a "screaming halt." The NOKs were dug in in the hills, so we settled down to dig them out. On October 26, a Chinese prisoner was brought in. Higher headquarters was notified.

Then came October 31, Halloween Night! In the past we had seen flitting ghosts and pumpkin heads, but this was our first view of the galloping Chinese, blowing bugles and whistles, and ringing bells! Thank Heaven for the 11th Regiment of the 1st ROK and the 78th Battalion that night. The infantry-artillery teamwork was a thing of beauty. The infantry held the Chinese from the artillery, and the artillery slaughtered the onrushing hordes. That was the end of the "1st Phase" or should it be called the "advance phase"? We got out; our only casualties were suffered by the 2d Chemical Mortar Battalion, which was in the front lines with the infantry, helping hold the Chinese with mortar fire, carbine, tooth and nail.

Notify the Journal of your new address

JAPAN LOGISTICAL COMMAND

MAJOR General Walter L. Weible now commands the Japan Logistical Command. This element of the Far East Command was activated 25 August 1950, with the rear echelon of Eighth Army, headquarters at Yokohama, as the nucleus. The Japan Logistical Command exercises occupational responsibility and planning, under Far East Command, for all land areas in Japan proper except certain naval installations, and those responsibilities specifically allotted the Commanding General, Headquarters and Service Command, GHQ, FEC.

There are three subordinate commands as follows: Northern Command, headquarters at Sapporo, Hokkaido and northern Honshu; Yokohama Command, headquarters at Yokohama; and the Southwestern Command, headquarters at Osaka, southern Honshu, Shikoku and Kyushu. The British Commonwealth Occupation Forces (BCOF) is under Japan Logistical Command, successor to U. S. Eighth Army in Japan, for operational control and performs occupational functions in an area of southern Honshu.

The Japan Logistical Command provides logistical support to the United Nations Forces in Korea. It also supports the civilian relief program in Korea. This command is further prepared to render support to units and installations anywhere in the Far East Command.

It also provides services and supplies for non-self-supporting U. S. Government agencies, foreign missions, Department of Army civilians, dependents and others as provided for by the United States Government.

Biographical Sketch

General Weible entered the CAC as a private in 1917 and was commissioned in 1918. In World War II he served initially with the War Department General Staff and later with the Army Service Forces as the Director of Military Training. For his achievements during this period, he was awarded the Distinguished Service Medal and the Legion of Merit.

In 1945, he reported for duty in the Philippine Islands, where he assumed command of Base I (later changed to Nagoya Base) of the U. S. Army Service Command "Olympic" which was part of the Sixth Army. He entered Japan with the Army of Occupation in September 1945 and commanded the Base at Nagoya until 1 November 1945, when he assumed command of U. S. Army Service Command "Olympic," consisting of Bases at Nagoya, Wakayama, Kobe, Kure, and Fukuoka.

In 1947 and 1948 General Weible served with Headquarters Third Army and Headquarters Army Field Forces, returning to Japan in 1949 for further duty in the Far East.

Antiaircraft With The 7th Division

By Colonel Robert W. Hain, Arty.

TO THE EDITOR:

Thanks for yours of November 22. Apparently you had just read about the 7th Division reaching the border. Our troops entered the city of Hyesaujui led by a platoon of Battery A, 15th AAA AW Battalion (SP) under command of 1st Lieutenant Stephen Matejov. I arrived a couple of hours later.

Battery D (less 1 platoon) went with the 31st Infantry to Choshin Reservoir in the last week of November. They were hit hard by thousands of Chinese. Our M16s and M19s killed hundreds of Chinese and were only overrun because they had shot out all their ammo. A few survivors made their way to the 1st Marine Division troops which were also, and still are, surrounded by Chinese. I managed to get the battery commander, Captain McClymont, flown out. He has quite a story and if possible I will have him write it for you when he can.

Now we are in defensive positions preparing to make a last stand here at Hamhung and Hungnam. All M16s and M19s are up with infantry regiments. Men without primary armament are taking up a defensive position on a ridge behind the Division reserve line, using any machine guns, rifles, carbines they can lay hands on. We have hordes of Chinese pushing in from the south, west and north, and expect them from the east soon. To our rear is the sea. You know what that means. Well, we're awfully busy right now!

Regards,

ROBERT W. HAIN,
Lt. Colonel, Artillery.

Korea
Dec. 7, 1950

IN outlining the employment of automatic weapons with an infantry division in combat, more specifically the adventures of the 15th AAA AW Battalion (SP) in Korea as part of the 7th Infantry Division, I should like to point out that due to the nature of operations in this area such employment should not be construed as being recommended for future campaigns necessarily. In other words, take it with two grains of salt even if it is the latest word from the front.

To begin, those of us in the AAA should breathe a silent prayer of thanks to the foresight of those who were responsible for carrying out the expansion program of the AAA back in 1948. They made it possible to have trained AAA units ready for use in this present war. The AAA units shipped to Korea had the jump on a lot of people, and the training which my battalion had at Fort Bliss and Fort Lewis has really paid off in every way.

After our arrival in Japan in August and prior to our joining the 7th Infantry Division, we spent a week at the Katakai Firing Range by courtesy of the 40th AAA Brigade. During this time we fired at towed sleeves and RCAT planes, and although we have not fired a round since then at an airplane, it was excellent practice and the 60-mile road march to and from the range helped get a few of the bugs out of our vehicles. Following this we joined the division and proceeded to load out for the amphibious attack on the Inchon area. Due to the shortage of shipping we were forced to leave 1½ firing batteries in Japan for later shipment on turn-around vessels. This was not good but there was nothing we could do.

Col. Hain with members of the 15th AW Bn. at Hungnam.

I might say that Inchon is not the best place in the world at which to make an amphibious assault; as a matter of fact it is one of the worst. That is probably why it succeeded so well. It took us about three days to get all of our tracks, half-tracks, and trucks ashore. As soon as this was done, Divarty attached Battery B (Captain Ransom B. Cubbage) to the 31st Infantry Regiment, which was then engaged in operations south of Suwon. Battery B made an excellent showing in this fighting. They fired ground support missions in support of the infantry, sent out M-16s and M-19s as parts of patrols, executed "reconnaissance by fire" missions, and even engaged in some hand-to-hand combat with the Reds. This battery racked up a score of 300 to 400 dead Reds in this fighting, expending about 2,500 rounds of 40mm and 175,000 rounds of caliber .50 ammunition plus normal amounts of carbine, submachine gun, and pistol ammunition and hand grenades. The infantry loved it.

The ground support missions fired by Battery B were the normal direct-fire assignments covering the advance of infantry against enemy positions dug in around key terrain features. The M-19s were useful in this because their HE shell could be laid right into foxholes and the like, and no annoyance was forthcoming from places so covered. The M-16s had a field day against the Reds in one of their "banzai" type counterattacks. No infantry in the open can stand up against the 2,200 rounds per minute pouring out of the quadruple .50 mounts. The word must have gotten around, as there was no more of this kind of monkey business tried by the Reds. The usual

make-up of patrols in the 31st Infantry sector consisted of a tank or two, an M-19 and an M-16, plus some infantry in trucks. These were dispatched frequently in order to maintain contact with the enemy, for reconnaissance, and the like.

On a number of occasions Red T-34 tanks were encountered. The rapid laying of the 40mm guns on the M-19 permitted our crews to open up on the enemy tank and cover it with fire while our own tank crew got on target with their 90mm gun.

This was very effective and in each case the T-34 was destroyed. Now the M-19 is definitely not a heavy tank nor even a medium tank, and it is not a good antitank weapon if matched against a tank whose crew is on the ball. However, it works this way. The instant an enemy tank is spotted, the M-19 trains its guns on target and opens fire. This requires only a couple of seconds. 200 rounds per minute are poured onto that tank, knocking out his periscopes, damaging his tracks, and creating a terrific din that must be enough to make the tank's crew think that all hell has hit them. This makes them lose a few seconds trying to find out who is shooting at them; if they stick their heads out of the turret to take a look, they lose their heads. Meanwhile our tank has drawn a bead on the T-34 and commences firing. Result: dead T-34. It is obvious that this teamwork requires that the M-19 crew be absolutely alert, the guns be ready to fire, and ammo ready boxes be open. The M-19 must fire before the enemy tank can train its gun on us. One round out of the enemy tank gun would usually mean the end of our mission. But the way we did it down at Suwon worked fine and there is no reason why it can't be repeated. This type of work is rough on the nerves of the M-19 crews; so rotation is necessary at frequent intervals. In this type of mission, the M-16 takes care of any Red infantry personnel who happen to be at the scene, especially on the flanks.

Sgt. N. F. Osbourne and members of his M-19 crew. The first unit to reach the Yalu River.

ON one occasion, one of our M-19s turned in a good example of "reconnaissance by fire." To his front, the M-19 commander noticed a fairly large strawstack. Knowing that North Koreans sometimes hide in strawstacks, he put a few rounds of HE into it, and the straw was set afire. In a few seconds the stack was blazing merrily and it soon became apparent that there was more to the strawstack than straw. The falling ashes uncovered a nice T-34 tank, which was dispensed with in short order by one of our mediums. In other instances, our M-16s and M-19s would, at the request of the infantry commander, sweep hillsides, woods, and other places in an effort to uncover enemy locations. It is believed that some such employment of our weapons was not too well justified in that ammunition was wasted. The infantry has the natural tendency to let artillery and automatic weapons do as much of the work as possible. This is fine, but in some situations ammunition resupply will be so difficult that economy in ammunition expenditure must be practiced.

M-16s of Battery C (Captain Ray J. McManus) were employed south of Seoul on roadblock missions in an area where few infantry could be placed due to the more pressing need elsewhere. Our troops in this locality made good use of their time by combing nearby villages and rooting out Red soldiers and Communist leaders. We have 400 ROKs attached to the battalion, and some of those with Battery C had lived in the area where the roadblock was located. As a result we were able to turn in a number of prisoners, due to the knowledge on the part of the ROKs as to who the Communists were.

The mention of the ROKs brings up the subject of their use. We have used them to provide close-in defense of the weapons and of bivouac areas. Whenever we stop in a town for a few days, the ROKs go into the community and bring out North Korean soldiers who are

Soldier's Medal

PRIVATE FIRST CLASS SHIRLEY C. HICKS, RA 19352481, Arty., U.S. Army, while a member of Battery B, 15th AAA AW Battalion (SP), distinguished himself by courageous action at the risk of his life at Iwon, Korea, on 6 November 1950. On this date, Private Hicks was assisting in discharging vehicles of the 7th Infantry Division from the holds of the SS China Victory to the deck of an LST anchored approximately two miles offshore. There was a strong wind blowing and heavy swells caused the ships to toss and roll into each other. During one of these rolls, a soldier, while attempting to cross from the victory ship to the LST missed his footing and fell between the two ships into the water where he was crushed by the sides of the ships and rendered unconscious. Within a few moments Private Hicks rallied a group of about forty soldiers and Korean stevedores, directed them to try and hold the ships apart and after tying a rope around his waist had himself lowered into the ocean where he tied a rope around the injured soldier and had both of them hauled to safety. This daring and courageous action on the part of Private Hicks resulted in saving the life of a wounded comrade and reflects great credit on himself and the military service. Entered the military service from the State of Utah.

Capt. McClymont (with Chinese Tommy gun) and Lt. C. P. Chapman, Sfc. R. M. Slater, Cpl. J. R. Dorsey, Pfc. R. L. Olson, Cpl. C. V. Auger and Pfc. C. F. Merica. All participated in the Chosin Reservoir action.

Purple Heart Medals in the 15th AAA AW Bn.

Capt. Arthur M. Meranski
Capt. James R. McClymont
2d Lt. Clyde P. Chapman
M/Sgt. Robert M. Slater
Cpl. George J. Auger
1st Lt. Clarence L. Guffey
Pfc. Albert W. Marshall
Pfc. George E. Merica
Pfc. Robert L. Olson
Pfc. Paul J. Black, Jr.
Cpl. Raymond D. Atkinson
Cpl. Joseph A. Rusak
Pfc. Frank E. Clark

hiding there, together with local Communist leaders they are able to ferret out. They are also used in patrols, and are brave little fighters despite their lack of sufficient training. Our first man to be killed in combat was a ROK who was shot through the heart while attempting to take a sniper in a Korean house. It is a problem trying to transport the ROKs on long moves because we either have to shuttle them or borrow trucks; they are "chow-hounds" and eat us out of house and home, and they have other shortcomings, but all in all they are a big help and it has been quite an experience working with them. They are not dumb by any manner of means. I was amused by the remark of the interpreter in Headquarters Battery, one Kim by name. He noted that I smoke a brand of cigarette that does not quite rank in the top three. He said, "Hmm. Number One Boy smoke number ten cigarette."

Weapons and personnel of the 15th AA AW Battalion (SP) were present near Osan-ni when leading elements of the 1st Cavalry Division, coming up from the south, made contact with the 7th Infantry Division. Shortly afterward, we received orders to move by road to Pusan for another amphibious operation. This 330-mile move was difficult because of the poor roads, dust, and the fact that near Hamchang the road crossed a steep mountain on which a large body of North Korean soldiers was engaged in harassing our columns. Battery A (Captain John C. Hiles) was sent ahead and supported the 17th Infantry in the attack against these Reds while the Division artillery crossed the mountain. The difficult terrain did not lend itself to use of our weapons in the best manner, but Battery A was able to find positions here and there from which they delivered fire support. After making several stops to the south for gasoline, we arrived in Pusan and bivouacked at K-1 airfield about 18 miles northwest of the city. We spent the next two days working on our vehicles, drawing and issuing winter clothing, and the like. In mid-October we loaded our troops and material aboard ships, and after a sojourn in Pusan harbor, sailed for North Korea where we made another amphibious landing, this time near Iwon. There we collected our vehicles as they came ashore and prepared for the next move.

OUR first orders at Iwon directed us to attach the M-16s of Batteries A and D (D commanded by Capt. James R. McClymont) to the 17th and 31st Infantry Regiments, respectively. A day or so later the M-16s of Battery C were attached to the 32nd Infantry Regiment. At the same time, the M-19s of Battery C were put into positions to provide AAA defense for the Iwon beachhead, relieving elements of the 50th AAA AW Bn (SP). The M-16s mentioned above moved out with the infantry, headed for the Manchurian border. The roads in northeast Korea are very narrow, steep and winding, and they follow the north-south river valleys almost exclusively; this makes operations of any kind extremely difficult and troops are, of necessity, road bound in the majority of cases. High, rugged mountains flank the corridors and vehicles cannot operate off the roads except in limited degree.

After a few days at Iwon, the remainder of the battalion moved to Pukchong and set up AAA and ground defenses around that city to protect the Division Rear. Shortly afterwards, the M-19s of Batteries A and C moved out to join the infantry. On 12 November the weather joined forces with the enemy; it snowed all morning and by night the temperature had dropped to below zero. This sudden change in temperature caused hardship to everyone, and the extreme cold lasted for two days before it eased up.

Winter lubricants for vehicles have not, at the time of this writing, reached troops in this area and it is necessary to warm vehicles up at frequent intervals to prevent their being deadlined. At this time our batteries with the infantry are moving north in widely separated valleys, and they hope to reach the border soon. Battery A reported that they had had some minor action and had killed a few Reds, but it appears that there are few enemy to be found. We are all hoping that the Korean war will soon end and that we can return to some more likable place. We have no idea as

Silver Star Award

CORPORAL GEORGE J. AUGER, RA 11186174, Arty., U.S. Army, while a member of Battery "D," 15th AAA AW Battalion (SP), displayed gallantry in action near Sindae-ri, Korea, on 1 December 1950. On this date, Corporal Auger was the assigned driver of an M-39 command vehicle. The gunner of an M-16 half-track which was in a convoy of vehicles loaded with wounded being evacuated was himself wounded and the M-16 protection of the convoy ceased for the time being. Corporal Auger, realizing that someone must take over the job of gunner on the M-16 in order to protect the wounded, volunteered for the hazardous task and took over at once. At this time the convoy was under heavy enemy mortar, automatic-weapons and small-arms fire from all sides. Between the approximate hours of 1500 to 1800 on this date, Corporal Auger fired the M-16 machine guns at the enemy wherever they could be seen, and by his cool and deliberate action the enemy was finally overcome to the extent that the convoy was able to proceed. During the action one of the cannoneers on the M-16 was severely wounded and Corporal Auger assumed this task in addition to that of gunner. Although he was constantly under heavy fire as a result of which he was wounded in the head and in one of his legs, Corporal Auger stayed at his post in complete disregard of his own safety. This great heroism on the part of Corporal Auger reflects much credit on himself and the military service. Entered the military service from New Hampshire.

to where that might be, nor do we know whether we shall remain with the 7th Infantry Division. Suffice it to say, however, that we have found it very pleasant to work with the 7th Division, both with the infantry and the Division Artillery. We hope that we have done them some good.

COMMENTS RECEIVED LATER*

THE essence of the success of AAA AW in support of the infantry is found in its fire power. This fire power is tremendous, but it leads us straight into a serious problem—that of ammunition resupply. There is the hooker. With your self-propelled battery attached to an infantry regiment or to a field artillery battalion, the problem of ammunition resupply belongs, technically speaking, to the supported unit. That is all very well, but those folks have problems of their own. They will try, but over these narrow, icy and winding roads one cannot pass the buck completely. There were times when our batteries got into scraps which ate up the ammo like water going over Niagara Falls. Resupply became critical. In the fighting last October, our Battery B was firing ammunition so fast that the available capacity for hauling was insufficient; so the Battalion supply section had to draw 2½-ton trucks and trailers from normal tasks and turn them over to the battery. M-39s (Armored Utility Vehicles) were used to get the ammo across the rice paddies. Inasmuch as these are command vehicles, the platoon and battery commanders were handicapped for the time being. For the mud and rice-paddy country, an ammunition carrier that can not only traverse deep mud, but also be able to go long distances over rough roads when the battalion moves, is necessary.

The action at Chosin (Changjin) Reservoir in North Korea in which Battery D, 15th AAA AW Battalion (SP) fought alongside the infantry and field artillery against overwhelming numbers of Chinese who had surrounded them was an excellent example of the effectiveness of the M-16 and the M-19, but it also demonstrated that two basic loads of ammunition do not last long in sustained firing. The battery carried that amount with them. The Chinese attacks were heavy and determined, and while the ammo lasted our men killed hundreds of the enemy. Air drops were attempted but they were not particularly successful. However, no other method of resupplying the weapons was open to us. It was most fortunate that the battery had taken two basic loads with them.

During operations near the Manchurian border, at temperatures as low as 25 or 30 degrees below zero, in mountainous terrain, on roads coated with snow and ice, three of our batteries found that mere existence was a task that taxed their facilities to the utmost; fortunately the amount of ammunition expended did not put a heavy strain on anyone. The M-39 is not a good vehicle for hauling anything in ice and snow.

The M-16 (half-track with quadruple caliber .50 machine guns) is a fine weapon. For use with the infantry division, however, we need a full-tracked carriage to go anywhere that the M-19 can go. Protection against small arms fire must be given the cannoneers; on the M-16 these two men are easy pickings for enemy riflemen while loading and operating the machine guns. Provision must also be made for carrying ammunition chests on the turret or elsewhere on the vehicle so as to make them readily available to the gun crew.

The M-19 (M-24 light tank chassis mounting twin 40mm cannon) is an excellent weapon. The carriage is somewhat underpowered, however, and we have found that the gasoline tank capacity is too small. Other vehicles in the battalion can go much farther before having to refuel.

The M-39 has plenty of power and range. It has not worked out well as a command vehicle, due to difficulties in operating radios. The vehicle is very noisy and this interferes with good reception while on the move. The tracks stir up great clouds of dust that settle on everything in the vehicle. We have had trouble in using the intercom; drivers dislike it intensely because in order that conversations be heard, the volume has to be turned up to such a point that the sound hurts the driver's ears. The steel tracks slip and slide badly in snow and ice. It is very difficult to secure spare parts for the M-39.

It would be fine for officers of all self-propelled automatic weapons battalions to attend the Infantry School for several months to indoctrinate them in infantry tactics. By the same token, infantry officers should be given a course in the proper employment of our weapons in close support of the infantry. Of course, we are learning here, and would like very much to present our experiences in more detail, but unfortunately we are busy fighting. How about sending a team of experienced officers and NCOs over here from the AAA & GM School to put these things down on paper for us? That same team could bring along a great deal of information that we in the field would like to receive. It would work out to the best advantage of all.

*Colonel Hain's article includes reports received in three separate letters.

Silver Star Award

SERGEANT FIRST CLASS ROBERT M. SLATER, RA 34929995, Arty., U.S. Army, while a member of Battery "D," 15th AAA AW Battalion (SP), distinguished himself by outstanding heroism in action near Chosin Reservoir, Korea, on 28 November 1950. On this date the gun section of which Sergeant Slater was the leader was in close support of two field artillery units at a point on a defense perimeter. Sergeant Slater emplaced his two self-propelled weapons so as best to cover the routes of approach being used by the enemy to attack the perimeter at that point. Between the hours of 0030 to 0730 *on this date the enemy attempted to* pierce the perimeter by repeated rushes with small arms, hand grenades and bangalore torpedoes, in an effort to knock out Sergeant Slater's weapons. Although he could have *exercised command of his* section from the comparative safety of a foxhole or inside one of the armored vehicles, Sergeant Slater, with undaunted courage, voluntarily exposed himself to intense enemy fire by going constantly back and forth between the weapons, *directing the fire, passing ammunition,* encouraging the gun crews, assigning and instructing replacements for casualties, until he himself was wounded in the face by shell fragments, although this did not stop him. As a result of his high devotion to duty and his extreme personal bravery, his *section killed at least one hundred enemy* and the integrity of the defense in that vicinity was maintained. Sergeant Slater's heroism reflects great credit on himself and the military service. Entered the military service from Mississippi.

The 50th AAA AW Battalion In Korea

BY LIEUTENANT COLONEL
CHARLES S. O'MALLEY, JR.

IN the early days of September 1950 while Lieutenant General Walton H. Walker and his Eighth Army still struggled in the Pusan bridgehead to stave off the communist attack, Major General E. M. Almond's X Corps was being readied in Japan to administer the coup de grâce —the amphibious assault on Inchon. The landing was in reality an amphibious turning movement in the true strategic sense. Its objectives were manifold. First, the seizure of the vital rail and communications center of Seoul; second, the sealing off of the main areas of escape to the north; third, the grabbing of the port at Inchon and the air fields at Kimpo and Seoul.

Intelligence reports repeatedly showed that the enemy had committed almost his entire force to the south and that no sizable reserves could be thrown against the thrust at Inchon. The stage was set and big things were expected to result from the blow. The capture of the communications center of Seoul would cut the main artery of supply to the North Korean Forces facing the Eighth Army and it was expected that this severance would force a North Korean withdrawal and permit General Walker to assume the offensive. The seizure of the high ground north and south of Seoul would block the north-south corridors leading to the 38° parallel and thus cut off the main enemy escape route to the north. The capture of the port at Inchon and the air fields at Kimpo and Seoul would permit the logistical build-up necessary to exploit the Corps' initial success and accomplish its many missions.

Kimpo, moreover, would afford a good base for fighter aircraft which would add to the efficiency of our close air support. Finally, the capture of Seoul, the prewar capital of South Korea, would act as a psychological tonic to all UN Forces fighting in Korea. In short, the plan was brilliant in concept though not too daring when one considers that we controlled the air and the sea from the very outset of the conflict.

The X Corps was to be composed of the 1st Marine Division, the 7th Infantry Division, the 187 A/B RCT, and those normal additions called corps troops. The only radical departure from the normal TO&E was the augmenting of the 7th Division over and above its TO&E strength with approximately ten thousand ROK troops prior to its departure from Japan. These ROK troops were integrated right down to Battalion level and were to prove a great boon to the 7th Division in the months to come.

The plan called for the 1st Marine Division to land and secure WOLMIDO and the port of Inchon, take Seoul and secure the high ground to the north. The 7th Division was to land over the same beaches as the 1st Marine Division, fan out to the south and southeast, secure the high ground south of Seoul, protect the Corps right flank, and make contact with the Eighth Army after its breakout from the southern bridgehead.

THE 187 RCT was placed initially in the Corps reserve and was to be prepared to be committed by air or ground in either the 7th or 1st Marine Division Sector on Corps' order. Once having accomplished these objectives, the X Corps would be in position to block the retreat corridors to the north and form the anvil upon which the Eighth Army could smash the retreating North Koreans.

On the Corps troop list, and listed under Corps Artillery, was the 50th AAA AW Bn (SP). Its mission was to land on or about D plus four to protect the beachhead from ground and air attack, to be prepared to send one battery with the Kimpo Task Force in order to seize and protect the strip there, and to be prepared to support the advance of ground units when called upon to do so.

As is true with most operations, time schedules very rarely follow plan and Inchon was no exception. The 1st Marine Division and the 7th Division moved much more rapidly than had been expected and Kimpo air strip was overrun long before Task Force Kimpo could even be organized. Moreover, the expected enemy air and ground reaction against the beachhead failed to materialize and the 50th found itself without a mission upon putting ashore at Inchon on D plus eight. It took until D plus thirteen to gather the Battalion together since the unit was spread on every ship in the convoy for AAA protection en route.

During the period D plus eight to D plus thirteen we received our first new mission. The Battalion less Charley Battery was attached to the 1st Marine Division. Charley Battery was attached to the 187 RCT. The 1st Marine Division further attached the Battalion to the 11th Marine Regiment, the Marine Artillery Regiment and counterpart of Army Division Artillery. Consequently we set up our first headquarters at Seoul adjacent to the 11th Marine CP. Preliminary conferences with the genial and able Colonel James H. Brower, commanding the 11th Marine Regiment, divulged that our mission would be to protect the organic Marine Artillery Battalions from ground attack by small enemy groups, which were wont to infiltrate through our lines and attack artillery positions.

The North Koreans had been attacking artillery positions consistently since the beginning of the war, especially just prior to an attack or a withdrawal. It was their method of counteracting our artillery superiority. Accordingly, Dog Battery was attached to the 3rd Battalion, Able Battery to the 1st Battalion, and Baker to the 4th Battalion.

It was Charley Battery, however, which first proved to us the true value of the AA self-propelled weapon—the use of its fire power and mobility to assist the advance of the infantry. At the time Charley Battery was attached to the 187th, the RCT was in the process of cleaning up the Kumpo Peninsula of withdrawing North Koreans. When Charley Battery reported to the 187th

Artillery and mortar fire clearing the way for advancing troops near Kumchon.

CP, the 1st Battalion of that unit, under command of Lt. Col. A. Harry Wilson, had just passed through the 3rd Battalion and was moving north toward the Han River. Col. Bowen, the RCT Commander, attached Charley Battery to the 1st Battalion. The 1st Battalion had two of its rifle companies committed abreast of one another to the north of the town of Maydong-ni and one company in reserve south of that town.

The situation to the front was fluid to say the least and the action to date had brought forth but small enemy reaction. He had little or no artillery, was weak in anti-mechanized weapons, and his resistance was limited to sporadic small arms fire. The last objective of the 1st Battalion, the high ground overlooking the Han River at Sinni, was but four miles away. It was planned to combine the reserve infantry company and Charley Battery into a small task force and run to the river and its commanding high ground. All the "Angels from Hell" who were able to crowd onto the M-19's and M-16's did so while those who could not were placed in trucks at the tail of the sixteen AAA weapons.

THIS force was readied at Maydong-ni under exceedingly good cover. An attached tank platoon was emplaced to the front, on the ground occupied by the two committed rifle companies, to cover the road over which the task force would roll until its fire was masked. An artillery concentration from the organic battalion of the 187th RCT was to cover the high ground which paralleled the west of the road almost to the river.

Naval gunfire from the Inchon area was to take the objective area under fire.

The plan was quickly firmed up and clearance given for the artillery to open up. After the shore and naval artillery had fired for approximately ten minutes the signal for the attack was given. The small task force moved down the road without mishap, seized the high ground after ordering the naval gunfire lifted, and fanned out into the objective area. What few enemy were left in the area spent a miserable time trying to cross the river. The M-16's and M-19's raked the river and many small craft were sunk. Charley Battery spent the next week with ROK troops roaming the peninsula and ferreting out many small enemy groups left behind in the mad race north.

The batteries with the Marine artillery battalions experienced little activity and Colonel Brower agreed to let us move Dog Battery up with the 7th Regiment and Able Battery up with the 5th Marine Regiment in order to assist the advance of these units in whatever way we could. Dog Battery arrived with the 7th Marines in time to participate in the Uijongbu offensive, and worked much as the organic tank company in a regiment would in assisting the infantry in cleaning out enemy pockets. It must be pointed out here that the enemy was woefully lacking in anti-mechanized defense which permitted the M-19's and M-16's to be so utilized. A strong anti-mechanized defense would have precluded such use of Dog Battery's weapons.

THE following is an extract from Dog Battery's Operations Report for 3 October 50:

> The attack was to be led by M-26 Tanks and the M-19's and M-16's of the 2nd Platoon. Accompanied by infantry, the vehicles were moved to an assembly area at 0725. While moving into the assembly area, mortar fire was received but the platoon suffered no casualties. The attack began at 0900 led by the tanks and AAA weapons. Forward movement was continued until 1000 hours without resistance.
>
> At this time a halt was ordered while Marine engineers cleared the road to the front of mines. At the halt the column received some machine gun fire from a camouflaged vehicle off the road and to our right. The second squad of the first section under command of Sergeant Rodney M. Johnson opened fire and silenced the enemy weapon. The advance was resumed and the column was brought under light enemy mortar and rifle fire. Sergeant 1st Class James A. Couilliard reported the mortar fire coming from a cavelike position to our left front. All guns opened fire on the position.
>
> The infantry, which was now fanning out to our front and flank, later reported that all personnel in the cave were killed. We continued to receive sporadic mortar fire from an undisclosed position on our right. It was finally located and destroyed with about twelve rounds from the leading M-19. At about 1215 hours the Marine Infantry reported strong resistance in a small village at the base of a high hill on our right flank.
>
> Upon orders from Captain Richard Fink, Sergeant Homer W. Mulligan's section opened fire on full automatic and set the village on fire. As we moved past the burning village, small arms fire was received from the reverse slope of the high ground. Sergeant 1st Class Smith, the section leader of the 4th section, directed fire on these positions and helped clear the area of enemy troops. At 1430 hours, as the column approached the town of Uijongbu, an M-26 tank was knocked out by a land mine. This effectively blocked the road for a short time and the enemy at once began to shell the road with artillery.
>
> Marine artillery and air got into action very rapidly and soon quelled the enemy artillery. At approximately 1800 hours the column was ordered forward to take up position in Uijongbu. The first and second sections moved up with Fox Company of the 7th Marines on the left of the town, while the third and fourth sections moved up with Easy Company on the right.

Lt. Col. O'Malley *(second left)* with Capt. R. E. Pennes, Pvt. D. Lorenz, Capts. Hanek, Eiesenhart, Maj. McNerney and Capt. Rich, of the 50th AAA AW Bn.

ABLE Battery, after joining the 5th Marine Regiment, was attached to the 1st Battalion of that regiment which was situated in the vanguard at Chyong-ni. One platoon was used almost exclusively to escort supply trains from the Division dump to this Battalion and to its credit not one train suffered any type of ambush. The other platoon worked directly under the 1st Battalion Headquarters and was busied conducting patrols. The

normal patrol was two M-16's with a squad of infantry. This unit would reconnoiter positions to the flank and front with the missions of determining strengths and locations of enemy groups and taking prisoners for interrogation.

The M-16's provided greater range of tactical mobility for the foot squad and gave it the added protection of its eight machine guns. The M-16's, it might be added, proved to possess a considerable amount of tactical mobility even in very difficult terrain. Such was the employment of the Battalion until X Corps units were passed through by ROK forces and pulled out for their second amphibious operation which was to take place at Wonsan.

The 50th was detached from the 1st Marine Division, much to our regret, for we had formed many a firm friendship with that fine unit, and was attached to the 7th Infantry Division. The Battalion assembled at Seoul air strip on October 5, and marched to the 7th Division assembly area at Inchon. The Battalion left Inchon on October 10 at 1500 hours and marched to Hamchang, arriving there at 0200 hours on the 11th. The march was resumed at 0700 the same morning and we arrived at Taegu at 2000 hours October 11. Here the M-19's and the M-32 were placed on flatcars for the trip to Pusan while the rest of the Battalion gassed up and continued the road march to Pusan. We closed Pusan at 0530 October 12.

The Battalion had marched three hundred and fifty-six miles in thirty-eight and a half hours. One definite recollection of this march, which was thoroughly impressed upon all of us, was the amount of fuel consumed. FM 101-10 allows five thousand three hundred and ten gallons of gas per hundred miles including warm-up, etc.

We found out that on roads where maximum speed cannot exceed eight to ten miles per hour due to dust, where continual halts due to two-way traffic on very narrow roads are normal, and where numerous by-passes and tortuous climbing turns are the order of the day, gas consumption runs considerably higher. We also found that supply trains, especially those carrying Class III supplies through real defiles in mountainous terrain, must march with the unit train and not with division trains.

ON our arrival at Pusan we spent the time before loading up in rehabilitating our equipment and drawing winter clothing. The Battalion loaded on three different ships for the Wonsan operation and the Battalion liaison officer proved his worth here just as he did on our trip from Japan. There was considerable delay in the operation due to the serious threat the numerous mines at Wonsan posed to all shipping.

The plan therefore underwent a change and the 1st Marine Division alone went ashore at Wonsan while the 7th Infantry Division was landed at Iwon. It was here, where the Battalion put ashore on November 1, that we ran the gamut of diverse and unexpected duties. We landed without equipment as we were convoy loaded and our equipment was separated from our personnel. Our first task was to man a portion of the beach defenses and we took over two outposts with Baker and Dog Batteries. Charley Battery sent one platoon to Pukchong to protect the 7th Division CP, and its other platoon to protect the vital bridge at Shinhokusei.

We were performing routine infantry missions with three fifths of the Battalion at this point. Unloading ran behind schedule because of inadequate beach facilities, poor beach exits, and insufficient DUKW drivers to operate the DUKWs on a twenty-four hour schedule. The Battalion was called upon to furnish forty DUKW drivers. After a minimum of instruction the Battalion was in the DUKW business.

Finally one battery of equipment came ashore and we emplaced it, under the command of Able Battery, around the beach area to supplement the beach defenses. These various jobs were necessary to perform for the accomplishment of the Division's over-all mission, and it served only to show us that in the fog of war all is confusion, and each unit must be prepared to carry out any type mission necessary at the time regardless of whether it knows anything about the job or not.

The Battalion was finally married up with its equipment on November 8 and ordered to march at once to Hamhung, X Corps Headquarters, for further instructions. The treads on the M-16's were getting rather threadbare by this time and permission was granted to move the M-16's from Pukchong by rail. We accordingly moved the Battalion to Pukchong and set aside the M-16's for rail shipment to Hamhung. The area between Pukchong and Hamhung was notorious for its ambushes and we decided to make the march in the following manner.

We broke up Headquarters Battery and had its component parts, the S1, S2, S3, S4 sections, march with the line batteries for protection. Despite the wear on the treads we took two M-16's with each battery serial and placed one M-16 with the Battalion maintenance section which tailed the Battalion column. The march proved rugged enough —we marched over mountains reaching twenty-five hundred feet in places—but most uneventful. The North Koreans evidently feared the fire power of our serials and let us alone, much as they had done on our march to Pusan although they had ambushed march units to our front and rear.

Upon arrival at Hamhung, the Battalion minus one platoon was assigned to the Hamhung Defense Force. The Battalion now occupied a series of road blocks about Hamhung with the over-all mission, in conjunction with other units of the force both infantry and artillery, of preventing the movement of by-passed North Koreans into the area. We have sought defilade for all positions without digging in and sacrificing our mobility, employed the weapons by section, and set up an elastic and highly mobile defense. The one platoon of Baker Battery is attached to the Special Operations Battalion now operating in the Kwongch'on area with the mission of hunting down and driving into the open all guerrilla forces it comes in contact with.

WHERE the Battalion goes from here is a matter of conjecture but we stand ready to try anything. It is perhaps too early to pass judgment and the evidence we have is not at all conclusive but the following points stand out concerning the employment and equipment of the separate AAA self-propelled battalion in Korea.

A. Because of the almost complete absence of enemy air, AAA missions are of very secondary importance.

B. The battalion will be used in the majority of cases with ground units. In such employment the normal attachment will be one battery to a regiment of in-

fantry or an RCT. When so used the battery may find itself performing direct support of infantry, patrolling, convoy duty, protection of organic field artillery, or antiguerrilla missions.

C. There is great need in our peacetime training for stressing the working together of self-propelled units and infantry. Only in this way will the proper coordination of tactics and weapons employment be assured. In our training too, we must impress the ground forces that we are artillery and not just antiaircraft. We must show them that we have a tremendous ground potential.

D. The battalion communications section and each battery headquarters have need of a good AM radio set. When working with infantry on widely separated fronts the present radio equipment, the SCR 508, an FM set, is almost useless. Even the ANGR9 has proven unsatisfactory. Units are rarely in place long enough to erect and use the long-range antenna.

E. The one-ton trailer, general purpose, is not sturdy enough to withstand the rigors of Korean roads. There is need for a heavier duty trailer.

F. A 500-gallon tank truck in the battalion maintenance section would expedite refueling on long marches.

In closing, from a worm's-eye view and despite theories to the contrary, the old principles of war haven't changed a bit; they are immutable. Korea has changed only their application, and the intelligent application of these principles is still the test of a leader.

Tropic Lightning AAA

By Captain Lowell H. Bielsmith

OUR title bears no relation to the subzero weather; however, it does signify that Captain Leonard M. Pedersen's Battery A, 25th AAA AW Battalion (SP) is still in the scrap with Major General Kean's "Tropic Lightning" Division.

On 25 October 1950 the First Platoon left Taejon airstrip to support the 35th Regimental Combat Team of the 25th Infantry Division in their task of keeping the main supply route (MSR) open from Taegu to Seoul. Bands of organized guerrillas had been ambushing small convoys, setting up road blocks and in general, offering considerable difficulty in this mission. Half-track patrols were organized, supported by infantry machine gun jeeps. One such patrol leaving from Kumsan and another from Yonsan-ni, making contact at a river bed along the MSR.

During one patrol, an M15A1 directed fire on a cave causing a terrific explosion which was found to be an ammunition dump used by the Communist guerrillas. Patrols also operated at night but the half-tracks were then employed in the perimeter defense of I and L Companies. At 0400, 28 October 1950, a band of approximately 120 guerrillas attacked the village of Yonsan-ni where I Company's command post was located. The attack lasted for one hour and fifteen minutes. During the attack the

Captain Pedersen and Lt. R. M. Meyers of Battery A.

local jail, housing twenty Communist sympathizers, was broken into. The attackers liberated the sympathizers and stole the South Korean Police Chief's weapons carrier. During the attack, five guerrillas were killed. All tracks were engaged in the defense. The squad leader of Track No. 122 killed a Communist guerrilla with small arms fire while the guerrilla was attempting to destroy the track with hand grenades.

Many road blocks were encountered during the time the First Platoon operated their patrols. One type of road block was an apparently faultless bridge with all the supports cut almost in two causing it to collapse when a vehicle passed over. The Korean villagers claimed the commies came out of the hills at night and forced them to do all the labor and made free with their homes, wives, and possessions. The U. N. Forces would then come during daylight and enlist them to reconstruct the bridges, fill in the holes, and repair the roads.

While accompanying one of the patrols Lieutenant Alfonso Iaderosa, platoon commander, and I went forward to investigate a typical land mine in the road. We backed off and fired at the mine several times, getting direct hits but no explosion. I then went forward with a knife and some rope and removed the mine. It turned out to be a 60mm mortar shell buried in the ground with the nose up and protruding above the surface of the road.

While this was going on, Lieutenant Iaderosa and Master Sergeant Houck, platoon sergeant, spotted enemy Koreans on the hill. A trap! The track crews sprayed the area to drive them off and we moved on.

ON 30 October 1950 the Second Platoon left Taejon to work with the 35th RCT. They were attached to the Third Battalion (reenforced), commanded by Major Lee, then engaged in mop-up operations cleaning the Chunsan, Inchon-ni and Yonsan-ni area of guerrilla bands. Companies C and G were in blocking position at Yonsan-ni located on the MSR. The Third Battalion Companies were to attack from Chunsan to Yonsan-

ni the following morning. Lieutenant Charles Mugford, the Second Platoon commander, with the first and second sections, joined the attacking forces at Chunsan. Lieutenant William Corley with the third and fourth sections, joined the blocking forces at Yonsan-ni.

One Battery of Field Artillery supporting Company L, had been holding and patrolling out of that area for several days. Two tracks were placed in the old perimeter defense of the area and the other two tracks, both M16's, were placed as a staggered road block at the main road into town from Inchon-ni.

At approximately 0400 the Battalion was attacked by an organized enemy group. Their main effort being directed toward our half-track road block. They surrounded the area and fire was directed at us from all angles but the second section took the brunt of the assault. With their guns lowered to minimum elevation they swept up and out with their fire. The fire fight lasted approximately forty-five minutes, and was launched in two main attempts with much noise, lots of whistle blowing and banzai shouting by the gooks. During the second main assault on the half-track road block, one of our tracks was hit on the side by an enemy hand grenade and another exploded under the track. Corporal Emanuel Heinze, the squad leader, realized that some of the enemy had come in under our guns and from the flank. It took guts, but Corporal Heinze and his crew backed their track out toward and into the enemy ranks, tossing hand grenades to both sides and with the quad 50's blazing. This effort stopped the enemy grenade throwing and soon the attack was over. Some of the enemy dead were within twenty yards of the mount.

AT breakfast that morning, we received the compliments and thanks of Colonel Henry G. Fisher, the commanding officer of the proud 35th "Cacti" RCT. He was with us throughout the attack. The infantry treated us royally, making us welcome buddies on a real fighting team.

The following morning, the third and fourth sections from Yonsan-ni were used to run patrols on the left flank of the attack area, between Yonsan-ni and Chunsan to handle any enemy who might endeavor to slip south out of our squeeze effect. During this patrolling,

Sgt. W. Sprague with Pfc's M. Sanders, W. Lycans, N. Ruiz, C. Kohler and Pvt. H. Winfrey.

the First and Second Sections were advancing with the Third Battalion attacking elements furnishing a base of fire for the advance and firing on targets of opportunity.

The attack was halted at dusk. The tracks were much in demand by each company commander, who wanted them in his area. The attack was resumed the next morning and the mission completed when one M15 from C Company's blocking position and an M16 from the attacking elements were sent out to complete a link-up of the two forces.

In the above action at Chunsan, Corporals Emanuel Heinze and John Cole were recommended for the Silver Star award. Sergeant First Class Charles Hoke, Corporals Richard Scott and Cyril Scott were recommended for the Bronze Star medal.

In the above and previous actions, it was noted that the armor on the M15A1 and M16 was sufficient to stop or deflect small arms fire. On numerous occasions our tracks have been subjected to small arms fire, but penetration has never occurred.

On 3 November 1950, the commanding officer, platoon officers, and all the half-tracks with trailers and crews moved from Taejon to Kaesong, Korea, via rail. The experience gained from the rail movements in Japan proved invaluable. The complete loading took less than two hours. As each track reached its designated spot on the flatcar, part of the crew would begin blocking and the balance of the crew wired the track to the flatcar. Even though many of the crews built hasty shelters between the trailer and the track, it was a cold, miserable trip lasting two days with constant rain. Part way through the trip, two windowless coaches were attached to the serial which provided some respite from the cold and rain.

The following day the remainder of the battery departed via motor convoy for Kaesong, Korea.

The next day the battery arrived at Kaesong, the tracked vehicles having detrained at Munsan-ni, traveled the remaining distance to Kaesong via motor march. The battery went into position for an air-ground defense of the 25th Division airstrip just west of the town. Positions were constantly improved and training was resumed in addition to our combat mission. Experience is a grand teacher but we find that training even in a combat zone also serves us in many ways.

Even in this active battle area there are periods of waiting. It is very easy to relax at these times, but *often fatal*. In this battery the constant drive to catch up on the maintenance and training has served to keep the men interested and alert; vehicle and AAA maintenance; training in communications, gunnery, and equipment; instruction in enemy tactics and our own, current situation and events; athletics and recreation. It all helps. Then there's another type of waiting—that nerve-racking wait at night for the enemy, all night whether he comes or not. It is difficult, but an airtight guard system and strong nerves can handle that situation, too.

At Kaesong, a third platoon was activated with the usual armament. This third platoon was placed in reserve for organization and intensive training. The key NCO's and drivers of the Third Platoon were taken from the First and Second Platoons. This equal distribution of experienced personnel equalized the potential or cadre strength of all three platoons. The newly assigned men from the infantry and field artillery were also equally distributed to the three firing platoons. Such was our status of training that three days later when the Commanding General of our Division Artillery, Brigadier General George B. Barth, inspected the battery he found the new platoon capable and ready. On this basis our new platoon was assigned the mission of an air-ground defense of a key railroad bridge near Hanpo-ri, Korea.

They were a proud group, this combat born unit, as they confidently moved out to pit their wits and strength against the enemy.

When we moved north via motor convoy, the third platoon joined the battery column at Kumchon and the entire battery moved to the new 25th Division airstrip southwest of Kunu-ri. The division

was moving up to meet the big Chinese attack. The First Platoon was attached to the 64th Field Artillery Battalion, commanded by Lieutenant Colonel Hogan, in support of the 35th RCT; the Second Platoon was attached to the 159th Field Artillery Battalion, commanded by Lieutenant Colonel Preston, in support of the 24th RCT; and the Third Platoon defended Major Jack Blohm's Tropic Lightning air section. Shortly thereafter the battery headquarters and the Third Platoon moved to the new division advance airstrip about four miles southeast of Yongbyon.

On 24 November 1950, an excellent, even superb Thanksgiving dinner was prepared and served in the field by Sergeant First Class J. Victor King, and his mess personnel, while enemy planes were reported active to the northwest. On 25 November 1950, the First Platoon was in position about six miles northeast of Yongsan-dong and the Second Platoon in Unhung. These positions were the most northerly points reached by elements of the Battery.

WE HAVE FOUND:

a. That communication training of the individual was inadequate; that basic training should include practical radio operation.

b. That each Division needs at least a battalion of SP AAA.

c. That five men cannot maintain adequate ground security over an extended period of time and still maintain combat efficiency.

d. That cold weather increases the maintenance problem. The lubrication on machine guns will freeze and prevent firing. A dry M. G. will not fire satisfactorily. Our solution for this problem is to keep readily available at the turret a small pressure type oil can with a very light weight oil for immediate application the instant before firing.

e. That cold weather necessitates frequent movement of the tracks, bogies and wheels from freezing in place, in order to be ready to move on short notice.

f. That most men lack previous experience in cold weather operation and that detailed instruction in preventative maintenance procedures is necessary.

g. That the enlisted specialists in mess, motor maintenance, communications, and artillery maintenance are invaluable. One excellent specialist can instruct and lead, thereby increasing the efficiency of ten other men 100% in combat.

h. That bogie shafts broke frequently under the strain of passing over almost impassable terrain.

i. That, in cold weather, differential gears are easily stripped unless extreme care is used in pulling out of positions in low gear and four wheel drive.

j. That most motor failures were caused by clogged fuel lines even though extreme care was exercised by the driver in draining filters and lines daily.

WE RECOMMEND:

a. That M19's be issued in lieu of M15A1's.

b. That each platoon have a qualified radio repairman.

c. That platoons when operating alone have two mechanics, with vehicle and spare parts attached from the battery headquarters.

d. That an "A" frame or other means of evacuating half-tracks be organic to each battery. The lack of this type of vehicle on the spot in a combat situation has been responsible for our complete loss of five half-tracks.

e. That *all* weapons be test fired frequently whenever possible.

f. That a small lightweight shelter with heater, preferably gasoline, be provided for each AW SP squad and each headquarters section in cold weather operations.

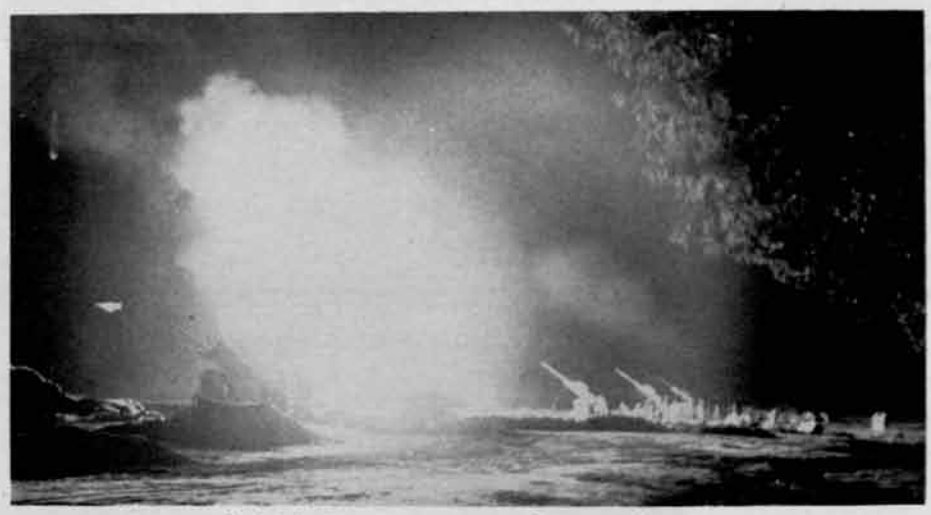
g. That half-tracks with the Field Artillery, when expecting ground attack, be positioned to cover the flanks and rear.

h. That the trailers be left at the C. P.'s when operating with the infantry on road patrols.

i. That a daylight and night position be prepared for each track; that tracks be moved just before dawn and just after dark to provide AAA defense during the day and close-in ground defense during dark hours. The enemy often uses daytime spotters to predetermine our positions. It is better to be elsewhere at night, but to have our supposed position well within our fields of fire.

We hope to give you a story of the battle with the Chinese armies in the next issue.

NIGHT ACTION IN KOREA



10th AAA Group 90mm guns in ground support.

From The Front In Korea

BY CAPTAIN
CHARLES W. HARRISON

Battery A, 26th AAA AW Battalion (SP), commanded by Captain Charles W. Harrison, provided the antiaircraft force for the 24th Division. This battery was the first of the antiaircraft units to enter into the pell-mell of Korean ground warfare. In many varied roles on the Kum River, at Taejon and on the Naktong the officers and men of this battery added to the heroic traditions of the 24th Division and established some standards for the Antiaircraft Artillery in this type of warfare. In doing so they suffered severe casualties. For the present we have lost contact with the battery.—Ed.

With the 26th AAA Battery In Korea

At the Kum River

DURING the early phase of our activities we were attached to the 19th Infantry. Slated for an advance, we took second place, behind an M-24 about 500 yards in front of the infantry column.

Engaging the enemy, strength unknown, we remained in position until the M-24 ran out of ammo. This reverse left us in first place, and we continued to fire upon the Jo-Kos, slaughtering them on all sides with our M-16's and M-15A1's.

Soon the North Korean artillery got too hot, at which time we retired to cover in the rice paddies. We were under their fire for about one half an hour. All at once four jets appeared out of nowhere, strafing and rocketing the North Korean positions. The jets gave them all they had, then spread their wings toward home. This, then, allowed the North Korean tanks to resume their fire in our direction.

Trying to get out of the paddies onto the road, a front wheel of one of our tracks fell thru into a culvert. This setback made it impossible to recover the vehicle; so we destroyed it while under fire by the enemy.

During our retreat we were pinned down by enemy machine gun fire three times until the Air Force came in and destroyed the North Korean positions in our vicinity.

At Taejon

At Dawn, Sunday 20 July, an M15A1, detailed to check on a burning enemy tank, was surprised by four additional North Korean tanks. The enemy mounted an 85mm gun in the turret, augmented by co-axial mounted caliber .30 MG's. We fired upon them immediately with AP to no avail, but we slowed them enough for the infantry to get two with 3.5 bazookas. We then returned to a position near the 34th Infantry CP to which regiment we were attached.

About 1500 hrs another North Korean tank appeared, strafing and shelling everything in its path. We met the tank with an M15A1 at an intersection and knocked the turret out of action with AP rounds from about 25 yards, possibly killing the gunner. The enemy then retired from the vicinity. Later this same tank was seen burning along the streets of Taejon as we departed from the ill-fated city.

At the Naktong River

Late in the evening of the 2 August we dug in on the front line to protect the 34th Infantry. With us we had two M-16's guarding the bridge.

Although our sector of fire was about a half mile wide, the terrain was not to our advantage. The slope extended to the river bank, making proper camouflage almost impossible.

With about 250 men, including the AAA, trying to hold down a front of five miles, it was easy for the enemy to break through despite the many casualties due to the fire power of our AW's and the infantry. We later regained the lost ground. During the breakthrough, our M15A1 became surrounded at which time we quickly destroyed the vehicle and rendered it useless.

When we were withdrawn a battalion of infantry and three M26 tanks were sent to replace us.

On Maintenance and Fallacies of Equipment

IN post mortem we recommend that an A1 priority be given to the installation of an auxiliary motor to be used as a battery charger on all full track vehicles. The necessity for this was indicated by the failure of the engine in an M39 command vehicle to start at a crucial moment during the siege of Taejon.

We also suggest the addition of an M32B3 wrecker to the T/OE. A vehicle such as this would have proven its worth on several occasions. A result of this deficiency being the useless abandonment and destruction of an M39 which slipped into the Naktong River. On another occasion an M16 turned over in a rice paddy during a run, creating a five-hour delay for the entire column. All hands had to assist in the righting of this vehicle. In addition the 81mm mortar mounted on the M32B3 could have been

Mortar, artillery and tank fire blast Communist troop concentrations in Korea.

utilized during the recovery movements.

We emphatically suggest that crew-served, track-laying vehicles should not be burdened with trailers as this actually lessens their effectiveness in combat. In connection with this, we suggest there be allotted two more 2½ ton trucks for transporting ammo and supplies. The crews in many instances have had to dismount and disconnect the trailers while under enemy fire, head the trailer in the new direction and then mount up and continue on. There should also be a ¾ ton truck per platoon for the purpose of carrying ammo, supplies, and replacement personnel to individual sections, thus making it much simpler.

Mount an M55 turret on the same chassis as an M19? This would offer more protection for the crew as well as increase mobility; and install armor plate to withstand up to caliber .50.

Provide for driver and assistant to retire to crew compartment, under fire, for means of escape.

Give up the M15A1?—It is necessary to carry two types of ammo, has not enough fire power, is slow and hard to load.

An issue of small arms such as the Thompson submachine gun would prove worthwhile as many times an outfit can be cut off and surrounded by the enemy. Several men have been killed while others have been spared. With a hard-hitting, far-reaching SMG all would have a greater chance to stay alive when the crews of our weapons are either pinned down by the enemy or in a serious spot of some sort.

Comments on Communications

OUR 593 radios, for early air warnings, were not used extensively because the nondurability of BB54 batteries limited their use. It is therefore recommended that SCR593's be installed only with modification kits or power supply units. In this campaign we have had little use for an early air warning setup, because there was no enemy air action. With a durable power supply a flash warning system could be utilized, other than air, with the 593 hookup, as we were primarily used in the ground support role.

It is again recommended that the SCR 528 could be modified for installation in the cab of the M16's, which would give space in the rear compartment for ammo.

We believe that two additional SCR 510's could be added to the T/OE, for installation in platoon leaders' ¼ ton trucks. During recent operations the displacement of one platoon of crew-served weapons was such that all vehicles could not be contacted from one central position. It was then necessary to relay messages from one section to another, causing an excessive loss of time. With the SCR510 mounted in the ¼ ton and the platoon leader at hand the hasty message could be delivered more rapidly by moving the ¼ ton to a line of sight position with the section desiring contact. On several occasions it was desired to locate the position of a vehicle in total blackout. It was felt that with a radio mounted in a mobile unit, moving throughout the numerous roadnets, contact could possibly have been made with these vehicles.

Capt. Harrison and driver.

All personnel should be familiar with radio and telephone procedure to the extent of installation and first echelon maintenance of all sets employed under the present T/OE. It was found necessary to utilize untrained operators on vital radio positions during fire. Even a cook should be able to cipher and decipher a message, install two 528's, change crystals in a walkie-talkie and lay five miles of wire to the next supporting unit.

8TH ARMY COMMANDER RETURNS

U.S. Army photo

The late General Walton H. Walker's flag-draped casket is flown from Tokyo for burial in Arlington.

THE WRITTEN WORD

By Captain B. G. Oberlin, Arty.

AS a rule army men are good at conversation. They are keen and analytical and most have a sense of humor. They have definite opinions and like to discuss them. Nor do they confine themselves to military science; they like to talk about world affairs, business, sports, automobiles, psychology, Japanese prints, books and even religion. They are avid readers. This stimulates thought and good conversation.

But when it comes to putting these same interesting ideas into writing the average soldier seems to recoil and stiffen. The result is a cramped and awkward style that repels most readers. This may be due in part to long observation of stilted official format in writing, but it is mainly due to lack of practice. It should not be so.

The Army needs good writing. You may argue that the Army has too much written matter already. Then, all the more need to revise the manuals and regulations, to comb out the extraneous and abstruse matter, to get them up to date in brief and readily usable form. We need field manuals and training courses that are well organized and easy to read and follow, written in language that appeals to the soldier. We need orders and regulations which make clear in brief and lucid English the essential points and avoid rambling discussion of side issues and minor details. The function of each order, letter, or manual is to convey a message to certain people. If it is badly organized, or loaded with verbose and ambiguous gobbledygook, or otherwise presented in language difficult for the intended reader, it obstructs knowledge. Well prepared army publications will enable us to mobilize faster and fight better.

Captain B. G. Oberlin is an editor in the Department of Non-Resident Instruction, AA & GM Branch, The Artillery School, Fort Bliss, Texas.

We might go on to add that experience in writing is good for the officer. The preparation, the study and thought, the organization of one's ideas, and planning of the presentation, as well as the actual writing, serve to increase the ability to organize, to plan, and to instruct. These abilities are recognized qualities of leadership that appeal to the officer and soldier.

Having made these broad observations, I shall now settle down to some basic points which are rather essential. These points come to our attention regularly in the daily grist of editing manuals, special texts, sub-courses, and other matters here in the school.

Careful Writing

IN his book, The Army Writer, David Klein says: "Before World War II the Army had detailed rules and SOP's on correspondence, orders, and training literature. But the prewar Army's literary pace was so leisurely that the regulations did not become truly irksome until the war. During the war the output of the written work increased so tremendously that the rules were generally disregarded —either deliberately or through ignorance. Thousands of writers, each with his own concept of military writing, began turning out copy according to their own lights. A brief examination of the Army work between 1941 and 1945 will reveal the chaos that prevailed."

The readers will appreciate effort toward reducing such confusion.

Corrections to manuscripts are not made at the whim of the editor. He is required to follow directions laid down in Special Regulations. Where these do not apply, the United States Government Printing Manual and Webster's New International Dictionary, Second Edition, Unabridged, are referred to. Where the rules of grammar and good usage are involved, the Harbrace Handbook of English is consulted. If a ruling on general style is needed, The Army Writer, A Guide to Military Writing, by David Klein, is consulted.

Fowler's Modern English Usage, The Art of Readable Writing, by Rudolf Flesch, and Ballard's Thought and Language are other useful reference books. My effort here is to encourage army writers to refer to these texts.

Regulations for Writers

SR 320-5-1 is a Dictionary of United States Army Terms. Its stated purpose is to assist in reaching a more common understanding of the meaning of military terms. It is designed for general reference throughout the Army.

This regulation includes only those terms of interest to the Army and only when the word is not defined adequately for military usage in a general dictionary.

It will help you in spelling. It will help you in deciding whether to hyphenate the word, to write it as one word, or as two words when words like air-ground, airframe, and air loading are met. Whenever in doubt, consult the Army Dictionary.

SR 320-50-1 and its Changes No. 1 are the authority on abbreviations to be used in the preparation of military writing. It directs that common abbreviations prescribed in standard dictionaries may be used, provided that they are not in conflict with those prescribed in the SR. This SR prescribes "Comd." for commander or commanding and does not list "Comdr." or "Cmdr." Department of the Army is abbreviated DA; there is no D/A, but T/O & E is still used. Changes No. 1 rescinds S-1, G-3, and the like. These abbreviations are now written S1 and G3.

SR 310-10-2 provides instruction for the preparation of Army publications in accordance with the provisions of AR 310-10. It prescribes the organization of subject matter down to the numbering of subparagraphs. More later.

When the Army writer masters the basic requirements laid down in these SR's, he can devote more thought to

choice of proper words, length of sentences, and punctuation in his presentation.

Watch Your Spelling

Editors are commonly believed to be acquainted with all the bartenders in their vicinity. This editor remembers one who presided over a small bar tucked cozily off the lobby of a small Ohio hotel. Charley surveyed the world with a morose and jaundiced eye.

His stock greeting, his standard reply, to either a complaint or a compliment was, "Ain't it pitiful." This was a statement, not a question. It was his favorite remark and he had few from which to choose. Ten years later I find myself reading manuscripts for editorial comment in an Army school. I often think of Charley now, and his "Aint it pitiful."

A soldier pulls his WD AGO card from his wallet. He reads across the top, "For indentification only." They say that even the Germans couldn't believe this. In the Battle of the Bulge their agents were carefully fitted out in American uniforms and provided with counterfeit papers. All an American sentry had to do was ask to see a stranger's card. If it read "for identification" he knew he had a spy. German thoroughness couldn't cope with our careless spelling.

A soldier enters the post exchange. He finds the main hallway cluttered with vending machines and money changers. A large sign above them advises that here he can change quarters into "nickels" but just beneath it another one offers to furnish "nickles." His wife gets a job with the United States Census Bureau. She is handed a form to fill out for the payroll section. The first line asks her to enter the date when she "excepted" the job. Ain't it pitiful!

Here are a few examples from the daily grist, words written by army officers who have at least two years of college education: numberal, phenominum, ordinairly, similiar, verticle, richochet, perminant, and occassion. When a writer can't spell the words he uses, he rapidly loses the respect of his readers. If not sure, turn to a dictionary. Don't let your reader say "ain't it pitiful" about you.

Organization

A WRITER cannot stop with writing words into clear, concise sentences. He must consider arrangement and organization of his ideas to write effectively. SR 310-10-2 is the Army guide in preparing and processing publications.

In The Art of Readable Writing, Rudolf Flesch has this advice: "You must first go over your material in your mind, trying to find the focus, the perspective, the angle of vision that will make you see clearly the shape of whatever it is you are writing about. There has to be one point that is sharply in focus, and a clear grouping of everything else around it. Once you see this clearly, your reader will see it too, and that, the shape of your ideas, is usually all he is going to carry away from his reading."

There is one practical aspect of organization that should be understood. Paragraphs are numbered, the first subparagraph is lettered, the next is numbered in parentheses, and the third is marked by a letter in parentheses.

SR 310-10-2 says: "Paragraphs should not be broken down beyond the third subparagraph subdivision. Fourth and fifth subparagraph subdivisions usually can be avoided by effective organization of material."

But even second and third subparagraph subdivisions should be kept to a single line if possible. They are indented three inches and too much material in them produces unbalanced pages with too much blank space. The second and succeeding lines of the first subparagraph are brought over to the same left margin as the main paragraph, avoiding this waste.

Consider this example of faulty organization in a special text. Paragraph 76 consists of a single word, the heading, "Employment." The first subparagraph, a, also consists of a single word, "General." Under this are three long second subparagraphs. Each is indented three inches—a lot of wasted space. Use the main paragraph and first subparagraph for long statements. Save the lower ones for short sentences. Organize your work. Also remember that *"when a paragraph is subdivided, there must be at least two of the same subdivisions."*

We hold up our hands in horror at any deviation from what is proper in uniform and physical appearance. But how many of us calmly ignore the basic fundamentals and the regulations for proper writing!

* * *

Editor's Comment

We are happy to join the crusade for plain and readable English—easy to understand and interesting to follow. General Devers, then Chief of Army Field Forces, and his assistants started this crusade three years ago when they found that so many of our manuals were not readable to the men for whom they were intended. The schools and others are carrying the crusade forward. More power to them!

The Infantry School Quarterly published an excellent article, Plain English, by Lt. Col. H. W. Stephenson, Jr., in the July, 1950 issue (reprinted in *Combat Forces Journal*, September, 1950).

For delightful reading on simplicity and interest in writing we refer you to Rudolf Flesch's The Art of Readable Writing, 1949. Here are some of his ideas.

> The *more syllables* there are in a word, the harder it is to understand.
>
> The *more words* there are in a sentence, the harder it is to read and understand that sentence.
>
> The *more words about people* there are in a passage, the more interesting it is to read.
>
> The *more sentences addressed to an audience* there are in a passage, the more interesting it is to read.
>
> **Write spoken English.**
>
> **Use the active voice.**
>
> **Use more verbs.**
>
> **Cut out empty words.**
>
> **"If a thought is too weak to support a simple expression, reject it."**

NOTIFY THE JOURNAL OF YOUR CHANGE OF ADDRESS

SOP AAA GUN BATTALION

By Lieutenant Colonel Francis G. Gregory, Jr.

"A STANDARD operating procedure is a set of instructions giving the methods to be followed by a particular unit for the performance of those features of operation, both tactical and administrative, which the commander desires to make routine."

So reads paragraph 121, SOFM 101-5. It goes further to explain that the purposes of an SOP are to simplify and abbreviate combat orders; to simplify and perfect the training of troops; to promote understanding and teamwork between the commander, staff and troops; to expedite operations; and to minimize confusion and error. From there on a commander and his staff are on their own.

An SOP is a combat order. It covers matter applicable to the field order and the administrative order and is prepared in the same form, generally. It is distributed to all type commanders within a command. It should contain those parts of the combat orders that are standard and not normally subject to change. Reference may be made to Army Regulations, Field Manuals, Training Memoranda, etc., but subject matter contained in these publications is not repeated in the SOP.

Directives under the guise of SOP, explaining how to make requisitions, how to park your motor vehicle at a certain baseball park, how to prepare a dispatch slip for a motor vehicle to be used for recreational purposes, how to address a letter to your wife, and thousands of other administrative details should not be confused with nor included in an SOP.

GENGHIS Khan controlled large armies, but was not able to write. This does not mean that he did not issue orders. It simply means that most of the Khan's orders were issued verbally. They were necessarily brief and easily understood. That is what the civilized military machines of today are striving for. *A simple, brief, complete combat order.* In order to have his orders so brief and at the same time complete, it was necessary for Genghis Khan to have a standard operating procedure. Here again simplicity, brevity, and completeness were exemplified in a verbal standard operating procedure memorized by every officer of the Mongol Command. It is a pity that the military commanders of today do not have access to some of the Khan's orders and to his verbal SOP so they might improve their own.

Some good guides for standard operating procedures for armies, corps and divisions have been prepared by the Command and Staff College. These guides are in no case over five pages long. However, certain divisions, brigades and battalions have prepared SOPs that were over thirty pages long and some garrision forces and base commands have prepared SOPs over seventy pages long. Genghis Khan had his garrison forces, military governments, and rear area commands too, but it is amusing to think that the Khan would ever have had an SOP that would exceed two typewritten pages.

Who prepares the SOP? The accepted method is for the S-3 S-2 team to prepare the part that fits the field order and for the S-4 S-1 team to prepare the part that fits the administrative order. S-3 supervises the over-all job and authenticates the SOP.

A sample standard operating procedure for an AAA Gun Battalion follows:

TACTICAL SOP 100TH AAA GUN BATTALION

I. GENERAL

1. *Purpose:* This SOP standardizes normal procedures. It applies unless otherwise prescribed.

II. ORGANIZATION

1. DA T/O & E 44-15; RT 44-15-20; SR 650-180-1; SR 650-206-1; SR 650-145-1.

III. PERSONNEL

1. *Strength, records,* and *reports:* Daily str summaries to S-1 by 0530 for 24 hr period ending 2400.
2. *Replacements:* Emergency requisitions immediately to Gp.
3. *POW:* Unit evacuation to Bn.
4. *Morale:* No restrictions on mail.
5. *Graves Registration:* Unit Responsibility (AR 600-550).

IV. INTELLIGENCE AND COUNTERINTELLIGENCE

1. *Combat Intelligence:*

a. Reports:
   (1) Spot Int repts immediately.
   (2) Enemy activity rept each 4 hrs beginning 0400.
   (3) POW repts immediately.

b. Observation:
   (1) 1 Vis observer at each gun btry, M55 position, and Bn CP.
   (2) Radars as directed by AAOO.
   (3) Air defense grid squares used for flash reporting: (Ex: Flash William 24-23 Hostile)

c. AAOC
   (1) Bn AAOC will operate 24 hrs a day.
   (2) 70,000 yards range for radar surveillance.
   (3) Radar plots each 60 seconds to AAOC as follows: Daisy Dog-Xray 7654-Many-at one zero-Hostile.

d. Local Warning:
   (1) Whistle for ground Atk.
   (2) Horn for air Atk.
   (3) Series of short blasts for impending Atk. One long blast for all clear.

2. *Counterintelligence:*

a. Distribution of marked maps held to minimum.
b. Captured personnel reveal only name, grade, and ASN.
c. Classified documents will be destroyed when capture is imminent.
d. Captured documents to S-2 immediately.
e. Captured material rept to S-2.

3. *Miscellaneous:* All Trs will be kept informed of their mission and the moving situation.

V. OPERATIONS: (FM 100-10)

1. *Reconnaissance:* Selection and occupation of positions (FM 44-4 pars 110-114)

2. *Security:* Unit responsibility. CO Hq Btry responsible for Bn CP.

3. *Movement:*

a. Night—50 vehicles per mile.
b. Daylight—10 vehicles per mile.
c. Road Speed:
   (1) Paved roads—25 MPH.
   (2) Dirt roads—10 MPH.
   (3) Cross-country—5 MPH.
d. Halts—10 minutes per hr.
e. Signs and markers will be used to the maximum.

4. *Orders:* (FM 101-5) Brief orders to Btrys; others will be informed by commanders and staff officers.

5. *Alert Conditions and Rules of Engagement:*

a. Alert conditions are:
   (1) Standby—Btrys skeleton manned and ready to deliver fire in 5 minutes.
   (2) Battle Stations—Btrys fully manned and ready for instant action.
b. Rules for engagement: (SOP Subject: Rules for engagement, Headquarters Eastern Air Defense Force, July 1950)
c. AAOO will furnish schedules for radar surveillance and maintenance.

6. *Situation and Operations Map:* Each Btry will keep a situation and operations map.

7. *Radar:*

a. Radars will report to AAOC as soon as communications are established. Upon being emplaced and oriented they will go "ON THE AIR" and remain until ordered "OFF THE AIR" by AAOO.
b. Four (4) clutter and cover diagrams will be constructed whenever a change in location is made, within one hour. One copy will be posted in the radar van and three forwarded to Bn CP.
c. Radar operators will record all plots showing (a) Name of operator (b) Time plot reported (c) Grid coordinates (d) Identification (e) Altitude.
d. Surveillance radars will scan 6400 mils in A; from 0 to 700 mils in E; and 70,000 yards in D.
e. All radars on surveillance are under control of AAOO.
f. Reports (See Sec IV. 1. a.)
   (1) Status of Equipment—Daily as of 0800, and immediately upon any major change.
   (2) Spot action—Immediately.
   (3) Completed action—Immediately.
   (4) Daily action—By 0600 as of 2400.
   (5) Ready for action—When ready for action.
   (6) Overlay of positions—Within one hr after occupation of positions.
   (7) Ground defense overlays—Within four hrs after occupation of positions.
   (8) Closed position—Upon closing of position.
   (9) Mobile—Immediately prior to moving out of position.

VI. LOGISTICS:

1. *General:* Current Admin Os.

2. *Supply Levels:*

a. Cl I—1 day emergency type.
b. Cl III—150 miles operational range.
c. Cl V—1 basic load.

3. *Medical:*

a. Btry aid men with Btrys.
b. Evacuation to Bn.
c. Repts to S-1 on number and type casualties daily.

4. *Demolition of Material:* Memorandum No. 8, this Hq, cs.

VII. COMMAND:

1. *CP:* Rept movement and new location.

2. *Liaison Officers:* As directed.

3. *Signal Communications:*

a. Initially messenger and radio. Wire as soon as possible.
b. M209 Convertor will be used for encoding and decoding messages.
c. Radio communications will be established in accordance with current SOI in the following order of priority:
   (1) AWS
   (2) Radar reporting
   (3) C & I
   (4) Adm
d. Radios will go on standby (receiver only) upon establishment of wire communications.
e. Wire communications—Wire established in following priority:
   (1) AAOC to Btry
   (2) C & I to Btry
   (3) Adm to Btry
f. All wire circuits will be tagged.
g. Wire laying in accordance with FM 24-20.
h. Wire laying from Bn down.
i. Authentication will be used for all radio and wire messages.
j. Message procedure: par 11 AR 105-25 & par 14 FM 24-17.
k. Messenger will report to Bn CP immediately upon closing position.
l. Message Center: (FM 24-17) continuous operation.
m. Switchboard operators will check lines each half hour.
n. When wire goes out switchboard operators will notify message center, S-3, and Communications Officer.
o. Station logs will be mimeographed and kept at all switchboards.
p. Communications Officer will prepare consolidated line route map, circuit diagram, and traffic diagram upon completion of initial laying of lines.

SMITH
Lt Col

OFFICIAL:
s/Jones
S 3

NEW BRANCH INSIGNIA FOR ARTILLERY AND ARMOR

The Department of the Army announced approval on January 3 of the insignia, branch and cap braid colors for the newly consolidated Artillery branch and for Armor which had been Cavalry prior to the passage of the Army Organization Act of 1950.

Henceforth all members of the Artillery will wear the traditional crossed field guns used by the Field Artillery for more than 100 years, and one of the oldest insignia in current use by the Armed Forces.

Artillery scarlet will continue as the Artillery branch color with the same scarlet and yellow combination for guidons. Present standards and guidons will be used until replacement is necessary.

The Armor branch insignia will be a front view of an M-26 tank with gun slightly raised and superimposed on two crossed Cavalry sabers in scabbards with cutting edge up. Yellow will continue to be Armor's color.

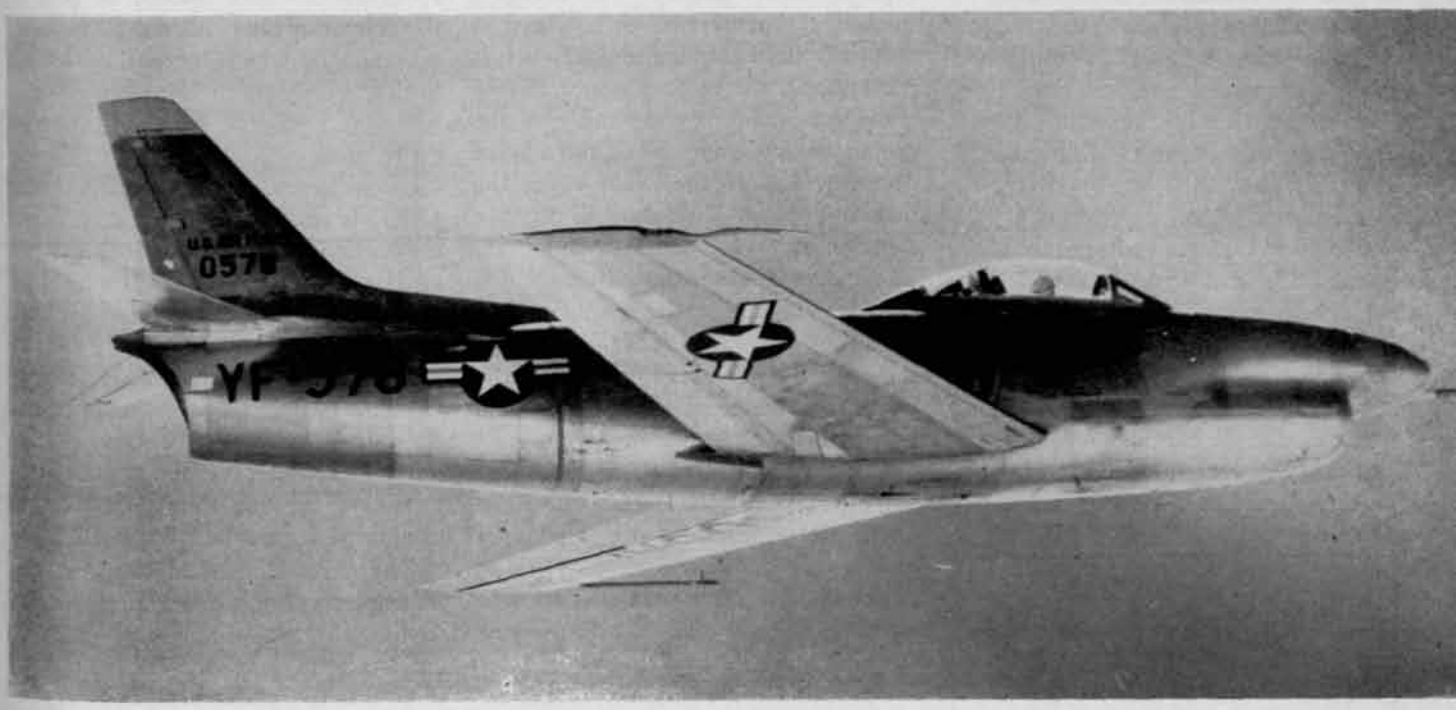
KNOW YOUR F

Republic F-84 Thunderjet: First American jet fighter to fly over 600 miles an hour with a service ceiling of 45,000 feet, the Thunderjet is armed with six caliber .50 machine guns and can carry a substantial rocket load for ranges up to 850 mph.

F-80B, Lockheed's "Shooting Star," has also been thoroughly tested in operations over Korea. It is in the 600 mph class at altitudes of over 45,000 feet armed with rockets and machine guns.

endly AIRCRAFT

A formation of four North American F-86 "Sabres." Their speed is well over 650 mph with a ceiling of over 45,000 feet. These jet fighters were recently credited with destroying attacking jet planes over North Korea.



North American's F-95A, the "Shark Nosed Interceptor," is designed for jet speed and rapid rate of climb at extreme altitudes under all weather conditions.

Suggestions On Maintenance Of The Mobile 40MM Gun

By Captain Phillip B. Duckworth, Arty.

Who can't remember World War II and its problems in the maintenance of antiaircraft equipment—and motor vehicles? Preventive maintenance is the key to the solution. But the commander must go further. On the battlefield the Ordnance and other Service agencies get snowed under. If the batteries and battalions can't do the 1st and 2d echelon maintenance well, and higher echelon maintenance, too, the guns go on the dead line and stay there. Every battery needs officers and men well trained for such work.—Ed.

THE primary mission of any artillery unit is the delivery of fire against enemy targets. One essential for the accomplishment of this end is achievement of a high degree of maintenance at unit level.

Maintenance problems vary greatly with climatic conditions. For instance, maintenance problems at Fort Bliss, Texas, where it is dry, are quite different from those in the South Pacific, where it is usually wet.

From such varied experiences I have collected a number of maintenance hints, presented here as workable (not expert) solutions to some of the situations faced by the commander of a mobile 40mm gun unit.

Starting from the ground and working up let us take the tires first. Whether the situation be highly mobile or static, tire pressure should be 45 pounds at all times.

Captain Phillip B. Duckworth is an AW instructor in the AA & GM Branch of The Artillery School. He served with automatic weapons in Southwest Pacific during the war, and has had broad experience in his subject.

In static situations it is the practice to remove the complete wheel and place in storage. This gives more room in the gun pit and helps prevent "dry rot" of the tires. They are placed in a cool, dry place, with pieces of wood between the tires so there will be no rubber-to-rubber contact. If tire pressure should rise above 45 pounds it should be allowed to decrease with the temperature. This prevents excessive flexing of the side walls and insures life of the tire.

Brake drums and armature plates are other components that require attention. This is particularly true if guns have been in salt water. Wheels should be removed, drums dried and cleaned as soon as possible after passing through the water. If not, they rust very quickly and the proper braking action is not obtained. The armature plates are treated the same way. Nothing touches these plates except the electro magnet. The dragging force of the magnet is not sufficient to clean rust off the armature plate. If it is not cleaned, the magnet is not able to grasp the armature plate and give the proper braking action. Sand in the brake drums will score the drum when the brake is applied. This also will decrease the efficiency of the brakes and cause undue damage to the brake lining.

The six-volt dry-cell battery that furnishes the power for the brake system in the event the gun breaks away from the prime mover is a much-neglected item. One main point is that one terminal on the battery should be disconnected if the gun is not going to be towed. If this battery is left connected for a great length of time it will gradually drain "dry" or go dead. The net results are that it must be replaced, or we have lost the "break away" braking system.

The cable system for the brakes extends from the junction box through the girder and out to each wheel. This cable is rubber insulated. In many cases it will be found that these cables lying in the bottom of the girder are practically covered with grease; the grease having run out of the compensating spring units. This will cause deterioration of the rubber insulation and cause trouble throughout the entire circuit. By removing the inspection plates in the front and rear of the girder it is possible to reach the greater portion of the girder and remove the grease. When the compensating units are removed the cleaning job can be done very thoroughly.

Water will enter the girder from the top and collect inside. A modification to the carriage has been made by boring two holes in the bottom of the girder. Plugs are screwed in to prevent water from entering the girder when the gun is pulled through water. These should be removed and the water allowed to drain. Particular attention should be paid to this procedure after either an amphibious operation or where streams have been forded.

TO waterproof the lower carriage completely is almost an impossibility. Since the entire front steering assembly is pivoted on the girder the front axle will turn slightly and break any seal that has been used. The same holds true for the suspension system. This will allow water to enter the girder, compensating units and the axle. If the gun has been in either salt or fresh water it is almost mandatory to remove the entire units, disassemble, clean, and replace the lubricant.

One of the important considerations in emplacing the piece is proper siting to insure proper drainage. Where an emplacement becomes flooded, water seeps into the girder, compensating and suspension systems, and into the wiring of the remote control system. When this

occurs wiring of the remote control system must be removed and dried out or replaced entirely before remote control firing can be used. Prepared emplacement anywhere whether in the desert, arctic, or in the jungle should be so sited and constructed that adequate drainage insures against flooding at all times.

WHEN the gun becomes extremely hard to traverse, check the top carriage dust seal. If it has become worn, or deteriorated, dust and water can enter the traversing ring gear and bearing, causing hard traverse. This seal must be replaced as it is not repairable. It deteriorates rapidly in a damp climate developing a tendency to tear easily. Unless corrected promptly, sand and grit by-pass the ineffective dust seal to a degree which in time results in the destruction of the top carriage bearing. This latter stage of damage calls for replacement by Ordnance agency.

The gun: First consider a damp climate. All "bright" metal must be lubricated or coated with appropriate preservative to prevent rust. Some of these parts move in recoil and counterrecoil with a requirement that friction be minimized by lubricating. Grease is a wonderful lubricant but it will not penetrate. All metals are porous. When grease is smeared on, air pockets are left and a rust spot results. If a light oil is placed on metal first it will penetrate the pores. This followed by a coat of grease will effectively retard moisture penetration.

If at all possible when in a wet climate guns should be cleaned each day, old lubricant wiped off and new applied. If a gun must be ready to fire at all times, the lubricant should be applied in sufficient quantity to prevent rust but not in excess. The amount of smoke, due to excess lubricant, which will rise from a 40mm gun when it gets hot during firing, will often obscure the target and make tracking or gun laying with on-carriage sights almost impossible. Using personnel must be trained to use lubricants in reasonable amounts and often, not in gobs and seldom.

In a dry climate conditions are changed considerably. If a gun is to be fired it is better not to lubricate any part unless it is in actual contact with other parts and moves in recoil or counterrecoil. Moving parts, or that portion where friction will exist must be lubricated. But why put grease on the entire breech ring? It will only serve to collect dust and create smoke while firing! Apply a light lubricant on the guides, recess for the breechblock, and leave the rest of the breech ring dry.

The breechblock and firing mechanism should have a light coat of oil. Only the grooves on the loading tray should be lubricated and the remainder allowed to remain dry. In the automatic loader the feed pawl rods and rollers and the star journals and plungers need a light oiling. There are two guides in the rear that the loading tray rides on. These should be greased. Since the catch and check levers raise and lower during each firing cycle it is advisable to oil them at the points of pivot. The remainder of the automatic loader can be left dry. It does not move and there is no friction to be cut down by lubrication.

The above statements will not hold true in any damp weather, however. If a part is not painted it must be lubricated to prevent rusting. Normally under these conditions a *light* application of OD grease is sufficient to repel the little moisture in the air. Above all, frequent checks are needed to make certain that lubrication is effective.

PROTECTION for the barrel can be accomplished by a field bluing job. If the paint has burnt off or the barrel has become "Bright" apply a good coat of "OF" grease. When the opportunity arrives to fire the gun enough to heat the barrel the grease will be burnt in and will give a reasonably good bluing job which helps in preventing rust.

A dirty chamber or dirty ammunition is one of the most frequent causes of stoppages. In either case the empty brass is extremely hard to extract from the chamber. This results in placing the recoiling parts under a twisting strain and jams the gun back in the recoiling position.

Another frequent stoppage is a failure to feed due to dirty star journal plungers and guideways. In the case of dirty or fouled plungers and guideways when a round is forced against the feed rollers they must spread to allow passage of the round. In so doing the plungers are forced back against spring tension. When the guideways have become gummed with grit or grease the pressure needed to force the plungers back is greater than the tension on the safety springs in the feed pawls. The safety springs in the feed pawls will give and the round will not be fed onto the loading tray. Using personnel should clean the star journal plungers and their guideways as part of the regular maintenance schedule.

In each equilibrator case there are four holes bored at the lower end of the case. These are used when disassembling the equilibrators. But in a dusty climate they are a perfect entrance for dust and sand into the cylinder. These holes can be taped over very easily to prevent any foreign matter from entering the cylinder.

The elevation arc, if gummed with grease and grit, will bind and make gun pointing in elevation extremely difficult. A light coat of oil is usually sufficient to prevent rust and still lubricate enough for normal operation. The arc should be wiped clean and new lubricant applied when the gun is to be fired. This particularly applies when the gun has been exposed to dust and dirt in any manner.

It has often been a practice, especially when preparing for inspections, for using personnel to use a lightly oiled cloth and go over the painted surfaces of the entire gun. This gives a nice gloss to the paint and makes for good eyewash. On the other hand it will cause the paint to deteriorate on any gun or other piece of equipment and shorten the life of the paint job.

It is a practice in some units to build small duckboards and place them on the loading platform of the gun. This prevents direct contact with the paint on the platform and the shoes of the servicing personnel, and cuts down considerably on the number of times that the platform has to be repainted. It should be noted that a piece of burlap or canvas should not be placed directly on the platform. If this is done it will eventually collect dirt and moisture and the results will be as bad as if no protector had been used.

ONE of the most abused items issued to the 40mm fire unit is the gun cover. It is thrown on the ground, used as a place to clip ammunition, used to clean component parts of the gun, and a thousand other uses for which it was not designed, all of which are detrimental. The cover is generally picked up off the ground and put on the gun after maintenance. Dirt falls into the working parts of the gun and causes damage when the dirty gun is fired. To insure cleanliness and service-

ability, fold the gun cover when it is removed from the gun and put it in a clean spot until needed to again cover the gun. Proper use and operation of any piece of equipment is directly connected with maintenance.

ONE feature of operational safety precautions is pertinent here. At the present time the drill in case of a misfire or hangfire states that the position of the breechblock can be determined by use of the outer extractor release lever. However, this will not indicate the true position of the breechblock at all times nor does it ever tell whether there is anything in the chamber, which is most important. Following are examples of where the breechblock could be and still get an entirely reversed indication from the extractor release lever; also how either a round of live ammunition or a round of brass could be in the chamber.

a. Broken extractor spindle—This would allow the outer extractor release lever to rotate to a position indicating a closed breechblock, which would not necessarily be true. Nor does it indicate whether the chamber is clear or not.

b. Broken breechblock closing spring—Breechblock would not close, a round of live ammunition would be in chamber. Release lever would indicate position of breechblock but the only way to tell about the round in the chamber would be to actually look. (To facilitate looking through the chamber without opening any covers it has been recommended that a small slot be cut in the cartridge case deflector.)

c. Broken parts jamming the breechblock open—This happens many times. Again the round of ammunition would be in the chamber. At present the drill does not prescribe a hard and fast rule to make certain the chamber is empty. If the indication is that the breechblock is open it is normally assumed that there was a failure to feed. Generally the rammer shoe is recocked, another round is forced on the tray and the firing pedal is stepped on. If there is a round in the chamber the second round would be rammed into the back of the round in the chamber. This action often fires the round in the chamber and sometimes both rounds, thereby causing damage to equipment and injuries to personnel.

THERE are many other conditions that exist, but the above three happen quite often and have been used as examples. In order to prevent ramming a round of ammunition into the breechblock or another round in the chamber it is necessary to actually look and see if the breechblock is open or the chamber is clear.

Items of issue are all intended for a particular use. Some of the uses that they get are not in line with their purpose and are harmful. Any harm done to one component part is harmful to the over-all operation of a unit. Lubricants are one of the army's greatest mainstays, but they are useless and sometimes detrimental to operations when not needed. Where needed, they should be applied in a quantity needed and the proper type, otherwise the mission of maintenance will not be accomplished.

THE DAILY TASK

By Lieutenant Colonel Virgil M. Kimm, Arty.

ONE afternoon in July of 1944, as I was sitting on a stump in our orchard near Airstrip No. 1 on Omaha Beach, enjoying a few moments of relaxation watching a French farmer harvest hay in the adjacent field, I observed a vehicle from Brigade approach the Battalion CP. In due course of time a Lieutenant reported his mission: "The General sent me down to investigate your motor pool."

Somewhat startled, I asked, "What did we do now?"

The Lieutenant, obviously enjoying the bombshell he was about to drop, continued, "Yes, as a result of the recent series of vehicle inspections by Ordnance, the General wants to know why your vehicles didn't show up as many defects as did those of other units. He wants to know what system you are using."

"That is easy," I replied. "It is THE DAILY TASK SYSTEM that we tried out to a limited extent last February at Blanford Camps (Blanford Forum, England) and have since continued with improved modifications."

THE DAILY TASK SYSTEM is a method wherein the entire first echelon maintenance procedure for a vehicle is divided into fourteen tasks, one task being performed each day so that during the course of every fourteen-day period, the vehicle will be completely and thoroughly checked and serviced. Each task is of such magnitude that it can be accomplished in from ten to twenty minutes. With the tasks thus broken down, the driver can at some time during the day find time to do his daily maintenance requirement. It may be during a halt,

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during a lull in action, in camp, or what not. The important thing is that the tasks have been set up so that they are well within the capabilities of the drivers to perform them during combat, and thus will not be neglected.

Prior to the adoption of this system we had depended upon the check lists on the back of the trip ticket form to get the driver to perform his maintenance. A close check and test disclosed that this was wishful thinking because the "Before operation check" was so voluminous that to do it properly, the checks outlined required from one to two hours. Obviously, the system was too cumbersome and impractical for combat use. While the method was passable in garrison, it was soon obvious that it was a detriment in combat; hence the search for a better way.

After a little experience with the DAILY TASK SYSTEM, our drivers were sold on the idea, because it was something that they could do which produced results and it did not harass them with impossible demands. It proved to be the ideal system in combat.

ANY system, to be effective, must have a check to insure that all duties are carried out. With this end in view, each driver was given a check card listing the daily tasks by number. When the driver completed his daily task, he had to report to the motor sergeant and have the sergeant initial the card. This insured that each driver performed his daily task.

The task series may start on any day and continue, but after considerable experience we found it most practicable to start the series on the 1st and the 15th, and let the 30th and 31st days be free days, or be used for special checks. The following is an example:

Daily Check Card—January

Driver	Vehicle		
1-1	8-8	15-1	22-8
2-2	9-9	16-2	23-9
3-3	10-10	17-3	24-10
4-4	11-11	18-4	25-11
5-5	12-12	19-5	26-12
6-6	13-13	20-6	27-13
7-7	14-14	21-7	28-14

After completion of task, have Motor Sergeant initial your card.

Following is a suggested division of maintenance operations into daily tasks. It must be borne in mind that this is a very general guide and must of necessity be varied for different types of vehicles. Also it should be noted that this system of maintenance may be used for any other type of mechanical equipment if the piece of equipment has a regularly assigned attendant.

Task 1, First Day: The Engine and Exhaust System

This task includes engine and exhaust system to include checks of mountings, gaskets, knocks, and faults disclosed by nature of exhaust, etc.

Task 2, Second Day: Engine Lubrication

This task includes check of pipes, fittings, gaskets, pertaining to engine, camshaft, timing system, oil gauge, etc.

Task 3, Third Day: Engine Cooling System

This task includes radiator, heater, fan, water pump, thermostat, joints, gaskets, hose, etc.

Task 4, Fourth Day: Fuel System

This task includes gasoline tank, lines, gauge, mountings, fuel pump, filters, etc., up to carburetor.

Task 5, Fifth Day: Carburetor and Controls

This task includes all parts of carburetor and control system together with air cleaner.

Task 6, Sixth Day: High Tension System

This task includes spark plugs, leads, cables, terminals, distributor, ground connections, etc.

Task 7, Seventh Day: Steering System

This task includes steering box, linkage, wheel bearings, etc.

Task 8, Eighth Day: Charging System

This task includes battery, generator, cutout, regulator, ammeter, etc.

Task 9, Ninth Day: Starting, Lighting, and Electrical

This task includes starter, cables, lines, lights, heater, switches, accessories, etc.

Task 10, Tenth Day: Clutch, Gears

This task includes clutch, gear housings, transfer cases, differential, winches, etc.

Task 11, Eleventh Day: Transmission System

This task includes universal joints, drive shaft, axles, torque arms, wheels, etc.

Task 12, Twelfth Day: Springing System, and Lubrication

This task includes springs, shock absorbers and the normal 1,000-mile vehicle lubrication job.

Task 13, Thirteenth Day: Body

This task includes check of frame, doors, glass, paulins, windshield wipers, heaters, etc.

Task 14, Fourteenth Day: Braking System

Complete check of system to include master cylinder, parking brake, shoes, lines, pedal operation and clearance, etc.

IN addition to the items listed there should be included in each Daily Task, gasoline, water, crankcase oil, and tire pressure service, and check of lights. During our combat operations we insisted that each vehicle be given these services at the end of the day (before dark) and not left until the following morning.

In closing, it might be added that the reader who applies this system of inspection to his own private automobile, even if it takes fourteen Saturdays to do it, will reap worthwhile dividends in time, temper, money, and personal satisfaction in owning a well maintained vehicle.

Tactical Use Of Guided Missiles*

Their Potentialities in Support of Ground Combat

By Major N. M. Bengtson

These weapons of the future will combine the best features of fighter-bombers and artillery.

THE ultimate objective of all major weapon development is to provide support for the ground combat soldier. Weapon developments which have contributed admirably to this support objective in modern times include the mortar, rocket, rifled gun, tank, airplane, naval vessel, automatic gun, and radar.

A recent addition to the list of supporting weapons is the guided missile. Just how well the guided missile will assist ground troops of the future remains to be determined. Excellent potentialities for missile employment in support of ground combat are indicated by a study of its characteristics.

Comparison of guided missiles with artillery guns and fighter-bomber aircraft reveals the fact that certain long-desired missions, which were not possible by existing weapons, show definite promise of accomplishment by guided missiles.

A clear example of one of these particular missions is presented in the story of the German break-through at the Bulge. Our forces reportedly knew where the enemy troops and tanks were jamming up in defiles and at road obstructions, but because of the prevailing overcast our only suitable weapon, fighter-bombers, could not be used effectively for several days.

Such a situation would be made to order for medium- and long-range guided-missile fire. Map fire on the enemy targets could instantly be initiated by medium-range missile batteries in the area and by long-range missile batteries from any location in the theater of operations.

A further possibility, far more effective than map fire in such a break-through situation, would be the conduct of observed missile fire by forward observers.

Missile Characteristics

These examples delineate some of the characteristics of the guided missile which are favorable to its acceptance for ground combat. Here is a weapon which, like the airplane, carries more explosive farther than the gun. Unlike the airplane it is independent of visibility conditions—it can be used for all-weather operation night or day. Its take-off field is a few feet square. Its fire-control channels can be integrated with the already existing artillery channels, thus bringing the weapon under direct command of the field commander rather than in cooperative effort with him as is the case with aircraft.

The accuracy of a missile may be made independent of wind and other meteorological variations which do influence the ballistic trajectories of guns. The robot-like electronic guidance of the missile renders it immune to the personal errors of human control which arise in the face of withering enemy defensive fires.

This characteristic of pilotless operation makes possible the attack of targets so well defended as to preclude the risk of human crews. The extremely high velocity of missiles makes them unlikely targets for conventional counterfire. The missile-interceptor missile of the future appears to rest well beyond the horizon of present engineering development.

A final aspect of the guided missile which is of equal importance with its combat characteristics is its wartime procurement possibilities. Basically, the missile should present few difficult problems to the automobile, aircraft, home-appliance, radio, television, and chemical industries.

Why Missiles?

The question might now be raised that if the guided missile is being developed primarily to expand upon the capabilities of guns and aircraft, why do we not attempt modification and improvement of the latter instead of introducing an entirely new weapon?

The answer lies in plain dollars-and-cents engineering evaluation. A given

Readying an Ordnance development test missile at White Sands Proving Ground.

*Reprinted with permission from the *Ordnance* journal, November-December 1950 issue.

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amount of development money and effort expended in missiles promises greater advance toward the desired goals than would an equal amount expended in attempts to alter existing weapons. Historically this position is well supported.

The trend in military aircraft has been a constant race for greater and greater speeds to the end that enemy aircraft and antiaircraft fire might be successfully eluded. That the speeds at which present jet planes operate seem to be incompatible with the requirements of fighter-bomber support has been the subject of controversy in the recent past. A reversion to older, slower types of aircraft for the ground-support role has been suggested, perhaps as a temporary measure.

However with the successes that have been attained in the development of antiaircraft missiles and other antiaircraft weapons, it may well be that the years are numbered during which subsonic aircraft will be able to operate over the battle area. With such dim prospects for air support in view, it is indeed wise to place a considerable investment in the guided missile, particularly when it holds the advantages which have been enumerated for the more immediate future.

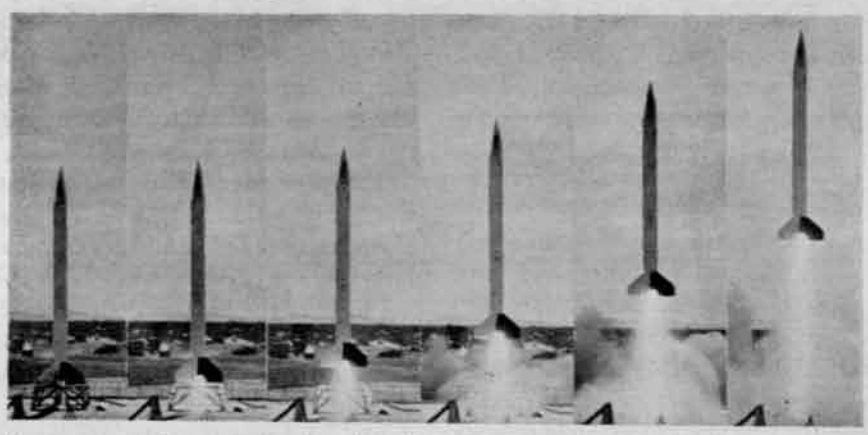
Prewar Development

The complex interrelationship among guns, missiles, and aircraft was vividly depicted by development trends in various nations subsequent to World War I. All nations virtually abandoned further development of the long-range gun. The victors concentrated on the development of aircraft. Success in this endeavor was marked by the epic industrial-target raids of World War II as well as by troop-carrier and fighter-bomber support operations.

The Germans, however, gave early attention between the wars to the potentialities of rockets and unmanned aircraft, the forebears of guided missiles. Belated success in this new field was marked by the advent of the V-1 and V-2 weapons late in the war and by the postwar revelation that antiaircraft missiles were coming into existence.

Had high-level supervision of the German efforts been more intelligent to the end that the antiaircraft missiles had been given high priority, the results might have proved to be of most embarrassing consequence to the Allied air effort and to the entire Allied cause.

The great potentialities for employment of guided missiles which were thus revealed by the Germans in World War II added great impetus to the missile development efforts of the United States and other nations. In the V-2 rocket, or unguided missile, the practicality of large-scale propulsion systems had been demonstrated. The task ahead consisted of refining the propulsion system and of marrying it with three other great technical achievements of the war—radar, the electronic computer, and improved autopilot techniques.



Sequence of photographs showing the firing of an Ordnance guided missile.

The "Guided" Missile

It is these technical achievements that lend the word "guided" to the term "guided missile." Radar permits measurement of the position and velocity of a missile during flight, to a very high degree of accuracy.

Without radar, missiles would be rotated or programmed in pitch angle as a calculated function of time cut on a program cam so that when the motor cut off at a preset missile velocity the missile would be headed in an expected direction at an expected velocity from a calculated position in space. For trajectory computation purposes, the same conditions can be simulated by firing a gun from the same point.

If the trajectory calculations were correct, and particularly if wind assumptions were correct, the missile would hit near the target in accordance with the precision with which the expected heading and velocity could be enforced by the program cam and the motor cutoff device. Such a system of guidance, called preset guidance, was substantially used by the V-2.

The tolerable degree of accuracy that the V-2 achieved depended mainly on exhaustive wind-tunnel tests and trajectory calculations. However, such low accuracy does not commend itself to the field-artillery commander.

It is this objection that radar helps to overcome. When radar is used, the same programming is followed, but there is no need for rigidly enforcing the required heading and velocity at cutoff. Instead, the ground radar set measures the exact position and velocity of the missile and transfers this information through a computer network back to the missile in the form of commands (hence the name, "command guidance") for both the azimuth and range steering control channels.

A second factor which has enhanced the potentialities of guided missiles is the remarkable progress which has been made during the past decade in the field of electronic computation. Electronic differential analyzers and digital computers are becoming almost commonplace in all branches of engineering design, statistical research, and military fire control.

In fractions of a second these computers can solve simultaneous differential equations of missile motion of such complexity that weeks would be required for hand computation. A small, simple computer carried in the missile and used in conjunction with a more elaborate one at the ground radar site gives the instant calculation which is essential to guidance of a missile in supersonic flight.

The computer and the radar alone, however, would be of little value in guiding a missile were it not for a device in the missile whose uncanny functions are to receive and to remember the computed commands, to steer the missile in compliance with the commands, and to know when the commands have been complied with.

These are the functions of the missile autopilot, a device which is not too dissimilar from aircraft autopilots. Designs

of the missile proper, together with its radar, computer, and autopilot, are integrated from conception and refined during development in order that a specified accuracy goal may be achieved.

Accuracy

Accuracy specifications for guided missiles are expressed in the same terms as those of guns and bombs. The fifty per cent dispersion circle must be of a specified diameter. Major causes of dispersion in gun projectiles are variations in the initial yaw and in the initial velocity. Similarly, fin alignment variations on bombs and unguided rockets are the major cause of dispersion in these weapons.

Comparable causes of dispersion in guided missiles are radar noise, electronic unbalance, and gyroscope drift. Sensitivity of the guidance equipment to these variations is held to a minimum compatible with other operating requirements. Nonetheless such variations do create random spurious commands of small magnitude which result in a normal dispersion pattern.

Dispersion may or may not be an attribute of a weapon, depending on the nature of the target. For area fire a certain minimum degree of dispersion is desirable to insure uniform coverage of the target. On the other hand, for fire on point targets it is essential that the size of the fifty per cent circle be of a magnitude comparable to the dimensions of the target lest an exorbitantly large number of rounds be required to insure a given level of destruction.

As mentioned previously, there are applications for guided-missile fire in support of ground combat which guns and aircraft do not fill. Any reasonably economical dispersion characteristic of missiles will be welcome to fill these gaps in the capabilities of existing weapons.

The more accurate the missile is, the warmer its welcome will be, of course. However, in order for missiles to compete favorably with existing weapons in meeting some of the fire-support applications which may be common to missiles and either or both of the existing weapons, the missile must demonstrate its ability to do the job better from the standpoint of target destruction and cheaper from the standpoint of manpower and material costs.

For example, forty $5,000 short-range missiles might be placed on a target of a radius which would require the expenditure of a thousand $200 shells to effect the same result. The choice of weapon in such a case would depend on war-head characteristics. If better target destruction could be achieved by blast, then the large missile war head would be advantageous. If penetration were necessary, the large war heads and high velocities of missiles would again be advantageous. However, if area distribution of chemical or fragmentation shells were desired, there would be even choice between the missile and the gun except for the longer-range advantage of the missile. Similar comparison could be made between the ground-support missile and the fighter-bomber.

Missile Evaluation

Cost, effectiveness in target destruction, operational and logistic feasibility, and dependability under tactical conditions are factors of paramount importance in weapons evaluation. Cost in dollars is significant because dollars represent manpower in our economy. Roughly eighty per cent of the cost of any peacetime or wartime production item is labor, which flows from the same manpower pool as combat troops.

The cost of an item will normally be too high if it is not readily adaptable to the techniques of mass production. In this respect the extreme simplicity of solid-propellant propulsion units is most attractive when compared with the elaborate plumbing, machinery, and assembly requirements of liquid-propellant systems.

The operational feasibility of the solid-propellant missile is also attractive when compared with the difficulties involved in the field distribution and loading of liquid fuels. However, as logistically feasible as the smaller, shorter-range, solid-propellant missiles may be, the weight of the solid-fueled weapon becomes excessive for larger-size missiles, and the liquid-propellant system becomes a necessity in these longer-range weapons.

As the range to the target increases further, it is found that huge, logistically inconvenient, single-stage rockets are required. Alternatives are the 2-stage rocket and the ram jet.

Six years ago there were a scant dozen men in the Nation who had a firm notion of the guided missile and its potentialities. The progress that we have made to date is a gratifying indication that in the technical fields we are alert to our military responsibilities.

AAA GUARD UNITS IN PENNSYLVANIA DISASTER-RELIEF

When record snowfalls, high winds and heavy floods of the Susquehanna and Juniata Rivers struck Western Pennsylvania over the Thanksgiving week end, 2,000 National Guardsmen were ordered on emergency duty in areas suffering heavy damage.

Units of the 218th AAA Group, commanded by Colonel Vincent P. Lupinacci in Pittsburgh were quickly assembled in their armories. The heavy M-4 "Cats" of the AAA were used to pull fire department equipment through the 31.1-inch-snow-covered streets, while AAA radios were put to use at check points, supplementing the city's crippled civilian communications system.

The guardsmen brought food and supplies to snowbound families, prepared hot food and sleeping facilities for stranded travelers, and in one instance transported an expectant mother to the hospital by jeep.

Participating in the emergency were the 708th AAA Gun Battalion, with the 689th and the 724th AAA AW Battalions.

TRIAL FIRE WITHOUT CHARTS

By Major Andrew R. Grant, Arty.

USE of charts in finding trial fire corrections is a constant source of error, through inaccuracies in the original drawing and in the plotting and movement of CB's. Even when done accurately, they require time to construct and are inconvenient to use. Their proper use requires considerable training. The desired corrections can be found with greater accuracy and less trouble through the use of the method outlined below. Inasmuch as this method is based on use of proportions, let us call it the "proportions method," to distinguish it from the "chart method" currently in use.

The data required for this method are the same as for the chart method. For each burst we need to know the slant range deviations in yards and the lateral and vertical deviations in mils.

Let us work through the problem shown in the figure.

We are firing a TSP at a range of 8,000 yards and an altitude of 6,000 yards, using 90mm guns. Azimuth is 1600mils. Ballistic corrections have been applied. From the firing tables we see that the slant range is 10,000 yards and angular height is 655mils.

After completing the firing, we find the average deviations were as follows: in slant range, +220 yards; vertical, +5mils; and lateral, right 5mils.

Looking in the firing tables, at page 19, we find that a change in muzzle velocity of +100 f/s in muzzle velocity would have caused a variation in slant range of +330 yards. In our problem we had a variation in slant range of +220 yards. The muzzle velocity variation would then be the same proportion of 100 f/s as 220 f/s is of 330 f/s. The muzzle velocity variation is proportional to the slant range deviation.

$$dMV = \frac{+220}{+330} \times 100 f/s = +67 f/s.$$

Unit 598th AAA Gun Bn		Date 4 Aug 48		Time 1000	
Range 8,000	Altitude 6,000	Slant Range 10,000	Angular Height 655	Azimuth 1,600	
Shot Number	ΔD (yds)	Shot Number	ΔE (mils)	Shot Number	ΔA (mils)
1	+200	1	+10	1	R5
2	+250	2	+5	2	R5
3	+240	3	−5	3	L5
4	+200	4	+10	4	R10
5	+210	5	+5	5	R10
Algebraic Total	+1100	Algebraic Total	+25	Algebraic Total	R25
Average ΔD	+220	Average ΔE	+5	Average ΔA	R5
ΔD for + 100 f/s of MV	+330	ΔE for + 100 f/s of MV	+4.8	Converted to Horizontal	R6
dMV	+67	ΔE for dMV	+3.2	dA	L6
		Subtract ΔE	−5		
		dφ	−2		

The muzzle velocity correction, dMV, can then be applied.

Page 19 of the firing tables also shows that a variation in MV of +100f/s would have caused a change of +4.8 mils in the angular height of the CB. Therefore, our change of MV of +67f/s should have caused a change in angular height of 67% of +4.8mils, which turns out to be +3.2mils. This is where the burst would have occurred had there been no vertical error. To move the CB from its observed position of +5mils to its calculated position of +3.2mils would require a correction of −1.8mils, or −2mils. This is our correction to quadrant elevation.

The lateral correction is computed in the same manner as in the chart method. The average lateral deviation is converted to the horizontal, where, with its sign changed, it becomes the lateral correction. In our case, the lateral correction is −6mils.

All this takes considerably longer to tell about than to do. The above described calculations can easily be done in less than half a minute, even by longhand. Use of a sliderule or nomograph will cut it down to about ten seconds or less. The time required to draw the TSP chart is entirely eliminated.

The proportions method is based on the same assumptions as the chart method, namely, that variations in MV are proportional to variations in slant range, and that a change in angular height is equivalent to a change in quadrant elevation of the same number of mils. Neither of these statements is exactly true, but the error is smaller than the P.E. of the guns and may be ignored.

The advantages of the proportions method are that it may be worked without the use of a prepared chart, a drawing board, or a straightedge. It requires no skill in the manipulation of instruments. Further, it gives the answer more accurately than the chart method, being limited only by the accuracy of the readings taken and of firing tables, and finds the answer more quickly.

Major Andrew R. Grant is a student in the Advanced Course, AAA and GM Branch, The Artillery School, Fort Bliss, Texas.

The writer developed the proportions method about two years ago for the purpose of providing exact solutions of preparatory fire problems used in officers' schools. It has also been used for actual firing problems in the field. It has never failed to outperform the chart method for speed, accuracy and convenience.

* * *

This article represents the author's views. It is well worth study. We would add that the chart method should be well understood before the proportions method is undertaken. We would further add, on trial fire and calibration fire in general, that super care and accuracy are pertinent. Such firings are highly instructive and certainly trial fire is essential. However, with all our high regard for antiaircraft artillerymen, experience taught us long ago that the corrections derived from trial and calibration fires were frequently due to errors in gun laying, observation, and solution, rather than to ballistic variations emanating from the guns or ammunition. Except for well-worn guns, they perform quite consistently. The muzzle velocity determination should be made for each lot of ammunition, but azimuth and elevation errors should be viewed askance. Gun laying should be checked and the burst observations should be made by two sets of instruments completely independently. Accurate and timely meteorological data are also pertinent.—Ed.

ROTC Camp, Fort Bliss

By Cadet Thomas N. Duffy (ROTC), Arty.

COLONEL M. A. Hatch's recent article in the ANTIAIRCRAFT JOURNAL on the ROTC Summer Camp at Fort Meade, Maryland, rather graphically showed the problems of a camp commander and the peculiar conditions affecting them there. This is a shoe off the other foot; it is a cadet's-eye view of the AA ROTC Summer Camp at Fort Bliss, Texas. The camp itself lasted from 19 June to 29 July, a period of what Californians call "unusual weather." We had sandstorms, hail, and all the conditions in between, including one flood.

The camp was organized as a battalion of two batteries. One of the best products of the camp developed from this situation was a strong esprit de corps, and thus a flourishing interbattery rivalry. Sports, shooting and drill were all performed with much more spirit when it was a case of A against B.

Training time was broken into three general groups: two weeks instruction on general subjects and service of the piece (both guns and AW), three weeks firing, and in the final week, field exercises. The tremendous advantage Fort Bliss has over Fort Meade as a base for a summer camp is that it is the AA & GM Center, affording all the benefits of numerous crack instruction teams and the spacious Hueco Ranges. Colonel Hatch mentions that he was restricted to three afternoons of firing: at Fort Bliss we were given two full weeks, all day, for AA service practice.

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The first week of firing, with automatic weapons, was conducted the third week of camp. For the most part RCAT's were provided as targets, both for realism and to stimulate battery rivalry. The two batteries were rotated on the firing line frequently. We used M-16's and M-19's belonging to one of the self-propelled battalions stationed at Fort Bliss, and used them to such good effect that by the end of the week the average life of an RCAT was about two missions.

The next week, borrowing guns from a battalion then in garrison, we fired on Hueco Range No. 4. Here again firing was scored by battery. In order to keep battery scores up, the cadets had to learn teamwork in gun service, and they learned it well. As in the AW firing, the scores came up to a level comparable with some regular batteries.

THE fifth week of the camp was given over to carbine firing. The primary purpose of this period was to give the personnel a working acquaintance with the weapon, its firing, and target range procedure. In the course of the week, however, every cadet in both batteries qualified with the carbine, with a high number of expert and sharpshooter scores being shot.

Field exercises put the whole of the camp's training in perspective and rounded off the training with the total picture of the battery in action. In the problem the two batteries defended a guided missiles launching rack, one with guns, the other with AW. F-80's from Biggs Field added all the realism possible under peacetime conditions.

As I mentioned before, Fort Bliss' tremendous facilities paid dividends in cadet training. Demonstrations were given in motor maintenance at battery, battalion and ordnance levels. The Guided Missiles School gave a full day of lecture and demonstration of their work. Other features were lectures on tactics and on communications, with emphasis on radio in the self-propelled battalion.

A FEW suggestions have been offered by instructors at the camp. One agrees with Colonel Hatch when he says that as much student leadership as practicable should be utilized. At Fort Meade students were often used for instruction. This could have been done many times at Fort Bliss with good effect. It was suggested, too, that cadet officers should have been given more authority in the field; the tendency was for unit instructors to conduct all phases of the service practice, except the actual firing, themselves.

Although matériel was in good supply, there is some feeling that if each battery had been given full equipment for firing, more practice and skill might have been obtained than was possible under the rotation system.

Cadets from the following schools participated in the camp:

University of California
Kansas State College
University of San Francisco
Texas A & M
Texas Western College
Utah State Agricultural College
University of Washington

They comprised about two hundred and fifty students from the Fourth, Fifth, and Sixth Army areas.

Defense Of Large Metropolitan Areas

By Major Charles F. O'Donnell, Jr., Arty.

In the 35th AAA Brigade Staff we have had considerable work in preparing plans for the AAA defense of a metropolitan area. We have since given the plans a good test in a field exercise in which the troop units had to establish the defense in accordance with the plans and on short notice. As expected we found that detailed planning for all echelons is required. We also found that it has to be kept up to date.

For our own use Major Paul J. Maline, S-3, and I have prepared an AAA Planning Guide for the Defense of a Large Metropolitan Area. It includes a discussion of the necessary steps in preparing the plans, forms for the operation plan and the position book, a tactical SOP for the Brigade, and a complete operations plan.

I am presenting here the essential parts of the planning guide.

AAA Planning Guide

1. *Purpose:*

This procedure is based upon the assumption that you will have ample time to do all the things indicated and that the detailed planning is necessary in order that an effective defense may be established on short notice.

2. *General:* Topics for discussion.

a. Steps in the preparation of a defense plan for a large metropolitan area.

b. Dissemination of the plan.

c. Subsequent action after the plan has been approved and disseminated.

Steps In the Preparation of the AA Defense Plan:

The first step is the procurement of maps of the area to be defended. According to the number and type units involved, the following is an estimate of the amount and scale of the maps required:

	Brigade	Group	Gun Bn	AW Bn
Small scale 1:1,000,000....	1	1	..	..
Intermediate scale 1:200,000	3	3	3	3
Medium scale 1:50,000	20	20	20	20
Large scale 1:25,000	10	15	15	70

The second step consists of preparing a theoretical solution to the problem. This solution will be based on the mission assigned, enemy capabilities, troops available, antiaircraft artillery tactical doctrine, logistical support, and terrain features.

Mission assigned:

From which determine the size of the area to be defended, the importance of the objective and where possible, the desired Attrition Rate.

Potential enemy capabilities:

Determine or estimate an enemy's capability of attack, possible avenues of approach, types of enemy aircraft and guided missiles, his altitudes of attack, formation, speed and tactics.

Latest tactical doctrine:

Adapt it to the particular situation, bearing in mind the units available and the desired Attrition Rate. Reference: Special Text AA & GM No. 4.

Units available:

Prepare the defense plan based on the units immediately available to the defense. Prepare an additional plan considering units that might augment the defense. Where units are mixed such as 90mm and 120mm gun battalions the Optimum Gun Ring must be modified and a composite gun defense established.

Logistical Support Provided:

Establish the location and extent of help to be provided by the technical services. Terrain features such as large rivers, swamps, mountain ranges will affect the location of units prior to occupation of positions in the defense.

The third step consists in forming a permanent planning committee. This committee should be appointed by the commanding officer and include his S-2, S-3, S-4, communications officer and radar officer. In addition two officers from each type battalion in the defense and an officer from the operations detachment should also be on the committee.

The fourth step should be a reconnaissance of positions by members of the committee:

Based on the tactical solution, the committee makes a map reconnaissance of all positions selected. The map locations selected should be as near the ideal positions as possible.

Plot all elements of the defense except battalion and higher headquarters. The battalion and higher headquarters positions will be selected and plotted when the location of commercial communication facilities has been determined.

Form reconnaissance teams from the committee. Reconnoiter each position and where possible select the position on public lands. Where it is not possible to select the ideal position on government land an alternate position will be selected on the nearest public land available if at all suitable. The use of public lands will facilitate the arrangements for manuevers and preliminary communication checks.

The fifth step is the preparation of position folders. A position folder will be prepared for each position to be occupied in the defense. These folders are prepared only because the lower echelon units cannot be brought into the preparation of the plan. They are used as a substitute for the reconnaissance normally accomplished by lower echelons.

Each folder will include:

a. Position Area Sketch showing the battery layout, access roads and prominent features. Where possible the messing, billeting and recreation areas should be indicated.

b. Route Sketches or overlays, giving mileage between initial points, identifying roads used, and prominent landmarks.

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c. Word description of route to position. This description should coincide with the Route Sketch. It should describe the turns to be made, mileage to identifiable points, bridge capacities and road conditions.

d. Description and sketches of alternate positions. These should be comprehensive and inserted in the rear of the folder.

e. Pertinent maps to accompany the overlay, preferably to a scale of one inch to the mile.

Each automatic weapons platoon and battery folder should contain maps showing the location of each fire element of the platoon and battery.

The folders are prepared on the assumption the personnel using them will have little if any time to make a reconnaissance and that movements will undoubtedly take place during the hours of darkness. Therefore all the sketches and descriptions must be clear and concise.

The sixth step is the determination by the communications officer who will ascertain what commercial communications facilities may be made available to the defense. This information will be a major factor in finally determining battalion and higher headquarters command posts.

The seventh step is the testing of the positions for radar and radio receptions.

The radar officer should make cover and clutterage diagrams.

Tests should be made on property selected as positions if permission is granted to occupy these lands; otherwise the tests must be made on public roads in the immediate vicinity of the position.

The eighth step by the committee will be the preparation of the *Position Books.* (See Figure No. 1.)

The position book form is initially prepared by the reconnaissance team and is expanded by each succeeding visitor to the position.

The book will contain pertinent information including a general description of the area, owners, water, sewage, telephones and electric service available, metes and bounds, etc. The position book will eventually include the plans for the necessary construction of barracks, mess halls, offices, road nets and storage sheds.

The purpose of each position will be designated by a code number in order to permit the position book to be classified "Restricted."

The book will become a permanent record of the activities of the site and will be kept current by the responsible headquarters when the site is not occupied. It will be of valuable assistance to the Corps of Engineers in negotiating for the lease of the property.

POSITION BOOK FORM

Number .....
Purpose .....

Owner's Name
Address

General Description:
Area for Temporary Occupation:
Area for Permanent Occupation:

Identification of Initial Point:

Official Metes and Bounds:
Area for Temporary Occupation:
Area for Permanent Occupation:

(Page 1)

Number .....
Purpose .....

Water:

Telephone:

Gas:

Power Sources:

Sewage Facilities:

(Page 2)

Number .....
Purpose .....

Access Work Required:
Clearing Required:
Grading Required:
Terrain Condition:

(Page 3)

Number .....
Purpose .....

Changes Affecting Utilization:
Firing Masks:
Trial Shot Data:

(Page 4)

Number .....
Purpose .....

Radar Tests:
Radio Tests:

(Page 5)

Number .....
Purpose .....

Record of Visits:
Comments:

(Page 6)

Figure 1

The ninth step is the preparation of the operations plan with annexes. (See Figure No. 2.)

The commander's S-3 is responsible for the preparation of the operations plan from the data compiled by the committee.

It is published in the form of a five paragraph operations order with pertinent annexes. Members of the committee and staff sections are responsible for the preparation of these annexes.

Annexes should include:

a. Intelligence Annex:

It reports the general situation with respect to a potential enemy, and the potential enemy capabilities of attacking by air, land, or sea the specific area to be defended.

b. Operations maps or overlays:

To show the locations of all elements of the defense. It includes one overlay for guns and one for AW.

c. Administrative Plan:

Provides for administration after defense positions are occupied.

d. Signal Annex:

Provides directives concerning message center and communication matters.

e. AAAIS and AAOC Plan:

This plan will be an appendix to the Intelligence Plan and should provide for the coordination of all elements of the AA Defense and receipt of early warning information from the Air Force.

f. Transportation Plan:

Prepared by the S-4 as an appendix to the Administrative Plan. It contains complete instructions for the movement of units from home stations to the defense positions. The plan prescribes the attachment of vehicles to units for movement, giving routes to the defended area with a

BASIC FORM FOR OPERATION PLAN

HEADQUARTERS
PLACE
TIME AND DATE

OPERATIONS PLAN NUMBER ....

MAP REFERENCES:

1. GENERAL SITUATION: Information of over-all situation so subordinates would understand current situation.
   a. ENEMY FORCES: Who, What, Where, When, How. Annex 1, Intelligence.
   b. FRIENDLY FORCES: Information that may affect the decision of a subordinate.
   c. ASSUMPTIONS: Those used as a basis for the plan.

2. MISSION: Statement of task and purpose.

3. TASKS FOR SUBORDINATE UNITS: Specific tactical tasks for each element of the command.
   x. Time or condition under which plan is to be put in effect. Instructions applicable to two or more units or the entire command.

4. ADMINISTRATIVE AND LOGISTICAL MATTERS: Broad instructions usually included in Annex. Reference made thereto.

5. COMMAND SIGNAL MATTERS: Refer to standard plan, usually an Annex. Location of Command Posts.

Annexes:
1. Intelligence
2. Operations Map (AW)
3. Operations Map (Guns), OP's, CP's
4. March Table
5. Administrative Plan (Transportation Plan)
6. Signal
7. Vital Installations

Name
Rank

Distribution:

OFFICIAL

Name
S-3

Figure 2

march table or graph showing time of arrival into position after H hour and lists movement priorities. (H hour is the time personnel and equipment have been assembled and are prepared to move out.)

The S-3 ascertains the location of the nearest Air Force Aircraft Control and Warning Station. Communications are established between the Air Force Control Center and the Antiaircraft Operations Center for prompt information on movements of aircraft.

The final step in the defense planning is the assembly of the defense plan and the presentation of this plan to next higher headquarters. This can best be done by the commanding officer and his staff in conference with the higher headquarters.

Dissemination of the Defense Plan

After the plan has been approved by higher headquarters, dissemination will be made based on the existing situation and security considerations. As soon as possible the following dissemination should be made:

a. The operations order down to and including battalion level.

b. The position folders down to and including each AW battery, platoon and fire unit; gun position and OP site.

c. The position book down to each site occupied.

These portions of the plan containing the intelligence summary and listing vital installations should not be distributed below group headquarters.

Classification:

The defense plan should be classified as "Secret."

The position books, when properly encoded may be classified as restricted.

Standing Operating Procedure (SOP)

A Tactical Standing Operating Procedure should be prepared by each organization. The SOP contains a set of instructions governing the procedures to be followed as a matter of routine. The purpose of these instructions is to reduce the number of orders to be issued and to establish the regular procedure to be followed unless particular cases arise which call for special instructions.

Subsequent Action

a. Rehearsals.

Each person concerned becomes thoroughly conversant with his assignment under the plan. Staff officers cognizant of the entire plan should be familiar with the action to take in an emergency.

Practice loadings of ammunition are conducted. Time all these actions. Eliminate waste motion and bottlenecks.

Practice motor marches to positions are conducted by the units tactically loaded. Time all these movements.

Hold maneuvers to include actual occupation of primary or alternate positions. This will provide the opportunity of testing all communications, both wire and radio, and provide a check on the time and priorities established in the march table. Further it will enable units to devise an effective plan for local security and test the plan for logistical support.

b. Constant review and revision of plan.

(1) The following conditions may require changes in the plan:

(a) Change in potential enemy capabilities or tactics may dictate change in the tactical solution for the defense.

(b) Construction on or alterations to site selected for occupation may require a further reconnaissance for new positions. This will also mean a change in the operations maps and overlays.

(c) Changes in or to units comprising defense. If a unit is changed from mobile to semi-mobile the march graph and transportation plan will have to be changed. If gun units are added to or subtracted from the defense additional plans will have to be made.

(d) Radio or radar tests may prove a position to be unsatisfactory. If so a reconnaissance team should select immediately a new position.

(2) Every revision to the plan must

be carefully studied and any changes in gun battery locations analyzed to ensure that the defense is kept tactically sound. Make an analysis to determine if any corridors of approach or weak spots have been left open. Revision to the plan should be a continuing process based on changing conditions and constant inspection of positions. The plan when approved is not to be considered as fixed or unalterable.

Planning Room

A planning room should be established containing all the information, forms, and equipment required in a field CP. Thus in case of an emergency everything required for a CP will be centrally located. In addition, this room, properly secured, will be a great aid to the planning committee during its periods of study and preparation of position folders and position books.

The room should contain a large map rack with current overlays, operation maps, gun density charts, and matériel reports posted.

Conclusion

The instructions contained herein are of a general nature. While all the steps indicated are essential they should not be construed as inflexible and should be altered to fit local conditions and situations.

LEADERSHIP AND THE STUDENT

By First Lieutenant Robert L. Hogan

LEADERSHIP has been called the art of guiding a group of men toward a common objective—and making them like it.

We are applying this type of leadership in teaching the basic electronics subjects in the Radar course at the AA & GM School, Ft. Bliss, Texas.

The basic electronics section has the responsibility of teaching simple electrical theory, through radio principles, on up to the final goal of teaching several specialized circuits peculiar to army radar equipment. With the mental tools thus acquired, the student then goes forward to the practical application of what he has learned by actually working on the several radar equipments presently operational within the artillery.

The basic section has an average teaching span of sixteen weeks. Two years ago the student class in covering these sixteen weeks would pass before a large number of instructors, each a specialist quite familiar with his subject, but somewhat less familiar with the individual student.

This did not hold true in every case. The exceptionally brilliant student, or the highly extroverted student, each found his own way to overcome anonymity. But the normally mediocre, or quiet student passing through his sixteen weeks was losing out on personal contact. As soon as he became familiar enough with an instructor's face to ask him for help he was confronted with another new instructor and withdrew again into his shell.

Commencing under the direction of Major Robert Fate and carried forward under his successor, Lieutenant Colonel Ira W. Cory, the section divided its instructors into teams of five or more officer and enlisted electronics specialists. Each team was assigned a class on its entrance into the course and for the following sixteen weeks became its guides, teachers and mentors. The change, both on the part of the student and the instructor, was amazing. Instead of the personal vacuum which existed between the student and constantly changing instructor before, the relationship became more personal. Instructors were heard more and more to make remarks such as, "How did our boys do in the exam today?" and "What seems to be the trouble with Jones—he has been slacking off for the past week?" The student began to refer to the team chief in that esprit-building vernacular as the "Old Man." More and more the quiet members overcame their inherent shyness and called on their instructors to help them out on small but important technical points. Personal contact put the student-instructor relationship on a basis that paid off in phenomenal results.

FOR one example we can take the case of Sergeant First Class Smith. He has some eight or nine years total service with some high school background. He dabbled in amateur radio to the extent of building his own receiver. He wants to further his army career by gaining a technical education, and therefore enrolls in the Radar Repair and Maintenance course at Fort Bliss. Three weeks after he starts, the speed at which he has been required to absorb the tremendous volume of technical theory and application finally reaches a saturation point and he begins to slide down in his marks. His platform instructors by this time have noticed his interest and also noticed this gradual falling back. His laboratory instructors of the same team though, have noticed an exceptional grasp of usage and manipulation of instruments and equipments. On failing one or more examinations Smith is brought to the attention of the team chief who must submit a report to higher channels on his recommendation as to whether Smith should be retained in the course, dropped back to another class, or dropped from the school. The team chief, however, from his own personal observations and those of his assistants, has already a good line on Sergeant Smith's problems. He has a talk with him, establishes a bit more firmly the personal contact, straightens out some other matters, and decides to keep Smith in the class and help build up his grades.

The team, as a whole, also becomes more aware of Smith. In class and out, many or all of them are available for consultation on phases of the course in which he is having difficulties. Usually it is found that Smith, now knowing his problems are in sypathetic hands, redoubles his efforts and eventually licks his problems.

This hypothetical case history shows in a small way that good leadership principles, when applied in any phase of Army life will pay off usually with "good men achieving that objective toward which they are being guided."

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Better Efficiency Records

By Colonel Strode Newman

THE present efficiency report form is perhaps the best yet devised; yet it fails to cure the main weakness in our efficiency report system. Those who make out the reports are just human beings, and bias and personal reactions enter into the construction of every ER rendered; therefore, an over-all rating based on a small number of reports will always lack objectivity.

Now we can't change human nature; so the best solution would be to recognize the existence of human nature and then try to devise a means of obtaining a large number of ERs, which would thus serve to minimize the influence of human nature.

AR 600-185 states that efficiency reports have two main purposes:

"(1) To provide a measure of an officer's over-all value to the service, to be used with other information as a basis for selection purposes.

"(2) To furnish information necessary for efficient utilization and assignment of individual officers."

And further, "The intent is to secure objective and worth-while ratings over a maximum time. . . ."

In spite of these sound principles, however, our efficiency report system contains this serious weakness: Out of thousands of officers in the Army, *each of us is rated by a very small number of judges* under the present system.

Here is how the system works.

(1) There is the officer who, at a vital point in his career, hitches his wagon to a star that is going places, and for a period of years is rated only by that officer. Result: a long series of fine ERs.

(2) Another officer does an outstanding job, but has superiors who give him relatively low ratings—generally because they are mediocre officers themselves. (Having seen their own reports, they rate others accordingly.)

(3) Then there is the kind of assignment with a job to be done that almost any good officer could do but when it is done successfully, the officer who did it will get an outstandingly good report. In other words, certain jobs lend themselves to making the officer assigned to them look good.

(4) Also there is the reverse of this: An officer gets a job where the cards are stacked against him from the beginning. Whoever draws that assignment is going to look bad and get a poor efficiency report, unless he has an unusually discerning superior.

(5) One of the worst breaks is to get under an officer with whom there is a personality clash, and some of the best officers in the Army run into this difficulty. Weak sisters seldom have personality clashes with their seniors. The result of a personality clash is almost always an ER that is below the rated officer's real worth.

(6) In marriage, mental cruelty and incompatibility are recognized legal grounds for divorce—but in the Army it is normally very difficult to obtain a military divorce from your "immediate superior," though the same human frictions exist.

(7) There is also simply a question of taste, just whether your superior happens to like your type or not.

IN 1928 I went to Amsterdam as a member of the American Olympic Team, and while there saw the finals of the high diving championship. In this competition there were five judges, placed at widely separated points to view the diving from all angles.

The real fight for the championship narrowed down to Desjardins of the United States and Simaika of Egypt. It was a magnificent demonstration of competitive skill, and when the scores were added, Simaika had 99.58 and Desjardins 98.74; so they crowned Simaika as the Olympic Champion.

Later in the day, however, it was discovered that Pete Desjardins, and not Simaika, was the Olympic Champion, because at least three of the five judges had judged him better than Simaika; yet he had been dropped down in point score by the low rating given him by a single judge. The rules were clear on this point, fortunately, to protect competitors against the human factor which would otherwise allow a single judge to unfairly drop a fine competitor below his proper place.

THE comparison with ERs is obvious. A single comparatively low ER rating will drop an officer out of the championship class where the competition is so keen—and it is very, very keen.

I think there is a solution, however, and a relatively simple one. Once a year require each field grade officer who has ten or more years of active commissioned service to send to the Adjutant General his opinion as to the best five (5) majors he knows in the Army, the five (5) best lieutenant colonels he knows, and the three (3) best colonels.

This can be done simply by having these experienced field grade officers fill out a separate 3"x5" slip on each officer named. Separate slips would probably facilitate counting, scoring, and filing in the Pentagon.

The following form is suggested:

OPINION RATINGS BY FIELD OFFICERS

I consider the following officer to be one of the five (5) best in his grade known to me in the Army.

(I am a field grade officer on active duty who has had ten or more years of active duty as a commissioned officer.)

MAJOR Johnson, Harry M., O-123456, Inf.

(Signed) Anniston F. Murphy
(Typed) Anniston F. Murphy
Lt. Colonel, Inf., O-987654

15 Dec 1950
Fort Williams, Ky.

I shall not attempt here to specify exactly how these opinion ratings would be evaluated and integrated into the over-all ER ratings of each officer.

The scheme would tend to correct the basic fault in the present system, because it gives every officer a chance to be rated by a large number of rating officers. And they would have seen him from all angles —above, below and sideways, on and off duty, and in every other fashion.

It would crimp a few of the personality boys who set out to do a butter-up job on their current immediate superior.

It should definitely influence selections for detail to the Army War College, other advanced schools, and other similar details. It should also influence selections for promotion. Examine for instance the promotions to the grade of general officer. We would have a number of colonels, all with fine records. Each of these colonels would, over the past ten years, have been rated by relatively few officers, subjected to all the chance, pressure, and vulnerability to personal bias. It appears that the opinion ratings would offer a broader basis for, and wholesome influence upon, the selection.

Some Tips For Junior Staff Officers

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

YOU may never have been near the halls of Leavenworth or the Pentagon, but there is a strong chance that you will find yourself one fine day with the duties, responsibilities and somewhat dubious privileges of a staff officer. In the popular mind, a staff officer is often something sinister, a man who spends his time in devious plotting when he is not hovering in suspicious proximity to the brass. To the line soldier, the staff officer often appears as a man who goofs off from the discomforts which he ought to share in order to think up harassments for the people who do the real work, and who never has a glimmering of what day-to-day, mundane problems of troop duty actually are.

Neither of these pictures bears much resemblance to reality. The staff officer exists because of the complexities of modern command, complexities which increase with the size of the unit commanded. No one man can be expected to have at his finger tips the mass of data required to plan, put into effect and check up on the operations of any military organization above the battery level.

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The provision of an officer to be responsible for each of the various major functions of a headquarters is merely recognition of this fact. For the sake of having a definition to work from, therefore, we might say that, in essence, a staff officer is a component part of the commander's brain.

Within his own given sphere of responsibility he advises the commander upon the course of action to be followed by the unit; he helps to plan the details of the course of action finally decided upon by the commander and then coordinates those phases of it for which he is responsible with other interested agencies; and he acts for the commander in checking up on the execution of the plan by subordinate units. In other words, once the commander has made the decision, the staff handles the details.

It is because of the staff organization that complex operations can be put into effect rapidly and efficiently. An example illustrating this point is the case in which General Patton's Third Army, poised for an offensive, reversed its direction entirely and marched to the relief of Bastogne during the Battle of the Bulge, and did so without chaos on the roads, units lost, confusion of orders, or any of the thousand other major disruptions which could have been expected to occur. It is taking nothing away from General Patton's laurels to say that this operation was a triumph of staff work.

"Handling all the details" sounds like a large order. It is; but at the same time, it is no more than seeing a course of action through from its initial conception to its final execution. Its successful performance can be broken down into four guiding principles: loyalty, delegation of authority, coordination, and "completed staff action." They apply to staff work at every echelon from the Pentagon clear down to battalion. There is nothing revolutionary about them, but they need to be emphasized. Although they should become instinctive, reflex action in every staff officer, the sad truth is that all of them are sometimes neglected.

LOYALTY ought to be taken for granted, you say, and so it should. But can it be? I suppose you have never heard an order issued something like this: "Men, I think this is damn' foolishness, but the Old Man says this is what we'll do so we'll have to do it." Or have you? Have you ever used that same device yourself? If you must answer yes to either of these questions, you must agree that loyalty needs stressing.

Loyalty in a staff officer means three things, really: loyalty to the commander, loyalty to the subordinate units and loyalty to oneself. Loyalty to the commander means in part that when you issue an unpleasant order to a subordinate unit you don't try to league yourself, by implied sympathy or otherwise, with the suffering subordinates against the unreasonableness of the CO.

Of course, the manuals say that a staff

officer does not issue orders, and he does not do so in his own name; but not only does the staff officer relay the commander's instructions, he frequently issues in the commander's name orders which that gentleman never knew about. Once he has learned the CO's policy it is often the staff officer's duty to issue necessary instructions, always within the limits of that policy, without reference to his commander. He has to act for the CO—if he goes running to the Old Man for an OK on everything he does, he is worse than useless. But because of this leeway which he is allowed, loyalty by the staff officer is particularly important.

Finally, in being loyal to the commander, the staff officer must remember that the credit for the unit's good work goes to the CO. Maybe it was your idea originally which led to a commendation from higher headquarters. The credit is not yours, it is your commander's. If he is worth anything at all, he will see to it that your contribution is recognized. Remember, if your bright idea, instead of a stroke of genius, turns out to be a lemon and draws down the ire from higher up, it isn't you who catches hell, it's your CO. He takes the blame; he certainly rates the credit.

The second aspect of a staff officer's loyalty is loyalty to the subordinate units. He is obligated to help them in every way he can. That means, among other things, not to heckle them with a mass of unessential reports (each with a suspense date). It means not to try to blame them to your CO for mistakes you made yourself. It means not to go hot-footing to him every time you find out that they may have left something undone. If it's something in your line, help the subordinate commander straighten it out; if its outside your own bailiwick, pass the word informally to the section in your headquarters which is properly concerned. Of course, if the deficiency is something the CO needs to know, by all means tell him, but don't worry him unnecessarily with minor matters. He has plenty of other problems.

THE third form of the staff officer's loyalty is to himself. In many respects, his job is a self-effacing one. He does not (at least he had better not) go around trying to run things. At the same time, no good CO wants a yes-man. This is particularly important in the stages of deciding on a plan and determining how to carry it out. If you disagree, it is your duty to say so, and why, up until the moment when your CO beats his fist on the table and says: "*This* is what we are going to do and *this* is the way we'll do it!" After that point, you must support the decision that has been reached, whether you think it's the best or not, as if it were your own. As has already been pointed out, the ultimate responsibility for every decision rests upon the commander.

The next basic principle of good staff work is delegation of authority. This may seem odd in a paper on the staff officer, not the commander. The fact remains that much of the actual detail work of command is done by the staff. There is often a temptation, in putting out directives, to prescribe in detail how the job is to be done. If you are a good troop officer you know better than to insult the intelligence of your men by telling them how to go about accomplishing what you have told them to do.

The situation is perhaps more acute on the staff, since as a staff officer you are often dealing with men who, as subordinate commanders, are senior to you in rank. They know how to do their jobs; all you can do is tell them what needs to be done and such details as you may know which will help them in reaching a sound decision as to how best to do what is asked of them.

We have defined a staff officer as one of the component parts of the commander's brain. That definition points up the next principle to be discussed. That is coordination. To pursue the figure, you know what happens to a man whose brain's parts do not synchronize properly. By analogy, the importance of coordination in a staff is obvious. It would be hard to find a staff problem which is of exclusive interest to one section. Even if a joint decision is not required, there is almost always someone else who needs to know what action has been taken. The decision you make today may be an important element in the decision another man on the staff has to make tomorrow.

THERE are techniques for insuring coordination, ranging from a phone call through the informal memo to the information copy of correspondence. How you accomplish the goal isn't too important; the essential thing is for each staff officer to be sure that everyone who conceivably has a legitimate interest in what he is doing is informed of it.

Last, there is the important principle called "completed staff action." This means that you are to pull your own weight. You don't go to your CO and say, "Sir, here is a problem. What do you want me to do?" You go to him and say, "Sir, here is a problem. We can do A, B or C. I would recommend C, because of so-and-so. In any case, I think B is especially undesirable because of thus-and-such." Remember you are supposed to be part of the CO's brain. You are supposed to be the expert in your field of the staff's activities. That means that you must present your commander with the choices; all he should have to do is make a selection.

STAFF work is not mysterious or abstruse. It simply follows rules of sound administrative procedure that apply anywhere. The Career Plan calls for every officer to gain staff experience as well as troop duty. Although it is no substitute for troop duty, it is one of the essential courses in the school of command, for as a member of a staff an officer is fundamentally the agent for the commander within the limits of the sphere of responsibility of his staff section.

Remember that to do his job effectively, the staff officer must be loyal—loyal to his commander because that commander depends on him and vests some of his own authority in him, loyal to the subordinate units and loyal to himself by standing up for his own opinions until the CO formally overrules them—; he must not try to command the batteries from his position at battalion, not only because he cannot possibly know enough of the details to make sound decisions but also because it is his job only to pass on *what* is to be done and what limitations or possibilities exist; he must coordinate his action with everyone who has any conceivable, proper interest in it; and he must present the CO with completed staff action—not a *fait accompli* and not with a problem alone, but with the details of the problem, the various possible solutions, and his recommendations as to which is the best, and why.

There is nothing impossible about any or all of these. If you apply these guiding principles you will save yourself a lot of grief and your outfit a lot of confusion.

HONOR ROLL

★★88th AAA Airborne Battalion
Major Thomas F. Penney

★★228th AAA Group
Col. David W. Bethea, Jr., S.C. N.G.

★★107th AAA AW Battalion (M)
Lt. Col. Thomas H. Pope, Jr., S.C. N.G.

★★305th AAA Group
Col. John S. Mayer, N.Y. O.R.C.

★★21st AAA AW Battalion (SP)
Maj. Charles E. Henry

★★59th AAA Battalion (SP)
Lt. Col. Landon A. Witt

★★69th AAA Gun Battalion (M)
Lt. Col. Alfred Virag

★101st AAA Gun Battalion (M)
Lt. Col. Henry J. Ellis, Ga. N.G.

★★19th AAA Group
Col. H. P. Gard

★★39th AAA AW Battalion (M)
Lt. Col. Nyles W. Baltzer

★★4th AAA AW Battalion (M)
Lt. Col. Raymond J. Conelly

★★503d AAA Operations Detachment
Capt. Rayfield R. Berger

75th AAA Gun Battalion
Lt. Col. Adam A. Koscielniak

★40th AAA Brigade
Col. Morris C. Handwerk

★62d AAA AW Battalion (SP)
Lt. Col. Robert G. Finkenaur

★★226th AAA Group
Col. John D. Sides, Ala. N.G.

★★146th AAA AW Battalion (SP)
Lt. Col. R. H. Franklin, Mich. N.G.

★★70th AAA Gun Battalion
Lt. Col. Kenneth R. Philbrick

★★68th AAA Gun Battalion
Lt. Col. Raymond C. Cheal

★★10th AAA Group
Col. W. H. Hennig

★★95th AAA Gun Battalion
Maj. Nelson C. Wahlgren

★79th AAA Gun Battalion
Lt. Col. Henry W. Ebel

★★768th AAA Gun Battalion
Lt. Col. Theodore H. Kuyper, Ill. N.G.

★229th AAA Group
Col. Edward Isaachsen, Ill. N.G.

★★207th AAA Group
Col. George T. Stillman, N.Y. N.G.

★★204th AAA Group
Col. John Barkley, La. N.G.

★★251st AAA Group
Col. Anthony Long, Cal. N.G.

★★35th AAA Brigade
Col. Pierre B. Denson

107th AAA Brigade
Col. John W. Squire, Va. N.G.

★★340th AAA Gun Battalion
Lt. Col. George V. Selwyn, D.C. N.G.

★★103d AAA Brigade
Brig. Gen. Russell Y. Moore, Conn. N.G.

★★212th AAA Group
Col. Joseph A. Moore, N.Y. N.G.

★★227th AAA Group
Col. Percy L. Wall, Fla. N.G.

11th AAA Group
Col. John L. Golf

★★46th AAA AW Battalion (SP)
Lt. Col. Walter M. Vann

71st AAA Gun Battalion
Lt. Col. Alfred J. Montrone

443d AAA AW Battalion (SP)
Lt. Col. John F. Reagan

★★715th AAA Gun Battalion
Lt. Col. William H. Uter, N.Y. N.G.

★★265th AAA Gun Battalion
Maj. Harry Botts, Fla. N.G.

★★705th AAA Gun Battalion
Lt. Col. M. P. DiFusco, R.I. N.G.

753d AAA Gun Battalion
Lt. Col. William A. Smith

★★105th AAA Brigade
Brig. Gen. Alfred H. Doud, N.Y. N.G.

★★105th AAA Operations Detachment
Capt. Paul D. Vancelette, N.Y. N.G.

★★127th AAA AW Battalion (SP)
Lt. Col. Hartley G. White, N.Y. N.G.

★★518th AAA Gun Battalion
Lt. Col. Harry Hewitt

★★214th AAA Group
Col. Jack G. Johnson, Ga. N.G.

★★202d AAA Group
Col. John W. Anslow, Ill. N.G.

313th AAA Group
Col. A. F. Hoele, Pa. O.R.C.

★78th AAA Gun Battalion
Lt. Col. Thomas W. Ackert

★698th AAA Gun Battalion
Lt. Col. Frank Monico, Ill. N.G.

★★97th AAA Group
Col. Joy T. Wrean

★★507th AAA Operations Detachment
Capt. Edwin F. Bookter

★65th AAA Gun Battalion
Lt. Col. Robert F. Moore

★712th AAA Gun Battalion
Lt. Col. Harry H. Taylor, Jr., Fla. N.G.

22d AAA AW Battalion
Lt. Col. Robert J. Jones

★374th AAA Group
Col. Thomas F. Mullaney, Jr., Ill. O.R.C.

★867th AAA AW Battalion
Maj. Samuel M. Arnold

★★216th AAA Group
Col. William E. Johnson, Minn. N.G.

★★302d AAA Group
Lt. Col. Arthur R. Arend, Ohio O.R.C.

★★398th AAA AW Battalion (SP)
Lt. Col. Louis B. Dean

★★126th AAA AW Battalion (SP)
Lt. Col. Richard C. Carrera, Mass. N.G.

★41st AAA Gun Battalion
Lt. Col. Lincoln A. Simon

★★112th AAA Brigade
Brig. Gen. J. W. Cook, Calif. N.G.

★★208th AAA Group
Col. Howard S. Ives, Conn. N.G.

★★82d AAA AW Battalion (SP)
Lt. Col. Walter Killilae

★★507th AAA AW Battalion
Lt. Col. Edward S. Mathes

★★709th AAA Gun Battalion
Lt. Col. Lyndon A. Long

★★9th AAA Gun Battalion
Lt. Col. R. A. Turner

JOURNAL HONOR ROLL CRITERIA

1. To qualify or to requalify for a listing on the Journal Honor Roll, units must submit the names of subscribers and a roster of officers assigned to the unit on date of application.
2. Battalions with 80% or more subscribers among the officers assigned to the unit are eligible for listing, provided that the unit consists of not less than 20 officers.
3. Brigades and groups with 90% or more subscribers among the officers assigned to the unit are eligible for listing, provided that the unit consists of not less than seven officers.
4. Units will remain on the Honor Roll for one year after qualification or requalification.
5. Battalions with 90% of officers subscribing will qualify for one star placed before the unit's designation on the Honor Roll. Battalions with 100% subscribers will qualify for two stars.
6. Groups and brigades cannot qualify for one star but may qualify for two stars with 100% subscribers.

Ack-Ack — Too Fast To Duck

By Colonel Earl L. Mickelson, Arty.

ARMY instructions have been given on the precautions to be taken by troops receiving enemy shellfire ("Incoming Mail"). Among other pieces of wisdom there was offered some sage advice about ducking—all offered from the point of view of our own boys. Now, it is proposed to change the point of view and see what can be done to the other fellow *if* we use the proper weapon to shoot at him; in other words, we shall emphasize the length of time we allow him to duck our "outgoing mail." In particular, we shall discuss the ducking time available to him when we cut down with the 90mm antiaircraft gun (90mm M1), which fowling piece is chosen as an example of a high-velocity shooting-pipe capable of heaving metal in a hurry.

As usual, there are three means by which the enemy receives warning of shells we throw at him: Seeing our muzzle flashes, hearing our muzzle blasts, and hearing the sound of our shells themselves as they approach him. With respect to the first two of these we can use firing tables available to the field soldier to compare slow-moving shells, such as those fired by a 105mm howitzer, with high-speed shells. Let's pick some data from the 105 tables and the 90mm tables:

Here the first four columns are picked right out of the tables and the last is composed of the calculated times required for the sound of the gun (muzzle blast) to carry the distances given in the range column under the assumption that sound travels at a rate of 350 yards per second.

Examination of the second, third, and fourth columns will reveal the time intervals the enemy will have for ducking if he sees the muzzle flashes from the various ranges given in the first column. For example, from line *b* we read that if the gun is 6,000 yards from him he will have 18.6 seconds for 105mm Charge 4, 16.2 seconds for 105mm Charge 7, and 9.2 seconds for the 90mm. At shorter ranges the ducking times become smaller the closer he is to the guns. But, as has been pointed out before, one seldom sees useful muzzle flashes unless one is an observer engaged in this particular business, so the knowledge to be gained from the table in this respect is not very important.

Turning now to the muzzle blasts, which the enemy frequently can hear as a means of warning, we do glean some worth-while information. If we shoot at him with a 105mm howitzer from 4,000 yards we see in line *a* that the shell will reach him 11.6 seconds after it is fired, while the sound of the gun will reach him in 11.4 seconds, and he will have two-tenths of a second in which to duck if he uses only his ears; Charge 7 and the 90mm will give him no time at all. At 6,000 yards (see line *b*) Charge 4 will allow him a second and a half and the others zero. By close scrutiny of the table you will arrive at the following conclusions: 4,000 yards is about the greatest range a 105mm (Charge 4) can fire without having its muzzle blast beat the shell to the enemy; 8,000 yards the greatest for the 105mm (Charge 7); 17,600 yards, the greatest for the 90mm. Motto: Aggressor, look out for that 90mm gun and its bigger high-velocity relatives.

	Time of Flight (Sec)			
Range (Yards)	105 Charge 4	105 Charge 7	90mm	Travel Time (Sec) Muzzle Blast
a. 4,000	11.6	9.9	5.4	11.4
b. 6,000	18.6	16.2	9.2	17.1
c. 8,000	27.1	23.4	14.1	22.8
d. 12,000	(Can't Reach)	45.6	26.6	34.2
e. 17,600	(Can't Reach)	(Can't Reach)	50.4	50.3

WHILE anyone getting his hands on the firing tables available in the field can do all the figuring he likes along the lines indicated above and while the data he accumulates may be important to him, I still think that the data obtainable from those trajectory charts issued to the field (and they do not come with many firing tables), which permit one to estimate the ducking time from the scream of the shell itself are the most important: More troops depend on the noise of the shell itself for warning than on flashes and muzzle blasts, especially so far as artillery shells are concerned. If one paid too much attention to flashes at night and the booming of guns at all times he wouldn't have time to do anything else. After all, he is directly interested only in the shells coming his way, and these he gauges by the noises they themselves make, rather than the flashes and sounds of the guns which fired them. With these notions in the background let's look into the matter of shell screams, and, since trajectory charts for the 90mm are available in the field, let's estimate the amount of warning time 90mm shells allow the enemy.

To begin with, we can see from the firing tables that at 8,500 yards range a 90mm shell fired from the AAA gun M1 will arrive at its target with the speed of sound. This means that at all ranges shorter than 8,500 yards (about 5 miles) the shell gives no warning of its approach whatever—it is decidedly a "no-hearem." Moreover, since we have already seen that the 90mm shell beats its muzzle blast way out beyond 8,500 yards (17,600 as a matter of fact), one can see that this little 23.4-pound pill is bad medicine to dish out for old Aggressor.

To estimate how much warning the

Colonel Earl L. Mickelson commanded the 119th AAA Gun Battalion in World War II campaigns from Normandy through central Europe. He was integrated in the Regular Army in 1946 and now serves as G-3, Military District of Washington.

90mm shell will give at ranges beyond 8,500 yards requires some finagling, which, however, can be managed because the 90mm AAA tables conveniently provide trajectory charts. Take a look at the chart. Among other things, this is what you see: Curved lines representing the paths of shells fired at 100-mil intervals of elevation, a horizontal scale graduated to 100 yards, and time-of-flight curves intersecting the trajectories at points representing the various positions thereon corresponding to the time intervals elapsed since the shell left the muzzle. It happens that the farthest reaching trajectory is the one for elevation 400 mils and horizontal range of 15,400 yards. By using the firing tables and allowing for the difference between horizontal range given on the chart and curved range (to fit the earth) given in the tables one can bring the higher trajectories "down to earth" by extending them, thereby making a more complete chart for the present purposes.

With the chart all fixed up, we complete our tool kit by marking off a piece of cardboard into 350-yard intervals to the same scale as that of the chart and mark the intervals 1 sec, 2 sec, and so on —a time scale for the speed of sound. Now, for example, consider the trajectory for 400 mils elevation, which pierces the horizontal at a point A (for "Aggressor"!) 15,400 yards from the gun and for which the time of flight to A is 40 seconds. Let S (for "Shell") represent the variable position of the shell along this trajectory. Suppose S is 10 seconds away from the muzzle. It makes an awful noise (both a screech and a crack) which ultimately will be heard at A. Lay your cardboard scale across A and S and discover that the noise made by the Shell at S will be heard at A about 28 seconds later. But from the time of flight lines one can see that the Shell itself will reach A in 40 minus 10, or 30 seconds. Consequently, *if* the noise of the shell were loud enough, its sound would reach A two seconds before the Shell itself and old Aggressor would have two seconds' warning. Now let S slide along the trajectory to various positions and measure this time difference for a variety of positions and you will find that the maximum warning the shell will give is about 2.4 seconds. If Aggressor located at A has a perfect ear, this is the maximum ducking time the shell noise will give him at range 15,400 yards.

AFTER examining various trajectories by this admittedly crude method one comes up with the following table of estimated ducking times for an Aggressor having perfect ears:

DUCKING TIME—GUN 90mm M1
(Perfect Ear)

Impact Range (Yards)	*Ducking Time (Seconds)*
0 to 8,500	Zero
11,200	0.2
13,600	1.3
15,400	2.0
18,500	7

This latter table seems to indicate that at the ranges beyond 11,200 yards an enemy would have considerable time to his advantage. Such is not the case, however, because his ears are not perfect sound-detecting instruments. Beyond 8,500 yards ground range, the shell travels more slowly than sound and, hence, does not produce a sharp crack or shock wave; its sound is a less powerful wave more like a screech, whine, or whistle with much less carrying capacity. It is believed to be safe to say that beyond 8,500 yards range the sound of a 90mm shell cannot be heard by the normal ear for more than 10 seconds of sound-travel time (3,500 yards). Under this assumption one may confine his scaling of the trajectory branches within 3,500-yard zones of the various impact points and modify the last table into the following:

DUCKING TIME—GUN 90mm M1
(Normal Ear)

Impact Range (Yards)	*Ducking Time (Seconds)*
0 to 8,500	Zero
11,200	0.1
13,600	1.0
15,400	1.0
18,500	2.3

Whether these figures are very accurate or not, they certainly are figures to be reckoned with. I have watched "Jerry's" mad scramble to duck our fire as far out as 19,500 yards; his actions didn't indicate that he had received much warning. Since a battalion of 90mm AAA guns can deliver 320 rounds (four tons of almost razor-like fragments) per minute for short periods and since the ducking time is short or nil, the tactician should give serious consideration to the employment of these "long-range corn-shredders" as antipersonnel weapons. No wonder the North Koreans didn't care for our "automatic artillery," as reported in the last issue by General Marquat.

GENERAL BUCHER RETIRES

Historic Virginia Military Institute saw another of its distinguished sons honored on January 4th when the Cadet Corps passed in review before their Commandant, Brigadier General Oliver Boone Bucher, who retired December 31st after more than 33 years of service in the Army.

General Bucher's military career began in May of 1917 when he graduated at V.M.I. as First Captain of The Corps and President of the First Class. He was commissioned in the CAC and has served since then with the Artillery. In World War II General Bucher commanded the U.S. Forces in the Caribbean with headquarters in Trinidad. After a brief tour of duty in Germany, he was recalled to his present post as the Commandant.

General and Mrs. Bucher will remain at V.M.I. until June, 1951.

National Guard Training At Fort Bliss

TWO former National Guard Antiaircraft Artillery Brigades from New York and Georgia, with attached units from several other states, are now stationed at Fort Bliss, Texas, for duty and training. They arrived last August and plans were ready to provide for an intensive training program to prepare them for future use in the defense program.

The organizations are well into their training period and many of the men are now well-trained "old soldiers." Most of the units have completed small arms qualification firing, run the gamut of the confidence and infiltration courses, and learned to handle antiaircraft artillery equipment.

A "mock village" confidence course, commando course and infiltration course have done their part to acclimate the men to combat conditions. Actual firing of the 90mm and 120mm antiaircraft weapons, operation of an antiaircraft operations center and the use of radar and other equipment are a part of the schedule.

Reorganized in the Bronx, N. Y., in July 1947 as part of the New York National Guard, Hqs and Hqs Battery, 102nd AAA Brigade has a record of service in both world wars.

The Brigade is commanded by Brigadier General William M. Hamilton, who, as Lieutenant Colonel and Colonel, served during World War II with the 44th Brigade in North Africa, Corsica, Sardinia, France, Elbe and Germany. He was given command of the newly activated 102nd AAA Brigade in October 1941 and became a Brigadier General in February 1948. In civilian life he was executive vice-president of General Steel Products Corporation.

Brigadier General William M. Hamilton

Brigadier General Joseph B. Fraser

The 102nd AAA Operations Detachment trained in the Bronx and entered Federal service with the Brigade.

Hqs and Hqs Battery, 108th AAA Brigade and the 178th AAA Operations Detachment, from Savannah, Georgia, have an interesting historical background. Both units stem from the original troops of Georgia and trace their history back 214 years to the "Georgia Hussars."

The Brigade is commanded by Brigadier General Joseph B. Fraser, who entered military service as a cavalry trooper in 1915. He was promoted to Brigadier General in May 1947. He took the first American combat ground troops into New Guinea in April 1942, where he organized and commanded the first antiaircraft defense of New Guinea, composed of both American and Australian troops.

In Hinesville, Georgia, General Fraser was president of the Fraser Lumber Company, president of the Hilton Head Lumber Company, Inc., and president of the Liberty County Frozen Foods, Inc.

Hqs and Hqs Battery, 226th AAA Group, attached to the 108th AAA Brigade, was organized in Mobile, Alabama, in January 1947 as a part of the Alabama National Guard.

The Group is commanded by Colonel John D. Sides, who, since his enlistment as a private in the National Guard in 1927, has held every enlisted grade and every commissioned rank to his present grade. During World War II, he served as a battery and battalion commander with the 104th AAA Battalion in the Pacific. At the end of World War II, he had the distinction of being the first com-

The Operations and S-2 sections of the 102d AAA Brigade at Hueco Tanks near Fort Bliss. *Left to right,* Pvt. D. J. Walsh, Cpl. I. M. Hirsch, Major G. A. Warren, S-2, Sgt. G. J. Wino and Major J. A. Heckle, G-3.

manding officer of the 1st Guided Missiles Battalion, the Army's first guided missiles unit.

Four AAA Gun Battalions, the 245th of the New York National Guard, 709th of the Pennsylvania National Guard, and 716th and 726th of the New Mexico National Guard, have been attached to the 226th AAA Group since arrival of the organizations at Fort Bliss.

During World War II, the 245th Battalion, now commanded by Lt. Col. C. A. Miller, saw action in both the European and Pacific Theaters before returning to its home in Brooklyn, New York.

The 709th AAA Battalion was first organized in Philadelphia in October 1947 under the command of Lt. Col. L. A. Long. Recruiting was a problem for the unit, which was drilling in the same armory with four other AAA battalions. In order to spur the recruiting drive, the unit put on a television show of the christening of one of its first 120mm guns—the "Philly Buster."

Members of the 716th and 726th AAA Gun Battalions are no strangers to Fort Bliss; both organizations have seen summer training at the post as units of the New Mexico National Guard. A direct descendant of the famous 111th New Mexico Cavalry, the 716th saw duty during World War II as the 200th Coast Artillery Regiment, which was part of General Jonathan M. Wainwright's beleaguered garrison on Bataan Penninsula in 1941 and 1942.

A simulated defense position of the 102d AAA Brigade during field training with Pfc. A. Takourian, Pvt. R. Hirsch and Pfc. J. Youngberg.

In the fight for Bataan the 200th used its antiaircraft weapons against enemy personnel, aircraft, tanks and landing barges, and when their antiaircraft weapons burned out, the members of the unit took up rifles as a part of the Bataan Provisional Infantry. The 716th is now commanded by Lt. Col. Joe R. Stewart.

The 726th AAA Battalion, commanded by Lt. Col. John T. Watson, attended summer encampments in 1948 and 1949 at Fort Bliss. The organization is made up of men from Santa Fe, Las Vegas, Espanola and Taos, New Mexico.

The 136th AAA AW Battalion, a unit of the 36th Division, Texas National Guard, although not yet called into federal service, conducts training in an armory located on the Fort Bliss reservation. Commanded by Lt. Col. Robert H. Holman, the Battalion now consists of Headquarters Battery and Batteries A, B, and C, with Battery D being formed.

The 30th Ordnance Battalion, organized as a part of the New Jersey National Guard, from Trenton, and the 65th Army Band, organized at San Angelo, Texas, as a part of the Texas National Guard, are also at Fort Bliss. The Ordnance Battalion is commanded by Lt. Col. Alvin S. Novie. It trained at Trenton, Fort Dix and Pine Camp, New York, after being organized in 1947. CWO Lonnie O. Shannon is director of the 65th Army Band. The 961st Ordnance Medium Maintenance Company, formerly stationed at Nashville as a part of the Tennessee National Guard, is attached to the 30th Ordnance Battalion.

BRASS AT FORT BLISS

MAJOR General John T. Lewis commands the Antiaircraft Artillery and Guided Missile Center and Post, and also serves as the Commandant of the Antiaircraft and Guided Missiles Branch of The Artillery School and President of Army Field Forces Board No. 4.

Chief of Staff for General Lewis is Texas-born Colonel Cyrus Q. Shelton who began his military career in 1917 by enlisting in the Army as a private at Fort Bliss. Immediately prior to returning to the Post in 1949 as G-1, he served for three years as Deputy Director of Intelligence in the U.S. Air Forces Headquarters at Wiesbaden, Germany. As Chief of Staff, he follows Colonel Eugene F. Cardwell who was transferred to Washington, D. C.

Deputy Chief of Staff: Major Guy L. Campbell.

Deputy Post Commander: Colonel William J. Wuest.

G-1: Colonel Ronald E. Button.

G-2: Lt. Col. Donald E. Twyon.

G-3: Lt. Colonel James D. Land who succeeds Colonel Arthur H. Bender.

G-4: Lt. Colonel John A. Rega who replaced Colonel Frederick A. Ward.

Brigadier General J. D. Balmer is Assistant Commandant for the Antiaircraft and Guided Missiles Branch of The Artillery School. He came to Fort Bliss in January 1950 from Europe where he had been Deputy American High Commissioner to Austria.

Colonel Robert H. Krueger is Coordinator of Instruction for the AA & GM Branch. Other key personnel include: Lt. Colonel Kenneth A. Eddy, Secretary; Coordinator of Administration, Colonel Harold T. Brotherton; and Plans and Operations Officer, Colonel George R. Carey.

Heads of the various departments are: Tactics Department, Colonel Ralph W. Russell; Gunnery and Matériel Department, Colonel Paul B. Nelson; Guided Missiles Department, Lt. Col. Francis M. McGoldrick; Electronics Department, Colonel Peter W. Shunk; General Subjects Department, Lt. Col. Roger Page; and Department of Non-Resident Instruction, Colonel Francis L. Beaver. Commanding officer of the School Detachments and Units is Lt. Col. Sidney I. Parsell and Chief of the Research and Analysis Section is Major Forest Arnold.

Deputy President of Army Field Forces Board No. 4 is Colonel Charles E. Shepherd. His executive officer: Colonel Jacob G. Reynolds.

Head of the Test Facilities Section is Colonel William A. Weddell, while directors of the Antiaircraft Service Test Section and the Guided Missile Service Test Section are Lt. Col. Donald L. McMillan and Lt. Col. Ralph H. Pryor, respectively.

THE CHAIN

By Captain J. S. Douglas

WITHIN the past ten years minds of American strategists have turned strongly toward consideration of the Polar and Arctic regions as potential battlegrounds in event of a future war. During this decade, in which we have seen the arrival of large-scale aerial warfare, guided missiles, and supersonic aircraft, the Mercator concept of our world has begun slowly to be replaced by the Polar concept. That is, travel from one continent to another on east-west lines is becoming old-fashioned. The shortest routes between continents in most cases lie over the Polar regions via great circle arcs. The two great oceans which border our country are no longer very comforting as barriers against possible invasion.

The picture today indicates the necessity for this country to have its flanks protected, even though those flanks extend many miles beyond our continental limits. A foothold on Greenland, for example, may spell the difference between success and failure for an invading force against the United States. Between Greenland and the United States there is almost nothing to prevent an enemy from attacking our continent. However, going the other direction, starting at Greenland, there is a chain of islands which might make ideal "stepping stones" along which to travel—travel or attack.

A look at the map of the northern waters of Russia (see Fig. 1) will show one large island and many groups of smaller islands. More or less due north of the town of Archangel lie the islands of Novaya Zemlya and the Franz Josef Land group, all owned and inhabited by Russians. Following a great circle arc from these areas toward the western hemisphere, the next land to be reached is the island group of Spitsbergen. Then come Greenland, Canada, and the United States. Starting on a great circle arc from either Archangel or Murmansk, and after passing over Finland, Sweden, and Norway, the next land to be reached is Iceland. Then again the succession is Greenland, Canada, and the United States. It is inevitable that the chain of islands along this route consists of Spitsbergen, Iceland, and Greenland.

Because of their potential importance in world affairs, it behooves us to know something of their geography and their potentialities as bases for either air or ground forces. One island cannot be fully discussed without mentioning another insofar as military value is concerned, but for the most part each one will be considered separately.

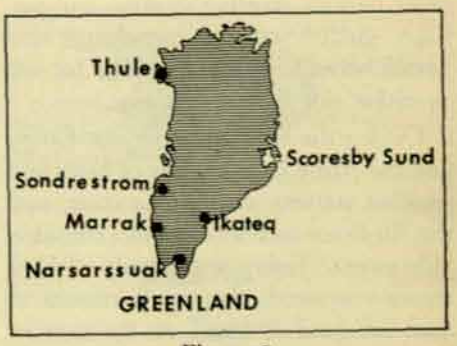

Figure 2

GREENLAND, the largest island in the world, lies just off the northeastern limits of Canada, and is a Danish possession. The larger portion of the island lies above the Arctic Circle (see Fig. 2). Although in actual size it is about the same total area as all the States east of the Mississippi (837,620 sq. mi.), approximately eighty per cent of its surface is completely covered with ice year around. In the summer there are about 111,000 square miles of free land, and in winter only about 46,000 square miles.

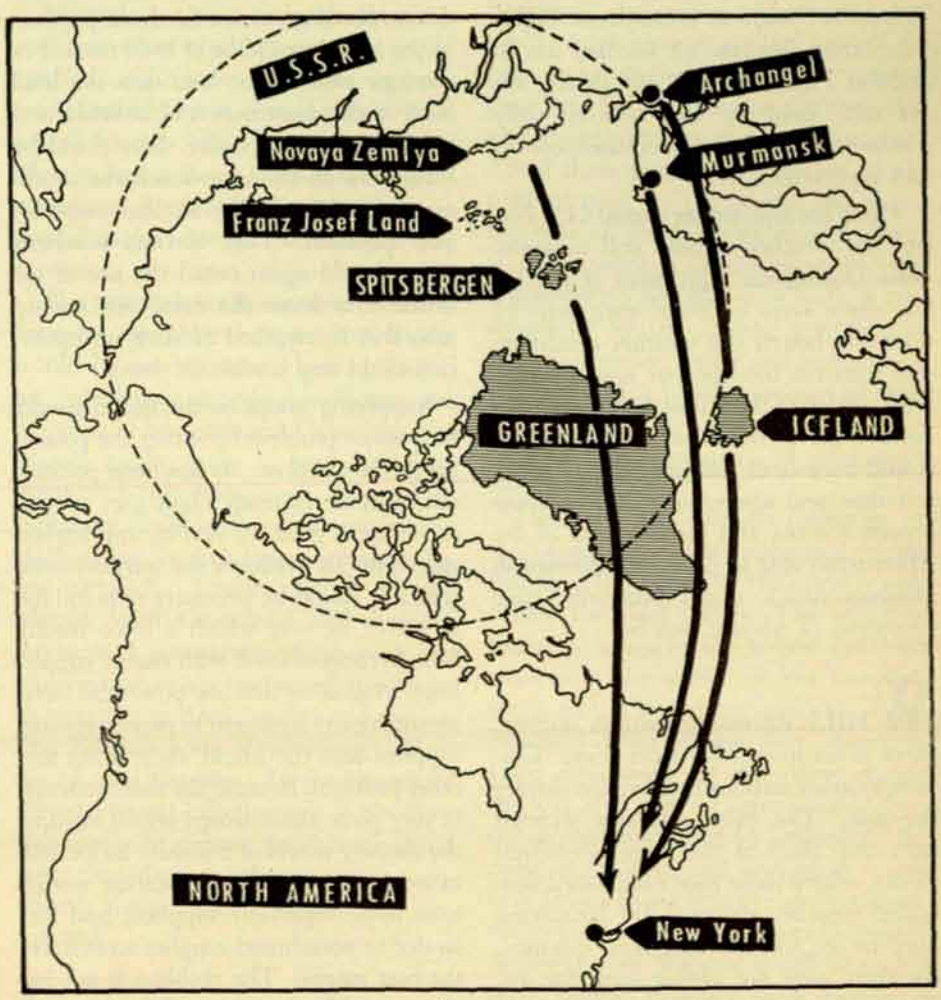

Figure 1

Most of southern Greenland is ice-free the year around and suitable air bases on the island are approximately 1,700 miles from New York. Murmansk is about the same distance while Franz Joseph Land is some 2,400 miles away and Spitsbergen a little less than 1,400 miles from the habitable southern portion. In general this would indicate that air bases, radar stations, weather stations, and perhaps guided missile launching sites would be in favorable locations for use by either side in case of a war.

During the last war, the Coast Guard and the Army built a series of bases and weather stations around the coast, and the Air Force used airstrips to a considerable extent. Today, with nearly all U.S. forces evacuated, there still remain at least five good air bases. At the town of Narsarssuak, on the southern tip of the island, there is a 6,500-foot runway intact, with the rest of the installation still serviceable. It has a capacity for about 4,000 men at peak strength. At Sondrestrom, on the west coast, there is a 6,000-foot runway, with base installations sufficient for about 2,000 men. These two bases are still in use by the Military Air Transport System in transatlantic flights. The other airstrips, all smaller, are located at Thule, Marrak, and Ikateq, and are now used by local aircraft only. These are entirely under Danish control and supervision.

There are also, under partial U.S. control, six weather stations still in operation. During the high point of the last war there were eighteen such stations, reporting hourly the weather conditions and forecasts used by our armed forces. This service to the Allies, had there been none other to come out of Greenland, would have been sufficient to pay for itself time and again, for based on these reports the sea and air elements of the Allies were able to plan and accomplish missions which might otherwise have run afoul of adverse weather.

WHILE discussing weather stations, there is an interesting story about German weather stations in operation during the war. The Nazis cleverly secreted men onto parts of the huge Greenland icecap, where these men established concealed weather stations. By burrowing into the ice and building their quarters, the men were not visible from the air. Their only physical contact with the outside during the few hours of daylight was through ventilating pipes. To search an area as large as this for a few ventilating pipes would have been all but folly. Radio fixes were almost impossible, but eventually it was by this means that the stations were pin-pointed and the enemy driven out. Nobody has told just how long they had been there, but there can be no question as to the good which they did to their fighting forces, especially in the invasion of Norway.

IT is possible to land men and supplies from ships on at least a part of Greenland at any time of the year. In winter, however, landing facilities are confined to the lower one-third of the island, with Scoresby Sund and Angmagssalik (near Ikateq) being the best open harbors on the east coast. The reason for this limitation is, of course, the iced-in condition of the northern parts during this season. Ice breakers can cut their way into such harbors as exist, but the process of landing men from ships which must be preceded by ice breakers is hazardous—too much so for a military operation. In addition, landings in the northern portions of the island would be of little tactical or strategic value. The land does not lend itself to the construction of airfields, and because roads are scarce there could be little sense in trying to reach the southern portions except by another amphibious operation. This, if from northern ports, would again entail the use of ice breakers to leave the area. An enemy who was forewarned of such an operation could stop it with air power.

Supplying troops on the island would be a major problem for either the possessor or the attacker. As has been pointed out, only a relatively short part of the coast line is good for year-around harbor use. This fact reduces the territory over which it would be necessary to maintain air cover, or over which a force would have to concern itself with enemy supply lines. Assuming that one power did have air superiority sufficient to permit getting supplies onto the island, there arises another problem. Because the road network is very poor, those troops which occupy the country would of necessity be located in isolated groups. Each location would have to be separately supplied, and air-landed or parachuted supplies seem to be the best means. The problem is not insurmountable, but it is difficult—especially during time of war.

Let us suppose for a moment that an enemy could establish control of the entire island. Because of its situation, the best probable use at first would be as a weather station. The best part of the country for airfields is on the west coast, and the Allies could install radar stations on Baffin Island, Ellesmere Island, or even on Labrador—all of which are close enough to detect aircraft as soon as they leave the ground from Greenland. Interceptor aircraft based in Canada or Labrador could be alerted long before enemy air could reach the mainland. And when the time comes that such distances as these will be easy ranges for guided missiles, the enemy on Greenland would have no better advantage than we in using missiles. Our advantage would lie in the fact that we could use a much greater area in which to locate launching sites, and thereby secure a measure of security against detection. The enemy on Greenland could do little else than remain in one place.

Enemy submarines might be based on the island, but here again the distance to our mainland is so small as to permit our air forces to act against water craft. In these days of Schnorkels, it is likely that water reconnaissance by aircraft will prove less fruitful than in the past. Still, bases are fruitful targets if they can be reached. Another hazard to any submarine operations in the waters near Greenland is the abundance of ice floes and icebergs. A submarine, with its thin shell, is no match for icebergs, some of which range in weight up to hundreds of tons. There is also the problem of supplying submarines from the island. Complete air cover would permit establishment of refueling stations, but any break in this cover and our forces could instantly begin effective countermeasures.

SPITSBERGEN, lying east of Greenland, is actually a group of islands, the largest of which is West Spitsbergen. The single name of Spitsbergen, through usage, has come to apply equally to the entire 25,000 square miles of land in all the islands. (See Fig. 3.)

Being situated astride the entrance to the Barents Sea and the Northeast Passage, Spitsbergen is now on the list of strategically important spots in the world. During the twentieth century many nations have tried to gain at least partial

Figure 3

control of the group. Virtually colonized by Russian trappers, but more or less established by the Norwegians, the two home countries of Russia and Norway have figured in all of the disputes.

In 1914 the islands were declared neutral, to have an international police administered by the Russians, the Swedes, and the Norwegians. In 1921, after action at the Peace Conference in 1919, Spitsbergen was placed under the flag of Norway by a treaty in Paris. In 1944 and 1945, and again in 1947, the Russians placed considerable pressure on Norway to gain joint "defensive bases" on the islands. Norway has refused all such demands, but realizes that in case of war somebody is going to take over at once. At present there is no navy or army, nor are there any fortifications with which to defend the islands.

The key to its strategic importance lies not so much in the possible use of the islands as troop bases, as in their use as interceptor or warning stations. The so-called "world's most strategic radio station" is located on Ice Fjord. It is a joint Russo-Norwegian operated station, and is tremendously important as a weather reporter, broadcasting for any and all nations who care to listen. No propaganda material is ever broadcast by this station. Governor Balstad has said that the peoples of the islands, although of mixed descent, live most harmoniously without need for propaganda.

There are very few spots which can accommodate submarine bases. Glaciers and fjords chop up the country so thoroughly that in actuality there is only one area, the Ice Fjord, where either submarine bases or airstrips could be built for modern machines. The east coast of the group is almost always icebound, and the west coast is accessible only during the months of July, August, and September. Although in summer weather the days and nights are quite pleasant, even hot upon occasions, the winters are dark, cold, and very windy, with a great deal of snow. The inhabitants have to rely heavily on self-sufficiency during the winters because shipping of supplies is slow, even when possible.

IN case of war, the Russians will more than likely make an early bid for these islands. The Russians are currently developing military outposts on Rudolph Island, a scant 1,000 miles from Spitsbergen, in Franz Josef Land. These bases are in turn only about 1,400 miles from Greenland. It is not known whether there are any air bases on Rudolph Island, but even if not there is the Russian city of Murmansk only 1,750 air miles away. Our own aircraft could not, from this country, outrun Russian aircraft in a race for Spitsbergen, since it is some 3,000 air miles from New York to the islands.

Presuming, then, that the Russians could get there ahead of our forces, and establish radar bases, air bases, or even guided missile bases, it might become essential for the Allies to make an all-out effort to regain them. With Spitsbergen's usefulness devoted to the Allied cause, several major strategic advantages may accrue.

The twenty-hour flying time presently between the United States and Russia would be cut at least in half by basing on Spitsbergen, provided sufficient airstrips could be developed. Otherwise, the islands might make a good refueling point for bombers in transit. Ground installations could perform vast services by establishing the first line of an air-warning network. Lastly, control of the islands, with Greenland and Iceland, might well provide the Allies with the vital link necessary to close off the Atlantic entrance to Arctic waters and the ice-free Russian ports of Archangel, Murmansk, and Petsamo. To do this would almost prevent effective use of the Russian navy. At present the defense chiefs agree that Russia's submarines are a potential threat which cannot be discounted.

ICELAND, lying southeast of Greenland at about 150 miles' distance, is essentially a plateau of volcanic rock, covering some 40,000 square miles (about the size of Kentucky). (See Fig. 4.) Of that area only about 5,600 square miles is productive. There are numerous valleys and fjords throughout the island, and enough hot springs to permit the heating of entire cities merely by piping in water from the springs.

Figure 4

There are no extremes in temperature because of the Gulf Stream influence. However, much of the coast is ice-bound during the year. The principal port, and the only one capable of accommodating large numbers of ships, is located at Reykjavik, the capital. There are a few other ports which are ice-free most of the year, such as Siglufjordur on the northern coast, and Seydisfjordur on the east coast, and Eyrarbakki on the southern coast. All of these ports are connected by the road network on the island, but by far the bulk of the 3,000 miles of highway is concentrated in the southwestern part. There are no railroads now built or contemplated by the Iceland government. In time of peace, motor and horse-drawn vehicles suffice for the amount of commerce, and small ships can carry loads from one ice-free port to another if weight warrants.

There are two airports operating on the island. One was established by the British at Reykjavik in 1940, and is used chiefly for local planes. The other, at Keflavik, is one of the largest and most modern in the world. It has four runways, each a mile long, and can be approached from almost any direction. Used extensively by the Allies during the war, it is now an international civilian airport, controlled by Icelanders. Because of its size, and because it is less than fifteen flying hours from New York, the airport is one to be seriously coveted in case of war. Because it will be such a prize, ground defenses must necessarily be strong. During the last war there

were over 47,000 U.S. troops based on Iceland. There is room, if necessary, for many more, and it is to our credit that the inhabitants liked the Americans well enough to ask many back. As in the case of Spitsbergen, however, these people have no military force with which to defend themselves. They are only 1,500 miles from Murmansk, and it is likely that their country will become a battleground if Russia and the United States do go to war.

Except for the additional disadvantage of the cold, landings in Iceland would follow a pattern similar to those on any other land. Because communications are good, it is probable that whoever gets established first with the largest force will remain. Should it be the Russians, they would find their supply problem hampered unless they also had command of Greenland, Spitsbergen, the British Isles, and Scandinavia. With any one of these countries under Allied control, we could send constant air and naval attacks against Russian shipping and air transport lanes. If the Allies control Iceland, the same group of countries could be supply bases, and the Russian problem of covering our shipping lanes would require keeping patrols in the air over long periods of time far away from home bases.

ICELAND's chief value to an enemy, then, would be as a warning and weather station, with possible use as strategic bomber bases, or as another stepping stone toward our country. Without control of Spitsbergen or Greenland, an enemy's position in Iceland might well be untenable.

On the other hand, the same "if's" are imposed on us. We would have to be in control of at least Greenland to maintain our chain to Iceland for any length of time. In these areas it is the supply problem which looms above all others. Without supplies, armed forces are unable to carry on their fighting, especially in country so barren as this, where living off the land is at best very difficult.

These islands, lying astride the flying lanes between Russia and ourselves, are links in a chain which cannot afford to be broken. Their strategic value can well be stressed. All of the talk today about the new Polar concept and about possible battlegrounds high above the North Pole makes it even more important that we know our geography and know where and when to make the first move in event of war. Recognition and exploitation of the strategic advantages and resources of the Arctic is now a necessity to the defense of the entire North American continent. Together with topnotch armed forces, it should provide a strong first line of defense—strong enough to defeat aggressors should they come.

It is quite likely that this island chain will become as important in a future war as the islands of the Pacific were in leading up to V-J Day.

CUT DOWN ON THE LOAD

Leatherneck, Jan. 51, Inchon to Seoul by Staff Sergeant R. W. Tallent:

"In every sense [the 1st Division marine] was trimmed down, in body weight, equipment and weapons to the ideal fighting machine. Every piece of his gear had a purpose, the lethal fripperies like fancy pistols, ugly trench knives and crisscross cartridge bandoliers were left for the use of the deadly fighters in the rear echelons."

* * *

Combat Forces Journal, Jan. 51, Battle Facts by Captain John R. Flynn (company commander):

"In about thirty days of continuous combat none of the men in my company wore combat packs. The mountains and frequent orders to move made it necessary for us to reduce the soldier's load to the absolute minimum. This consisted of:

Steel helmet	First-aid packet
Fatigues	Bayonet
Combat boots	Intrenching tool
Web belt	Ammunition
Canteen	Individual weapon

"As the nights got colder some soldiers added either a field jacket or poncho. Toothbrush and razor were carried in the pockets of the fatigue uniform. The extra pair of socks, when available, was carried in the helmet or belt. . . .

"All rolls, cargo packs, extra equipment and clothing were kept in the kitchen train. Clean fatigues, socks, weapons and other equipment were issued during normal ration breakdown at company supply points."

* * *

ANTIAIRCRAFT JOURNAL, Nov.-Dec. 50, Automatic Artillery in Korea by Major General William F. Marquat:

"Warning also must be sounded to antiaircraft units against overloading their organizations. Transportation is scarce in large-scale amphibious movements and air transport, and oversized organizations are not accommodated in high priority. In Korea the logistical problems of keeping railroads operatting, or restoring them after our air force has wiped them out while in the hands of the enemy proved serious. Road repair over long distances is not accomplished in a short period of time either. So the tendency to add to T/O & E equipment every item that might fit any special case must be avoided. The refinements should be held to the irreducible minimum consistent with efficient performance."

News and Comment

General Lemnitzer Commands 11th Airborne Division

Major General Lyman L. Lemnitzer assumed command of the 11th Airborne Division, Fort Campbell, Kentucky, on January 15th. This division, "The Angels," had a distinguished combat record in the Philippines in 1944-45 and served later in Japan until 1949, when it moved to Fort Campbell.

In November and December General Lemnitzer completed the basic airborne course at Fort Benning, Georgia, and qualified as a parachutist. Previously he had directed the Defense Department operation of the Mutual Defense Assistance Program since its inception in 1948 and throughout its tremendous expansion.

In July, 1942, General Lemnitzer took command of the 34th AAA Brigade. Preceding the brigade to England, he became the AC/S, G3 in the Allied Forces Headquarters under General Eisenhower in September for the North African invasion. In February, 1943, he resumed command of his 34th AAA Brigade in the Tunisian Campaign, and later as General Patton's Seventh Army antiaircraft commander, led the brigade through the Sicilian Campaign.

From July, 1943 to July, 1945 he served as deputy chief of staff to Sir Harold Alexander, Commander of the Allied Armies in Italy initially, and later the Supreme Allied Commander Mediterranean.

In October 1942, he participated in the secret submarine mission to North Africa with General Mark W. Clark preparatory to the Allied invasion of North Africa. He took an active part in the surrender discussions leading to the capitulation of Italy in 1943, and likewise with the preliminary discussions leading to the German surrender in May 1945.

Returning to the United States in November 1945, General Lemnitzer has since then served with the Joint Chiefs of Staff, as Deputy Commandant of the National War College, and as Director of the Office of Military Assistance.

American decorations: DSM, LM (OLC), six battle stars for campaigns in Africa and Italy.

Association Election

The following officers of the U. S. Antiaircraft Association were elected for the 1951-1952 term:

President: Lieutenant General LeRoy Lutes

Executive Council Members:

National Guard: Brigadier General Charles G. Sage, Adjutant General, New Mexico.

Organized Reserve: Colonel Thomas F. Mullaney, Jr., Comd. 374th AAA Group, Chicago.

Regular Army: Major H. Glen Wood, Office Chief of Staff, Washington.

General Lutes was elected unanimously with 282 votes. Colonel Mullaney trailed closely with 261. For the other positions it was not a people's republic single ticket affair at all. The Chicago membership came in strong for Brigadier General Julius Klein. However Brigadier General Sage won with a vote of 236.

For the final position the independent young blood movement, reaching from Washington to Fort Bliss, swept in Major Wood without any aid from the Nominating Committee. Colonel Pierre B. Denson polled a strong vote of 95—enough ordinarily to elect with ease—but the young bloods polled 166 votes during the last week, for Major Wood to carry the election.

14th AAA Command History

Major General William F. Marquat reports a splendid response in orders received for the 14th AAA Command history. It is now being printed and should be available in February or March.

The JOURNAL is stocking a few copies for those who were unable to order them in advance. Price will not exceed $3.50. Send your order direct to the ANTIAIRCRAFT JOURNAL.

The Caisson Ride new style: Captain and Mrs. Patrick W. Powers return to Fort Bliss from their honeymoon.

GEN. WALKER WITH TURKISH ALLIES

The late General Walton H. Walker, 8th Army commander, awards Silver Star to General Takoin Yacisi *(right)*, commander Turkish Brigade, and fifteen of his officers and men for gallantry in action. In standing off a Chinese Division, the Turks killed over 200 enemy in bayonet charges alone.

40th AAA Brigade Honors General Moore

The site presently occupied by 40th Antiaircraft Artillery Brigade, commanded by Colonel Morris C. Handwerk, Artillery, has been designated "Camp Moore" by General Order 9, 1950, General Headquarters, Far East Command.

Named in honor of the late Major General George Fleming Moore, distinguished Corregidor veteran, the newly designated camp, formerly occupied by the Eighth Army Signal School, comprises 40th AAA Brigade Headquarters and 40th Brigade Antiaircraft Artillery Training Center.

It is located at Hiyoshi, on Route 11 between Yokohama and Tokyo near the Far East Printing Plant.

Tribute To the McKenny Johnsons

Tribute from their Coast Artillery and other friends in the armed service all over the world was received by Mr. and Mrs. P. McKenny Johnson of Phoebus at a testimonial dinner in their honor at The Officers' Casemate Club, Fort Monroe, Virginia, on the evening of December 5.

Orchid leis flown directly from Honolulu, Christmas cards, a homemade medal of friendship, and other tokens were presented the Phoebus couple, sent by service friends in the far-flung Army stations throughout the world, including the late Gen. Walton H. Walker, commander of American troops in Korea.

The Johnsons also were presented with a handmade mahogany corner cabinet, a mahogany marble-top coffee table, and a silver tray.

The committee of arrangements for the dinner and presentations included Maj. Gen. A. H. Sunderland, Maj. Gen. F. H. Smith, Col. A. E. Potts, Col. James T. Campbell, and Col. Parry W. Lewis, all retired Army officers residing on the Peninsula.

Kenny Johnson, President of the Old Point National Bank in Phoebus, long ago established himself as the firm friend and unofficially a full-fledged member indeed of the Coast Artillery.

Your Address

Every magazine has its troubles with addresses. If you move without notice the magazine is returned. We know that much because Uncle Sam collects the postage both ways, but still we have to search for your new address. Months later, maybe, your growl arrives. Insist on better service. Notify us promptly of your change in address. Also, if moved by orders, leave forwarding address and copy of your orders with the Postmaster, so that magazines can be forwarded.

CORRESPONDENCE

From Our Senior Subscriber

To The Editor: Herewith my check for $3.00 for my 50th year of the Journal.

Journal U.S. Artillery—Coast Artillery Journal and now, the Antiaircraft Journal!

Keep up the good work!

William H. Wilson,
Major General, USA Retired.

20 Harrington Terrace,
Burlington, Vt.

Subscriptions—Antiaircraft Journal

To The Editor: Attached hereto complete roster of officers belonging to the 62d AAA AW Battalion (SP), now at Fort Hood, Texas and after . . . (date deleted) . . . APO 69, c/o Postmaster, New York, N. Y.

All desire a subscription to the ANTIAIRCRAFT JOURNAL.

We always enjoy your magazine and especially wish to congratulate you on the November-December issue.

Robert G. Finkenaur,
Lieutenant Colonel, Artillery,
Commanding.

Fort Hood, Texas.

From General Lewis

To The Editor: Congratulations on your November-December issue. I was particularly interested in General Marquat's article and those by Captain Ducey, Lieutenant Colonels Kimm and Nelson.

The sales copies in the Book Store and PX sold out rapidly. We will send you some new subscriptions, too. Keep it up!

John T. Lewis,
Major General, USA,
Commanding.

Fort Bliss, Texas.

To The Editor:

Thank you for your letter. We are developing more articles and photographs.

Did you notice that the picture on page three in Major General Marquat's article is of three men and a half-track from our unit? They are, left to right: Sgt. Emanual Heinze, Pfc. Billie G. Watkins, Cpl. John J. Chessar. In Lt. Col. Nelson's article, page 44 of the November-December issue, he refers to the "Combat experience of the AAA AW (SP) Bn somewhere in Korea," as a prime example, then builds his article around their experience. That unit is *US*, Battery A, 25th AAA AW Battalion (SP). We are a separate battery.

Members of this organization would greatly treasure a copy of the November-December issue. Send us 200 copies.

Sincerely,
Leonard M. Pederson, Captain, Artillery
Korea

We appreciate highly the response to our November-December issue. Anticipating the demand, we ordered 600 extra copies. We should have printed an additional 2,000!—Ed.

To The Editor:

I thought your November-December issue was particularly good.

However, how did Bill Marquat ever come to write the third and fourth paragraphs of his article? Does he not know that the doctrine on use of AA has been changed, as indicated in the article by Lt. Col. J. D. Stevens on page 43, where he refers to Section IV, Department of Army Training Circular, No. 13, 1949?

If a theatre AA Commander is not familiar with current doctrine, we sure are in one —— — — fix.

Sincerely yours,
John L. Homer, Major General USA, Retired
Civil Defense,
57th Street and Lake Shore Drive, Chicago.

General Homer is right. TC 13, paragraph 9, prescribes: " . . . The mission of antiaircraft artillery is . . . to attack and destroy hostile targets in the air, on the ground, and on the water. . . . Commanders . . . will assign it that mission dictated by consideration of the greatest threat . . ."

It makes no reference to a "primary" or a "secondary" mission.

To keep the record straight, General Marquat suggested we might edit his two paragraphs on the subject; so the ANTIAIRCRAFT JOURNAL *takes the rap.*

We still think that General Marquat drives home the importance of antiaircraft artillery employment in the ground role far more effectively than does the Training Circular. His rich language, like General Homer's, takes the reader right along with him.—Ed.

Disagrees with Capt. Ducey

To The Editor:

Congratulations on the *BEST* issue of the JOURNAL that I have seen. I especially enjoyed and considered very valuable "Automatic Artillery" and "Orientation by Backsighting." This method of orientation although used exclusively by this battalion is not considered the most accurate by the AA School. You may get a letter on it from there, but please tell them we are never out of orientation more than one mil.

I cannot agree entirely with my old friend Captain Ducey's timely article on "Ground Defense of the AA Battery." I am referring to only the 90mm battery. In the first place the defense perimeter is much too large. A 200 yard radius is generally acceptable in our field positions and is considered the largest that can be defended. This provides us sufficient area to park our twenty-four vehicles and sixteen trailers and is much easier to defend than an area as large as the one described in the article referred to. The organization in depth is concurred in. Even by a shrinkage of twenty yards the perimeter defense is greatly strengthened. Captain Ducey has given the 90mm battery a defense area *TWICE* the maximum recommended for an infantry company, personnel of which are armed with BARs and M-1 rifles. M-55s *CAN* be effectively hidden from approaching enemy ground forces and used in a dual role. Rocket launchers should definitely be held centrally located in battery headquarters so they may be brought up quickly to any point threatened with armored attack. I agree also on counterattack, but this decision rests with the battery commander; and no defense is considered adequate that does not have a demolition of equipment plan.

FRANCIS G. GREGORY, JR.
Lt. Colonel, Artillery
Fort Meade, Md.

Journal Training Value Stressed

To The Editor: The recent issues have reached a new high in professional interest. The articles on the Korea campaign have a particular value in ROTC training.

ROBERT S. STACY
Lieutenant Colonel, Artillery, PMS & T
Youngstown College,
Ohio

Congratulations

To The Editor: We look forward to getting each new issue and I want to congratulate you on the high standard of the JOURNAL and the splendid results you are attaining.

W. S. PHILLIPS
Colonel, Artillery, PMS & T
University of New Hampshire,
Durham, N. H.

RECOMMEN

THE HARD WAY HOME

By Colonel William C. Braly (Ret.)

The surrender on Corregidor. Three years as a POW in Luzon, Formosa, Japan, and Manchuria. A realistic and gripping story of how the strongest prisoners from Corregidor and Bataan kept up their morale to survive. But alas! Two-thirds of the 20,000 American prisoners perished under the shoddy treatment and atrocities. A background of sound indoctrination.

If not already there, put this story in the day room and every soldier will read it; or, in the home for every member of the family.

Your old Coast Artillery friends from Corregidor are in there; so are General Wainwright, the Commander of Singapore, and the Governors of Guam and Hongkong.

An Antiaircraft Association Book

SPECIALLY PRICED $1.98

THE EFFECTS OF ATOMIC WEAPONS

The officially released basic scientific and technical information on the phenomena and effects accompanying an atomic explosion are included in this governmental publication. The ball of fire, break-away of shock front, cloud chamber, spray dome, base surge, fall-out, and other effects of atomic bomb bursts above the ground and under water are fully described by text, tables, and illustrations. The damage caused by the atomic bombs in Japan is examined and estimates made as to probable effects on American cities. Radioactive contamination, the nature and biological effects of radiations, and the shock effect upon human beings are discussed. The material for the book was contributed by more than one hundred military and scientific authorities in the atomic energy field.

This first completely authoritative document on the over-all effects of atomic weapons is unqualifiedly recommended to the military profession and to all members of civilian defense organizations. 456 pages. Price, $3.00. —*The Military Engineer.*

TRUMAN, STALIN AND PEACE

Albert Z. Carr's latest contribution to the troublesome questions of the times takes the reader back to the beginning of the Cold War and follows through a carefully charted course to events as they now stand between East and West.

The book is an excellent piece of reporting by one who has been present at some of the history-making international conferences. The conclusions drawn represent careful thought and study by an experienced international observer. 256 pages. Price, $2.75.

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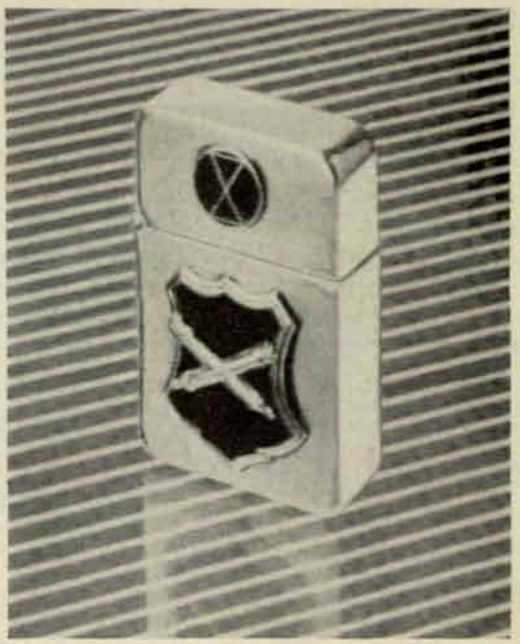

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