

# The FIELD ARTILLERY JOURNAL



MAY-JUNE 1950



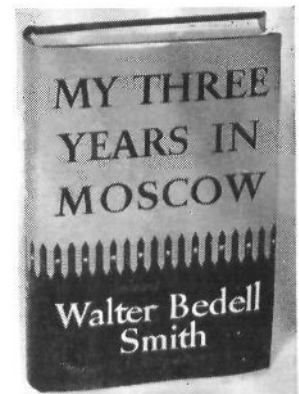
SECRETARY OF THE ARMY FRANK PACE, JR.

## RUSSIA

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By LIEUT. GEN. WALTER BEDELL SMITH

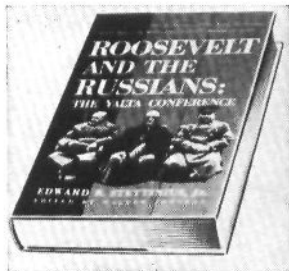
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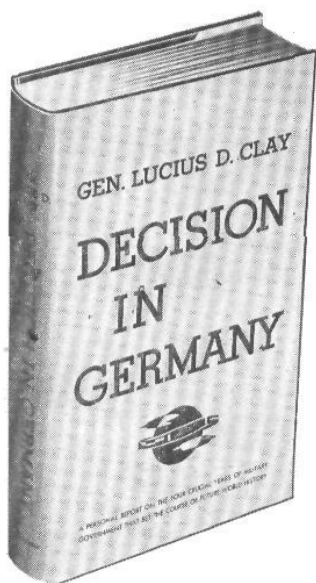
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# AVE ATQUE VALE!

The special meeting of the Association, decided upon at the Annual Meeting in November 1949 and referred to in the minutes thereof in the January-February 1950 issue, was held at the Army and Navy Club in Washington on 3 April 1950. The purpose of the meeting, as announced, was to decide finally on the action to be taken on the proposed merger with the Infantry Association. The result of the returns to the ballot that went out in our November-December issue was announced: 97½% in favor of the merger. The result of the returns to a similar ballot sent out in the Infantry Journal was also announced: 98% in favor of the merger. As an interesting sidelight, the Secretary was able to present the result of an independently conducted poll on the question, taken at The Artillery School: overwhelmingly in favor of a merger. There followed some general discussion of the matter, including questioning of the Secretary of the Infantry Association, who made himself available for the purpose. It was then moved, seconded, and unanimously passed "that the Secretary be directed to proceed with the negotiation with the Infantry Association toward the amalgamation with that Association of the U. S. Field Artillery Association on the terms and with the provisions agreed to by the two associations in correspondence on the matter." After some further general discussion and questioning, the meeting adjourned.

At present the legal representatives of the two Associations are engaged in drawing up a draft of a Constitution for the "Association of the United States Army," the name decided upon for the new Association. This draft will in due course be presented to the two Executive Councils (who will have a joint meeting if necessary to settle any controversial points) for ratification. Following ratification, the two Councils will unite to form the Executive Council of the new Association, and will function as such for the first year of its existence.

This issue of the Field Artillery Journal is its last as a separate entity—rounding out almost forty years of uninterrupted publication. The first issue of the new magazine, The United States Army COMBAT FORCES Journal, will be that for August. The names of the Journals to which it is the successor will appear on the cover and the masthead, directly under the new name. All present subscribers of both Journals will receive the new magazine to the end of their current subscriptions without increase in cost. Field Artillery Journal subscribers will thus benefit by receiving a monthly magazine, which it is planned will be increased in size and will carry adequate coverage on technical, tactical, and historical artillery.

All present members of our Association are urged to support the new Association and its Journal by prompt renewal of their subscriptions, by getting new members for the Association, and by submitting articles of artillery or general army interest, suitable for publication (in this connection, it may be of interest that the new Association will be in a position to pay appreciably larger authors' fees than we have been able to). The address of the new Association will be 1115 17th St. N. W., Washington 6, D. C.



★      ★      ★      ★      ★

PUBLISHED BIMONTHLY BY THE UNITED STATES FIELD ARTILLERY ASSOCIATION WHICH WAS FOUNDED IN 1910 WITH THE FOLLOWING OBJECTS—AS WORTHY NOW AS THEN

*The objects of the Association shall be the promotion of the efficiency of the Field Artillery by maintaining its best traditions; the publishing of a Journal for disseminating professional knowledge and furnishing information as to the field artillery's progress, development and best use in campaign; to cultivate, with the other arms, a common understanding of the powers and limitations of each; to foster a feeling of interdependence among the different arms and of hearty cooperation by all; and to promote understanding between the regular and militia forces by a closer bond; all of which objects are worthy and contribute to the good of our country.*

★

**The  
UNITED STATES FIELD ARTILLERY  
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*Organized June 7, 1920*

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The Field Artillery Journal is not a medium for the dissemination of Department of the Army doctrine or administrative directives. Contributors alone are responsible for opinions expressed and conclusions reached in published articles. Consistent with the objects of our Association, however, The Field Artillery Journal seeks to provide a meeting ground for the free expression of artillery ideas in the changing present.

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**"Contributes to the Good of Our Country"**

**VOL. 40**

**MAY-JUNE, 1950**

**No. 3**

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Published bimonthly by The United States Field Artillery Association. Publication office: 3110 Elm Avenue, Baltimore, Md. Editorial and executive offices: 1218 Connecticut Avenue, Washington 6, D. C. Address all communications for publication to the Washington office. Entered as second class matter August 20, 1929, at the post office at Baltimore, Md. Accepted for mailing at the special rate of postage provided in Sec. 1103. Act of October 3, 1917, Copyright, 1950, by The United States Field Artillery Association, Subscription rates: \$3.00 a year; foreign, \$3.50; single copies, 60 cents; additional single copies to subscribers, 50 cents. The Field Artillery Journal does not accept paid advertising. It does pay for original articles accepted, but unsolicited manuscripts must be accompanied by return postage if they are to be returned.

# An Army Artillery Commander?

By Colonel William J. Thompson, FA

## THE PRESENT SITUATION

What is the present situation on artillery command and staff functions at the Army level? Does the Army Artillery have a commander or not? If not, should there be a commander for the Army Artillery, and should he be also the person who performs artillery staff functions for the commanding general of a field army? Do field artillery and antiaircraft staff and command functions intermesh at the Army level? Should they?

It is the purpose of this article to discuss these questions and present some thoughts looking toward their answer.\*

Let us look at the record, to see what the Field Manuals set forth on doctrine and organization. FM 6-20, "Field Artillery Tactics and Technique," May 1948, has this to say (*italics are the writer's*):

'13. GENERAL. In *armies*, corps, and divisions, the senior officer in the artillery headquarters is the artillery commander and also functions as artillery officer on the special staff. The senior officer in the artillery section of an army group or higher headquarters is designated artillery officer. The *army*, corps, and division artillery commanders command the field artillery, antiaircraft artillery, rocket, and guided missile units retained under *army*, corps, and division control respectively. These artillery commanders act as advisors to their respective commanders on artillery matters."

In general consonance with this statement of doctrine, Field Manual 101-10, "Organization, Technical and Logistical Data," August 1949, shows, in

paragraph 3*b*, a diagram of organic Army troops which include a proposed Hq & Hq Btry, Army Artillery, with a strength of 15 officers, 1 warrant officer, and 62 enlisted men. The same diagram of organic Army troops shows the Army Headquarters organized under T/O&E 200-1. The current version of this T/O&E is dated 26 October 1944, and includes an Artillery Section of 18 officers, 1 warrant officer, and 40 enlisted men. It likewise includes, by Changes No. 5, dated 3 August 1945, an AAA Section of 11 officers, 1 warrant officer, and 15 enlisted men, when a Hq Btry, Army AAA, (T/O&E 44-200-1) is not provided. The Hq Btry, Army AAA, is authorized when two or more AAA brigades or the equivalent in groups are included directly under Army or when the equivalent of one brigade, but no brigade headquarters, is included under Army.

Regarding the existence of separate Artillery and Antiaircraft Staff Sections in the Army Headquarters, it is probable, in line with current policy, that a combined Artillery Section, including both FA and AAA functions, awaits only a revision of the T/O&E for an Army Headquarters. These staff sections should certainly be combined, just as FA and AAA command and staff functions have been combined at other levels, and, in my opinion, with material savings in personnel. I shall discuss the staff section later.

Field Manual 101-10, paragraph 47 *b*, includes in the type field army the following FA and AAA Army Troops: the Hq & Hq Btry, Army Artillery, mentioned above; one Hq & Hq Btry, AAA Brigade (the Hq Btry, Army AAA, is not mentioned); three Hq & Hq Btrys, AAA Group; and an assortment of AAA Battalions and heavy artillery battalions, including guided missiles.

Thus far in our examination of the record, therefore, it appears that artillery on the Army level has a Commander and an Artillery Officer who is one individual, and that he is provided with a Hq & Hq Btry, Army Artillery, to execute his command functions, and

with an Artillery Section (and an AAA Section) in the Army Headquarters to execute his staff functions.

However, that this is not firm is indicated by the following quotation from Training Circular No. 13, Department of the Army, 7 December 1949, "Principles of Fire Support Coordination," which states in Section 1, paragraph 1:

"Interested agencies will consider specifically whether a requirement exists for an artillery command echelon at the army level and, if so, whether the same officer should perform both the command and staff function for the army headquarters."

It is apparent, then, that there exists some divergence of thought on the command status of Army Artillery. Before examining the merits of the issues, let us see what has to be done by artillery (FA and AAA) personnel at the Army level.

1. Someone must act as staff advisor to the Army Commander on artillery plans to support current and contemplated operations; on allocation of artillery to divisions and corps, and that to be held directly under Army; and on related matters of artillery personnel, organization, equipment, training, and logistics. In more general terms, someone must act as the coordinator and advisor to the Army Commander on all matters concerning the artillery (FA and AAA) with the Army.
2. Someone must command the field artillery, if any (normally heavy artillery, including guided missiles and perhaps rockets), held directly under Army control.
3. Someone must command the antiaircraft artillery, if any, held directly under Army control.

## WORLD WAR II EXPERIENCE

Before attempting to discuss the question of who should perform these duties and what means should be given

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The article "Corps and Army Artillery," by Major Paul E. Pigue, CAC, in the Jan-Feb 1950 *Journal*, gives a clear picture of certain aspects of the staff duties of an Army Artillery Section, but it does not cover the question of combined FA-AAA staff functions and seems to assume that Army Artillery will be almost entirely AAA. These are open questions.

him, let us look at our experience in World War II. Throughout the war, the Artillery (FA) Section of an Army was substantially that indicated in the current T/O&E 200-1, Headquarters, Army. The Artillery Officer was purely a staff officer on the Army Commander's staff.

In contrast, the AAA Section had a variegated history. In early 1944 it was a normal staff section, somewhat smaller, as I recall, than the Artillery Section. By a new T/O&E, dated 26 October 1944, the AAA Section was eliminated with the exception of a single individual, a major general, who was authorized as the AAA Commander when two or more Army AAA brigades, or the equivalent in unbrigaded groups, were directly under Army. This individual became a brigadier general when the equivalent of one brigade in groups was directly under Army; the position ceased to exist when only one AAA brigade with its brigade headquarters was provided directly under Army.

As far as is known to the present writer, no Army headquarters, in the European Theater at any rate, eliminated its AAA Section on the basis of the changed T/O&E. The AAA Officer and his section had already proved their value many times over. No sensible Army Commander was going to break up a going concern which was performing essential staff functions in his headquarters, functions which could not be taken over by any other section, particularly in the middle of a campaign, without a major upheaval in the headquarters. This view was sustained by Changes No. 5 to T/O&E 200-1, already mentioned, which provides a small AAA Section in the absence of a Hq Btry, Army AAA. In passing it should be noted that this section is now headed by a brigadier general, the major general vacancy having gone the way of all flesh. So much for Army Staff functions, FA and AAA.

Now as to the World War II command set-up for FA and AAA directly under Army control. In the European Theater there was usually provided one FA brigade for each Army, to command the field artillery held directly under Army control, and an AAA brigade to provide the same

function for the AAA units. Speaking for the Field Artillery set-up alone, since I did not have the experience to comment on the AAA, in practice the combination of an Army Artillery Section with staff functions only and a FA brigade commander with command functions for the Army field artillery worked out very well indeed. This does not mean, however, that this set-up is necessarily the best that can be provided.

In the first place, it is thought by some field artillerymen that there is no justification for the Army FA brigade headquarters, inasmuch as there is no justification for holding any field artillery directly under Army control. This view holds that the heavy artillery (and therefore, in the future, presumably the rocket and guided-missile units) should be attached to corps or lower, as dictated by the importance of the lower unit mission. In my opinion this view is not sound. Extremely long-range, super-heavy artillery (and even more so, the guided missile) is a special purpose weapon. It must be available for use by the Army Commander in his most critical zone of combat where it can bring great weight to bear on the course of the battle. The guided-missile units, and perhaps special-purpose rocket units, naturally increase the validity of this view. Plainly, if units are to be shifted from zone to zone, under Army control, there must be available a suitable headquarters to control and direct their operations.

(It may be noted, in passing, that the view that there is no need for a separate echelon of Army field artillery represents a general feeling on the part of subordinate commanders that they should be given *all* available means to assist them in the accomplishment of their mission and that the next higher headquarters should not retain under its own control any means which the lower echelon feels that it could use. Many individuals in division artillery, for example, would prefer to have a proportionate share of the corps artillery attached to them rather than have any artillery operate under corps control. This is a natural and very human position, but one which is not soundly based.)

#### ARMY ARTILLERY COMMANDER AND STAFF OFFICER

Assuming, therefore, that a requirement exists for Army Artillery as such, should we retain the World War II organization of a separate Army Artillery Commander and a separate Artillery Officer on the Army Commander's staff? It is my view we should not retain this dual organization, but should combine the functions of the Army Artillery Commander and the Army Artillery Officer. Although the separation of functions, to repeat, worked out very well in combat in World War II, there are major disadvantages. In the first place, under the World War II set-up, the FA brigade commander, although of course a general officer, simply becomes in the minds of the Army Headquarters the commander of another attached unit. Correspondingly, the Artillery Officer, not having command status, is simply another staff officer, although of course an important one whose views carry great weight on artillery matters with the Army Commander. In my experience there were many occasions when the planning, staff coordination, and direction of operations, to include coordination with corps and division artillery, would have gone more smoothly had a single individual been both the Army Artillery Commander and the personal staff advisor on artillery matters for the Army Commander. The analogy with the combined command and staff functions of the Corps Artillery Commander is plain.

#### COMBINED FA AND AAA STAFF SECTIONS

If we assume for the purposes of discussion, then, that artillery staff and command sections on the Army level are going to be combined, what should we do about the present T/O&E 200-1, Army Headquarters, which has separate Artillery and AAA Staff Sections? I believe it is evident that these staff sections should be combined into one Artillery Section. This can be accomplished with an Artillery (FA and AAA) Section of a strength of some 26 officers, 1 warrant officer, and 50 enlisted men, effecting a saving (over the present separate FA and AAA

sections) of 13 officers, 1 warrant officer, and 5 enlisted men. This Artillery Section would comprise the usual subsections with staff responsibilities for artillery personnel and administration; intelligence; organization, training, and operations; logistics, supply, and maintenance. It would include, in addition, sections for Artillery Army Aviation (Air OP's) and for special AAA functions. General AAA functions would be handled, as are FA functions, under the appropriate S-1, 2, 3, and 4 subsections of the combined Artillery Section.

A SOLUTION

Now to bring all these threads together, I propose the organization shown on the chart for the Army Artillery Command and Staff, with a single officer who functions both as Artillery Officer for the Army Commander and as Commander for the Army Artillery.

DISCUSSION

It will be noted that the Army Artillery Commander, a general officer, has been provided with a deputy, who is also a general officer, as well as with the staff executive, normally present in any staff section, and an Assistant Army Artillery Commander, both of whom should be senior colonels. The provision of a general officer as Deputy Army Artillery Commander is based upon the necessity for one of the two—the Army Artillery Commander or the Deputy Artillery Commander—to be always at Army Headquarters and the other forward with the command echelon of the Army Artillery. This is analogous to the corps artillery command and staff set-up, which provides for tactical command and control of the corps artillery through the Corps Artillery Fire-Direction Center and an assistant or deputy commander for continuity of artillery staff functions at the corps headquarters.

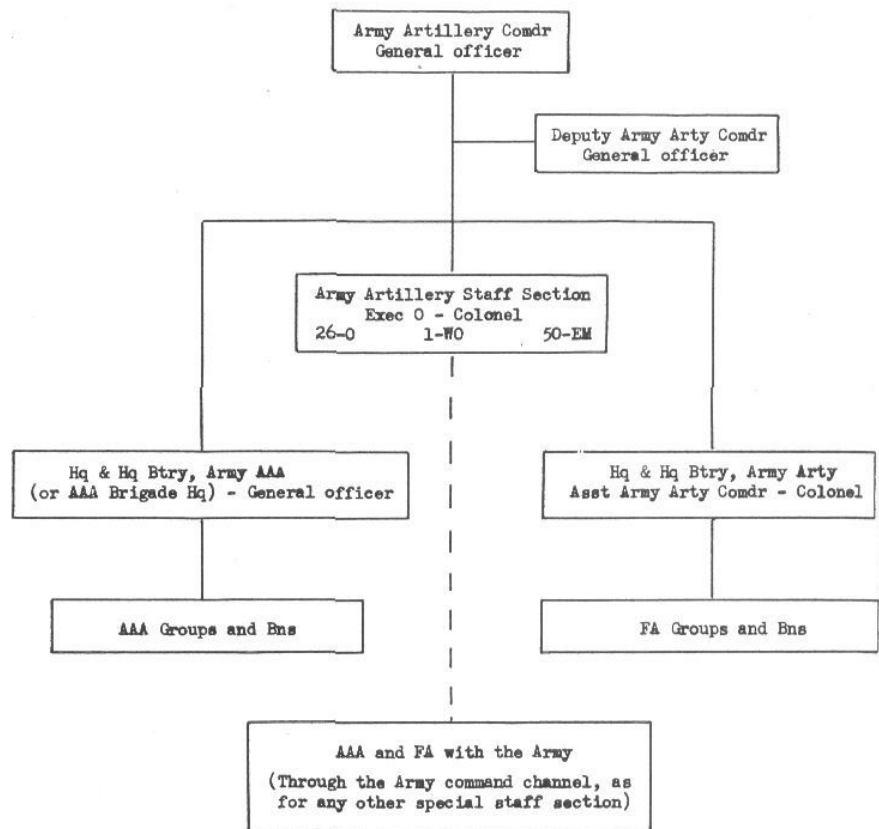
The proposal to combine the functions of the Army Artillery Officer and the Army Artillery Commander in one person is open to objection by those who feel that the artillery staff functions on the Army level are of such major importance that they warrant the full-time attention of the senior artillery

officer with Army Headquarters, and that these staff functions will inevitably suffer if the Army Artillery Officer is also made Army Artillery Commander. In my opinion, there is no question as to the great importance of artillery staff functions on the Army level. Under our system of General Reserve Artillery organized into independent, separate battalions (even though the group headquarters has now been made administrative and may have battalions assigned to it), a higher artillery headquarters unquestionably has a major task to perform. Having been actually engaged at one time on this task, I am not inclined to underestimate its complexity, difficulty, and importance.

Continuing this view, it is similarly advanced that the senior artilleryman in the Army Headquarters must have staff functions only, because it is essential that he be free, unfettered by additional command responsibilities, to keep himself intimately acquainted with the thinking of the Army Commander and the Army staff; with current operations and problems; with plans for projected operations; and

with the effect of all these upon the allocation, employment, maintenance, and supply of the artillery with the Army. Having likewise been intimately engaged in these aspects of the Army Artillery Officer's duties, I am the first to agree to their importance. The necessity for close contact between the senior artilleryman in the Army Headquarters and the Army Commander and his staff can hardly be overestimated; indeed, it is in recognition of the importance of the Army Artillery Commander's staff functions that I propose to provide him with an Executive Officer to maintain continuity of staff functions and to head up the Army Artillery Section, with an Assistant Artillery Commander who will head up the operational and combat aspects of the Army Artillery, and further with a Deputy Army Artillery Commander who will be the *alter ego* of the Army Artillery Commander, with the particular duty of maintaining direct personal contact with the Army Commander and the senior Army staff when the Army Artillery Commander is absent from Army

ARMY ARTILLERY (FA and AAA) COMMAND AND STAFF ORGANIZATION.





Headquarters.

In conclusion, I believe that the proposal for an Army Artillery Commander, who functions in a dual rôle as commander of the army artillery and as artillery staff officer to the Army Commander, is in consonance with the functions provided for the senior artilleryman in the corps and the division. It provides unification of artillery—field and antiaircraft. It insures that a single individual, properly supplied

with both staff and command agencies, can be depended on, by the Army Commander and his staff, both for staff advice on all artillery matters and for the employment of the special - purpose army artillery. It simplifies the organizational structure and eliminates many rough spots which formerly had to be dealt with on the basis of tactful personality or skillful negotiation. Its advantages appear definitely to outweigh its disadvantages.

## John Paul Jones Had A Sailor . . .

By Jerome Kearful

"I have just begun to fight!" is a call that has come ringing down through the years. It goes back to 1779, when John Paul Jones, his ship in a near-sinking condition, shouted defiance at his British opponent. His words were vindicated by the exploit of a single American sailor!

John Paul Jones, the incomparable adventurer and American patriot, had assembled a small squadron of ships and, in 1779, had been carrying on a series of daring raids along the coast of Scotland. As Jones and his ships pressed further south, the inhabitants of the coastal towns, as well as the coastwise English shipping, were thrown into a frenzy of anxious anticipation. The English press and public joined in a combined threat against the foolhardy American and a demand that the British Navy speedily set about regaining its prestige on the high seas. The war was coming close to home for the English!

The dauntless Jones himself was ready and looking for some of the enemy's fighting ships. Raiding towns along the coast and disrupting English shipping was an effective prosecution of the war, but the American commander was in a mood to challenge whatever the British Navy was prepared to offer! John Paul Jones was never one to count the odds too closely when great events were in the making.

Keeping a close watch for whatever

might appear from beyond the horizon, the American ships sailed on down the English coast. Of the small squadron, only two ships, Jones' flagship the *Bon Homme Richard*, and the smaller *Pallas*, were suitable for active combat. No wonder the English called Jones foolhardy! Then, shortly before sunset on September 23, 1779, the Americans sighted the enemy.

The British vessels turned out to be a fleet of merchantmen, this time under convoy of two fighting ships, the *Serapis* and the *Countess of Scarborough*. In armament, the *Richard* was evenly matched with the *Serapis*, while the *Pallas* could fairly take on the *Countess of Scarborough*. It was a fair challenge, and the adversaries picked out their opponents and prepared to close in combat. At the first sight of the Americans the merchantmen had ploughed straight for the coast, so the sea was clear for the epic struggle that was to follow.

By the time the fighting ships had maneuvered into position, darkness had fallen and action began by battle-lanterns. At this time the ships were off Flamborough Head, and, attracted by the returning merchantmen, a crowd collected to catch the impending distant flash of gunfire and the sound of guns.

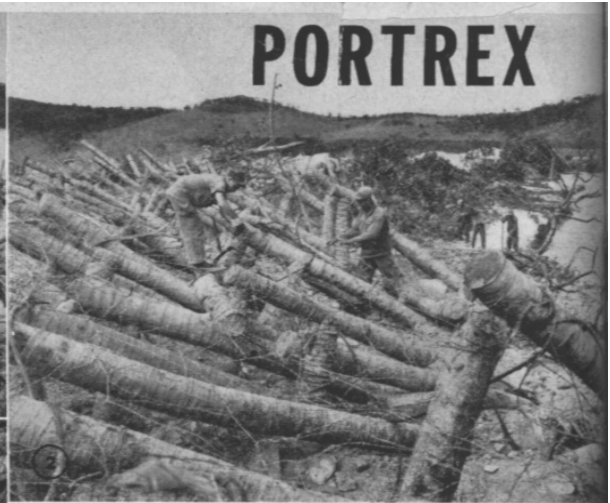
Disaster struck the *Bon Homme Richard* as she fired her own first broadside. Two of her heavy guns blew up.

Casualties and damage were heavy, and it seemed that the battle had been lost before it had even got under way. The loss of fire power left the *Richard* unable to cope with the *Serapis*, and practically at the mercy of the powerful British ship.

Jones decided that, lacking fire power, his only chance was to come to close quarters with his opponents. As the struggling *Bon Homme Richard* maneuvered to come alongside, British guns raked her again and again, nearly cutting the ship in half along the water line. Jones himself put grappling lines on the *Serapis*, but before the Americans could attempt to board her, she veered off. Again Jones ordered his stricken ship brought alongside, as the British guns wrought terrific havoc. The American cause seemed completely lost, and some of Jones' officers favored surrender. It was then that the British commander asked Jones if he wished to strike his colors, and it was then that Jones threw back his challenge, "I have just begun to fight!"

As the *Bon Homme Richard* was brought alongside the *Serapis* the second time, her crew remaining fit for action tried to force an opportunity to board her, but it seemed hopeless. No one noticed that, high on a yardarm overlooking the British ship, a single American sailor was inching his way out. He carried a bucket of grenades! When this fearless man had reached a precarious but strategic place, he threw a grenade that landed in a supply of British powder. It caused a terrific explosion, and immediately started a raging fire aboard the *Serapis*!

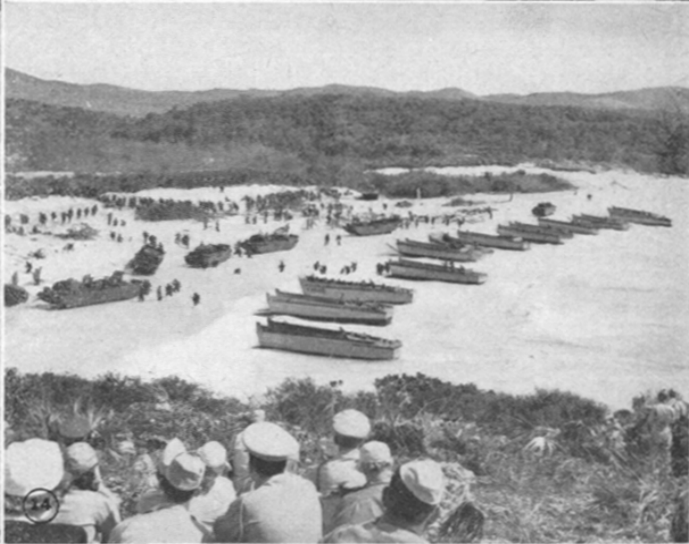
With that one fearless exploit, a single sailor turned what seemed defeat into victory. Shortly, the British commander of the *Serapis* was forced to strike his colors to John Paul Jones, and the most memorable naval engagement of the Revolutionary War was over! In the meantime, the *Pallas* had overcome the *Countess of Scarborough*, and this double victory soon resounded throughout Europe and America. It was a blow to England, and a tonic for the American States, that would never have happened but for a gallant commander and the intrepid action of a single sailor!



1. Obstacles on RED Beach
3. Lt Gen W. H. H. Morris, Jr., and Brig Gen E. L. Sibert inspect a beach obstacle
5. A piece of "Aggressor" artillery
7. The drop on the air strip; part of the "invasion fleet" in background

2. Obstacles on BLUE Beach
4. Brig Gen E. L. Sibert, in "Aggressor" uniform, describes the beach obstacles to Col B. A. Day
6. View of maneuver area, invasion beaches, and air strip, from VIP Hill
8. The 75mm pack how battery drops

# GLIMPSES



9. Watching the air drop are Sec of the Navy Matthews, Lt Gen Morris, Sec of Defense Johnson, and Maj Gen Ray Porter
11. The first wave hits RED Beach
13. A 105mm how battery in DUKWs approaches the beach
15. A DUKW on RED Beach; observers line the brow of the hill

10. A portion of the VIP Hill chow line
12. Armored tracked landing vehicles approach RED Beach
14. Congestion on RED Beach before the obstacles were breached
16. Ashore, coupling a 105mm how to a DUKW

# Defensive Artillery in PORTREX

By 1st Lt. F. F. Hickey, Jr. FA

"... Concentration Blue Nin-er, LST unloading, Fire for Effect." Soon the time-fire bursts appeared over the LST ramp—it was 8 March, 1950—D-Day, Exercise PORTREX. The Aggressor nation was defending the island of Vieques, which, for PORTREX, became in November of 1949 a peninsula on the eastern coast of Puerto Rico, and now the US forces were attempting to drive off Aggressor.

Aggressor forces occupying the maneuver area, which is about 7,000 yards in width and 6,000 yards in depth, included Group Coco, a task force composed of an infantry regiment, an artillery battalion, an AAA battalion, a tank company, an engineer company, and other units.

These organizations—the 1st and 2d battalions of the 65th Infantry Regiment, the 504th FA Bn, the 98th AAA Gun Bn, the 18th Rcn Sqdn, and the 531st Engr (C) Co, all stationed in Puerto Rico, and the 1st Bn 33rd Infantry from Panama—occupied the defense zone in January and February and began the construction and organization of defensive obstacles and positions.

The 504th FA Bn, composed of Puerto Rican troops and participating in Vieques Island maneuvers for the third successive year, was assigned the task of setting up beach defenses on Blue, Green, and Yellow beaches.

Blue Beach, the largest landing beach in the zone of action, has a usable length of over 800 yards. The artillerymen, turned engineers, built cocoanut-log abatis, interlaced with steel cable, barbed wire, iron strapping, and trees, which extended from a swamp inland to both ends of the usable beach. An anti-tank ditch was bull-dozed and blasted out in front of this obstacle. A 15-foot-high wall of sand was bulldozed at the water's edge and two mine fields were laid, one just behind the beach and one just in front of the antitank ditch. Farther inland from Blue Beach, the 504th constructed two dirt-filled log-crib anti-tank obstacles with a combined length of 250

yards. These cribs were designed to delay and hamper invasion forces which landed across Blue Beach and attempted to move westward through the zone of action, the landing beaches all being located on the south coast of the island. Barbed wire, woven through the trees and brush, was the principal obstacle employed on Green and Yellow Beaches, which are much smaller than Blue.

The terrain over which the battle was to be fought is generally hilly with scattered tree belts and is rutted with stream gulleys. North of Red Beach, the westernmost landing beach, there is relatively flat plain bounded on the north and east by a high range of hills.

Aggressor's plan of defense was generally to delay the enemy on the beaches by employment of artillery and small units, to hold the line of hills which runs east and west about 1,500 yards inland and which affords complete observation of landing beaches and the flat plain, and to counterattack rapidly and forcefully with infantry and armor whenever the opportunity for maximum exploitation should occur.

The mission of the artillery was direct support of the infantry. The two firing batteries of the 504th became the 4th and 5th Batteries of the 2nd Bn, 135th Aggressor Artillery Regiment, armed with 120-mm guns, which have a maximum range of 14,000 yards. These 120s were represented by the battalion's 105s. In addition to its organic units, the 504th was given operational control of the 54th Mortar Company and the 54th Howitzer Battery, both of which are integral parts of the Infantry Regiment under Aggressor T/O. The mortar

company consisted of nine 120-mm mortars, represented by 4.2" mortars, having a maximum range of 6,600 yards, and the howitzer battery was armed with 75-mm howitzers (pack).

The above-mentioned units were organized to operate as two battalions of artillery. The two batteries of the 504th, plus the 54th Howitzer Battery, were employed as one battalion, and the 54th Mortar Company constituted the other battalion. The FDC of the 504th controlled all fires of both battalions. It was set up on a dual basis, the battalion of howitzers having an HCO, VCO, and 3 computers and the mortars having a combination HCO-VCO and 1 computer. Thus, FDC was organized to fire two battalion fire missions simultaneously.

The positions of these units were organized on a deliberate defensive basis. They included sandbagged and camouflaged gun pits, personnel shelters, CPs, and ammunition shelters. Battery truck parks were located for the most part in stream beds, which had natural walls 8 to 12 feet high and thick overhead concealment. The battalion CP installations were placed in a similar-type dry stream bed.

Forward observers and liaison officers were furnished the infantry battalions and a command liaison officer worked with the infantry regimental commander. These officers and their sections accompanied the infantry units during the rehearsals of counterattack and withdrawal which preceded the actual exercise, thus being afforded the opportunity to become thoroughly familiar with the infantry plans and personnel. The battalion also established two static OPs to insure continuous and complete observation of the landing beaches, particularly at the time when the FO's should become concerned completely with the enemy action inland which directly involved their supported units.

In this deliberate defensive set-up all wire was placed overhead, which resulted

## ILLUSTRATION CREDITS

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**U. S. Army: Cover**

in a minimum of wire-communication failures. A forward switching central was established to conserve wire. Wire lines to the liaison officers were laid through planned infantry battalion rear CP locations to the initial CPs actually occupied, so that in event of withdrawal the liaison section merely had to tap in on its original lines without additional wire-laying to the rear. Liaison officers were provided with BD 71 switchboards from the firing batteries, which enabled them and their forward observers to communicate with maximum ease and flexibility.

On D minus 4, ships of the invasion advance support group appeared off the south coast and began the preliminary shelling of the area. Concurrently Naval Air from carriers and Air Force planes from bases in Puerto Rico began bombing and strafing the defensive positions. These were live missions, actually striking an impact area adjacent to the maneuver area, and were performed from D minus 4 through D-Day. The invasion force gained air superiority on D minus 4 and maintained it throughout the exercise.

At dawn on D-Day the large invasion fleet was in position off the southern shore of Vieques. Shortly after dawn heavy air activity commenced and the DUKWS, LCVPs, LCMs, and other landing craft were observed in rendezvous areas at sea. At 0745 hours air activity increased, particularly in the area of the flat plain, previously noted, which contains a large airstrip. At 0800 36 C-82s appeared from the west and dropped a parachute battalion of infantry and an artillery battery near the eastern end of the strip. Aggressor immediately counterattacked from the hills in the north with infantry and armor, and the 504th went into action, receiving credit for the virtual annihilation of one company of paratroopers. Counterbattery fire was not needed in this phase, owing to the fact that the airborne artillery was dropped further west than planned and landed within Aggressor lines, thus being effectively neutralized immediately. The airborne troops attacked towards Hill 105, which bounds the plain to the east, but were stopped by infantry and artillery fire.

At 0920 hours the landing craft began leaving their rendezvous at sea and

headed for the beaches. Red and Blue Beaches were hit by the first waves at 0930 and at that time, according to prearrangement, the artillery fires were shifted to combat the sea invasion, leaving the containment of the airborne troops in the plain to the organic infantry support weapons. For the next three or four hours the beach areas received continuous artillery fire. Many remunerative targets presented themselves, including landing craft unloading, troops, DUKWs, bulldozers, and later tanks. At H plus 2, bulldozers became first priority artillery targets in Aggressor's attempt to keep the beach obstacles effective as long as possible. Considerable success was attained by the 504th in the destruction of three of these bulldozers.

Infantry elements of the invasion forces soon began to move inland and the artillery maneuvered some of its fires to oppose these units, still, however, conducting fire against the beach areas. After the first vehicles of the invasion force broke through the obstacles on Red and Blue Beaches, the majority of artillery fires were employed against the forces and materiel moving inland.

During the remainder of D-Day the build-up of troops and supplies across the beaches continued, and at darkness Aggressor held a line well in advance of the high range of hills which gave such excellent observation of the beaches and drop zone.

During the night of D-Day, Aggressor withdrew to the main battle positions generally located along the high hills overlooking the beaches. From that time on, the maneuver developed into a pattern of continuous pressure and attack all along the line by the US invasion forces and withdrawal and counterattack by Aggressor. Priority of Aggressor artillery fire was given to counterattacking forces. Some smoke missions were fired to cover these counterattacks.

The fire-direction center of the 504th received, throughout the course of the maneuver, many more requests for fire missions than could actually be fired. There were 262 missions fired and marked during the exercise, which lasted until 0900 Saturday, 11 March (D plus 3).

Six fire-marking teams were provided to mark the fires of the battalion and attached units. These teams were composed of one officer and four enlisted men each and were under the supervision of an artillery umpire. When FDC received a fire mission, the umpire radio operator in FDC checked his map to see which fire-marking team was closest to the target and notified that team to proceed to concentration (or coordinates) so and so. The team then proceeded to the target and upon arrival reported "Ready to mark." In the meantime the data had been sent to the guns and, at the S-3's command, firing and target marking commenced. Simulators represented the firing at the gun positions and the fire markers fired air bombs from Very pistols, notified the umpire with the unit fired upon of the number of volleys, calibre, and back azimuth to the gun position; this information to be used for shell reports. The umpire then assessed casualties. The superior manner in which the fire-marking teams worked greatly augmented the effectiveness of the battalion.

There was occasional delay in firing missions owing to the distances that the fire markers had to travel, but the realism added by the system overbalanced the delays. The fire-marking teams, for safety reasons, were not allowed to work at night. A substitute system of notifying umpires with the US Forces of the time and location of night harassing and interdiction fires was employed. The target locations reported by the observers were very accurate throughout the exercise, principally due to the fact that the observers, having worked on the terrain for over two months, were very familiar with it.

Artillery communications played an important role relative to the intelligence function. The Group G-2 soon learned to rely heavily on reports from the artillery battalion S-2 for information of the enemy, particularly for the location of enemy front lines. On D plus 1, the primary mission of the static OPs was changed to that of reporting enemy information to the S-2, who had a direct telephone line to G-2 for the purpose of relaying this information.

On D plus 2, an invasion force SOI, complete with call signs and frequencies, was captured by Aggressor forces and turned over to the 504th FA Bn S-2. On the morning of D plus 3, having set the US Forces division artillery and artillery battalion frequencies on an SCR 608, the S-2 was able to raise havoc in the invasion force artillery nets. At various times he acted as US Force fire-direction center and forward observer, causing authentic missions not to be fired and missions to be fired by US Forces on their own troops. US Force transmissions were slowed down greatly as a result of this interference and of their having to require authentication on messages and fire missions.

It was found that the employment of pneumatic equipment, which when inflated gives the appearance of actual weapons, can be of great deception value. Two batteries of these dummy guns were used, together with simulators. Simulators provide smoke, flash, and noise similar to actual firing. The dummy batteries were victims of repeated air strikes throughout the exercise, while the actual batteries were never struck.

Counterbattery fire by the battalion was generally limited to early morning missions because of the delay involved in moving fire markers and the continuous close fire support needed by the infantry.

The only counterbattery fire marked on the Aggressor artillery was directed at the mortar company, with a resultant loss of two mortars and some personnel casualties.

Realism achieved a high peak in PORTREX. All Aggressor forces wore the Aggressor uniform and carried Aggressor identification, and the officers were given Aggressor names. Vehicles all carried Aggressor markings, a green triangle on a white field. There were no imaginary men or imaginary weapons used to simulate real ones. The method used in marking Artillery fire is vastly superior to the former use of flags for that purpose.

Many valuable lessons were learned by the 504th in the preparation and execution of PORTREX. These lessons will constitute a valuable asset to the battalion when it moves to Panama in the near future.

## THE ONE-NIGHT, NO-BULLET WAR

By Harold Helfer

ONE of the strangest campaigns in the annals of military matters occurred on a day in 1896, when the British invaded the Gold Coast of Africa. The "ammo" ship that the British brought along with them contained not a single rifle or bullet and they waged and won the war in a single night, without firing a bullet and without the regular armed forces disembarking.

The war was against King Prempeh, of Ashanti. Officially, it was to reform "barbaric" conditions in that part of the world. The king had 3,333 wives and a habit of chopping off the heads of people whenever he got the whim. But cynics pointed out that the British interest in the region coincided with the discovery of gold.

The British Army, however, was concerned with just how to go about conquering that country. Ashanti was a land of jungle, as dense as any in the world. There wasn't a road through there. The natives, who were acquainted with firearms and were dead shots, could hide like monkeys in trees

and brush, and pick the British soldiers off from a thousand different ambushes. A big army wouldn't be any better off than a small one; considering the logistics, even worse. Then there was the fact that this tropic world was a source of strange and fatal diseases for the white man. Let one go down with a malady and it was apt to spread through his outfit with the rapidity of a forest fire. A prolonged struggle could well be ruinous to the British Army.

It seemed in the nature of a well-nigh impossible task to get the best of that savage land. And yet, of course, something had to be done. Orders were orders. . . .

So on this day in 1896 British ships anchored off the Ashanti coast. But its fighting force of 786 Britishers, 400 men from an India regiment, and 500 hussars remained aboard. Instead, a small outfit of engineers went ashore. With them were some natives from a neighboring country. The natives began chopping a path through the woods. They also carried boxes from the "ammo" ship.

Suddenly, some rifle fire rang out. Ashanti warriors were making themselves known. The British party stopped where they were. They opened the boxes. In a few minutes the air was filled with skyrockets, pinwheels, Roman candles, Coney Island rockets, and firecrackers. The "ammo" the British had brought along with them was Fourth of July fireworks! It served its purpose, though. A few minutes later there wasn't an Ashanti warrior anywhere in the vicinity.

The British kept up the firework display all night, filling the black African sky with a dazzling array of man-made "shooting stars" and the like. The terrified Ashanti natives didn't know whether the world was coming to an end, or the gods were just being mightily displeased, or what, but they knew they didn't care to have any more of that business going on.

The next morning a courier of King Prempeh went over to the British and reported that the king was willing to do their bidding, whatever it might be.

### TAS WANTS COMBAT ARTICLES

*The following is extracted from a recent letter from The Secretary, TAS.*

**We still need much more material here at the School if we are to have a good combat-experience book. So far, we have received about 25 combat-experience articles direct from officers. Unfortunately, many deal too much in generalities and too little in tangible facts.**

**We are very anxious to receive any articles that have not yet been submitted; all we ask is that officers get them in as soon as possible. We especially need factual accounts — names, dates, places, and maps or sketches—of actual happenings from battery commanders, liaison officers, and forward observers.**

# Operation Amphibious

By Lt. Col. R. C. Williams, Jr., Inf.

(continued)

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## Part II: "Smoothing the Rough Edges."

### BEFORE NORTH AFRICA

What little training the United States Forces had in amphibious operations prior to 1925 was shared by the Navy and Marines. This was only natural, for nearly every campaign which saw the Navy in action also saw the Leathernecks landing under cover of the Navy's guns. These landings consisted of the simple procedure of collecting the various Marine detachments aboard the ships present and sending them ashore. No particular attention was paid to special training in this direction until 1902. At that time much study and effort was devoted to a search for suitable techniques and special equipment which would be applicable to this phase of a Marine's job. In 1914 progress had reached the point where the Marines had advance-base brigades trained and equipped, or so it was believed, to make amphibious landings. There was no need for this type of work during the first World War and so the problem was ignored until 1924. In that year the Marine Expeditionary Force moved down to Cuba from Quantico and engaged in landing exercises on that island, while the Fifth Marine Regiment did the same thing in Panama. In 1925 the Army and Navy held a joint exercise at Oahu in the Hawaiian Group. However, in 1933 the Fleet Marine Force, organized, equipped, and trained to execute amphibious landings, was a definite part of our Armed forces. The following year annual landings became an integral part of the Navy maneuver schedules, and this annual exercise continued until 1940.

In 1939, the 3rd Infantry Division, stationed at Fort Lewis, Washington, was ordered by the War Department to launch a training program involving

amphibious operations. When those of us who were in the Division at that time turn back to the memories of 1939 and recall what we had to work with in those days, and then consider what amphibious operations involve today, we have a feeling that the progress made in the few short years is nothing short of miraculous. Rifle companies were organized into 12-man boat groups and lined up at one end of the parade ground. Then, upon the given signal, we would walk to a line drawn across the middle of the area, representing the shore. Once the group reached the theoretical shoreline it would deploy. The only amphibious craft available to the Division in those days were the Engineer pontoons and assault craft. Battalions alternated in using these clumsy barges in a nearby lake. A makeshift tower was erected in the lake so that personnel of the Division might learn how to lower equipment, weapons, and supplies from a simulated ship to a landing craft. Cargo nets were hung on the sides of barracks buildings to teach the men how to get into landing craft from the transport. At that time the battalion was the basic landing unit. Trucks were used for landing craft, a cliff formation on the reservation (called Engineer Bluff) became the beach, and the training continued. In December 1939, the Division finally saw what transports looked like as they marched aboard some in Tacoma, sailed from Washington, and landed on the coast near San Pedro in California. These joint exercises lasted six months and the Division gained much in the way of experience. In the fall of 1941 the reorganized Division again started amphibious operations in earnest.

At the same time a joint amphibious exercise was scheduled on the East Coast. The 1st Infantry Division and the 1st Marine Division were designated as the assault troops. The landing craft used in this exercise, like those used by the 3rd Division, were a variety of small boats designed for purposes other than assault landings. Whaleboats, lifeboats, motor launches, and the new Higgins craft were used. The transports were captained by Army Transport Service officers. Much was also learned on this exercise. Loading equipment, supplies, and the craft at the Brooklyn Army Base uncovered a multitude of problems. It showed the necessity for a definite command set-up which would be unified, controllable, and simple. Special equipment was needed and lacking, much work in amphibious technique was indicated, and, even then, the supply problem began to look as if it might be difficult to solve.

In February 1942 the importance of this new type of operations was realized by the leaders of our armed forces. They appreciated the value of amphibious moves as they watched the Japs move into the Philippines, into Malaya, through Singapore, into Java, and on down to New Guinea. With the Germans already firmly ensconced in North Africa, it was realized that our offensives would largely consist of amphibious moves initially. And so it was that in February of 1942 the Amphibious Force was born. Its commander was Rear Admiral Brainard. Nineteen hundred and forty-two, then, was the year when a definite move was made to do something about this joint-operations problem. It must be remembered, too, that the North African invasion was already on the schedule for the same year.

The problems faced by the Atlantic Fleet Amphibious Force, the official title of Admiral Brainard's organization, were immediate, difficult, and numerous. It would be up to his Force to get the Army and Navy to work together. He would have to see that new landing craft were built and tested, that doctrines concerning supply, communications, naval gunfire support, and a host of other matters were made available to the troops who would undergo

amphibious training. November 8, 1942, the final "D" day for the African Invasion, was less than 8 months away. He, as well as the rest of our leaders, were aware of the fact that our Armed Forces knew less about amphibious operations than any other type of operation.

The Admiral acted quickly, got a staff together, and set up shop at the Naval Operating Base in Norfolk. Soon thereafter the Admiral was promoted and transferred and Admiral Hewitt took over command. The Army, as their share of this work, plunged into the expansion of the Engineer Amphibian Brigades in April 1942. The function of the Brigades was to man the assault craft and to get the supplies ashore for the troops. Camp Edwards, Massachusetts, and Carrabelle, Florida, were selected as the bases for the Army work. On 15 July their school was organized and training commenced. The Force Headquarters at Norfolk had by now become a joint staff, and, with the impending operation of North Africa shaping up, naturally their work multiplied many-fold.

One of their problems was the matter of landing craft. Although the Navy had devoted some time to the development of personnel landing craft for the Marines from as far back as 1920, it was not until 1936 that their tests were exhaustive enough to indicate that the types on hand were unsuitable for amphibious work. Nor were they able to come up with an acceptable model or type during the next four years. It remained for Andrew Higgins to design and build a craft with a ramp in front suitable for landing operations. His LCVPR (Landing Craft, Vehicle, Personnel, Ramp) was modified soon thereafter and the LCV was built to carry vehicles with the LCP carrying troops.

In 1942 the Navy accepted Higgins' LCM-3 (Landing Craft, Medium), a tank lighter, and so the Amphibious Force had three craft to use as the nucleus of its small-craft pool. Incidentally, Higgins had been selling his craft to the British for several years before he was able to convince our Navy that they were the best-made craft for quick landings, that they retract more readily than the then-standard Navy craft, and that they

had the necessary speed and endurance. Our Navy had the advantage of British experience in the matter of amphibious craft, for it was the British who came out with the LCM and LCA (Landing Craft, Medium, and Landing Craft, Assault), the LST (Landing Ship Tank), and LCI (Landing Craft, Infantry). The building program was launched with a great deal of speed all over the United States and landing craft were soon seen on many of our lakes and rivers.

In June 1942, with TORCH (the code name for the North African landings) less than five months away, the decision was made in Washington that the Navy rather than the Amphibious Engineers would man the landing ships and craft. The Atlantic Fleet Amphibious Force therefore had to obtain and train thousands of coxswains, and do it quickly. This in itself was a huge task, but plans were prepared and the job begun. The country was combed for men who had some experience with small boats, the US Coast Guard was tapped for many of its men, and their schooling started.

When it is realized that the Atlantic Fleet Amphibious Force, the Landing Craft Group of the Force, and the Amphibious Engineer Brigades were all assigned mammoth tasks, had to secure their own personnel and equipment, organize, train, and equip their men, decide what they were to teach, and then set up schools to teach it, constantly expand, aid whenever and wherever they could in the planning of TORCH—do all this in only a few months' time—it will be apparent to everyone that they did a fine job.

The Amphibious Training Command at Camp Edwards, Massachusetts, was the Army's school for this type of work. By July 1942 they had decided upon definite doctrines and principles which they would use as a guide in their teaching. It might be well to look at these in order to ascertain, as we trace the development of amphibious warfare through the following years, just how many of the original principles withstood the test of experience.

The faculty believed that the purpose of amphibious operations was to gain a foothold along a hostile shore line from

which further military operations might be conducted. To accomplish this purpose the Army believed that the judicious joint employment of the available Army, Navy, and Air Forces, as well as sympathetic inhabitants, was imperative.

Further, it was believed that, regardless of whether the landing operation would require a single infantry battalion combat team or a force of many divisions, supported by all the arms, services, and agencies, one commander with an adequate staff should have complete control from the first planning through the capture of the assigned objective. The motto, they believed, should be "One mission, one operation, one commander." In 1942 Unity of Command was a recognized principle.

Lessons from the past proved to General Keating, Colonel Wolfe, Colonel Charles, and others that thorough reconnaissance, sound and complete planning, rehearsing, securing proper and adequate equipment for training and for the operation, establishment of an effective control system, and a supply system that would insure continuous and adequate supplies of the right type at the right place and at the right time, were necessities before starting any amphibious operation. Here were the lessons of Gallipoli, St. Nazaire, and Dieppe, together with the lessons learned by our own forces in their joint exercises. Here, too, was a lesson which was ignored in several of our actual landing assaults with regrettable results—the lesson stated as a principle regarding supply of a landing force.

The doctrine of the Amphibious Training Command included a statement to the effect that plans must be complete, detailed, simple, and flexible, and provide for a definite alternate procedure. They must be based upon the latest and most reliable information of the enemy situation, secured by naval or air reconnaissance, aerial photos, raids, patrols, and reports of intelligence agencies. Every phase of the operation from the selection of and movement into assembly areas, the embarkation, the crossing, the assault of



the hostile beaches, and the subsequent operations must all be covered in detailed plans and rehearsed by the troops who were to accomplish the operation on ground similar to that of the target area. Plans must provide for such details as water transportation, signal communication, supply, and evacuation during each phase of the amphibious landings, and must be coordinated with all the arms and services. They must also provide for the organization of each wave of the landing force, for the designation of the principle beaches, feints, protection against enemy aircraft, naval guns, fire support, and a definite alternate plan to be used in the event the initial plan could not be executed. Owing to the complicated nature of amphibious operations, and to the fact that troops will probably operate under some form of protective concealment, such as darkness or smoke, and may be exposed to unsuspected or unfavorable weather conditions, a simple plan is the one most likely to succeed. Unforeseen contingencies may arise in every phase of the operation, so, consequently, all plans must provide flexibility of action.

The Command emphasized that thorough training for amphibious operations was essential. Troops, staffs, and commanders, they believed, must become accustomed not only to the sea and thereby gain complete confidence in small craft under all conditions of weather and turbulence, but also to the technique of operations on the water, as well as to the use of specialized equipment employed in such operations. Surf conditions, beach terrain, and any material used in training should be as nearly like those to be found or utilized in the proposed operations as was possible to locate or secure. It was preferable, they said, that troops train with the same equipment and in the same type landing craft as was contemplated for a specific operation.

It is interesting to bear some of these points in mind as we see how the actual operations in the Pacific and Mediterranean are traced, for it will then be apparent that the lessons listed as learned in some of these campaigns were lessons taught at Camp Edwards by the

Army officers of the Amphibious Command.

For example, they taught that assault troops must know what, when, where, and how naval gunfire and air support was to be furnished. Similarly, naval and air forces must know the plans and locations of the assaulting troops and what support they would need. Other arms, services, and agencies must know specifically what they were to do, when to do it, and what specific alternate measures were planned. An effective inter-communication signal system, it was emphasized, would facilitate this coordination and provide flexibility.

The Army knew that the fire that could be delivered by the assault landing forces was limited. Consequently, supporting fire, during the critical phase of the crossing and while assaulting the beach, would have to be furnished by the naval and air forces. Hostile lines of communication, installations, and troop concentrations which would influence the outcome of the landing operations would have to be neutralized by friendly air power. It would be imperative that the area used for ferrying and landing be cleared of hostile aircraft by friendly air forces.

They recognized the necessity for vigorous execution of the landing phase. They preached that, once begun, a landing operation must be pushed relentlessly to a successful conclusion. Disaster on one beach might be averted by the vigorous action of a small force that has been successful on an adjacent beach. Individuals and units must drive forward with all possible speed and energy until the assigned objective is taken.

The faculty must have had Dieppe in mind when they taught that it was anticipated that landings directed against some beaches would meet with more opposition than landings launched against others, and that therefore the advance on those beaches where resistance was slight must be rapid. Reserves, they said, should be directed to those beaches where resistance was weakest, or where full exploitation would secure success.

The Amphibious Training Command had, as one of its principles, the

statement that surprise must be sought throughout the landing operation by every means and by every echelon. It emphasized its point that every amphibious force should be organized and equipped for the particular task it was to perform. One of its principles, having to do with the weather, showed the foresight of the faculty. They appreciated the fact that equipment which might be entirely satisfactory in normal seas might be useless in a turbulent or stormy sea, and that beaches which might be suitable for landing under favorable conditions might be impregnable in a heavy surf, fog, or wind. Therefore, it was advocated that all plans should provide for the dispersion of key personnel, weapons, essential supplies, and vital communication equipment, among the various landing craft, to reduce possibilities of their total loss during the period they were afloat.

The School emphasized supply and logistics in their teachings, realizing that administrative planning, complete and detailed, prior to embarkation, was essential to successful amphibious operations. In no other way, they said, could the proposed tactical plan be supported to complete success. Inadequate planning might result in a breakdown of the supply or replacement system, which must function effectively throughout if the tactical plan was to be a success. They believed and advocated that the administrative plan be developed concurrently with the tactical plan. They advocated planning for sufficient ammunition and other supplies to offset any losses enroute to the landing beaches.

Finally, the Command approved and taught combat loading of transports; that is, loading of troops and equipment on ships in such a way that essential combat equipment and supplies could be obtained quickly by the force needing them.

Thus far we have traced the work of the Navy and the Army agencies feverishly engaged in preparing for our first amphibious operation. A word or two about the transports used might be in order before we move on to an examination of TORCH.

After the Pearl Harbor incident, the

Navy started to collect merchant ships. They got new ones, old ones, big ones, little ones, of all sorts and shapes. It was realized that these passenger ships would not be suitable as troop ships and a huge reconversion program was begun. In 1942 the first results, the APA (Personnel Transport), made its appearance. As more appeared, the joint staff of Admiral Hewitt had to decide how the APA, and its cargo counterpart, the AKA (Cargo Transport), would be loaded. As a result, the title TQM (Transport Quartermaster) was bestowed upon the Army officer who would load the transport.

As it was decided at Norfolk that the Army would be responsible for gathering and loading all the supplies and equipment it would need for the amphibious operation, the TQM became a key man in amphibious work. He had to have a workable loading plan if the supplies and equipment were to get to the right beach at the target area when and in the order of priority desired by the assault forces. To do this the TQM would first arm himself with the characteristics of the ship he was to load. He then would ascertain what the assault force wanted to put aboard in the way of supplies, equipment, and personnel, and the priority in which they wished it unloaded on the beach. He next checked with the ship's captain, who studied the loading plan to see that it did not violate safety precautions (such as ammunition and fuel storage regulations), and if it would work with the hoisting equipment he had on the ship. A check with the assault troops headquarters was next in order before actual loading began. In getting tanks, trucks, troops, ammunition, rations, water, gasoline, and all the supplies and equipment deemed necessary aboard his transport, the TQM thought he had the most difficult task in the Army.

But the assault troops were far from idle. A school was set up by the Atlantic Fleet Amphibious Force at Camp Bradford, Virginia. Army divisions were first sent to Camp Pickett, Virginia, where the men scaled cargo nets, learned how to waterproof equipment and to tie knots for lowering their equipment and weapons, and were given general

amphibious training. Then, while the officers on the various staffs in the division attended schools dealing with command and staff procedure, TQM duties, communications, and shore and beach party problems, the combat teams were given intensive training. The soldier was given a life belt and taught how to use it. He was shown how to act as part of a boat group and then given an opportunity to prove that he had assimilated the instruction. He landed, got wet, deployed, attacked — again and again. Then cargo nets, shore obstacles, and rough-weather landings were added to the practical exercises. Individual training was replaced by unit training, so that battalions, regiments, and finally entire divisions participated in the landing exercises.

#### NORTH AFRICA

The first real test of our amphibious doctrine came with the North African invasion on 8 November, 1942. Three main assault landings were made, by separate task forces, at Algiers, Oran, and Casablanca. To get these three armadas to their destinations the United States Navy escorted the Western Task Force, while the British Royal Navy took care of the Eastern and Center Task Forces.

The Royal Navy created a special task force of its own, called Force "H," to keep an eye on that portion of the French Fleet under Vichy control as well as on the remnants of the Italian Fleet. If the enemy, after being informed by agents in Spain and Tangiers that the Eastern and Center Task Forces had

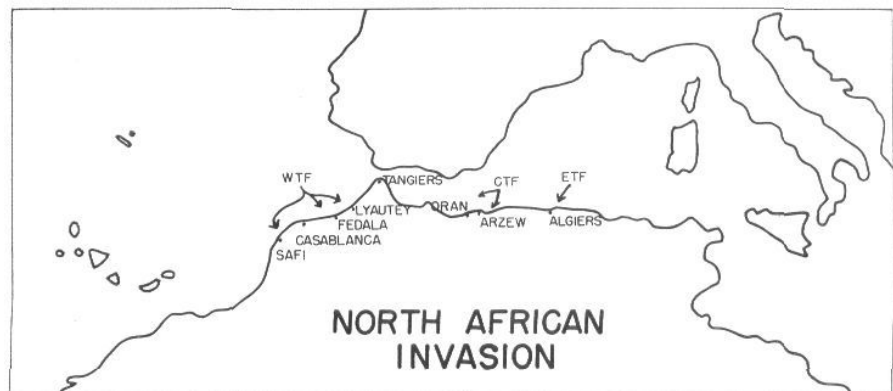
passed through the Straits of Gibraltar, was not deceived by the feint toward Malta, and attempted to take advantage of and destroy by a naval sortie the magnificent targets offered by the many transports and cargo vessels, it was felt that Force "H" could handle any such an attack.

Initial air support was to be from carriers, and within three days after the initial landings fighters were to be flown from Gibraltar to the Oran and Casablanca areas.

The Eastern and Center Task Force had a dress rehearsal along the southwestern coast of Scotland, while the Western Task Force made landings in the Chesapeake Bay area. The three forces then set sail for North Africa, ETF and CTF on October 26th, WTF on the 29th, for the November 8th assaults. The three landings were successful in that the assigned missions were accomplished. However, the amphibious phase provided many lessons.

For example, the landings were made across French colonial beaches. The troops were in a quandary as to what the French reaction to the amphibious assaults would be, and this confused feeling did not make for the aggressive spirit desired in amphibious assault troops.

Ships stopped in transport areas in positions other than those assigned and as a result many coxwains of small boats from one ship, who were to take combat loads from another ship, were unable to locate their quarry. At night this confusion increased, especially when the coxswain had to return to a ship other than his own after a trip to the beach.



Although the Navy had done its best to train them, many of the coxswains were green and had never made a landing outside Chesapeake Bay. Faulty navigation by these men in many instances caused small craft to land far from their assigned beaches. In one instance at Fedala, for example, the major portion of a battalion was landed twelve miles from its designated beach. Landing on rocky portions of the shore line, plus damages received by coastal defense guns which enfiladed the beaches, brought the toll of wrecked landing craft to a staggering total. WFT lost over two hundred alone.

Beach marking by scout craft in most instances failed. The plan called for these craft to go in early, find their respective beaches, and then guide the assault troops in by blinking colored lights from a position offshore. Fog, smoke, rain, coupled with faulty navigation, could easily cause such a plan to fail.

Boat-employment plans needed correction. The 3rd Division, for example, adopted the principle, "one boat, one trip," for their amphibious moves after TORCH. The risks involved in depending upon a small craft to return from its initial trip to the beach and find a specific transport for a second load were too great. The decision was that sufficient craft must be obtained to take all the assault battalions to the beach in one trip. Returning craft would be "bonus" craft.

The plan for the taking of Casablanca was based on faulty intelligence. The maps showing the enemy coastal batteries at El Hank and Akoucha showed the area of fire of these guns to seaward. The arcs did not extend to the coast. The plan therefore called for a two-regiment assault on the city from the north, with one regiment moving down along the coast. The soldiers in the 7th Infantry, the regiment which did the move along the coast, soon discovered that the arcs were in error and that they were being shelled by heavy guns from both the batteries while they were still some distance from Casablanca.

The Fort at El Hank had been pounded for several days by the 14- and 16-inch guns of our battleships. An

inspection of El Hank after the battle had ended revealed that these enormous rounds, designed as armor piercing projectiles for use against enemy battleships and cruisers, did not burst into fragments upon hitting. The rounds might pierce armor, but they hurt nobody in El Hank because they did not land squarely on a gun. The Navy learned this lesson quickly, as they changed their ammunition for naval gunfire support immediately after TORCH.

Incidentally, the Commandant of El Hank stated that he had posted his observers, all in proper uniform, in dwellings on the higher hills along the coastal highway from Casablanca to Fedala. He was amazed, he said, to see our forces move along the coast without disturbing his men. He did not realize that the American troops had been given orders to stay out of civilian homes, hence did not see the French officers who were spotting the unusually accurate fire. Then, too, the American troops were ordered not to damage any of the telephone system through which the observers were sending their messages.

The amphibious jeep was combat-tested in North Africa and found wanting. It was too fragile, did not carry enough of a pay load, and did not do well in any sea other than a very calm one. The criticisms regarding the amphibious jeep brought forth its big brother, the 2½-ton amphibious truck, which was to play a very important part in future operations.

Supply of ammunition, water, and other necessary equipment failed miserably. Back in the United States the 3rd Division had executed many landing operations, but the men never were required to haul the necessary ammunition or water along with them as they pushed inland toward their objectives. Being in combat without ammunition was an embarrassing predicament, and the men in the Division never made another attack, real or in training, without having the proper amount of supplies, equipment, and ammunition along.

When the troops left for North Africa they were loaded down with too much equipment. The infantryman,

forced to run across a bullet-swept beach, soon began to throw away some of this equipment. Hundreds of gas masks, belts of ammunition, extra canteens, decontaminating equipment, shoes, headnets, and equipment of all types and sizes littered the landing beaches. If the soldier had to fight his way from the high-water mark inland, he could not carry all the equipment issued him. Only the bare essentials should be carried by assault troops.

The field artillery pack howitzers proved no match for the French defense guns. It was realized by those who participated in TORCH that heavier guns, protected against small-arms fire, would have to be provided for assault troops.

Communications were worse than just bad. Some radios were dropped in the water and failed to function, others just refused to function. The Arabs stole telephone wire as rapidly as it was laid. Messengers showed that they lacked training. The idea of making the dullard of the company, or the barber, or the permanent latrine orderly the company runner, as he did not endanger the units of the company, proved foolish. Communications all the way up to Division, communications between ships and the shore party, communications between ground and air units, communications everywhere were, as one commander put it, "just plain lousy." The need for better equipment, better organization of communication units, better training, better control was plainly indicated. Commanders began to understand the meaning of the phrase "Communications is a function of command." They couldn't do any commanding for hours on end in North Africa because their communications were out. The Army and Navy both saw that much work would have to be done on ship-to-shore communications and in the control of landing craft if another "rat-race" similar to TORCH was not to be repeated.

Supply, communications, small-craft employment—these were only a few of the deficiencies which had to be met. But the men had smelled the smoke of battle and gained confidence.

*(To be continued)*

# Walter Huston and "Keep 'em Rolling"

By Maj. Gen. H. W. Blakeley, USA, Ret.

When, in the summer of 1933, the troops stationed at Fort Myer, Virginia, heard that RKO was sending a unit from Hollywood to make a moving picture on the post the news was greeted without much enthusiasm.

The garrison consisted primarily of the 1st Battalion 16th Field Artillery and part of the 3rd Cavalry. In addition to the usual routine of administration and training, plus seven days a week care of horses, there was frequent participation in ceremonies in Washington and at Arlington National Cemetery, and constant demand for assistance of various kinds in connection with charity events, horse shows, and hunt race meets. The bonus march disturbances of the previous year and other possibilities of domestic difficulties in Washington had added considerably to the training burden—and to duty hours. More activity was not welcome, but the War Department, it developed, had ordered assistance in the making of a picture based on "Rodney," a Saturday Evening Post story by Leonard Nason. So that was that.

In the Post version, the story centered around an artillery horse in and after World War I. It was based on the exploits of an actual horse named "Rodney" who had distinguished himself in the Spanish-American War.

Col. (now Maj. Gen.) Kenyon A. Joyce, commanding officer of the post and of the 3rd Cavalry, was designated as the War Department representative for the making of the picture, but when RKO's advance party arrived with the script of the movie it was evident that an artillery officer would be needed as "technical advisor." As I was practically the whole battalion staff at the time, it seemed logical to every one but me that I should have the job because I could issue orders as needed to turn out men, horses, and equipment.

That night I read the script, and bright and early the next morning I reported to Colonel Joyce that it in my opinion was

impossible to even think of permitting Army participation in the production of the story as written. It reflected on the Army, was unrealistic in dialogue and military procedures, and my "technical advice" was to have a showdown right now. A major re-write was indicated.

The reaction from the moving picture people was understandably violent, but Colonel Joyce stood firm. As the rest of the company, including Walter Huston, Frances Dee, and Frank Conroy, was on the way by train, the RKO representatives were on a spot. Eventually, the decision was made to ease out the writer who had done the screen version, and a new writer, Albert Shelby LeVino, was brought east by air.

The shooting finally got under way, with the re-write about two days ahead of the actual picture making. This was rough on all concerned from director to property men—particularly on those of us who were trying to help with the script and at the same time see that no technical errors, from the military point of view, got into the actual picture making. To add to the problems, the director wanted help in selecting a considerable number of officers and men to play parts, a procedure not only economical from the director's viewpoint, but also, as it turned out, one which resulted in considerable increase in authenticity of portrayal.

Walter Huston arrived just about as things were at their worst. He was, at the time, nearly fifty years old, and he had to play a young soldier in the early stages of the story, which extended, in point of time, from 1915 to 1933. Lt. Col. C. P. ("Toddy") George, the Battalion commander, took over the job of seeing that he got a military haircut and some condensed recruit instruction.

Prior to his arrival, we all, I think, inclined to the view that Mr. Huston would be one more problem. Actually, he never was. He was always quiet, courteous, and co-operative. During the entire filming of the picture, he was

where he was supposed to be, at the time he was supposed to be there, in the proper uniform, and he knew his lines. (The latter case, we discovered, was not always true of less distinguished actors.)

On the basis of Mr. Huston's own statement that he could imitate better than he could learn from instruction, we had him watch some of our best drivers in action in the riding hall. That day he drove a lead pair, and by the time we finished the picture he was a good artillery driver. We also assigned Sgt. Joseph Haley, chief of the first section of Battery C, the easiest job of his long career, which had begun in the Spanish-American war and included winning a Silver Star in World War I. He acted as Mr. Huston's stand-in, and this was not just a matter of taking Mr. Huston's place for the adjusting of lights and cameras. Mr. Huston watched him, talked with him, and, consciously or unconsciously, imitated him. When he played a chief of section later in the picture, he was the old soldier to the life.

The last few weeks of the picture-taking at Myer were a long nightmare. The pressure was on to get the job finished. We artillerymen discovered the sad fact that three minutes of the final film was considered par for a long day's work "in the field," i.e., not in a Hollywood studio. The last four nights, we made war scenes from dark to dawn—a matter not without its hazards. That the results were successful was a credit to the Hollywood explosive expert, and particularly to Capt. (now Major General) George D. Shea, whose battery bore the brunt of the night work.

There had been some vague talk about someone going to Hollywood for the completion of the picture there, but it was nevertheless a surprise to me when I was told the day before the last night's shooting (and it was shooting in both senses) that I was to go. I had already, of necessity, turned over most of my staff jobs, but I had funds to transfer and many odds and ends to clear up. We finished shooting at dawn, I got a few hours sleep, packed, and got on the train late that afternoon. I shared a drawing room with Mr. Huston and we both slept twelve hours straight.

In Hollywood, though I was treated

with courtesy, things were different. At Myer, the Army had control, obviously. Here, there were no troops or army equipment involved, and it took firmness on occasion to hold down the urge of some of the movie people to "ham it up" to the detriment of a fair presentation of army methods.

On the other hand, there were surprising examples of the other side of the picture. The company was most willing to spend money and effort to get authentic weapons, uniforms, and equipment—with much Army help, it might be added. It was something of a shock to discover the number of changes in armament, harness, and uniforms which had taken place during the eighteen years covered by the story. For example, we had to have both 3-inch and 75mm. guns, and we used canvas leggings, reinforced leggings, wrap leggings, and laced boots for the enlisted men during various phases of the picture.

We also had to watch changes in customs and procedures. In the opening scenes, Mr. Huston, as Sgt. Benny Walsh, comes out of the barracks with several fellow non-coms, all in blue dress uniforms. As they walk to the car line, "Retreat" is played and they stand at attention during the playing of "To the Colors," saluting at the last note—the regulation in 1915. For some time after the picture was released, we thought that from the military viewpoint here wasn't a single error in it. Then someone in Florida wrote and asked how come that the finish line of the section race between 3-inch gun sections was marked by aiming stakes of the type that were first issued when the 75mm. gun was adopted several years later!

In Hollywood, nearly a whole day was spent on an added and allegedly humorous scene, played entirely by professional actors. When we looked at the "rushes" the next day, the director promptly threw the whole thing out. His explanation: "They all look like actors."

With this enlightening comment in mind, I watched scenes on the screen as the picture was being cut and put into final form, and discovered the pleasant fact that Colonel George, Captain Shea,

Capt. H. T. Brotherton, Capt. W. R. Frost, Lt. George B. Barth, and several enlisted men had achieved a naturalness that some of the movie professionals — perhaps handicapped by unaccustomed uniforms—did not equal.

A notable example of this was in a rather long scene between Captain Brotherton and a young actor who had been highly successful on the stage but who was participating in his first moving picture. This scene had to be retaken perhaps a dozen times, not because of Capt. Brotherton's share of the dialogue but because of the actor's nervousness. It was, of course, "Trony" Brotherton's first movie too, but he was simply doing a job because he had been told to, and he didn't much give a damn whether anybody thought he could act or not.

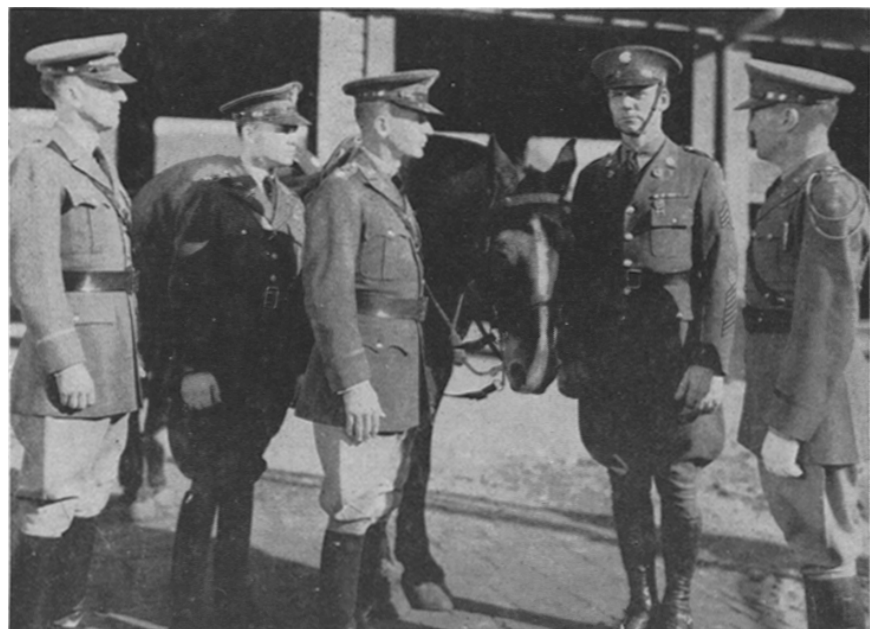
"Variety," in reviewing the film (which was finally titled "Keep 'Em Rolling"), gave an opinion certainly less prejudiced than mine. It said: "Several officers and men of the 16th Field Artillery show up as corking actors, especially Lt. Col. C. P. George and Capt. Brotherton."

Incidentally, I never went to see the picture when it was being presented in the motion picture theaters, being by that time well fed-up with the whole matter, but in 1941, when I was in command of the 6th Field Artillery, "Keep 'Em Rolling" was shown, presumably as a morale builder, by order of the War

Department to all mounted units of the artillery. I was honestly amazed at the enthusiastic applause at the finish, which shows the 16th Field Artillery passing in review at the gallop while the band plays Sousa's version of the Caisson Song—"The U. S. Field Artillery March." Perhaps the old picture may have some esprit value today.

A pretty amazing fact to me, then and now, was that the horse "Rodney" was "played" by six horses—three in Virginia and three in California. We borrowed a young horse from Capt. Sam Marshall's Virginia farm for the opening scenes at Myer when "Rodney" arrives as a remount, used a battery horse for the scenes during the bulk of the picture, and another battery horse for "Rodney" in his old age. One of my first jobs in Hollywood was to match up three horses there to use in scenes not completed at Myer. The make-up man painted similar blazes, socks, and other markings on all of them. The whole procedure was utterly bewildering. In the picture, you see Capt. Marshall's horse being led out of a Pennsylvania Railroad stock car at Fort Myer. He acts up and there is quite a roughhouse. But the actual rough-stuff part of the sequence was filmed outside of Los Angeles with a performing horse, and with a Southern Pacific Railroad car painted over to resemble the Pennsylvania's car. And a pathetic scene between Sgt. Walsh and

**Capt. Blakeley, Capt. Frost, Lt. Col. George, "Sergt" Huston, Capt. Brotherton**



"Rodney" started outside the Arlington Cemetery wall with one horse, and ended up being made with another horse in a Hollywood sound studio in front of a replica of the cemetery wall and with Walsh digging a hole in the studio floor!

We knocked off for the Thanksgiving week-end and I spent it with the Hustons at their mountain home. Even though we had spent a good part of every day together for some months, this was nevertheless an enlightening experience. I had seen him nearly mobbed in a Washington theater when his admirers discovered him in the audience at the first night of a play, and I had seen him at work and at social gatherings under a variety of conditions but always more or less in the public eye. In the privacy of his own retreat, and with no necessity of putting on an act, he was as courteous and considerate as ever.

One evening after a busy day and a good dinner, five of us and the Huston's dog were in the Huston living room. Mr. Huston was reading one of the Clarence Day books, "God and My Father," as I remember it. (This was, of course, before "Life with "Father" had become a stage success.) Mr. Huston chuckled from time to time and read out excerpts that particularly amused him. Some one said, "Go on," so he continued to read aloud.

I had read the book, had been out in the open air all day, and was stretched out in front of a warm fire. Some fifteen minutes later, I woke up, and looked around with some embarrassment. When your host is one of the country's leading actors and he is giving a private reading for his guests, sleep seems to be a little discourteous. If so, there was a lot of discourtesy in the Huston living room.

The score: asleep, four people and one dog; awake, Mr. Huston. It was too much for me. My yell of laughter stopped the reading. Mr. Huston's honest amusement and his obvious complete freedom from any feeling of irritation was a measure of the man's lack of conceit.

I have seen him briefly from time to time over the years. He was always interested in the Army and in Army friends. Even under the pressure of his long run in "Dodsworth," he and Mrs. Huston came out to Fort Myer for a day when the play was in Washington.

In his unexpected death the Army, and particularly the Field Artillery, has lost a good friend. He was always clearly aware of his obligations and responsibilities not only as an actor but as a man. The country has lost not only an outstanding actor but a fine citizen.

## The Field Artillery Battalion Fire-Direction Center—

### Its Past, Present, and Future

By Lt. Col. Frank G. Ratliff, FA

*Fire direction* is now defined as the tactical and *technical* control of artillery fire; and the *fire-direction center* as the operations center of an artillery unit, which assists the battalion commander in the control and coordination of all types of fire with one or more batteries. *Fire control* (or the *conduct of fire*) is the *technical* employment of fire power to bring fire to bear at the proper place and time in the appropriate volume. The above definition of fire direction has not always obtained. There was a time, in the not-too-distant past, when the term "fire-direction center" was unheard of; and when fire was conducted by the battery commander almost exclusively. This is the point at which this account will begin.

Every battalion and higher commander since the days of Gustavus Adolphus has exercised fire direction—i.e., each has exercised tactical control over the fire of subordinate units to carry out his will; but, except for unusual

cases, technical control has been exercised by battalion commanders for less than twenty years. The fire-direction center of today is simply an evolution of fire control, which naturally followed with indirect laying and improved and more rapid methods of communications, aerial photos, mapping, and survey methods.

The birth of the battalion fire-direction center was first announced to artillerymen in September 1935 with the publication of *Digest of FA Developments*. At that time, we were not certain of just what we had, and it was not until October 1941 that the Chief of Field Artillery gave final approval to the present basic concepts of the fire-direction center. Prior to that time, it was generally felt that the battery commander was a king in his own right. In general, the battalion commander was expected to assign duties and tasks to each of his subordinates, to exercise supervision over the expenditure of

ammunition, to keep his subordinates informed as to the situation; *but*—he was expected to refrain from interfering in the details of conduct of fire or the service of the guns, interposing only when it was perfectly obvious, after careful observation of the fire, that the desired results were not being obtained.

Let us look back to the period prior to 1929, and take a peek at a battalion commander of that day in his exercise of fire direction. The battalion fire-direction personnel consisted of the battalion commander, the S-3, S-2, a draftsman, plus telephone operators, and horseholders. TR 430-105, *Tactical Employment of FA*, was the "bible" of the day. It gave the standard tactical definition of fire direction; said that the fire unit was normally the battery; and that the conduct of fire was a battery function. Battalion fire direction then, as now, consisted of two parts, unobserved and observed fires.

Unobserved fires gave the battalion

staff no particular difficulty. The targets were passed on to the batteries in the form of overlay with ovals, squares, and odd-shaped areas, or coordinates; and a time schedule, which indicated when and what type and amount of ammunition was to be expended. It was up to the battery to plot these targets on

Appropriate steps and commands are given below. The battalion commander was the "director"; the battery commander was the "conductor." Available at the battalion observation post to obtain this information was equipment ranging from field glasses, prismatic compasses, and BC rulers to

"Field Guns in France," a book by Lt. Col. Neil Fraser-Tytler, DSO, RA. The book was quite interesting and was read by all members of the Department of Gunnery, and discussed at length. The book concerned the exploits and successes of a British Royal Artilleryman who employed forward-observation methods of adjusting fire during the first World War. As a result of reading and discussing this book, plus the recognition of the shortcomings of battalion fire direction as it existed at that time, tests and experiments were conducted to find ways of improving it.

First came the adjustment of fire by forward observers. It was found that normal methods of axial or lateral adjustment would not work for an observer whose observing range was quite short in relation to the gun-target range. Difficulties of wire and radio communication were recognized. Finally air-observation methods were used by the forward observer with good success.

Next came a method of massing the battalion on a target when only one battery had adjusted, and no maps were available. This method, the forerunner of our present observed-fire chart, has been called the birth of the modern concept of the fire-direction center. Briefly, this method consisted of surveying the relative location of the batteries and plotting them on a firing chart; after the adjustment of one battery, the target or base point was plotted using the adjusted range and direction; from the point so plotted, data for the nonadjusting batteries were then computed. This method was successfully tested and demonstrated in the spring of 1931.

Improvements to this early chart followed rapidly. First, it was found that a better chart resulted by plotting the base point using actual or assumed coordinates, registering all three batteries, and back plotting them using back azimuths and adjusted ranges, assuming a site of zero. This is our present-day quadrant-plot observed-fire chart. Then, as now, there was a triangle of error formed by the centers of impact of the three batteries, when fire was transferred to another target. This triangle of error was traced to the false assumption that the site was zero. A better

a surveyed chart (normally prepared by battery survey personnel); to measure the map data; to compute the latest corrections for each target, based on factors obtained from registration or on the latest metro message; and then fire the concentration on a prearranged schedule. The battalion S-3, with his draftsman, turned out overlays and schedules, but it was the battery commander who spent hour upon hour in computing data, applying corrections, and then more corrections to the data computed, before it was fired by the guns.

The other aspect of fire direction, and by all accounts the major and more difficult, was in the field of observed fires—the designation of targets. "The most important duty of the battalion commander in the exercise of fire direction is the designation of targets" wrote a battalion commander in 1923 when he discussed a graphical method using a plane table, declinators, etc.

Several theses were written on the subject of fire direction by Advanced Course students at the Field Artillery School in 1925-26. All of them stressed the difficulty of target identification from one OP to another, and went into great detail as to methods of target identification. The forerunner of the present "S-3 fire order" is found here. Certain set steps in the designation of targets by the battalion commander were advocated, and it was felt that he should use commands, not mere conversation.

range finders, aiming circles, BC scopes, and plotting boards. It was generally felt that the battalion commander should personally observe to see that the desired effect was obtained; that fire direction (meaning designation of targets and observation of effect) was as important as the conduct of fire.

In order to mass the battalion on a target on which one battery had adjusted, the World War I method was used when maps were available. This consisted of stripping out the weather correction from the adjusted data, plotting the target on the map, and then computing map data corrected for the other two batteries. This method was much too slow. For the average target it was felt that a single four-gun battery was just as effective as three batteries. There was no way of massing the battalion when a map was not available, except by individual adjustment of each battery onto the target.

The basic need which led to the fire-direction center and the observed-fire chart was that target designation from one observation post to another was so difficult that a set-up which would enable the man who saw the target to adjust on it was obviously necessary.

The fire-direction technique announced to the service in the *Digest of FA Developments* in 1935 was the result of extensive experimentation, much of it by trial and error, at the Field Artillery School, beginning about 1929 or 1930. By chance, a gunnery instructor read

Step	Description	Example
1	Target given a battalion number.	Bn 1
2	Location: so many mils R or L of a RP as viewed by conductor, or Azimuth or Compass so much.	RP R 210
3	Site to target as viewed by conductor.	Si-4
4	Range to target from the conductor.	Rn 3600
5	Description of target, ammunition to be used, and results sought by director.	Small patch of woods behind ploughed field near edge of woods; MGs firing eff on our inf, shrapnel, neutralize immediately.

chart was constructed when sites were known and stripped out of the adjusted data before back plotting the batteries. This is our present-day observed-fire chart when sites are known.

Until 1933, there was no range-deflection fan—a piece of equipment now considered essential in every fire-direction center. The steel straightedge was used to measure ranges, and detachable deflection arcs, improvised on celluloid or paper, were tacked to the chart at various predetermined radii. A separate 1000-mil arc was used for each battery and the battalion observation post. Of course, the chart was quite cluttered.

Unobserved scheduled fires were also given a fillip in this period just prior to 1935. The practice in the past had been to designate important targets, or areas to be covered by fire, by means of odd-shaped ovals, squares, rectangles, lines, or what have you. A system of 100, 200, 300, and 400-yard circles, each with a standard allotment of ammunition, was developed, thus simplifying the problem of computing ammunition required to neutralize areas, etc. The graphical method of assigning concentrations to batteries, and the time the concentrations were to be fired, was further simplified. Methods of applying registration corrections were improved. *K* was expressed in terms of plus or minus yards per thousand. In addition, the tabular firing tables of that day were rearranged, greatly simplifying the computation of weather corrections. A weather-correction diagram was introduced which further reduced the computations that were necessary. The computations were still numerous, however, and were still the function of the battery command post, rather than the battalion command post. The possibility of centralizing computation of initial data, particularly schedule fires, at the battalion command post was considered, but rejected because of the extra work at the battalion command post, without personnel to handle it.

This, then, was the situation in 1935, when the above developments in fire direction were announced to the service as a whole. The battalion was to become the *fire unit* whenever control could be centralized. Shortcomings of the former methods were recognized, and it was

admitted that normally a target worthy of artillery fire could be neutralized more effectively by surprise fire of a battalion than by sustained fire of a battery; that the observer who saw the target was the logical man to conduct—or at least adjust—fire on that target.

If the modern concept of the fire-direction center was born in 1931, as has been suggested, it was christened in 1935. The term "fire-direction group" and possibly "fire-direction center" was used at Fort Sill during the period 1931-1935, but the first time "fire-direction center" appeared in an official publication was in 1935. It was said to exist only when centralized control existed; to be located as a part of the command post; and to be composed of the S-3, and one or two additional staff officer assistants, the sergeant major, a draftsman, a clerk, and telephone and radio personnel. The assistant staff officers (usually the S-1 and S-4) were not fire-direction specialists; they mainly supervised the transmission of fire commands by the telephone operators, based on S-3 instructions as to the commands to be sent.

Throughout this initial period of development, and indeed until late 1941, the greatest obstacle to overcome was the resistance to taking any of the prerogatives away from the battery commander. Many held to the old idea that no one but the battery commander could give orders to the battery executive. For a time the Field Artillery School was prohibited from teaching that the battalion was the fire unit. Many said that attempts to mass fires were not practicable in combat.

Chief credit for the developments of the period 1929 to 1935 should probably go to Majors Carlos Brewer and Orlando Ward, each of whom served as Directors of the Department of Gunnery of the Field Artillery School during this time. Chief credit for the next stage belongs to Major General H. L. C. Jones, now retired, who became Director of the Department of Gunnery in 1939. From 1937 to 1939, as the Battalion Commander of the 2d Bn, 77th FA, at Fort D. A. Russell, Texas, Jones tested many of the ideas that he later saw adopted by the Field Artillery School and the Field Artillery as a whole.

The first step was to make the batteries responsible for observed fires, and the battalion responsible for the preparation of unobserved fires. The conduct of observed fires was considered the battery commander's main battle mission. All batteries had at least one forward observer, and the battalion two additional forward observers. The batteries were relieved of the onerous task of preparing data for unobserved fires, but the battalion fire-direction-center personnel had to be augmented to handle this job. The enlisted draftsman (Horizontal Control Operator) was retained and, in addition, four battery officers were pulled in to the fire-direction center to act as computers and Vertical Control Operator.

The next step was combining the observed-fire chart and the surveyed chart used for unobserved fires into a single chart. It was felt that when the surveyed chart was available (and improvements and centralization of survey procedures was a necessary corollary of the improvements in fire-direction methods) targets located by firing should be plotted thereon, and that initial data should be obtained from the same chart.

The Graphical Firing Table came into being in late 1940. Initially, it was merely a "pony" used by an officer computer taking part in a demonstration, to help prevent mistakes and to gain speed in the computation of firing data. This first Graphical Firing Table consisted of a slide with elevation and "C" scales, and an upper guide with a range scale, a 33/R scale, and 50/R scale. All scales were plotted linear to a map scale of 1/20,000, and covered ranges sufficient for that particular demonstration. The value of the Graphical Firing Table was recognized immediately. In short order, changes were made: The scales were plotted logarithmically to give percentage (*K*) corrections, in lieu of the flat corrections applied by that first model; a *K* scale was added so that corrections in yards per thousand could be read directly; the range limits were increased so that the rule could be used by all calibers; a drift scale was added; and, a little later, a fuze-setting scale was added.

The Graphical Firing Table at this time was merely a specialized slide rule. The base of the rule was used by all



calibers; a separate slide (or slides) was provided for particular calibers and charges. The detailed history of the Graphical Firing Table is a story unto itself; the skeleton of its origin has been mentioned above. The rule received overwhelming approval, was adopted, and technique of fire direction using the rule was incorporated into the teachings of the Field Artillery School. The Graphical Firing Table so simplified computations in the fire-direction center that it was now considered feasible to use enlisted personnel, instead of officers, as computers.

May 1941 saw the adoption of the "vertical-wall concept" of time-fire corrections, and did away with the *corrector*. By September 1941, it was realized that the application of the Graphical Firing Table to "transfer limits" did away with the necessity of the weather-correction diagram. Weather corrections were computed for a single point, and, by use of the Graphical Firing Table, proportional corrections were applied throughout transfer limits—of range and deflection—which were found to work.

The technique of fire direction was constantly growing, and necessary changes were made to keep up with this growth. In 1943, tests proved that proportional time corrections rather than a constant time correction gave the best results. A few months later the 12-inch Graphical Firing Table which is in use today was developed. This Graphical Firing Table has the essential firing-table data plotted to logarithmic scale on a single base or rule. The slide was eliminated and all corrections set off by merely drawing a gage line or lines on the frosted indicator window.

The personnel of the fire-direction center and the division of tasks were as we know them today; enlisted personnel consisted of the horizontal control operator, vertical control operator, and three computers; officer personnel, the S-3 and assistant S-3.

In April 1941, the observed-fire chart methods of massing the fires of a single battalion were applied to the problem of massing the fires of division artillery. Result: The division artillery observed-fire chart.

In 1944, Col. Gjelsteen, the Assistant Commandant, in speaking of this period,

said: "In the final analysis the 1940-41 developments in fire direction were the completion of the methods evolved in 1935. The methods now used are merely the extension of the observed-fire chart of 1935 to all types of artillery in all types of fire. During 1940-42, we considered we had wrought a revolution; now it seems to me to be an ordered, natural evolution. It is surprising that the 1935 observed-fire chart did not develop into the present methods much earlier than 1940-41."

Throughout this period of development, 1930-41, the new technique was given a cold reception at the hands of many senior artillerymen. Therefore, the first reports from the battlefields of World War II were eagerly awaited. A paraphrase of a radiogram sent by General MacArthur on 11 March, 1942, concerning field artillery on Bataan, reads: "I can make no suggestions for the improvement of methods taught at Fort Sill. The strong effect of massing artillery fire, using a fire-direction center connected with all observation posts available, has been proven beyond question. . . . In many situations that seemed desperate, the artillery has been a most vital factor. . . ."

Countless testimonials as to the efficiency and effectiveness of the field artillery in World War II can be found. Consider one more: "The Field Artillery School has developed methods of using artillery fire in large concentrations which are directly responsible for the magnificent success of the field artillery in this Theater. Their fire is accurate and can be massed on a second's notice with great ease and simplicity. . . ." (General Jacob L. Devers, 23 Feb., 1944.)

The next significant development in battalion fire-direction-center procedure was based on experience gained in World War II. In 1945, field artillery gunnery technique employed in the European Theater was studied by a board of senior officers. In general, this board found "the policies and procedures of fire-direction technique prescribed in War Department field manuals basically sound." Deficiencies noted by that board included the following:

1. Number of fire-direction-center personnel insufficient for 24-hour operation.

2. Observer procedure in conduct and adjustment of fire too difficult—observers were inexperienced and working under combat conditions.

3. Mistakes and "human errors" attributable to design of equipment and training.

In an effort to correct these deficiencies, certain developments occurred at The Artillery School. Observer procedure was greatly simplified in February 1947 by Change 2, FM 6-40, in that the observer sent corrections in terms of yards to fire-direction center rather than fire *commands* or *sensings*. He still was required to determine and apply factors, however, to keep the bursts on the observer-target line.

In the summer of 1947, under the direction of Colonel B. Hamlett, Director of Department of Gunnery, TAS, further research and study (known as Project Comanche) was made in an effort to increase the efficiency of artillery fires, both observed and unobserved. As a result of this project the target-grid method of fire was developed.

The target grid has eliminated the use of factors by the observer; the observer's corrections are converted to fire commands graphically.

Procedures using the target grid have developed rapidly. There is no doubt that observer procedures are simpler and that training time for observers has been reduced.

Fire-direction-center procedures have been changed so that the computations formerly required of the observer are performed in the fire-direction center—either graphically or mentally. These procedures are set forth in FM 6-40, FA Gunnery, 1949, and are being incorporated into all related training literature.

Project Comanche also provided for a device which measures the ranges and deflections of all three batteries simultaneously. The data thus measured is then read and acted upon by each battery computer. A cardboard model of this device has been used successfully, and additional tests and experiments on this and similar gadgets will continue.

From a long-range point of view, the target grid and related devices are at best only interim measures—not the final answer. There still exists a need

(Concluded on page 127)

# Action At Vella Lavella

By Lt. Col. W. H. Allen, Jr., FA

The term amphibious operations connotes a mental picture of clouds of bombers, an umbrella of fighter airplanes over the beachhead, the beach itself hidden in a dense pall of smoke from bombs and the heavy shells of battleships, cruisers, destroyers, and rocket ships. To seaward the ocean teems with transports and landing ships, surrounded by their swarms of skittering landing craft. The artilleryman's mental movie screen fills with waves of ducks landing 105's and later with heavier guns and howitzers rolling onto the beach via causeways jutting shoreward from gaping mouths of LST's. By this time the light artillery, several hundred yards inland, is pounding the enemy, its fire accurately directed by hovering grasshopper planes.

This picture we all now accept as normal. But in the almost forgotten early days of World War II, some of us can remember a far different kind of amphibious warfare, a poor man's war. Such were operations in the Central Solomons in mid-1943.

On 11 August 1943, Commander South Pacific Forces designated the following units as Northern Landing Force, under the command of Brig. Gen. Robert B. McClure, to seize the island of Vella Lavella, destroy enemy forces, defend the island, construct an airfield, and establish and operate a minor naval base:

- 35th Infantry Regiment
- 64th Field Artillery Battalion
- Co. C, 65th Combat Engineer Battalion
- Co. B, 25th Medical Battalion
- Reconnaissance Troop, 25th Infantry Division
- 4th Marine Defense Battalion
- 58th Naval Construction Battalion
- Naval Base Group

The objective, Vella Lavella, a tadpole-shaped tropical island, is 30

miles long by 20 miles wide, mountainous, smothered by dense rain forest except for a few small cocoanut plantations. The narrow coastal shelf is covered to the shoreline by dense forest except for the few small cocoanut groves, and presents few beaches, all steep, narrow, and obstructed by offshore reefs. Tidal streams, choked by sand bars, interrupt the shore every few miles. A few native footpaths crisscross the island; there are no roads. Here and there the natives have grubbed out small clearings wherein they cultivate taro vines. Their few small villages hug the shoreline. Fishing from canoes and cultivation of taro patches suffice to supply the natives' primitive needs.

Eighty miles northwest lies Bougainville, with its then powerful Japanese complex of air bases, supported by the crowded airfields of Rabaul, 200 miles farther to the northwest. The nearest friendly air base was in the Russell Islands, 200 miles southeast. The soldier and the seadog on Vella soon learned that aircraft identification was easy—all planes seemed to display the red meatball.

Reports of coastwatchers indicated that the Jap population of the island was mainly survivors from the ships and barges sunk in the fierce naval battles of June and July 1943 around Kula Gulf and Vella Gulf. It was also suspected that a depot and hideout for the busy nocturnal Jap barge traffic existed in one of the many small coves, but its exact location was unknown, so well was it concealed from the aerial camera by the dense forest. On 21 July an officer patrol had landed by PT boat to locate the site for the airfield, landing beaches, dispersal, and bivouac areas. This group reported the best area was located on the east coast near the few huts called Barakoma. The patrol reported this area clear of Japs. On the night 12-13 August, an advance party of the landing force, including Capt. M. G. Hatch, 64th FA Bn., landed from PT boats to make a final detailed reconnaissance. The party

made contact with a Protestant missionary who had lived on the island for many years, who warned them of Japs in the landing area. Having been cautioned not to jeopardize surprise by being seen or getting themselves captured, the advance party was able to do little reconnoitering prior to D-day.

Information available to the artillery prior to the landing was meager: essentially only a few poorly lithographed copies of a 1/20,000 uncontrolled mosaic. Shown on the mosaic was the shoreline; inland nothing but solid jungle, broken only by occasional white patches of cloud, usually where information was most wanted. Superimposed on the mosaic was a crude 600 yard "JAN" grid. Stereo photos of the landing area, if any were available, never percolated down to the artillery battalion, which, during the brief "planning phase" of the operation, was in the Russell Islands, 75 miles from Northern Landing Force headquarters at Guadalcanal.

D-day, 15 August 1943, breaking dimly through the usual morning overcast, found the first echelon of the force in Vella Gulf. At 0624 the first wave of craft from destroyer transports (APD's) grounded the leading wave of the infantry on Vella. Not a shot was heard, to the relief of the headquarters, fire-direction, survey, and communication teams of the artillery still aboard LCI's, awaiting their turn to disembark. The calm was short, however. As soon as the equatorial sun burned away the haze, the scream of diving "Vals," Tojo's naval dive bombers, the pop-pop of 40-mm's, the rattle of 20-mm's and 50's, the crump of bombs, tore the air.

The fattest game, the "Large Slow Targets," LST's, on one of which were embarked B and C Batteries, filled the bomb sights of Tojo's slant but keen-eyed pilots. Fortunately, their aim was spoiled by eight of the battalion's 50-caliber machine guns, fired from their homemade AA mounts on the deck of

the LST while the sailors vainly struggled to get their two water-cooled 50's operating. The skipper gladly gave the battalion's machine gunners credit for saving his ship.

The landing plans called for the LCI's to beach, but it soon developed that because of previously unlocated reefs, only one LCI at a time could run up on the assigned beach. To clear the way for the LST's, the artillerymen aboard the LCI's had to transfer themselves and all their equipment and stores into landing craft plunging like broncos in the seas alongside—a task accomplished with some dunkings and language worthy of pack artillerymen. Once ashore, the battery commanders and their parties with the battalion S-2 set off to locate gun positions in previously designated areas.

When at 0915 the LST eased up to the shore, the ramp lacked several yards of touching firm footing on the coral shore. Eventually an engineer dozer from an LST farther down the shore clanked up and with the aid of strong artillery backs made a ramp of stones over which unloading could proceed. (Causeways were then unknown.) The next problem was that, once ashore, vehicles could find no place to unload in the jungle that grew to the water's edge. Here again the indispensable bulldozer went to work to clear out a turnaround loop that weaved among the giant trees. As soon as the truck prime movers towed the 105's ashore the firing batteries began to wrestle with the 30 days of rations, drums of gasoline, and the five units of ammunition stacked to the roof of the LST's tank deck. Engineer shore parties were a luxury unknown to early South Pacific expeditions.

Although the closed-in tank deck was stifling in the tropical heat, the artillery stevedores needed no urging. The four fat LST's beached closely side by side offered an irresistible target to Nip airmen, who came over in twos and threes all day long. Those stragglers from the unloading detail who sought shelter in the jungle became discouraged after seeing the results of a 500-pound bomb that exploded in a platoon of doughboys. They decided that, digging holes in the coral coastal shelf being impossible, the steel sides

of the ship at least afforded some protection against bomb fragments and strafing.

Nightfall found the first echelon of the landing force ashore in an area some 600 yards wide by 300 deep. The howitzers pointed to seaward, the only direction in which they had a field of fire, and the 90mm AA guns and radars of the Marine Defense Battalion remained parked, as they too had no field of fire. In the light of a full moon, enemy planes droned all night over the island, searching with lights, here and there laying an egg, then impudently rat-tat-tatting with their tail guns. Fortunately, the jungle screened and the LST's having left, planes had difficulty locating the troops, who held their fire. A piece of luck spared C Battery—at daylight they saw a 500-pound dud that had plunked into their bivouac during the night.

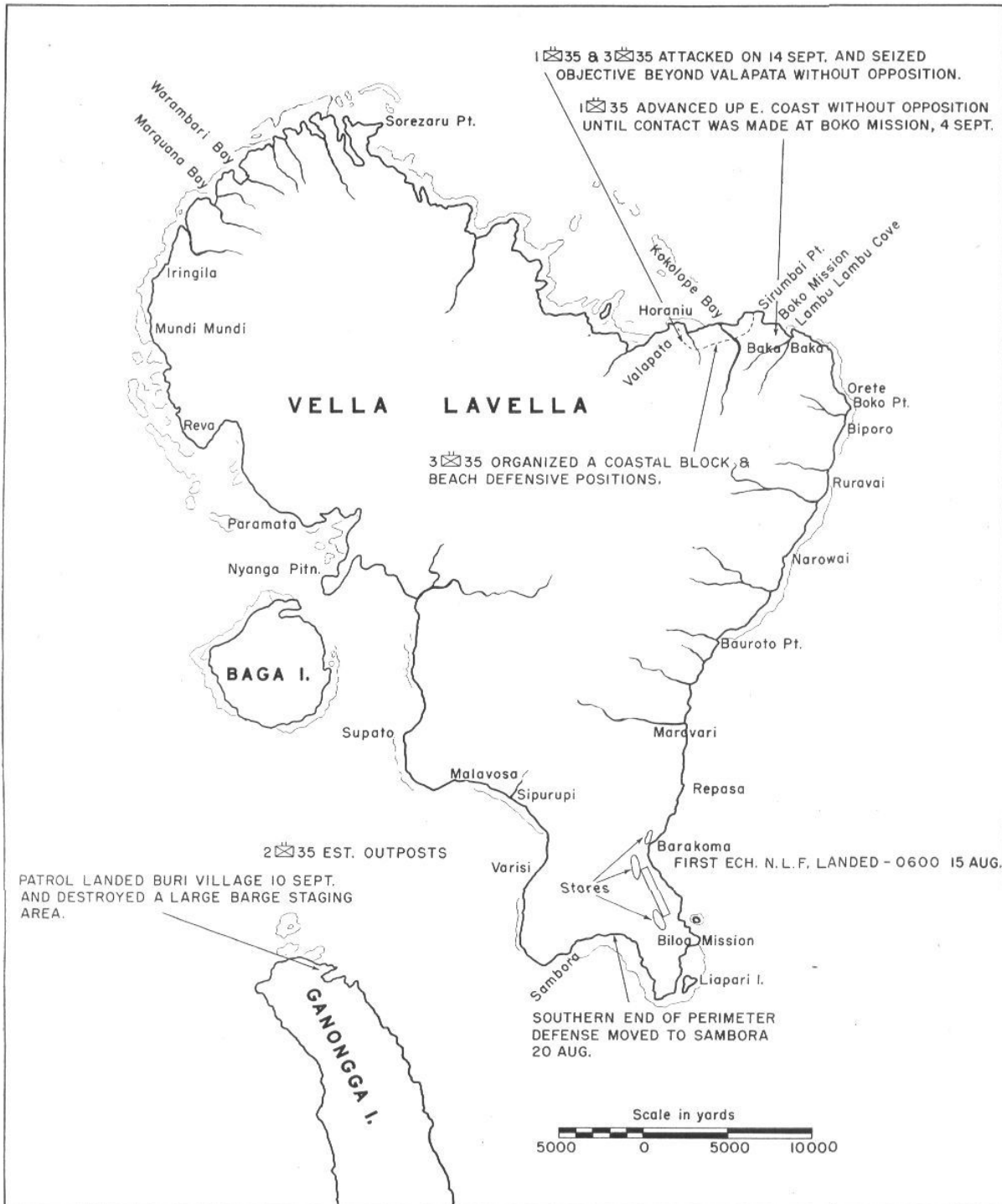
The next morning disclosed some damage. An AA radar was riddled and some stores had been hit. The principal damage the artillery suffered was to two trunk lockers brought along by officers in violation of instructions. The offenders received scant sympathy as they gazed at the tattered fragments of their woolen uniforms, fluttering from tree limbs high above ground. (The reader may wonder why woolen uniforms were carried to the Solomons—they were brought by the entire division, which was enroute to Australia when it was diverted in late 1942 to Guadalcanal to relieve the Marines.)

On 18 August, the remainder of the battalion (A Battery and the remainder of Headquarters and Service Batteries, except for a small rear echelon on Guadalcanal) arrived at Barakoma. One man was killed and several severely wounded when an air raid struck without warning just after the men had debarked and before they had time to dig foxholes. No one well dug in was hurt during the more than 300 air attacks undergone while the battalion was on Vella Lavella. The main casualty producer was recurrent malaria, which reduced the battalion's strength to 27 officers and 455 men by the end of the action.

By 18 August the perimeter had been extended to include the southern

peninsula of the island, from Barakoma to Sambora, a defended area roughly 8,500 × 10,000 yards. Within this area reconnaissance was commenced for positions from which fire support could be rendered on all sides of the perimeter; that is, a sector of 6400 mils. Reconnaissance was not a simple process, as positions had to be in one of the small native clearings, or else a clearing had to be cut out of the dense forest. Fortunately, three suitable clearings were found after much hiking over native footpaths, keeping direction by compass. Next, the problem presented itself of getting the batteries into the clearings, all of which were west of the projected air strip and near the center of the peninsula. It was found feasible to snake vehicles through the forest by cutting underbrush and vines, avoiding the giant trees. Luckily, the first few days of the occupation were fairly dry; hence the batteries got into position, with the help of some tractors borrowed from the Marine Defense Battalion, without cutting up the trails too badly. But as soon as the batteries commenced hauling ammunition to the howitzer positions and some heavy rains fell, the story was different. Trucks were winched up the slippery hills, but soon the trails became impassable even to 6×6's. The solution required the back-breaking labor of corduroying the trails with logs. The construction and maintenance of the several miles of corduroy road required an untold amount of labor. Other tasks which kept the gunners busy were fortification of the howitzer positions, digging of slit trenches in the bivouac, installation on foot of an extensive net of wire communication, and survey (all by traverse, necessarily). The battalion completion of these jobs was impeded by furnishing of large levies to the Force G-4, that often took 2/3 of the battalion strength in men and all its 2½-ton trucks for unloading LST's.

The maintenance of motor vehicles was definitely not according to the book. Owing to the meager lift for the landing force, only 54 of the T/O&E 136 vehicles were brought. Necessarily the 17 2½-ton trucks of the artillery battalion figured prominently in the G-4's calculations and were continually



in use hauling as much as could be piled on from LST's through soupy mud to dumps. They stopped rolling only when they broke down—no time was permitted for routine maintenance. Only the outstanding work of the battalion's motor section kept them running at all. Jobs like changing engines, transmissions, clutches, universal joints were done every

day. Supply of parts from Guadalcanal being almost nil, the expedient was to cannibalize. Members of the motor section were continually on the prowl around the island; any vehicle immobilized more than a day or so was picked clean as if by vultures. This work was done under tarpaulins hung under dripping jungle trees, usually in knee

deep mud. The motor men soon ignored the continual air raid alerts (usually sounded after the crump of bombs was heard).

The infantry set up small outposts on the east and west shores of the island several thousand yards beyond the perimeter. With these outposts were forward-observer parties of the artillery.

W-110 wire was laid to these outposts posts as well as to the usual beach OP's, forward observers on the perimeter, and liaison sections. Laying and maintenance of these lines entirely by foot parties kept the wire sections more than busy.

Survey, including vertical control, was carried out on a 1/20,000 grid sheet. In addition, on orders of the CG, NLF, the S-2 section, under Capt. Fahey, mapped the perimeter including all trails and installations. Closed traverses being impossible, orienting lines for the batteries were laid out by shooting the sun and computing the azimuth of the orienting lines. Registration was made on the water, using the center of impact method, intersections being made on each round with BC telescopes at each of three beach OP's that were located by traverse; direction was established by sun shots.

By 29 August the perimeter defense was organized and work had commenced on the airstrip, which had to be hacked out of virgin jungle and surfaced with crushed coral. Construction materials, rations, bombs, and the hundreds of other things needed for an advanced base were being unloaded from LST's. The work was considerably hampered, however, by the continual air raids, the first warning of which was usually the bang of bombs. The Nip fliers evaded radar detection by coming in low, screened by the high ground at the north of the island. On 30 August the 1st Battalion, 35th Infantry, was ordered to secure the Boko Mission—Kokolope Bay area to make possible the installation of a radar at Sirumbai Point, on the northeast coast, some 20 miles north of the perimeter. This radar would be able to pick up enemy planes coming down "The Slot" almost as soon as they took off from Bougainville.

To escape detection the 1st Battalion marched up the east coast, following in single file a bush trail generally paralleling the shore line. Meager information from natives and coastwatcher reports indicated that there were 100-200 Japanese in the Boko Mission—Kokolope Bay area and that these were poorly armed and equipped survivors of sunken ships and

barques. Company G, 65th Engineer Battalion, was ordered to build a road behind the 1st Battalion as quickly as possible. Until the "road" was hacked out of the jungle, artillery could not accompany the column; however, it was felt that owing to lack of opposition the infantry could take care of trouble with its mortars and machine guns. Nevertheless the artillery liaison section normally attached and a forward-observer party were sent along with instructions to send daily reports to the artillery battalion commander, including overlays of possible howitzer positions along the route of advance.

By 4 September the 1st Battalion had reached Lambu Lambu Cove without incident. Natives reported the presence of many Japs in the Boko Mission—Baka Baka area, 1000 yards west of Lambu Lambu Cove between the battalion and its objective, Sirumbai Point, several thousand yards to the west.

On 4 September A Company, followed by C Company and led by native guides, moved out on the trail to Boko Mission. About 1400 the native guides, having reached high ground 20-minutes' walk from Boko Mission, refused to go farther. A Company moved out to contact the enemy at Boko Mission. About 500 yards south of the point at which the natives left the battalion, the leading elements of A Company arrived at a point where the trail forked in three directions. Lt. King's platoon sent a patrol down each fork. The patrols on the left and center trails encountered Japs digging in along the trails. The patrols killed several Japs, one of whom was an officer, who had on him a map showing an elaborate defensive set-up in the Boko Mission—Kokolope Bay area. Examination of enemy dead and captured arms and equipment showed that the battalion had to fight healthy, well equipped, well organized enemy soldiers rather than starving stragglers. The captured map indicated these Japs were on the island not by chance, but for a definite purpose.

The captured Jap sketch, a crude looking affair, was immediately sent back to the forward echelon of the regiment, where the language section went to work on it. At the same time

the CO 1st Battalion requested artillery support. As soon as the request for artillery support reached the CO 64th FA Battalion, Battery C, commanded by Capt. Grieve, was alerted to move to Ruravai.

The simplest and easiest solution to moving the battery would have been via LCM, as a small beach existed at Ruravai. Unfortunately, the few available craft in the Navy boat pool were being used to carry supplies to the infantry. Consequently the battery commenced the move over the "road" the engineers were constructing along the shore. The "road" was a track roughly paralleling the beach trail, made by a D-8 bulldozer, which snaked between the giant jungle trees and through the occasional coconut groves. By the use of axes, shovels, and winches the 2½-ton 6 × 6 trucks towing the 105's made fairly good progress. The main obstacle was the numerous streams. These were passed by fording at low tide the sand bars that choked the stream mouths. One river, where the water was too deep for fording, the engineers bridges with a coconut-log trestle that would have made a state highway engineer cringe. Lacking spikes, the engineers had to wire the logs together. Though anyone in his right senses would have hesitated to cross in a jeep, the battery drove their 2½-tonners across loaded with ammunition. By nightfall 6 September C battery was in position at Ruravai.

On 7 September the battery registered on Sirumbai Point, which could be located on the Jan mosaic. Fortunately, the initial data for the registration allowed a considerable safety factor in range and deflection to seaward. The adjusted deflection disclosed that, in this part of the island, grid north of the mosaic was approximately 400 mils west of true north. To observe for the adjustment the forward observer paddled out in a native canoe along the shore opposite enemy-held territory—a procedure that became routine as the advance progressed parallel to the shore line. Communication was by 284 radio from the canoe to the OP on the beach, thence via wire to the battery position. This wire line, of W-110 some 8000 yards long, was laid by hand, the

"road" not yet having been opened to Lambu Lambu Cove. The battalion had to rely for radio communication on the heavy 284 and 193 radio sets, the 600-series being yet a thing of the future. An L-4 plane would have been invaluable, but it, too, had not yet made its appearance in the Solomons.

Meanwhile the artillery liaison officer, Lt. Doyle, the artillery battalion S-3, Capt. Hatch, and the CO 1st Battalion, Lt. Col. Munson, were at work on the captured sketch. Patrolling had verified the existence of several positions shown on the sketch, and the Japs had made several attacks on the positions of the 1st Battalion. By this time the 3d Battalion, 35th Infantry, had arrived in Lambu Lambu Cove to free the 1st Battalion for operations toward Boko Mission. The doughboys, based on past experience, were preparing for a long, tough fight. The Japs were well dug in, and, visibility, field of fire, and maneuver being highly restricted by the jungle, the doughs expected the usual slow, bloody battle against fanatical, last-ditch opposition.

From the Jap map with the aid of 1/5,000 stereo pairs (which the infantry had obtained) and from patrol reports, the S-2 and S-3 sections plotted the Jap positions and drew rough contours on an overlay traced from the JAN mosaic. Poor as the lithograph copy of the mosaic was, they could discern the individual photos that made up the mosaic. Fortunately the enemy positions did not extend very far inland, hence a component photo of the mosaic included enemy positions and also the shoreline. Registration on successive promontories identified on the mosaic and on other points that could be seen from tree OP's provided transfer data good for enemy positions on the same photo. The Japs must have watched with amusement the crazy Americans shooting up the rocky headlands.

As the infantry became more and more sold on the accuracy of the captured map, they increasingly felt the need for artillery support. The perimeter at the south end of the island being fairly secure, a battalion of the 145th Infantry having arrived, and the Marine Defense Battalion having set up their 155mm

guns for coast defense, on 8 September Hq. & Hq. Battery, under Capt. Hayden, and A Battery, commanded by Capt. Flatberg, moved to Ruravai.

Since the range from Ruravai to the front line was about 9,000 yards, on 11 September Hq. and C Batteries moved to Lambu Lambu, with the same difficulty in pioneering overland as in the move to Ruravai. The wide splitting of the batteries may seem a bit unorthodox, but there were reasons. Most important was the difficulty of finding positions for two batteries at Lambu Lambu. Another reason was that while A Battery at Lambu Lambu could fire at short range over our infantry into the enemy positions on the steep ridges and narrow gullies which ran perpendicular to the coast, there was considerable dead space. C Battery, firing at long range with Charge 7, enfiladed the enemy positions. Thus effects of dispersion were minimized, and dispersion might even have been beneficial, as at the time it was not known how accurate were the plotted locations of the enemy defenses. Lastly, the forward displacement helped the grossly overworked wire crews.

At 0800 8 September the 1st Battalion commenced its attack, preceded by a ten-minute artillery preparation, fired at maximum rate. The report of the CO 1st Battalion tells the story:

"The attack was executed as planned and was unopposed. The enemy had withdrawn just ahead of our assault companies, making possible the seizure of the day's objective without firing a shot."

On the next five days the infantry continued its advance to the west, slowed only by the impossibly difficult terrain. Everywhere the story was the same. Each day's advance showed signs of the enemy's hasty retreat. The infantry passed through large dumps of food, ammunition, rations, weapons, and well-constructed bivouac areas, as well as strong field fortifications. Evidently the area had been a supply base in the chain of Jap staging areas for supplying their forward garrisons by nightly barge traffic. Evidence of accurate artillery fire was found in every occupied area. 105mm shell hits were found in mortar

and field gun emplacements. Dead Japs were found with shovels and picks in their hands as if they had been working in their fox holes and on the ridges. This mission was accomplished by the expenditure of only 1600 rounds of artillery ammunition. On 15 September the 1st Battalion reached their objective and set up a perimeter defense around the radar position.

The way all the doughboys felt about their artillery was voiced in a letter from the CO 35th Infantry:

"The superior work of Batteries "A" and "C" during the period September 4th to 14th, inclusive, allowed the 1st and 3rd Battalions 35th Infantry to secure their objective with a minimum loss of life.

". . . To the best of my knowledge this is the first time in the Solomon area that artillery was used so accurately and with such splendid results in aiding the infantry to take a well-fortified area with so few casualties. Without the aid of Batteries "A" and "C" of the 64th Field Artillery Bn, a bloody and lengthy battle would have had to have been fought by the 1st and 3rd Battalions 35th Infantry in obtaining their objective.

"In the name of the Officers and Men of the 1st and 3rd Battalions of the 35th Infantry, I wish to salute the Officers and Men of the 64th Field Artillery Bn, and especially Batteries "A" and "C," for their splendid work."

This action was but a very minor one in a forgotten theater of war, but it has some lessons for younger artillerymen. Almost none of the prerequisites for successful amphibious operations obtained. Air superiority was tenuous and transitory. Assault shipping was most insufficient. The artillery, a truck-drawn 105mm howitzer battalion, was not suitably organized and equipped for amphibious and jungle warfare was understrength in personnel, had no modern communications equipment, no observation aircraft, few and unsuitable vehicles, no maps worthy of the name, no higher echelon artillery and service support. More unfavorable terrain does not exist. But its well trained personnel, tried in jungle warfare, and determined, earned a "well done" from its supported infantry.

# Security in the FA Battalion

By Lt. Col. S. L. Nichols, FA

*"Defeat is sometimes excusable, surprise never."*

Prior to World War II, field artillery training programs provided for a certain amount of training in security measures and in scouting and patrolling. MTP 6-1, 2 August, 1944, provides for training in minor tactics.

In practice, security training consisted mainly of instruction in the establishment of a perimeter defense. Scouting and patrolling instruction was generally confined to map reading and the use of the compass, with or without practical application. The idea that the infantry or other supported troops would furnish protection for the field artillery was prevalent. Little time or attention was devoted to practical minor tactics. If the artilleryman was taught how to locate an enemy, he was not taught what to do about it after contact was made.

During the latter part of 1944, the 192nd Field Artillery Battalion (155-mm howitzer) occupied a defensive position on the small island of Tumbleo about 4,000 yards off the New Guinea coast while the remainder of the division was located on the main island at Aitape. Preparations, including training, were under way for the attack against Luzon.

The training program prescribed by division artillery included security of the position area as a protection against the customary Japanese infiltration. The emphasis was still placed on the use of obstacles, concealment, mutually supporting weapons, and other means of static defense.

The mission of the division in the forthcoming operation indicated that the dispersion between units would be much greater than in previous operations. No longer could the field artillery battalion, particularly in general support, expect to enjoy the relatively close protection of the infantry. In view of the enemy's practice of sending out raiding parties with the sole mission of

"counterbattery," it seemed advisable to extend the training somewhat beyond that prescribed, and to include some scouting and patrolling, extended order drill, and tactics of the squad and platoon.

Considerable difficulty was experienced in evoking enthusiasm for the extra-curricular training. Neither officers nor noncommissioned officers were familiar with the subjects being taught. The battalion had seen several months of jungle and island fighting in which it was usually firing from one island to another or derived its security from the proximity of other troops. It seemed easier to sit on the perimeter and wait for the enemy to come in than to go out and find him.

Finally the services of two infantry non-commissioned officers were obtained for two or three days. These men instructed selected NCOs of the battalion about four hours a day. When not on the job, they were given every comfort and consideration that could be offered under the circumstances. Much of their time was spent in exchanging experiences—true and false—with the artillerymen. It is believed that these off-duty "conferences" were as valuable as the actual training insofar as creating interest was concerned, and in addition established a bond of sympathy between the men of the battalion and the infantry. Unfortunately time and the details incident to the preparation for the operation limited this training to the bare fundamentals.

On D-day, 9 January 1945, the battalion landed and occupied positions in the vicinity of Tococ, north of San Fabian. For several days the activity around the position area made patrolling unnecessary if not impossible. As the division moved inland and expanded the beachhead, the intervals between the units

increased and infiltration became less difficult for the enemy.

At 0330 on D+8 the Japanese penetrated Battery A's position. There was a short fire fight but owing to the inky darkness neither casualties nor damage to materiel resulted. Daylight disclosed a dud grenade on the edge of one gun pit and an unexploded magnetic mine inside the gun pit. Several grenade fragments were picked out of the gun tires. This incident served as a warning and active patrolling started at once. Usually two patrols were sent out just after sunrise and two more in the late afternoon. Special patrols were employed as required. Each patrol consisted of eight or ten men led by a noncommissioned officer, or in some cases by an officer. Routes, objectives, and time of return were specified.

The system started paying dividends almost immediately. Just before dark on the evening of D+9 a patrol completing its tour intercepted an enemy party moving toward Battery C's position. The patrol leader, an officer, deployed his patrol and opened fire. Darkness interrupted the action, but daylight revealed five enemy dead, one of whom was an officer. Equipment carried by the party consisted of grenades, magnetic mines, and knee mortars. A map found on the officer showed two friendly medium battalions, one light battalion, and one heavy battery accurately located. Intelligence received later from higher headquarters indicated that this was part of a 160-man detachment sent out for specific purpose of destroying artillery. There is no doubt that the action of this patrol saved the battalion a number of casualties and some damaged materiel.

A demonstration of the need for training in squad and platoon tactics occurred on D+9 when an enemy party was discovered just outside the position area. Their position was excellent. A

depression about 15 feet deep furnished good cover while a heavy growth of bamboo afforded complete concealment.

The enemy having been located, the problem should not have presented any particular difficulties to trained personnel. However, before the information concerning the enemy party reached battalion headquarters, several men had made an energetic but misdirected attempt to destroy the party, three men had been wounded, and the enemy had not been hurt. The battalion had not been trained adequately in this type of fighting. Had they been faced with the same problem on the training field, they would probably have found the correct solution quickly. But the stress of the moment proved too much for their meager training. They had an enemy fixed in position and simply didn't know what to do next.

When the battalion CP was informed of the situation, a squad of eight men was formed. Four men armed with carbines (with a bazooka thrown in for good measure) formed a base of fire. The second four men, armed with carbines and grenades, constituted a maneuvering force. All men were told how and what the squad was to

accomplish. They then moved out under a leader, and working under his coordination, methodically accomplished the assigned mission. The entire enemy party of 13 men was wiped out.

The only flaw in the action of the squad re-emphasized the need for training in infantry fighting. When the "maneuvering force" had closed to within hand-grenade range of the enemy, one man, covered by the carbines of the other three, threw a grenade. His procedure, timing, and aim, were strictly in accordance with approved methods. But when his grenade exploded and movement in the enemy position indicated a successful throw, excitement overcame his limited training. He stood up and pulled the pin on his second grenade, and in so doing needlessly exposed himself. A rifle shot knocked him down while he was still holding the armed grenade.

This was the only casualty of the action. Had this man been adequately trained in close-in fighting, he probably would not have died.

The unit journal of this battalion is full of accounts of patrolling activities.

They were not always successful and they did not completely eliminate enemy infiltration. It is significant that as proficiency in patrolling increased, infiltration decreased. Only once again did the enemy make a serious penetration of the battalion position area, and then patrolling was being carried out chiefly by guerillas attached to the unit.

From time to time Filipino guerillas were attached to the battalion for protection of the positions. They were used for routine patrolling. These guerilla units with previous service in the Philippine Scouts performed in an excellent manner.

It must be expected that in open warfare there will be many times when artillery units are left entirely on their own for local security. Training in the tactical employment of the squad and platoon will enable them to seek out and destroy small bodies of enemy within reasonable distance, who may be waiting for a favorable opportunity to infiltrate or attack the position. The battalion commander who waits on the perimeter has only one chance of saving his guns. The one who patrols aggressively has two.

## There IS a Difference in Outfits

By Captain Edward A. Jabbour, MI Res.

**T**WO plus two does not always equal four—at least not when it comes to the results produced in training a unit for combat. Take any two similar types of battalions that have received basically the same training. You would expect to find them generally of equal efficiency; however, such is not always the case. Quite often you will find one of these units far superior to the other in combat efficiency. In fact, so often is such the case that the important variables affecting the capability of a unit warrant careful study. Undoubtedly this situation is common to all branches of the service, but we will consider field artillery since it is the branch with which we are most familiar.

We were a platoon of antiaircraft half-tracks in the European Theater and were assigned numerous missions to give antiaircraft support to various units. The majority of these units were field artillery and the differences in their degree of efficiency was amazing. It would be difficult to forget the 105mm howitzer battalion we reported to near the Moselle river just south of Charmes. The situation was quite static there, since we remained in one position for five days. In combat it doesn't take long to size up an outfit. When chow time came we were handed C ration cans for the next three meals. Up to then, each thirteen-men section of our platoon usually ate with the battery it protected. Almost invariably those batteries had

had hot meals served whenever the situation permitted. In this battalion, morale was low and discipline generally lax. The laxness was reflected in the unkempt appearance of the men; in the accidental or purposeful discharging of small arms; in the accidents resulting from carelessness, two of them ending fatally. On our first movement with them, during daylight and under little pressure, their poor convoy discipline had to be seen to be believed. Never had we witnessed such confusion. Two of the firing batteries were late joining the convoy and held it up for a half-hour. In some stretches on the march, vehicles were jammed together bumper to bumper while, in other parts of the convoy, vehicles were spread out four or five



hundred yards apart. Because of this wide distance between some of the vehicles, the last battery didn't make the right turn-off and an hour was wasted getting it back in line. We were thankful it was not a night movement under unfavorable conditions. Fortunately we did not remain long enough with this battalion to observe their firing. It probably matched their general efficiency. Among many drawbacks of being attached to units such as these, one in particular should be noted. In spite of all efforts to the contrary, the morale of your own men is lowered. The weaker members, particularly, are influenced adversely by these attachments because poor discipline is highly contagious.

It must be admitted that this battalion was not representative of all with which we were attached. A few were superior. The caliber of the majority of the battalions lay somewhere in between these two extremes. One of the crack outfits in particular, with which we were fortunate to work, was a 155mm howitzer battalion that we met in Normandy just before the breakthrough at St. Lo. In that wild dash south to Avranches and then eastward across France, it was a thrilling experience to observe them in action. The men fairly exuded esprit de corps. In the midst of all the tense activity, they looked and reacted like well-disciplined soldiers and kept their equipment in excellent shape. It was standard procedure that, whenever the situation permitted, the men were served hot food. Although the food consisted of B and C rations, it was made more palatable by the skillful intermixing of the rations and by heating.

March orders came fast those days following the breakthrough; as many as two or three a day, and it was on the march that this battalion revealed its mettle. Their convoy discipline made them appear like veterans with numerous campaigns behind them instead of newly committed troops in their first action. When they were called on to fire they would respond superbly, from the competent fire-direction center to the smooth-working gun crews. Whether inspired by their example or whether by chance, our own platoon shot down their greatest number of enemy planes. After working with battalions like this, it is always a big letdown when you get

orders attaching you to some other outfit.

Sure there is a difference in outfits, but what specifically are the vital factors that make this difference?

Obviously the chief factor that influences a unit is the leadership in that unit. It is the caliber of officers, commissioned and noncommissioned, in key positions. This factor may seem so apparent so as to sound trite; however, it cannot be emphasized too strongly or too often. For example, observe any battalion. Although the batteries are composed of basically the same cross-section of men, you will usually find one of the batteries generally superior to the other batteries in efficiency. When you do, look to the officers of that battery. Therein lies the difference. In all probability, you will find officers that know their jobs; officers that are interested in the welfare of their men and *do something* about it; and officers that know how to handle men. John D. Rockefeller, Sr., is reported to have said that he paid the most not necessarily to men with the most ability but to men who knew how to handle other men. There were not nearly enough such men in the service during the past war. Again look at that battery and you will find officers that spend lots of time with their men and who keep them well informed.

It's amazing what effect one good officer can have in a small unit. Take, for example, a platoon. It has been observed on numerous occasions that the arrival of a competent officer in a mediocre platoon has had electrifying results. Almost overnight, morale leaps sky-high, and with that rise in morale comes better discipline and increased efficiency. Whether it be a platoon, battery, or battalion, the most important officer in each of these units is, of course, the commanding officer. To a big extent, as he is, so is his unit.

The second factor that makes one outfit superior to another is training. The long months and months of intensive drilling; of studying; of practicing; of maneuvers; of tough practical problems in every phase of work; of rugged exercises under simulated battle conditions; all this goes into that training. The stark significance of the phrase, "the battle is the payoff," only becomes apparent when the unit is committed to combat. That is the

ultimate test of training. That is the payoff. It is in combat that a unit either quickly shapes into a capable fighting team, or muddles along ineffectually, a pathetic example of wasted time, effort, and money, and at a time when a nation, battling for survival, can least afford it.

There is the third vital factor governing the efficiency of a unit. It is the quality and quantity of its equipment. This may be overshadowed by the factors of leadership and training; nevertheless, it is of critical importance. With all other things even, it is the unit with the most and the best equipment that will produce the best results. Our air corps proved that in the last war in sweeping the skies clear of the enemy. The Germans proved the point momentarily when they introduced their high-speed jet planes, fortunately too late to swing the tide. The German 88mm gun, with its high velocity and accuracy, caused us considerable trouble; however, the general superiority in quality and quantity of our weapons ultimately prevailed.

These three factors—leadership, training, and equipment—are the important factors that influence the efficiency of a fighting unit. All three are essential. It is the quality and degree of this leadership, this training, and this equipment that will determine whether units going into combat are composed of poor, of mediocre, or of highly efficient fighting men. The very existence of our nation may some day be staked on the results.

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(Continued from page 119)

for further simplification of fire-direction technique, and greater accuracy and speed in computation of data, laying of weapons, and delivery of fire.

The next logical step would appear to be the development of data transmission systems, electronic or mechanical directors, computers, and other allied equipment similar in nature to that used by the anti-aircraft artillery. However, such a system presents additional problems—size, weight, complexity, maintenance, training, etc. Only years of research and development will find a satisfactory compromise to these problems.

# A Radio Technician Made History!

By Jerome Kearful

SOMETIME in 1917, an Austrian radio technician named Alexander Szek came to an unknown end somewhere between Belgium and England. The mysterious death of Szek ended the career of the man who did more than any other one person to bring the United States into World War I. Here is the story.

After conquering Belgium, the German occupation forces began operating the powerful radio station at Brussels for their own purposes. One of these purposes was the sending of high diplomatic messages from the Foreign Office to various German diplomats scattered throughout the world. The British, quite naturally, regarded the interception and decoding of these messages as a goal of the greatest importance. But breaking the code was no easy task.

It so happened that Alexander Szek was one of the most competent and trusted of the personnel employed by the Germans at the Brussels station. Although his mother was English, he was a native of Austria, and German intelligence officers found nothing to indicate that he was not thoroughly in sympathy with Germany. His technical skill made him extremely valuable.

The British, however, in some way, learned the true nature of Szek's feelings about the war. Unknown to his employers, he was bitterly anti-German. Acting on this knowledge, the British dispatched an intelligence officer to contact Szek with the proposal that he assist them in breaking the code used by the Brussels station. The British agent succeeded in reaching the Austrian radio technician and secured his agreement to this highly dangerous task.

The plan agreed upon was that Szek should copy, one by one, the words from the code book during those moments that occurred now and then when he was alone and unobserved. He was then to secrete the scraps of paper bearing the vital information about his person until

he was able to contact the British agent and give them to him for transmission to London.

It was a painful and arduous task. One slip and the game would be up. But Szek proved as competent an espionage agent as he was radio technician, and, after several months, he completed his hazardous undertaking. He had supplied the British intelligence service with the complete code being used by the Germans for sending their diplomatic messages over the Brussels radio!

In London, British intelligence now possessed a real "ace in the hole." Unknown to their enemies, they could follow the pulse of German diplomacy as revealed in the constant stream of messages being sent by Alfred Zimmermann, Secretary for Foreign Affairs, to his emissaries. For some time the British continued to intercept and decode the German diplomatic messages in complete secrecy. Alexander Szek continued at his post as radio technician at the Brussels station, and no one was the wiser—except the British policy makers.

Then came the startling incident which resulted in the death of Szek and moved the United States to the verge of war with Germany and Austria-Hungary. On January 17, 1917, Alfred Zimmermann sent a radio message to the German ambassador in Mexico, von Eckhardt. It included some of the most amazing contents in diplomatic and military history, and was the first step in a fast-moving denouement.

In brief, Zimmermann's instructions to von Eckhardt covered three points: Germany intended to begin unrestricted submarine sinkings; if this policy should provoke war with America, Germany would support Mexico in an attack on the United States, the Mexican prize to be Texas, New Mexico, and Arizona; Mexico should prevail upon Japan to end her nominal war with Germany and join in the attack on the United States. To ease any apprehensions on the part of Mexico, Zimmermann concluded his

instructions to von Eckhardt by directing him to assure the Mexican President that unrestricted submarine warfare "now promises to compel England to make peace in a few months."

When the British intercepted and decoded what became known as "the Zimmermann message," it was apparent that they had something really big. Obviously, if made public, the message would have a tremendous effect upon opinion in the United States and hasten to bring England's Anglo-Saxon ally belatedly into the conflict. The British military situation in Europe was far from bright, and if American entrance into the war, which seemed to be inevitable but unpredictable, could be hastened, the situation of the Allies would be inestimably improved. The British decided to make the Zimmermann message public at once, but, if possible, to conceal the manner in which it had come into their hands.

The reaction in the United States was immediate and nationwide. Wavering opinion largely swung over to the belief that war was being forced upon us, and that we could no longer "watch and wait." In making public the contents of Zimmermann's message to von Eckhardt, the British avoided all reference to Szek and the Brussels radio station; the Americans were credited with having stolen the original of a German diplomatic message which had been turned over to the British for decipherment. Press and public in the United States, England, and France accepted this explanation.

The Germans, however, realized that the facts were not such as portrayed by the British. All indications pointed to one leak in their secret communications: the Brussels radio station.

The drama now began moving faster. While America prepared for war, German intelligence officers, grimly, silently, and meticulously, began checking and re-checking key personnel in the Brussels station. It was not long before the net began to tighten around Alexander Szek, the competent radio technician with the English mother, who throughout the war had carried his loyalty to his maternal homeland. If Szek was to escape, it was now or never.

The British intelligence service, aware

of Szek's predicament, got him safely out of Belgium, and, reportedly, arranged for his passage to England. The Austrian apparently took ship for the British Isles. But there the story ends. Alexander Szek never reached his destination. The French have said that British agents, in order that no further word of the radio technician might reach the Germans and the true manner of their breaking the diplomatic code remain a mystery, themselves made

away with their collaborator by pushing him over the side of the ship. The stakes of espionage are desperate! The British explanation is more charitable, and, perhaps, more in accordance with the facts. They say that German agents caught up with Szek before he could reach safety and made an end of him.

The death of the one man who broke the German diplomatic code and helped bring the United States into the war remains a mystery!

chronically belligerent temperament whose sting means instantaneous death to all who get into their path.

But it is not a warrior but as a message carrier that the modern military mind has envisaged the use of the bee in combat. Getting dispatches across areas of no-man's land always has been a prime problem—the fate of battle can hinge on the success or failure of such matters.

The homing pigeon has been pressed into use in this undertaking but hasn't been entirely satisfactory, although pigeons won citations in both World War I and World War II. A pigeon with the nomenclature of Blackie Halligan was described as the "outstanding carrier pigeon hero of the Pacific war theater" and decorated after being wounded by Japanese flak on Guadalcanal while carrying back to headquarters a patrol message that led to the extermination of 300 enemy troops.

But the wounding of Blackie Halligan showed up an outstanding weakness of pigeons—they can be sighted and shot down. Moreover, they have a lot of natural enemies, such as larger birds, against whom they're almost hopelessly defenseless.

Militarists have contemplated using both the stork (of all things, really!) and the sparrow in dispatch-carrying work, but the stork, while a swift and straight flyer, makes too big a target and the sparrow has not proven strong enough.

The bee always has seemed like perhaps the perfect answer—so small as to be invisible from the ground when it gets a few hundreds yards up in the sky and, at the same time, possessed of a fierce homing instinct. The main reason the experiment in England never developed any further apparently was the feeling that they were not hardy enough to overcome inclement weather, particularly the cold.

But with the advent of the "super bee"—who knows?—maybe the "Donald Ducks" of the insect world will play a vital part in future wars by zooming unsuspectingly across front lines with important nick-of-time messages. And the honey you have on your table may have been made by a bunch of bees who turned to bitterness the war plans of our country's enemies.

## Bees of War?

By Harold Helfer

THE announcement by the U. S. Department of Agriculture that a "super bee" has been developed—a sturdier-type bee who can better survive the rigors of winter and other natural exigencies of existence—raises the speculation again as to whether bees will be pressed into military service.

Military men for some time have contemplated the possibility of using the bee, a creature of unerring geographical instincts, as a message carrier in time of conflict and, indeed, at the turn of the century in Great Britain an experiment in this direction took place.

As far as it went, the experiment was a success. A few bees were taken from their hives to a house four miles away. Several days went by in which the bees were turned loose in the house, so that they could become thoroughly familiar and "at home" with their new surroundings. Then a plate of honey was placed in a room. The bees immediately settled upon it and, while busily eating, dispatches were fastened on them by the apiculturist's trained hand.

The packets, containing messages on the flimsiest of paper, were tied to the backs of the insects with the thinnest bands. Great care was taken to leave the wings and legs absolutely free. It was a question whether, after having "settled down" among new surroundings, the bees would still hanker for their old environment, but no sooner

was a window open than the bees took off—and, with incredible certainty, headed straight for their old hives. In short order, they were back there again—their dispatches securely on their backs.

Bees, who can be deadly war-like when their belligerent instincts are aroused, and who, although so small that it takes hundreds of them to weigh a pound, have been known to kill horses and men in their fury, probably have fascinated military minds from time immemorial.

A number of centuries ago when the city of Tamly, in Spain's Xantine territory, was besieged by Portuguese, it appeared that the fortress was doomed. The invaders had taken bastion after bastion and the position of the defenders seemed hopeless. Then a strategist among the desperate Tamlyites got an idea.

All the bee hives in town were gathered up and placed against the last defending stone wall. A fire was built underneath them, and the besieged citizens "holed up." The bees, furious at the smoke and the flames that had driven them from their homes, took out after the approaching invaders and the Portuguese attackers turned and fled in panic.

And one of England's most popular recent novels deals with a man who develops a strain of toxic bees with a



# PERIMETERS in PARAGRAPHS



**By Col. Conrad H. Lanza, Ret.**

## **NORTH ATLANTIC ALLIANCE**

Prepared by a widely-known military scholar and writer, PERIMETERS IN PARAGRAPHS is a recurring feature dealing with the military, political and economic realities in world affairs. Whereas an understanding of these realities is deemed essential to the American soldier, it is emphasized that PERIMETERS IN PARAGRAPHS, not derived from official sources, reflects the opinions of the author, alone. This installment covers the period 1 March-30 April 1950.

*Plan of Defense for West Europe.* The rearming of Germany was debated in the House of Commons on 16 March. Former Prime Minister Churchill expressed the opinion that before the enormous military array of the Soviet Union and its satellites, West Europe could not be successfully defended without the active aid of Germany. He was aware of the plan to defend the Pyrenees and was glad that that idea had been decisively rejected, but in view of that the only feasible remaining plan was to secure the aid of West Germany.

On the 28th of the same month the Military Committee of the Alliance met at The Hague. It consists of the Chiefs of Staff of all of the Allies, and all were present except Iceland. A Defense Plan to cover the next 5 years was agreed upon. It provides:

The United States undertakes responsibility for strategic bombing.

Great Britain and France jointly are to furnish tactical air support.

The United States and Great Britain jointly are responsible for naval control of the sea. France, the Netherlands, and Italy are to aid.

Ground troops needed are to be furnished by the West Europe Continental Allies, particularly by France.

The United States, Great Britain, and France will organize a Standing

Group, with CP at Washington, to function continuously. General Omar Bradley, USA, is its Chief.

An American proposal to acquire bases in Spain was opposed by Great Britain and received but lukewarm support from France. Spain was willing to lease bases in return for diplomatic recognition, and the United States was willing to undertake the entire job without obligation by the other Allies.

Some matters on which there were differences of opinion were left unsettled. Examples: Who is to exercise command in the Mediterranean area? Which Allies shall construct certain types of war ships, planes, munitions, etc.? As to the latter, the American recommendation was that whatever was required should be provided by that Ally best fitted to produce it, even if such action should result in some Ally having more ships, or planes, or other materiel than was reasonably necessary for its own military forces.

On 1 April, the Defense Ministers, who had followed their Chiefs of Staff to The Hague, unanimously approved this Defense Plan.

No announcement was made as to what was probably the most important feature of the Defense Plan. Many commentators on world affairs indicate that the peak of Russian military strength may be reached by 1953. To meet that situation the Allied Chiefs of Staff considered that by that year West Europe should have 50 divisions ready for line use. At present about 15 are in sight. The Plan provides that the Continental Allies provide necessary ground troops, which would require organizing and training about 35 new divisions within the next three years.

To supply and maintain 50 divisions in peace or war, new port facilities are needed, and new or improved lines of ground communications. For the tactical air forces more airfields are required.

Who is to pay for all this? That was beyond the Chiefs of Staff.

In view of this problem, which is of major economic importance, Great Britain, France, Belgium, the Netherlands, and Luxembourg held a conference at Brussels, which ended on 17 April. They agreed that none of them could increase their budgets for the current fiscal year to carry forward the North Atlantic Defense Plan; saw no reason why Uncle Sam shouldn't undertake that mission, and rather thought that he should. To help him out they agreed on submitting requisitions for supplies and economic aid required in excess of what their present budgets provided for. This would of course place a large additional burden upon the American taxpayer. However, the West Europeans think that the rearming of their countries is really for America's benefit, so why shouldn't the United States pay for it?

In an effort to solve this problem, the Foreign Ministers of the United States, Great Britain, and France met at London on 10 May. No one disputes the recommendation of Chiefs of Staff as to the forces essential to defend West Europe. But there is as yet no agreement as to who pays for what.

In the meantime American munitions are moving in volume to the European Allies. Communists, acting under orders from the Cominform, have rioted in France and Italy in an endeavor to prevent unloading of munition ships. There was a small amount of sabotage, but in general the communists were less

numerous and less strong than had been expected. They were easily dispersed by police and military forces.

*Notes.* Norway is placing power plants underground. Five are completed and

believed to be bomb-proof; four others are to be completed this year. This is a good example, which should be copied.

The United States is opening schools in its Occupied German Zone to train

Allied officers and men in operating, maintaining, and repairing American weapons, vehicles, and supplies. First school opens in May.

## GERMANY

### EAST GERMANY

The policy of this Russian-directed state was officially expressed by its Foreign Minister Georg Dertinger in his speech of 15 March. The Soviet Union wanted East Germany to unite West Germany with it, and evacuate all occupation forces, which Russia was prepared to do. German sovereignty would thereby be restored, and if it joined the Soviet Union would again become a free and prosperous state.

With a view to getting such a program started, steps were taken to organize a march against West Berlin for Sunday, 28 May. At date of writing, details, which are secret, are unknown. It is reported that the Russian General Staff is keeping in the background, although they planned the operation, and have briefed the leaders. It is believed that the proposed march is to be ostensibly composed entirely of Germans—young men—who are to invade West Berlin and induce its inhabitants to join with them in a mass movement to unite West and East Germany and force the withdrawal of all foreign troops. Its success appears to depend upon whether the West Germans will welcome the East Germans.

Chief organizer is the Minister of the Interior, a Dr. Fischer. Between the two World Wars, this individual was in Russia training German military detachments at that time working with the Russians. Later he became a professor at Kazan University. He is very familiar with Russia and its communists.

The immediate leader at the end of April was a General Gomez, a veteran of the Spanish Civil war, experienced in house and street combat. He is a German whose real name is stated to be Wilhelm Zeisser.

Rearming is making rapid progress. The C-in-C is Air General Brandt, with CP in East Berlin. His present force, all designated as MPs, is 3 divisions and

some 1,200 planes. This air force is out of proportion for a bona fide police force. Planes are about evenly divided between fighter, bomber, and reconnaissance units.

Extensive preparations are under way for new forces. Draft boards are registering all men between 18 and 25. Pending their being called they are receiving an intense communist indoctrination. German barracks and quarters are being rapidly repaired and opened. New headquarters for large units are nearly ready at Dresden, Chemnitz, Gotha, Eisenach, and Nordhoven. With 3 divisions already in quarters, the new ones may be for 3 new divisions, and 2 corps CPs. By the end of 1950 a small army may be operational. A Mobile Guard Division is under organization. Its composition is uncertain, but it is probably a shock armored unit, and should be ready by autumn.

German generals and officers are constantly arriving to volunteer for the new forces. Many come from the West. They are out of jobs; some classified as Nazis are forbidden to hold jobs in the West. They are anxious to be back in uniform, and East Germany is their chance. Russians ask no questions as to former political connections; are asking about knowledge of armor.

Munition plants are working to capacity, including air and V-2 plants. However, the products made are by no means reserved to East Germany — much goes to Russia.

### WEST GERMANY

A Joint High Command has been formed in Berlin to arrange for opposing the proposed invasion from the East on 28 May. It has been made clear that the Allies are completely agreed to meet force with force. Special training in house and street combat is under way.

On 3 March, France unilaterally signed an agreement with the Saar,

recognized by France as an independent state, by which the latter leased its coal mines to France for 50 years. West Germany has protested strongly against the French annexation of the Saar, but can do nothing about it, except to add it to its list of complaints against the West.

The Council of Europe is a body of high-ranking officials of West European states, whose mission is to arrange for economic union of their countries. The United States has supported this idea as absolutely necessary to economic stability and as a major factor in preserving the peace. On 31 March this Council invited West Germany and the Saar to join as members. The West German Chancellor, Dr. Konrad Adenauer, to date has not accepted the invitation. He is dissatisfied that the offer did not include full membership rights. In an interview of 2 April the Chancellor expressed the German opinion that the North Atlantic Alliance could not save Europe. There was not a moment to lose to avoid World War III. The present condition of West Europe as a powerless area was an invitation to invasion by a stronger force, and it could not be saved by the United States. He agreed with Winston Churchill's proposal that Germany should be admitted as a partner in the North Atlantic Alliance with right to rearm and conduct its own affairs.

Production in the Ruhr has been the subject of complaint. The main trouble appears to be in the control, which is something like this:

1. At the top is the *Ruhr Authority* as in supreme command. It issues directives to
2. HICOG (High Commission for Germany). This exercises control through
3. Economic Commission. In turn this operates through two subcommissions:
4. Coal Control Group in Essen; and
5. Steel Control Group at Dusseldorf.

Foregoing are Allied Boards. Under them work German Boards, which include:

6. Ration and Import Board.
7. Iron and Steel Board.
8. Trade Union Board.
9. Coal Board.

This looks like a complicated set-up.

### COMMENTS

At the Potsdam Conference in 1945, Russia, Great Britain, and the United States undertook to organize Germany into a single democratic state. Owing to inability to secure Russian cooperation in an election, the Western Powers during 1949 conducted a free election in West Germany, while Russia conducted its own kind of election in East Germany. This has resulted in there being two Germanies — East with 18 million people, and West with 48 millions.

East Germany is now a Russian satellite. Less than 4 million of its citizens are communists, but they have seized control of the state. As soon as this forcibly installed government is securely seated, with opponents purged and/or liquidated, Russian occupation troops are prepared to withdraw. As in other satellite states, continuous Russian military occupation is considered neither necessary nor desirable after a local communist government has been consolidated. It then operates ostensibly as an independent state, but actually in accord with directives from Moscow.

The Western Powers after World War I classified and treated both Germany and Russia as outlaw states. Naturally the outlaws lost little time in getting together, and on 16 April, 1922, less than three years after the Treaty of Versailles, they signed the Rapallo Treaty. Thereafter Germany annually sent to Russia a certain number of officers to instruct the new Russian armies, and other officers for experience with heavy artillery, armor, air force, etc., with a view to their instructing German cadres upon their return. The Allies had a Control Council in Germany to keep that state disarmed, but it could not reach the operations in Russia. Germany also furnished Russia

with scientists and technicians for the current 5-year Plan. Net result was to modernize Russia and its army, and secretly prepare German forces to circumvent the Versailles Treaty.

After fourteen years Germany was strong enough for its first military operation — the reoccupation of the Rhineland on 7 March, 1936. Thereafter its military strength increased rapidly.

After World War II, Germany again became the international outlaw. It was completely disarmed, and sentenced to remain so indefinitely. Three years later, by 1948, Russia had gradually become antagonistic to the interests of the West. It is no longer considered in good standing among the community of nations.

Profiting by its previous experience, and now working more rapidly, Germany is once more rearming. In East Germany this time and, as before, with Russian connivance. Newly organized German units, clumsily disguised as MPs, but complete divisions with armor and air force, have appeared. The program indicates that by 1953 a German army will be operational which may well be superior in strength to the combined forces of the North Atlantic Allies in West Europe by that date.

The mission of these new forces is the same as in 1936—reuniting all Germany under one flag into a single state. Just as before, Russia is favoring this rearming. To insure Russian control, the new High Command is solidly communist. Propaganda is directed to convincing West Germans that this rearming is solely for the purpose of reestablishing the independence of Germany by forcing out all Occupation Forces, which Russia is itself prepared to do.

At a suitable occasion the new German armies may accept the risk of fighting the West and seek to reoccupy West Germany, just as was done in 1936. Perhaps the West will refuse to start a World War, as happened on the previous occasion. If reoccupation is successful, the Iron Curtain will move west to include the Ruhr, desired by the communist world for its steel production. If unsuccessful, Russia may denounce the operation, and in any case will seek to limit objectives to within

Germany. For Russia it is desirable to postpone World War III until after integration of the Ruhr. If this can be obtained by use of German troops, and an alliance is then made with a united Germany, it will be a major strategical gain. Russia will leave no step pass to further this aim.

Russian propaganda represents that, during World War II, Russia fought Hitler and not the German people. For the latter she professes only kindly feelings. She desires a new independent and united Germany with its military forces on friendly terms with neighbor Russia. The real enemy of Germany is painted as the United States and Great Britain. Who else bombed German cities and killed women and children? Who else limits German industrial production, and thereby causes unemployment and extensive misery? Russia fights for workers; America for capitalists. In East Germany, plants are not being dismantled and unemployment does not exist.

Russia has suggested that if Germany is over populated, and it is, she would consider accepting about 14 million DPs, and re-settle them in Russia and Siberia on land which will be freely offered. Germany badly wants more territory, but adjacent to her home areas. A compromise on this is possible.

The military situation as regards Germany in 1950 is the same as it was in the period 1922 to 1936. Operations to be initiated upon the completion of the rearming are likely to be much more efficient than the one in 1936. It will not this time take anything like 14 years to complete the rearming.

Much depends upon the reaction of West Germany. Perhaps the entire future of West Europe. West Germany has made it plain to the Western Powers that it prefers to play ball with them. With a population 2½ times greater than East Germany, and superior resources, West Germany could stop an East German communist invasion. But it demands independence — the right of managing its foreign service, of manufacturing what it wishes, of maintaining its own military forces, and of being accepted as a full member

of the Council of Europe (an economic organization) and in the North Atlantic Alliance (a military organization). It

wants to know where it stands and that right away. As its Chancellor stated — there is no time to lose.

The German problem — a duplicate of that of 15 years ago — is dangerous and explosive.

## RUSSIA

### MILITARY

*The West Border* is covered by a bulwark of satellite states. They are being organized to absorb, or materially delay, an invasion, and to afford bases for offensive operations. Consolidation of the satellites is a major mission. Method to accomplish this varies in different states, but eventually includes:

1. Purge officers, officials, and others known or suspected of being anti-communist.
2. Purge the clergy, especially Catholic as the largest and best organized.
3. Form and control a Secret Police, and control all military forces.
4. Where opposition is strong, remove substantial parts of the population and scatter them in Siberia or elsewhere. Replace with Russians and Asiatics.
5. Gradually sever economic and cultural relations with the West. Ultimate mission is to make the communist world self-sustaining.
6. Control schools, press, radio, etc., and with these direct propaganda extolling Russia and its acts, and condemning the United States as the great enemy of freedom and humanity, who is preparing a war against the only remaining free countries in the World — Russia and its satellite People's Democracies.

All satellite states sent their Chiefs of Staff, and/or Defense Ministers, to a conference held at the Army Group CP, recently opened in Budapest, on 3 April. This was a top-secret meeting. It was presided over by Marshal Klementy E. Voroshilov, who is believed to be the CG of the Army Group Hdqrs at Budapest. It must be presumed that the main subjects considered referred to some planned military operation. Published speeches laid emphasis that, to ensure peace and communism, it was necessary to fight. As against whom the fight is to be

directed, the only objective made public was Yugoslavia, and this may have been camouflage. East Germany was represented at the conference, and it has become known that she has signed the usual pact for mutual aid with Russia. It was announced that if the Western Powers admitted West Germany to the North Atlantic Alliance, East Germany would openly join Russia. Conference reassembles at Prague about 7 May.

*The Baltic Area.* Reports are numerous as to great military activity along the Baltic coast from the Gulf of Finland as far west and south as Ruegen Island, inclusive. Refugees state that training camps; air fields with underground hangars; radar stations; V-2 batteries; trenches and wire; and mine fields off the coast, are numerous, manned, and increasing. Reason for this is unknown. Reports from the Underground state that an expedition to seize Bornholm Island is planned. This seems an unlikely objective as not of sufficient value to risk a war. If it is a preparation for an offensive, most probable objective would be Kobenhavn (Copenhagen), which would open a route into the Atlantic for Russian submarines. Kobenhavn is not strongly defended, and once taken by hostile forces would be difficult to recapture.

Russia is very sensitive to its Baltic operations. This sensitivity led on 8 April to the shooting down of an unarmed American plane — a USN Privateer. According to Russia's account, this plane was sighted at 6:39 P.M. Greenwich Time 13 miles inland from Lepaya (Libau). Russian fighters signalled it to land (how, not stated), but instead the American plane was reported to have opened fire (plane was unarmed). Fire was then returned by the Russians, who claim the plane flew away over the sea. The plane never returned to its base and its crew of 10 is presumed lost. From minor wreckage found, it appears that the plane was shot down at least 20 miles west of Lepaya while on a routine training flight over

the Baltic. Just under what circumstances is unknown.

Russia violently accused the United States of violating its territory for unlawful reconnaissance, and the United States accused Russia of shooting down an unarmed plane over the sea outside of territorial waters. Both countries have demanded an apology. This incident had not been settled as this account closes.

*Far East Area.* Japanese POWs returning to their own country report great expansion of airfields in East Siberia. Four airfields are operating flights across the North Pole: Tiksi (on Lena River), Ambarchik (on Kolyma River), Markovo (on Anadyr River) and Uehlen. All these have runways for the largest type of bombers. The airfield near Uehlen is at the northwest entrance of Bering Strait, approximately 60 miles from the Alaska coast.

Largest concentration of airfields is in the Vladivostok area, where 30 airfields have been identified. 350 miles to the north, in the vicinity of Khabarovsk, are 9 more fields. On Sakhalin Island, and the mainland facing this island, are 13 airfields. This group faces toward Japan, at distances of from 150 to 650 miles.

In the Kurile Islands are 16 airfields, including 9 at or near the old Japanese base of Paramushiru. The remaining 7 are at the south end, close to Japan. None of this group is suitable for large bombers.

North of the foregoing group are 4 airfields in vicinity of Petropavlosk (south Kamchatka) and 1 near Cape Kamchatski, which are apparently for reconnaissance purposes. Also 1 near the mouth of the Anadyr River, which presumably maintains liaison between Uehlen airbase on Bering Strait and Kamchatka, and at the same time covers the important fields near Markovo—2, including 1 for large bombers.

According to the returned Japanese

POWs who worked on the fields, they estimate that 3,000 Russian planes are operational in the Far East. Of these, few are jets.

The number and distribution of Russian airfields in the Far East point to major operations, in case of hostilities, toward Japan, and only minor operations within the Arctic. An attack on Alaska might, however, be rated as a minor operation.

Unconfirmed British reports indicate two centers for atomic experiments. One is in the vicinity of the Anaonskie Mountains (about 65° 30' N and 103° E); and the other near Markovo (on the Anadyr River).

*Mediterranean Area.* Although the defection of Yugoslavia has resulted in closing the overland route from Russia to Albania, work is continuing on the naval (submarine) base at Sazan (Sasseno) Island off Vlone (Valona). Supplies come in part by transport and in part are flown in. Latest reports are that rocket batteries (V-2?) are being installed as additional to original plans. This base has been under construction since 1946, and should now be available for use.

### PROPAGANDA

The Marshall Plan to aid West Europe is systematically represented as a wicked scheme to enslave in order to spread American imperialistic capitalism. 5-Year Plans for Russia and its satellites are on the contrary represented as noble endeavors to bring the blessings of communism to People's Democracies, alleged to be the only free nations on Earth.

Russia recognizes that in these times a strong state is necessary. The state is not the sum of the people but a special institution whose primary mission is to protect against the war-mongering West. As this is a difficult task, and not

without danger, absolute obedience to the state is necessary until the entire world becomes a single communist brotherhood. In view of the great task which the communist state has before it, and the wonderful future to be brought about, minorities can not be tolerated. All not for the state are against it and must be ruthlessly liquidated. To ensure compliance with its directions, education, the press, radio, theaters, and other sources of information must be controlled by the state, in order that the ideas of the peoples shall be directed into desired channels.

In schools and colleges, text books have been rewritten, and the old ones destroyed. Students are taught that the great inventions of the world originated in Russia, which is the most enlightened and freest state in existence. Western states are described as totalitarian and reactionary, where slave conditions are the rule. During World War II the West accomplished little if anything—their states were saved by Russia.

Communism recognizes no God nor need for religions. For those individuals who persist in believing in a God, churches may operate provided they comply with government orders, but such deluded persons can not occupy positions of trust or be promoted.

Suppressing religion has been Russia's difficulty — probably its greatest. Early efforts to discredit the clergy by charges alleging irregular money transactions or improper conduct have not impressed the people. Clergy are now being tried in batches, uniformly on charges that they have been spies for the United States. Except for "confessions" extracted from the accused, no evidence has appeared that even one of them had any connection with the United States.

Elections at which citizens are required to vote are held at intervals.

Since no minorities are permitted, only a single ticket is presented. Theoretically citizens may vote NO, but if they do they automatically include themselves as a member of a minority, and are then subject as such to extermination. Elections all return a unanimous vote for the state, and are then widely publicized as proof of how well pleased the citizens are with their own People's Democracy.

On 19 April Russia started special propaganda against the United States. It withdrew from the United Nations Agreement regarding Palestine, and objected to American and British occupation of Trieste (see separate sections on the Levant and Trieste).

At the same time, the press started publishing charges that Turkey had sold herself to the United States for the benefit of the imperialist capitalists. It represented that American officers had assumed command of Turkey's military forces, as they had also done in Greece; and were, besides, supporting anti-Russian parties in Yugoslavia.

The solution for this unjust situation was alleged to be Russian occupation of the Istanbul Straits. That proposition has for centuries been desired by Russia, but for the past two years has been in abeyance. It is now reopened on an anti-American basis. The Russian argument is strengthened, or believed to be, by reports that strong Russian forces are assembling in Bulgaria close to the Turkish border.\*

Much of the Russian propaganda is for home consumption—to convince its own people that the United States is actively preparing to attack Russia.

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\*Turkey is getting along all right under American guidance. If necessary, it will make a tough fight to preserve its independence. Neither its troops nor those of Greece are under American command.

### TRIESTE

According to the Italian Peace Treaty of 15 September, 1947, Trieste was to be an independent territory under a Governor appointed by, and reporting to, the United Nation's Security Council.

British, American, and Yugoslav troops then garrisoning Trieste were to be withdrawn within 4 months. The Security Council has never appointed a Governor, owing to Russian objections

to all nominations submitted. Consequently, the garrisoning troops have not been withdrawn; the Yugoslavs occupying the south sector, and the British and American the



central and north sectors.

On 21 March, 1948, the United States and Great Britain proposed returning Trieste to Italy, since the population is overwhelmingly Italian, but nothing came of this.

On 9 April, 1950, the Italian Foreign Minister, Count Sforza, in a friendly speech suggested that Italy and Yugoslavia open direct negotiations with a view of returning Trieste, or at least a considerable part of it, to Italy. Next day Yugoslavia rejected the Italian approach as blackmail, threatening, and extortion. It would never reduce its own claims to

all of Trieste. Seeing another dangerous dispute arising, the ambassadors of the United States, Great Britain, and France at Belgrade jointly submitted a note to ease the situation.\*

On the 16th Yugoslavia conducted an "election" within its zone. It was overwhelmingly favorable to annexation to Yugoslavia. Italy promptly protested the election, charging that it was obtained by violence and intimidation; refused to be bound by it.

Russia now intervened. On 20 April,

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\*Not yet released for publication.

by letters, it demanded that the United States and Great Britain withdraw their troops from Trieste immediately, on the ground that they had illegally established there an air and naval base. It asked that a separate government for Trieste be set up at once.

On the 28th Marshal Tito offered, through a press conference, to allow Italy to have Trieste, less some sectors, if Italy in turn would cede Gorizia to Yugoslavia. Italy rejected this next day as totally unacceptable.

As this account closes, this problem remains to be settled.

## THE LEVANT

On 19 April Russia advised the United Nations that it had reconsidered as much of the UN plan for the partition of Palestine between Jews and Arabs as provided that Jerusalem would go to neither contestant, but would become neutral under UN authority.

Five days later, Jordan (redesignation for Trans-Jordan) proclaimed the annexation of all that part of Palestine on its side of the armistice line concluded at the end of the war a year ago. This area amounts to about 1,600 square miles and includes Old Jerusalem (the Walled City containing most of the sacred sites) but not New Jerusalem. This area does not agree with that designated by the United Nations for Arab occupation, but in general is less than that and, most important, does not include the port of Jaffa, which had been assigned to them.

On the 27th, Great Britain, which has an alliance with Jordan, formally recognized the Jordan annexation, and at the same time granted full recognition to Israel, the Jewish state in Palestine. On

the 29th the Jewish Irgun Zvai Leumi, an outlawed terrorist underground organization, announced that it would fight to the death for the recovery of all of Jerusalem. The Arab states have also refused to recognize the Jordan annexation as not having been approved by the Arab League.

On 30 April a motion was presented in the Syrian Assembly recommending that the government seek the support of Russia rather than of the United States and Great Britain, alleged to be wholly committed to the support of Israel.

*Comment.* The reopening of the Levant question is important. It is almost certain that the action of Jordan had been previously approved by the British, who are committed to support Jordan should it be attacked. What part Russia had in this is not yet known, but Russia has been seeking Arab support, and for that purpose had a large staff at Cairo. Jordan is the only Arab state which successfully fought Israel and gained thereby the above mentioned 1,600 square miles.

Syria was defeated, while Egypt and Lebanon each gained a small area just over their borders, which they still hold.

Israel is functioning in its part of Palestine. It is making progress, but it is not financially able to support itself. It is already overpopulated and is seeking to settle several hundreds of thousands of Jews from Europe. Israel is kept going by large contributions, mostly from the United States.

Israel's desire is to annex all of Jordan to secure arable land for its people. It would like to have Great Britain withdraw its support from Jordan and agree to withhold all war supplies from that country, while not interfering with Israel's receiving all munitions it wants. Under those conditions it might be able to conquer Jordan.

Present indications are that Great Britain will not agree to this—it will support the Arabs. What Russia will do is a question. The Levant has again advanced to a position of importance in the overall situation.

## CHINA

### POLITICAL

On 1 March Generalissimo Chiang Kai-shek reassumed command of the Kuomintang as President and C-in-C,

with CP at Taipei, Formosa. Besides Formosa, Hainan and the Chusan Islands were the only territory held. The Generalissimo replaced Li Tsung-jen,

Vice President and acting-President, absent in hospital in New York since last December. Li was a political opponent who had won his election on the claim

that he could reach a settlement with the communists. He took charge in January 1949. In the eleven following months his troops, numerically superior to the communists and in general better armed, surrendered about as fast as contact could be made. Whether this was Li's idea of reaching a settlement with the communists is unknown. The result was that the communists now control all of mainland China.

## MILITARY

*General Situation.* The communists have been on the strategic and tactical offensive, with the single mission of destroying the enemy — Kuomintang forces. They have had neither naval or air forces. The Kuomintang has been on the strategic and tactical defensive with the single mission of harassing the enemy—communists. They have used their inefficient naval and air forces to blockade the Chinese mainland, in which, in the absence of opposition, they have caused damage by bombing, and have interfered with sea commerce, resulting in a rise of prices in Communist China.

*The Hainan Campaign.* Hainan is an egg-shaped tropical island pointing NE, about 175 miles long and 100 broad. The interior is mountainous with summits up to 5,000 feet altitude. Capital and main city is Hoihow on the north side, from where a coast road extends around the island and a railroad down the east side about half-way around. Kuomintang had, by their own returns, over 100,000 troops under Major General Hsueh Yueh as defenders.

The 4th Communist Army Group, under General Lin Piao, held the Liaichow peninsula, opposite Hainan. Eight armies were detailed to seize Hainan.\* Only means to cross the 20-mile-wide Hainan Strait were junks, of which there were enough to transport one army at a time. As the Kuomintang had air and naval forces, crossing the

strait in sailboats would appear to have been a hopeless task. However, Chinese wars are conducted under very special rules. A major rule is — more battles are won by silver than by bullets.

Applying this principle, the communists let it be known to the defense that if it would offer only a token resistance, there would be no objection to general officers seizing any Kuomintang public funds they might locate, and withdrawing with honors. The Kuomintang generals seem to have foreseen this offer, for as early as last November they had sent a liaison officer to Saigon, to ascertain whether the French would offer a refuge there and banks accept funds for private accounts. At the same time, the QM was directed to have sea transportation available at Yulin on the south coast, to take the generals away, such travel being necessary for the military service.

When the Kuomintang troops had arrived in Hainan in November they were ill disciplined, badly armed, and out of rations, clothing, and other supplies. They seized what they found, and taxed the natives outrageously. Consequently the natives organized a guerrilla force, and advised the communists that they were willing to be "liberated." By 1 March 7,000 armed guerrillas were operating.

The first communist invasion left the mainland at sunset 5 March with 1 division and supplies. As wind failed it was necessary to row and the trip took 19 hours. Kuomintang planes "bombed" and according to own reports inflicted frightful losses. Best evidence is that there were no losses. The division landed west of Hoihow. It established a base, organized ration and ammunition dumps, and organized and increased the strength of guerrillas by April up to a claimed 30,000. By this time two more communist divisions had arrived.

On 13 April General Hsueh, Kuomintang commander, publicly announced that since the enemy already had 3 divisions ashore, his own position had become hopeless. He ordered his CP to close at Hoihow and move to Yulin, where the QM had advised that a ship was waiting to take the generals away. Note that by his own re-returns General

Hsueh had over 100,000 troops present for duty.

General Hsueh's announcement was the come-on signal to the communists. Their 64th Army, less 3 divisions already in Hainan, sailed and rowed across the strait during the night 18/19 April. By the 20th leading elements were at Tsingmai, 30 miles SW of Hoihow. The Kuomintang claims that on this day they attacked and overwhelmingly defeated the communists, leaving the battlefield piled with corpses. Planes of Major General Chennault's (USAF Retired) private air service, whose pilots are nearly all American Reserve officers, flew over the battlefield and reported that nothing unusual had been noted. Farmers were cultivating their lands; all was peaceful.

Everything being ready for the getaway, General Hsueh on the 21st celebrated at Hoihow his unparalleled "victory," with salutes and fireworks. Next morning the generals left by rail, with the public funds, for Yulin, and embarked on the ship provided by the QM and sailed away. Saigon not being friendly they went to Formosa. In accordance with the Chinese Rules for War, the communists waited until the generals had gone, and then on the 23rd occupied Hoihow. By the end of April all of Hainan had been occupied. There had been no resistance.

This campaign, which is reported to have been planned by General Chu Teh, communist C-in-C, is a good example of Chinese wars. Silver—and the enemy's silver at that—had been cheaper than bullets.

Naval and air operations were of minor importance. Main results are that occasional bombing of Canton and Shanghai had caused an exodus from those cities, and considerable material damage.

## COMMENTS

Examination of the Russo-China Treaty of 14 February, 1950, shows that its mission is to prevent "**aggression and violation of the peace by Japan, or any other state which directly or indirectly would unite with Japan, in acts of aggression.**"

\*At present, Chinese Communist *armies* consist of 3 divisions, each having a combat strength of around 5,000. An army is roughly equivalent in numbers to our division, but is materially inferior in weapon strength.

The Treaty does not define *aggression* or *violation of the peace*. Who is to decide what constitutes a violation of the peace? Would US troops in Okinawa be covered by that term?

The Treaty appears to have been drawn to afford, at some future date, a handy pretext for war. Russia might claim many things, true or untrue, as violations of the peace. This Treaty is a threat to peace.

China is lost to the United States. But it is not yet entirely at Russia's disposition. Time will be needed to consolidate that enormous country. China may make no serious resistance against a gradual Russian occupation, but the Chinese are not at all likely to be enthusiastic about it. Russian occupation can be accomplished, just as was done by Japan, without prolonged warfare. That the Chinese will actively support Russia is another question and quite

doubtful. Use of airfields and ports, and control of China's economic life, are probable. If paid satisfactory wages, and treated with ordinary decency, the Chinese will work for anybody. They are not interested in type of government, but are deeply interested in peace and order and the chance to earn a good living. Russia has a chance to consolidate China, and, if it succeeds, the military power of communism will be tremendously augmented.

## SOUTHEAST ASIA

### BURMA

*Political and Economical.* The Government at Rangoon is making slow progress in extending its authority. It is opposed by six different kinds of insurgents, who between them control such a large part of the country as to cause general economic disruption of business.

During 1949 exports of rice were 1,225,000 tons (normal is 3,000,000), while only 800,000 is expected during 1950. Owing to the enemy's holding the Irrawaddy valley and intercepting river transit, teak production is stopped, as no logs are coming down. Other lumber has also stopped since August 1949. The large lead smelter at Bawdwin (125 miles NE of Mandalay) is closed down, as it is impracticable to send coke from Rangoon. Tin and wolfram mines in Tenasserim are in the hands of the communists. The Chauk oil fields send oil to Mandalay by water monthly under escort, but none goes to Rangoon, as the enemy has destroyed the pipe line and intercepts other transportation. Burma now has to import oil. Communists hold the cement plant at Thayetmyo. The cotton yield in government-held areas was 3,000 bales last year (normal is 15,000). Cotton production in Upper Burma was normal at 25,000 bales, but is available only locally.

Although the Burmese have shown dislike for the British, their serious financial necessities led them to accept on 24 March a loan of \$16,800,000 offered jointly by India, Pakistan, Ceylon, and Australia.

Burma has recognized Communist China. It partially reorganized its own Government in accordance with a directive from the Government astrologers. The latter had advised that, after consulting the stars, it was clear that unless there was a reorganization of the government dire disaster would follow, and the contrary if their advice was complied with. It was required that such reorganization be made not earlier than 9:00 A.M., 2 April, and not later than 9:15 A.M. the same date. It was at first believed that a complete new government was needed. After investigation it was decided that this could be avoided. Promptly at the hour and date indicated, the Cabinet met and the Ministers handed to the President their resignations, which had been prepared in advance. These were immediately accepted and the same Ministers were at once appointed to fill their own vacancies. They all accepted before the dead line. Reorganization without change.

*Military.* As related in the preceding number of *Perimeters*, the only operation under way was the government campaign under Lieut. General Ne Win against the Karens. It had jumped off from Daik-u on 20 February with about 1 division, with armor, artillery, and a few planes, and was to destroy the forces of the Karens in the Sittang valley within 60 days. Up to 1 March this division had advanced 15 miles against light opposition. Progress thereafter was more rapid. By 20 March the Karen capital at Toungoo

was reached and occupied, with the Karens withdrawing. It was then decided to make oil the objective, the advance was continued north into communist territory, and Pinyinana was occupied by the end of the month, an advance of about 140 miles in 30 days. During April the offensive was directed westward and, still without much opposition, Magwe was reached on the 10th, and Minbu across the Irrawaddy River on the 14th. This is near the oil fields and 376 miles from Rangoon, to which a destroyed pipe line extends.

It is intended to resume the offensive against the Karens later. Date for completion of this has been extended from 20 April to 31 December. As the rainy season usually starts at the end of April, and lasts until December, there may be no further military operations for some time.

### MALAYA

The communist revolt continues. It started in June 1948, with an estimated 5,000 well-armed men, now supposed to be reduced to about 3,000. British forces operating number nearly 95,000. Up to 31 March the respective losses in a hard guerrilla war had been: British, 784 killed, and communists, 1,150 killed and 998 captured. Communists are now officially classified as bandits. Their operations include wrecking RR trains, ambushing vehicles and convoys, raiding, robbing, and assassinating non-collaborators.

Naming the communists *bandits* is misleading. They are well organized

and equipped, to include company and battalion levels. Smallest unit is the platoon of 30 men, much used for minor raids, sabotage, and murder of informers. There is a Service of Supply which functions secretly within British-held territory. It secures funds (partly by extortion), rations, supplies, and recruits, and arranges for forwarding these to the combat units in the jungle, who could not operate efficiently without this aid.

In an effort to interfere with this, the new British commander, Lieut. General Sir Harold R. Briggs, has ordered the resettlement of all Chinese settlers living outside of towns to within towns, where they can be watched and screened. These Chinese number about 300,000. Upon completion of this move, anyone circulating outside of towns is liable to be treated as an enemy.

The communists are nearly all Chinese. Nevertheless they receive little support from the large Chinese population of some 2,500,000, who in fact have suffered the major losses from the communist raids and murders. Neither do these Chinese support the British Government. They just are not interested in government and don't care who runs it — same ideology as in China. The Malay population, also about 2,500,000, strongly supports the British rule, and furnishes a large proportion of the 70,000 MPs in the field.

Malaya is essential to the British and sterling economy, as from sales of Malaya products the British Empire earns from 20% to 30% of the dollars of the entire sterling area. Strenuous efforts are therefore made to preserve its lucrative trade. To date production has been more than protected and is at a new peak. There is a tremendous export of tin, rubber, palm oil, copra, timber, pineapples, etc., much of which is essential for military reasons for the Western Powers. Social welfare plans have not been overlooked and are progressing. There has been, so far, no demand for American funds or supplies, to quell the communists. British believe it will take at least another year before they will be exterminated, and they have made up their minds to stand the expense involved, in view of the peculiar

nature of Malaya exports which can not readily be replaced from elsewhere.

### INDO-CHINA

*Political.* Viet Nam under Chief of State Bao Dai is progressing. It is establishing law and order wherever communist areas are freed, and where terrorism formerly reigned. This welcome change has impressed the natives, who are gradually turning to favor Viet Nam. For the present Viet Nam is dependent on its army with combat elements of about 15,000 men, and French supporting forces of 140,000. Without these this new state could not function, in view of the communist revolt.

The communists, known as the Viet Minh, operate a hostile government under Ho Chi Minh, whose CP is in a large jungle area south of Loakay, Tonkin. They also control a second jungle area north of Hanoi; two 100-mile sections of coast about the ports of Vinh and Binh Dinh; the mountains along the west border of Annam connecting the two coast sectors; and 5 small detached areas in Cochin China. North to south this extends 1,200 miles. The communist territory is mostly unproductive mountain and jungle, split in sectors, with Viet Nam and French troops between them. Communist combat troops are estimated as 25,000, but may be less. Owing to their dispersion they conduct no major operations, but limit themselves to guerrilla activities, sabotage, and terrorism.

Most tranquil part of Viet Nam is the south. Notwithstanding the communist detached posts, Cochin China is generally peaceful. It is a delta with rivers, canals, and water everywhere, and rice dikes cutting up the terrain. It is probably the world's greatest rice granary, and exports every year millions of tons. There are numerous towns of 30,000 to 50,000 people. Each has communist terrorists, who throw grenades into restaurants, theaters, etc., ostensibly to kill non-communists. Usually, perfectly innocent persons suffer. The three southern provinces of Annam, as far north as Cape Varella, contain the Viet Nam capital of Dalat;

otherwise nothing important. No communist infiltration now appears there. North of Cape Varella, communist raids occur from mountains to coast.

The United States is interested in Viet Nam with a view to arresting communist gains in Southeast Asia. It planned to furnish funds and military supplies, but first demanded certain political changes. The capital of Bao Dai was to be moved to Saigon, with the French High Commissioner there turning over his palace to Bao Dai. France was to announce that the limited independence of Viet Nam would be made complete at a date to be announced later. That France handle Indo-China affairs through its Foreign Office instead of the Overseas Ministry. That US funds and military supplies furnished be administered by a Joint Commission of France, Viet Nam, Laos, and Cambodia (the latter two are separate independent states not yet attacked by the communists).

On 24 April the United States agreed to modify its demands in accord with French explanations. Bao Dai had ample quarters, including large palaces at Dalat; the palace at Saigon was necessary for the French High Commissioner. Constitutional changes as to independence definitions should be discussed after a war, not during it. Indo-China was voluntarily a part of the French Empire and not a foreign state. France had no objection as to administration of American funds as suggested by the United States, when these were for economic purposes. As to military supplies, as France furnished 90% of the troops and bore the same proportion of the costs, distribution of these must remain under control of the French High Command.

Viet Nam has a population of around 20 millions (no census since 1938). Of these, 2½ millions in the south who are Caodistes or Hoa-Haos (religious sects, the first a variety of Buddhism, and the second a new system of worshipping all great men including Mahomet, Christ, etc.) are for Bao Dai. Another 3 millions are Catholics and anti-Communist. Remainder worship ancestors and are divided as to their allegiance.

Laos (population about 1 million) and Cambodia (about 3 million) are not overly happy about being independent. They fear that Viet Nam, which is overpopulated, will seize them just as Java is doing now in Indonesia. Laos believes it might be better to join Thailand, whose people and language are similar. Cambodia is also considering this. Both states have financial difficulties. France used to balance their budgets, but as they are now independent she no longer does so, and the new states don't know how to do it.

*Military Operations.* No military operations are now required in the south, and are being postponed in the center. The major force is concentrated in the north. Here Viet Nam and French forces have cleared the delta country between Hanoi, the capital, and Haiphong, the port. They have solid roadblocks at the China border at Moncay, Langson, and Loakay. Roads to these RBs are covered by blockhouses at short intervals, each of which has machine guns, and at least one gun or mortar, covered by wire and abatis. If attacked, reinforcements are rushed by motor transportation, and if necessary by air, and few posts have been lost. Main operations are directed to sweeps and consolidation of one area at a time. Latest sweep was through Phat Diem.

Phat Diem is an economically valuable province containing 300,000 natives, mostly Catholic. Their bishop, Le Hunt Tu, had for long ardently favored independence. When the Japanese war ended, this bishop assumed command of the province in addition to religious duties, and organized troops. He kept French troops out, but preserved good order. He at first established liaison with Ho Chi Minh and his Viet Minh, before its connection with Moscow had become apparent. Early in 1949, the Bishop became convinced that Viet Minh and communism were equivalent. He was impressed by the French grant of independence on 8 March. Ho Chi Minh, learning about this in November, sent troops to seize the bishop and his province. Viet Nam airborne detachments were dropped in time, and were quickly supported by French

ground troops. The communists were driven out, and the French High Command took the opportunity to sweep out the entire southeast sector of Tonkin. This operation started in January 1950, and was concluded by the end of February. As each village was cleared, a native government and a native defense force was established. The central Viet Nam government furnished support troops, and officials to maintain law and order. Loss of this area was serious to the communists, as they depended upon it for food.

Communist leader Ho Chi Minh has been an able leader, not to be despised. He is now reported as ailing, and has an executive, Nguyen Khank Toan, recently arrived from Moscow, after spending 17 years at communist schools. As these lines are written, both Ho and Nguyen are reported absent attending a conference at Peiping. It is presumed they are being briefed as to future operations.

## INDONESIA

On 5 April, troops at Kakassar mutinied. Their reason was the intention of the central government to suppress the local government on Celebes and to consolidate it with that of Java (Indonesia Republic). The mutiny was suppressed by the 14th.

A second mutiny broke out at Amboina on 26 April. These troops announced that they seceded from the Indonesia Federation and would set up an independent state. As this account closes no steps had been taken against Amboina.

*Comments.* At the beginning of the year Indonesia was a Federation of 16 states. In four months, overpopulated Java, with some 48,000,000 people out of a total of about 72,000,000, has absorbed all but 4 of the other states, and appears to be in the process of seeking to absorb these. Against this policy there have been four revolts to date, of which three have been suppressed.

The absorbed states have been permitted to have "elections," which invariably returned unanimous votes in favor of their being annexed to Java (official name is Indonesia Republic). Following the "election," opponents

have been arrested, and then they disappeared. All this looks much like the usual communist procedure. It was not therefore surprising that on 13 April the Government announced it would send a mission to Moscow, where it arrived on 30 April.

Further communist developments are to be expected.

## PHILIPPINES

The communist-directed revolt, led by Luis Tarluc, continues. The official name of the rebels has been changed from Hukbalahaps (means People's Army versus Japan) to Hukbong Mapaglaya Sa Bayan (People's Army for Liberty). For short they are still called Huks. They are gaining strength, and now have good leadership.

During the night 28/29 March the Huks successfully raided Montalban (close to Manila), San Mateo, Los Baños, and San Simon, Pampanga. They secured arms and ammunition, and captured 1 mayor and 12 policemen. Two more towns were attacked the next night. In all, the government side lost 35 killed, 60 wounded, 2 towns burned, and property valued at \$1½ million.

The government issued a new General Order directing that the Huks be suppressed without further delay. The Chief of Staff, General Mariano M. Castenada, personally assumed command of operations on 1 April. The same day Huks captured San Clemente, Tarlac. They assembled the inhabitants and made speeches exhorting them to become communists. After taking what they wanted, the Huks withdrew. On the 3rd Huk raids occurred at Aparri (extreme north) and at Santa Rosa, Nueva Ecija. On the 7th, Bacolor in Pampanga was attacked, and 100 civilians reported killed, presumably as a reprisal.

The foregoing raids were made by forces varying from 150 men (1 company) to 500 (1 battalion).

Recollecting the difficulty of the British in suppressing a really minor force of communists in Malaya, the Philippine Government requested American aid. As this account closes, negotiations are under way as to how to solve this problem.

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## EXTRACTS FROM THE FIRST ARMY ARTILLERY INFORMATION SERVICE (WWII)

By Brigadier General Charles E. Hart, USA

### EXTRACTS FROM AIS NO. 5, PUBLISHED IN JULY 1944

*Adjustment of Field Artillery Fire by High-Performance Aircraft—ARTY/R (Artillery Officer, First Army)*

*General.* High-performance aircraft are used to supplement and to extend the organic observation facilities of the field artillery. Hereafter, this operational technique will be referred to as ARTY/R.

ARTY/R has proven highly effective in operations to date. A need has developed, however, for a more flexible operating procedure, capable of prompt adaption to meet potential employments not hitherto contemplated. An operations memorandum, this subject, is now being prepared by this headquarters. Pending its publication, it is desired that the procedures set forth hereinafter be followed in ARTY/R shoots.

ARTY/R missions may be either planned or impromptu. Planned missions are those requested sufficiently in advance to receive consideration prior to the allotment of missions for a given day. Impromptu missions are those which are filled either from a reserve held for this purpose or through the cancellation of a planned mission.

The First Army Artillery Officer, in coordination with the Joint Army-Air Headquarters, will control a pool of ARTY/R missions. These missions will be allotted daily, on request from the several corps, so as best to further the overall army effort. An appropriate number of missions may be held in reserve to meet impromptu requirements.

*Types of ARTY/R Missions.* The following types of ARTY/R missions are available:

a. *Search* missions, which consist of a directed search for profitable targets within the fire possibilities of the corps. Once reported, targets may fall under type (b) or (c).

b. *Concentration* missions, which consist of observing and reporting the overall effect of a prearranged TOT concentration.

c. *Adjustment* missions, which consist of locating and adjusting bracket fire on a specific target.

d. *Registration* mission, which consist of adjusting a single gun by bracket methods on a clearly defined base or check point.

*Requests for ARTY/R.* All ARTY/R missions initiating within a corps will be submitted by corps artillery commanders direct to the Army Artillery Officer's representative (short title—ARTY (AIR)) at Joint Army-Air Headquarters. Planned missions should reach ARTY (AIR) not later than 1800 hours daily. Methods of transmitting requests are, in order of their desirability:

a. In written (and/or overlay) from either through message center or by special messenger.

b. TWX or command radio channels.

c. Army Artillery Officer's radio net.

d. Telephone to ARTY (AIR).

e. Telephone to First Army Artillery Section for relay to ARTY (AIR). Requests for impromptu missions will be transmitted as indicated by the urgency of the mission.

*Duties of ARTY (AIR).* ARTY (AIR) will:

a. Assemble all ARTY/R planned missions.

b. When necessary communicate with corps artillery either to clarify requests or to coordinate similar requests submitted by more than one corps.

c. In conjunction with G-3 (Air) and G-2 (Air), determine which requests for ARTY/R will be accepted.

d. Notify corps artillery commanders of approval or disapproval of missions requested.

e. Communicate directly with Army Liaison Officer (ALO) with the Tac/R Group concerning the details of briefing, etc. (See sub-paragraph entitled "Pilot Briefing" below.)

f. Receive and take the necessary action in connection with all requests received for impromptu missions.

*Pilot Briefing.* When particular information will be required by the pilot(s), an officer should be flown by Air OP to the designated Tac/R squadron air strip to assist with briefing. Such arrangements will be handled through ARTY (AIR) after mission has been approved.

If necessary, arrangements can be made through ARTY (AIR) for the pilot(s) and ALO(s) who will handle the missions to report to the corps artillery FDC for additional instruction.

On search missions, unforeseen information necessary to the mission may be given the pilot after air-ground radio communication is established.

*Notes on Wire Communication (Artillery Officer, Fifth Army)*

The wire-route reconnaissance should be made with the idea in mind of laying lines cross-country. Usually routes can be found that have already been traveled on, thus minimizing the danger of mines. Wire laid along roads either on the ground or overhead is in danger, not only from enemy shelling, but also from friendly vehicular and tank traffic. The Signal Corps personnel salvage wire that is not in use. They ring in with test clips on a line and if no answer is received they assume the line is abandoned and pick it up for salvage.

It has been found that, on long OP lines, the practice of establishing test stations, permanently manned, at the base of the OP has been advantageous. On these lines the breaks are caused mainly by shell fire, and it is necessary to repair the lines several times a day. The use of the forward test stations enables crews to start at both ends of the line simultaneously, find the breaks, and put the line back in service with a minimum of delay.

Owing to the large number of circuits that follow the same routes, units should devise some method of identification for their own wire, i.e., distinct tag marking, large wooden tags stenciled with unit code name.

Wire communication is a main problem and concern for about the first 30 days of combat. Wire crews soon learn the little tricks that simplify the whole communication problem. They service a line properly and carefully during installation so that breaks will be minimized, thus allowing them to get a normal amount of sleep. When wire does go out, repair crewmen, instead of running up and down a line with test clips, check the location of enemy shelling and proceed to the scene of the shelled area, usually finding their trouble right there.

*Lessons Learned—Normandy (Division Artillery Commander, 1st Infantry Division)*

Observation is absolutely essential; it must be well forward. Infantry observers continue to prove of value, as they frequently see targets that field artillery observers have missed.

Decentralization of operations, under close division artillery supervision, again demonstrates that constant fire support over the entire division front can be given and maintained. Heavier concentrations are easily and quickly provided when needed.

Surveillance of target area after completion of fire mission frequently discloses profitable targets in about five minutes. Thinking the mission is over, the enemy climbs out of his holes to repair the situation and another volley of shells surprises him unpleasantly.

Vehicles in woods and similar targets are best dealt with by using high-angle fire with a delay fuze.

Light artillery may be called upon to shoot throughout a 3,200-mil sector. To save time and extra work, this thought should be kept in mind when digging the guns in.

Gun crews should be given all available information concerning targets—and, most important, they should know the effect of their fire on targets attacked. It is surprising how much it peeps up their spirit and speeds up their work to know what they are shooting at and the effect their rounds are having on the target.

In a country where all vegetation is green, camouflage discipline must be rigid. *All natural camouflage must be changed daily.*

Forward observers should not carry

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exposed map boards, because it discloses key men to sniper fire. FO maps should be carried inside the shirt in a waterproof cellophane pack.

OP's should be barred to all personnel except those required to observe and conduct fire. This is an old rule that is habitually broken. A guard should be placed at the entrance to prohibit the use of the area to everyone except those absolutely required at the OP. Nothing draws fire quicker than the flagrant waving of map boards or unnecessary traffic around the OP. Two men are all that are required of a forward OP.

OP's should not be dug in under trees, regardless of their size, because of the fragmentation of bursts in the branches. If it is necessary to dig in under a tree, the roof of the dugout should be sandbagged and supported by logs, planks, etc.

100% local security is essential, with machine guns and AA guns sited around the perimeter. Outposts must likewise be established without delay.

In view of the fire hazard from strafing planes and enemy artillery, full gasoline cans should be kept away from vehicles.

In occupying any new position, plans should always be made as though for a long stay.

A well trained demolition crew should be available to blow gun pits and to widen entrances to gun positions. In this connection, a good use for excess powder bags is to put one with a small (1 lb.) charge of TNT in the hole. Results are as effective as a full charge of TNT. Powder bags for this can be carried in a 105mm shell case, plainly marked. It is suggested that in blowing gun pits the demolition be timed to occur with the discharge of artillery pieces in the area, to confuse enemy sound and flash units.

Strict adherence to radio procedure is of the utmost importance owing to enemy jamming and the burden of traffic on available frequencies.

To prevent corrosion, all radio equipment should be thoroughly cleaned after de-waterproofing.

Waterproof bags proved invaluable and should be made available for use in the field for protection of radio sets from inclement weather.

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The results of an accurate calibration plus about 6,000 rounds of combat firing indicate that a definite VE correction for the 155mm howitzer M1 is necessary with present firing tables. All guns shoot short with firing-table data. This unit uses a VE of —30 ft/sec in all metro messages and also has the same VE set up on our GFT's. We use the VE rather than the K change in the belief that the VE is the sounder correction when applied to widely varying ranges, azimuths, and charges.

The 1/25,000 battle map has been excellent, particularly for the FO's. At the FDC we still employ the grid sheet as an HCO chart for three reasons: (1) the difficulty of accurately joining adjacent maps; (2) the variation in distance between grid lines of the map, and (3) the quality of the map paper causes excessive shrinkage and expansion with humidity changes. The battle map is used as the VCO chart, and elevations are taken directly from it with good results. This VCO chart also assists in the location of targets reported by coordinates and description.

Our fighting thus far has been from hedgerow to hedgerow with little real observation available. Since the FO cannot see outside his own particular hedgerow, it is important that infantry officers and NCO's be able to call for and adjust artillery fire. Too much time cannot be given on this training.

Our FO's still have a tendency to get pinned down with assault platoons in a fire fight. This is misplaced aggressiveness and must be stopped. We believe that the artillery LnO should assign the FO's to a proper zone of observation and OP and should not permit the FO to leave on any improper mission.

*VII Corps Assault on Cherbourg (Artillery Officer, First Army)*

During the VII Corps assault on Cherbourg, the following enemy message of artillery interest was relayed by 21 Army Group:

"Battle Group Schlieben sent the following midday report at noon, 24 June:

"Heavy bombing attack on Fort du Roule and flak position. Enemy will probably regroup his artillery in course of day. Communications to several battalions no longer exist. 8th

Battery put out of action by phosphorous shells. Heavier enemy attack expected tomorrow. Harbor railway station has been destroyed. Entire harbor contaminated. Enemy attack in area southwest Rouges Terres and Le Caillou. All informed. *Completely crushed by artillery fire.*" *Precision in Artillery Fire (Artillery Officer, First Army)*

Precision in artillery fire is dependent, among other things, upon:

- a. Uniformity of ammunition within and between ammunition lots.
- b. Observance of projectiles' weight zones.
- c. Relative calibration of weapons.

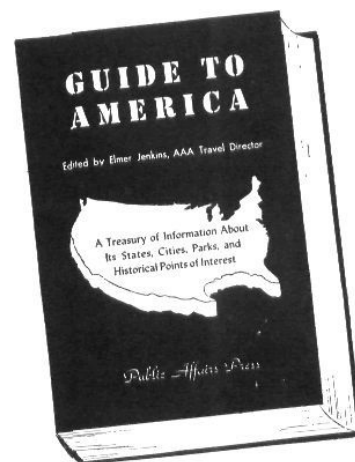
Uniformity of ammunition within and between ammunition lots is a matter of manufacture. It is anticipated that improvement in uniformity will be noted when ammunition manufactured in 1944 is received. In the meantime, ammunition that is being received by First Army does vary between lots and, because of mixture during many transshipments between the manufacturer and the ASP, is arriving in ASP's in very small lots. It is understood by all concerned that precision fire cannot be accurately conducted with mixed lots because of variation in projectile surface, seating of rotating band, and propelling charge.

ASP's have been instructed to segregate and issue fixed and semi-fixed ammunition and separate-loading charges by lot insofar as labor capabilities permit. Their success in so doing will be variable until main army depot stocks can be segregated. Units drawing ammunition must accept both large and small lots in order that availability of larger lots may be continuous. To insist on large lots only will only bring about a worse situation than exists at present.

Use of large and classified lots should be restricted to precision and close-support missions. Unclassified and small or mixed lots should be used for harassing missions and on area targets where precision is not paramount.

It is known by all field artillerymen that projectiles are marked by weight zone and that corrections for differences in weight from standard are included in the firing tables. Stacks of ammunition

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containing several weight zones have been observed in battery positions. ASP's have been instructed to segregate and issue separate-loading projectiles by weight zone so far as labor capabilities permit. This too will be variable until army depot stocks can be segregated. Firing batteries must be careful to observe weight zones whether firing fixed, semi-fixed, or separate-loading ammunition.

Army Ordnance Service now has available a mobile artillery-calibration team. This team is being made available to corps and will calibrate the field artillery weapons of each corps. Calibration is most important for large-caliber, high-velocity weapons because of the more rapid rate of wear in these weapons. For this reason, priority of calibration will be given to 8-in, 155-mm, and 4.5-in guns, and these weapons will be recalibrated at frequent intervals. Only relative calibration between the weapons of a battalion will be accomplished.

Since this type of calibration is new to most field artillerymen, it is well to note that a calibration in itself is not a cure-all, but a means of knowing the relative range characteristics of the weapons within the battalion. The factors which affect the accuracy of the fire of the battalion most are ammunition lots and weight zones.

To enlarge on the point that calibration of large-caliber, high-velocity weapons is most important, let it be noted that the 8-in gun loses 33 feet per second per 100 rounds, whereas the 105-mm howitzer loses only 2 feet per second per 1,000 rounds. There is, therefore, quite a difference between an 8-in gun which has fired 50 rounds and one that has fired 200 rounds (615 yards

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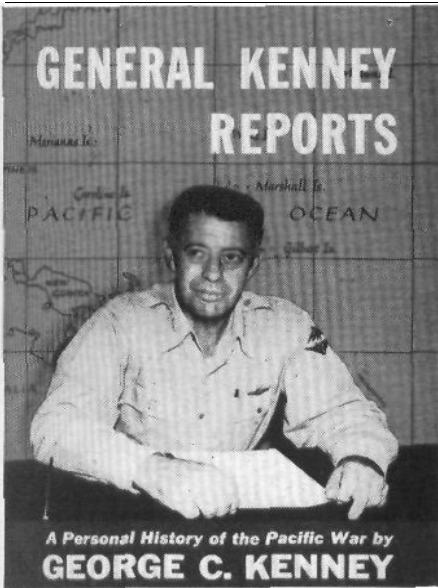
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at 25,000 yards), while the difference between a new 105-mm howitzer and one that has fired 5,000 rounds is only 10 feet per second (54 yards at midrange).

The limitations, usefulness, and practicability of calibration should be studied and understood by every field artillery commander. After he has once learned the relative characteristics of his weapons, he can keep up to date on them fairly accurately by using the figures in the accompanying table.

TABLE OF WEAR CHARACTERISTICS

WEAPON	VELOCITY DROP	ADVANCE OF FORCING CONE	INITIAL M.V.
76-mm gun M1	7.5 ft/sec/100 rds	No information	2600
3-in gun M3	9.0 ft/sec/100 rds	0.1-in @ 800 rds	2800
90-mm gun M1	9.2 ft/sec/100 rds	7.0-in @ 2000 rds	2700
105-mm how M2	2.0 ft/sec/1000 rds	0.07-in @ 5000 rds	1550
4.5-in gun M1	No information	No information	2275
155-mm how M1	3.3 ft/sec/1000 rds	No information	1850
155-mm gun M1	20 ft/sec/100 rds	No information	2800
8-in how M1	No appreciable drop in 2000 rds	0.15-in @ 1600 rds	1950
8-in gun M1	33 ft/sec/100 rds	36-in @ 450 rds	2850
240-mm how M1	3.3 ft/sec/100 rds	No information	2300



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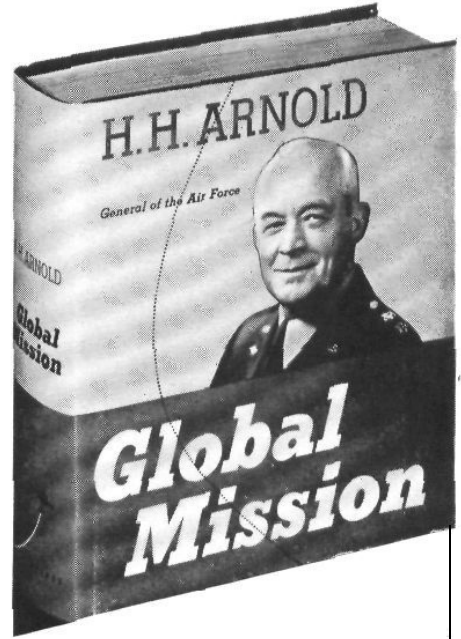
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