Antiaircraft JOURNAL

SEPTEMBER-OCTOBER, 1951

BRONZE STAR MEDAL AWARDS

3d AAA AW Bn. (SP)
Lt. Col. Alvin L. Newbury
Lt. Col. Charles W. Stewart
Maj. Robert B. Hay
Capt. Richard P. DeWitt (v)
Capt. Dave W. Edwards
Capt. James H. Furr (v)
Capt. Fred Patterson
1st Lt. Charles W. Boykin
1st Lt. Henry H. Emerson (v)
1st Lt. William R. Michaels (v)
1st Lt. William A. Pogue (v)
1st Lt. Richard Pride (v)
1st Lt. Edward Rankin
2nd Lt. Pelham L. Felder, III (v)
2nd Lt. John D. Kinnan (v)
2nd Lt. Billy C. Tubbleville
WOJG James L. Fleming
M Sgt. Joseph E. Ferrel (v)
M Sgt. Homer L. Snowden
Sfc. Robert L. Cornell (v)
Sfc. Martin L. Littleson (v)
Sfc. Kenneth Maxwell
Sgt. Claude R. W. Keith (v)
Cpl. Sid S. McKain (v)
Cpl. Neil G. Larson (v)
Cpl. Harold M. Stump (v)

21st AAA AW Bn. (SP)
Lt. Col. Charles E. Henry
Capt. Thomas R. Armstrong
1st Lt. Karl F. Bennett (v)
1st Lt. Richard S. Craig (v)
1st Lt. Homer J. Lackey (v)
1st Lt. Stuart Lassetter (v)
1st Lt. Richard Y. Park (v)
M Sgt. John A. Burke
Sfc. Rufus M. Gibson (v)
Sfc. Charles H. Moudy (v)
Sfc. Frank A. Simnowski (v)
Sgt. Shirley E. Basse (v)
Sgt. Albert D. Deason (v)
Sgt. Francis W. Doyle (v)
Sgt. Daniel R. Schmidt (v)
Cpl. Joseph E. Fye (v)
Cpl. Arthur R. Gideons (v)
Cpl. Walter D. Moyer (v)
Cpl. Dexter N. Packard (v)
Pfc. Kenneth V. Bailey (v)
Pfc. Zeb L. Head, Jr. (v)
Pfc. John Walker (v)
Pvt. George A. Bernasconi (v)

68th Gun Bn.
2nd Lt. B. M. Berkowick
2nd Lt. Carl Worth

82nd AAA AW Bn. (SP)
Maj. Alfred O. Ellis
Capt. John E. Clark
Capt. Perry E. Foust
Capt. Harold A. Keller
Capt. Clyde T. Mathaway (v)
Capt. Robert L. Ratoczak
Capt. James C. Wilson
1st Lt. Gilbert X. Chaves (1 OLC)
1st Lt. Ovid M. Davis (v)
1st Lt. Marion T. Howe
1st Lt. Kendall W. Korems (v)
1st Lt. Homer A. S. Stephens (v)
1st Lt. Norman E. Trask (v)
1st Lt. James H. Tyree (v)
1st Lt. William F. Warlick, Jr. (v)
WOJG Leo J. Managri (1 OLC)
M Sgt. Raymond E. Davis (v)
M Sgt. William E. Hill (v)
M Sgt. Edward Hogan
M Sgt. Frank J. Karwoski
M Sgt. Andrew Muncy (v)
M Sgt. Alfredo P. Ruiz
M Sgt. Robert M. Sweeney (v)
Sfc. Herbert W. Cozort
Sfc. William H. Davis
Sfc. Robert McGrath
Sfc. Leon H. Tutt
Sgt. Jesus Galvin
Sgt. Martin M. Goedecke
Sgt. Vernon F. Goetz
Sgt. Guadalupe Jurado
Sgt. Francis R. McCombie
Sgt. Harry J. Miyshira (1 OLC)
Sgt. Elmer A. Notvedt
Sgt. Dmytro Stefink
Sgt. Roy F. Wood (1 OLC)
Cpl. Norman D. Bishop (v)
Cpl. James C. Chaney (1 OLC)
Cpl. Robert W. Holmes (v)
Cpl. Duane H. Houck
Cpl. Billy R. Lucksted (v)
Cpl. Clayton L. Rook
Pfc. John W. Bishop (v)
Pfc. Donald C. Cole
Pfc. Merlin I. Loken (v)
Pfc. Dana M. Powers (v)

PURPLE HEART AWARDS

3rd AAA AW Bn. (SP)
1st Lt. Tony Zelenko
2nd Lt. Robert E. Hayden
WOJG Hardie M. Evans
Sgt. Ellery A. Fenstamaker, Jr.
Sgt. Ronald A. Hall
Sgt. Ralph H. Kieferle
Sgt. Floyd A. Markle
Sgt. John W. Stewart
Cpl. Nicholas Barnish
Cpl. Robert L. Cain
Cpl. Clifford W. Denlinger
Cpl. Joseph M. Duffy
Cpl. Ashby J. Fox
Cpl. James Goutermout
Cpl. Bobby J. Grigg
Cpl. Charles L. Groulx
Cpl. William J. Henry
Cpl. Melvin J. Janowiecki
Cpl. James E. Reiss
Cpl. John Revezzo
Cpl. Richard G. Schafer
Cpl. Robert A. Weaver
Cpl. Charles J. Williams
Pfc. Gary K. Bender
Pfc. Frederick Bozen
Pfc. Earl M. Harvey
Pfc. Herbert C. Kiel
Pfc. Robert J. Martin
Pfc. Anthony Molinaro
Pfc. Frank Petrowski
Pfc. Calvin C. Sager
Pfc. Michael S. Sopeo
Pfc. Ronald T. Stala
Pfc. George L. Sutton
Pfc. Donald A. Tipton
Pfc. Lonnie H. Vick
Pvt. Leo F. Bahr, Jr.
Pvt. Donald A. Breenie
Pvt. Mario Gaetan-Serra

15th AAA AW Bn. (SP)
Capt. Thomas G. Taft
Sgt. Herbert A. Dubeau
Sgt. Maurio W. Krepps
Cpl. Ralph A. Burba
Cpl. John J. Davis
Cpl. Eugene T. Lucas
Cpl. Gilbert G. Olea
Cpl. Sabino Pagano
Cpl. Stafford D. Shipley
Pfc. Emerson L. Archey
Pfc. Robert A. Hart
Pfc. Benny J. Holder
Pfc. Glen D. Jacobs
Pfc. Raymond J. Stewart
Pfc. William Wilson

21st AAA AW Bn. (SP)
1st Lt. Milo D. Rowell
Sgt. Harry M. Barnett
Sgt. Addrew J. Henry
Sgt. Gerald Hoke
Sgt. Sidney E. Witlock
Cpl. Byron Ballard
Cpl. Paul J. Cavender
Cpl. James R. Flemmings
Cpl. James W. Luke
Cpl. James McDonald
Cpl. Charles R. Norris
Cpl. Henry O. Travis, III
Cpl. Chaester L. Wielgos
Pfc. William B. Chenault
Pfc. Trinidad A. Garcia
Pfc. Eino H. Hakkola
Pfc. Florencie Lopez
Pfc. Robert E. Smith
Pfc. Herbert Stofel
Pfc. John J. Vengoechea
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The purpose of the Association shall be to promote the efficiency of the Antiaircraft Artillery by maintaining its standards and traditions, by disseminating professional knowledge, by inspiring greater effort toward the improvement of matériel and methods of training and by fostering mutual understanding, respect and cooperation among all arms, branches and components of the Regular Army, National Guard, Organized Reserves, and Reserve Officers' Training Corps.

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ANTIAIRCRAFT AR

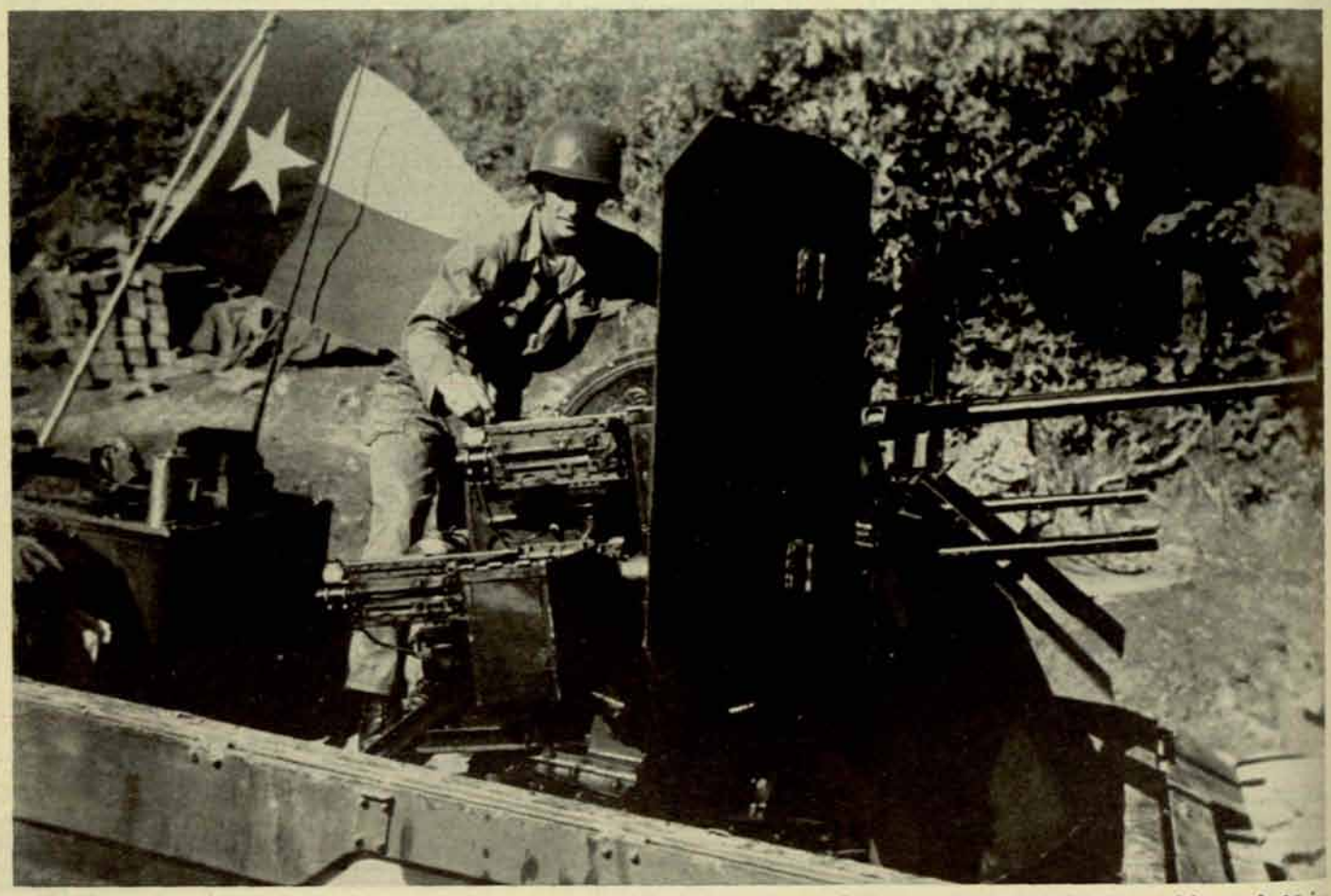
By Major Genera

SIXT

THE "truce talk" atmosphere has had a definite effect upon combat activities of all ground force elements in Korea since the last report to the ANTIAIRCRAFT JOURNAL. The UN Air Force continues to pound the rear areas and communications routes with unfailing accuracy and resultant high rate of destruction of hostile installations.

The seasonal rains have caused flash floods which inevitably add to the worries of the ground soldier as the rivers swell, bridges are washed out and communications are interrupted with irritating frequency. It is in times like these that the combat soldier deeply appreciates the efforts of the engineer and signal troops. In between rains the heat beats down upon the familiar battlefield panorama and makes military men dream of rotation with avid anticipation.

While the truce talks continue to spearhead the war news, the general character of ground combat has changed. Although the UN forces have gained ground steadily to establish the much discussed "neutral zone" boundaries further northward, the action has not been in the nature of general offensive. The enemy is digging in along a defensive line favorable to him and is reported to be massing forces behind these barriers to create a future striking power of considerable potential. UN armed reconnaissance patrols are penetrating deep into the enemy positions and the "flak wag-



Under the Texas flag, Sgt. Thomas Rogers of Greensboro, North Carolina and the 21st AAA AW Bn. cleans his quad .50 in Korea.

TILLERY IN KOREA

William F. Marquat

PORT

ons" continue to be a favorite component of these strong striking forces.

The enemy use of itinerant bogies at night and his repeated threats of increased use of air power if and when it suits his purpose has resulted in more caution in the disposition of the antiaircraft artillery elements. While there was little or no hostile air threat against advancing ground elements the divisional antiaircraft artillery units could be used during daylight hours for extensive ground support missions without endangering the air defense mission. The reappearance of an air threat, although insignificant at the moment, makes it necessary that adequate protection be accorded at all times to the vital friendly formations and essential establishments.

Among the divisional antiaircraft organizations advantage has been taken of any temporary lull in activity to brush up on techniques of firing at air targets. When live targets are not available it has been found that the familiar target practice procedures must be relied upon to keep the gunners' eyes sharp and their firing intuition at a high peak. Colonel W. H. Hennig, commanding the 10th AAA Group engaged in air defense missions, has been charged with general over-all supervision of antiaircraft training in Korea. Brigadier General James G. Devine made a trip to Korea to coordinate training and maintenance procedures between Korea and Japan.

There have been no significant developments in the infantry-armor-antiaircraft employment procedures since the last report. The "flak wagons" continue to be popular with the armor and infantry units with which they are integrated on offensive missions. The effectiveness of fire support by antiaircraft units has improved as employment of these combined arms continues.

As the situation becomes semistatic there is appearing a typical separation of artillery missions with the field artillery blasting out the permanent or semipermanent positions of the enemy and his concentrations to the rear while the antiaircraft weapons are used in direct support of advancing infantry. The mobility of the track and half-track vehicles permits them to move with the doughboys and the rapidity with which fire can be placed on a hostile target or shifted in a critical situation makes these weapons especially adapted for use in direct support. Fire with 40mm antiaircraft guns has been placed within ten yards of advancing infantry on occasions. Perfection of command coordination, crew discipline and communications procedures have commanded the attention of field commanders and the results obtained are most gratifying.

THE courage, aggressiveness and willingness to face the toughest odds continue to earn the plaudits of all troop elements in Korea. Awards for bravery are granted regularly. The special requirements of combat contribute to the further development in improvements of matériel which are installed willingly by the splendid supporting ordnance maintenance units. In fact great strides are being made in the field in overcoming structural defects in the design of the weapons which should be incorporated in future production plans.

In addition to the training responsibilities previously mentioned the 10th AAA Group Headquarters, under command of Colonel W. H. Hennig, is engaged in a multitude of air defense antiaircraft artillery development missions. During the earlier bogie raids by the enemy the defense forces were faced with difficulties of recognition and identification of the targets. It is a matter of record in the group headquarters that only one of the enemy surprise raids was even partially successful. The Air Force and antiaircraft specialists quickly identified the weak spots in the defense system and plugged them up. As a result the hostile sneak raids have been driven off with a frequency that apparently has discouraged the enemy since this type of activity against defended areas has almost disappeared.

Early warning always is a serious problem against low-flying airplanes but adequate procedures are being developed to overcome these technical difficulties.

Pvt. Raymond S. Sato loads up.

U.S. Army Photos

Gun crew of the 88th AAA Battery, 187th RCT work over a Red-held ridge.

Well coordinated Air-Antiaircraft SOPs are the result of continuous study of the situation and adjustment of methods. The 10th AAA Group Headquarters is engaged in cooperative air warning relationships with the Air Force and UN Navy elements in Korean waters.

The 78th AAA Gun Battalion, until recently under command of Lieutenant Colonel Thomas W. Ackert, has been engaged in routine air defense missions, but held one special exercise which developed considerable useful information. Since Colonel Ackert was placed on the Eighth Army Headquarters Special Staff the 78th has been commanded by Lieutenant Colonel John B. Parrott, former Executive Officer of the battalion. Extensive Ordnance repair programs have left the equipment of this battalion in fine condition.

Lieutenant Colonel Raymond C. Cheal's 68th AAA Gun Battalion, likewise has been improving its combat readiness in air defense positions. Target practices have kept the men and matériel at top efficiency. Schools for replacements have been organized and are obtaining excellent results. Master Sergeant Salem F. Jones has organized a class in Mercator grid projections. An athletic program has been initiated with horseshoes being extremely popular. Master Sergeants Jack Rudy, Harry Davis, Curley Nagel and Johnny Johnson are the leading championship contenders. Captain Boyd McGinn, Battalion S2, is kept busy with activities and operations reports for the outfit which have drawn favorable comment from higher echelons.

The 50th AAA AW Battalion under command of Lieutenant Colonel Lawrence J. Lesperance was among the first tested by the "night bandits." The battalion reports that upon each occasion when its weapons opened up on the intruder the enemy quickly flew out of range and dropped his bombs harmlessly. This battalion has alternated between ground support roles for advanced infantry and in air defense activities as a result of which it is having difficulty computing its "combat credit" for rotation priority.

Following are the battery commanders in the 50th Battalion. Btry A, Capt. Hal H. Rich; Btry B, Capt. William J. Murphy; Btry C, Capt. Kenneth W. Swayze and Btry D, Capt. Richard A. Fink.

THE 82nd AAA AW Battalion, veteran outfit organic to the Second Division, formerly commanded by Lieut. Col. Walter Killilae, is now under Major Robert H. Johnston, veteran of Korean antiaircraft operations. Johnston actually took over upon the relief of Lieut. Col. Henry E. Osthues. The 82nd AAA AW Battalion was in active combat with the division for eleven consecutive months before its first tour at a reserve area for rest. The unit was quickly returned to combat however and continued its distinguished service with the famous "Second to None" Division under Major General Clark Ruffner. This division was one of the first to employ antiaircraft weapons with ground patrols and in advanced elements of road marches. The 82nd Battalion continues to pile up an impressive record of combat awards, reported elsewhere in the JOURNAL.

The 15th AAA AW Battalion with the Seventh Infantry Division which was formerly commanded by Lieut. Col. Seth F. Hudgins now has Lieut. Col. Franklin A. Werner for its Commanding Officer. This battalion has been utilized exten-

Silver Star

First Lieutenant Francis J. Cronin, Jr., Battery D, 82d AAA AW Bn. (SP), 2d Infantry Division, displayed gallantry in action against an armed enemy during the period 16 May to 29 May 1951 in the vicinity of Hongchon, Korea. During that period, Lieutenant Cronin initiated and maintained a communications system from his firing vehicles to his command post and to units he was supporting and to higher headquarters. He personally placed each vehicle so that its primary mission could be accomplished, while at the same time each vehicle could be an important part of the radio net. He visited each vehicle on the main line of resistance time and time again although it meant braving heavy artillery, mortar and small arms fire, and traveling many hours on the road to reach the vehicles to check on the welfare of the men and to coordinate the operation of the radio net. His action resulted in all units at all times knowing the developments as soon as they occurred in each sector. Due to this ready data, the field artillery knew of targets as soon as they appeared and the infantry knew where concentrations were building up so that countermeasures could be taken. The above actions aided materially in the halting of the enemy's third spring offensive. His actions reflect great credit upon himself and the military service. x x x New Jersey.

Silver Star

First Lieutenant Paul S. Vanture, 21st AAA AW Bn. (SP).

"On the night of 23-24 April 1951 near Unsan-ni, Korea, friendly positions along the Han Tan River were under strong attack by a numerically superior hostile force. Despite constant exposure to devastating small arms fire and bursting grenades, he placed his radio on the top of a personnel carrier to direct the fire of his half-track platoon. As the infantry withdrew to more tenable positions, he held his men in place to conduct a spirited close-in defense that held off the hostile horde until the displacement had been completed. He then supervised an orderly withdrawal to the newly established line of resistance. Lieutenant Vanture's calm demeanor, resolute leadership and inspirational devotion to duty are in keeping with the high traditions of the United States Army. x x x Maryland."

sively with regimental combat teams since the last report. There is one report of a section under SFC O. W. Brown of Knoxville, Tennessee, directing his M16 fire on a hill so expertly that our infantry captured it without a man being killed or wounded but found 30 enemy killed when they reached the objective. The enemy evacuated so quickly they left warm food in containers at the position.

1st Lieutenant Donald E. Harkins of Tillicum, Washington, SFC Gordon Jach of Scranton, Pennsylvania, and others have distinguished themselves in action since the last report. Lieut. Col. Hudgins and 1st Lieut. John W. Baker, both of San Diego, California, were pinned down by enemy fire for two hours on one occasion. Colonel Hudgins has been recommended for the Silver Star medal for the rescue of infantrymen under fire. Other decorations of this battalion are mentioned elsewhere.

The 21st AAA AW Battalion is commanded by Lieutenant Colonel Charles E. Henry and is acting as the organic antiaircraft of the 25th Division. During one period in which the battalion engaged in 13 missions it accounted for 750 enemy killed and 118 additional estimated killed or wounded and 11 prisoners of war. The new gunners' shields, installed by the battalion, have held its own losses to a minimum.

In an additional five engagements the battalion killed 200, wounded an undetermined number and captured 7 more prisoners. Here again the shields and flak vests worn by the gunners served to spare lives in heated combat. A large number of decorations have been awarded to the men of this battalion, likewise reported elsewhere in this issue. This battalion has had encounters with enemy night intruders in which the hostile planes did not relish the automatic fire and quickly disappeared. A summary of 96 engagements in which this battalion has participated includes a record of 5,576 enemy killled, 4,463 additional estimated killed or wounded and 56 prisoners of war, all achieved in support of infantry operations.

Colonel Henry has convened a board of officers to examine antiaircraft artillery employment with infantry and make recommendations appropriate for future consideration. The report of the board is most interesting and will appear in full later in the ANTIAIRCRAFT JOURNAL.

U.S. Army Photo

Mr. Russell Hiday of Belmont, California, with Mrs. Hiday, receives the Distinguished Service Cross awarded posthumously to their son, Sergeant Jack B. Hiday whose extraordinary heroism in action cost him his life. Lieutenant General Joseph M. Swing, commanding general Sixth Army, tendered the decoration in a ceremony at the Presidio of San Francisco on September 5th. Brigadier General Robert W. Berry with Colonel Robert W. Hain, former commander of the 15th AAA AW Battalion in Korea, attended.

Distinguished Service Cross

Sergeant Jack R. Hiday, a member of Battery D, 15th AAA AW Bn. (SP), distinguished himself by extraordinary heroism in action on 30 November 1950 in the vicinity of Chosin Reservoir, Korea. When the enemy launched a vicious attack, supported by mortar, automatic weapons, and small arms fire, against the M16 half-track vehicle which he commanded, he stood on top of the vehicle and directed a barrage of fire into the charging hostile force. At the peak of the assault, it became necessary to replenish the weapon with full chests of ammunition. Observing that the cannoneers were unprotected during the change, the alert enemy rushed the vehicle. Sergeant Hiday, to protect his gun crew, grabbed a bazooka and leaped from the vehicle to draw hostile fire. As a result of his daring action, he was mortally wounded by a hail of fire, but his crew, meanwhile, reloaded and threw a heavy blanket of fire into the rushing enemy, killing a large number, dispersing the remaining element, and maintaining the defense of the perimeter. Sergeant Hiday's heroic action and self-sacrifice reflect the highest credit on himself and uphold the finest traditions of the military service.

Since the last report the 3rd AAA AW Battalion, commanded by Lt. Col. Charles W. Stewart has been extremely active with the Third Division in ground antiaircraft and installation defense. During 18 engagements the battalion destroyed 21 machine guns, neutralized 8 observation posts and three trench mortars, accounted for 569 enemy casualties by actual count and took two prisoners of war. It sustained six wounded in action during that period.

During another five engagement period the elements of this battalion inflicted 35 enemy casualties, took one prisoner, destroyed two machine gun emplacements and neutralized one observation post. Many decorations have been awarded.

Other antiaircraft artillery organizations in Korea which report "situation normal" as to both combat and training activities are:

76th AAA AW Bn. (SP), Lt. Col. T. A. Barker, Commanding
865th AAA AW Bn. (SP), Lt. Col. A. G. May, Commanding
933d AAA AW Bn. (M), Lt. Col. C. E. Roden, Commanding
52nd AAA AW Bn. (SP), Lt. Col. R. A. Tate, Commanding
Btry A–92nd Bn., Capt. A. E. Yonkers, Commanding.

The inspection visit of Brig. Gen.

James G. Devine with Colonel William L. McNamee, CO of the 138th AAA Group and Major Marcus L. Parsons, acting executive of the 40th AAA Brigade developed a number of facts of extreme value to the antiaircraft troops in Korea and Japan. These experienced officers investigated personnel and equipment matters and have submitted a report on which a follow-up is in progress.

To summarize the antiaircraft situation in Korea during the past several months it is apparent that the combat units, whether in air defense or in ground support assignments, are performing with highest efficiency and are continuing to earn the commendation of high commanders of all ranks. Total activity has been on a reduced scale but the lulls between combat are being employed for training and matériel servicing both to improve combat efficiency and to keep morale from sagging. Rotation has not affected the antiaircraft units as yet and a large portion of the antiaircraft troop complement is composed of seasoned Korean veterans. With exemplary discipline all units continue their efforts to improve their tactics and techniques and to advance the interests of the United Nations Force which they support against both ground and air attack.

The results of the "cease fire" talks now in progress will have a definite bearing on the tempo and type of operations in the immediate future. Whatever may be the outcome the Antiaircraft Artillery troops may be depended upon to meet their responsibilities fully.

AAA IN PATROL ACTION

By 1st Lt. Stuart H. Lassetter

25th AAA AW Bn.

THE Korean front has been relatively quiet during the summer months; however, the 25th Division has battled to improve its positions and it has constantly sent out task forces to feel out the enemy and find out what he is doing.

Lieut. Col. Charles E. Henry's "Quad Lightning" Battalion participates actively with all the task forces in their patrols or forays to the front. The following account taken from the log of 1st Platoon, Battery A, 25th AAA AW Bn. (SP) indicates a typical patrol action, the required coordination and teamwork:

Date: 18 July 1951

Place: Pongnang-ni, North Korea

Supporting: 1st Bn., 35th RCT

MISSION: At 1030 hours, Baker Company, plus six tanks from the Tank Bn and five M16 half-tracks from 1st Platoon Btry A, 25th AAA AW Bn (SP), to leave friendly lines to patrol and engage the enemy and estimate his strength and positions and then to break contact and return to friendly lines. Not to pass check point 15, 12,500 yards in front of present positions.

1030: Passed through friendly lines. Infantry riding until check point 6 has been reached.

1245: Arrived check point 6 without contact. Company Commander instructs platoon leaders: First platoon to walk ridge line on left, Second on right, the third with the tanks and half-tracks up the valley floor. Fourth platoon to follow in reserve.

1323: Contact made by 1st Platoon. Under heavy small arms and automatic weapons fire.

1325: Entire task force receiving artillery fire from unknown positions. Second platoon makes contact, under heavy automatic weapons fire.

1350: Company commander by radio instructed the infantry platoons to withdraw 200 yards. Tanks and half-tracks move into firing posiitons. We are now under small arms and automatic weapons fire.

1415: By radio contact, friendly troops had withdrawn to new positions. Close support units opened fire upon enemy. Numbers of enemy were observed killed by intense caliber .50 fire. Artillery F.O. called in fire with great effect.

1425: Ceased fire—infantry moves forward. Artillery fire increasing. Necessary to move half-tracks to defiladed area.

1440: Contact made. Two tanks stuck in rice paddies because of deep mud. Under heavy fire, crews are unable to dismount.

1500: One section half-tracks moved in exposed positions under heavy fire. Opened fire upon enemy. Intense fire from half-tracks enabled the tank crews to dismount and make recovery of tanks possible.

1550: By radio contact, task force ordered to make a slow withdrawal. Enemy observed outflanking our present positions. Artillery fire called in. Effects good.

1650: Task force ordered to return to friendly lines.

1840: Entered friendly lines and returned to firing positions on line.

RESULTS OF MISSION

1. Contact with enemy made.
2. Estimate encountered reinforced Chinese Company.
3. Well dug in. Position of enemy at check points 8 and 9.
4. Estimated killed and wounded, 35.
5. Mission accomplished.

Lieutenant Lassetter graduated from Texas Western College as an honor student in April, 1950, and received his Regular Army commission on 15 June, 1950. He has been awarded the Bronze Star Medal for valor in Korea.

MILITARY JUSTICE

By Colonel Melton A. Hatch, Arty.

Professor of Military Science and Tactics, University of Illinois

THE article Drumhead Justice: A Look at our Military Courts, in the August 1951 issue of the *Reader's Digest* by Professor Arthur J. Keeffe of Cornell University Law School and onetime (1947) president of the Naval General Court-Martial Sentence Review Board, can hardly be ignored by the Army. It refers more particularly to the Navy, but the indictments made are directed against all of the Armed Forces.

A fair appraisal of military courts should be of intense interest to all Americans today when so many men may expect to serve in the Armed Forces. The apparent eminence and authority of the author justifies the reader to expect a scholarly and unbiased presentation. But does the subject article present such a fair appraisal?

Let me inject here that I am not a lawyer. I came under military law when I was 19, gained my commission two years later, and in the thirty-three years of service since, I have been intimately connected with the operation of army courts-martial and served in every capacity in connection therewith, including that of defense counsel. My comments are based on my Army experience and on the provisions of the Courts-Martial Manual.

Now I quote from Professor Keeffe: "When a man is inducted into the armed forces, he leaves behind almost all of the constitutional safeguards which ordinarily protect him from a capricious police, or from a hasty or biased judge or jury." The lost safeguards are not enumerated. What are they? Certainly the serviceman gives up some of the freedom of civil life. If he is ordered to Korea, he goes to Korea, or else military law applies. Could it be otherwise? But he does not give up his citizenship or constitutional safeguards against illegal arrest, trial, or punishment. As a matter of fact, he acquires additional safeguards in that his military superiors are interested in his welfare and are trained and indoctrinated to take an active part in protecting him against injustice.

Perhaps the next sentence is intended to explain: "His commanding officer is chief of police, district attorney, jury, trial judge and judge of first appeal, all in one." Is this statement intended to be literally correct? If so, it is not. Whatever the intent, the statement is completely misleading. Only in our lowest court, approximating the civilian police court, does a single individual constitute the personnel of the court and his powers are similarly limited. He cannot be the accuser, nor the offender's commanding officer; nor is he the "judge of first appeal." Professor Keeffe may possibly refer only to the disciplinary authority of a commanding officer under Article 15 of the Code of Military Justice. This is usually exercised by the company commander, concerns only minor infractions of discipline, and permits only minor punishment, such as restriction to the area and extra duty. This is not a court-martial. The offender has the right to object and demand trial by court-martial. The commander is not the "judge of first appeal."

If Professor Keeffe means to say that the Army or Navy offender has lost the safeguards, constitutional or otherwise, which now protect some of the crooks, racketeers, chronic offenders, and traitors in our country as referred to in recent Congressional investigations, he may well have a point there. But that is no reflection on the military courts.

The next sentence reads: "If he is suspected of breaking the law, he is tried in secret by men whose principal purpose is to preserve Draconic discipline." Actually there must be much more than a suspicion of law breaking before a soldier is tried. First, the accuser must take oath that he has personal knowledge or has investigated the facts and knows them to be substantially correct. The code also provides: "No charge or specification shall be referred to a general court-martial for trial until a thorough and impartial investigation of all the matters set forth therein has been made. * * * in the interest of justice and discipline. * * *"

That provision is carried out in letter and in spirit in the Army. In fact, few charges of any kind get to any court-martial until an impartial inquiry is made. Many cases are quashed for insufficient evidence or other good cause. Innocent men are sometimes brought to trial, but seldom indeed. The investigating officer is required to advise the accused thoroughly as to his rights. The investigation is conducted in his presence. He is permitted to defend himself, to get counsel to defend him, or to remain silent. No confession is accepted in court unlss it is proved to be voluntary. Prolonged grilling is not tolerated.

THE author cites the Honolulu sugar cane rape cases and the improper introduction of involuntary confessions as evidence. To complete the record on these cases, they were set aside for that very reason.

Trials are not secret; they are open to the public except in rare cases. Here though we may well take a point from

Professor Keeffe. Many of the trials may lack the interest of civilian trials; however, others would be interesting and instructive to our men. It might have a salutary effect if we encouraged attendance more.

Throughout his article Professor Keeffe, with little reference to proof or reality, but by insinuation creates the impression that the commanding officer pushes the charges and flagrantly influences the court. That might possibly happen in some rare case, but the custom of the service and the specific provisions of the code are effectively set against it. The commanding general may well and properly influence the general standards of discipline in his command. But in any specific trial case, the court member regards his responsibility and his oath to render impartial justice jealously and he would resent bitterly any effort at undue influence by the commanding officer or another member. No sensible commander would dare attempt to dictate to a court-martial the findings or the sentence.

Actually the appointing and reviewing authority for a general court-martial is a division or higher commander who rarely has personal knowledge of the cases to be tried. If he be the accuser,—"if he has an interest other than an official interest in the prosecution of the accused,"—he is specifically and adequately denied the right to appoint the court or to refer the case for trial. He has on his staff a competent judge advocate general who reviews each case and recommends the appropriate action before it is referred to trial.

The general court is composed of five or more members, including a law member who is a trained lawyer and whose primary function is to rule on legal matters. The trial counsel has the duty of presenting the case and safeguarding the interests of the government and the accused. He and the members of the court are all required to take appropriate oaths to perform their duties in the case properly. The appointed defense counsel is of the law profession and is selected to insure that he is at least equally as competent as the trial counsel. The accused is permitted to have counsel of his own choosing, to include a civilian attorney and in addition to retain the services of the regularly appointed defense counsel if he so desires.

The officer and enlisted members of the court are assembled to perform an unpleasant obligation. They are schooled in military law and the elements of criminal law. As many of the members are young in the service their philosophy of justice is still influenced by their earlier civilian experience. "Draconic discipline" is a term reserved for learned lawyers, but the idea implied has little appeal to the average member of a court-martial in the service today; however, he is apt to be realistic and he can be tough when the evidence is sound. Sometimes he can be fooled by tricky arguments, but not often; accordingly both the trial and the defense counsel learn to limit their forensic efforts in this field. The only thing secret about the trial is the individual ballot on the findings and sentence. This gives the member adequate protection against anyone who would influence his action.

"Whether the soldier on trial is a bewildered farm boy who is doing his best or a yegg with a civilian criminal record seldom makes any difference before a military court." Is that statement made because, in order to protect the accused, the court-martial cannot receive evidence of previous convictions unless and until a finding of guilty is reached? Such evidence is received after a conviction and before the sentence is determined. Even so, the court is properly and sharply restricted against prying into the life of the accused except for evidence relevant to the specific charges; whereas, the defense is allowed to introduce evidence as to the reputation, and character of the accused, or any extenuating evidence. From my own experience I can testify that great consideration is given to the background and the attitude of the accused. The reaction of the military man is as natural as that of the civilian judge or other official.

"The code's punitive articles are as sweeping and harsh as the old articles which John Adams copied almost verbatim from the British military code of 1749." Is it not also true that our civilian law has its background in British jurisprudence? These "sweeping and harsh" punitive articles are primarily a description of crimes and offenses. The basic crimes and misdemeanors have remained to plague the human race through the ages. The Ten Commandments are still valid. The articles do authorize "death or such other punishment as a court-martial may direct" for a few high crimes, such as murder, rape, and certain military offenses in time of war; however, the limits of punishment are prescribed by the President of the United States. Normally the Army court-martial gives the maximum sentence only in aggravated cases.

The outstanding feature of the punitive articles is that they are written in clear-cut and simple language. Clarified briefly but fully in the Manual, they are readily understandable to the soldier, sailor, airman, and officer. They are explained carefully to all immediately upon entrance in the service.

Elsewhere Professor Keeffe has stated: "It is not so much that innocent men are convicted as that outrageously long sentences are given by the trial court." In time of war our court-martial sentences are severe and there are sound reasons for the severity.

MILLIONS of young men are brought from a life of great freedom into the service with a necessarily rigid discipline. The work, the station and the discipline are not of their choosing. Teamwork, sacrifice and courage are required. Aside from the hardships and dangers, their conduct is observed closely by their commanders and also by the public. On pass or in movements they represent the Army to our American public. Abroad they are ambassadors of America. Newsmen report on it.

All this is worked out remarkably well; practically all of the men and officers conform to the discipline and serve their country well. But a few do not.

One may absent himself for a few days, but in so doing contrive to miss the movement of his unit and to avoid or delay his battle service while his comrades carry on without him. Some in the service and others even before they are drafted recklessly commit offenses in the thought that a short sentence may enable them to escape the hazards of battle or the dreariness of desolate stations. Others take a firearm and shoot off a toe to avoid what they consider greater danger or hardship.

The court-martial sentence should serve to convince them of their error.

The average serviceman who is carrying his own load and part of that of the shirker is not prone to waste sympathy

on the offender.

The court-martial will temper its sentence with lenience when the evidence is complete and convincing. However, as previously indicated, the court-martial is handicapped in making full investigation. We still have other means for that feature. A study of the cases will show that many sentences are reduced or remitted. If the offender has any worth to the service, he can redeem himself, get restored to duty and earn an honorable discharge. Why? Because he is needed and no one realizes that more than his commanders.

Professor Keeffe states that the Army's clemency board and his own board changed many thousands of punishments. He should add that these boards are part of the court-martial system set up for that very purpose. And he could add that our civilian system fails to provide such an automatic system of review for the poor civilian who cannot afford attorney's fees and the cost of appeals. It is a well-known adage that the guilty defendant prefers to take his chances with a civilian court where he has greater possibilities of escaping justice through the uncertainties of hung juries, delays and all the trickery of lawyers; whereas the innocent man prefers the military court. His case is usually dismissed before it reaches the trial stage.

The big difference between the military and civilian courts lies in the simplicity and effectiveness of the military code and its prompt operation. The Army Manual of Courts-Martial has been revised four times since World War I, each time toward greater safeguards for the accused and better administrative procedures, all in keeping with changing conditions and new concepts.

Throughout the army from the company commander up to the Chief of Staff the policy is to reduce and avoid trials as much as possible. Realizing the great control that the commander exercises over the soldier, effective safeguards are established to protect the interests of the accused soldier. Of course, mistakes may occur. In wartime many of the men administering justice have come recently from civil life with limited training in military law. It is then that the comparatively few miscarriages of justice occur, and they are usually corrected. No system is perfect, but our Military Court-Martial approaches that ideal more closely than any other legal system in the world today. We should preserve it and continue to improve it.

Professor Keeffe would make drastic changes to take military jurisdiction from the hands of military commanders, except in the combat areas, and turn it over to civilian officials. He would create a Defense Counsel General to provide lawyers for the men who want to appeal their cases and a powerful civilian council to perform some of the functions now performed by the Judge Advocates General.

Fortunately our legislators and the public have a greater confidence in our military justice. They also have a keen interest now in the fighting efficiency of our armed forces.

The fundamental purpose of military law is to foster and support military discipline. To achieve that purpose it must be carried out in a just, impartial, dignified, firm and prompt manner.

Under the President and the respective Secretaries the reins of control are now in the hands of our senior military commanders, assisted by able judge advocates general. They are experienced in military matters, customs of the service, and in handling military men. I doubt that any other group could equally command the respect and confidence of our men in the service, their parents and the general public.

Annual Coast Artillery Party

The officers and ladies, still cherishing happy memories of the Coast Artillery, continue the tradition of an annual social party in Washington.

The family reunion will be held this year at the Fort Leslie J. McNair Officers' Club, Saturday, 24 November at 7:00 P.M. The signs indicate a corker.

Those who can arrange to be in Washington on that date should notify the Journal Editor.

A plotting board holds the interest of many civilians.

Trainees watch a radio-controlled plane fired on by a 90mm gun, with data picked up by the tracker.

U.S. Army Photos

CANAL ZONE

Colonel Sanford J. Goodman, 65th AAA Group Commander.

ANTIAIRCRAFT

ptain Leo N. Vasil explains the BD-71 switch-
ırd to Mrs. Louis Peczeli and Miss M. L. Csighy.

Civilians look at a quad .50 at the first session of the AACAP. 1st Lt. R. R. Allen, *left*, answers questions.

Miss Winifred Warsen, with 1st Lt. J. J. Sawyer, makes her first try on a 90mm gun computer.

65th Antiaircraft Group fired the big guns as part of the aircraft demonstration staged for the AACAP.

AAA Civilian Auxiliary Program

By Staff Sergeant Don Hatt

SINCE the announcement of the Antiaircraft Civilian Auxiliary Program (AACAP) by Secretary of the Army Frank Pace, Canal Zone military and civilian residents have been in a whirlwind of activity.

Mr. Pace's directive named the Canal Zone as the site of the initial test of the AACAP, stating: "U. S. citizens residing in the Canal Zone are representative of the U. S. public in morale, loyalty and the spirit of cooperation."

It was pointed out that the Canal Zone "offers a complete antiaircraft installation including permanent operations rooms, complete communications facilities, firing ranges, developed tactical sites, and a joint operations center with an aircraft control and warning center in the area."

In a joint move the Commanding General, United States Army Caribbean, and the Governor of the Panama Canal appointed a board of officers headed by Colonel Sanford J. Goodman, commanding officer 65th AAA Group, to integrate the test program. The 65th AAA Group was named as training unit for the AACAP and Lt. Col. John T. Browne was appointed officer in charge with Maj. Stephen D. Young as plans officer. On June 25 their tours of duty ended and Maj. Manning E. Hutchinson became OIC with Capt. Leo. N. Vasil S3.

The response of the civilian populace to local publicity, was greater than had been expected by the joint board. Canal Zone posts of the American Legion and Veterans of Foreign Wars, aided in the recruiting effort by manning booths placed in strategic locations throughout the area.

In record time, red tape was cut, big problems such as classroom and training space, logistics and the inevitable details were dispatched. What training hours can best be utilized? . . . what uniform is most practicable? . . . clearance for handling classified matter? . . . transportation for volunteers? . . . decision on and preparation of visual training aids . . . training schedules . . . lesson plans . . . firing point . . . classroom seating facilities . . . job suitability for men and women . . . coffee for evening classes . . . identification cards . . . traffic control . . . aircraft for target towing. . . .

Logistics. A number of early conferences had been held and many decisions reached prior to the entry of Capt. H. B. Phillips, group S4, into the picture. However, due to the haste in which the program had to get under way, many of these decisions were not disseminated. Thus when initial requisitions were submitted to various services to set up an AACAP administrative office, M/R accounts already in existence for Headquarters Battery, 65th Group had to be used. After several requisitions had been submitted and acted upon, a decision was made by the higher headquarters that a separate account would be set up for the AACAP with each requisition to be processed through Army G4.

There were no T/A's nor TO/E's on which to base the AACAP needs, no precedent had been established. It was decided that insofar as possible, equipment would be drawn to set up an abbreviated gun (90mm) and AW Battery, comprised of two guns of each type for instructional purposes. Tools for maintenance of this matériel were provided from the AW and Gun Batteries of the 65th Group.

Communications equipment was drawn in quantities sufficient to insure that proper instructions could be carried out—with bare or basic units requested wherever practicable. As the bulk of the communication instruction was to be carried on by the Antiaircraft Operations Center, most of the equipment was utilized there. However, sufficient equipment was obtained and made available to train an AW and a gun unit in the necessary communications.

Running a test "plotting" problem. *Left to right:* Miss Doris Chan, Instructor Sgt. Joseph Palicka, and Mrs. Gerry Henning.

Kay Hummer prepares to check one of the tubes in this "electronic brain" that positions 90mm guns. Mr. Ronald J. McConnell watches while SFC William Welch oversees.

Signal and Ordnance equipment was basic in order to get the program going and officers were appointed by each technical service for close liaison between the technical service and the S4 of the AACAP.

The quartermaster had problems too. Such items as a distinctive uniform for the volunteers, sufficient chairs for classroom work, paper cups in which to serve coffee, and mountains of other necessities to supply an administrative office were needed.

The training aid shop was called upon to furnish everything from simple charts to improvised steps to mount the rear of 2½-ton trucks.

Ammunition was another bridge to cross. No authority existed for expenditure—all these problems and many more were resolved by common sense and close liaison with all technical services concerned.

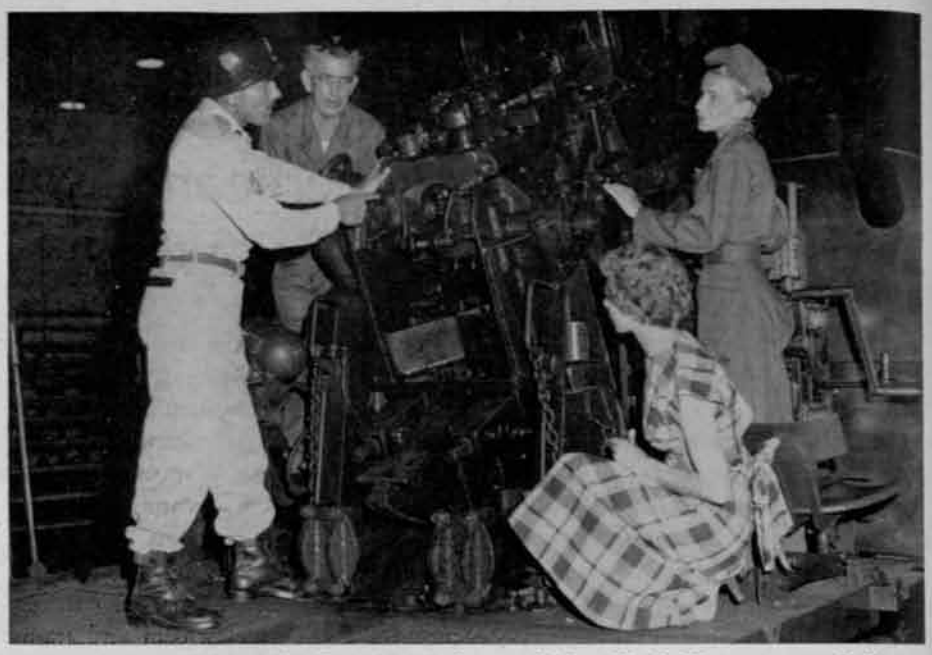
Portable bleachers were obtained through Special Service for use at the firing point and for classwork where large gatherings were required.

Training Hours. Volunteers were given a choice of the evenings and weekend half day they wished to train if accepted. Two out of three applicants indicated that training would be acceptable on Tuesday and Thursday evenings and Saturday mornings. These days fitted into the normal social, fraternal or other functions on the Pacific side of the Isthmus of Panama. The hours for evening classes are from 7:30 p.m. to 9:30 p.m., and for Saturday classes from 7:00 a.m. to 12 noon.

Uniform. It was recommended in the first stages of planning that the male volunteers be outfitted with one-piece coverall HBT, helmet liner with AACAP decal, and female volunteers with WAC fatigue uniform with the same headgear as the men. Due to a limited supply of helmet liners and WAC fatigue uniforms in this theater and the insistence of the planners on obtaining a suitable uniform, the one-piece coverall HBT with fatigue cap HBT was obtained from Quartermaster for all participants.

Classified Matter. Clearance was not too difficult since many of the volunteers were already cleared employees of the United States and the officials of the Panama Canal expedited the clearance of the others.

Transportation. Since the volunteers reside in seven communities on the Pacific side of the Isthmus, it was necessary to utilize thirteen buses to transport the participants to the sites of instruction. Army buses, operated by civilian employees of the Army, were furnished by the Transportation Section of the U. S. Army Caribbean.



Earl E. Trout *(left)*, Miss Bea Alexander, and Mrs. K. C. Hummer carefully attend to SFC Gilberto Vasquez as he explains the 90mm antiaircraft gun.

Training Aids. Because only a very small number of the volunteers had any military training, it was necessary to have, in addition to standard training film and strips, numerous visual training aids with which to illustrate lectures and instruction. Selected men of the group spent many hours wielding hammers and paint brushes, manufacturing graphic training aids not normally available through supply channels, before this phase of preparation was completed. Many of the same men were to demonstrate these aids and to operate movie and strip projectors.

Training Schedules. Due to weather conditions existing in this theater, training schedules were planned so that classes and demonstrations might be rearranged on short notice.

Lesson Plans. These were drawn up by the chief instructors of the three groups: Operations—Maj. Peyton R. Lucas assisted by Capt. John Niehoff, Capt. Walter E. Badger, 1st Lt. John B. Miller and WOJG Randall J. Joyner; AW—Capt. Leo N. Vasil assisted by 1st Lt. R. R. Allen, 1st Lt. D. M. Graham and 1st Lt. W. P. Wheeler; Gun—Capt. E. L. Wells assisted by 1st Lt. J. J. Sawyer, 1st Lt. E. B. Pautenis and Capt. Donald Eiler, radar officer. The lesson plans were a composite of the best judgment of the joint board, the officers in charge and the chief and assistant instructors. They are flexible and subject to change as additional field experience in the teaching of civilian volunteers is gained.

Firing Point. The firing point, an ideal island site located in the Pacific Ocean is connected to the mainland by an artificial causeway. It provides excellent launching positions for OQ target planes and clear approaches from left or right for towed targets. It also includes restroom facilities and ample parking space.

Job Suitability. This phase was worked out in advance by assigning civilians to the groups that could best use their particular skills. Most of the women were assigned to the Antiaircraft Operations Center and to communications sections. These assignments are tentative, however, and the division of labor is still in the process of change as the adaptability of the civilian volunteers is studied in these initial classes.

The training of the instructors was a major problem. The AA specialists were well qualified for general troop instruction—training civilians was another matter. Dry runs were conducted until every man understood his place in the instruction schedule and just how he was to impart information to the civilian trainees. Administrative details were ironed out by the capable efforts of WOJG J. J. Castaldo.

EIGHT weeks after the initial announcement from Washington, the first AACAP class was held. Lieutenant Governor Herbert D. Vogel, acting for Governor Francis K. Newcomer, lauded the volunteers and said that he believed this AACAP program would go far in bringing the "brothers under the skin," who constitute the North American population of the Canal Zone, closer in spirit —whatever their daily work, as they unite in preparedness against sneak attack.

Brig. Gen. Francis A. March, chief of staff, USARCARIB, declared that Americans have been volunteering for 175 years and this last group which constitutes AACAP is but another step in that cooperation which tells the world that, if necessary, they will stand up and fight.

A complete antiaircraft battery, including all component fire control and operations sections, was set up for demonstration. From a simulated repulse of attacking planes—made realistic by the sudden blacking out of the classroom at the moment the giant 90mm guns were ready to fire and the simultaneous turning on of a sound picture of an ack-ack battery in action—to the coffee and cookies which were served during the county fair display which ended the first night's session, the initial class brought a reaction from the volunteers beyond the expectations of the directing personnel.

The second class was held at the 65th Group firing range and here the eagerness of the civilian men and women was again displayed. Amid the ohs and ahs of the distaff side, the caliber .50, 40mm, 90mm and the huge 120mm guns were demonstrated by firing both at a towed target and radio controlled planes. The OQ-14's were flown by the 38th Radio Controlled Airplane Target Detachment and were ground controlled by the commanding officer, 2nd Lt. Melvin Holst. Two tow target planes were utilized; a JD-1 for high altitude was provided by the Navy's VU-10 Squadron of Atlantic Fleet Headquarters, Guantanamo Bay, Cuba, and a Caribbean Air Command B-26 for low altitude towing. The Saturday morning demonstration was truly a unified operation.

Considerable good natured confusion ensued when the uniforms, which consisted of a one-piece coverall, fatigue cap and identification tag, were issued. After a little trading about, everyone had a decent fit and the group ceased to look like recruits who had been mistreated by an irascible supply sergeant.

Though the civilian volunteers have just entered into the program, the military personnel involved have spent many a weary hour during the early weeks in arduous preparation. The road ahead, though not too well charted, shows promise of an eventual close integration between the military and the civilians in the Canal Zone—where the citizens in mufti know that any future war will not be restricted to the military; a shoulder to shoulder attitude is growing which should spread to the continental United States as the AACAP expands.

Graduation Exercises

THE wind-up class of the Canal Zone AACAP was held Saturday, August 25th when a final "shoot" showed remarkable results for the six-week test.

Canal Zone Governor Francis K. Newcomer, Lt. Gen. William H. H. Morris, Jr., C in C Caribbean Command, were among the high ranking persons who witnessed the accurate fire of the civilian gunners.

Two RCAT planes were downed by caliber .50 fire and a high-flying tow target was bagged on the second course by the 90 millimeter AA guns.

A party of high-ranking officers, civilians and newsmen from the United States, headed by Maj. Gen. Paul W. Rutledge, C. G. Eastern AA Command, also viewed the culmination fire. Earlier, they inspected the civilians at their classrooms and in the AAOC.

Although no official decision can be made until proper analysis of the full report is made in Washington, it was the consensus of opinion that the answer to the following pertinent questions was an emphatic "yes!"

Will civilians volunteer?

Can they learn the technique?

Can it be done in a minimum of time?

Do they have the initiative?

Did the volunteers really do it, no snow job?

On Saturday, September 1st, the AACAPers received their diplomas at formal graduation exercises. They were lauded for their patriotism by Governor Francis K. Newcomer and Lt. Gen. William H. H. Morris, Jr.

Col. Sanford J. Goodman thanked the civilian volunteers whom he described as modern minutemen.

Brig. Gen. Francis A. March, Chief of Staff USARCARIB, presented diplomas to the 193 graduating volunteer artillerymen and women.

Mrs. Bebe Santord *(left)*, and Mrs. Bobbie Tutcher learn the operation of a 90mm tracker from 1st Lt. J. J. Sawyer.

Antiaircraft Artillery In The Air Defense Team

By Colonel Lamar C. Ratcliffe

AIR defense of the United States, although the primary responsibility of the Air Force, can be accomplished by no one service, arm, or agency. It depends for its success upon the pooling of all our resources for the detection and destruction of whatever the enemy may send through the air at our vital targets. It involves not only the Air Force but the Army, the Navy, civilian volunteers, and the cooperating forces of such a neighboring power as Canada.

Nor must these resources merely be agreements and plans on paper. If and when the emergency comes, and the enemy strikes with expected suddenness and fierceness against the key political, industrial, and military areas that he has no doubt pinpointed on his strategic map, there may be no time to confer, no time to practice. Our plans must already be worked out in much detail —rehearsed and set to go. Channels of command and communication need to be clear and ready for immediate action.

The Air Force, with its Air Defense Command, has long had a carefully worked-out organization for the employment of its warning system and interceptors in air defense of the United States. It has tested and improved this organization until it has reached a state of readiness. It was not until 1 July 1950, however, that the Army created a parallel and cooperating organization of its antiaircraft artillery and became a full-fledged member of the air defense team. With the formation of the Army Antiaircraft Command, an agency was established which could give point and direction to the Army's contribution to air defense. Its commanding general became the principal advisor to the commanding general of the Air Defense Command on the employment and capabilities of antiaircraft artillery.

In its early months, and with only the nucleus of a staff, the primary concern of the Army Antiaircraft Command was to organize itself and establish a command structure, including subordinate commands in two, and subsequently three, geographical areas. It was likewise occupied with implementing the Memorandum of Agreement, signed by the Chiefs of Staff of the Army and the Air Force on 1 August 1950. This agreement provided, to the satisfaction of all parties, a basis for operational procedure, including rules of engagement of enemy aircraft, and for the relationship between Army and Air Force components in the air defense system. Soon afterwards, the Army Antiaircraft Command began to devote itself to the preparation of both broad and detailed plans for the employment of available antiaircraft artillery in the air defense of the United States. This required close coordination not only with the Air Defense Command and its elements but with appropriate Navy and continental army commanders. More recently, on 10 April 1951, the commanding general of the Army Antiaircraft Command assumed command of all antiaircraft artillery troops committed to the air defense of the continental United States. Strengthened by the addition of this command responsibility, the Army Antiaircraft Command continues to prepare itself to participate in the air defense of the United States as the Army component of a joint force.

THE Army Antiaircraft Command has from the start appreciated the need to work closely with the Air Force. Its headquarters is alongside that of the Air Defense Command, originally at Mitchel Air Force Base and now at Ent Air Force Base in Colorado Springs. Similarly, it has established its subordinate headquarters with regional air defense headquarters: the Eastern Army Antiaircraft Command at Stewart Air Force Base with the Eastern Air Defense Force, the Western Army Antiaircraft Command at Hamilton Air Force Base with the Western Air Defense Force, and the Central Army Antiaircraft Command with the Central Air Defense Force in Kansas City. At each echelon the antiaircraft artillery commander, in addition to commanding the troops assigned to him, is the antiaircraft artillery advisor to his opposite number in the Air Defense Command, and the relationship of Air Force and Army commanders and their staffs has been close and harmonious. There is increasing realization on the part of officers in both services that they are on the same team and have the same mission.

Lieutenant General Ennis C. Whitehead commands the Air Defense Force with station at Ent Air Force Base, Colorado Springs. Major General Willard W. Irvine is the Army Commander.

The major subordinate commanders are as follows:

Eastern Air Defense Force, Major General Frederic H. Smith, Jr.; Major General Paul W. Rutledge, AAA Commander.

Western Air Defense Force, Major General Hugo P. Rush; Brigadier General Robert W. Berry, AAA Commander.

Central Air Defense Force, Major General George R. Acheson; Colonel Donald J. Bailey, AAA Commander.

It is at these top headquarters that policies and procedures are established whereby antiaircraft artillery units operate as an element of the air defense system. The close interrelationship of the Army and the Air Force continues, and in fact is intensified, at the working level of the Air Division. Here the senior antiaircraft artillery headquarters in the area, usually a brigade, provides antiaircraft artillery representatives at the air division commander's command

A FORWARD STEP IN ARTILLERY OFFICER EDUCATION

By Major General Willard W. Irvine

A SIGNIFICANT and progressive step in furtherance of Department of the Army policies has recently been taken by the Chief of Army Field Forces. It is certain to have both immediate and long-range effects on the education of artillery officers and, even more important, on the integration of the two types of artillery into a single powerful and versatile branch.

I refer to the decision to resume the integrated field-antiaircraft artillery officer advanced course for artillery officers of the Regular Army. This course, which had been interrupted by the extreme need of officers as a result of operations in Korea, is not only to go forward again, but is to be increased in duration from ten to eleven months in order to insure thoroughness and completeness of training. Moreover, it is to be begun without delay so that officers will be graduated from the first course next June.

Soundness of educational planning is also indicated by the recommendation that Regular Army officers who have completed a basic or advanced course in, let us say, antiaircraft artillery, but have had no schooling or experience in field artillery, attend an associate course in field artillery and, if practicable, follow this by a short tour with a field artillery unit. Once this program is under way at the battery officer level, and training in the two artilleries has been properly integrated from the start, it is anticipated that the field-antiaircraft artillery advanced course can be materially shortened without loss of training or lowering of standards.

As long ago as September 3, 1946, General Devers, then Commanding General of Army Field Forces, recommended to the Chief of Staff the creation of an artillery arm, to which officers commissioned in the Field Artillery and the Coast Artillery would be detailed, and the prescription of the cross cannon of the Field Artillery as the insignia of this unified and integrated arm. The Army Organization Act of 1950 legally established the Artillery as a single basic branch of the Army. But integration of two branches, each with a distinguished record and with years of individuality, is no easy matter. At times there has been doubt that the integration went far beyond the common name and insignia.

NOW, however, it appears that integration of the two artilleries is on the way toward accomplishment. Before it is completely achieved, there must be a much more extensive cross-assignment of officers at the various levels and in various duties—troop, staff, and school. A rotation system must be developed which will make cross-assignment a continuing process, to prevent the growing apart that will inevitably result when an officer remains too many years with one type of artillery. Integrated education must, in other words, be followed up by integrated experience. But it is with education that the process should naturally begin, and is beginning.

Despite the existing law and the positive steps that are now being taken to put it fully into effect, objections to integration of the two types of artillery will undoubtedly continue to be raised. It may be argued that an officer who attempts to become an inclusive artilleryman will fall short of the highest standards of completeness and thoroughness in a single speciality. It may also be pointed out that, in a time of urgent demand for trained leaders, we cannot afford the delay involved in any sort of double training.

On the first point, let it be said that there is no intention to lower the standards of artillery specialists. Rather, it is anticipated that officers will gain depth, as well as breadth, as they come to appreciate both the common features and the variations within their branch. If the infantryman can master more than one specialty, and become a more complete soldier in the process, so can the artilleryman. On the second point, the Army's educational system, though it may need to be adjusted during periods of emergency, rightly takes the long view. The present period of international tension may last ten to twenty years, and it would be disastrous to narrow the professional officer education of tomorrow because of the stringencies of today.

The educational plan envisaged and boldly begun will do much to make our officers at once well-trained specialists and versatile, knowledgable artillerymen. It is a step in the right direction and one that keeps pace with modern military developments.

post. Here also, by means of antiaircraft artillery personnel at the air defense direction center (ADDC), the antiaircraft operations center (AAOC) is tied into the aircraft control and warning system. It is here, in the Air Division, that the firepower of antiaircraft artillery weapons is integrated into the air defense system and the members of the team really play the game together.

While teamwork of the Army and the Air Force, through the Army Antiaircraft Command and the Air Defense Command, is of first importance in air defense of the U. S., there are other interrelationships in which the Army Antiaircraft Command is involved. Unless these, too, work smoothly, the mission cannot be performed with maximum effectiveness.

One of these interrelationships is with the several continental armies. Within the areas of five of the six armies are units which the Army Antiaircraft Command has under its command for the performance of its mission. Some of these units are assigned specifically to air defense; others are earmarked for shipment overseas, but are to be used in air defense of the U. S. until their departure. The total number of such units—brigades, groups, battalions, batteries, and operations detachments—is now substantial. While the Army Antiaircraft Command has control over these troops, the continental armies provide administrative and logistical support, and thus perform an important function.

Still another interrelationship in which the Army Antiaircraft Command is involved is with the Navy. For the Navy, with its communication system and the

antiaircraft firepower of its ships in port, is also a part of the air defense team. In all operations the Army Antiaircraft Command is concerned with this dovetailing of Navy and Army antiaircraft potentialities.

LOOKING to the future, the Army Antiaircraft Command is watching closely the Army's development of new antiaircraft weapons, tactics, and techniques, and planning with the Air Defense Command, the continental armies, and appropriate echelons of the Navy the employment of these means in a coordinated air defense. The Army Antiaircraft Command depends upon the Office of Chief of Army Field Forces, the Antiaircraft Artillery and Guided Missiles Branch of The Artillery School, and Army Field Forces Board No. 4 to keep abreast of the latest thought in this significant field.

A recent exercise, involving all elements, gave the air defense team a workout of national scope. The Air Force, Army, Navy, as well as civilian volunteers manning portions of the warning system, functioned together to ward off a simulated air attack by an enemy power. Other such exercises will continue. In these exercises, as in the real thing if it should come upon us, the Army's component will play its part in the integrated air defense team.

AAA FIRING DEMONSTRATION FOR GENERAL CLARK

The effectiveness of AAA was well established by troops of the 31st AAA Brigade in a demonstration for General Mark W. Clark, Chief of the Army Field Forces, at the Yakima Firing Center in the State of Washington during a recent training inspection.

The day of August 2, 1951, was more than a day of routine training at the sprawling firing center. The brigade troops were demonstrating that imagination and ingenuity, coupled with hard work, could turn a dry, hot, dusty wasteland into a modern antiaircraft artillery range; that the Army Antiaircraft Command is a going concern.

Lieut. Colonel Karl W. Dittrich, 770th AAA Gun Battalion, commanded the troops presenting the firing demonstration. Battery B, 770th AAA Gun Battalion of the 250th AAA Group, commanded by 1st Lt. Noel C. Skube, and Battery C, 518th AAA Gun Battalion of the 5th AAA Group, Captain Stanley Foster commanding, staged the firing. The two batteries alternated in firing on the first four courses and fired simultaneously on the fifth course. All commands and reports within each firing battery were broadcast to the spectators so that they were always aware of the progress of events.

The 41st Tow Target Squadron at Lawton Air Force Base furnished two planes, each towing a target for the demonstration. As the first plane left the field of fire, the second plane entered the field of fire, thus eliminating delays between courses. The target sleeves towed on the third and fifth courses were shot down in good ack-ack fashion.

Following the demonstration, General Clark inspected various displays of antiaircraft artillery equipment and the mess halls and barracks of the 770th AAA Gun Battalion, and the 719th AAA Gun Battalion, commanded by Lt. Col. Warren W. Morse.

When the demonstrations were completed General Clark promptly complimented all concerned: "I have nothing but praise for what I've seen. The 31st AAA Brigade is doing a magnificent job in the supervision of training." His favorable impressions were later confirmed in a personal letter to Col. Aaron M. Lazar, commanding the 250th AAA Group.

Lt. Col. Dittrich and the two commanders of the firing batteries drew special praise from Major General Willard W. Irvine, commander of the Army AA Command.

General Mark W. Clark inspects the honor guard of the 770th AAA Gun Bn. with Lt. Col. Dittrich.

General Clark observes AAA firing. *Left to right:* Major Gen. Willard W. Irvine, Mayor Gilbert W. Burns of Yakima, General Clark, Brig. Gen. Hobart Hewitt and Col. Aaron M. Lazar.

Battery D, 15th AAA AW Battalion, In Close Support

By Captain James R. McClymont

IN February of 1951, Battery D, 15th AAA AW Battalion was furnishing close support for the infantry. Due to severe battle losses earlier, in November, 1950, the outfit was down to one platoon in size at the time of this article. As a result, the four sections that remained in the battery were generally allotted on the basis of one section per infantry battalion and the remaining section to the field artillery battalion for perimeter defense of isolated batteries. Sometimes a section would be released from the reserve infantry battalion and used to back up the AAA section with the leading infantry battalion. The tactics in this scenario were used by Battery D in several different engagements. The telephone technique is highly effective as you might better realize if you ever jumped up on the turret to tell the gunner to cease fire or to change his direction of fire while small arms fire was whizzing around your ears.

SCENARIO:

"Sgt. Hensley, you will take your section and act as close support of the Red Battalion of the 31st Infantry. Here's the deal, the terrain is mountainous where you're going, with rice paddies on each side of the road. You will leave your trailers at coordinates—where the battery reserve ammunition supply will be. You will move out with two M4 tanks in front of you. You will have two different missions. The first is to keep up within 100 yards of the tanks so as to keep them from being rushed by foot soldiers with land mines, or enemy bazooka teams—

Infantry moves toward hill 4.

cover those tanks! Secondly, you will fire missions for the infantry."

"How will I know about these, captain?"

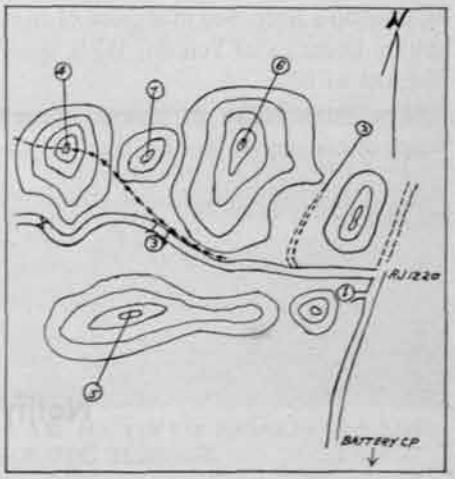
"Sgt. Kruegar has rigged up a 300 radio for you on your M16. Your M19 will precede you and will tie in with you and the ammunition supply M39 for our own purposes over the SCR 528 and ANGRR-5. Our code name will be 'Daisy Mae.' You will use the 528 to control your section and request ammunition from the battery ammunition dump. Over the 300 will come your fire missions from the infantry. In addition, the tank platoon commander has one of our crystals, so he can contact you if he needs to do so."

"Shall we try out our new telephone control and cannoneer technique?"

"Yes, also if things quiet down, I'll have hot coffee brought up with the ammunition resupply! Any further questions? If not, get in my jeep and we'll go see the Infantry S3 and the tank platoon commander."

At 0700 the next day the weather was clear and cold. Snow was falling occasionally. Artillery had been firing for an hour. The battery M39, one of the battery's 2½-ton trucks loaded with 40mm and caliber .50 ammunition, and the communication jeep moved up to their designated battery ammunition resupply point at 1. (See map sketch.) The two M4 tanks and the M19-M16 section met at a road junction and were waiting to push off. The infantry battalion commander began to move his battalion out, Able company on the hills to the left flank, Baker as point on the road directly after the tanks, one AAA AW (SP) section, Charlie company on the right flank, and Dog company in the rear as mop-up and reserve. Away they went. The advance of the tanks was geared to the infantry, but began to pull ahead gradually. The infantry had as objectives to advance one mile then take hill 4 on the right of the road. (See map sketch.)

When the tank-AA team had advanced around the bend in the road and were advancing toward the bridge 3, they began to receive small arms fire from hills 4 and 7. The tactics worked out by the AA section were applied. The two top fifties on the M45 turret were fully loaded; the two lower guns were



Captain McClymont has recently returned from Korea, where he commanded Battery D, 15th AAA AW Bn (SP). He is presently an instructor in the Department of Gunnery, AA & GM Branch, TAS, Fort Bliss, Texas.

Silver Star

Sergeant First Class Buster W. Strasser, 21st AAA AW Bn. (SP).

"On 4 April 1951, Sergeant First Class Strasser's half-track platoon was supporting an attack on strong hostile positions near Kunja-Dong, Korea. When the communications system within his unit failed to function, he repeatedly exposed himself to heavy small arms and automatic weapons and mortar fire to direct the counterfire of the crews on the main strongpoints of the foe. Despite the increasing intensity of the devastating barrage, he continued his efforts until the enemy had been driven from the objective. Sergeant First Class Strasser's courageous and determined actions reflect the highest credit on himself, his unit and the Armed Forces. x x x North Dakota."

half loaded. The gunner had his two armor flaps up and immediately turned his turret toward the small arms fire. The two cannoneers dropped to the floor of the half-track. The section leader opened the door on his side and began to walk alongside of the half-track behind the opened door. The driver operated the 528 radio and drove slowly ahead. Over the 300 the section leader told the Infantry Battalion Commander that "Daisy Mae" was receiving small arms fire from hills 4 and 7. He received orders to take the hills under fire from his present position near the bridge. He told the driver to notify the M19 to fire into the wooded area on hill 7 with his 40mm's so as to get tree bursts and to fire at likely areas on hill 6 to the right of 7. The 300 radio was just inside the cab of the M16. When they stopped, the driver began to listen to the hand set. Fastened by its strap was an EE8 telephone. Running from it to a loose coil on the floor of the M16, then up on the turret to a headset being worn by the gunner was a direct telephone connection from the section leader to the gunner.

"Swing her around a little, Joe—hold it, now up a little. See that grove of trees with a house in it? You do? Well, spray hell out of it!"

The guns began to chatter, empty cases rained down on the floor of the half-track. The unpleasant whine of enemy small arms fire was drowned out, and only occasionally would the cannoneer notice the spatter of rifle fire off the front of the turret armor. When the top guns stopped firing—out of ammunition—the cannoneers reached up and set the two outboard guns firing. Up and down and back and forth under the section leader's supervision, the machine guns sprayed the hills, two firing at a time. Enemy small arms fire died out. The section leader ordered firing stopped. The gunner swung his turret into the cab area, and the left cannoneer replaced his ammunition chests under cover of the bulk of the turret. Then a swing to the rear, and the right cannoneer serviced his weapons. Both dived for cover as a burst of machine gun bullets spattered against the half-track. Through his field glasses the section leader spotted movement on hill 4 and directed fire on it.

OVER the 300 the section leader received orders to fire only on hills 4 and 7 as the infantry was beginning to advance past the right flank of the section (see sketch). When they had advanced past the section and were actually mounting hill 4, fire was placed again on hills 7 and 6. Each squad of infantry had a panel strapped on the back of one man, and the company's progress was easy to trace. Artillery fire on the objective was raised. Through his glasses the section leader spotted an enemy group defiladed from the approaching infantry. The 40mm squad leader was called back for a consultation. He carefully located the spot. Over the 300, the infantry was informed and permission was granted to go ahead with the mission. The forty fired, completely wiping out the group by its shrapnel effect. Soon the infantry reached the skyline and reported that the enemy were fleeing west down hill 4. The two tanks and the AA section moved down the road to the curve at X where the M16 had a field day along with the light 30's on the tanks. The infantry took their objective with few losses. An investigation revealed many enemy dead, knocked out by caliber .50 fire and 40mm shrapnel. The infantry patrols found forty dead or wounded reds in the woods on hills 6 and 7 as mute testimony of the action there. Our fire had forced them to flee to the north. The lead tank ran over a wooden box mine just past X and had a tread blown off. This held up the advance of an armored patrol that had been planned after hill 4 was taken. The infantry battalion CP was moved to a point near the bridge at 3. Patrols completed their search of the area.

The M19 had fired about 250 rounds while the M16 fired just over six thousand rounds. No one was hurt in the AA section. About 1200 hours, the M39 armored personnel carrier brought up ammunition for both the weapons, and also the hot coffee.

At all times the section leader had control over his section. He was also readily available for orders from the infantry over the 300 radio. The technique of cannoneering from the floor kept the cannoneers from being wounded. Since that time many M16's in Korea have been modified to include "bat-wing" armor protection for the cannoneers. The M19 was found to be *very accurate* for pin-pointing fire and produced excellent shrapnel effect on wooded areas.

The system was found to be highly effective in attacks launched during the "Operation Killer" campaign in Korea in February and March of 1951.

Sgt. Hart and squad in attack.

Notify the JOURNAL of your address change.

Horse 'n Buggy Air Defense In Korea

By Major Walter T. Ride, Jr,. Arty.

SUPER high speed, high altitude Communist jet fighters roam MIG Alley daily but as yet they have feared to venture south across the 38th. We have geared our early warning, our interceptors, and our antiaircraft artillery to the jet age, but haven't we forgotten something? What about "Bed Check Charlie" flying in among the goats? At any rate, we've put the old "horse 'n buggy" tactics away in moth balls.

Well, dig into the moth balls, friend, because "Charlie" is back.

"Charlie," in this case, is a North Korean job, classified as a PO-2, a two-seater biplane armed with a light swivel-type rear cockpit machine gun, carrying three to eight light bombs, and capable of speeds up to 120 MPH. By the way, "Charlie" can fly up alongside and turn inside a C-47 as one of our startled flare ship crews can tell you. He apparently navigates by contact, as he flies only on moonlit nights and seems to follow obvious terrain features such as: rivers, coast lines, lighted camp areas, valleys, roads. That's right, you have to black out—even for "Charlie." His little bombs kill you just as dead as block busters.

Some people say, so what? What can one little PO-2 do? Well, he can pave the way for his bigger friends. He can scout our operations. He can also become quite a nuisance with his light bombs. The way to stop "Bed Check Charlie" is with "horse 'n buggy" tactics—so get out the old book.

First you establish an airtight early warning system. Supplement the radar system with alert, well-placed OP's that can make an initial pickup. Next you integrate all agencies into the air warning net. Private Joe Blow, guard, at the 13th desk repair platoon must be able to spot and yell "Bogie" so that it can be heard within thirty seconds in the nearest air defense center. And that calls for a lot of communication coordination. It also requires organization and planning in the air defense.

Obvious night air approaches, such as rivers and valleys leading directly into target areas, must be staged as early warning traps. Gun and searchlight crews are made fully aware of these obvious approaches so that maximum effort can be placed on the enemy approach. Enemy flying tactics are studied and anticipated.

We need searchlights. Our "moonlight cavalry" was turned over to the engineers shortly after World War II with the reservation that we could call upon them whenever the situation demanded. That has not worked at all for us. AAA AW SL crews can, and were in Korea, trained and put in operation on a day's notice. The AW people realize that they must *SEE* to shoot, and at night the spread beam 60-inch searchlight does the job. As a matter of fact the SL will, in many cases, actually accomplish part of the AAA mission by causing the bogie to abandon his mission or at least swerve off enough to nullify the attack. At least one searchlight should be made available to every AW battery.

We also need better means of sound pickup. A simple directional sound detector would be a great help. It would be especially an aid to the searchlight director and the man in the OP who has to say "bogie heading south (I think) . . ."

In night operation with automatic weapons the little generators on our M55's and the grinding motors on other automatic weapons make sound detection and voice commands downright difficult. In order to pick up a single unilluminated bogie an AW gun pointer must be directed on target by voice command, by prearranged touch signal, or he must see for himself. The best method,

An alert M55 crew from Btry. 68th AAA Gun Bn. (90mm) in Korea. *Left to right:* Sgt. Johnson, PFC Fredrovitch, PFC Filkner, and Cpl. Knapp.

OP of the 50th AAA AW Bn. (SP) in Korea by Cpl. Davis and PFC Holbrook.

of course, is for him to see for himself and that most always demands that he first detect the bogie by sound. To do this we recommend the motors and generators be kept off until the pointer is on target. Sure it's a lttle tough on the battery, but the four to five seconds of "dry run" can be compensated after a very few moments of power run. We would do well to work out practical problems like this in our training schedule —with searchlights and without.

SUMMING up our horse 'n buggy defense, we have established visual OP's, coordinated communications, stressed blackout measures, put the searchlights back in operation, screamed for sound-detectors, improved our auto-weapons control, and trained our people in enemy night tactics. As long as we maintain air superiority in Korea or any other theater of operations we can expect the enemy to resort to "Bed Check Charlie" tricks; so let's rehearse our "horse 'n buggy" lessons.

CHARLIE BATTERY AND HILL 88

By 1st Lt. Norman G. Halpern

3rd AAA AW Bn. (SP)

IN the early part of February 1951, the 3rd Infantry Division was gradually approaching the Han River after fighting their way north from Chonan. Rain, mud and slime coupled with the tenacious Chinese could not stop the grinding momentum of the division. On the 15th of the month all that remained between the third and the Han was a battalion of diehard enemy troops well entrenched on Hill 88.

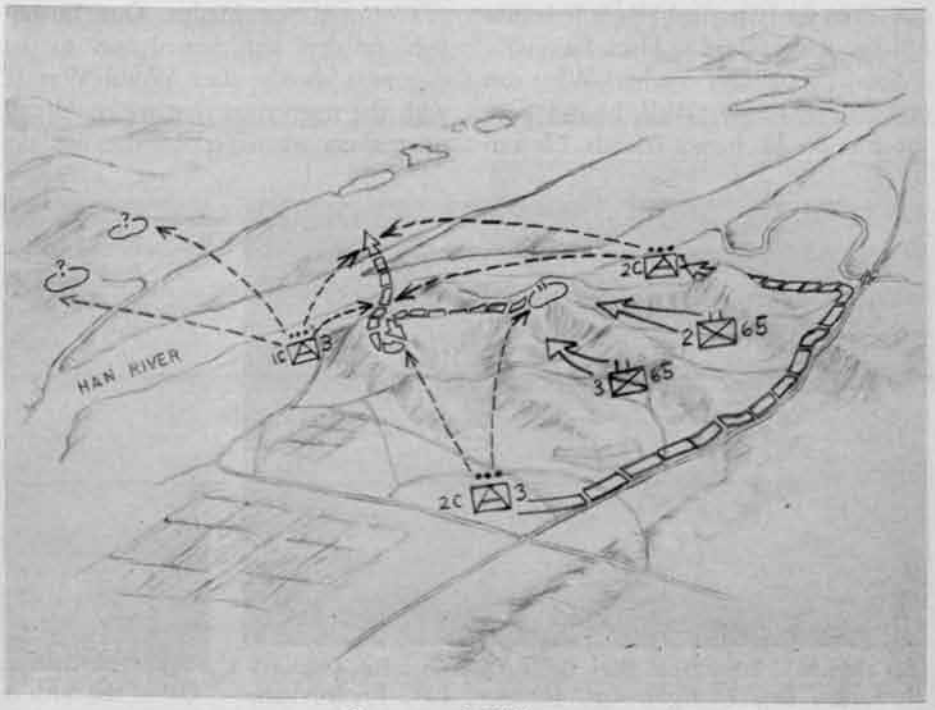
The objective was in the 65th Infantry Regiment zone—the right flank of the division. Detailed plans were made by the 65th Infantry staff. All possible support was needed in order to take the critical objective. The 2nd and 3rd Battalions, supported by the 58th FA Battalion and C Battery 3rd AAA AW Bn. (SP), were to attack 190600 February 1951.

Captain Dave Edwards, Commanding Charlie Battery, Lt. Ed Rankin, 1st Platoon, and Lt. Del Rovis, 2nd Platoon, coordinated fully with the regimental and battalion commanders.

At 0530 hours 19 February, the Second Platoon with two M19's and three M16's started the preparatory fires from positions approximately 2000 yards south of Hill 88. Under the withering, covering fire of the AA guns, the infantry slowly advanced. While these three sections were firing on the objective, the First Platoon, under the protecting cover of darkness, moved to the west flank. As dawn appeared, this platoon was in defiladed positions on the south bank of the river preparing to fire on supporting weapons across the Han at a range of 2,500 yards. At daylight the M19's proceeded to deliver accurate fire at the enemy emplaced on the north bank. Shortly the steady staccato firing of the machine guns joined the 40mm pounding. The enemy across the river was soon neutralized, unable to assist their comrades on Hill 88.

By this time, the infantry was on the objective, only to find the enemy withdrawing to another hill, preparing for a stiff defensive stand. Eventually the fire of the Second Platoon was masked and Lieut. Rovis immediately started to move his platoon around to the east flank close to the river. A hasty reconnaissance showed that only a narrow rice paddy trail was available. Precariously balancing on the trail, the platoon slowly moved toward a levee approximately three feet high, about 1,500 yards east of 88. No sooner had they occupied this position, which enabled the platoon to cover the enemy withdrawal, when a volume of mortar fire fell in and around their emplacements. Fortunately, not a man was scratched. As Lt. Charles Boykin, assistant platoon commander, phrased it afterwards, "It's a good thing, their bubbles weren't level."

The first lull of the mortar fire enabled them to spot the enemy's weapons. In a matter of seconds the 40's and 50's had taken the guns under fire and completely destroyed them.



Capture of Hill 88.

Although the Chinese seemed still determined to hold the hill, the field artillery had zeroed in and the 105's and 155's were in fire for effect! With all hell breaking loose, the 105's and 155's dropping in from overhead, the AA pounding from the flank, and the Infantry steadily, stealthily, advancing from the front; the enemy decided—he had had enough.

Lt. Rankin's platoon, still firing across the river on the left of the objective, noticed it first—the Chinese were withdrawing. Guns were traversed and the retreating little men were taken under fire. By this time the Second Platoon on the right had maneuvered into positions enabling them also to fire on the enemy as he attempted to cross the frozen Han. Few if any managed to escape through the resulting cone of fire.

From the original enemy battalion on Hill 88, there was now less than a company left. Of these, 125 never passed through the cone of AA fire and only about a dozen managed to escape to the temporary haven north of the river.

It was all over now. Some of the men started to eat; others just sat where they were. Others joined in the inevitable after-battle critique.

One of the unique phases of the operation discussed was the fact that the enemy in his withdrawal had no sanctuary. In previous battles he would withdraw to the next ridge and defend from there. Here the river was his only alternative. This, thanks to C Battery's alertness and pin-point firing, proved disastrous to him.

Another aspect covered was the tremendous effect of the flanking fire delivered on the enemy by the AAA guns. Only through the closest coordination can this type of fire be brought upon an enemy and yet insure complete safety for friendly elements. In this operation, and many others that have since followed, the 3rd AAA AW Battalion has accomplished this type mission in a most successful manner.

Ammunition Expenditure:	5,700 Rds. Cal. 50; 1,072 Rds. 40mm.
Communications:	Inf Bn CO to AA Plt Ldr—SCR 300 AA BC to AA Plt Ldr —SCR 508 AA Plt Ldr to AA Section —SCR 528

Silver Star

Second Lieutenant Donald J. Koevenig, Battery C, 3d AAA AW Bn. (SP), 3d Infantry Division, United States Army. On 18 April 1951, in the vicinity of Chungsa-ri, Korea, while serving as assistant platoon leader on a mission to recover disabled tanks, Lieutenant Koevenig skillfully dispersed his men to positions which afforded maximum protective support to the recovery team from the 65th Infantry. With no regard for his safety and despite intense small arms and automatic weapons fire, Lieutenant Koevenig voluntarily left the comparative safety of his armored vehicle in order to point out enemy positions to his gun crews. When an enemy machine gun threatened the security of the mission, he unhesitatingly exposed himself to hostile fire, ran to a gun position, and personally directed a fire mission which silenced the machine gun and permitted operations to continue. Lieutenant Koevenig's complete command of the situation ensured the success of the mission and as a direct result of his actions, not one friendly casualty was sustained. The outstanding gallantry, leadership and selfless devotion to duty displayed by Lieutenant Koevenig reflect great credit upon himself and the military service. x x x Illinois.

AAA TARGET PRACTICE—KOREA

By Colonel Thomas M. Metz, GSC

The extensive employment of AAA units in close support of infantry has demonstrated beyond a reasonable doubt the versatility of the AAA self-propelled weapons and crews. Notwithstanding this fact, the Eighth Army, ever watchful of enemy attacks from the skies, took advantage of the lull in the Korean fighting to improve the capability of its Ack Ack to deliver effective antiaircraft fire. Since the enemy had offered so few aerial targets, it was necessary for the 10th AAA Group under Col. William H. Hennig to establish and operate a firing range close to the combat zone.

In a matter of a few weeks, Lt. Col. John Coontz, executive officer of the 68th Gun Battalion, had established the range and EUSAK weapons were conducting abbreviated target practices. The

units were phased on the firing range by Col. R. C. White, artillery officer of Eighth Army. The division commanders were unwilling to release their units even by batteries. However, sections of each battalion were allowed to leave the division zones and much valuable training was accomplished.

Tow target aircraft of the 314th Air Division in Japan were dispatched to Korea and rendered most effective support. B-26 aircraft flying sleeve and flag targets were used six hours a day, seven days a week. The firing point was so well organized that little valuable time was wasted and in some cases units arriving in the early morning were able to complete their firing and return to their divisions during the night.

A tent camp was established at a nearby swimming beach for those units that could spend the night at the range. This afforded the artillerymen an unbroken night's sleep and a chance to enjoy saltwater bathing.

If the communists carry out their threat to use air power in their next offensive, they will find that the AAA units are anxious to show that their fire is just as effective in the air as it is on the ground.

AAA In "Exercise Southern Pine"

By Lt. Col. Lawrence W. Linderer

80th Airborne AAA Battalion

AGGRESSOR ground forces, urged on by their President, Marshall Arturo Aquinaldo, and paced by powerful air and naval support, launched amphibious assaults on 16 July 1951, at Myrtle Beach and Georgetown, South Carolina. The speed and surprise of this attack enabled the invading forces to secure both beachheads within three hours of the initial attacks. Between 17-19 July 1951, a link-up of these beachheads was effected and Aggressor lashed out with strong armored columns to capture Charleston, with all port facilities intact, by 26 July 1951.

Aggressor forces then moved north rapidly and by employing paratroops had captured Southern Pines, the western half of Fort Bragg and the Camp Mackall area by 13 August as Exercise Southern Pine started.

The enemy held air superiority initially, his forces were well trained in subversive activity, and his agents were busy throughout the maneuver area. Aggressor forces were actually represented on the ground by an Army force of 10,000 men representing all armies, under command of Brig. Gen. Henry J. D. Meyers recently returned from Korea.

As emphasized by Lt. Gen. John R. Hodge, USA, maneuver commander, and his deputy, Maj. Gen. W. B. Wolfinbarger, USAF, Southern Pine was a controlled training exercise in joint air-ground operations. Troop engagements took place on the Fort Bragg and Camp Mackall reservations.

The Army troops included the VII Corps, the 28th and 43rd Infantry Divisions, the 82nd Airborne Division, and supporting troops.

Air Force elements included the 9th Air Force (tactical) and five groups comprising the Troop Carrier Command.

The 224th AAA Group, Col. Edwin W. Thompson, commanding, provided AAA protection for the VII Corps. It included the 398th AAA AW Battalion, Lt. Col. Louis B. Dean, the 464th AAA AW Battalion, Lt. Col. Ralph E. Glasgow, and the 105th AAOD, Lt. E. A. Sisson.

Silver Star

First Lieutenant Robert C. Morrison, 21st AAA AW Bn. (SP).

"On 15 April 1951 near Kyadang, Korea, while under heavy artillery bombardment, Lieutenant Morrison's half-track platoon was advancing along a river bed to support the attacking infantry. In the middle of the impact area, he found the route blocked by a truck loaded with gasoline. After directing his men to seek cover, he climbed into the truck and drove it through bursting shells to clear the route. His bold action enabled his platoon and its supporting tanks to proceed to the safety of a defilade. Lieutenant Morrison's valorous initiative and selfless devotion to duty reflect the highest credit on himself, his unit and the Armed Forces. x x x Tennessee."

In the absence of Army or area AAA, the 398th provided antiaircraft protection for the 3rd ASCOM area. The 464th were constantly on the move protecting the corps forward elements.

Divisional AAA battalions in the exercise were the 169th AW Battalion (SP), Lt. Col. W. K. Covill, 43rd Division; the 899th AW Battalion (SP), Lt. Col. H. E. Rochow, 28th Division; and the 80th AB AAA Battalion, 82nd Airborne Division. They participated with their respective divisions.

The 105th AAOD operated on a 24-hour-day basis throughout the maneuver and provided excellent early warning to all AAA battalions operating in the exercise. On 16 August 1951, at 1230 hours the 105th AAOD was attacked by eight aggressor jet aircraft inflicting minor damages, and umpires awarded a total of four dead and five wounded. A thirty-minute delay was awarded while necessary repairs were made to resume operations.

U.S. Army Photo

Lt. Gen. Frank G. Milburn, CG I Corps, Maj. Gen. Robert L. Soule *(left foreground)*, CG 3rd U.S. Inf. Div., and Gov. Thomas E. Dewey of New York with SFC John Downing *(center)*, and his men of the 3rd AAA Bn. during the Governor's visit to Korea.

THE sources of information for the AAOD were the Air Control Center and the battalion OP's. The 398th was the

only battalion equipped with radars. The AAAIS was broadcast adequately on the SCR 399. Shortages of equipment were serious; however, the 105th AAOD had improvised all essential plotting equipment, and they provided an early warning service that was invaluable to my battalion, as well as the others.

The maneuver directors were uncanny at setting up confusion for realistic training. Lt. Col. Dean reports that the 398th had a good bit of this immediately upon arrival when their directions led them into the middle of the Ninth Air Force Headquarters instead of their own position miles away. He also reports that the exercise gave invaluable training in rail and motor movements, operations with other arms, night operations, security, maintenance, and supply.

The 464th made the 1,000-mile motor march from Camp Edwards, Mass., without a single motor accident and with every vehicle pulling in on its own power. This battalion operated closely with the VII Corps Artillery during the exercise.

As already indicated the Aggressor agents were active in their subversive and sabotage efforts. The requirements for radio authentications, use of countersigns, guards, identifications, and integrated perimeter defenses emphasized security. At night the AAA units frequently had to redeploy their weapons in close-in perimeter defense.

As I write on 21 August, three Aggressor agents have just entered my battalion marshalling area and attempted to blow up the works. However, we have captured them now.

When I can get around to see the 169th and the 899th AW Battalions with the other divisions, I shall try to give you their reports for a later issue.

U.S. Army Photo

Status board in the operation tent of the 105th AAOD with Sgt. Lind and Pfc. Frey.

U.S. Army Photo

Bridge in the 34-ft. x 34-ft operation tent of the AAOD, Colonel J. W. Sandridge (AADC), 1st Lt. E. A. Sisson (AAOO), Corporal Arthur Troicke (C & I Teller), Corporal James Bridgland (C & I Recorder).

CAMP EDWARDS AAA TC

CAMP EDWARDS, MASS., located on Cape Cod has again become the site of a busy antiaircraft training center. Brig. Gen. Arnold J. Funk, a Bataan veteran, is in command. Colonel George R. Carey arrived recently from Fort Bliss to serve as camp executive.

Brig. Gen. Harry F. Meyers, 56th AAA Brigade, commands the AAA troops in training and Colonel Alvin T. Bowers serves in dual capacity as camp S3 and executive of the brigade.

Colonel Charles G. Patterson commands the 2nd AAA Group. Lt. Col. Matthew J. McGuire commands the 242nd AAA Group. Each group comprises several battalions in training both on the Camp Edwards reservation and on the Camp Wellfleet firing range.

During the summer months several thousand National Guard and Reserve troops conducted their summer camps at Camp Edwards. Brig. Gen. Roy Y. Moore, 103rd AAA Brigade, commanded the Connecticut troops in training in July. Brig. Gen. Alfred H. Doud, 105th AAA Brigade, commanded the New York troops in camp early in August. Brig. Gen. Vincent P. Coyne, 104th AAA Brigade, commanded the Massachusetts troops in camp late in August.

Colonel John C. Smith, New England Sub Area Office, served as the coordinator of training for all summer camps.

At North Truro the Eastern Air Defense Force and the Army AA Command operate a school in AAAIS.

Otis Air Force Base, a jet fighter training station, is also located on Camp Edwards adjacent to the army station.

All of the AAA troops were enjoying the delightful Cape Cod summer weather as they pursued their vigorous training schedules.

899th AAA AW BATTALION (SP)

At Southern Pine

By Lt. Col. Harold E. Roschow

THE 899th AAA AW Bn. (SP) is an organic part of the 28th Infantry Division and as such participated in EXERCISE SOUTHERN PINE August 13 to 27, 1951. It was the first extended field maneuver in which the Battalion participated.

The battalion was equipped with 32 M16's, 32 M15's, 27 2½-ton trucks, 23 jeeps and 15 ¼-ton trailers. Shortages particularly in jeeps and trailers were acutely evident. The well worn half-tracks also gave us a continual problem in maintenance.

The mission of the battalion generally was one of protection of FA battalions, Division and Div Arty CP's and air strips against enemy air attacks, although there were occasions when the battalion was employed in a ground support role. The mission was accomplished usually by attaching three individual gun batteries to three FA battalions and using sections of the one remaining gun battery for air strip and CP protection. At night the AA crews were pulled in and integrated into a tight perimeter defense during the hours of darkness. Before dawn, they would return to their daytime positions.

The exercise kept the battalion on the go and gave invaluable experience in field operations with the combined arms.

Communications are a very real and vital problem to a self-propelled battalion. A careful study was made of the deficiencies observed and some remedies are in sight.

Fortunately, the battalion was equipped with nearly all of its assigned signal equipment which included SCR 508's, SCR 528's, SCR 593's, SCR 300's and AN/GRC 9's.

The battalion AM net using the AN/GRC 9's was usually reliable and voice ranges up to twelve miles were not uncommon. The AAAIS teams using the same sets, minus the crystals (not available) were consequently much less effective due to the sets being jarred off frequency by the movement over rough terrain. The sets were often unreliable for instant operation and of limited range. The crystals are needed.

Silver Star

Sergeant First Class Leland D. Bray, 21st AAA AW Bn. (SP).

"On 7 March 1951, Sergeant First Class Bray's half-track section was advancing in support of a tank-infantry patrol near Pyongchon, Korea. When hostile forces began an intense small arms and antitank gun barrage he advanced on foot to seek more tenable firing positions for the vehicles. Exposing himself to the deadly fire, he walked in front of each half-track to ensure the most effective placement. By directing a heavy volume of accurate counterfire, he eliminated the enemy resistance and allowed the patrol to advance. Sergeant First Class Bray's valorous initiative, aggressive leadership and unwavering devotion to duty are in keeping with the high traditions of the American soldier. x x x Texas."

The battalion command net using the FM sets did not perform well since the line of sight characteristics of these sets made their operation over irregular terrain difficult. Of limited range, these sets did not satisfy the needs of a widely dispersed self-propelled battalion, but were suitable for battery level communication.

The SCR 593's at gun positions were unsatisfactory for flash messages. A more stable receiver of the AN/GRC 5 type is needed.

Wire communication within the battalion was rapidly installed and perfectly reliable. However, our batteries supporting FA battalions were given poor tie-in into the battalion switchboards. We shall have to get better service with them.

The trailers assigned to the communication section should be made available to the section. During Exercise Southern Pine, this battalion communication section was forced to borrow a truck assigned to the S4 section for the purpose of transporting its wire, wire equipment, switchboards and message center equipment. When not moving, this equipment had to be stored in the open which resulted in avoidable deterioration of this equipment.

Radios must be furnished to batteries that will net with the radios of the division units supported. (One SCR 608 would serve this purpose.)

There should be a radio repair truck available to the communication section with the ample supply of spare parts, particularly tubes, microphones, fuses and lamps. Radio is the primary means of communication and must be maintained. In active operations the division signal maintenance cannot meet all the urgent demands.

The communication section should also carry spare headsets for EE-8 telephones, spare drop units for the SB-72 or 71 and reel unit RL-31.

Supply was a tremendous problem. There was actually an acute shortage of water due to lack of necessary equipment such as 250-gallon trailers. Each battery needed one.

A fifty-five-mile round trip to the supply point was necessary for the ammo, and this was played to the full by using blank ammo and ammo boxes filled with sand. We learned the need for a better system of reporting expenditures and ammo on hand so that an accurate estimate of each battery's needs can be reported to S4.

The "B ration" was used, but we believe that the 10-in-1 would have been more suitable. Feeding troops dispersed over a vast area from a central kitchen was a formidible task. One battery solved this problem by breaking down the "B rations" to individual gun sections and by having the crews cook their own meals on twenty-man cookers.

We also learned the need for operations reports. The batteries were sometimes negligent in keeping S3 informed of their location and operations, especially when these batteries were attached or acting in support of the FA battalions. This does not permit maximum efficiency for the AA battalions. Radio silence also imposes tremendous hardships upon a unit so dependent upon radio for communication. These periods of radio silence should be anticipated and steps taken for improvising an effective system of maintaining control and exchanging information.

Lighted Fuze In The Middle East

By Lieut. Col. John B. B. Trussell

Psychological Warfare

BY the time these words are printed, it is possible that Iran will have driven Korea from the headlines. Or, the situation there may have improved; but as a fundamental complication of the East-West struggle, the Iranian problem will remain. For in the Cold War, Iran is a critical battle line.

It is the expropriation and nationalization of Iranian oil which has focused international attention upon Iran, but oil nationalization is actually a symptom rather than the basic problem itself. Iran is of strategic importance because of its geographical location as well as because of its geological deposits. It is of *critical* strategic importance because of its internal political instability. The nationalization crisis is only one manifestation of that instability.

Iran's geographical location is largely responsible for making it one of the more significant arenas, historically, in the struggle between Britain and Russia. Throughout the nineteenth century, Russia was always a threat to Iran's territorial integrity, for Russia avidly regarded the shores of the Persian Gulf, considering that there might lie the warm-water outlet to the open seas which she ached to possess. Furthermore, the area from the Bosporus to Afghanistan is Russia's weakest frontier. In recent decades, when mechanization made oil the lifeblood of industry and war, Russia could not but view with misgivings the fact that her own Baku oil basin, producing two-thirds of her total oil output, lies only a few hundred miles from the Iranian border—a border unprotected by any natural obstacles—and today within easy medium bomber range from Iran, Iraq or Turkey.

Britain's interest in Iran was also intense. India was the most valuable possession of the Crown; and to maintain India's security, Britain had to control all land areas adjacent to that great subcontinent. In addition, for the security of the communications from England through the Mediterranean, the Suez Canal and around the Arabian Peninsula to India—the "lifeline of Empire"—Britain had to insure that no strong, hostile Power dominated the shores of the Persian Gulf or the Arabian Sea.

Motivating both countries, too, was the fact that the Middle East provided a fertile field for exploitation, and from 1872 until 1907 the two powers vied for concessions to build railways, run telegraph lines, found banks and supervise Iranian customs collection. A certain order was brought into the competition after 1907, however. Russia had just been defeated in her war with Japan, and Britain had recognized the rising threat of a militantly expanding Germany; it was time, leaders of the two powers decided, to reach some sort of agreement concerning their various points of contact. So far as Iran was concerned, an agreement was signed, dividing the country into two zones of influence, with a neutral area between. Russia was to have a monopoly of concessions in the north, and Britain in the southeast.

With the outbreak of war in 1914, the Iranian government declared its neutrality, but the intrigues of foreign agents soon had the country in a state of turmoil approaching anarchy, a condition which persisted until early 1921. Stability was restored when Colonel Reza Khan seized control of the government. Becoming prime minister in 1923, he was declared Shah in 1925. In this capacity he instituted a period of vigorous, one-man rule. His one objective seems to have been twofold: to modernize his country and to eliminate foreign influence.

Under him, the nation took enormous strides toward industrialization, better communications and a more up-to-date concept of law and administration. However, the price of this progress was the reduction of parliament to a rubber stamp, the centralization of power in the hands of the Shah and the virtually complete abolition of such democratic rights as had existed. Furthermore, in his emphasis on industrialization, Reza Shah tended to ignore agriculture and irrigation. The direct result was a decline in

Middle East.

the living standard of the agricultural workers. This development was acutely important because farmers comprise the vast majority of the population. Of the country's estimated 16,550,000 people, some 2,000,000 are nomadic tribesmen, supported by their flocks, and only 3,000,000 live in towns of more than 20,000 inhabitants.

By 1938 Germany, as the source of most of the imports of machine tools and capital goods so vital to a country undergoing a period of industrialization, had achieved a position of great influence in Iran. Furthermore, though Reza Shah prudently maintained friendly relations with his huge northern neighbor, he detested Communism, a sentiment leading him to be friendly toward the Nazis. Both Britain and Russia, therefore, were seriously worried about the Iranian situation after the beginning of World War II. The British had come to depend upon Iran as one of their major sources of oil, for nowhere in all the British Empire is oil known to exist, and Iran's Abadan refinery is the largest in the world. Entirely apart from the importance of oil was the fact that if Germany came to dominate Iran, Russia would be threatened in her rear.

PROMPTED by these considerations, in 1941 Britain and Russia called upon Reza Shah to enforce his country's declared neutrality by halting the activities of German agents in Iran. In the Soviet view, their position in this situation was reinforced by the existence of a Russo-Iranian treaty, dating from 1921, which, according to their interpretation permitted Russian intervention in the event of anti-Russian activities by any third party operating from Iranian soil. This treaty, according to Soviet opinion, is still valid. When the Shah, in any case, ignored the Allies' demand, Russian troops moved into the country from the northwest and British from Iraq and the Persian Gulf. Reza Shah abdicated and was succeeded by his son, Muhammad Reza Shah Pahlahvi. For the rest of the war, Iran served as a mammoth way station on the supply line from Britain and America to Russia.

Despite the pressure used initially by the Allies, amicable working relations were achieved. So far as the presence of foreign troops in the country was concerned, it was agreed by treaty that this was not equivalent to occupation, and all were to be withdrawn within six months after the end of hostilities against Germany and her associates.

Although political adjustment was attained, the war's impact on Iran's economy was drastic. Scarcities of necessities developed, inevitably bringing inflation. The cost of living rose one thousand per cent. A people already poor deteriorated into abject poverty, a development contributing to the occurrence of the now famous Azerbaijan crisis which followed the end of the war by only a few months.

One-fifth of Iran's total population, producing the bulk of the country's foodstuffs, live in Azerbaijan. Poverty and hardships caused segments of this population to support the so-called "Democratic" regime which declared the province "independent" with Communist moral and physical support. When, in November, 1945, Iranian forces were sent to suppress the rebellion, Russian troops stopped them at the provincial border. By the terms of the agreement of 1942, the Russian troops were due to leave—American and British troops had long since been withdrawn—but the Kremlin refused to move its units until "certain matters" could be "clarified." Although the question was brought before the UN Security Council, settlement was reached by independent negotiations between the two countries. Russian troops were finally withdrawn, but only at the price of a promise by Iran's premier to obtain parliamentary consent to the formation of a joint Irano-Soviet company to exploit oil resources in the northern provinces. The Russian scheme for extortion of this concession backfired in 1947, however, when the Iranian parliament refused to charter the company.

Under the present Shah, Iran has since the end of World War II enjoyed a somewhat more representative government than during Reza Shah's reign. However, the cabinets have been very unstable. While the vast majority of rural Iranians are not interested in government, the urban population is very active politically; at the same time, it is bitterly divided. Three broad political divisions can be made: there are the Communists, the National Front, and the orthodox Moslems. Of the three, the Communists have the best organized party (the Tudeh).

Both National Frontists and orthodox Moslems are anti-foreign. The Tudeh, of course, takes its orders from Moscow and therefore, if not completely anti-foreign, is certainly anti-British and anti-American. To some extent the National Frontists and the orthodox Moslems can cooperate, although the cooperation has a shaky foundation, as the orthodox Moslems will be content with nothing less than a theocratic state. Their dislike for the United States, for example, is based on the belief that America is irreligious. They are perhaps more anti-foreign than the National Frontists. It was a religious fanatic who assassinated Premier Ali Razmara in March, 1951, following Razmara's attempts to work out international trade agreements. The great political danger today is a union, even a temporary one, between the Moslems and the Tudeh, a union motivated by a common hatred of the West.

THE oil nationalization crisis stems from a long-smoldering resentment of foreign exploitation. In Iranian eyes, oil was the cause and the Anglo-Iranian Oil Company the chief instrument of this exploitation. The country's political leaders have argued that if the oil profits went into the national treasury instead of being drained off into foreign pockets, Iran's poverty could be alleviated. It was this complex of beliefs which caused parliament last spring to rebel against the relatively conservative leadership of Premier Hossein Ala and, urged on by the leader of the National Front, Mohamed Mossadeq, to pass unanimously a bill calling for expropriation and nationalization of the oil industry.

Thus repudiated by parliament, Hossein Ala resigned and the Shah named Mossadeq Premier in his place. There seems reason to believe that the Shah took this step unwillingly, but as a constitutional monarch he could not legally block a movement which apparently had such general popular support. Of course, how many members of parliament voted for nationalization because to do otherwise would invite assassination it is impossible to tell. The fate of Ali Razmara is a recent memory, and only two years ago the Shah himself was wounded in an assassination attempt by a nationalist extremist.

As for Mossadeq, he is said to be only

slightly less anti-American than he is anti-British and anti-Russian. His two passionate hatreds are foreign encroachment and dishonesty in government. Although there is ground for comfort in the fact that he is at least as much opposed to Russia as he is to the West, it is nonetheless true that Russia has less to lose by expulsion than have the West in general and Britain in particular.

The greatest immediate danger from nationalization appeared to be that the Iranians might try to operate the oil refineries themselves. Virtually all the technicians in the industry were British, employed by Anglo-Iranian. The expulsion of the company and the threat of imminent violence toward its foreign employees have left the oil fields without qualified direction. There is real cause for fear that the complex machines of the refinery will be ruined by inept handling.

The Kremlin, without lifting a finger, would thereby gain a tremendous victory, for Britain would be deprived of the source of one-fourth of her total oil supply. In 1950, Anglo-Iranian was the largest oil-producing company in the world. The company's 700,000 barrels per day amounted to 10% of world production. All of Russia and her satellites together produce only 821,000 barrels per day. While in America the Texas wells alone produce 2,000,000 barrels per day, it is still necessary for the United States to import upwards of 40,000,000 barrels per year.

A danger which is slightly less immediate but just as real is that if the Iranian government tries to operate the refineries and fails, the already considerable unemployment (half a million people) will increase and the country will go bankrupt. This might well lead to disorders which would precipitate Russian intervention. Such a development would be even more serious than Korea because of the probability of direct Russian participation.

Considering the size of the country and the type of economy, Iran has a respectable military force. Upon reaching age twenty-one, each physically qualified young man is, theoretically, required to serve two years in the Army; however, exemptions are not difficult to obtain so that by no means all of each conscript "class" performs service. Secondary schools have training comparable to that given in our Senior ROTC; graduates of these units perform shorter periods of service than do the ordinary conscripts, and are eligible for commissions. According to recently published estimates the Army has a strength of 130,000, and is believed to be completely loyal to the Shah.

Two infantry divisions are normally stationed at Teheran. Currently, two thousand troops are stationed at Abadan.

Besides the help of an American military mission, Iran has received from the United States about $60,000,000 worth of military equipment, including light armored vehicles. However, the Army is only partially mechanized. There are no armored divisions, but each infantry division has organic armored elements.

In addition to the Army, the municipal police total about 22,000. There is, also, the Security Guard, or Gendarmerie, numbering some 20,000, reorganized and modernized since 1942 by Brigadier General H. Norman Schwarzkopf of the United States Army.

The Air Force is extremely small, equipped with only about three hundred aircraft, most of them training planes.

IT seems clear, therefore, that should Russia attack in strength, Iranian military forces could at best carry out no more than a brief delaying action. Yet it is also clear that the West cannot permit itself to be deprived of the oil so vital to its industrial existence. If Iran fell, the rest of the Middle Eastern oil sources would be seriously threatened, and the Middle East possesses 42% of the world's known oil reserves.

In short, even if it is possible for Iran and Britain to come to a working agreement on the current oil question, so long as the Cold War continues Iran will remain a vitally important factor in the West's defense. Moreover, in view of Iran's internal dissension and military weakness, she will necessarily stand high on the list of problems confronting Western strategic planners.

To summarize, for a hundred and fifty years, Iran has been the center of an East-West power struggle. At first because of her geographical location, then because of her oil deposits also, she was the unfortunate victim of an international tug-of-war. Embittered by the years of exploitation, politically articulate Iranians have turned against all foreigners, although they differ sharply among themselves as to the best means for bettering their condition. The tragedy for the West is that Iran's antiforeign feeling may lead to action which could cut off the vitally needed oil supply from everybody, or may even bring Russian invasion—and such invasian would almost certainly bring on world war. Worst of all, Iranian nationalism makes extremely difficult any program of foreign assistance to improve the living conditions of the population or even to build up military strength; yet without such assistance, living conditions and military strength are likely to deteriorate still further. Any further deterioration is almost certain to bring on the very disorder which is most likely to provide Russia with an excuse to move in.

Nevertheless, the situation is not hopeless. If Britain can come to an agreement with Mossadeq, the vital oil will continue to flow; with an arrangement regarding the refineries more favorable to the Iranians, some of the anti-foreign feeling should abate; the resulting change in feeling may make it easier to draw Iran more completely into the orbit of the free world. Pending such agreement on the oil question the Iranians can be expected to resent any foreign interference from Russia as well as the Western powers.

Antiaircraft Orders

(Continued from page 56)

Schuch, Ronald L., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Seals, Marvin, Jr., to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Shaffer, Don W., to 47th AAA Brig, Cp Stewart, Ga.
Sharp, Donald R., to Hq W A AA Comd 8577th AAU, Hamilton AFB, Calif.
Sheppard, Hubert C., to EUCOM, Bremerhaven, Germany.
Souser, David H., to 71st AAA Gun Bn, Ft Belvoir, Va.
Stearns, Robert D., to EUCOM, Bremerhaven, Germany.
Stevenot, Joseph E., to 5th AAA Gp, North Richland, Wash.
Stevens, Chris W., Jr., to 47th AAA Brig, Cp Stewart, Ga.
Stolsits, Frank L., to 685th AAA Gun Bn, Cp Edwards, Mass.
Strong, Warren A., Jr., to 80th AAA Gp, Ft Totten, NY.
Stubbs, Duane H., to 31st AAA Brig, Ft Lewis, Wash.
Sutton, Harry L., Jr., to FEC, Yokohama, Japan.
Weber, Thomas E., to 38th AAA Brig, Ft Bliss, Tex.
Westrich, Ralph L., to 209th AAA Gp, Indiantown Gap, Pa.

A LABOR SAVER

By Sgt. 1st Class Darrel C. Norum

A GOOD soldier is always interested in saving time and labor. This thought often occurred to me while working in the shops of the Department of Gunnery at the AA & GM Br, TAS, Fort Bliss, Texas.

Much of my work was concerned with the unit generator M5 and the Director M5A2. I noticed that whenever we had to move the generator, which weighs more than 800 pounds, we had to find eight men able to drop their work to carry it. Watching eight men struggle across a hot yard under this load and thinking of the danger of an accident to the matériel or the men, I dreamed up a device to permit one man alone to pick up the generator and haul it where he wished.

I took my plan to Master Sergeant Roy S. Donohue, my shop foreman, and with his encouragement and help assembled a supply of salvage material from which we built the cart which is still in use in our shop. We have built other carts as the need arose and have a cart to pick up and haul the director and its range finder, a total weight of more than a thousand pounds.

We turned our plans and blueprints over to the department for the general use of the Army but others in our position may wish to know how to make such a device. It is unlikely that such a cart can accompany troops into the field. However, around a shop and even when on the range this device will save a lot of man working hours; the letter of commendation we received says this saving is estimated at 3,000 man working hours during the last two years.

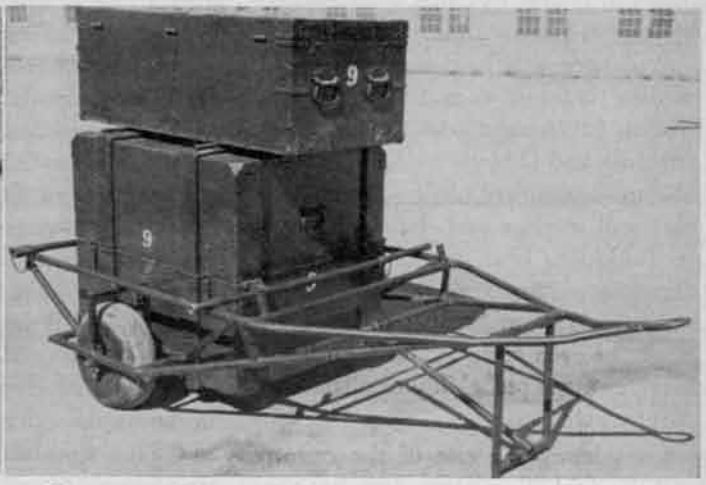
The cart consists of two rubber-tired wheels mounted in a tubular framework which can be tilted as the handle is raised or lowered. A porter bar is inserted in the rear of the generator as the first step and the car is rolled toward the generator so that a wheel is placed on either side. The cart is then tilted downward by raising the handle. This permits the side bars to pass beneath the ends of the porter bar.

Then, by pressing down on the towing handle of the cart as a lever, one man can tilt the generator forward and while holding it in this position can pull down a lever on the handle, which forces two rods into the front side porter bar sockets and at the same time locks the cart on the porter bar across the rear of the generator. It is then balanced between the two wheels and as soon as the towing handle is lifted, one man can pull a load difficult for eight to carry.

If the generator is to be hauled for any distance, the towing handle can be attached to a ¼-ton vehicle but this is not required for ordinary work around the shop. There are many places where this cart will save time and labor. It may also save a smashed finger or a crushed foot.

The cart was so successful that we made one on the same principle with which to pick up and move the boxed director with its range finder. In making the carts, I used one-inch tubular pipe and wheels from salvaged wheelbarrows. If anyone is interested in blueprints for constructing such a cart, and needs more detail, I'll be glad to answer his inquiries.

One man can pull the generator.



Director and range finder ready for one-man transport.

AA Command In Field Exercises

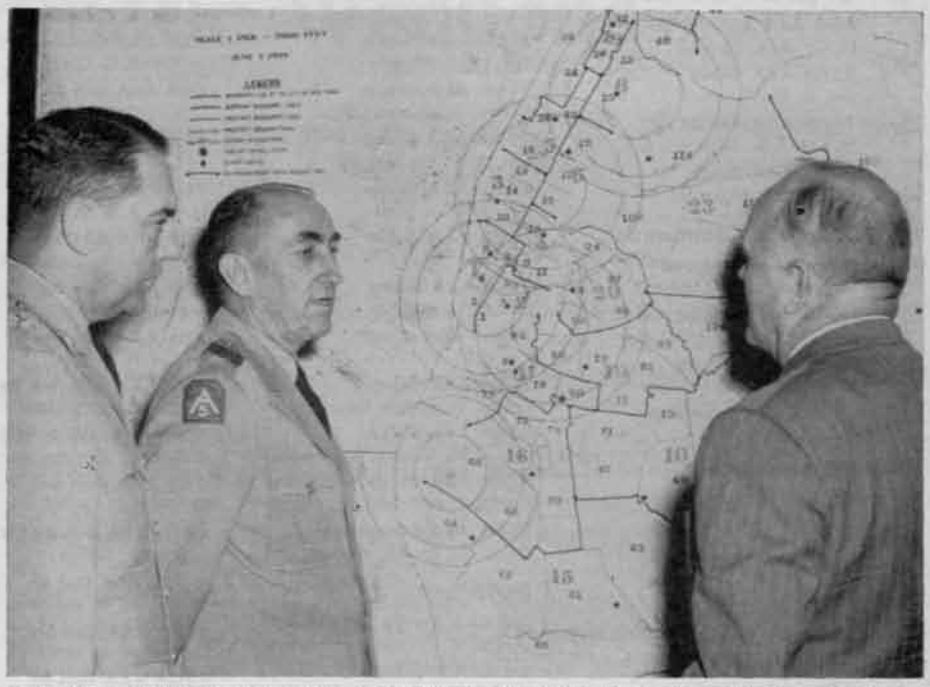
THE troops of the Army AA Command under Major General Willard W. Irvine are engaged in extended field training during the month of September.

Typical of continental air defense, most of the units were located in the suburbs of metropolitan areas. Some of the troops were in the field near their home areas. Brig. Gen. William H. Hamilton's brigade was active in the New York area. Likewise Lt. Col. Francis Fulton's battalion staged their training near Philadelphia.

Cooperating with the 35th AAA Brigade, Air Force elements were simulating hostile air attacks by day and night giving all hands realistic practice in perfecting their early warning and gunnery.

Other exercises in field operations and organization of positions served to round out the training for the new men as well as the veterans.

Likewise, throughout the command from Col. Albert S. Baker's group in the First Army to Brig. Gen. Hobart Hewett's brigade in the Sixth Army the antiaircraft troops were training in air defense.



Brig. Gen. William M. Hamilton and Major Paul W. Rutledge with Commissioner Wallender, chief of civil defense, study the New York area.

Major General Paul W. Rutledge in the Eastern Army AA Command and Brig. Gen. Robert W. Berry in the Western Army AA Command were actively directing the training.

Delaware Guard—By Sgt. David D. Preston

BEYOND the muzzles of the 40s, a blue wedge of the Atlantic Ocean was visible between the scrub-covered sand dunes that lined the southern Delaware beaches. A thousand yards at sea, floated a sail-like cloth target, towed by an Army boat. Gun crews on the beach fidgeted at their stations, waiting for the word.

The 261st AAA Brigade, of the Delaware National Guard, commanded by Brig. Gen. John B. Moore, was in the midst of its second and final week of summer camp this muggy early-August afternoon. Behind the men were several days of firing at aerial targets. Now they were ready to settle an argument—that firing on water-borne targets, simulating antimechanized operations, could be made a vital part of ack-ack training.

In the tower behind the guns, two officers were anxiously awaiting the order to start firing. Col. Ralph S. Baker, commanding the 160th Group, was anxious to see what the 193rd and 945th AW Battalions would do in their first crack at flat-trajectory firing.

Part of the anxiety of the two officers was the fact that one of the two battalions—the 193rd—had been converted to a 40-mm unit only two weeks before camp, after several years of operating the bigger 90s.

The honor of leading off, and perhaps of setting the pace, went to a battery from Dover, the state's capital. The man at the breech stood with the first steel-jacketed, armor-piercing shell ready, those on the forward-area sights pinpointed the target, as they would to ambush a tank.

The gun officer shouted, "Target!" and the gunner dropped in the shell and kicked the trigger. Ten shells in all went in the breech in a matter of seconds, and the gun flashed ten times. When the cease-fire was given, five of the armor-piercing shells had ripped through the target, others had chipped pieces from the raft which held it.

The next unit to level off, a Milford battery, put four of ten shells into the target before making way for another Milford outfit which shredded the target with six straight hits. One after another, the eight batteries of the two battalions stepped up to the line and riddled the target. More than 100 hits were scored during the afternoon, and on many occasions, "near misses" clipped the raft.

When it was over, everyone was convinced that the firing on water-borne targets had proved to be very valuable training.

HONOR ROLL

Original Honor Roll

88th AAA Airborne Bn
Lt. Col. R. B. Barry, Jr.

228th AAA Group
Col. D. W. Bethea, Jr.

107th AAA AW Bn (M)
Lt. Col. T. H. Pope, Jr., S. C.

305th AAA Group
Col. John S. Mayer, N. Y.

Separate Commands

Army AAA Command
Maj. Gen. W. W. Irvine

Third Army Training Center
Brig. Gen. C. H. Armstrong

East AAA Command
Brig. Gen. P. W. Rutledge

Central AAA Command
Col. D. J. Bailey

Guided Missile Dept.

AA & GM School
Col. F. M. McGoldrick

Brigades

35th AAA Brigade
Brig. Gen. Homer Case

40th AAA Brigade
Brig. Gen. James G. Devine

47th AAA Brigade
Col. G. C. Gibbs

103rd AAA Brigade
Brig. Gen. R. Y. Moore, Conn.

105th AAA Brigade
Brig. Gen. A. H. Doud, N. Y.

107th AAA Brigade
Brig. Gen. J. W. Squire, Va.

111th AAA Brigade
Brig. Gen. Chas. G. Sage, N. Mex.

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

Groups

2nd AAA Group
Col. C. G. Patterson

10th AAA Group
Col. W. H. Hennig

11th AAA Group
Col. W. B. Logan

19th AAA Group
Col. H. P. Gard

97th AAA Group
Col. J. T. Wrean

200th AAA Group
Col. C. M. Woodbury

204th AAA Group
Col. F. C. Grevemberg, La.

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

208th AAA Group
Col. H. S. Ives

209th AAA Group
Col. E. J. Welte

212th AAA Group
Col. J. A. Moore, N. Y.

214th AAA Group
Col. J. G. Johnson, Ga.

216th AAA Group
Col. W. E. Johnson

218th AAA Group
Col. V. P. Lupinacci, Pa.

224th AAA Group
Col. E. W. Thompson

226th AAA Group
Col. John D. Sides

227th AAA Group
Col. P. L. Wall

251st AAA Group
Col. A. Long, Calif.

302nd AAA Group
Col. John M. Welch, Ohio

313th AAA Group
Col. A. F. Hoehle, Pa.

326th AAA Group
Col. M. D. Meyers, Pa.

374th AAA Group
Col. T. F. Mullaney, Jr., Illinois

515th AAA Group
Col. F. G. Rowell, N. Mex.

Battalions

3rd AAA AW Bn (SP)
Lt. Col. C. W. Stewart

3rd AAA Tng. Bn.
Lt. Col. E. E. Twining

4th AAA AW Bn (M)
Lt. Col. R. J. Connelly

9th AAA Gun Bn
Lt. Col. H. O. Johnson

15th AAA AW Bn (SP)
Lt. Col. F. A. Werner

21st AAA AW Bn (SP)
Lt. Col. Chas. E. Henry

22nd AAA AW Bn
Lt. Col. R. J. Jones

A Btry, 25th AAA AW Bn
Capt. L. M. Pederson

35th AAA Gun Bn.
Lt. Col. J. E. Burrows

39th AAA AW Bn (M)
Lt. Col. N. W. Baltzer

41st AAA Gun Bn
Lt. Col. W. A. Keyson

46th AAA AW Bn (SP)
Lt. Col. Wm. M. Vann

48th AAA AW Bn.
Lt. Col. O. K. Marshall

50th AAA AW Bn (SP)
Lt. Col. L. J. Lesperance

59th AAA AW Bn (SP)
Lt. Col. H. Von Kolnitz

60th AAA AW Bn
Lt. Col. R. T. Cassidy

62nd AAA AW Bn (SP)
Lt. Col. R. G. Finkenaur

63rd AAA Gun Bn
Lt. Col. B. I. Greenberg

64th AAA Gun Bn.
Lt. Col. R. A. Lanpher

65th AAA Gun Bn
Lt. Col. R. F. Moore

68th AAA Gun Bn
Lt. Col. R. C. Cheal

69th AAA Gun Bn (M)
Lt. Col. D. C. Sherreis

70th AAA Gun Bn
Lt. Col. K. R. Philbrick

71st AAA Gun Bn
Lt. Col. A. J. Montrone

75th AAA Gun Bn
Lt. Col. A. A. Koscielniak

78th AAA Gun Bn
Lt. Col. J. B. Parrott

79th AAA Gun Bn
Lt. Col. F. E. Pratt

80th AAA Airborne Bn
Lt. Col. L. W. Linderer

82nd AAA AW Bn (SP)
Maj. R. H. Johnston

95th AAA Gun Bn
Lt. Col. L. S. Dougherty

101st AAA Gun Bn (M)
Maj. L. D. Collins

102nd AAA Gun Bn
Lt. Col. M. H. Roesser

115th AAA Gun Bn.
Lt. Col. W. D. McCain

120th AAA Gun Bn
Lt. Col. H. C. Gray

126th AAA AW Bn (SP)
Lt. Col. R. C. Carrera, Mont.

127th AAA AW Bn (SP)
Lt. Col. H. G. White, N. Y.

142nd AAA AW Bn
Lt. Col. C. Beckman, N. Y.

146th AAA AW Bn.
Lt. Col. R. H. Franklin

150th AAA Gun Bn
Lt. Col. L. O. Ellis, Jr.

238th AAA Gun Bn.
Maj. T. P. O'Keefe

243rd AAA AW Bn.
Lt. Col. E. E. McMillan

245th AAA Gun Bn
Lt. Col. C. M. Brown

250th AAA Gun Bn
Lt. Col. A. J. Twiggs

260th AAA Gun Bn
Lt. Col. R. H. Stephens, D. C.

265th AAA Gun Bn
Maj. H. Botts, Fla.

337th AAA Gun Bn.
Lt. Col. J. W. Dry

340th AAA Gun Bn
Lt. Col. G. V. Selwyn, D. C.

369th AAA Gun Bn.
Lt. Col. C. S. Heming

398th AAA AW Bn (SP)
Lt. Col. L. B. Dean

420th AAA Gun Bn.
Lt. Col. G. S. Green

443rd AAA AW Bn (SP)
Lt. Col. J. F. Reagan

507th AAA AW Bn
Lt. Col. S. J. Paciorek

518th AAA Gun Bn
Lt. Col. O. L. Greening

697th AAA Gun Bn
Lt. Col. James McMinn

698th AAA Gun Bn
Lt. Col. F. Monico, Illinois

705th AAA Gun Bn
Lt. Col. M. P. DiFusco, R. I.

707th AAA Gun Bn.
Lt. Col. F. Fulton, Jr.

708th AAA Gun Bn
Lt. Col. P. I. Getzinger

709th AAA Gun Bn
Lt. Col. L. A. Long

710th AAA Gun Bn.
Lt. Col. C. C. Berkeley

712th AAA Gun Bn
Lt. Col. H. H. Taylor, Jr., Fla.

713th AAA Gun Bn
Lt. Col. B. N. Singleton

715th AAA Gun Bn
Maj. J. Y. Woodruff

716th AAA Gun Bn
Lt. Col. Joe R. Stewart

717th AAA Gun Bn
Lt. Col. E. D. Pelzer

720th AAA Gun Bn.
Lt. Col. G. A. Duke, Calif.

726th AAA Gun Bn
Lt. Col. John T. Watson

728th AAA Gun Bn.
Maj. G. C. Moore

732nd AAA Gun Bn.
Maj. L. Neeley, Ore.

753rd AAA Gun Bn
Lt. Col. W. H. Nicolson

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

773rd AAA Gun Bn
Lt. Col. G. F. Slavin

804th AAA AW Bn (M)
Lt. Col. Wm. C. Wells

867th AAA AW Bn
Maj. S. M. Arnold

Operations Detachments

102nd AAA Opns. Det.
Capt. G. J. Lahey

105th AAA Opns. Det.
1st Lt. E. A. Sisson

177th AAA Opns. Det.
Maj. W. F. Hale, Va.

179th AAA Opns. Det.
Maj. R. S. Gruhn

181st AAA Opns. Det.
Maj. R. H. Moser

501st AAA Opns. Det.
Maj. E. F. DeLeon

503rd AAA Opns. Det.
Capt. R. R. Berger

507th AAA Opns. Det.
Capt. E. F. Bookter

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 twenty 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.

Employment Of Self-Propelled Automatic Weapons

By 1st Lt. Carl M. Guelzo, Arty.

EXPERIENCES in World War II and the lessons learned on the battlefields of Korea demonstrate the value of light AAA automatic weapons. A description of the tactics employed in the U. S. 3d Infantry Division may prove helpful. The uses of AW described are not inflexible, but rather have proven effective in the type of terrain and the methods of fighting characteristic of Korea.

The two major missions of light AAA are still unchanged: air and ground defense, although the latter has grown in importance under the air supremacy of the UN forces. In Korea, the ground support role predominates to the almost total exclusion of the antiaircraft mission; but, future wars may hold a different disposition of air forces. Even in Korea, the air defense mission has not been neglected as demonstrated in the relatively minor engagements during nuisance raids.

The demands made on the single self-propelled light AAA AW battalion organic to the division artillery are heavy and varied, but generally fall into a pattern of three major categories: First, protection must be afforded the field artillery by tying into their perimeter defenses (thereby relieving the infantry of the task) and providing air and ground defense for their march columns. Second, such division installations as CP's, main supply routes, bridges, air strips, and supply dumps must be protected from air and ground attacks. And third, the infantry must be given close support by firing preparations for attacks, providing close overhead fire, supporting task forces and armored thrusts, and firing on targets of opportunity. Additional services for infantry and other units, such as the evacuation of wounded from the battlefield, hauling ammunition to units engaged with the enemy, and accompanying psychological warfare teams, have added to the success of ack-ack.

It is not without justification that more and more infantry and field artillery commanders are regarding their supporting AAA with affection. The four firing batteries are utilized to the fullest in providing an equitable distribution of their services in spite of certain inadequacies of equipment. The high mobility of the self-propelled AW battalion is limited by the inability of the equipment to negotiate rough terrain or operate off roads during periods of inclement weather. Despite armor plating, the vehicles are not tanks and cannot operate or be used as tanks, but many supported unit commanders, deceived by armor that will only turn small arms fire and light shell fragments, fail to realize the limitations of the M19 and M16. Improper disposition and emplacement in the face of mortar, artillery, or antitank fire or in dangerously mined areas often results in the permanent loss of a valuable weapon.

Improvisations have served admirably in offsetting many matériel disadvantages. An SCR-300 borrowed from the infantry for use during an operation solves the problem of communication between the infantry and AAA commanders, while careful selection of firing positions and routes of approach can offset the tactical disadvantages of the vehicles. Mil scales engraved on the brass azimuth and elevation handwheel collars of the M19 aid considerably in bringing fire to bear on targets quickly, accurately, and with a minimum of adjusting rounds.

The high muzzle velocity and flat trajectory of the twin 40mm cannon enable the weapon to lob high explosive shells into the narrow embrasures of concrete pillboxes and bunkers, while the quad caliber .50 machine guns, although not as accurate as the 40mm, can literally sweep a given area with their tremendous firepower. But both weapons can perform these phenomenal feats of firepower and accuracy just as effectively at a range of 1500 yards from the enemy as 500 yards—and with more safety for the vehicle. The effectiveness of the weapons can be increased immeasurably if they are employed properly. No commander would knowingly sacrifice a weapon capable of providing a high rate of fire combined with almost pinpoint accuracy or deliberately limit its effectiveness, yet failure to provide proper defilade for the vehicles or misjudging the ability of the weapons to traverse a rice paddy or other questionable piece of terrain has resulted in just that.

Coordination, a necessity in any operation involving AW, is not an insurmountable problem. The borrowed SCR-300 is one method, or liaison personnel utilizing an assistant platoon leader or a platoon sergeant to accompany the infantry commander fills the bill. Panels on the backs of attacking groups of infantry establish quite clearly a no-

Silver Star

Sergeant Floyd T. Barton, Battery C, 21st AAA AW Bn (SP). In the vicinity of Yongdongpo, Korea, on 16 February 1951, Sergeant Barton's half-track was suddenly attacked by a hostile patrol which was attempting to cross the Han River. Although the initial onslaught forced the entire crew to take cover, he and the driver made their way back through enemy lines to recover the vehicle. Quickly mounting the machine gun turret as the driver mounted the cab, he delivered a steady stream of deadly fire to inflict numerous casualties on the surrounding foe and drive the remainder into disorderly retreat. Sergeant Barton's courageous leadership and selfless devotion to duty are in keeping with the high traditions of the Army. x x x Pennsylvania.

fire line, and smoke grenades are excellent for signaling cease firing. Targets can be designated with tracer bullets, a round of white phosphorus from a 57mm recoilless rifle, or using reference points. Such procedures as these, in increasing the effectiveness of the support rendered by AAA units, have proven time and again the ability of AAA to act in the offense as well as the defense.

Two administrative means may be used in accomplishing the varied tasks assigned the organic divisional AAA battalion. The direct attachment to the supported unit, while placing tactical and logistical responsibility for the AAA in the hands of the supported unit commander, is not the best method. Attaching AAA batteries or platoons to supported units, whether infantry or field artillery, takes virtually all control away from the battalion commander. In the present emergency, many fine officers have been recalled to active duty but immediately placed in the field without access to the newest developments in tactical doctrine available in service schools. Control of AW units then falls into the hands of persons who are not always equipped to utilize them to the best advantage.

The logistical burdens placed on supported units by a direct attachment may also prove unduly heavy. Few organizations will require 1000 gallons of fuel to replace that used in a single operation. Expecting regimental S4's to supply enormous quantities of gasoline with already limited transportation appears to be unfair; yet the M19's and M16's burn just such quantities of fuel. Supplying ammunition quickly becomes a major problem when the twin 40mm can expend a basic load in the space of a few minutes and exhaust what can be carried in its trailer in a few more minutes.

Silver Star

First Lieutenant William O. Keeling, Battery D, 21st AAA AW Bn (SP). On the night of 25 April 1951, near Uijongbu, Korea, during a powerful hostile attack, Lieutenant Keeling organized his half-track platoon to cover the displacement of friendly forces to more tenable positions. Although all the rifle elements had apparently passed through, he held his vehicles in place, despite the proximity of the onrushing foe, in the belief that others might still be at the front. His action enabled the rear guard of another platoon to withdraw to safety. Lieutenant Keeling's courage, resolute leadership and steadfast devotion to duty reflect the highest credit on himself and the United States Army. x x x Pennsylvania.

Placing batteries and platoons in direct support solves many of the problems raised by direct attachments. The battalion commander of the AW battalion is a man of long experience and sound judgment in the disposition and employment of his combat vehicles; hence, direct support roles permit him to retain full operational control of his batteries. While actively controlling the activities of his weapons, the battalion commander is also able to allot his vehicles and batteries most effectively and economically. The same weapons made available to the infantry during daylight hours can be used to provide perimeter defense for field artillery batteries at night, and the vehicles accompanying an armored reconnaissance party during the day can return and resume their air and ground defense mission around division installations during the hours of darkness. In this manner, either the same number of missions can be accomplished by fewer vehicles to provide an opportunity for repair and maintenance, or a greater number of vehicles can be assigned to each mission to provide more firepower than would be possible under a direct attachment. Under a direct attachment, this double duty for combat vehicles would be difficult or impossible.

The Headquarters Battery of the AW battalion is also equipped to serve as a service battery in providing full logistical and administrative support of the firing batteries. The battalion S4 is not dismayed by large gasoline and ammunition requirements and has had experience in filling the needs of the batteries in these respects. The motor officer, one of the business men in the organization, is equipped to keep the tracks and half-tracks of the battalion rolling despite the hard usage of the equipment on long gruelling road marches. Although it is not my intention to relate war stories here, it is significant to note that the maintenance supervision rendered by battalion motor officers will pay big dividends as demonstrated by the low mechanical failure rate on the two wild dashes of the 3d Infantry Division in May, 1951, during the second round of the Chinese spring offensive, first across the tortuous mountain trails of central Korea, and then back again to the western sector.

A full realization on the part of supported unit commanders of the limitations and capabilities of the AAA AW weapons and the proper methods of employing them to bring out their full potential as close support weapons is needed. The loss of an M19 or an M16 deprives the commander of a tremendously powerful weapon for periods of time that vary with highly uncertain repair facilities during a period in which he may need them the most. Once these basic fundamentals of employment are understood, the supported commander will find himself allied on the field of battle with weapons unequalled in flexibility, accuracy, and firepower.

Struggle For Survival

"Those who feel that the successful solution to one conflict may give us the opportunity to relax and stay out of all the succeeding ones fail to recognize the avowed intent of Communist doctrine. We are face to face with a long-range struggle—a struggle in which the enemy will use all means—political, economic, psychological, and military—to bring about this capitulation. This long-range struggle is a struggle for survival."—*General of the Army Omar N. Bradley.*

I Send Your Son Into Battle*

By Lt. Col. Melvin Russell Blair, Inf.

RIFLEMEN fight their wars on mountaintops, and most riflemen are very young. With this in mind, think then of any mountain you may remember—any rising slope of ground covered with trees and rocks and little bushes, and wrinkled with gullies. And then think of your own son—a boy in T shirt and blue jeans now, perhaps, but soon to be a soldier who, in some far-off corner of the earth, may someday be ordered to go running and crawling up such a hill as this, to kill or drive away the enemy upon it.

Combat takes many forms and all of them require great skill and courage. There is the war at sea, and war in the air, but to the infantryman these are impersonal forms of war—a conflict between men and machines. And on the ground there is the war that the artilleryman and the tanker fight, but this is not war as the infantryman knows it. The war the rifleman fights is the essence of war, and it is almost impossible to describe, for soldiers are not usually deft with words, and it is hard for them to make others see and understand what they who listen have never experienced.

But I have commanded troops in battle in two wars now, as a platoon leader, company commander, and finally as a battalion commander, and I have never led men into combat or watched them go on my orders, without wishing that I could sit down and write a letter to the father and mother of every man and tell them in simple terms what the rifleman's war is like, and what traits of character the boy should have who fights it best.

First, of course, he must be physically strong and tough and resilient, for he will be called on to undergo hardships and weariness and discomfort almost beyond the capacity of the human body to endure. He must be intelligent and quick to comprehend, for a soldier's time of training is brief, and in this short time he is told many things that he must understand and remember if he is to survive in battle. He must be obedient, for discipline is the only thing that holds a unit together in combat, whether it be a squad or a battalion. Yet at the same time he must possess initiative—the instinct to take action on his own—for there will be many times in battle when the men who give orders are dead or out of his sight and hearing, and he must decide for himself what to do.

He must, above all, possess a sense of pride and a sense of loyalty to his comrades, for in battle, in the moments of great danger, it is his loyalty to the men around him that makes him go where he is afraid to go. And courage is only pride so strong it will not let him reveal to others that he is afraid to do what they will do.

So, remembering this far-off mountain where he someday may come to his great testing, think of your son and judge for yourself what kind of soldier he will be. If he likes sports and the outdoors, if he loves hard play and camping, he possesses the physical attributes he will need. If he does well in high school he will learn quickly the simpler lessons the Army teaches. If he gets along well with the kids on his street, he will get along well with his squad. If he is respectful and obedient to you, he will accept the discipline of the noncoms and the officers who command him. If he keeps his room neat, he will keep his rifle clean and his gear in order. If he is loyal to his family and to his school, and proud of his own appearance, his own skill as an athlete or as a student, he will have the loyalty and pride to carry him well in combat.

Silver Star (Posthumous)

Corporal John T. Travis, Battery B, 21st AAA AW Bn (SP). On 16 February 1951, near Naegong-ni, Korea, Corporal Travis was serving as a gunner on a multiple mount machine gun during a sharp fire fight. After the vehicle had been moved to an exposed vantage point, he delivered a steady stream of effective covering fire as the infantry maneuvered for an assault. Although subjected to an intense concentration of small arms, automatic weapons and mortar fire, he remained at his post to direct over 3000 rounds at the surrounding foe before he was mortally wounded. Corporal Travis' exemplary courage, aggressive spirit and unremitting devotion to duty were an inspiration to his comrades and enhance the high traditions of the service. x x x California.

These are His Buddies at the Front

What, then, is this combat like, this day of battle in which all that a man is in body and in spirit is tried and tested? The best way to describe it, perhaps, is to describe first the unit which does the fighting and what goes on in the ranks and up at command level, before, during and after a battle.

Armies, corps, divisions and regiments do not fight battles. They direct and control and administer. The basic fighting unit on which all actions are planned is the battalion, a force of some 1,000 men, divided into three rifle companies of roughly 200 men each, plus a company of heavy weapons—machine guns, mortars and recoilless rifles—and a platoon of five tanks, and perhaps a company of engineers. And these rifle companies are broken down into platoons, which again are broken down into squads of nine men each—five riflemen, a squad leader and his assistant, and an automatic rifleman and his helper. These last are the men your son will know. He will know their nicknames, and their home towns, and the way their sweethearts look in bathing suits, and they will know all these things about him. For they are the men he lives and trains with, and they are the only men he will see around him as, in the noise and smoke, he goes into battle for the first time.

How, then, does he go into battle? Who sends him there? Who does the thinking and planning and gives the orders which, on some gray morning just at dawn, will cause him to rise from

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his foxhole and start out on the loneliest, most frightening journey a man will ever take?

That is my job. I am his battalion commander. I do not choose the hill we will assault or the time he will go, but once the attack has started, it is on my orders that his company goes forward, halts where it is or comes back. And it is my judgment which decides whether he shall carry out his mission and perhaps be wounded or killed in the attempt or whether he shall withdraw and fail. The choice is hard. If I order his company on into fire it cannot survive, every man in it may be killed or wounded or captured, and I have gained nothing. If I order it back, its withdrawal may cause my whole attack to fail, and the failure of my battalion to take one hill may mean the failure of a grand-scale attack in which thousands of men are employed for miles along the line.

That, then, is the burden a battalion commander carries as long as his unit is in combat—this balancing of the lives of his men against the mission he has been ordered to carry out. There are only two things which sustain him—the knowledge he has gained in schools where the distilled military wisdom of the ages is pounded into his head, and his own experience in battle. Out of these two sources of knowledge he fights his battalion.

What, then, does he do? Let us say, for instance, that he is taking this battalion into battle for the first time. It is a green outfit. He and the company commanders and the platoon leaders and some of the noncoms have been in combat before, but the men are fresh from training. They have learned to salute, to drill, to pitch a pup tent, to fire their weapons. They have had a little simulated combat, when machine guns fired live ammunition over their heads. But that is all. Now they are in an assembly area some miles to the rear. They are bored and restless, and those of them who have never seen action look forward to it with mixed feelings, half eagerness and half fear. Far up ahead they hear the artillery slamming doggedly away, see jet planes swimming like schools of silver fish in the sky, watch supplies going up and the dusty ambulances lurching back over the rough roads to the hospitals at the rear. At night they see the glow in the sky of the flares which light the front, and sometimes the redder glow where a village burns, set ablaze by artillery fire.

Silver Star (First Bronze Oak Leaf Cluster)

First Lieutenant John Gronsky, Battery B, 21st AAA AW Bn (SP). On 3 April 1951, friendly forces were advancing over a flat, open valley toward strong hostile positions near Chugang-ni, Korea. Lieutenant Gronsky preceded his half-track platoon to search for mines and to select advantageous firing positions. When three of his men were wounded by a bursting mortar shell, he exposed himself to the deadly barrage to carry them to safety. Throughout several hours of constant action, he repeatedly exposed himself to direct more effectively the movement and fire of his men and to administer to the needs of the wounded. Lieutenant Gronsky's courageous leadership, aggressive spirit and unwavering devotion to duty enhance the high traditions of the United States Army. Entered military service from Pennsylvania.

Two days, three days, a week may pass while he waits in the assembly area. And then the leather-cased telephone jingles in my tent. It is the regimental CO. He calls me by my first name. "You'll move up tonight, Russ, and relieve the first battalion in place," he says. Then my work begins. I call the CO of the weapons company, the tank platoon, the engineers and the artillery-liaison officer. I alert the rifle-company commanders and tell them to be ready to move. The word passes quickly to the men. Each behaves as his character dictates. A few weak ones report to the aid station with vague, indefinable aches and pains. Others hunt up the chaplain for a little talk. Most check their gear, write a letter or two and then sit doing nothing at all.

With my officers I go up to the command post of the battalion I am going to relieve. The battalion CO briefs me on the situation of the enemy as well as he knows it, shows me on the map where his boundaries are, where his mortars are set up, his heavy machine guns, where his tanks are deployed and his reserve company, and where his artillery concentrations are falling.

I look at this map and make certain changes in my mind. Terrain governs the disposition of troops and no two commanders interpret terrain exactly the same. I may feel that his CP is too close up, too far back, too far to one flank. I pick another spot where the wiggly contour lines on the map show me I can set up my own headquarters where I shall be in defilade, out of sight of observed mortar or small-arms fire. I choose positions for my mortars and for my reserve company that may be a little different from his, but nearly always my forward rifle companies will go into the same foxholes where his riflemen now are.

I tell him how long I think it will take me to move, and as soon as I have two companies in place I will take over responsibility for the sector. I call back to my CP and give orders for the movement to begin.

Back there the men have had their last hot chow. They move up on foot in the dark. Guides from the battalion we are relieving take them to the forward foxholes. As my men move into the holes the others move out. They don't have much to say to one another. The men being relieved are too tired and beaten and bushed to talk. All they want is to get out of the line.

If all has gone well, by daylight my battalion will be in place. Telephone lines will be in from my CP forward to the rifle companies, back to the tanks, the mortars and the artillery. I am ready for whatever orders may come.

Through the night I have been studying my map. I have projected my boundaries ahead—1000 yards, 2000 yards. I know pretty well, before I ever get the call from regiment, what my attack objective will be—a hill mass, high and rugged, 500 yards to my front.

Dawn comes and your son John, in a front-line foxhole for the first time, looks out, down the slope of the hill in front of him, across the flat valley to the hill mass ahead. There is no sound, no movement, except the slow drifting of gray smoke beyond the hill. Magpies sail lazily in the valley below. He sees no enemy, nor any trace of him, no earth thrown up, no log barricades, no guns pointing ominously at him, no sign at all that this hill and valley to his fore are any different from a thousand such he has passed in his journey from the docks at Pusan.

Back of him now, not ahead, he hears a great door slam, and over his head he hears for the first time the dry whisper of an artillery shell passing over—his own artillery. He watches for the explosion, but sees nothing and hears noth-

ing, for this is interdiction fire, falling deep behind the enemy's line.

He sees no enemy, but off there somewhere the enemy sees him. And as he stands up in his foxhole and calls across to a buddy—Whoom!—behind him a section of the hilltop leaps in the air, something sings past his head, he finds himself flattened in the bottom of his hole while bits of earth and rock shower down on him. He hears for the first time the cry, "Medics, medics here!" He pokes his head up timidly. Thirty yards away lies a man strangely mis-shapen, with a red blur at his shoulder where his arm had been. His helmet has rolled toward John's foxhole and he sees the jagged hole in it, the bright shine of blood inside. A wounded man is threshing on the ground, holding his side. He makes no outcry except a strange gasping sound, and your son learns for the first time that wounded men do not shriek or cry out.

More mortar shells come in. They are high-trajectory shells and they give no warning shriek or whine. Now he stays in his hole. He unstraps his shovel from his back and begins to dig deeper. But mortars make a flash and a bang not easy to hide. Our own mortars begin to answer, searching out with fire the ravine where the enemy mortar is hidden. No more shells come in.

All day my mortars and supporting artillery keep up a steady firing. Meanwhile, I have been pondering a decision on which men's lives depend. When night comes, shall I send out patrols to feel out the enemy, try to find his flanks, probe for weak spots in his line? If I do, I know that some of the patrol are sure to be killed. Will the information the patrol brings back enable me to find a route of approach, which, when my battalion finally attacks, might save the lives of half a company? By sacrificing two or three lives, might I save the lives of a hundred?

While I ponder this, the phone rings again. "You all set?" the Old Man asks. I tell him I am.

"O.K.," he says; "you jump off at 0600 against Hill 426." (Hills are called by their heights in meters.) I glance at my map. That's the hill I'd figured would be my objective. He tells me a a great deal more—who will be on my right and left, communications codes, plans for evacuation of wounded, prisoners, captured enemy matériel—but all I really need is that goose egg on the map.

Silver Star

2nd Lieutenant Joseph W. Weeks, 21st AAA AW Bn. (SP).

"On 23-24 April 1951 friendly forces were under strong hostile attack in the vicinity of Unsan, Korea. Although the enemy had secured the commanding ground on the left flank he moved his three half-tracks into a blocking position to deny entrance into the valley. After inflicting heavy casualties on the attacking force, he attached all valuable equipment to his vehicles before rejoining the infantry on the new line of resistance. On the following day, when friendly forces were again ordered to disengage, he held his vehicles in place to impede future enemy advances until more tenable positions could be firmly secured. Lieutenant Weeks' exemplary courage, resolute leadership and unwavering devotion to duty are in keeping with the highest traditions of the United States Army. x x x Florida."

I call my company commanders and tell them to meet me up in the line, at a point where we can get a good view of the terrain to the fore. I give them their company boundaries, Able on the left, Charley on the right. We crawl out ahead of the troops to get a better view. We look over the terrain a long time, searching it with glasses, trying to pick the best routes of approach. I try to think like the enemy CO. If I were defending that hill, where would I have my guns? What dead spots would I cover with mortar fire or mines and booby traps? I ask my company commanders to outline their plans of attack. If I like it, I O.K. it. If not, I tell them what to do. I give my reason. That defilade looks good, I'll explain, but it will be a death trap. They'll mortar you to bits in there.

We crawl back through the lines. The men have seen us out there. They know an attack is in the wind. They look up, questioning, as we come back through. We say nothing and try to show nothing in our faces. The platoon leaders get the word to check each man to see that his weapon is in shape, that he has two C-rations, a full canteen, ninety rounds of ammunition and three grenades. They check particularly to see that he has his first-aid packet. The American soldier is a softhearted guy. He'll bandage a hurt Korean child and go into battle without the bandages that might keep him from bleeding to death.

Back at my CP, I order out patrols to search out a certain nose that pokes down the ridge line. I work out my fire plan. Here's another decision. Shall I step up the artillery barrage during the night, thus warning the enemy that an attack is coming, or shall I keep it firing a steady eighty rounds an hour? *Hell,* I figure, *he knows we are going to attack. I'll hurt him all I can. These are green troops and the artillery will give them confidence.* So I ask for 200 rounds an hour, from midnight to H-hour minus twenty-five. At H-hour minus twenty-five the planes will hit the hill for fifteen minutes. At H-hour minus ten, I'll call in the artillery again; and the mortars, the 75-recoilless, the tanks and the flak wagons will start. They'll lay down a canopy of fire over my men as they advance, and they'll fire until the riflemen réach a point just below the crest, ready for the final assault.

Once the fire plan is laid on, I try to sleep, but it's not much use. Maybe I worry a little. Is that approach I O.K.'d for Charley Company the best one? Will it let the men get pretty close before the enemy can put fire on them? Does it keep them out of death-trap defiles? Can the supporting weapons help them there? Can they observe the enemy from there and keep him constantly under fire? I worry about the commanders. I never commanded them in battle before, but they've all got good records as combat men. The next fight, I'll know. That tall captain seemed a little doubtful about whether he could take his objective or not. Is he just one of those pessimistic guys who always bet against, but fight like hell once they're engaged? Or is he a little soft inside? If he's soft, I ought to know it now. He won't make it. His attack will come to a screeching halt as soon as his men come under fire. He'll get men killed going out, and he'll get them killed coming back. All these things run through my head as I try to remember all I've ever learned in school and in the battle actions where I was the fellow who was out there in front, taking them into the attack.

There's not much sleep in the foxholes either. The new men lie in their holes, nervous and eager. They want to see action. They want to know what it's like. The old men are quiet and thoughtful. They think of the many hills they've gone up before, the wounds, the close calls with death. They have no

more curiosity about an attack. They know that a man is a pitcher who can't go too often to this well. The artillery is slamming close over their heads now, and it makes no dry rustling sound, but a crack like the smacking together of two great blocks of wood.

First light comes and the valley is shadowed in mist. The men peer from their holes toward the farther hills. Where the artillery shells are falling, smoke shrouds the hilltop, and in the smoke they see the red and yellow burst of the exploding shells. Planes zip by and the artillery falls silent. The planes come back in swooping dives and the orange glare of napalm shows on the hill. They come again with bombs, and then with rockets that explode with a great whoosh, and then they come again, strafing.

I am up with the forward air observer now, helping to talk them in to their target. Nearby, crouched in holes, are the mortar observer and the artillery-liaison officer and the weapons-company CO. And now the planes are gone and the whole symphony begins to play—mortars and artillery, 75's and 57's, flak wagons and the big guns on the tanks. All the world is a hell of clamorous sound, but I don't notice it. My job is to adjust these fires so that every shell is on the target. I've got to have them falling right before H-hour, and the minutes are ticking by. Finally my watch shows 0600. I call the company commanders on my radio. "O.K., boys," I say. "You are on your own."

I poke my head up to watch. The men come out of their holes. They don't come out running and yelling, as you might think. They come out slowly, like tired old men. They hunch their shoulders high, and they move forward slowly, stooping over. They are moving in a skirmish line, and you can see them swing their heads to right and left, watching their squad leaders.

What's been going on in their minds while I was adjusting the fire? They've been watching the terrible explosions on the hill over there, and the new men have been thinking, *Hell, that's clobbering them.* They think that when they get over there there won't be a Chinese left alive. But the old soldiers know better. They know there'll be plenty left.

But go with your boy Johnny, if you will. The great barrage tearing the air over his head has shaken him a little, for he's never on earth heard such noise. His hands are wet and a little shaky. He pats his grenades to see that they are hung securely, he checks his rifle and looks to his bayonet. He tries to remember all that he's been told. What was it the sergeant said about hand signals, smoke signals? Where does the left hand go when you lunge with the bayonet?

He's watching his squad leader, who has a walkie-talkie strapped to his back. Suddenly the squad leader jumps out of his hole. He waves his arm forward. He yells something. He turns and starts down the forward slope. And before he knows it, your Johnny is out following him, his hands sweating, his heart pounding in his throat. He feels a strange excitement. *Here it is,* he thinks to himself. *I'm in action at last.*

Something cracks by his head, and he flinches, but he keeps going on. Dust is jumping from the ground beside him and he hears the savage whine of a ricochet. Suddenly he finds himself on the ground, the roar of a great explosion in his ears. He crunches his face into the ground. He feels himself hastily, wondering if he's hit. He looks to the left, and there he sees a wounded man, threshing on the ground. He starts to crawl to help him. Then he remembers. He can't help. Behind, 200 yards, the medics are coming. A rifleman can't stop. He must go on. Bullets are striking all around him now, and more mortar shells are falling. He sees ahead of him a little ditch and he inches forward to it. There he lies flat, his head turning. He wants to see who's with him. But smoke and dust obscure his vision. He can see two men to his left, three to his right. That's all.

Another mortar shell hits very close, and dirt and bits of rock sting him. He thinks he is hit. "Oh-h-h, God," he says. "Oh, God." He knows now that the old noncoms were right. The shells and the bombs on the hill were not killing them all. He looks to the hill. He can see nothing there. No sign of enemy yet. All his sense of adventure has gone out of him now, all his eagerness. War has lost all its glamour for him now.

Up on the hill at my OP, I'm yelling into my radio to the company commanders. "Get them moving!" I yell. "Get them out of that fire!"

Down on the slope, the squad leaders get the word. Johnny, watching, sees his leader leap up and wave. He thinks, *If I leave this little rise of earth that's protecting me, I'll get it in the head. I'll get it in the guts.* Then, out of the corner of his eye, he sees the men on his right spring up, and he, too, is up—not for love of country, not for freedom or democracy or any of those great ideals. He got up because the man on his right did, and the man on his right got up because the squad leader did, and the squad leader moved because he is an old soldier and an order is an order.

And now he's running across an open field, and the bullets are smacking in the paddy muck around him, but the mortar shells aren't falling, for they can't zero in on moving men, and now he is across the field and diving into the brush at the foot of the hill where the enemy lies.

And still he hasn't fired a shot because he hasn't seen anything to shoot at. In the woods, in the cover of the bushes and the rocks, he feels a little better. There's cover here, and as the men on his right and left move up, he moves too. And then, all of a sudden, the bullets begin to crack into the trees and into the rocks and brush around him, and he looks around him and he sees nobody moving. The squad leader is up ahead a little way, and he's waving to his men to keep down. And the fire is falling hot everywhere along the line, and the company is pinned down.

And now comes a decision I must make, and it must be right. The Able Company commander calls me and tells me he can't move, and can I get some mortar fire into a nest of rocks ahead of him? I call for mortars there, and it doesn't work. Then I tell Able's

Silver Star

Sergeant Woodrow McKinnon, 21st AAA AW Bn. (SP).

"On the night of 24-25 April 1951, hostile forces launched a strong attack near Yori, Korea, and isolated Sergeant McKinnon's half-track from the remainder of the unit. Although most of his crew had been wounded he continued to direct a deadly concentration of fire on the encircling foe. Despite repeated hostile attempts to overrun the position, he conducted a spirited defense to enable the infantry elements to displace to a new defense line with minimum casualties. Sergeant McKinnon's courageous actions reflect great credit on himself, his unit and the American soldier. x x x Florida."

CO to see if he can maneuver a squad to flank the nest in the rocks, and he tries to move a squad of the first platoon and loses five men in one burst of fire. What can I do now? Can Charley Company bring it under fire? Charley can't. All that's left is my reserve company, Baker, close behind me in defilade. But I don't want to commit my reserves unless I have to. If I throw them in to help Able now, and Charley gets a *banzai* counterattack, I'll have nothing to stop it with. Charley will be overrun. Able will have to pull back the best it can and my attack will have failed.

There's just one thing to do. I've got to go up there and see exactly what the hell the situation is. I don't want to go. I've got slugs in my legs now, and mortar fragments in my back, from going up to help pull a company out of a hole. But that's my job, and when the time comes, I must run the same risks of being killed that your Johnny runs. So I make the walk he made, stooping and crouching, running and crawling, until I get up close enough to see where the fire is coming from. Then I crawl back and call my tanks and bring one up and around the hill until he can fire point-blank on the rocks where the enemy machine gun is, and when he fires the third round the company commander calls me on his radio.

"That's all she wrote," he says, an old piece of Army slang meaning that whatever it is, it is finished.

And now the fire lifts off your son Johnny, and with the rest of the squad he goes, crawling, walking, dodging behind rocks and trees, on up the hill. Fire still comes down on him; he hits the dirt again and again. And still up ahead of him he sees no enemy. But now he hears the roar of the great explosions on the hill, where the artillery and the mortars are still firing, and he thinks, *Hell, we are going right into it.* Then he remembers he was told that just below the crest he'd stop, and that suddenly the fire would lift, and then he'd go on up in the final attack. And without being told, he stops.

He's all alone now, fighting his own fear, for he knows that in a minute he'll be meeting the enemy at last, hand to hand, in a fight to the death. His belly muscles are tight and his back is cold, though his face is running with sweat. He looks to his rifle, to his bayonet point; he checks his clip and his grenades. He pulls his right leg up under him, and suddenly there is silence, broken only by the crack of small-arms fire, and somebody yells and he lunges up and goes forward. And he sees nothing to shoot at, but the men with the BAR's are firing, and he lets off a round or so himself, and then he regrets it, for he wants a full eight rounds in his magazine when he gets to the top of the hill. He feels a sting and a thump in his thigh, as if he had been rapped with a club with a tack in it. But he does not stop. He lunges on, and suddenly he realizes that the voice he hears, yelling faintly above the din, is his own voice. Grenades are rolling down on him now, and he feels the concussion jolt as they go off behind him. His lungs are about to burst as he hurls himself up the last rocky incline that leads to the top of the hill.

And now, all at once, he is out on top, in the sky line, and here for the first time he sees his enemy. And the thought flashes through his mind, *Now I am going to be killed,* but he runs forward, yelling and firing, toward the two flat-faced yellow men whose heads and shoulders poke above their holes. One is firing a burp gun, but he does not feel the bullets tear his sleeve, and the other is drawing back to throw a grenade. And the one with the burp gun slumps forward, hit in the face, and the other one starts to scream as Johnny's bayonet goes in just where the muscles make a V at his throat. He plunges across the hole, jerking his bayonet free; and down the reverse slope of the hill other enemy are running, leaping down the rocks like goats. And Johnny stands on the crest of the hill, firing as long as he can see a running form.

Then his rifle snaps in an empty chamber and he stands there on the top of the hill, weak and a little dazed, looking about him where the medical men are beginning already to bandage the wounded, load them on the litters and send them down the hill. And for the first time he thinks of the men he saw fall back there in the rice paddy a hundred years ago, and he wants to ask about them. But about that time a lone enemy mortar shell falls down the slope a way, and he dives into the hole with the men he killed.

He feels nothing toward the dead men, neither hatred nor pity, but he remembers somebody told him once that the enemy had lice. So he crawls out and into an empty hole, and he does not pay much attention as a heavy-machine-gun crew comes up, drags the dead men to the rim of the hill and tumbles them down the slope, so they can set up their gun in the hole. He just sits there in his hole thinking of nothing much at all, physically and emotionally spent. Pretty soon the lieutenant comes along, checking on the wounded, and for the first time he remembers that whack on the leg he felt back there, when he had jumped up for the last run forward. So he lowers his pants and looks at the little blue-and-red hole in his thigh, and maybe he says a little prayer of thanks that that was what he got instead of one in the head or chest. But he knows that it was only luck that it was the other guy, not he, that got the bad one.

The lieutenant looks at his wound and pats him on the shoulder. "You're O.K., son," he says. "Soon as we get squared away here, go on down."

So, later, he goes back down the mountain, to where the litter jeeps wait in the road. And up on the hill the company commanders are setting up their defenses for the night, checking their dead and wounded, getting more ammunition up, putting their outposts out to the front and flanks. Soon they'll be ready to move on or defend, whatever their orders may be.

And that is war as the infantryman knows it, and the way he fights it, day after day.

Silver Star

Sergeant First Class Harold L. Grimes, 21st AAA AW Bn. (SP).

"On 29 March 1951 friendly forces launched an attack on strong hostile positions near Changgo-ri, Korea. Despite exposure to intense small arms and automatic weapons fire, Sergeant First Class Grimes guided his half-track section to flanking vantage points which commanded a full sweep of the main enemy strongpoints. By his skillful coordination of movement and fire, he was instrumental in enabling the infantry to secure the objective. He was seriously wounded while fulfilling his mission. Sergeant First Class Grimes' courageous leadership, military ability and inspirational devotion to duty are in keeping with the highest traditions of the American Soldier."

S3 RECORDS IN COMBAT

By 1st Lt. Carl M. Guelzo, Arty.

OBVIOUSLY S3 paperwork should be simplified in combat. However, a certain amount of good administration is necessary, and it can make the work of all much easier.

A great deal of the routine administration of operations work is suspended. Training is necessarily sporadic and should be decentralized largely to the firing batteries. Status of training reports and progress charts disappear in the press of battle. But not all administration can be ignored.

In combat, the temptation to increase the administrative burden is just as great as in garrison situations; but unnecessary paperwork—administration for its own sake—serves no useful purpose. Operations and field orders assume greater importance than ever before, but even these routine types of operations orders can become a nuisance if overdone. It is not necessary to publish an operations order each time the battalion or several batteries either displace or have their missions changed. Bulky annexes and intricate administrative procedures for purely tactical operations do not always increase the operational efficiency of the battalion.

The S3, however, cannot ride roughshod over the problem of good administration. The operations journal is indispensable. A simple form, similar to that shown in *Figure 1*, is sufficient to present the day-by-day activities of the section so that all may see at a glance what has been going on. The same journal form can be used as a draft copy of the more formally prepared staff journals to be submitted with command and other recurring staff reports.

The operations order can easily be overdone. The changing of a firing battery's mission or attachment, displacement of the battalion command post, the announcement of special EEI or special instructions relating to operations —all these could, but do not necessarily require a separate operations order. The operations order should be used only for major changes that actually require the publication of a full, formal order.

The OI —Operations Instructions—is a completely adequate substitute for the more formal operations order with regard to relatively small changes. A firing battery must make a platoon available to an infantry regiment during daylight hours, a complete AW battery is placed in direct support of a field artillery battalion, a platoon is attached to a special task force, special instructions are issued regarding the use of passive defense measures—all these items may be published in an OI that would serve either as a substitute for a new operations order or supplement an existing order (see example in *Figure 2*). An OI, having a far more limited scope than an operations order, can be published at the end of each day without taxing the clerical capacity of the section; or an OI need only be published as the information it contains changes. The file of OI's then provides a continuous picture of the assigned missions of each firing battery as well as a record of daily operations which will serve as source material in the preparation of command reports.

The periodic command report can be a thorn in the side of any battalion S3 section—if proper steps have not been taken to provide source records for the information required. The OI and the two forms to be discussed next can provide all the information necessary to prepare a command report. Each time a battery is engaged with the enemy, a report should be made to the S3 section for historical, operational, and logistical purposes. A blank report form will make the work of the battery in preparing such after action reports and the S3 section in recording the information much simpler.

A report form, similar to that shown in *Figure 3*, in conjunction with the OI for that day, provides a great deal of information for historical and operational purposes as well as furnishing the S4 with valuable logistical data on rations and ammunition expenditure. Let's take a closer look at this form. The heading is self-explanatory. In *item 1* we would find listed the mission of the particular unit engaged: D/S 1st Bn, 14th Inf, atchd 100th FA Bn, etc., while in *items* 2 and 3 would be entered the location of the action with coordinates, and the date

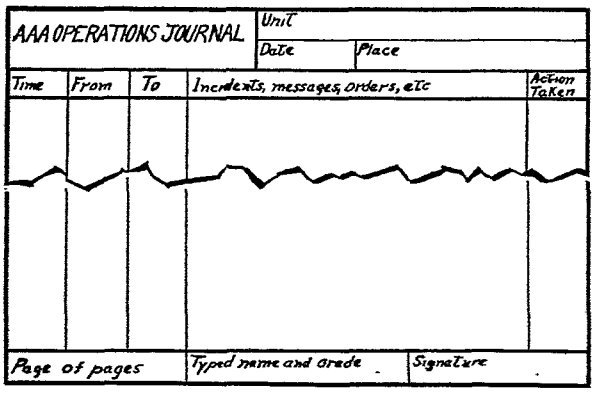


Figure 1—Sample operations journal form.

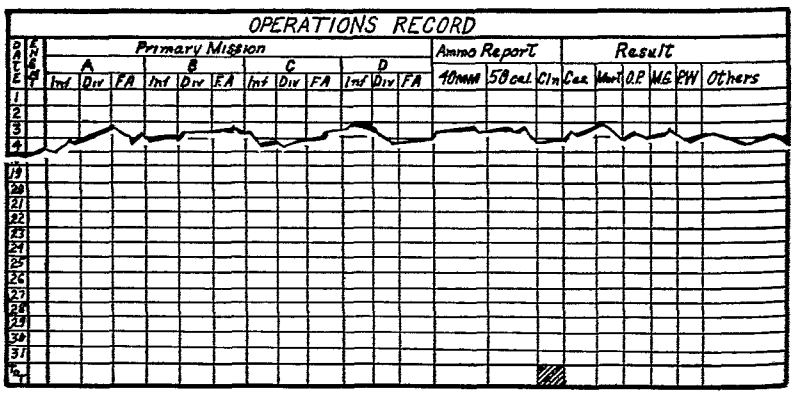


Figure 4—Operations Record.

OPERATIONS REPORT	Battery	Platoon	Date of report

1. Primary mission	2. Location of action	3. Date & time of action

4 Results of Action

Vehicles engaged		Enemy						Friendly			Ammunition expended	
Type	No.	KIA	PW	OP	Mort	M.G.	Other	KIA	WIA	MIA	40 mm	50 cal
M16												
M19												
M39												
Total												

5. Degree AA weapons assisted supported unit	6. Effect of weapons

7. Coordination with supported unit	8. Target designation

9 Fire control method	10. Emplacement & protection of AA wpns.

11. Damage to equipment

Vehicle	Cause	Description

12. Remarks

Typed name and Grade	Signature

Figure 3—Operations Report.

and time of the action. From this information, the S4 can obtain a rough estimate of rations needed by observing the unit attachments, whether he will be required to furnish the rations or if the supported unit will handle that, and how many C-rations will be needed to replenish supplies.

Item 4 supplies the bulk of the operational and logistical data. Under this item, the number of vehicles engaged will be listed in addition to the ammunition expended by each type of vehicle and the results of that ammunition expenditure in enemy casualties and damage to his matériel. For historical and statistical purposes, the number of friendly casualties can also be entered here. In *item 5*, we would find entered how the AAA weapons assisted the supported units: whether by firing preparations for an attack, providing overhead fire for advancing infantry, protecting assembly areas, or engaging targets of opportunity. The effect of the weapons—excellent, good, or limited—would be entered in *item 6. Item 7* will furnish information of the method of coordination with the supported unit (SCR-300 through the infantry commander, panels, smoke grenades, liaison personnel, etc.), while *item 8* would provide information of the method of target designation (pointing, tracers, smoke grenades, etc.).

The method of fire control—SCR-508 from platoon leader to squad leaders, assigning sectors of fire, smoke grenades, voice control—would be entered in *item 9*, while the manner in which the AAA weapons were emplaced and protected would be described in *item 10*. The battalion motor officer, to allocate more effectively his personnel and equipment, may want advance information of damage to battery vehicles. The division engineer may require reports of mine incidents. All such items of information could be found in *item 11*. Under *item 12* would be listed such elements of data as explanations of limited effectiveness reported in *item 6*, degree of cooperation from the supported unit, and any outstanding performances of both equipment and personnel. The file of these operations reports will constitute a source of almost every element of information that could be desired of an operational nature.

WHEN command report time rolls around, a recapitulation of the information contained in the operations reports will prove invaluable for ready reference. A form, similar to that illustrated in *Figure 4*, will come in handy any time up-to-the-minute information is required of the operations of individual batteries or of the battalion as a whole. An explanation of this recapitulation form is in order here.

Frequently, perhaps in each command report, information will be requested on the number of engagements the battalion has had in combat and the manner in which the battalion has been disposed during the reporting period. The first blank column, headed *ENGMT*, is reserved for listing the number of engagements during any one day. The *PRIMARY MISSION* section is divided by batteries and, under each battery heading, is further subdivided into the three major types of missions. AW units are called upon to perform: operations in direct support of infantry or field artillery units, and protection—both air and ground defense—of division or higher unit installations such as bridges, airstrips, CP's, supply dumps, etc. The number of days each battery and, by a process of addition, the entire battalion spent in each of the three missions can be computed from entries in this section in the following manner:

a. The mission of each battery is determined from the OI or operations order for the day.

b. The percentage of the weapons of the battery spent on each mission each

100th AAA AW BN (SP)
XXYY-ZZ (WWOOOOOO), KOREA
171800K July 1951

OI 7-10
MAP: KOREA, 1:50,000

1. SPECIAL EEI: What demoralizing effect does AW fire have on the enemy?

2. a. A Btry (–) D/S 100th FA Bn.
   1 Plt D/S 700th Inf.

   b. B Btry (–) D/S 99th FA Bn.
   2 Sec Air & Grd Def Div Airstrip.
   2 Sec Air & Grd Def Div CP.

   c. C Btry (–) D/S 98th AFA Bn.
   1 Plt D/S 97th FA Bn.
   2 Sec available 800th Inf during daylight hours.

   d. D Btry atchd 101st FA Bn.

3. All vehicles will be serviced and readied for movement prior to darkness daily. Maximum use will be made of all passive defense measures.

4. REPORT OF TODAY'S OPERATIONS:

   a. 1 Plt A Btry D/S 700th Inf fired 250 rds 40mm, 600 rds .50 cal; 12 en casualties, 1 mort destroyed, 1 OP neutralized. No friendly casualties or damage to equipment.

   b. 2 Sec C Btry D/S 700th Inf fired 300 rds 40mm, 850 rds .50 cal; 27 en casualties, 1 MG destroyed. No friendly casualties or damage to equipment.

STEWART
Lt Col

DISTR:

A, C Plus:	1 — 100th FA Bn
1 — Div Arty	1 — 99th FA Bn
1 — 101st FA Bn	1 — 98th AFA Bn
1 — 700th Inf Regt	1 — 97th FA Bn

OFFICIAL:
SMITH
S-3

Figure 2—Sample operations instructions.

day is entered under the appropriate column. For example: Suppose the OI for the first of the month prescribes that one platoon of Battery A will be in air and ground defense of the division CP and airstrip. One platoon is half a battery, so 50% will be entered under the *DIV* column. In addition, 2 sections of Battery A will be in direct support of a field artillery battalion, and the remaining 2 sections will be attached to an infantry regiment. Since 2 sections are one-fourth of a battery, 25% will be entered under the *INF* and *FA* columns. One more example: Suppose 1 platoon and 2 additional sections are sent out with an infantry task force, while the remaining 2 sections are used to protect a field artillery battalion. One platoon and 2 sections constitute three-fourths of a battery, so 75% will be entered under *INF*, and the remaining 25% under *FA*. And here is a check: the entries under a battery heading for any one day must always total 100%, of course. In addition, the totals of the three columns under a battery heading must be a figure equal to the number of days for which the form has been maintained, otherwise an error is indicated in either entering the data or in addition.

c. At the end of the month, the totals of the four *INF* columns are added together and divided by four to arrive at the number of days spent by the entire battalion in support of infantry units. In the same manner, the *DIV* and *FA* column totals are added together and divided by four to obtain the number of days spent by the battalion on division and field artillery missions. Another check: the number of days spent by the battalion in each of the three missions must, of course, total the number of days for which the form has been kept.

The totals of the *AMMO REPORT* and *RESULTS* columns provide a ready recapitulation for the S4 on ammunition expenditure during the reporting period (the *CLN* or classification column indicates the type of mission —infantry, field artillery, or division—on which the ammunition was expended), and a handy indication of the results of the battalion's activities for the month in damage inflicted on the enemy.

Naturally, situations may arise which would require modifications of the forms illustrated, or even the design of additional forms; but the procedures described in this article, having been put to the test of actual use in combat, should not only simplify but also streamline much of the routine administration and recordkeeping required in a combat zone. These procedures are sufficiently simple and the records easy enough to maintain to make them a responsibility of any of the enlisted assistants in the section; thereby freeing the S3 himself of the burden of routine paperwork and providing him with additional invaluable time in which to supervise the operations of the battalion.

Notify the JOURNAL of your address change.

SERVOMECHANISMS

By Lt. Col. Leonard M. Orman, Arty.

THE growing complexity of our Antiaircraft profession is constantly requiring the addition of more complicated devices to aid us in the solution of our problems. One result of this is the increasing importance of the class of mechanisms which control the over-all interaction and reaction of the various guns, computers and radar sets—servomechanisms. A servomechanism is not a specific type of equipment. It is any one of a class of automatic regulators intended to keep a quantity—speed, position, or the like—matched to a reference quantity. Other names applied to this class of devices are follow-up mechanisms, auto-followers, governors and regulators. The American Institute of Electrical Engineers now calls them feedback control systems. A servomechanism has been defined as a "power-amplifying device in which the amplifier element driving the output is activitated by the difference between the input to the servo and its output."

This definition may be illustrated by the diagram (Fig. 1):

It can be seen that a servomechanism consists of these parts:

1. An error-measuring device, which compares the instantaneous positions of the input and output.
2. An amplying unit which contains such motors and power sources as may be required and such gears and linkages as are needed to connect it to the output and the load.
3. An error corrector, often called a servomotor.
4. An input member.
5. An output member.

In addition a damping or stabilizing device is usually incorporated.

The functions of these various components are as follows:

1. The instantaneous position of the *input member* furnishes a standard reference with which the output member is to be made to correspond, through operation of the servo system.
2. The *output member* is that part of the system which is driven into a position corresponding to that of the input member.
3. The *error-measuring device* produces a signal proportional to any error or difference between the input and output positions. This signal may be a mechanical displacement or an electrical voltage.
4. The *amplifier* and *servomotor* act as the controller. Actuated by the error signal they develop and deliver to the output member and the load a driving force of such direction and magnitude as to displace the load in a manner that will zero the error signal produced by the error-measuring device.

Emphasis should be laid on the fact that while some of these elements may be electrical, they are not necessarily so, in fact many servomechanisms are entirely mechanical or hydraulic. It should be evident that, in many cases, servomechanism is a new word applied to an old device. For instance, a fly-ball governor and a float-operated valve are both servomechanisms.

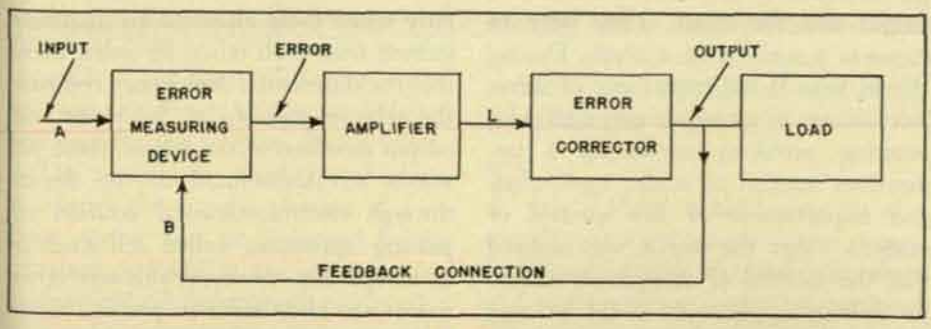


FIG. 1

LET US LOOK at a servomechanism from the over-all design viewpoint. Suppose that the input and output are mechanical rotations. Assume that the error-measuring device measures the difference between the input and the output in the form of a voltage. This voltage is amplified and applied to the error corrector, which is an electric motor connected to the output so that the motor always turns in such a direction as to reduce the difference between the input and the output. Now, if the input is turned through an arbitrary angle and stopped, an error voltage will appear and cause the motor to turn in such a way as to reduce the error. When the error reaches zero, that is the output is equal to the input, the error voltage is also zero, and so the motor stops. Thus the servomechanism has performed its function and made the output equal to the input. Now suppose that instead of turning through an angle and stopping, the input is turned at a constant speed. Eventually the output will also turn at a constant speed, but since a constant voltage is needed to keep the motor going, a constant difference between the input and output will exist. This difference is an error which must be accepted, and it turns out to be proportional to the input speed. Obviously the higher the gain of the amplifier, the smaller will be the error voltage and consequently the error necessary to keep the motor going at a given speed. Similarly, if a constant torque is applied to the output, a constant voltage must be applied to the motor to keep the output from turning. Again to obtain this constant voltage an error must be accepted, and the larger the amplifier gain the smaller the error. From both these standpoints we must have large amplifier gain for small error.

Now let us look at another side of the picture. If the gain is large a small error will drive the motor very fast, and at the instant the error reaches zero the motor will be going at a considerable speed; and, since it must have some inertia, it will overshoot, which reverses the sign of the error. The motor will then reverse and may overshoot again on the other side. Indeed, there is no guarantee that it may not overshoot indefinitely. In other words, the servomechanism may hunt continuously about the correct value. This kind of operation is called instability. The tendency for a servomechanism to be unstable usually increases as the amplifier gain increases. We see that there are two opposing factors in servo design. The chief problem is to balance these factors in such a way as to keep the errors below the required value without making the servomechanism unstable.

A familiar AA example of this may be found in radar equipment. Since the connection between the handwheel controlling the antenna position and the antenna itself is effectively somewhat elastic because of the action of the electrical and magnetic circuits involved, the inertia of the moving antenna causes it to overtravel its required position. An error voltage is developed in the servo system in the opposite direction and the antenna reverses. Successive overtravels by the antenna would be less and less, and the mechanical oscillation would die out except for one factor; there may be a time lag in the servo system which causes reinforced oscillations. In such case, the antenna would continue to hunt indefinitely about its normal position.

In order to eliminate hunting, which would cause harmful mechanical vibration of the entire antenna rotating system, an anti-hunt device or circuit is introduced. These commonly consist of arrangements to slow up the motor as the antenna approaches its final position. If the drive power is reduced soon enough the inertia of the moving parts causes the antenna to coast into its final position without any overtravel. In other words, the position control is made nonoscillatory.

So far the simplest of servomechanisms involving only one regulated quantity has been discussed. In practice there are often many quantities related to the same system which must be controlled. For example, if the system is a steam boiler, steam pressure, steam temperature, drum water level, and internal furnace pressure may all be regulated quantities. Such a case must be treated, not as a group of separate servomechanisms, but as one servo having many feedback loops. This is because the many controllers are coupled through the common system which they control. Indeed a system which is stable when all controllers are in operation, may become unstable when one of them is disconnected, even though all of the separate controllers are stable when acting alone. A problem of this sort is very difficult to analyze, but great progress is being made along these lines at the present time.

The following list is typical (but incomplete) of quantities controlled by servomechanisms and their application:

Quantity Controlled	*Application*
1. Position	Guided missiles, gunfire control, ship steering autopilots, color printing, telemetering, automatic recording, profile machines, analogue computers.
2. Velocity	Turbine and engine governors, d-c motors, steel mills, paper machines, printing presses, wire recorders, analogue computers.
3. Torque	Turbo-propellers, aircraft engines, steel mill motors.
4. Power	A-c generators, d-c generators, tie lines.
5. Pressure	Steam boilers, chemical plants, oil refineries, pipe lines.
6. Temperature	Homes, steam boilers, chemical processes, annealing furnaces, dryers.
7. Current	Welders, series lighting circuits, steel mill motors, wire winding machinery.
8. Voltage	Generator voltage regulators, induction regulators, rectifiers, power supplies.
9. Frequency	Power systems, a-c generators, low frequency standards.
10. Liquid level	Steam boilers, chemical plants, oil refineries, water tanks.
11. Liquid and gas flow	Chemical plants, steam boilers, oil refineries.

THESE systems all have in common the feedback path which connects the output and the input. They have in common a method of analysis. During World War II the importance of servomechanisms in automatic gun and radar pointing problems stimulated a tremendous amount of study, application, and improvement of this method of analysis. After the war it was realized that the method of analysis developed for military applications could be used to improve the design of many time-honored devices, and to make possible the accomplishment of hitherto impossible tasks. Dr. Norbert Wiener of the Massachusetts Institute of Technology, in his book, *Cybernetics*, has even tried to apply the methods of servoanalysis to the behavior of human beings.

Servomechanism, then, is the name attached to a large class of control systems where control is achieved by comparing the output to a reference quantity. While such systems are not new a quantitative method of analysis has quite recently been applied to them, which leads to a better understanding of their behavior, and so to the design of better servomechanisms.

In many systems the shafts through which the error-measuring device is operated are connected mechanically to the input member and to the output member respectively. It is not always possible or practical to make the required mechanical connections between the several elements of the system, particularly when these elements are remotely located from each other. In order, then, that the differential device may compare the relative positions of the input and output members of the system, these positions are transmitted to the device through electromechanical position repeating apparatus, called self-synchronous repeaters or selsyns, although other names are often used in practice (synchros, teletorque, diehlsyn).

One method of classifying these selsyns is by the general purpose which they serve:

1. Indicating selsyns, which transmit an indication of angular position to a remote station.
2. Power selsyns, which transmit power synchronously between two or more remote positions.
3. Control selsyns (alternatively called "error" selsyns and synchro-transformers) and electrical differentials which control the angular position of a remote rotating device.

As an example of the use of the indicating selsyn consider the simple problem of reading the direction of the wind from a wind vane at a weather station. The best location for the wind vane may be comparatively remote from the weather office where the observations are to be recorded. A mechanical connection from the vane to an indicator in the office by means of shafts and gears would be complicated and cumbersome, and would probably have so much inertia and friction that it would actually affect the position of the vane and introduce errors into the readings. If, however, the freely turning vane could be made to produce an electrical signal at the tower which could be transmitted by wire to the weather office and there cause a pointer correctly and continuously to indicate the azimuth of the vane the problem would be solved. An indicating selsyn system does precisely that.

The indicating selsyn will not furnish power, except for the slight amount necessary to turn a very light pointer. Occasions arise, however, in which it is necessary that two physically distant driving shafts operate in close synchronism. Thus in a vertical lift drawbridge, in which a section of the bridge is raised bodily to allow a ship to pass beneath it, it is important that the shafts operating the lifting mechanisms at the two ends of the draw turn in synchronism, so that the ends of the draw will not get out of line and jam. Power selsyns are designed and used for this purpose, among others.

The need for the third type of selsyn, to control the angular position of a remote device, may be illustrated by the situation in which an operator may wish to control the azimuth or elevation of a radar antenna too remote from the operating position for it to be turned by a mechanical linkage. An indicating selsyn cannot be used because it does not have enough power to move the antenna. A power selsyn is primarily a device for synchronizing angular speeds and will not synchronize positions sufficiently closely. What is desired is for the antenna to take precisely the same azimuth as that set on a pointer or dial by the operator. This result is accomplished by the use of a control selsyn, or synchro-transformer, which is so designed that it furnishes an error signal whenever the azimuths of the operator's dial and the antenna are not the same. The error signal then causes an auxiliary motor, or servomechanism, to turn the antenna to the correct position.

If the servomechanism is to function properly in the control system it must follow the error voltage continuously, smoothly, and as nearly instantaneously as possible. Even if the servo is a DC motor, some special form of speed control is necessary to make its speed continuously variable in either direction of rotating starting from rest. The most practical method is to supply a variable voltage to the motor armature, since control of speed by variation of the motor field is limited in its range. There are a variety of methods of controlling the speed of a DC motor by varying its armature voltage. One of these methods is the Ward-Leonard system. Somewhat similar in principle, but superior in practice because of its greater flexibility in responding to a small error voltage, is the use of a special generator known as the amplidyne to supply the motor armature current. This form of generator has only recently come on the market, but it has already been put to a wide variety of uses.

The amplidyne generator is an externally driven DC generator, outwardly similar to a conventional motor or generator. However, the ingenious addition of a short circuit and a compensating winding creates such precise electrical balance that an electric signal as small as half a watt will almost instantly release kilowatts of output power.

FIG. 2 shows a block diagram of a complete antenna remote control system. In it are shown the essential components of a modern remote control arrangement. The operator sets the positioning handwheel to the desired azimuth, thereby setting the control selsyn transmitter. The synchro-transformer produces an error voltage which feeds into the control amplifier, which in turns excites the field of the amplidyne generator. The amplidyne, driven at constant speed by the three-phase motor, generates the armature voltage to drive the servo motor and rotate the antenna to the same azimuth as the positioning handwheel. The synchro-transformer rotor turns with the antenna, and the error voltage reduces to zero when the antenna reaches the proper azimuth, thereby stopping the servomotor. A second selsyn transmitter also rotates with the antenna and operates a selsyn receiver which turns a position indicator pointer at the operating position. As a result the operator can observe at all times whether or not the antenna is following the positioning handwheel. Obviously the operator can be replaced by any kind of automatic positioning device, so that the antenna can be rotated continuously or intermittently in either direction instead of being positioned manually. Normally only the positioning and indicating selsyns are located at the control station, the remainder of the equipment being assembled at the remote antenna position.

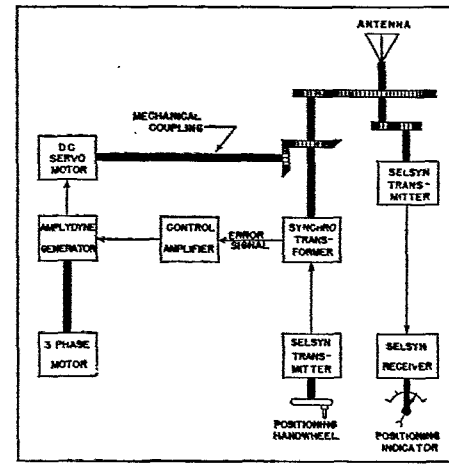


Fig. 2. Simple Selsyn-Amplidyne Control System.

It should be obvious that the same type of assembly can be used in a wide variety of military and industrial applications. Some of them which come to mind immediately are the remote control of AA guns, the automatic tracking of targets, the turning of gun turrets on shipboard or in heavy bombers, the operation of the controls in pilotless aircraft and guided missiles, and the operation of automatic steering devices

on ships or heavy aircraft. Many of these systems are much more complicated than the one described but the complexity is primarily one of detail and multiplicity of components rather than in any of the principles involved.

Although most of the servomechanisms used in radar work are electrical, many of those used in fire-control work are hydraulic. One kind of hydraulic servomechanism drives the gun by a hydraulic motor supplied with high-pressure oil from a pump. The pump is driven at constant speed and has several cylinders and pistons the stroke of which is adjustable. The volume of oil pumped per unit time is proportional to the piston stroke. The hydraulic motor is similar in construction to the pump, except that it has a fixed piston stroke. The speed of the motor varies in proportion to the rate of flow of oil. The stroke of pump is controlled through a hydraulic relay by a differential synchro motor which measures the error angle.

The first portion of this article was taken with permission from a lecture by Dr. C. N. Weygandt of the University of Pennsylvania before an Engineering Forum.

The author is also indebted to Col. Clyde R. Nichols, Associate Professor of Electrical Engineering, Purdue, for some of the remainder of the material presented here.

Louisiana Guard Sets Artillery Record

By Lt. Louis A. Beninate

"THIS is the best AA shooting I've ever seen at any Guard encampment," said Brigadier General Raymond F. Huft, Adjutant General of Louisiana, as he watched 37mm guns mounted on half-tracks, 40mm guns and quadruple .50 caliber machine guns of the 204th AAA Group knock down 21 R-Cats in one day's firing.

Fourth Army Commander Lieut. General Leroy Lutes, and Major General John T. Lewis, Commanding General, AA and GM Center, Fort Bliss, Texas, believe that the Louisiana National Guard contingent has set an enviable firing record at Fort Bliss.

Commanding the 204th AAA Group is Colonel Francis C. Grevemberg, ex-combat and staff officer with Gen. Omar Bradley's 12th Army Group during World War II. Col. Grevemberg stated upon completion of the summer training that, "results from weeks of hard study and work at home stations proved gratifying in the field."

At Fort Bliss, the Louisiana guardsmen joined forces with members of the New Mexico National Guard for joint training. The teamwork and co-ordination between the two state guards resulted in high esteem for one another's ability and excellent co-operation. Brigadier General Charles G. Sage of New Mexico commanded the guard units.

Morale stayed at a high pitch throughout the training period, and the first week end at Fort Bliss found the guardsmen enjoying trips to El Paso, and Juarez in Old Mexico.

The 204th Group consists of 1,500 personnel organized into three battalions. The 105th AAA AW Battalion stationed at Bogalusa, Franklington, Hammond and Slidell, is commanded by Lt. Col. Charlie P. Verger of Bogalusa. The 527th AAA AW Battalion stationed in New Orleans is commanded by Lt. Col. Joseph H. Cunningham, Jackson Barracks. The 769th AAA AW Battalion is commanded by Maj. O'Neil J. Daigle, Gonzales, La., and is stationed at Baton Rouge, Plaquemine and Donaldsonville.

Battery B, 769th Bn. of Baton Rouge.

FORT BLISS ROTC CAMP, 1951

By Captain Harvey H. Whitehill

. . . 100-degree weather . . . sand blowing . . . sun-baked parade grounds . . . sand under the beds . . . more 100-degree weather . . . more sand blowing . . . thunder clouds, no rain!

It was the usual Fort Bliss of late Spring and early June that greeted 1,322 Reserve Officer Training Corps cadets on June 16. The cadets represented 28 colleges and universities in the United States and Puerto Rico. It was the first time that all college ROTC antiaircraft units had trained together.

The cadets found well-grounded plans already in operation when they arrived. Movement in establishing the Camp was directed by Colonel J. H. Madison, Deputy Camp Commander under Major General John T. Lewis, Commanding General, AAA and GM Center, Fort Bliss.

Camp staff members and cadre had moved into Fort Bliss a week or more earlier and had set up a provisional regiment of two battalions. Each battalion consisted of four batteries, three platoons to the battery.

During the week before the cadets arrived, each staff section busied itself formulating training plans, personnel processing, gaining clearances on ranges, parade grounds, athletic fields, and the hundreds of other necessary details. In most cases, personal contact with established Post administrative sections was required.

Several weeks before the arrival of ROTC training personnel, a permanent party of Fort Bliss officers and men had been assigned to start preparations for the camp. A skeleton crew arranged for drawing of uniforms and other needed supplies, set up temporary administrative details, and went to work on problems that arise in the establishment of a temporary, short-term camp.

The S1 section, charged with the responsibility of personnel administration, consisted of an adjutant, a sergeant-major, a personnel sergeant-major, an administrative NCO, a payroll NCO, three clerk typists, and two mail clerks.

COLONEL J. H. MADISON
The Citadel

This group processed the records and handled administrative affairs for more than 1,300 cadets representing: Washington University of St. Louis, Virginia Polytechnic Institute, The Citadel, University of Delaware, Kansas State College, Fordham University, Hampton Institute, University of San Francisco, University of Minnesota, Michigan State College, Florida A & M, Utah State Agricultural College, Texas Western College, University of Puerto Rico, Mississippi State College, University of Maine, University of Kansas, A & M College of Texas, Northwestern State College of Louisiana, Georgia Tech, University of Washington, University of Alabama, University of Illinois, University of Iowa, University of Cincinnati, University of California, University of New Hampshire, Youngstown College.

Common subjects of the training program covered such matters as processing in and out of camp, parades and ceremonies, physical training, inspections, and visitations of established units. The antiaircraft field covered such subjects as maps and aerial photographs, terrain appreciation, military organization, signal communications, motor movements, field fortifications and camouflage, tactics, and field problems. Artillery subjects included service of the piece, computation of firing data, service firing, and weapons and marksmanship.

For the most part, physical training, drill, ceremonies and parades, inspections, and visits to established units were scheduled by the S3 section, but were left to each battery commander for accomplishment. On the whole, ceremonies and parades were of superior nature.

Several weeks before the opening target date, a decision was made by the deputy camp commander to complete instruction in such subjects as weapons and marksmanship, map reading, and other subjects not directly related to antiaircraft weapons during the early phases of the camp.

During the second week the carbine was fired on the known distance range at Castner Range, and in addition classes were held in map reading, aerial photographs, communications, field fortifications and antiaircraft artillery tactics. On the carbine range, each cadet fired the preliminary and record course. Of the 1,303 cadets who fired the carbine Course A, 1,299 qualified as marksman or better.

Map reading and aerial photograph reading was squeezed into three hours of classroom instruction.

As in all other training, the signal communication instruction was made as practical as possible. It consisted of communications security, radio operation—its characteristics and capabilities—and radio and telephone transmission procedures. The last two hours of instruction covered a CPX in which the cadets operated the nets. Voice procedures and signal security were stressed during this exercise.

Field fortifications and tactics stressed the importance of these subjects as related to antiaircraft in field operations.

During the third week, the cadets attended a course in radiological defense—defense against atomic warfare—con-

ducted by the Post chemical officer. Later training was given in motor maintenance, operation, and convoy discipline. Cadets visited the 581st Transportation Truck Company and observed motor stables in operation.

By the close of the third week, all subjects common to other branches had been covered, leaving the cadets free to devote themselves exclusively to Antiaircraft Artillery subjects.

In order to stimulate weapons training and service practice firing, two plaques—known as the Deputy Camp Commander's Award—were placed in competition. These plaques were destined for the gun and AW battery firing the highest scores during service practice firing.

Service of the piece on AW weapons included familiarization with the various weapons and gun drill. During the familiarization stage, assembly, disassembly, and functioning were covered. Instruction was given on the M15A1, M16, M55 and the 40mm gun. Small groups of cadets were arranged so that each student would become familiar with the different weapons.

Drill was conducted in the gun park by rotation of cadets on the various pieces. Stress was placed on those phases of gun drill most applicable to actual firing.

In general, two batteries received instruction at one time by the committee. Very fine support by the 59th AAA AW Battalion and machine gun sections of the 726th AAA Gun Battalion made maximum student participation possible. These units, in addition to providing sufficient weapons for small group instruction, furnished an experienced enlisted instructor with each piece of equipment.

During the fourth and fifth weeks of training, the cadets moved to Oro Grande Range for service practice firing. While the firing at Oro Grande covered a period of eight days, each battalion split its time between AW firing and AA gun firing. The AW firing line was made up of twelve sections. Six were self-propelled units and six were mobile. The SP consisted of M15A1s and M16s, while the mobile units were 40mm (towed) and M55s. Since it was not possible to maintain all cadets on the firing line at the same time, additional weapons were provided behind the firing lines for training purposes.

The cadets displayed great interest throughout the training phase on AW weapons. The firing of the weapons was especially interesting to the students, and the results were extremely gratifying. Since the batteries were firing under competition for the Deputy Camp Commander's Award, enthusiasm was especially high during record firing.

Battery D, 2nd AAA AW Battalion, consisting of cadets from the University of California, the University of Cincinnati, the University of Illinois, the University of New Hampshire, and Youngstown College, was awarded the plaque, having fired a score of 75 per cent during the competition. The plaque will remain at Fort Bliss for display in the winning battery during the 1952 Camp, and again be placed in competition at that time.

Support unit for the AA guns committee was the 726th AAA Gun Battalion, a federalized New Mexico National Guard unit. The 726th furnished one battery of M2s and three batteries of M1A1 guns. In addition to the usual range equipment, two additional computers were set up for training, and one additional SCR 584 was used.

The batteries were instructed two at a time, and by using organized crews on a rotation basis, each cadet had an opportunity to receive individual training on each piece of matériel. Service of the piece instruction consisted of gun drill, emplacement and march order, orientation and synchronization—the necessary elements of practical training needed to move into the 65-hour phase of service practice firing.

Prior to the departure for the firing range at Oro Grande South, classes were held in the computation of firing data. The instruction covered the development of ballistic corrections, trial shot problems, and calibration fire.

Upon arrival at the firing points, the batteries fired trial-shot problems, calibration fire, with the cadets performing all the necessary functions.

The training was successful judging by the scores made during record fire. Battery B, 1st Battalion, with cadets representing The Citadel, Kansas State College and the University of Delaware, won the Deputy Camp Commander Plaque for Guns by firing a record score of 73.3 points. With only three days of firing experience, some crews were putting four rounds into the air in less than ten seconds.

The firing line at the range was organized with four batteries of guns in line. During familiarization fire, two batteries were used, and only one fired during record fire. More than 5,000 rounds were expended in eight days of firing.

Plans for processing the cadets through their physical examinations were made

90mm guns manned by ROTC cadets.

ROTC cadets move into firing positions on an M-16.

as early as April. Under this system, 1,287 physical examinations were accomplished in one day—June 17.

A mess was established for each battery and for cadre officers. These were operated through the Food Service Section of the Post Quartermaster. Operating personnel was furnished by units stationed at Fort Bliss.

An athletic and recreation program was put into effect to fill free time for the cadets. Camp championships were determined in softball, volley ball, horseshoes, ping-pong and swimming events. Softball teams were organized at battery level for round-robin play and a championship series. Cadets from Florida A & M and Utah State teamed up to win the camp championship.

Two dances were held for the cadets at the Fort Bliss Officers' Mess and Club. The first was an informal, while the second was formal. Invitations to the formal dance were sent to dignitaries, both military and civilian, and to local girls and college girls attending Texas Western College. Both dances were well attended.

Time on the training schedule was allotted the chaplain for character guidance lectures and morality type motion pictures.

From time to time the Fort Bliss ROTC Camp was visited and inspected by military and civilian dignitaries. First of the military inspections was conducted by Brigadier General J. D. Balmer, assistant commandant, AA & GM Branch, TAS. Later, visits were made by General Lewis; Major General Hobart C. Gay, deputy commander, Fourth Army; Major General Andre Zeller, Inspector of Combined Artillery of the French Army; Lt. Col. F. W. McGinn, ROTC Section of Army Field Forces; Lt. Col. A. S. Wilder, Chief of ROTC Affairs, Fourth Army; Lt. Col. C. H. Jones, Jr., ROTC Affairs section of the Department of the Army; Dr. C. E. Dugdale, Northwestern State College of Louisiana; Dean Thomas E. Hawkins, Hampton Institute; Dr. Howard W. Jones, Youngstown College; Dr. M. C. Rhaney, Florida A & M; Colonel Blake R. Van Leer, Georgia Tech; Colonel D. S. McAlister, The Citadel; Dean W. G. Bowling, Washington University of St. Louis; and Dean E. M. Thomas, Texas Western College. The latter group of civilian educators was present at the camp during service practice firing and watched cadets from their various schools actually serving as gun crews on antiaircraft weapons.

An outstanding number of individual awards were made available to cadets. Honor cadets were chosen at battery, battalion and camp levels. Each received a properly inscribed gold or sterling silver belt buckle. Marksmanship medals given for high record firing with the carbine were presented to four cadets, there being a tie for second place. The awards were furnished by the El Paso Chamber of Commerce.

Cadet Floyd C. Adams, Jr., Athens, Georgia, and The Citadel, won top individual honors at the camp, when he was selected as the Camp Honor Cadet. Adams was an outstanding cadet during the training period, and is an outstanding student on his campus. Battalion honor cadets were Clifford G. Houchins, University of San Francisco, for the 1st Battalion, and John R. Klussendorf, University of Illinois, for the 2nd Battalion.

In addition to these top selections, Battery honor cadets were selected. In order, according to lettered battery, the selections were: Eugene G. Jones, Virginia Polytechnic Institute; Loma A. Allen, The Citadel; James E. Hill, Hampton Institute; and Edward B. Baffico, University of San Francisco, in the First Battalion. Second Battalion battery honors went to Jack H. Younce, Utah State Agricultural College; Charles L. Warner, Mississippi State College; Michael J. Bellipanni, Northwestern State College of Louisiana; and John Pete, Jr., Youngstown College. It is well to note that ROTC units have been established at Northwestern State College of Louisiana and Youngstown College for only one year.

Cadet Thomas A. Reed, Texas Western College, won the carbine marksmanship high score, firing 195 out of 200. Earl S. Ashton, The Citadel, and James E. Hill, Hampton Institute, were tied for second, while Lawrence N. Birchetta, Hampton, placed third.

Major General Terry de la M. Allen, U.S.A., Ret., was invited for the second consecutive year to deliver the graduation exercise address. He was introduced by General Lewis, who later awarded commissions to 144 second lieutenants. Awards for outstanding achievement were awarded by Colonel Madison. The invocation and benediction were delivered by Chaplain Luther W. Evans, Fourth Army Chaplain, who had two sons in the training class as cadets from The Citadel.

Following graduation the cadets departed for their homes, singing a little jingle which was developed during the training period:

Fort Bliss is a blot on the whole human race,
But cheer up, dear brothers, we're leaving this place.
We've had lots of gripes, and we've been on the run,
But thinking it over—we've had lots of fun.

Col. Blake R. Van Leer, president of Georgia Tech, meets the members of a crew.

GOVERNOR BYRNES VISITS CAMP STEWART

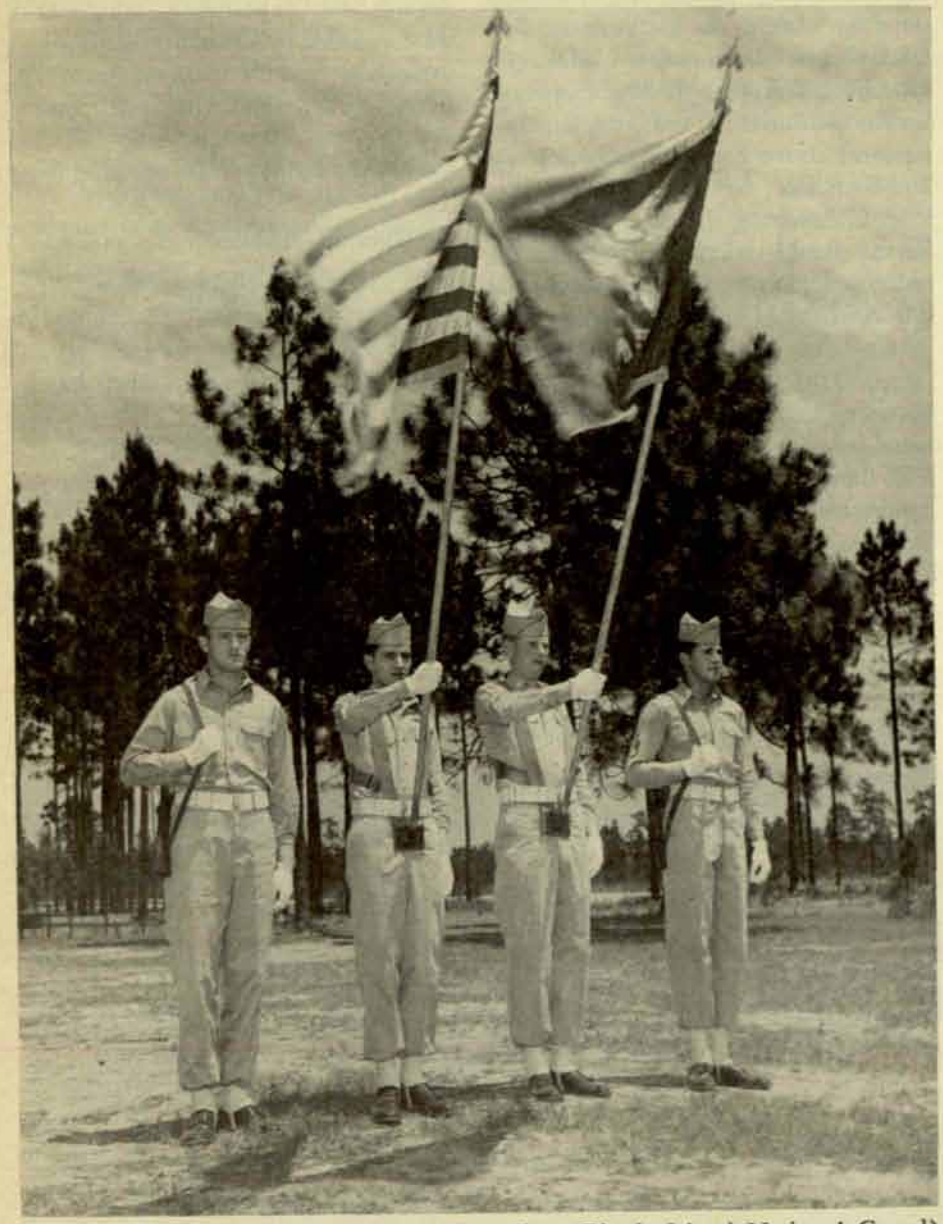
"Forces of the United Nations should not withdraw one foot from positions they now occupy," South Carolina Governor James F. Byrnes told units of his state's National Guard and Organized Reserve Corps at Camp Stewart, Ga., on July 21st. "These positions should not be surrendered for reasons other than military necessity."

Speaking prior to a mounted review, by the Carolina units taking their summer field training, Governor Byrnes pointed to the fine record of the National Guard in the two world wars and said: "The Guard today has even better soldiers for they are better trained." Taking the review with the Governor was Major General James Dozier, adjutant general of South Carolina, who accompanied him to Camp Stewart.

Major Julian B. Crayton, Jr., Greenville, S. C., commanding the 698th AAA AW Battalion, S.C.N.G., led the review. Other South Carolina troops participating included the 316th AAA Group, ORC, Col. Donald M. White; 376th AW Battalion, ORC, Lt. Col. Thomas J. Thorne; the 331st and 335th Operations Detachments and the 246th Army Band, S.C.N.G.

North Carolina units also in summer training at Camp Stewart included the 252nd AAA Group, Col. Kenneth Corbett, Wilmington, and the 725th AAA AW Battalion, Capt. John C. Maultsby, Whiteville.

During August, the 214th AAA Group, Col. Jack C. Johnson, commanding, and other National Guard AAA units from Alabama, Florida and Georgia conducted intensive training at Camp Stewart.



Color guard of the 705th AAA Gun Battalion (Rhode Island National Guard) recently rated the finest at Camp Stewart. Pfc. Robert E. Turner, Sgts. Marino Coletta, Charles H. Dexter and Joseph M. Perrotti.

* * *

Lt. Col. John C. Parker, former assistant chief of staff; Lt. Col. John E. Burrows, former commander of the 35th AAA AW Battalion, and Lt. Col. Peter L. Urban departed from Camp Stewart on August 1st to attend the Command and General Staff School at Fort Leavenworth.

* * *

Col. Donald B. Herron, the deputy post commander, retired on August 31st after 33 years' service in the Army. Col. and Mrs. Herron plan to make their home in Florida.

* * *

Col. Lloyd A. Corkan is now the chief of staff of the Third Army AAA TC.

* * *

Lt. Col. John J. Deane, GSC recently arrived to take over duties at G1.

* * *

Col. Robert G. Jones, G3, recently announced the plan to award six gold cups at Camp Stewart during the Fall for proficiency in antiaircraft gunnery. The cups will be presented by the commanding general, Brigadier General Clare H. Armstrong, to the winners as determined by the G3 records division.

Competing for the cups will be the 11 battalions of the 47th AAA Brigade now in training under Col. Gerald G. Gibbs, commanding officer.

The battalion having the highest score in each of five record firing practices will be presented one of the five cups. A sixth and larger cup will be awarded to the battalion with the highest over-all average.

Status Of Training Literature Manuals

By Major B. G. Oberlin

No new AAA manuals have come off Department of the Army presses since the last report in the ANTIAIRCRAFT JOURNAL. Manuals prepared at AA & GM Br, TAS, and forwarded to OCAFF for final approval and publication include:

FM 44-19, Examinations for AA Artilleryman, which contains an outline for testing expert, first class, and second class gunners in various types of AAA units.

FM 44-57, Service of the Piece Multiple Caliber .50 MG Motor Carriage M16 and Multiple Caliber .50 MG Trailer Mount M55.

FM 44-60, Service of the 40-mm Gun and Associated Fire Control Equipment.

TM 44-225, Orientation for Artillery, which covers surveying, astronomical observations, and a complete description of grid systems with many illustrations and charts.

FM 44-1, AAA Employment, which covers command, control, and relationships with other arms in the employment of units above the battalion level.

Manuals in various stages of preparation include:

FM 44-38, Service of AA Directors M9, M9A1, M9A2, and M10.

TM 20-300, Radio-Controlled Airplane Targets.

FM 21-80, Recognition Training, which is being prepared as a revision and will describe the approved methods of teaching recognition of aircraft.

CHANGES

Recently approved doctrines and principles require changes to manuals already in print. The following changes are in preparation:

C1, FM 44-2, will cover indirect fire methods for light AAA, incorporating results of tests at Fort Bliss.

C1, FM 44-4, describes the use of the fire unit analyzer and sets forth the tactical principles for employment of medium and heavy AAA. C2 to this same manual contains general corrections to the text, including the elimination of fuze error in the analysis of fire.

C1, TM 44-225, contains general changes in AAA service practice.

TRAINING CIRCULARS

The last training circular to come off the press was TC No. 18, Basic Tactical Principles for the Employment of Medium and Heavy Antiaircraft Artillery Guns in Air Defense. A number of new and interesting training circulars have been prepared and are waiting for final approval and publication.

A new circular will describe the organization and functions of the AAAOC and AAAIS. AAAIS now stands for AAA Information Service instead of Intelligence Service. AAAOC represents the antiaircraft artillery operations center, replacing the former antiaircraft operations room (AAOR).

Basic tactical principles for light AAA will be covered in another new circular. Use of the fire unit analyzer with light AAA will be included.

The new antiaircraft fire control system T33 will be explained fully in a circular which will describe it and cover service of the AAFCS T33.

The Skysweeper, T69, downgraded in classification to RESTRICTED, is discussed in detail in a circular with many illustrations on the service of the T69.

Service of the AN/TPS-1D, an acquisition radar used in the AAA warning system, is the subject of another new circular.

Circulars scheduled for early completion at AA & GM Br, TAS, will cover the tactical employment of the T69 (Skysweeper), the improved 40-mm gun on carriage M2A1, and the twin 40-mm gun on carriage M19 with recent improvements in design.

SPECIAL TEXTS

A useful handbook on trouble shooting for the SCR-584 has just been printed at AA & GM Br, TAS. In 64 pages, arranged in tabular form, troubles which may be encountered are named, symptoms are described, remedies are suggested, and references are listed. The Book Department stocks this handbook for sale at 50 cents a copy under schedule number 5000.

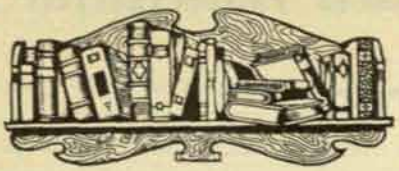
Other special texts which may be expected in the next few months will cover service of a surface-to-air missile, a surface-to-surface missile, and the perimeter defense for AA units.

TRAINING FILMS

Two films on the employment of light AAA in a close support role will be made at Fort Hood with personnel drawn from AAA units at Fort Bliss as soon as scenarios can be rewritten to incorporate lessons learned from Korea. Light AAA experience in Korea has received much attention in pictures and stories in the ANTIAIRCRAFT JOURNAL for the past year. A training film on the AAFCS T33 is scheduled for production during this fiscal year.

Silver Star

Private First Class Frederick B. Duke, Battery D, 21st AAA AW Bn (SP). On the morning of 16 February 1951, while supporting an infantry assault near Naegong-ni, Korea, the gunner on Private First Class Duke's half-track received a severe wound which necessitated evacuation. While two of the crew assisted the injured man, Private First Class Duke and a comrade operated the turret to maintain a heavy volume of effective fire. When devastating machine gun fire impeded the advance, he ran to a nearby tank and used its machine gun to point out the emplacement to the crew. By thus directing the destruction of the main hostile strongpoint he enabled friendly forces to secure the objective and drive the enemy into disorganized retreat. Private First Class Duke's courage, initiative and selfless devotion to duty are in keeping with the great traditions of the service. x x x Minnesota.



BOOK REVIEWS

THE SOVIET STATE AND ITS INCEPTION. By Harry Best. Philosophical Library. 448 pp.; $6.00.

The book outlines the developments of this gigantic nation, even beyond the limitations of its title. Early chapters present historic studies of Russian geography, history, government and religion, and add to the well written documentation a discussion of the Russian people, their industries and their social life. Having provided an adequate factual background, the author then traces the Russian ingestion of revolutionary doctrines, culminating in the October Uprising. Mr. Best concludes the first section of his book with a description of the seizure of power by the Bolsheviks and the initial establishment of the Soviet State.

In discussing the leaders of the new state, Mr. Best is in full agreement with other historians, for he states "Never before had partisanship on so large a scale, so narrow and so bloody-minded a cast, taken over the reins of a government in a great nation."

The need for preparedness is advanced in the author's warning that America must be on armed guard at all times to maintain world peace.

Those who advance the socialist concept will gain comfort from many statements of the author, one of which advocates the acceptance by America of a program wherein there are no unfair or inordinate accumulations of wealth in the hands of individuals or groups. To this he adds a condemnation of those who would allow graft and corruption in government, and further suggests that we in America have an obligation to put our own house in order if we are to combat Communism effectively. Throughout the entire book there is emphasis upon "giving the devil his due."

Mr. Best's latest contribution will hold the reader's interest and can be extremely valuable to those who desire a general knowledge of the Soviet State and the Russian people.

COMDR. W. T. GREENHALGH, USN.

Silver Star

Sergeant James T. Patterson, 21st AAA AW Bn. (SP).

"On the night of 24-25 April 1951, the half-track on the left of Sergeant Patterson's vehicle was virtually isolated during a strong hostile attack. After several casualties had been sustained, he secured a machine gun and fought his way through the surrounding enemy to enable an aid man to reach the beleaguered crew. After locating the main strongpoint of the foe, he exposed himself again to deadly fire to direct its complete destruction. Sergeant Patterson's valorous initiative and selfless devotion to duty and his fellow soldiers are in keeping with the high traditions of the United States Army. x x x Arkansas."

TITO AND GOLIATH. By Hamilton Fish Armstrong. MacMillan. 300 pages. Price $3.50.

CRACKS IN THE KREMLIN WALL. By Edward Crankshaw. Viking. 279 pages. Price $3.50.

Two authors, acknowledged experts in their fields and eminently qualified to write on their respective subjects, have brought out two new and unrelated books that, taken together, give the reader an over-all picture of the problems that Soviet Russia is faced with in its own carefully sealed-off back yard.

Mr. Armstrong gives an interesting and highly illuminating background story on Tito's Jugoslavia, explaining the relationship of the Jugoslav Communist party with Moscow, past and present.

Mr. Crankshaw, who also wrote "Russia and the Russians," delves into the many weaknesses of Stalinist Russia and examines a hopeful possibility that an all-out war with Soviet Communism may be avoided.

Either book is worth while reading and the two shed much light on the difficulties faced by Stalin in keeping his own house in order. Neither author points to complacency on the part of the West as being an antidote but Mr. Crankshaw particularly pin-points *Stalinism* rather than *Communism* as the enemy to be faced and shows how far the present Russian regime has deviated from the social doctrine of Lenin.

No easy solution to the existing threat to the free world is offered in either book but the fact of Tito's defection from Moscow and the multitudinous conflicting forces within the Soviet orbit, point to a possible downfall of Russia's present masters.

Both books are recommended reading.
—RWO.

14th AAA COMMAND HISTORY. 268 pp.; $2.00.

Latest of World War II operational histories to be published is a chronology of the 14th AAA Command and its subordinate units in the war in the Pacific.

Prepared in Japan under the direction of Major General William F. Marquat, wartime commander of the unit, the book gives the story of the movements and operations of the command and its components.

It is well illustrated with photographs and graphical studies. The annex also includes a roster of the officers and warrant officers with all of the AAA units and other historical data.

Former members of the units of General Marquat's command will want this authoritative record of their achievements.

Books Received

STRUGGLE FOR THE MEDITERRANEAN—1939-1945. By Raymond De Belot. Princeton University Press. . $4.00

UNDER THE SOUTHERN CROSS. History of the Americal Division. Combat Forces Press $6.00

AMERICAN CAMPAIGNS. By Matthew Forney Steele. Combat Forces Press $6.00

MELVILLE GOODWIN U.S.A. By John P. Marquand. Little, Brown . $3.75

AMERICAN DEMOCRACY AND MILITARY POWER, By Louis Smith. University of Chicago Press $5.00

News and Comment

AA General Officer Promotions

Four wartime brigadier generals who served with the AAA have again been promoted recently to their World War II rank.

Brig. Gen. Hobart Hewett commands the 31st AAA Brigade at Fort Lewis, Washington, the same unit he took from Camp Haan, California to the Mediterranean Theater in February 1943. Since the war he served with the Chief of the Army Field Forces on research and development and later served in Hawaii.

Brig. Gen. Nathaniel A. Burnell, II, who commanded the 52nd AAA Brigade in Europe, has recently been assigned as Chief of the U. S. Military Assistance Advisory Group in Belgium and Luxembourg. He had previously been Chief of the Army Section of the MAAG in The Netherlands.

Brig. Gen. Harry F. Meyers, commander of the 74th AAA Brigade in the ETO during the late war, is presently commanding the 56th AAA Brigade at Camp Edwards, Mass. Since the war he has served as Military Attache to Pakistan and with the Central Intelligence Agency in Washington, D. C.

Brig. Gen. Marshall S. Carter is presently assigned as Director, Executive Office of the Secretary of Defense. He served on the General Staff during World War II and was later detailed to the Department of State as Special Assistant to Secretary Marshall. He was later assigned as Deputy to the American Ambassador in England for Military Assistance Programs for Europe.

General Balmer Transferred

Brigadier General Jesse D. Balmer relinquished his duties as assistant commandant of the Antiaircraft Artillery and Guided Missile Branch of the Artillery School, Fort Bliss, Texas early in August to assume his new assignment with The Joint Chiefs of Staff in Washington.

General Balmer has served as assistant commandant since December, 1949.

During World War II General Balmer served as the Commandant of The Field Artillery School at Fort Sill. Recognized as an authority on Armored Artillery Warfare, he became a warm enthusiast in the Guided Missile field during his tour at Fort Bliss.

Brigadier General Frederic L. Hayden, 38th AAA Brigade, took over the duties as assistant commandant pending the permanent assignment of General Balmer's replacement.

BLISS TO HONOR ARTILLERYMEN

Major General John T. Lewis, commanding the AAA and GM Center, Fort Bliss, Texas, is preparing a list of outstanding former artillerymen, for whom new buildings, training fields, roads, and other facilities at Fort Bliss will be named.

He requests our readers who are interested to send in recommendations.

Central Army Antiaircraft Command

The Central Army Antiaircraft Command was established in May with headquarters at 25 East 12th Street, Kansas City, Mo. The commanding officer is Colonel Donald J. Bailey, the well-known antiaircraft artilleryman who commanded the 12th AAA Group with the XIX Army Corps in Europe during World War II.

Prior to this assignment Colonel Bailey was the Executive of the Western Army AA Command. His staff includes Lt. Col. James H. McCann, Jr., Major Horace C. Lorek, Major Roy H. Lundgren and WOJG Ralph C. Gallion.

This command constitutes the Army element of the Central Air Defense Force, commanded by Maj. Gen. George W. Acheson. Its responsibility extends over an area of eighteen states in central United States. Both headquarters are located in the Twelfth and Walnut streets area in Kansas City.

Joint Air Defense Board

The Joint Air Defense Board has been organized recently at Colorado Springs, Col., in close proximity to the Air Defense Command. Maj. General Grandison Gardner, A.F., is chairman. The board will include Army, Navy and Air Force members in approximately equal

ARMY SECRETARY VISITS BLISS

Lt. Gen. LeRoy Lutes; Lt. George H. Sim, Comdg. Off., Btry. A, 516th AAA Gun Bn.; Hon. Frank Pace, Secty. of the Army; Maj. Gen. John T. Lewis; and Mr. Karl L. Bendetsen, Asst. Secty. of Army, chat before a 120mm antiaircraft gun at Hueco Range.

numbers. The Army personnel for the board will be provided by the Artillery from officers with an antiaircraft background. Colonel Arthur E. Wilson has been assigned as the Senior Army Member. Colonel James M. Donohue also serves with the board. The board is already a going concern, and has requested that anyone with a problem in, or an idea to improve, air defense will contact the board.

Membership Addresses

We regret to announce that for security reasons we are not permitted to publish this year our Association Membership listing and addresses. We shall hope to renew that splendid feature as early as conditions permit.

To The Editor:

In the article Airborne AAA in the July-August issue Captain H. W. C. Furman stated: "Airborne antiaircraft, however, has made little progress. We have a poorly defined mission, a poor system of employment and are inadequately equipped for maximum employment . . ." So true. The fact that the 187th Airborne Regimental Combat Team utilized its AA Battery as a 75mm Howitzer unit furnishes ample proof.

The Joint Airborne Troop Board was activated 1 July, 1951, for the specific purpose of coordinating matters pertaining to the development of doctrine and procedures, the evaluation of joint tactics and techniques, equipment, and joint training. Major General W. M. Miley, an airborne pioneer and former commander of the 17th and 11th Airborne Divisions, is assigned as Director.

The board will include an airborne AA and GM Member. Ideas and suggestions to be passed on to this officer are urgently solicited, and may be addressed to the Secretary.

Fort Bragg, N. C. — C. W. Bright, Major, Arty. Secretary

To The Editor:

Major M. R. McCarthy's article on bore gauges in the July-August issue of the Journal is thought provoking in the point made that trial fire may be impracticable. However, I am not at all sure that the case has been proved.

It is always a good idea to know where the shells are going to burst by actually seeing them burst there. Atmospheric conditions are more variable than the interior ballistics of a gun. Methods of computing ballistic wind and density are not perfect. In summary, trial fire is needed in order to make corrections for all possible variables.

Trial fire as now conducted does not make it possible to correct separately for variations in wind, density, velocity and fuze running time. However, techniques have been developed for use with the T33 Fire Control System whereby all four of these principal variables can be corrected by firing and analyzing a single problem. This should enhance the value of trial fire.

Before embarking on a program of issuing bore gauges, therefore, the least that should be done is to:

(1) *Evaluate the accuracy of a bore gauging system in predicting muzzle velocity.*

(2) *Evaluate the relative effects of errors in meteorological corrections as compared to errors in muzzle velocity. This would require a careful analysis of a large number of trial fire problems.*

Let's have some factual information before spending the taxpayer's money.

Bell Tel. Labs., Whippany, N. J. — A. A. Currie, Lt. Col., Arty, USAR

Your Rank and Address

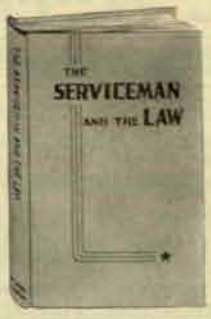
One loyal subscriber's wife along with the renewal check writes: "I do think the Journal should look at a promotion list once in a while. Pappy's had his eagles since December, '50." She's right and we appreciate everything about the note, particularly her interest.

We are trying to do better, but we do have a problem in keeping up with the changes in addresses and in rank. Please notify us of your own changes. The card attached in each Journal can be used for convenience.

Silver Star

Corporal Lynwood E. Collins, Battery C, 21st AAA AW Bn (SP). On 16 February 1951, near Yongdongpo, Korea, Corporal Collins' half-track was suddenly attacked by a hostile patrol which was attempting to cross the Han River. Although the entire crew was forced to seek cover in the initial onslaught, he made his way back through the encircling foe, mounted the blazing driving compartment and moved the vehicle into firing position. He then assisted in manning the machine-gun mount to inflict heavy casualties on the enemy and drive the remainder to flight. Corporal Collins' valorous initiative and selfless devotion to duty are worthy of emulation. x x x Georgia.

MILITARY JUSTICE 1951



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BALLOT

UNITED STATES ANTIAIRCRAFT ASSOCIATION

The Vice-President and four members of the Executive Council are to be elected on this ballot, to replace officers whose terms of office expire December 31, 1951.

Please record your vote by making an "X" in the appropriate square or indicate your choice by writing the name of your candidate. Ballots received with signatures, but with no individual votes recorded, will be considered proxies for the President of the Association.

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

Ballots received after December 31, 1951, cannot be counted.

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

FOR VICE-PRESIDENT

☐ Major General Willard W. Irvine, Commanding General, Army Antiaircraft Command.

☐ _____

FOR MEMBERS OF THE EXECUTIVE COUNCIL (Vote for four)

☐ Brigadier General Robert W. Crichlow, Jr., Army Secretary, Research and Development Board, Department of Defense.

☐ Colonel Norman E. Hartman, Chief, AA Section, Artillery Branch, Career Management Division, AGO, Department of the Army.

☐ Lt. Colonel Francis X. Bradley, Assistant Secretary of the General Staff, Office of the Chief of Staff, Department of the Army.

☐ Major James E. Calkins, Assistant G1, 8600 ASU, Department of the Army.

☐ _____

☐ _____

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☐ _____

Signature_____

Rank & Organization_____

Address_____

5-51

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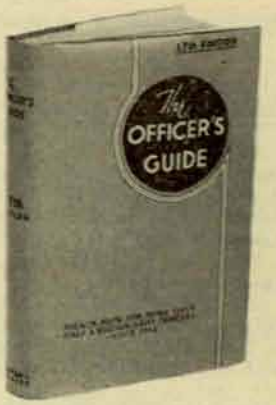

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ARTILLERY ORDERS

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Promotions and Demotions not included.

COLONELS

Buchwald, Donald F., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Burgess, George R., to Office Secy of Def, Wash, DC.
Button, Ronald E., to Sixth A 6514th ASU Oreg ORC Instr Gp, Vancouver Bks, Wash.
Carey, George R., to First A, Sta Comp, Cp Edwards, Mass.
Crowell, Evans R., to ROTC Instr Gp, Tex Western College, El Paso, Tex.
DeRita, Joseph, to 4051st ASU Arty Sch, Ft Sill, Okla.
Donohue, James M., to A Sec Joint Air Def Bd 8601st AAU, Ent AFB, Colorado Springs, Colo.
George, Max S., to Hq Sp Wpns Comd 8452d AAU Sandia Base, Albuquerque, N Mex.
Hayden, John C., to Stu Det AWC, Carlisle Bks, Pa.
Hennessy, Harold P., to 51st AAA Brig, Chicago, Ill.
Hollingshead, Frank A., to Hq Fourth A, Ft Sam Houston, Tex.
Howell, James F., to Hq AAA Comd 8577th AAU, Ent AFB, Colo.
Lepping, Aloysius J., to FEC, Yokohama, Japan.
Owen, Ernest T., to OC of S, Wash, DC.
Roper, Harry McK., to FEC, Yokohama, Japan.
Sherburne, Thomas L., Jr., to Third A, 82d Abn Div, Ft Bragg, NC.
Stubbs, Guy H., to Sixth A 6513th ASU Calif ROTC Instr Gp, Univ of San Francisco.
Wilson, Arthur E., to A Sec Joint Air Def Bd 8681st AAU, Ent AFB, Colo.
Worthington, James M., to AWC, Carlisle Bks, Pa.

LIEUTENANT COLONELS

Backes, Robert M., to FEC, Yokohama, Japan.
Branson, Lounsbury, to FEC, Yokohama, Japan.
Brown, Charles M., to 102d AAA Brig, Ft Wadsworth, NY.
Buynoski, Adam S., to Hq AAA Comd 8577th AAU, Ent AFB, Colo.
Difusco, Manrico P., to Hq E Army AA Comd 8577th AAU, Stewart AFB, NY.
England, Sanford P., to Stu Det Hq First A, Harvard Univ, Boston, Mass.
Ganter, Frederick R., to FEC, Yokohama, Japan.
Gilchrist, Richard W., to FEC, Yokohama, Japan.
Kuhn, William F., to 705th AAA Gun Bn, Indiantown Gap, Pa.
Moore, James M., to FEC, Yokohama, Japan.
Munson, Thomas V., to FEC, Yokohama, Japan.
Pell, Kenneth E., to Hq First A, Governors Island, NY.
Ranney, Daniel A., to W Army AA Comd, 8577th AAU Hamilton AFB, Calif.
Santilli, Carl, to 4052d ASU AAA and GM Cen, Ft. Bliss, Tex.
Smith, John A., to FEC, Yokohama, Japan.
Stone, Robert O., to W A AA Comd 8577th AAU Hamilton AFB, Calif.
Sweek, Jacj G., to Stu Det AWC, Carlisle Bks, Pa.
Turner, Hugh J., Jr., to 8th AAA Bn, Camp Lucas, Mich.
Von Kolnitz, Henry, to 59th AAA AW Bn, Ft Bliss, Tex.
Williams, Ralph I., to FEC, Yokohama, Japan.

MAJORS

Abramoski, James W., to FEC, Yokohoma, Japan.
Backes, Herbert W., Jr., to FEC, Yokohama, Japan.
Brown, Burrell G, to AFF Bd No 1, Ft Bragg, NC.
Burgess, George R., to Office Sec of Def, Wash, DC.
Daniel, Robert J., to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Davies, Sam L., to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Doane, Leslie O., to Stu Det, AA and GM Br, Arty Sch, Ft Bliss, Tex.
Fadden, Victor J., to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Foster, William B., to FEC, Yokohama, Japan.
Fuller, Carl W., to Stu Det AA and GM Br, Arty Sch, Ft. Bliss, Tex.
Fulmer, Richard P., to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Geddis, Howard A., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
George, Max S., to Hq Sp Wpns Comd, 8452d AAU, Sandia AFB, N Mex.
Herren, John C., to Office Secy of Def, Wash, DC.
Hudak, Edward M., to US Army Alaska, Big Delta, Alaska.
Jackson, James M., Jr., to 51st AAA Brig, Chicago, Ill.
Kehs, Charles H., to FEC, Yokohama, Japan.
Kuznicki, John F., to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Kyne, Edward G., to FEC, Yokohama, Japan.
Linck, Oswald H., to FEC, Yokohama, Japan.
Loos, Lawrence E., to FEC, Yokohama, Japan.
Lorck, Horace C., to 710th AAA Gun Bn, Ft Myer, Va.
Lundgren, Roy H., to Cen A AA Comd 8577th AAU, Kansas City, Mo.
Malone, Robert H., to Stu Det AA and Gm Br, Arty Sch, Ft Bliss, Tex.
Mauck, Charles A., to FEC, Yokohama, Japan.
Moyer, Maynard G., to 80th AAA Gp, Ft Totten, NY.
Scott, Laurence A., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Stanwood, Arthur H., to 3d AAA Gp, Cp Stewart, Ga.
Stenstrom, Lawrence E. V., to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Vogel, John F., to FEC, Yokohama, Japan.
Whitaker, Edwin H., Jr., to Hq Second A, Ft Meade, Md.
Worley, Thomas G., to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Worthen, Frank P., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Yaple, Wellington, to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Young, Cecil G., Jr., to Hq Sp Wpns Comd, Sandia AFB, N Mex.

CAPTAINS

Anderson, Forrest E., to FEC, Yokohama, Japan.
Andersen, Oscar W., to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Armstrong, John L., to FEC, Yokohama, Japan.
Arndts, Virgil G., to FEC, Yokohama, Japan.
Arvin, Charles R., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Attebery, John J., to FEC, Yokohama, Japan.
Auer, Richard M., to AFF Bd No 4, Ft Bliss, Tex.
Baer, Adolph J., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Bardolph, Peter P., to FEC, Yokohama, Japan.
Bender, Robert M., to FEC, Yokohama, Japan.
Biersack, Kennetj D., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Bowling, William E., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Bowman, Joseph A., to 43d Inf Div, Cp Pickett, Va.
Brooks, Ralph D., to FEC, Yokohama, Japan.
Carter, Roy C., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Catrell, Frederick A., to FEC, Yokohama, Japan.
Chadderton, George W., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Cookerly, Ernest S., to OCOFS, Wash, DC.
Cornell, John J., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Darrow, Eugene A., to Stu Det Arty Sch, Ft Sill, Okla.
Davis, Robert L., to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex.
Dean, Albert V., to 3444th ASU Sta Comp, Cp Stewart, Ga.
Decker, Wilson K., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Dietsch, Howard J, to Stu Det AA and GM Br, Arty Sch, Ft Bliss, Tex
Doesburg, Charles E., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Dolan, William M., to FEC, Yokohama, Japan.
Dorian, Robert A., to 4052d ASU AAA and GM Cen, Ft Bliss, Tex.
Douthitt, Charles L., to FEC, Yokohama, Japan.
Everett, Don W., to FEC, Yokohama, Japan.
Fimiani, Joseph C., to FEC, Yokohama, Japan.
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Carr, William, to FEC, Yokohama, Japan.
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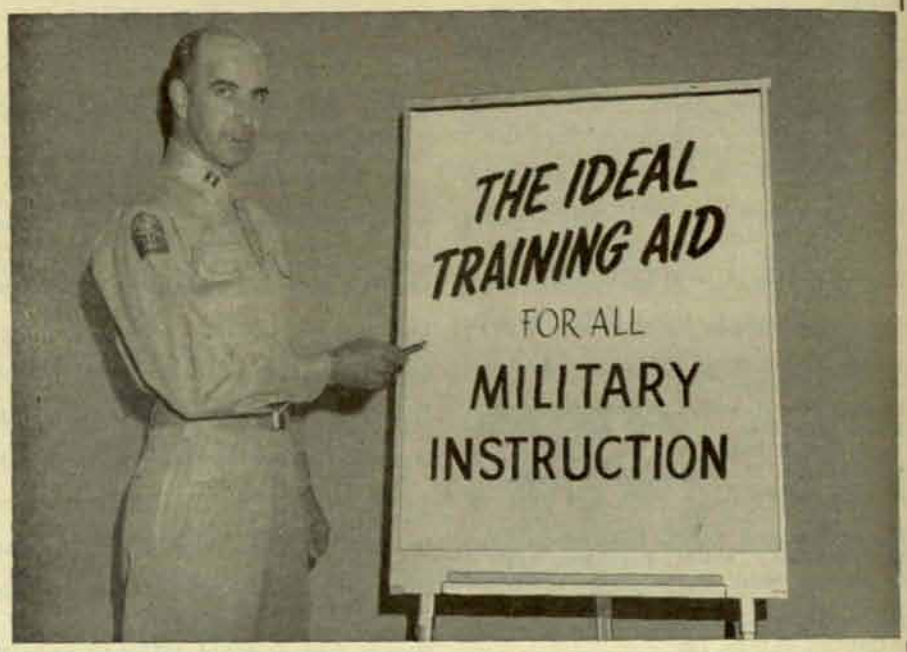

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