

*The*  
**FIELD ARTILLERY**  
*Journal*



APRIL, 1945

*Attention!*

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TANK DESTROYERS,  
AND MEMBERS OF  
AMPHIBIOUS TANK BATTALIONS:

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# The Field Artillery Journal

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AS THE WAR'S TEMPO quickens, eyes and thoughts turn more and more to the Pacific. Island combat conditions are graphically described in several articles in this issue. More will appear next month.

TROOPS IN EUROPE have been especially keen about learning as much as possible concerning conditions in the Pacific. Their anticipation of service there has had recent confirmation, through announcement of plans for moving men and equipment from the European Theater to the Far East.

When this shift occurs, it will require time to reverse the flow of thousands and thousands of types of articles. Not the least of these will be mail. Included, of course, will be your JOURNALS. Your Association will continue to make all requested changes of address, immediately upon receipt of your notice. We bespeak your understanding, however. Recent operations have delayed deliveries of even first-class mail. The sorting and resorting problems of the Army Postal Service will be compounded when we are preparing to bring full weight to bear upon the Japs. Delays in delivery will inevitably occur. But you can help minimize them by keeping us advised of your full and correct addresses, at all times.

MANY ARTILLERYMEN OVERSEAS are taking advantage of the savings available through your Book Department, to build up their libraries at home. Many sound titles are being published, well worth future reading or study. Some of them sell so fast that publishers soon run out of stock—and with the paper shortage, reprintings are rather rare. By patronizing your Association's facilities you have a double-barreled gain: you get what you want (and get it promptly), and save money in the bargain. Try it.

OUR COVER shows some 8" howitzers at work on Leyte.

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*Authors alone are responsible for statements made. No articles are official unless specifically so described.*

Neues Divisionszeichen - (TRANSLATION)  
 New Divisional Insignia for the  
**715. I.D.**  
**AVANTI! DIVISION**  
**FIRST PRIZE**  
 This drawing has been selected for first prize in the recently held competition in  
 division for a new insignia.

Letzte  
 Nachrichten  
 TRANSLATION  
**LATEST NEWS**  
 23 AUGUST  
**PARIS LIBERATED!**

**Frontpost**  
 AUSGABE SÜD  
 15. Dezember 1944

**Budapest in der Zange**  
 Deutscher Rückzug aus Jugoslawien bedroht  
 Am 8. Dezember wurde in Chiasso



(TRANSLATION)  
**Frontpost**  
 AUSGABE SÜD  
 December 15th, 1944

**Princers round Budapest**  
 German ex-cav  
 from Yugoslavia  
 In a report of the  
 2nd Ukrainian Army  
 to the staff of the  
 1st Army Group  
 in the Balkans  
 on December 12th, 1944  
 it was stated that  
 a group of about 100  
 German soldiers  
 had been seen  
 near the city of  
 Budapest.  
 It was further  
 stated that these  
 soldiers were  
 wearing German  
 uniforms and  
 carrying German  
 equipment.



**Haguenau taken**  
 In Haguenau, Alsace, the  
 American 2nd Army on Dec.  
 11th captured the  
 important town  
 of Haguenau, near  
 the junction of the  
 Moselle and Rhine  
 rivers. The town  
 had been held by  
 German forces  
 since the beginning  
 of the war.

**Wo ist Hitler?**  
 Where is Hitler?  
 (TRANSLATION)  
 Wann hat Hitler sein letztes  
 Mal gesehen?  
 Wann hat man seinen letzten  
 Laut gehört?  
 Wann hat man seinen letzten  
 Laut gehört?  
 Wann hat man seinen letzten  
 Laut gehört?

**AVANTI! DIVISION**  
**Soldiers of the**  
**'Avanti'-Division!**

**Das letzte Aufgebot**  
 (TRANSLATION)  
**The last effort**

**Die Alliierten rücken in Deutschland**  
 The Allies are advancing in Germany:  
**Why are you still fighting in Italy?**

**you still fighting in Italy?**

**DAS ENDE DER KRIEGS  
 THE END OF THE WAR**

**Fallen - kurz**  
 ODER: Auf Grund  
 Vertragnummer 604/44  
 vom 27. Juli 1945 werden die  
 Häftlinge...  
 1. Die Häftlinge...  
 2. Die Häftlinge...  
 3. Die Häftlinge...  
 4. Die Häftlinge...  
 5. Die Häftlinge...  
 6. Die Häftlinge...

**SAFE CONDUCT**  
 The German soldier who carries this safe-conduct is using it as a sign of his genuine wish to give himself up. He is to be disarmed, to be well looked after, to receive food and medical attention as required, and is to be removed from the danger-zone as soon as possible.  
 H.P. B. Bauer  
 Commander-in-Chief, Allied Forces in Italy  
 FASSERSCHREIN. An der allersten Vorposten: Der deutsche Soldat, der diesen FASSERSCHREIN trägt, erweist sich als Zeichen für seinen ehrlichen Willen, sich zu ergeben. Er ist zu entarmen. Er muss gut behandelt werden. Er hat Anspruch auf Verpflegung und, wenn nötig, ärztliche Behandlung. Er muss so rasch wie möglich aus der Gefahrenezone entfernt werden.

**...but prisoners of war return to their families!**  
 (TRANSLATION)  
 Die Fünfte Armee sendet Soldaten in Italien, diese Soldaten unserer Landsleute vor...

# Psychological Warfare

## LEAFLET SHELLS

By Maj. G. B. Foster, Fifth Army PWB Section

"You achieve more with leaflets than we with grenades," the remark of a young Lance Corporal from a German infantry division taken prisoner on the Italian front last November, is but one of the many expressions of opinion by German prisoners on the leaflet war which the Fifth and Eighth Armies have waged with such increasing effect.

Almost daily, without remission, a flood of leaflets is being poured over the enemy lines on the Italian front by shell-fire: leaflets which attack every point in the Nazi armor; leaflets which aim at undermining the morale of the German soldier, and at breaking down and destroying the German's will to fight on, just as surely as our shells and bombs break down his material defenses.

This massed leaflet campaign has been possible only through the closest cooperation which has been afforded the Psychological Warfare Branch by all headquarters from Army down to Divisions, particularly by the Intelligence and the Artillery staffs and by all Ordnance units, and by the gunners themselves who are finally responsible for insuring that these leaflets are placed accurately in those areas where enemy troops are concentrated or where enemy troops are likely to pass. This system of dissemination of leaflets over enemy front-line troops is the result of much experience, much trial and error, throughout the Allied advance in Italy from the days of the landings in the south over a year ago. The organization which has been evolved for attacking enemy front-line troops with leaflets is so closely tied in with normal army ammunition supply that it has been possible to put down on the enemy a daily leaflet barrage.

### WHAT THEY ARE LIKE

#### *News Leaflets*

Regularly, twice a week, along the whole length of the Italian front a one-page newspaper for German troops is disseminated by the artillery. Started a year ago with a regular weekly edition, "Frontpost" has become well known in the German army and is eagerly awaited by all German soldiers in the line. This is now a semi-weekly news sheet. Together with its supplement, "News from the Home Country," it gives the German soldier the latest news on the progress of the war. With very little news reaching him from his own higher headquarters—and that only very late and very drastically edited—this news sheet has become for the German soldiers the most important and most reliable source of information on the progress of the Allies. One of the American divisions of the Fifth Army, in its report on the Italian campaign, stated: "The enemy has become so accustomed to receiving the periodical that some PsW demanded their weekly copy of 'Frontpost' as if they were paying subscribers."

#### *General Propaganda Leaflets*

Any topic which it is believed would have a demoralizing influence on the German soldier provides material for general

propaganda leaflets. The situation in Germany, the Allies' war aims, post-war Europe, the treatment of PsW by the Allies, hints on how to desert, are but a few of the themes which have been exploited in leaflets.

#### *Tactical Leaflets*

The accuracy with which leaflets can be landed on a target has been demonstrated on many occasions during the Italian campaign, both in actual combat and in trial shoots. Two examples can be cited.

Prior to the bombing of the Cassino Monastery, some means of warning the Italian civilian inhabitants of the imminent air attack on the German-held monastery was required. Consequently a leaflet bearing a brief warning in Italian from the Fifth Army, telling the Italians that at last we found ourselves compelled to train our guns on the monastery itself and urging them to leave the building at once, was loaded into 25-pounder shells and fired over the famous building. Artillery and PWB observers saw the leaflets shower down on the abbey. Some of the Italians who escaped from the abbey reported subsequently that the leaflets had reached the target and that the message had been received by all the civilians in the monastery.

At a trial shoot held in Italy on 20 Aug 44, 20 leaflet shells fitted with Fuze TM 67 were fired to burst at a range of 6,000 yards. It was intended to detonate all 20 shells in the area of a farm house. The gunnery was so accurate that although the first round of the 20 was a contact burst some 75 yards from the farm house, the following 10 all detonated at a fairly regular height of 300 feet above the building. No leaflets reached the ground more than 50 yards from the farm house.

With such accuracy possible, leaflets can be addressed to specific units on the front and landed where required. Thus, when any unit finds itself in a "tight corner" or when we have access to intelligence which might prove particularly demoralizing to the unit, a message is addressed to the particular division, battalion, or company. Such leaflets have very telling effect: in many instances, articles have appeared in German army publications in which attempts have been made to counteract the effect of these leaflets.

A leaflet was addressed by PWB to the 42nd Jaeger Division in which were included the usual instructions on how to surrender—waving a handkerchief, or the leaflet, etc. This leaflet had such an effect on the troops of the division that half the following edition of the division's news sheet was devoted to a venomous article which attacked the leaflet and attempted to refute our main arguments, and which ended, "They will not wave the leaflet as you would like them to do, but they will stuff your lying mouths with a bullet."

**KRAFT durch FURCHT?**  
 Das deutsche Volk weint sich nach Frieden, und es  
 kann das deutsche Niderlagen unvermeidlich  
 sein. Krieg weiter. Warum?  
 nicht weint, das  
 weint.

**Strength through Fear?**

The German people longs for peace, and realizes that  
 German defeat is inevitable. Yet the war continues.  
 Why?

Because the German people doesn't yet dare to shake  
 off the regime of war and annihilation. Everybody is  
 paralyzed by fear of the Gestapo. While the Führer has  
 remained silent and invisible for many months, the  
 Reichsführer, Heinrich Himmler, conducts his regime  
 of blood and terror.

Moreover, there is the fear of the consequences of  
 the last war. Goebbels tries to make the Germans believe  
 that in the case of defeat the whole nation will be enslaved  
 or exterminated. Of course, that's an impudent lie.  
 All the responsible  
 Nazis, Roosevelt,  
 Italy declared its  
 war - the German  
 Germans who let  
 East would  
 with succeeded  
 people a little  
 propaganda of  
 military situa-  
 become clear

Fear

**A wet grave?**

"The depth of the river Po, at its shallowest  
 point, between the Adige and the Mincio and at  
 low water, is 1.98 metres. At its deepest point,  
 near Pavia, and at high water, its depth is 5.93  
 metres."

**SAFE CONDUCT**

By presenting this pass, the bearer or bearers indicate that they are  
 deserting against the Allies. Take him or them to safety.

(TRANSLATION)  
**SAFE CONDUCT**

By presenting this pass, the bearer or bearers indicate that they are  
 abandoning the fight against the Allies. Take him or them to safety.

This safe conduct assures you a safe passage through our lines.  
 Agree amongst yourselves. Get hold of a leaflet. One is enough for the  
 whole group. Come in groups of not more than 5 or 6.  
 at dawn  
 a white  
 lead the  
 terrain is favourable. The darkness  
 or afterwards, not before  
 cloth or handkerchiefs  
 party. Our  
 be well  
 draw you

**BEUTERDEUTSCHE  
 DER 42-TEN  
 BEUTERDEUTSCHE  
 OF THE 42 JAEGER DIVISION:**

Eure Führung ist  
 NS-Livision aus  
 dem Sektor bei  
 42-ten Division ist  
 Winter etwasi sein  
 und Ebnstellung  
 30-Einzel sich ist  
 Die Nazis vert  
 darauf sollt  
 abgeschriebe  
 Wie gewöhnlich  
 keine Flieger  
 Erster Untere  
 Ihr seid dazu  
 den für

EURE LAEN  
 ZUM  
 Ihr habt in

You are to be used as human mines  
 to cover the withdrawal of

Soldati della  
**MONTE ROSA**  
 e della  
**SAN MARCO**  
 Soldiers of the divisions  
**MONTE ROSA**  
 and  
**SAN MARCO**

I son  
 Edito, the  
 given and  
 who leave

Li able  
 le ante a  
 carry the  
 opera...

E I  
 NO

The real Alps, those of the Edito, Montorno, To  
 Fano, Venturo, Veneto Battalione and of the Bergamo  
 Group, know what the Germans did in their conquests in  
 the battlefields of Russia...

They abandoned them in the snow, without fuel,  
 on to the tracks which were carrying the Germans in  
 their desperate flight...

Will the Germans in Italy treat you  
 any better? What will happen to you?

What will happen to you when the Allies begin their  
 attack and chase the Germans out of Italy once and  
 for all?

You will be treated, hated,  
 You will return to the concentration camps in Ger-  
 many... and you will not come back. You will die!

**CROSS  
 THE LINES!**

**Safe Conducts**

A "Safe Conduct Pass" assures the bearer of good food, medical attention, removal from the battle zone—all strictly in accordance with the Geneva Convention. Although obviously it is superfluous for a prisoner to carry one, yet the written assurance has had very telling effect in hundreds of cases. It has been reported that these Safe Conducts have an exchange value of 5 cigarettes, and many PsW have stated that most German soldiers carry one on their person "just in case."

**PREPARING THE SHELLS**

Once the leaflets are produced, then the process of dissemination begins. As soon as the leaflets are printed at the press, a team of civilian laborers is employed to roll them into cylinders which exactly fit the shells for which they are intended. Sizes have been carefully worked out in order that the same leaflets may be rolled in two different ways to fit the British 25-pounder as well as the American 105-mm shell. Care has to be exercised in the rolling in order that damage caused by tearing when the leaflets are expelled from the shell may be minimized. As a result of experience gained in Italy, 95% of the leaflets leave the shell unimpaired, apart from a uniform crinkling which is imparted to the leaflet by the shock of discharge.

When the leaflets have been prepared in rolls they are delivered to the ammunition supply points where they are loaded into the shells. The shells used for this purpose are, as already stated, the American 105-mm and the British 25-pounder, base-ejection, smoke shells. At the dump where the shells are

prepared a supply of smoke shells is kept available and a team of trained personnel alerted to prepare the leaflets. A long assembly line is in operation. As a shell passes down the line it first has its base plate unscrewed. Then the smoke canisters are removed from the shell. Steps are taken to ensure that the explosive charge lies flat in the recessed chamber in the nose of the shell and that the baffle plate is correctly seated. A considerable thickness of cardboard discs next is inserted in the shell in front of the leaflet roll, in order to protect the leaflets from the burning of the ejection charge. Then follow one or two rolls of leaflets, according to size. The shell is closed by screwing home the base plate. It is then put back into its container, which is marked clearly (with either a stencil or a label) to show the type of leaflets the shell contains.

**DISTRIBUTION OF SHELLS**

While the shells are being prepared at the filling dumps, arrangements are made by telephone through the artillery staffs at the corps headquarters with the artillery units in the line, and the allocation of shells is made to various units. When using 105-mm shells the proportion to be fitted with fuze TM 54 (which gives an air-burst range of 8,000 yards) as compared with fuze TM 67 (giving an air-burst range of 12,000 yards) must be decided upon. When the shells are filled they are delivered by routine ammunition convoys to the various dumps from which the artillery units collect their normal ammunition supply.

**SOURCES OF MATERIAL**

Material for these leaflets comes from varied sources. A continuous check is kept at PW cages on the current thought topics of the German front-line soldier, and any new trend in

German morale is detected. Reports furnished by PW interrogators provide up-to-date background material for all who have any part in this branch of psychological warfare. For tactical leaflets, intelligence usually is provided by the G-2 staff at the various headquarters. Captured documents are carefully studied and enemy broadcasts are monitored closely to furnish background material for this leaflet war.

#### VALUE OF THIS PROGRAM

Evaluation of the extent of leaflet dissemination over the enemy is extremely difficult, if not impossible. It has been possible, however, to keep careful check throughout the Italian campaign on the dissemination given to leaflets both by the artillery and by the Air Force, and regular monthly polls conducted at PW cages give the percentage of PsW who have seen or read Allied leaflets as varying between 50% and 85%. Instances are not infrequent when every man in a platoon or section had a leaflet in his possession when captured.

To assess the effects of this psychological warfare is, however, more difficult. All reports indicate that our combined propaganda efforts have a very telling effect on the enemy, and the German High Command has been compelled to acknowledge in several ways the effectiveness of Allied propaganda.

Up to the end of February, 1944, little objective reaction to our artillery leaflet campaign was evidenced by the German High Command. But, as the effects of our leaflets began to tell on German front-line morale, the Germans themselves began a high-pressure leaflet campaign against Allied front-line troops, particularly against the Anzio Beachhead forces.

Since then, the Germans have produced a wealth of profusely illustrated leaflets exploiting every possible argument which they can muster. Dissemination of the leaflets has been carried out by various means. Patrols have brought packets with them to be left behind. Aircraft (if and when available) have dropped leaflets over our troops. But the principal means of dissemination has been by two projectiles specifically designed for the purpose, viz.: the rifle grenade, and the propaganda mortar grenade 41. But complete satisfaction with these two weapons, as compared with the Allies' 105-mm and 25-pounder modified smoke shells, could not have been obtained by the German authorities, as a document was captured giving details of a competition in which

prizes were offered by the German High Command for any member of the Wehrmacht who could devise a new means of disseminating propaganda to the enemy. Nothing could have resulted from the competition, though, as no new projectile has been encountered.

The influence which Allied leaflets have had on the efforts of the German authorities has on many occasions been clearly evident from the way they sedulously have copied our phrases, sentences, and even complete leaflets in their propaganda. An outstanding example of this is a recent leaflet produced by the enemy, entitled "Lies You Are Being Told," which has been copied textually from an Allied leaflet "Lies You Are Told."

Orders are issued at regular intervals to the Political Officers in the units of the German Army in a frantic attempt to counteract Allied propaganda, and instructions are given on the most effective methods to stave off the effects of this "poison" on German troops. The following extract taken from an order published by the commander of a German Panzer Division is but one instance of the energetic measures taken by the German Command against Allied leaflets:

"The enemy, who in spite of superiority in men and weapons cannot break our positions, inundates us with a flood of leaflets. We must prevent this venomous material from falling into the hands of irresolute comrades. I, therefore, forbid the reading of enemy propaganda leaflets! Anyone who finds an enemy leaflet must tear it up immediately and hand it over to his superior. The Company leader has to arrange for the burning of the leaflets. Anyone found in possession of an enemy leaflet not torn up is to be punished. In case of repetition, an insubordination report is to be made. I know that every decent soldier, conscious of the seriousness of our struggle and of the magnitude of our task, calls for the severest measures against all those who attempt even in the smallest degree to weaken the fighting power of our people."

Conversely, the German Command's own words written with reference to their own propaganda, are indeed appropriate to the Allied Psychological Warfare during the Italian campaign, waged—in large proportion—through the keen cooperation of the Artillery: "With great success our propaganda already has been directed against the enemy; it has spared many of our comrades' lives and blood, and thus fulfilled an important function."

---

## AN ARTILLERYMAN LOOKS AT PROPAGANDA

By Lt. Arthur Hadley

Leaflets are fired at the request of the Division G-2, with whom arrangements have been made by the Psychological Warfare Liaison Officer. (We will assume that we are dealing with a Division and DivArty set-up, though the same holds true for the artillery in support of combat teams, or Corps Artillery.) The leaflet may be general in its appeal and be fired over the entire Army front, or it may be directed to a specific enemy unit opposite one or two divisions.

Leaflets are loaded at Army level by the Psychological Warfare artillery team in base ejection howitzer smoke shells, 600 in a 105-mm or 1,000 in a 155-mm, and are normally delivered down to Division Artillery level. Between 75 and 100 rounds will cover the average division front. The soldier who delivers these rounds contacts the DivArty S-2 and informs him that so many rounds, identified by a distinctive marking on

the fiber case and with a copy of that specific leaflet in the cover, have arrived. He also gives the S-2 enough copies of the leaflet and of the translation for all the men involved in firing the leaflet, for it is only fair that these men who do the work should see what they are shooting. The artillery S-2 then gets the G-2 on the phone and tells him that so many rounds of this particular leaflet have been delivered.

While the SOP from here on differs slightly with each organization, the following is most generally used and seems to be about the most workable procedure. The G-2 informs the S-2 of the area in which he would like the leaflets fired, and leaves the selecting of specific targets up to the artillery. The S-2 and S-3 then get together and decide which battalion or battalions will fire the rounds; these battalions are then informed

that there are so many rounds of propaganda shell at Division to be picked up, and told the area in which the shell is to be fired. Again the actual selection of specific targets is left up to the lower unit for, like any other form of fire, this can be effective only in an area where there are enemy troops—and the location of busy road junctions, chow lines, and CPs are best known by the battalion firing in that area.

In firing the shell time fire is used. Height of burst for most effective distribution is 100 feet. Observation, while not absolutely essential, is a distinct advantage as the wind may often cause the falling leaflets to drift away from the target. At average ranges the leaflets can be picked up with glasses, and may even be visible from the air OP if the sun is behind the observer. Although the firing tables are much like those for regular smoke, the different weights of paper used in making the leaflets sometimes result in a slight error. Also, observers should be cautioned in adjusting on the first round as the shifting of paper under the impact of firing occasionally results in the round's being erratic.

As to the effectiveness of leaflets, in one recent operation 350 enemy soldiers surrendered after a combined loud-speaker appeal and leaflet barrage, enabling our infantry to occupy a strongpoint without a single casualty. Ultimatums, calling on a German garrison commander to surrender, are printed in leaflet form and fired at his troops so they will know both what is going on and the situation in which they will be placed if he refuses the ultimatum. This was particularly successful at Brest.

The SHAEF surrender pass, which guarantees good treatment to the German using the pass as a genuine sign of his desire to give himself up, is placed in the hands of the enemy soldiers by artillery fire, as is also a weekly newspaper. Prisoner of war interrogation has revealed that the leaflets enjoy a wide circulation and are much discussed; also, that special political orientation officers have been appointed whose main duty is to confute Allied leaflets, and that in some areas severe penalties have been imposed for reading Allied propaganda. It seems that the leaflet is doing what was intended:

**FIRING TABLES FOR PROPAGANDA SHELLS**  
Shell BE M84, Fuze T & SQ M54 for 105-mm How M2,  
M2A1 & M4

CHARGE 5

<i>Desired Rn for Propaganda</i>	<i>HE setting in yds.</i>	<i>Fuze setting for graze burst</i>
2000	1880	6.4
2500	2375	8.0
3000	2870	9.7
3500	3365	11.5
4000	3865	13.3
4500	4370	15.2
5000	4875	17.1

CHARGE 7

5000	4955	13.1
5500	5465	14.7
6000	5975	16.3
6500	6585	18.1
7000	7000	20.0
7500	7525	21.9
8000	8090	23.8

The best available data should be used.  
Depending on wind conditions, 100/R is the best Ht of Burst.

instilling that doubt in the mind of the enemy that makes him fire one burst less, quit one minute sooner. A leaflet shell is not a substitute for HE. It is not meant to be. Propaganda is another supporting arm trying to get the infantryman to his objective a little sooner with a few less casualties. If leaflet firing does this, it has indeed justified its existence.

## CALIBRATING ANGLE OF SITE—"END-FOR-END" METHOD

This method of calibrating angle of site on fire control instruments depends on the principle of reversion. Any error of adjustment will appear doubled in the results of the test.

To make the test, two stations are established on the ground 75 to 100 yards apart. At each station a stake with a flat smooth top surface is driven or a stone with a flat top surface is seated firmly in the ground. The instrument to be calibrated is set up at station 1 and leveled with the objective lens slightly in rear of a pole held in a vertical position resting on the stake or stone. The height of instrument is then marked on the pole at the same height as the center of the objective lens. This is done by determining the radius of the objective lens and applying it in the proper direction to the height determined for the top or bottom of the objective lens.

The pole is then taken to station 2 and held vertically on the stone or stake there. The angle of site to the height of instrument mark is then measured with the instrument and noted. Clarity of sighting is improved if the edge of a card or other well defined straight edge is held horizontally in contact with and just below the pencil mark on the pole.

Then the instrument is set up over station 2 and the entire procedure is repeated, step for step. (CAUTION: The height of instrument as set up at station 2 must be marked on the pole and

used as the sighting point when the pole is set up at station 1.)

If the algebraic sum of the two angles of site measured equals 0, the instrument is in adjustment and no correction need be applied to readings taken with it; for example:

$$\begin{array}{r} \text{Site measured at station 1} = +5 \text{ } \mu \\ \text{Site measured at station 2} = -5 \text{ } \mu \\ \hline \text{Algebraic sum} = 0 \end{array}$$

If the algebraic sum of the two angles of site is other than 0, the instrument is in error by one half of this amount. The sign of the error is the same as the sign of the algebraic sum of the two angles of site. The correction is applied in the opposite direction:

$$\begin{array}{r} \text{Site measured at station 1} = +5 \text{ } \mu \\ \text{Site measured at station 2} = -8 \text{ } \mu \\ \hline \text{Algebraic sum} = -3 \text{ } \mu \\ \text{error } -3/2 = -1.5 \text{ } \mu \\ \text{correction} = +1.5 \text{ } \mu \end{array}$$

The correction is applied to each angle of site reading thereafter, unless the instrument contains an angle of site micrometer which can be adjusted to the true setting.



# DIRECT SUPPORT :-:

By Maj. R. W. Millican, FA, and  
Sgt. John Lynch, FA

Here is the direct support artillery role in what was characterized by XIX Corps Headquarters as the "perfect infantry attack." It was so described in an Associated Press story datelined 26 Nov 44, which gave an excellent news (non-technical) account of the operation.

This is not an attempt to set forth a standard operating procedure. No two operations are alike except that men die and you advance by fire and movement. This is an account of how a direct support battalion functioned in an attack on strong field fortifications in Germany.

Our mission was direct support of the 117th Infantry. Their mission was to capture in succession objectives E, K, G, H, M, and N (Overlay Sketch No. 1). It was expected that E would be taken the first day, K and G and then H the second, and M and N on the third day.

Three thousand years ago a Chinese said that tactics, like water, must conform themselves to the ground over which they flow. That is true today with a vengeance—ask anyone who fought in the hedgerows. The terrain over which this attack would be made was like a billiard table with a few blocks scattered upon it. The only concealment was in or near towns—amid the blocks. The important terrain features were, from north to south: the railway embankment north of Mariadorf, the two slag piles at Mariadorf (the near or northwest one 80 meters high, the far one 50), Mariadorf itself, the railway embankment south of Mariadorf, and the woods and ravine southeast of Kellersberg.

The front in this sector had been static for some time. This meant that the Boche had laid many mines—but also that we had a fair idea as to where his installations were. Within the limits of fluctuating ammunition allowances we had sniped at him quite a bit. Every time we'd shoot in a good target we would replot and then transfer it to an overlay marked "Known Enemy Installations." Sometimes, of course, he would move to alternate locations, but most of the time he wouldn't; reason: no suitable alternate locations.

We observed several characteristics. German mortars were invariably near German OPs, linked by wire communication. Long lines could not be maintained in the face of our artillery. Direct fire guns will stick to certain areas, those that meet the requirements of concealment and field of fire. We actually shot out two direct fire guns in the same location three days apart. Wherever there are Boche there are MG 42s.

Our infantry had attached to it the mortars of a tank battalion, and also one tank company. We had the 70th FA Bn (105-mm how) in direct support (virtually attached). Also we had a semi-battalion formed by grouping the 117th Inf Cannon Co with the 406th Inf Cannon Co (the latter having been loaned to us at the last minute). That is a total of thirty-six 105s which were at the immediate call of our FDC. In addition, a company of 4.2" mortars was to work in our sector, available through DivArty, and there was a great amount of reinforcing artillery at hand.

For many a day our doughboys had gazed across the flat beet fields between Alsdorf and Mariadorf and shuddered. There was no cover. The wooded ravine to the south had been explored with unhappy results. Their plan was to take off at a dead run, go around both sides of the near slag pile, and get on the first

objective (E, or Mariadorf town) before the Boche could slam the door with artillery and mortar defensive fires. There was to be no alerting artillery preparation. During the attack the flanks of the penetration area were to be smothered with HE, and the area of penetration was to receive ten minutes' fire while the assault companies made their 700-yard dash. The 2nd and 3d Bns would make the attack.

After consulting Ln-2 and Ln-3 we decided to send one FO with the assault companies of each battalion. A third FO from the 70th FA Bn would go with a support company of the 2nd Bn. All present static OPs would be manned to cover the attack. The FO who accompanied the 3d Bn was to find an OP that next day could cover the advance of the 1st Bn through the housing project.

The artillery fire plan was gotten up in the following manner. After consulting the infantry and our overlay of known locations we requested certain fires from Division Artillery. We told them where, how long, and what type (neutralizing or harassing). They, after a parley with Corps, told us what we'd get. With the Division plan in our pocket we went back to the infantry and planned the fires with their mortars and our thirty-six 105s. One unique feature was the plan to place one battery's time fire concentration on each of the two slag piles. These concentrations were to be lifted on call from static OPs when the infantry got too close for safety. As Ln-2 was not satisfied with the fire along and in back of the railroad embankment north of Mariadorf, we put our third battery in that area firing different time fire concentrations at maximum rate. This last paid dividends.<sup>1</sup>

The composite fire plan was as shown in the table below (see Overlay Sketch No. 1).

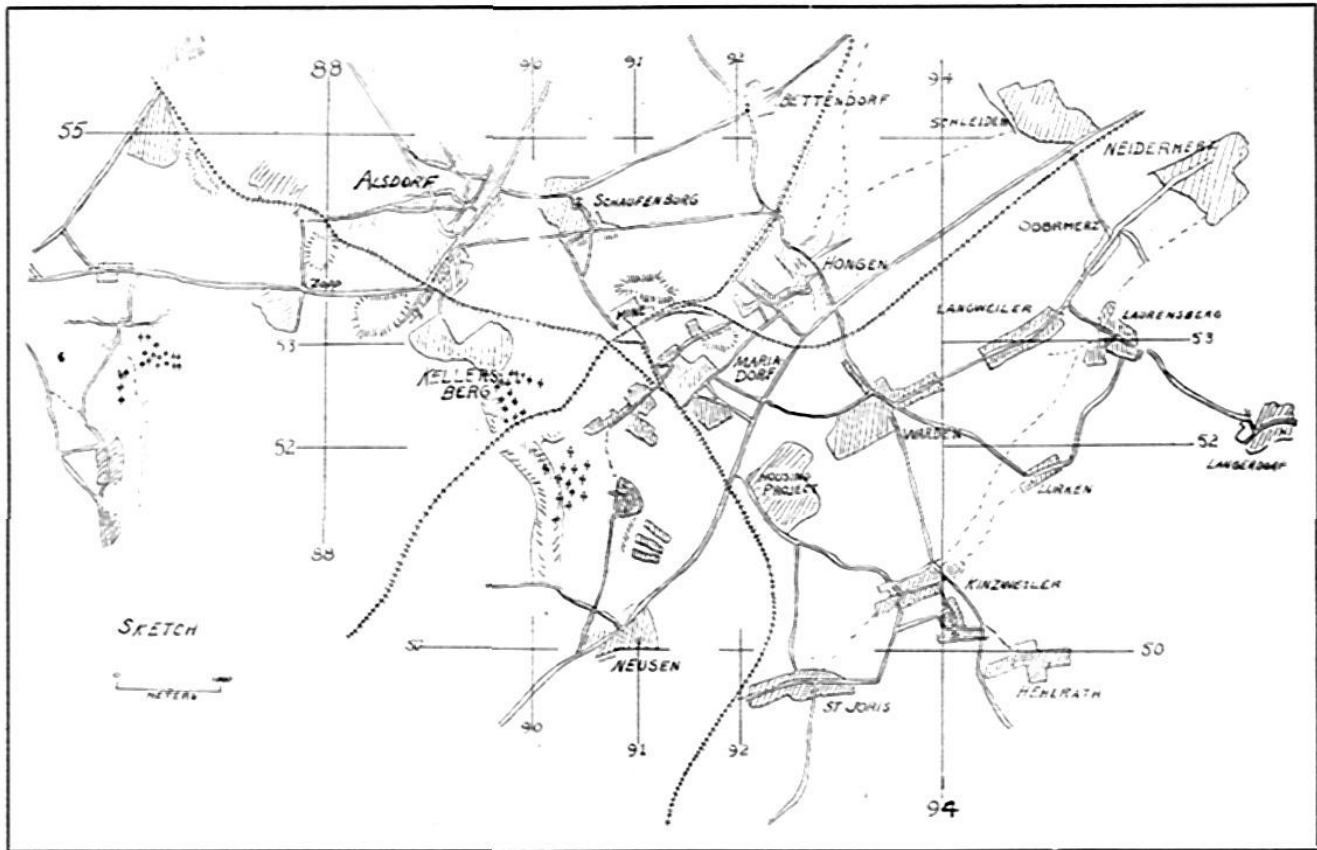
<i>Time</i>	<i>Unit Firing</i>	<i>Area or Conc</i>	<i>Method of Fire</i>
H 'til lift	118th FA "A" & "C"	Conc 1 & 2	1 btry v/min ti fire
H to H+10	General support	Area 1	Neut fire
H to H+30	General support	Areas 2 & 3	Neut fire
H to H+60	1 plat 4.2" mtrs	Area 16	250 rds
H to H+15	Btry B, 118th FA	Area 17	220 rds ti fire
H to H+30	117th Inf & attachd mtrs	Areas 11, 12 & 14	Neut fire
H to H+30	4.2" mortars	Area 15	Neut fire
H to H+2	117th & 406th Can Cos	Area 12	4 vol max rate
H+2 to H+15	117th Can Co	Area 15	Neut 1-v/min
H+2 to H+15	406th Can Co	Areas 15 & 10	Neut 1-v/min
H+15 to H+30	406th & 117th Can Cos	Areas 13 & 9	Harr plat v/min
H+15 to H+60	70th FA Bn <sup>2</sup>	Area 18	Neut (total 192 rds)
H to H+60	General support	Areas 4, 5, 6, 7, & 8	Harr fire

Initially every tube was tied up with prearranged fires. We expected, however, that our own "A" and "C" batteries would be free by H+10. Previous experience indicated that very few targets are picked up in the first few minutes of an attack.

We drew up a plan of defensive fires for each of the objectives in advance. We planned the use of FOs from the jump-off to the final objective. The liaison officers came in, got the defensive fires, and were briefed on the plans for supporting fire on D-day and for employment of FOs. With Ln-1 we drew up a tentative fire plan for the attack on the housing

<sup>1</sup>Our S-2 later found in this area 12 abandoned MGs that had not fired a round.

<sup>2</sup>70th FA Bn was used by DivArty from H to H+15.



project (Objective G).

The morning before the attack there were air strikes on Mariadorf and Hongen. We marked the targets with red smoke, our observers correcting any errors in marking. H-hour was near mid-day, immediately after the air strike.

We had shot in Concentrations 1 and 2. The batteries had given the data to each section to avoid delay. H-hour came, the tumult began, and we waited. At H+6½ "B" Btry reported rounds complete, each of six concentrations fired twice, btry 3 rounds. At H+10 Ln-2 called for Concentration No. 1 to lift. Ln-1 reported that the assault companies were moving around the slag pile into the mine, walking upright. About H+15 Ln-1 fired at a machine gun in a house on the near edge of Area No. 2. Ln-2 called for Concentration No. 2 to lift. Ln-1 reported no Boche artillery or mortars as yet. A Cannon Co FO on "B" Co OP began firing on some 25 Germans with machine guns short of the north edge of Area 14 (Overlay Sketch No. 1). Two batteries with time fire were put on this target, firing about 60 rounds. When the area was mopped up three walking wounded were gotten out; the rest would never walk.

By dark all of Objective E except the far slag pile had been taken. The fog of war began to settle.

The 70th FA Bn lost contact with their FO accompanying the 2nd Bn. Our FO with the 3d reported his location, then checked out of the net to conserve batteries. When we attempted to decode his message giving his location, we couldn't. Ln-2 moved up to Mariadorf. The Boche began to shell the road between the mine (by the rear slag pile) and the town with 150s.

Ln-1 called up about dark. The FO who was to accompany 1st Bn to Objective G (housing project) was with him. He wanted to

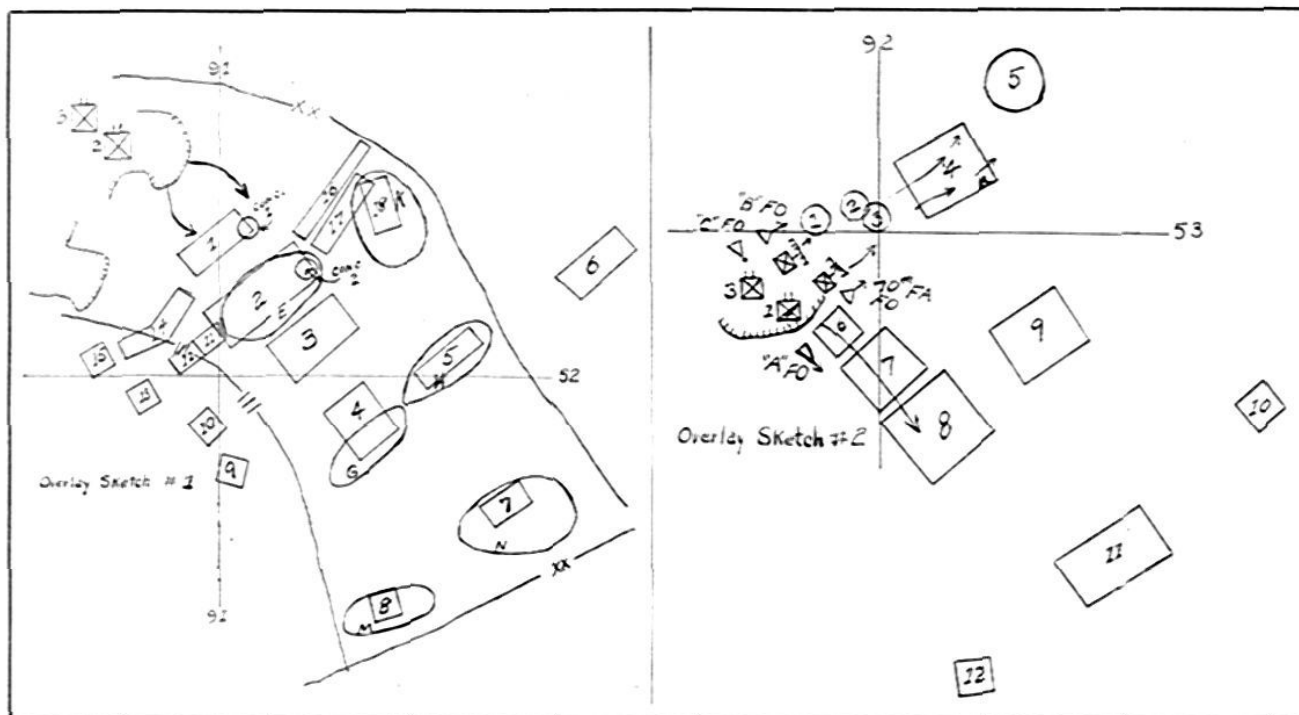
know what the FO with the 3d Bn could see that would help him. We couldn't tell him. He still planned to use the previously-prepared supporting fires (Overlay Sketch No. 2).

H to H+5	Area 6	Bn concentration
H+5 to H+15	Area 7	Rolling barrage
H+5 to H+15	Area 8	Med arty neutralization
H to H+60	Areas 9, 10, 11, 12	Harassing fires

For Ln-2 it was agreed to put some "heavy stuff" (TOT with several medium bns) on Hongen and to fire Concentrations 2 & 3 (Overlay Sketch No. 2) at H-hour.

One company was to go around the east side of the slag pile, another west of it. The 70th FA Bn FO had never made contact with his company, the one that was to go to the east. Our "B" FO was with the company that was to go to the west of the slag pile. H-hour was 0700 hours.

The 1st Bn got through the rest of Mariadorf but stopped at the main highway short of the objective to reorganize. The company of the 2nd Bn that went east of the slag pile faded into the blue as far as we were concerned. The company west of the slag pile got pinned down by machine guns in houses at Concentration No. 1 and an AT gun at Concentration No. 2 (Overlay Sketch No. 2). At about 0805 hours our "B" FO began adjusting on these houses—which were slightly less than 200 yards from our advance troops. At 1130 the 4.2" mortars began anew to neutralize the Hongen area. At 1155 we fired a preparation on the houses at Concentration No. 1 and lifted to Concentration No. 2; this had been planned and coordinated by our FO and the company CO. The company east of the slag pile would not give us clearance on Concentration No. 3 but asked for fire 200 yards north of that point (and got it). This gave us an inkling of where that company was. The 2nd Bn's attack proceeded slowly because they had to pause to take quite a few prisoners, but by about 1500 they



were on their objective. The mortar fire on Hongen was lifted at 1435.

While the 1st Bn halted to reorganize, the unit on their right was counterattacked. They waited until that was cleared up. At 1400 we put all 36 of our 105s on Area 4. The infantry moved in behind the fire. By 1530 they were on objective G.

About 1530, as our FO with the 2nd Bn got into an OP in Hongen, he saw about 100 Boche retreating north from that town. The location he sent in plotted out in the open, so we started to put only one battalion on the target. We were a little skeptical about so many Boche thus exposing themselves. The FO's radio operator clarified the situation by saying, "The whole damn German Army's out there." We put ourselves and the 70th FA Bn on the target until it disintegrated and melted from view. Later that night we fired on some enemy infantry near the railroad underpass west of Hongen, perhaps remnants of this group.

The 40th Inf Cannon Co reverted to their own regiment's control. This left thirty 105s at our immediate call. During the attack this day we got a wire-head up as far as Ln-1, on the far side of Mariadorf. We also put in a wire to Ln-2 but could not keep it in because of enemy artillery and friendly tanks.

The 1st Bn planned to attack Warden (Objective H) from the east and the southeast, one company attacking from Mariadorf and one from Objective G (the housing project southwest of Mariadorf). The "A" Btry FO with the 1st Bn had observation on Warden and had registered us on a house on the rear side of town. Also the FO from the 70th FA Bn in Hongen had observation on Warden. The fire plan had been tentatively drawn up prior to D-day:

H to H+10	Warden	Neutralize (118th & 70th FA plus Can Co)
H to H+60	Langweiler, Lurken Kinzweiler, St. Joris	Neutralize—general support

At 0730 the attack jumped off. The tanks failed, however, to accompany the infantry and maintain neutralization. The attack was repulsed with losses. "A" FO shot out a machine gun that he picked up during the attack. The 70th FA Bn FO in Hongen

shot at two self-propelled guns that he spotted in Warden. Since the town seemed full of Boche we requested and got a TOT on it.

By now we had gotten a T-splice from Ln-1's wire to "A" FO. Over this wire we conducted a simultaneous adjustment of the 118th FA Bn, 70th FA Bn, and 117th Inf Cannon Co on initial points for a preparation for the next attempt to take Warden. Between sensings over the same wire the infantry issued several field orders (mainly, "Get those damn tanks up").

The attack was to be at 1150. We had been firing for three minutes when Ln-1 cut in on the line to announce that the attack was called off 'til 1300. This time a company of the 2nd Bn supported by tanks was to attack from Hongen toward Warden to assist the 1st Bn. "A" FO adjusted the 118th & 70th FA Bns and the Can Co of the 117th Inf around the NW, W, and SW sides of Warden, respectively.

We sent "C" FO up to Ln-1 to be put on a static OP in Warden, when taken.

This attack had the taste of perfection. DivArty neutralized the centers of Langweiler, Lurken, Kinzweiler, and St. Joris for 30 minutes. Our 105s covered Warden. The infantry and tanks came fast, the tank machine guns spraying the rear side of town. As the friendly troops approached our fire, "A" FO would move it by saying, "Move Cannon Co 200 yards deeper" or "Move 70th FA 200 yards northeast." As our troops entered Warden he fired both the 70th and 118th FA Bns on Boche beyond the town attempting to escape.

We were getting a little extended now. The 70th FA Bn set up a static OP in Hongen. We put one in Warden. Wire would go to the OP in Warden in the morning. We had wire with Ln-1 on the far side of Mariadorf and with Ln-3 on the rear side. With Ln-2 (who was in Hongen moving to Warden) we had only radio communication.

The LnO at regimental headquarters told us that the plan

for the next day was a simultaneous attack by the 2nd and 3d Bns on Kinzweiler and St. Joris, respectively (Objectives N and M, Overlay Sketch No. 1). Our OP in Warden could see Kinzweiler. The FO with the 1st Bn in Objective G, the housing project, was told to get observation on St. Joris. We planned to use the same type preparation that we had used on Warden, with the FOs adjusting the preparation and lifting it as the troops approached (this time using radio instead of wire.) In this case we requested a particular fire support plan from DivArty after consulting only Ln-3.

Ln-1 briefed the observers in Warden and in the housing project. They understood that they were to adjust on the NW sides of St. Joris and Kinzweiler at daylight and to lift the fire back into the towns on the approach of our troops. Ln-2 called by infantry wire at about 2300; the plan was explained to him. Ln-3 called to say that the observer who would go with his assault troops had reached his company. Everything seemed to be in hand. H-hour was set for 0800.

The infantry had learned well the value of speed. With their tanks, they moved out swiftly across the naked fields. At 0811 the FOs who were giving surveillance to the preparation requested the mediums to lift and the 105s to fire concentrations on the towns' forward edges. These were lifted to the rear of the towns at 0815. By 0830 both Kinzweiler and St. Joris were taken. Our total casualties could be counted on one hand. A surprised German battalion staff, with a nice piece of the battalion, had been captured.

Both we and the 70th FA Bn had selected positions near Kellersberg the previous day. Wire had been laid and survey executed. The objectives taken, we began to displace. We sent one battery first, with a section of FDC to initiate registration,

using the "C" btry FO in Warden. When this was under way we left the assistant S-3 and a radio at the old CP (thus assuring communications with the 70th FA Bn and with observers), and moved the other two batteries. Quite a number of missions were fired through this arrangement. Before noon we were registered and firing from the new position; then the 70th FA Bn displaced.

During the assault from Warden to Kinzweiler two of our tanks had tracks blown by mines. The crews jumped out with tommy guns and went on with the infantry. Later when an attempt was made to get the tanks, an AT gun near Lurken caused trouble. "B" FO picked up the AT gun and quickly silenced it. He also did some good shooting at German armor SW of Langerdorf and may have broken up a potential counterattack. The FO from the 70th FA shot steadily and well. The Boche was confused and hurt. Our OP in Warden picked up some German infantry movement near a haystack. The first time he adjusted one battery; next time he saw them move, thirty 105s fired two volleys and movement ceased.

Our infantry were securely on their objectives. They had captured more than 700 Germans. Enemy dead and wounded marked our concentration numbers.

\* \* \*

No new lesson is to be drawn from this narrative—only a reaffirmation of the old one of coordination. Tanks, infantry, and artillery form a strong combat team. A failure by any one of the three members jeopardizes the whole operation.

As an artilleryman the task is yours to strive, scheme, and shoot, to do all in your power to help the doughboy. The satisfaction of knowing he has implicit faith in you is more than ample reward.

## ARTILLERY SUPPORT AT ARNHEM

By Lt.-Col. I. P. Tooley, RA

At four o'clock in the afternoon of September 20 the Regiment received long-awaited orders to move from its area south of the Escaut Canal bridgehead. No destination was given; we were merely told to keep moving up the Center Line until ordered to deploy by the Commander (Royal Artillery) of the division we were supporting. Not one of us that evening could have suspected that the slow night march into Holland through Valkenswaard, Eindhoven, and Zon (the last-named a sharp silhouette against the glow of burning vehicles) would shortly culminate in dramatic and exciting action in support of the 1st British Airborne Division.

We snatched two hours' sleep near Uden in the cold of early morning, then went on again. Information was scanty—just the advice that the great bridge over the Waal at Nijmegen was intact and firmly held by the airborne troops. But of 1st British Airborne there was nothing except an ambiguous report that the bridge at Arnhem was intact.

About 0700 hours our recon parties were ordered forward to an area 4 miles short of Nijmegen. At 0935 hours Regimental Headquarters began to pull in. And still there was no news of the 1st Airborne Division.

Suddenly the smoothness of our regimental net was broken by a station using an unknown code sign. He was asking permission to come in on our net. He was ordered off. He persisted: "We are being heavily shelled and mortared. Can you help us?" The voice

was calm, but behind it was an urgency that compelled us to think. We asked who he was. "The people you are trying to join up with," came the reply.

It seemed incredible, but we couldn't take risks. We must identify the station beyond a doubt. Our methods of authentication were unorthodox, but so was the whole business. The Commanding Officer knew the name of the Commander (Royal Artillery) of the airborne division. "Does your name begin with . . . ?" we asked.

"Yes, and my Christian name is . . ."

"And do you know a . . . ?" we continued, giving the Christian name of a mutual acquaintance. When the surname of the mutual acquaintance was immediately supplied by the "pirate" station, we reckoned we had established his identity beyond question—the 1st British Airborne urgently in need of help! Something had to be done.

At 1035 our 4.5" battery reported ready and the Airborne gave us two targets, both out of range. They gave us a third, this time one which was all right. Two corrections, and then scale 10<sup>1</sup>! This was only a warmer.

It had already become obvious that we couldn't give maximum support to the airborne division from our present positions, so about midday one of our 4.5" troops<sup>2</sup> moved forward some 4,000 yards. Meanwhile, the other troop remained in action

<sup>1</sup>10 rounds per gun.—Ed.

<sup>2</sup>Equals U. S. battery.—Ed.

where it was and engaged 6 further targets. Four additional ones unfortunately were out of range, but when the forward troop reported ready these too were engaged. Then the rear troop moved up.

At 1230 hours another strange station came on our net, but the speaker at once gave his name. There was a sudden quickening of personal interest: a man in danger was talking to his friend who could give him aid. But not a hint of the smaller drama that was being enacted within the larger was contained in this correct exchange of wireless conversation between the Brigade Major (Royal Artillery) of the airborne division and the Adjutant of the medium regiment.

The first "pirate" station now seemed to be subsidiary to Headquarters (Royal Artillery). In fact, as we later discovered, it was the Forward Observation Officer's control.

There was no hiding the fact that the 1st Airborne were in a pretty bad way. They had one wireless link to the outside world—through us. So bad was the situation, that at 1250 hours the FOO's control, speaking to his Commander (Royal Artillery), reported the enemy no more than 40 yards from his position. The tenseness of the situation was brought home to us by the sound of bursting shells coming over our radio. The Airborne badly wanted a "Situation Report"; could we tell them where our leading tanks had got to?

We didn't know ourselves, nor could we find out. And all the time, target followed target with scarcely a break. Sometimes scale 1, sometimes scale 3, and not in vain. At 1315 hours the Commander (Royal Artillery) was able to report that the general situation was appreciably improved.

At 1330 hours there came more good news. The Commanding Officer, who had been making a full report to Corps Headquarters, returned with the information that a battle group consisting of an armored regiment and an infantry brigade with artillery support had been ordered to push on and contact 1st Airborne Division. Further, a battery of 155s was coming up as fast as it could, and a Liaison Officer of 1st British Airborne would be reporting to Regimental Headquarters.

By 1600, the battery of 155s was in action under our command.

Up to now the wireless had been working well, particularly to the FOO's control, but night was falling and even the most optimistic of us had doubts about being able to keep contact during the darkness. But we had to remain through, even if it meant two or even three step-up stations. Consequently, a relay was sent out with an officer in charge. His instructions were short and to the point: "Go as far as you can without being put in the bag—and keep through." He did, and for the remainder of our liaison with the airborne division the station remained out. Its work was invaluable.

The night was quiet. Only two calls for defensive fire came through, one just after midnight and the other before dawn. It looked as though the Germans had been made to think.

During the night the Corps Commander (Royal Artillery) had opened a set on our regimental frequency (surely a unique distinction!) and at 0720 hours he asked the Commander (Royal Artillery) of the airborne division for a "Situation Report," adding, "We are driving on hard."

The reply came back: "No change. We shall be glad to see you."

Later in the morning a second wireless link to the Commander (Royal Artillery) was established through the Airborne Liaison Officer, who had arrived with a wireless on



*British airborne troops use a 75-mm howitzer on the outskirts of Arnhem.*

to his own control north of Nijmegen. This eased the situation somewhat for the Regimental Headquarters, but the day was as hectic for the gunners as the previous afternoon had been. In addition to our fire-plan in support of the airborne division, 31 targets were engaged by the regiment. Inspired by the urgency of the situation the men worked magnificently.

Realizing our commitments in this direction, the division we had originally come up to support had as far as possible made calls only upon our 5.5" battery, but during the day it became abundantly clear that the fullest possible aid had to be given to the airborne division if they were to survive. To enable our 5.5" battery to give additional support, positions were chosen for them in the same area as the 4.5" positions. They were occupied at first light on the 23d.

In the normal course of events Regimental Headquarters would have moved up without hesitation, but present circumstances found us on the horns of a dilemma. To move forward would unquestionably facilitate our regimental communications, but might also impair communications to the airborne division—particularly in view of the fact that the ground sloped down to the river and tended to become more and more "built up." The second in command, however, went out in a wireless truck and tested reception at various points and finally, having found a spot suitably near the batteries where reception of the airborne division seemed to be as good as ever, it was decided that Regimental Headquarters should move.

The Adjutant and the Signals Officer went forward with a small Tactical Headquarters while the remainder kept contact with the airborne division. A 30-foot aerial was erected in the new area. Communications were good, so Tactical Headquarters took over to allow the main body to rejoin them. That day 25 targets were engaged.

By this time our worries were increasing. The division we were nominally supporting was beginning to make frequent calls on us. Our supply route had been cut by the enemy. No guarantee of an early replenishment of ammunition could be



*British paratroopers fire their 6-pdr AT gun against a German SP gun which was only 80 yards away when this photo was taken.*

given. As luck would have it, the local Forward Maintenance Center had been supplied with medium ammunition just before the road was cut—but this wouldn't last long at our present rate of firing. Our difficulties were eased somewhat, though, when

a battery of heavy AAA and another 4.5" battery came under our command.

The situation had become desperate for the Airborne, however. Calls for fire were now interspersed with long messages between the Corps Commander (Royal Artillery) and the Commander (Royal Artillery) of the airborne division. There had still been no link-up and none seemed likely. Supplies were giving out and it was becoming tragically clear that the Airborne could not hope to hold on much longer in their narrowing perimeter.

An attempt was made to supply them on the nights of the 24th/25th, but it failed. Only a few DUKWs got across the Lower Rhine in the face of the strong currents and thickly mudded banks.

And so, at 1025 hours on September 25, a cryptic message was passed to the Commander (Royal Artillery) of the airborne division. A fire plan was prepared. Under cover of a blistering barrage the operation was carried out.

The last call for fire had been made.

## ARMORED FA ACROSS FRANCE

By Lt. Col. I. B. Washburn, FA

### AUTHOR'S NOTE

**The article *On to Berlin* in the November, 1944, *Field Artillery Journal* attracted my attention. As the commanding officer of an armored field artillery battalion which took part in several of the outstanding armored actions in the campaign of Northern France, I have a number of observations which confirm and several which differ from the experiences or lessons outlined by Maj. Whitaker.**

### RECONNAISSANCE

That the results of special operations for which the armored field artillery battalions were designed were "mission accomplished, beautiful effect" is agreed. Our battalions, however, although under the new T/O and E, were without any of the excess personnel enjoyed by the battalions reported on by Maj. Whitaker.

Our movements were in general faster and covered more terrain than those he indicated. Our batteries were customarily on the road before reconnaissance was completed. Previous planning for reconnaissance was impossible, since usually the route of advance was not known even by commanders but was selected by the reconnaissance elements of the Combat Command at the head of the column. The only preparation possible was to provide flexibility and plenty of reconnaissance personnel.

The Battalion Commander necessarily rode well forward in the column, sometimes as far up as the point of the advance guard. Battery Commanders were at least as far forward as the head of the battalion column. The T/O Reconnaissance and Survey Officer cannot perform both functions, since they occur simultaneously; he therefore becomes the survey officer and should be in the immediate vicinity of the Battalion Commander. All Observers and Liaison Officers were expected and required to make continuous reconnaissance in addition to other duties. The AOP was used for reconnaissance ahead of the leading elements of the ground column.

As soon as the forward elements of the command ran into

difficulty a battalion area was selected by the Battalion Commander and survey instituted by the Survey Officer. The Battery Commanders were meanwhile called forward and their positions pointed out. Usually they had time to ride through their area and make a hasty reconnaissance, although in many instances it was necessary to so select the battalion area that the leading battery could turn into it without any delay whatsoever and answer emergency calls for fire from the forward elements. In this case the leading battery was sometimes firing within five minutes after the decision to emplace it.

The type of vehicle in which to perform reconnaissance has been a decided problem. It is necessary for the reconnaissance parties to pass elements of the columns of supported units while on the road. To do so in anything but the ¼-ton C&R was impossible, so this vehicle was used almost exclusively for the purpose. When, however, the reconnaissance is actually being made at the flank and near the point of a column of troops in enemy territory, a vehicle carrying more personnel and having some machine gun fire power is highly desirable.

### OBSERVATION

Constant and aggressive observation and liaison are absolutely necessary. At no time has this unit found it possible to operate with less than 3 liaison officers: one with each supported battalion and one with the combat command. Normally 3 forward observers are out, one with each tank company together with its associated infantry company; but many times the exigencies of the situation have made it necessary to place observers with infantry companies as well and even with platoons with separate missions, so that as high as 9 observers have been out at one time! Added to this demand on officer personnel is the necessity of relieving observers.

We have found it almost mandatory to relieve forward observers after from three to four days in line. From an already insufficient T/O it has been extremely difficult to meet these requirements. It has made it necessary for the battalion to operate without an S-1 and without one or more battery commanders

for long periods of time. The battalion AOP made a further demand for officers not provided for: it is necessary to furnish an observer for each pilot, as in combat it has been found impossible for the pilot to fly and to observe both ground and air.

#### SURVEY

Survey usually has been reduced to a position area survey sufficient to locate the batteries on the map and provide an orienting line. Direction was normally established by registering on a crossroad or some feature appearing on both map and ground. A grid intersection was frequently used for the base point. We have never yet found it necessary to use an observed fire chart. Very frequently, if the situation stabilized for a time, it was found advisable to use a grid sheet for the firing chart, transferring map data to the grid sheet by coordinates.

#### COMMUNICATION

It has been necessary to use radio almost exclusively for communication with observers and liaison officers. Our practice has been, however, to have each battery lay one wire to FDC. Usually wire communication to batteries is possible from 10 to 30 minutes after occupation of position. The wire section of the battalion, consisting of a corporal and 3 men supplemented by whatever personnel are available, starts immediately to lay wire to the CPs of the supported units. One of our greatest handicaps has been the lack of sufficient wire personnel. Radio channels are always overcrowded, are frequently jammed by the enemy, and normally overlap with one or more adjacent units. This condition

makes the use of wire almost a necessity for really rapid and prompt delivery of effective fire.

#### SUPPLY

Supply of rations and fuel in these operations was one of the greatest problems encountered. It was necessary for supply personnel to travel many miles to the rear through territory still largely in enemy hands and to return only to find that the unit had moved. On one such occasion the sergeant in charge of the ration truck drove over 300 miles and followed the unit for three days through several changes in direction of advance before rejoining the battalion.

#### THE FIRING BATTERY

In these operations the firing batteries have used all types of positions possible to a SP howitzer battery, ranging from a "position" so called only because it was occupied as the nearest open field when fire was called for, to carefully selected, prepared, and camouflaged positions. In almost all cases, however, it was impossible to predetermine the final direction of fire. Since the command had penetrated into enemy territory, regardless of the direction of the initial resistance, profitable and sometimes mandatory targets were often found to the flanks and rear. The present SP howitzer is an extremely clumsy piece to handle in this case since a change in direction of the carriage involves sufficient displacement to require relaying the battery; it ruins all efforts at camouflage, not only by disturbing the camouflage of the piece but also by making new tracks. In all other respects our SP 105 howitzers have given a superior performance.

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## Close Support at Kaltenhouse

By Capt. Eugene Maurey, Jr., FA

**The village of Kaltenhouse in Alsace fell to the 1st Bn 315th Inf of the 79th Inf Div on 10 Dec 44. Local newspapers on the day following said "Kaltenhouse had been by-passed." A current G-2 report officially told that it fell "without resistance." 28 PWs were taken from the town, so unquestionably we did not by-pass it. It could perhaps be said, however, that it was taken *almost* without resistance. This is the story of what actually did happen.**

Kaltenhouse was a key defensive position that protected the east flank of Hagenau. The defenders had excellent natural fields of fire stretching some 1,200 yards to the south and west. The flooded Moder River was a barrier to an attack from the east. The town was held by an estimated infantry company reinforced by SP guns, mortars, and artillery support. The town had to be taken.

Upon previous occasions after our infantry had taken a town the opportunity to study its defenses had been particularly of interest to me as the artillery liaison officer. My errors or inaccuracies in the locations of enemy installations, the effect of our fire, a study into the enemy's delaying tactics, all suggested improvements in the artillery plan for future attack operations.

By such study the following information was ascertained:

1. The enemy defended both sides of roads leading into town, using all natural available concealment close to town.

*Solution:* Hit him with heavy concentrations near those roads close to the last house in town.

2. His foxholes were usually roofless. *Solution:* Use time fire.

3. He employed good fields of fire. *Solution:* Use HC smoke to screen the assaulting platoons. Encourage the infantry to enter the screen for protection; cease firing smoke as they enter.

4. He usually evacuated a village as soon as our troops secured a good portion of it. *Solution:* As soon as friendly troops enter, harass all roads or exits he may use to leave town.

5. He occasionally used the church tower as an artillery OP. *Solution:* Direct a tank or TD to fire a few rounds into the tower.

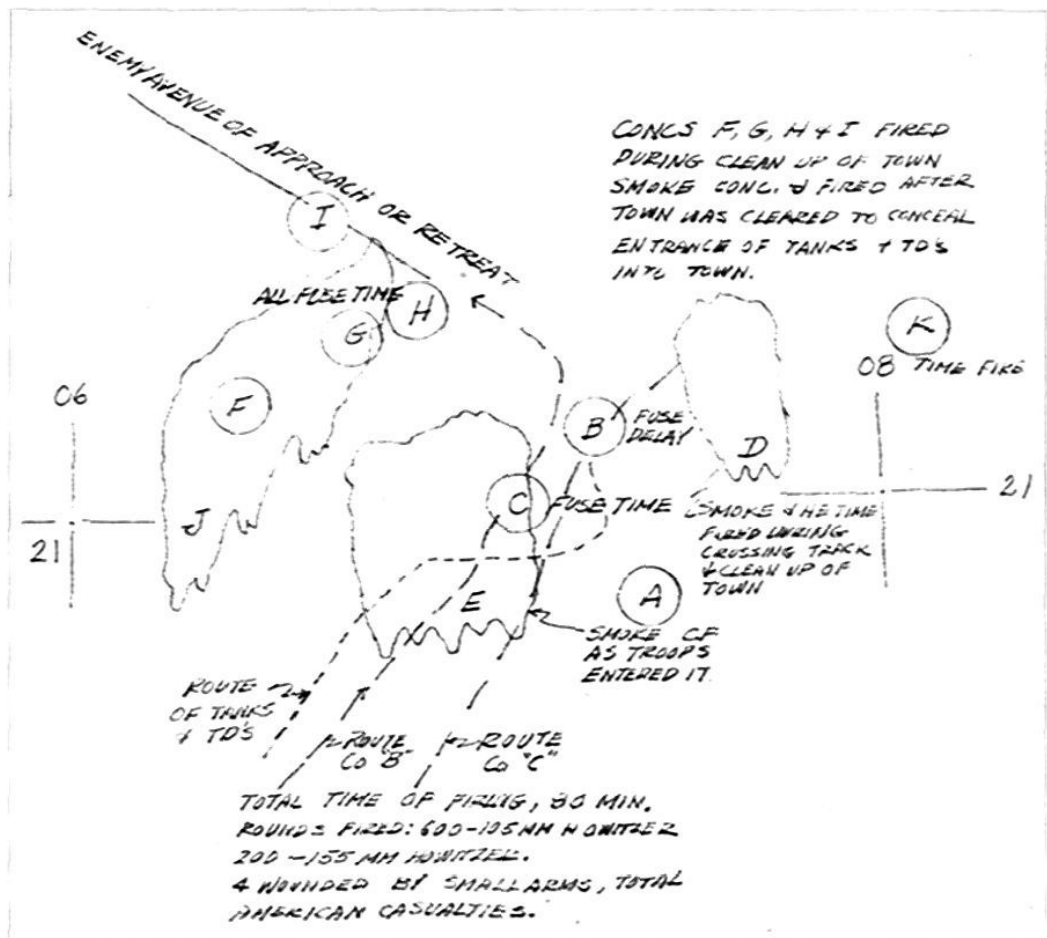
The fire plan had to be made before the infantry had fully decided how they wished to attack Kaltenhouse. Such a plan had to be flexible to fit into the infantry decision. A close examination of a good aerial photo and a gridded map was made. About 20 possible enemy strong points were selected in probable routes of advance, and were given concentration numbers by FDC. Additional points were selected upon avenues of approach into town which later could serve as defensive fires after the objective had been taken. All concentrations were to be fired on call with the type of fire specified by

the artillery liaison officer. One hour before H-hour (1200) it was decided to drive with two companies abreast directly across the open fields toward the town.

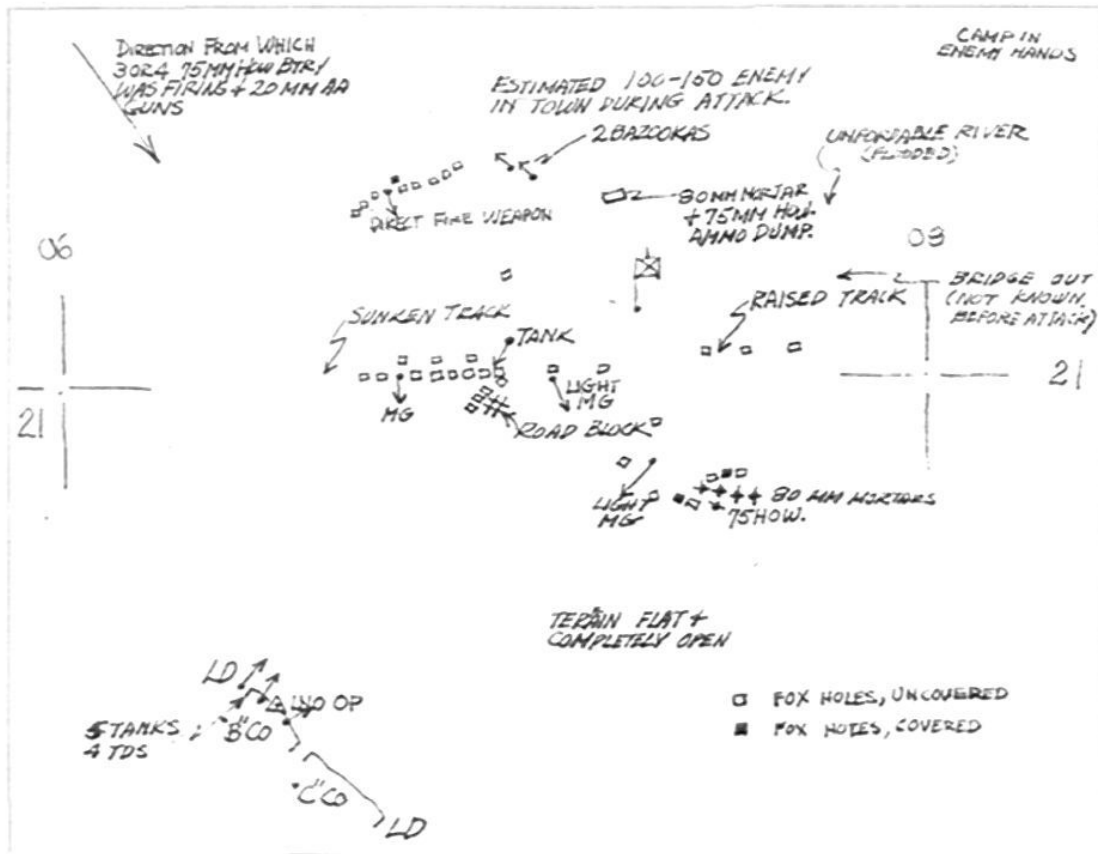
Such a decision was a challenge to the artillery. Could it put the infantry into the edge of town without the almost certain considerable casualties being caused by small arms fire as the doughboys passed over the barren, flat fields? The infantrymen crossed directly in front of the enemy's guns, took the town, and had only 4 men wounded by small arms fire. The infantry-artillery team clicked!

#### THE FIRE PLAN

As the troops left the line of departure at H-hour an HC smoke screen was laid approximately 400 yards from the end buildings of Kaltenhouse. The smoke drifted toward the town (see E). Upon the probable enemy strongpoints on the forward edge of town time fire was used (C and A). The main road intersection in Kaltenhouse was interdicted using fuze delay (B). As soon as the aggressive infantry had moved into the protective smoke, all smoke and initial fires were lifted. Fires were then placed in heavy volume upon the flanks of the village (F, G, and H) and upon roads serving the enemy as possible exits (I and K). In addition, medium artillery smoked the railroad track (A) in order to prevent possible direct







#### COMMUNICATIONS AND OBSERVATION

Our communication consisted of wire back to FDC and an SCR-609 as an alternate means. An SCR-300, borrowed from the infantry battalion, was used to listen in upon the infantry command channel. This infantry radio was of utmost importance as it enabled the artillery to coordinate its fire closely after the infantry had disappeared among the buildings of the village. Our OP, in an attic of a house upon the line of departure, gave excellent observation up to the southern edge of Kaltenhouse.

Cannon Co fired

fire weapons across the river from enfilading the track as our troops sought to pass over it. HE was also later used upon this target with the smoke, as it was not known at the time that the river bridge was out.

After the mop-up of the town by the infantry was well under way, it was decided to send 5 medium tanks and 4 tank destroyers into the town to repel any impending counterattacks. By prearrangement with the tank commander a smoke screen (J) was laid upon the exposed left flank as concealment from AT fire from that direction. This smoke effectively screened the movement.

#### COUNTERMEASURES

German countermeasures consisted of 75-howitzer protective barrages which fell in considerable volume during the attack in the areas adjacent to the smoke screen. As the smoke obscured the observation of the enemy artillery, this fire was not accurate and was easily side slipped by the infantry without casualties. Mortar fire was placed upon the line of departure against the tanks and TDs and upon the troops in the town during the mop-up period. 20-mm AA guns fired time fire over the town, possibly to cover the enemy's withdrawal.

from another OP, independently of the arty fire plan.

#### CONCLUSIONS FROM OPERATION

1. The OP must give maximum observation.
2. Wire to FDC must be had at the OP, if possible.
3. An SCR - 300 for the artillery LnO on the infantry's channel is indispensable for close infantry-artillery liaison.
4. Registration in the vicinity of the area of the operation must be accomplished before the attack, in order to secure accurate unobserved fires.
5. Cannon company should be more closely coordinated into the artillery plan by the artillery LnO.
6. Lift artillery fires from within a town when the infantry starts to enter it. You no longer can see the infantry and you may hit him.
7. Defensive fires to secure the captured objective must be prearranged.
8. Primarily, study your opponent, discover his weaknesses, seek your errors after each fight, and you will beat him more easily the next time.

#### THE HUNGER OF MARS

In a little over three months after D-day, the First, Third, and Ninth American Armies in France fired:  
 300,000,000 rounds of small arms ammunition  
 4,426,000 rounds of 105s  
 1,248,000 rounds of 155s  
 3,500,000 rounds of mortar shells

And there are four other armies on this front as well as still others in the Mediterranean and the Orient.

In *one month* those same three American Armies in France lost from all causes 83% of their dump trucks, 50% of their mortars, 14% of their scout cars, 10% of their light and medium tanks. Multiply such losses by twelve months and you can see that our manufacturing output is far from being net gain in the weight we put in the balance.

—LT. GEN. BREHON SOMERVELL.



# PERIMETERS in PARAGRAPHS



(BASED UPON LATEST INFORMATION AVAILABLE AT DATE OF WRITING, AND SUBJECT TO CORRECTION AS MORE COMPLETE REPORTS ARE RECEIVED.)

By Col. Conrad H. Lanza

## THE WEST GERMAN FRONT (19 Jan to 18 Feb 45)

At the beginning of the period Allied armies were deployed:

21st Army Group (Field Marshal Sir Bernard L. Montgomery), with the Canadian First and British Second Armies—from the North Sea, along the Maas and Rhine Rivers, to north of Aachen.

12th Army Group (Lt. Gen. Omar N. Bradley), with the U. S. Ninth, First, and Third Armies, in order named—extended the above front to south of Luxembourg.

6th Army Group (Lt. Gen. Jacob Devers), with U. S. Seventh and French First Armies—completed the line to the Swiss frontier.

Allied GHQ was near Paris, with General of the Army Dwight D. Eisenhower as Supreme Commander.

In detail the line was:

Schouwen Island (German)—Overflakkee Island (G)—Hollandische Diep (with German bridgehead about Geertruidenberg)—Rhine or Waal River to Nijmegen (with Allied bridgehead at latter place)—Mook (G)—Maas River—Stevensweert (?)—Echt (A)—Sittard (A)—Geilenkirchen (A)—Linnich (A)—Roer River—Monschau (A)—Malmedy (A)—St. Vith (G)—Sterpigny (G)—Bourcy (A)—Wiltz (G)—Diekirch (G)—Echternach (?)—Sauer River—Mosel (or Moselle) River—Remich (A)—Tettingen (G)—

Merzig (G)—Saar River—Forbach (G)—Sarreguemines (A)—Rohrbach (A)—Bitche (G)—Wingen (A)—Reipertswiller (?)—Philippsbourg (A)—Woerth (A)—Hatten (A)—Leutenheim (A)—Rhine River—Sesenheim (G)—Drusenheim (?)—Herrlisheim (G)—Gambshiem (G)—Rhine River—Gerstheim (G)—Roosfeld (A)—Selestat (A)—Bebbenheim (G)—Sigolsheim (A)—Turckheim (G)—Munster (G)—Col de la Schlucht (?)—St. Amarin (A)—Thann (A)—Cernay (G)—Mulhouse (A)—Kembs (A)—Rhine River.

Active operations were in progress in the Ardennes, and in both north and south Alsace.

### BATTLE OF THE ARDENNES

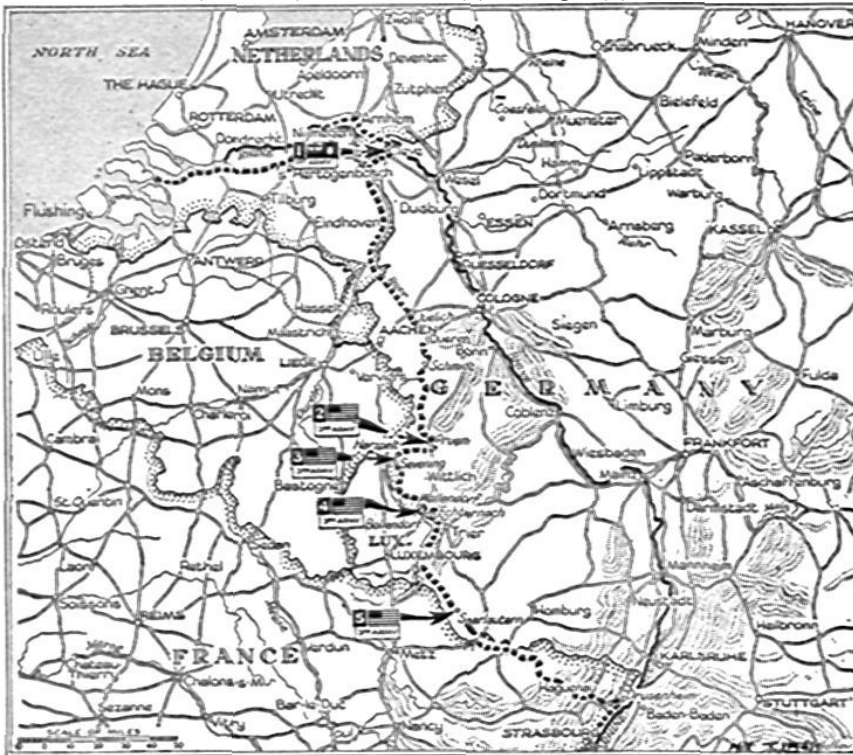
This had started on 16 Dec 44 as a German counteroffensive. By 24 Dec it had come to a stop with a maximum advance of 50 miles. Thereafter the enemy had been slowly pushed back. By 19 Jan the Allies were continuing to attack on so much of the above front as extended from Malmedy to Echternach. The U. S. First Army held the north sector as far as Bourcy (exc), with the 1st, 30th, 75th, and 83d Inf Divs in line from north to south on a 35-mile front. The U. S. Third Army similarly held the south sector with the 101st Airborne, 6th Armd, and 26th, 80th, and 5th Inf Divs on a 30-mile front. The right flank was guarded by the 94th Inf Div against a minor enemy force opposite Remich.

No major attacks were made on 19 Jan. The First Army mopped territory not completely cleared, and in the north advanced its line as much as 2 miles. The Third Army found that the enemy had withdrawn from Diekirch to the north bank of the Sauer River, and seized that town.

Next day the First Army attacked toward St. Vith from the north, and the Third Army from the southwest. Both made small gains, the Third Army reaching the railroad extending south from Stavelot near Bouvigny while the First arrived on a line 4 miles northwest of St. Vith.

These attacks were pushed on the 21st. The First Army came within 3 miles of St. Vith at some points; the Third reached the railroad both north and south of Bouvigny. An advance was started north from the vicinity of Diekirch, to threaten the enemy at St. Vith from his left rear. This met strenuous resistance. Between the two main attacks another was made east from the area Houffalize—Bastogne; it made gains of a mile or more.

On 22 Jan, which was a cold winter day of clouds and snow, preventing air support or reconnaissance, the American attack was resumed in greater strength. Some divisions had been taken out of line and replaced by others. In the First Army the 7th Armd, with the 30th and 75th Inf Divs, continued their attack of St. Vith, and to the north of that town arrived within 2 miles of their objective. The Third Army, with the 84th Inf Div on its left, attacked due east from Houffalize. In the order named, the attack was pushed by the 6th



The Canadian-British drive is designated (1). Toward the end of the period Americans of the 4th Division seized the key road point of Pruem (2). To the southwest other Third Army units took Harspelt and entered Sevingen (3). Bollendorf was captured and the bridgehead there nearly united with the one at Wallendorf (4). In Saarlautern (5) our men made slight gains.

Armd, 90th and 26th Inf, 6th Cav, 4th Armd, and 5th Inf Divs as far south as Echternach. In face of this concentrated force the enemy did not seriously contest the bulge in his line opposite Houffalize and withdrew, resulting in an American advance against moderate resistance up to 3 miles.

On 23 Jan the First Army captured St. Vith, which was found completely ruined. The 5-mile advance had taken just the same number of days. The attack of the 4th Armd Div toward Vianden met determined resistance, but it advanced to within 1½ miles of its objective.

Next day the Air Force reported that enemy armor was streaming to the northeast from the Ardennes area. They were assumed to be en route to the eastern front. Large forces of planes attacked them. It seeming likely that as a result of this movement the enemy's west front had been correspondingly weakened, the offensive was pushed. There was no reduction, however, in the resistance, which was uniformly strong and very strong in the Vianden sector, where the enemy passed to the offensive and attacked himself. In general the Americans made slight gains, and the enemy apparently followed his plan of withdrawing slowly.

On the 25th at least one of the enemy Panzer divisions observed as having withdrawn from the Ardennes front was identified by prisoners as in Alsace. It therefore seemed doubtful just what the movement observed on the day before meant. A move by day was unusual in itself. Only small gains (not exceeding ½ mile) were made, and none in the Vianden area.

The 26th saw some reduction in the American attacks, which were not pushed in the Vianden area. Troops advanced about 2 miles east of St. Vith. Lesser gains were made to the south, where the enemy continued not to contest too strongly what remained of his Ardennes bulge. On the following day Clervaux (which had been by-passed to both north and south) was occupied, and the front became almost a straight line. By the 28th the Third Army was approaching the Our River on the Luxembourg frontier.

On 29 Jan the First Army attacked strongly in the St. Vith area, with the 1st Inf Div to the north of the town, pierced the enemy's defense, and gained 4 miles to the east. South of St. Vith the attack was less successful. The Third Army reached the Our but was still unable to take Vianden.

On 30 Jan the First Army extended its attack northward to beyond Monschau, with the 78th, 9th, 2nd, and 1st Inf Divs in line from north to south. A strong artillery preparation preceded the advance of tanks and infantry. Gains varied from 1 to 3 miles, but the enemy fought back savagely and in places counterattacked. The Third Army attacked with its left as far south as the Clervaux area. This crossed the upper part of the Our River. These attacks were pushed on the 31st, with further but not so extensive gains.

On 1 Feb the First Army, having effected the relief of some divisions, continued its attack on the same front and with increased strength. The 18th and 25th Inf Divs were in line between the 2nd and 1st Divs and the 82nd Airborne Div was south of the 1st Inf Div. These attacks gained up to 1½ miles north and south of the Monschau Forest, which remained in enemy hands as a salient. The Third Army made slight gains along the upper Our River.

Now the First Army was in contact with the foreground of the West Wall. The enemy withdrew on the 2nd from all of the Monschau Forest except the east fringe, but he vigorously contested terrain to the south. On the 3d gains up to 3 miles were made north of the forest and lesser ones in the St. Vith area. The Third Army, attacking, made slight gains but were unable to take Vianden.

Continuing with the attack, the battle line by evening of the 4th had reached (for the First Army) the line Roer River near Ruhrberg—Schleiden (G)—Ramscheid (?)—Frauenkron (A). The Third Army continued this line, holding both banks of the Our River as far as the border of Luxembourg and thereafter the west bank (less enemy bridgeheads at some points, including Vianden).

On the 5th the only substantial advance was about 1½ miles by the Third Army due west of Pruem.

On 6 Feb the First Army made only limited progress. It was impracticable to take Schleiden, and in no place did gains exceed about 1,000 yards. The Third Army started a determined attack on Pruem, an important road center less than 8 miles away. Very stiff fighting developed on a 25-mile front, a considerable part of which was within the Schnee Eifel Forest. A slight advance was obtained on the left, the enemy's resistance being everywhere very strong.

On the 7th the Third Army continued its attack on a 35-mile front along the Our and Sauer Rivers. Neither river was fordable; both had rapid

currents, making it difficult to maintain bridges. The east bank was covered by wire, and there was more wire in the rivers. The attack was launched before dawn and during a fog. Notwithstanding the difficult conditions six small bridgeheads were established by the 80th and 5th Inf Divs over the Our north of its junction with the Sauer, and four others below. The First Army made its main effort northeasterly from Monschau. Its attack was impeded by large mine fields. The advance did not average a half mile.

Next day the First Army made further slight progress. The battle along the Third Army's front was very severe. It was found hard to maintain the bridgeheads, but they were gradually strengthened. Further north, the left of the army advanced toward Pruem. This was temporarily stopped on the 9th by strong enemy artillery fire. Enlargement of the bridgeheads proceeded slowly, against strong enemy fire and counterattacks against the southerly ones.

On 10 Feb the First Army's attack beyond Monschau reached close to the Schwammenauel Dam on the Urft River. The enemy did not destroy the dam but he did demolish the water gates, thereby letting the water out and establishing a flooded area below as far as the next dam—Urftulsperrre, just above the junction of the Urft with the Roer River. The Third Army's attack arrived within a mile of Pruem. After a very strong artillery preparation the bridgehead troops were able to enlarge their positions. It was not possible as yet to establish bridges; men on the east bank were supplied by ferries (using assault boats) and by air. An advance northeast from Echternach made some progress.

On the 11th the Third Army bridgeheads grew into two fairly large ones, 80th Div north and 5th Div south of the Sauer and Our Rivers' junction. The 5th Div established a foot bridge near Echternach, but the 80th was unable to maintain a bridge under the enemy's artillery fire. Its six original bridgeheads had now become one about 3½ miles long and not quite 2 miles deep. The 5th Div bridgehead was about 3 miles deep. The First Army's attack was hampered by the floods. A thaw had set in and it was raining, with mud everywhere.

Next day heavy street and house fighting within Pruem ended in the Americans' gaining possession of most of that small town. Vianden, which had held out for so long, was entered. The bridgeheads grew gradually.

On the 13th the First Army's offensive had practically ceased. The Third Army continued the battle within Pruem, and enlarged its bridgeheads into one 10 miles long and 2 miles deep. Very severe fighting occurred in this area. The situation did not materially change next day, nor the one following.

On 16 Feb small advances (¼ to ½ mile) were made from Echternach. These were continued on the 17th and 18th, on which date the line in this sector was:

**Roer River—Gemuend (A)—Hellenthal (A)—Losheim (G)—Pruem (A)—Leiderborn (G)—Neuerburg (G)—Obersgegen (G)—Walsfeld (G)—Wasserbillig (G).**

During the period the Allied line to the south near Remich had been the scene of a number of alternate attacks and defenses. The net result was to advance the Allied (American) line to include Sinz.

#### BATTLE OF NORTH ALSACE

Since 1 Jan the enemy had been active in north Alsace from Saarlautern to the Rhine, and thence southward nearly to Strasbourg. The U. S. Seventh Army defended this front. It had voluntarily withdrawn from a previous line which had been on or beyond the boundary between Alsace and Germany.

Before 19 Jan the Germans near Reipertweiler had encircled 5 companies of U. S. infantry from the 45th Div, who had been cut off since the 15th. A tank was sent to establish connection. This had worked on the 16th. It failed this time, although it had but 1,000 yards to go. The artillery kept a standing barrage around the encircled troops, as called for by the forward observer. These Americans surrendered on the 20th, there being at that time but 147 left. Two of these men escaped and reached our lines.

The Germans made continuous attacks with limited forces on the front from Reipertweiler to the Rhine. None had any great success, but it was considered advisable to withdraw the line to in rear of the Moder River. Without enemy interference, this was concluded during the night 21/22 January.

On 24 Jan a German attack on a 4-mile front forced a crossing of the Moder River. Continuing on next day they reached the line Muehlhausen—Schillersdorf. By this time the Seventh Army had brought up its reserve, who counterattacked. The enemy was forced back to the north side of the Moder. An effort to follow him over the river failed. This German attack was probably a feeler to determine whether a further retreat was in progress.

Heavy falls of snow forced a provisional lull in the fighting.

On 29 Jan German 240-mm guns commenced shelling Saverne, an important road center for supplies for the Seventh Army. On the 31st a minor attack by the Seventh Army recaptured Gamsheim, 9 miles north of Strasbourg on the main route (No. 68) on the west side of the Rhine. Only moderate resistance having been met, the attack was continued north on the next day into the Stone Forest. A second attack was also launched; it crossed the Moder River to reach Oberhoffen, 4 miles southeast of Haguenau. This started a street and house battle, destined to last for many days with very determined attacks and counterattacks. Rohrweiler was taken against less resistance.

On 3 Feb the attack along the Rhine met increased resistance. Much flooded ground was encountered. The line was withdrawn to the Zorn River, allowing the enemy to occupy Herrlisheim and Offendorf as the south limits of his Rhine bridgehead in this sector.

Three days later, preparatory to further operations, the Seventh Army launched several strong raids against the enemy's bridgehead between Forbach and Sarreguemines, and in the vicinity of Bliesbruck.

On 8 Feb the street and house battle was still continuing in Oberhoffen, but elsewhere the front was not very active. The enemy withdrew from Offendorf and Herrlisheim. His southernmost post on the Rhine was now at Drusenheim. On the 14th Oberhoffen was reported as finally cleared of Germans, after 14 days of intense fighting. New raids were made by American troops on the same day on both sides of Sarreguemines.

On 15 Feb the U. S. XV Corps attacked from near Forbach, past Sarreguemines, to beyond Bliesbruck. This was not pushed, although fighting continued through the 18th. There was no substantial change in the line, which then was:

**Sinz (A)—Merzig (G)—Saar River—Forbach (G)—Bliesbruck (G)—Rimling (G)—Bettwiller (?)—Lambach (A)—Wingen (A)—Moder River—Rhine River.**

#### BATTLE OF SOUTH ALSACE

This had started on 7 Jan, when the Germans crossed the Rhine near Witternheim. Thereafter they had continued on the offensive north toward Strasbourg against the French First Army, but with limited forces. This German operation had reached its peak.

On 20 Jan an Allied counteroffensive was launched northward on the line St. Amarin—Cernay—Mulhouse. Preceded by a strong artillery preparation, it generally made substantial progress except near Thann. Maximum advance was about 3 miles.

Deep snow caused a temporary slowing of the attack next day. Despite snow storms, icy roads, and stiff opposition, on the 22nd the enemy was pushed out of suburbs of Mulhouse which he had been holding, and out of the Nonnenbruch Forest (ESE of Cernay). Not much impression was made around Thann.

On the 23d the French First Army, using the U. S. XXI Corps, started a new attack along the line Colmar—Selestat. This, striking eastward, reached the Ill River on the 24th and crossed it at some points. Some were lost to counterattacks. In the meantime pressure was maintained in the south attack. Continuing, the north attack enlarged their bridgeheads and reached Riedwihr (on the Blind River) on the 26th.

In the cold winter weather the fighting was difficult, but progress was made. By 30 Jan the south attack had advanced between Cernay and Mulhouse to the line Wittelsheim—Witternheim. Cernay was nearly encircled. Troops entered it next day, starting a street and house battle. The north attack on 1 Feb reached the Rhine River with its right, thereby separating the enemy west of the Rhine into a larger bridgehead to the south and a small one to the north (which the enemy abandoned).

On 2 Feb the north attack entered Colmar for another street and house battle. Attacks were now started against the enemy south of Colmar. On the north the vicinity of Neuf Brisach was reached on the 3d, and on the

same day Pulversheim on the south. These two spearheads threatened to cut off the enemy still holding opposite St. Amarin and Thann. In view of this situation, and possibly influenced by the general situation, the German High Command

commenced to withdraw to the east side of the Rhine. The Allies—French and Americans under the French First Army—sought to prevent the enemy's escaping.

On 4 Feb Cernay was cleared of the enemy and the Allies advanced beyond to the line Steinbach—Uffholtz. A new attack was launched just west of Colmar, which was taken, and reached Turkheim, headed south. Next day this reached Rouffach, where it met troops coming north, thereby cutting off the enemy in the area Munster—St. Amarin—Thann. Munster was occupied without much opposition. On the 6th the Allies advanced northeasterly from Mulhouse toward Neuenburg, and reached about halfway there.

The Germans were now withdrawing as rapidly as they could. Those near the Rhine were generally able to cross that river. Those further away were mostly taken by the Allies. The battle ended on the 9th. The total number of German prisoners taken during the entire campaign was about 20,000.

#### GERMAN-HELD PORTS IN FRANCE AND BELGIUM

There has been no change during the month. At the mouth of the Gironde the enemy garrison, estimated as 20,000 men or more, made a large raid on 1 Feb. This post is surrounded by French FFI forces, who had covered their front with extensive mine fields. The enemy had first to clear a way through these. Having done so he rolled up a section of trenches, presumably to capture supplies.

Allied raids occurred on 4 Feb against St. Nazaire and Dunkerque (held by estimated hostile forces of 25,000 and 20,000 each) and later against La Rochelle.

No unusual activities were reported from Lorient or the Channel Islands.

All German-held ports have communication with Germany by air and occasionally by submarines, which furnish some supplies and evacuate small numbers of men.

#### BATTLES ALONG THE DUTCH BORDER

On 19 Jan a British attack was under way between Echt and Sittard on a front of about 15 miles. This day it crossed the frontier into Germany. It continued making slight daily gains thereafter against very strong opposition which contested every favorable bit of terrain. By the 24th the left of the attack reached Heinsberg, a 6-mile advance in as many days. It took one day of street and house battle to clear that town. The attack was now extended on the right to the vicinity of Geilenkirchen (held by the Allies) and with the right on the Wurms River. Advancing northeasterly the front was nearly parallel to the Roer River and moving toward it.



*In the middle of the period in the south a French division (1) linked up with an American division (2) at Rouffach, pocketing Germans to the west and east. Our contingents above Strasbourg battled to clear Oberhoffen (3).*

On 26 Jan this offensive continued to receive strong opposition—mostly passive, based on defensive artillery and infantry fire. Then it temporarily came to a stop.

On the same day Canadian troops commenced an operation to reduce the enemy's bridgehead south of the Maas (Biesbosch sector) around Geertruidenberg. This was carried on both day and night. By limited attacks the main effort was made on the right (east) and by 31 Jan had captured Kapelshaveer Island in the Biesbosch. The Biesbosch is an aggregation of islands threaded by numerous water passages of the Maas River, which at this point is (including these islands) about 8 miles wide. This success outflanked the German defenses. On the ensuing night the Germans evacuated the Geertruidenberg area and withdrew to the north side of the river.

The 21st Army Group prepared for a new offensive to be launched southeastwardly from the vicinity of Nijmegen, to clear the area between the Maas and Rhine Rivers. Commencing on 4 Feb several raids were first made to secure information and identifications. These, coupled with troop movements and the bringing in of artillery, attracted the enemy's attention. On 7 Feb the local German army commander alerted his reserves to meet an expected offensive. At the same time the German artillery commenced counteroffensive fire by vigorously shelling all troops and batteries located.

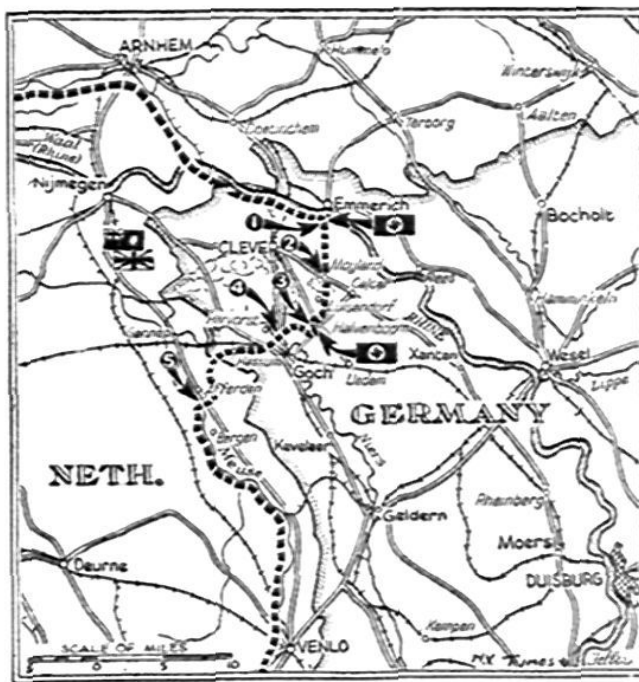
On 8 Feb the Canadian First Army fired a 6-hour artillery preparation, then attacked. There was very heavy air support. Progress was irregular. In the south sector the line arrived approximately on the German border. In the north the border was crossed as far as Kranenburg on the 2nd day. The left of the attack made the faster progress. It reached Cleve (a city of some 20,000 people) on the 10th and started a street and house battle.

On the 11th the extreme left crossed the German boundary. The right was south of Cleve engaged in a furious forest battle in the Reichs Wald (Government Forest). On the 12th the left came abreast of Cleve on the north side, approximately along the railroad going north. On the south side the line extended southwest to Gennepe (inc). The enemy now brought into line some of his reserves, and counterattacked with Panzer divisions in the Reichs Wald. This succeeded in holding the advance.

On 13 Feb British troops on the right, attacking over open ground eastward from the vicinity of Gennepe, advanced nearly 5 miles to within 3 miles of Goch. Canadians on the left met increased resistance from new reserves. The enemy flooded low ground north from Cleve, retarding the battle in that area. It was established from identifications that the enemy between the Maas and Rhine Rivers had 7 divisions in line on a front of about 14 miles. Of these, 6 had arrived in the sector since the offensive started on the 8th, 4 came from army reserve and had been nearby already, and 2 (both Panzer) came from GHQ Reserve.\*

Despite the floods the Canadians on the north moved forward on the 14th. The British on the south met increased resistance. Cleve and the Reichs Wald were finally cleared. On the 15th a general attack all along

\*Arrival of these two Panzer divisions appears to establish that Germany in mid-February still had GHQ reserves. There is no reliable information as to the size of these reserves.—C. H. L.



Above Cleve (1) the Canadians blocked German infiltration efforts. On the Calcar road Moyland (2) was entered. An enemy attempt to clear the Calcar-Goch road was repelled (3). Scottish units moved south of Hervorst (4) and beyond Afferden (5).

the line failed to gain much.

On 15 Feb a Canadian amphibious expedition attacked Schouwen Island, without success.

On 16 Feb the Canadians fired a strong artillery preparation, then attacked with fresh divisions. A slight advance was secured. A similar result was obtained in the center (where the objective assigned had been Calcar, which was not reached) and on the south (where Goch, the objective in that sector, was not reached either).

Next day the attack was continued along the entire front with very strong artillery support. The left failed to make much progress but the right closed in around the north and west of Goch, which was strongly defended. Afferden (south of Gennepe) was taken. Next day there was heavy fighting along the center and right of the British line, and a small advance was gained.

On the 18th the line was:

Schouwen Island (G)—Overflakkee Island (G)—Hollandische Diep—Waal River (with Allied bridgehead at Nijmegen)—Schenkenschanz (?)—Cleve (A)—Goch (G)—Afferden (A)—RR line to Venlo (G)—Maas River—Echt (A)—Sittard (A)—Geilenkirchen (A)—Linnich (A)—Roer River.

## EAST GERMAN FRONT (19 Jan to 18 Feb 45)

There have been no military operations north of the Gulf of Riga. South of there, to as far south as Yugoslavia, the entire front has been a continuous theater of operations of the Russian Great Winter Battle.

The major Russian effort has been by five large Army Groups, carefully supervised and coordinated by a GHQ. There is no reliable information as to how Russian GHQ functions.

The Army Groups were (as of night 18/19 Jan):

**1st Ukraine (Marshal Ivan S. Konev), with 105 divisions, of which 15 were armored, had jumped off on 12 Jan and advanced up to 90 miles to the line Praszka (exc.)—Czestochowa—Krakow (exc.) (a 100-mile front).**

Two days after the 1st Ukraine jumped off (or on 14 Jan) two Army Groups to the north attacked, with the following result:

**1st White Russian (Colonel General Gregory K. Zhukov), with 45 divisions, including 5 armored, had advanced from the Warsaw area about 50 miles to the line Sochaczew—Lowicz—Skierniewice (an 80-mile front).**

**2nd White Russian (Marshal Konstantin K. Rokossovsky), with 30 divisions, including 5 armored, had advanced northwestwardly**

**from the Narew River about 50 miles to the line Ostroleka—Przasnysz—Ciechanow (a 75-mile front).**

One day still later (or on the 15th) two more Army Groups, one on each flank, attacked as follows:

**3d White Russian (Colonel General Ivan D. Chernyakovsky), strength unknown, had attacked westward astride the railroad from Kaunas to Koenigsberg and advanced about 20 miles to the line Ragnit—Gumbinnen (exc.)—Goldap (exc.) (a 40-mile front).**

**4th Ukraine (Marshal Ivan Y. Petrov), strength unknown, had attacked astride the Carpathian Mountains and advanced about 25 miles to across the Wisloka River.**

Very little is yet known as to the strength and organization of the German armies. According to Russian reports as of last December, the total German strength on the east front was just about 200 divisions. Of these 30 had been identified holding a large beachhead in Latvia and 20 more were estimated as south of the Carpathians (including Hungary). This leaves 150 divisions as available to oppose

the five Russian Army Groups listed above. On 12 Jan when the Russian offensive began the front of attack was 500 miles.

Present information indicates that the Germans expected the attack. German commentators had been discussing it for over a month. In preparation for it the Germans had withdrawn a considerable part of their troops from Poland and had established a GHQ Reserve. Subsequent events indicate that the Russian offensive, although foreseen, was more violent than had been looked for and that the Russian advance was more rapid than had been calculated. This led to a dislocation of German plans, with necessity of hasty adoption of provisional plans to meet the succession of emergencies which soon developed.

#### RUSSIAN OFFENSIVE TO 22 JAN

The main effort was to advance straight west to Berlin. This lay in the zone of action of the 1st White Russian Army Group, whose right was covered by the 2nd White Russian and left by the 1st Ukraine.

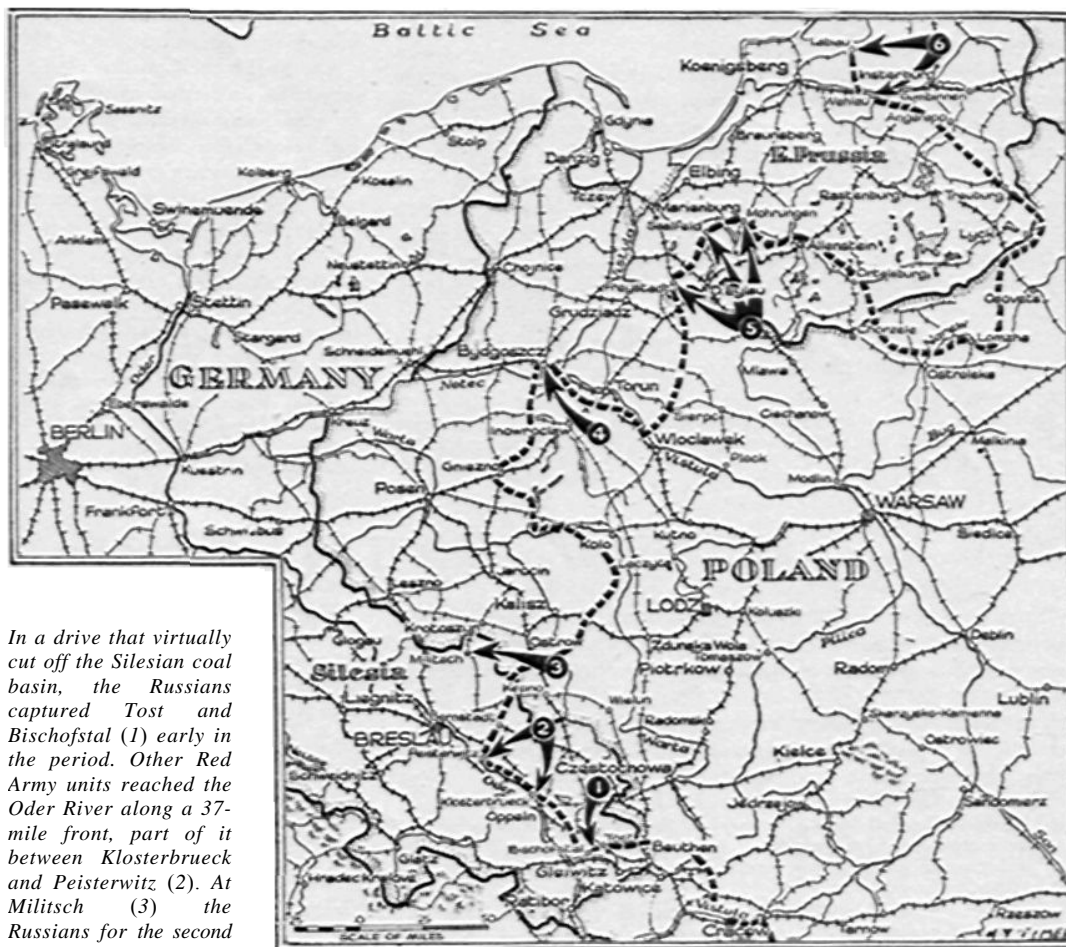
This Russian left was nearing the industrial region of Silesia. It arrived sooner than expected. The Germans called out the Volksturm battalions to defend the line of the Oder River until Regular troops could arrive. The Volksturm battalions resemble our Home Guards. In normal times their members go about their usual civilian duties, with drills in the evening and on Sundays and holidays. They are called out as necessary. Lacking transportation, they are primarily for home defense. In that role they have been fairly efficient. Another part of the Volksturm had, however, been given transportation, supplied with artillery, and formed into Volksturm divisions. These had cadres of experienced officers and NCOs, and were incorporated into the Regular Army. They are not to be confused with the Volksturm battalions.

On 19 Jan the 1st White Russian advanced 20 miles (to beyond Lodz) without meeting much resistance. On its left the 1st Ukraine captured Krakow, which had been entered the day before. Praszka was also taken. The center of this Army Group encountered bitter resistance. On the right the 2nd White Russian met heavy resistance in places, but a spearhead reached Mlawa and went some miles beyond. The two Russian wings (in East Prussia and in the Carpathians) attacked, but neither gained appreciably.

On the 20th, the right of the 1st White Russian against minor resistance reached the line Wloclawek (on the Vistula)—Kolo (on the Warta River). South of Lodz the left met a strong German armored force; a furious all-day tank battle extended over a wide area. At the end of the day the German armor withdrew under cover of darkness. The 1st Ukraine's left met German counterattacks which drove back the Russian advance, but the center and right made gains. The 2nd White Russian also had severe fighting. It enlarged its spearhead into a front 25 miles wide practically along the German border opposite Mlawa. The Russian wings attacked in strength. On the north, Tilsit and Gumbinnen were entered for street and house battles; in the south Nowy Sacz was taken, thereby blocking one of the Carpathian passes.

Next day the 1st White Russian (against diminished resistance, except in one sector) reached the line Radziejow—Sompolno—Kolo—Dayie

*In a drive that virtually cut off the Silesian coal basin, the Russians captured Tost and Bischofstal (1) early in the period. Other Red Army units reached the Oder River along a 37-mile front, part of it between Klosterbrueck and Peisterwitz (2). At Militsch (3) the Russians for the second time attained a point 165 miles from Berlin. The big junction of Bydgoszcz (4) was toppled. The two arms of the big pincers clamped on East Prussia advanced to Freystadt, Saalfeld, and Mohrungen (5), and Wehlau and Labiau (6).*



Poddebice—Zdunska Wola. Strong resistance from the German Panzer Army withdrawing from the Lodz area was encountered in the south sector. The left of this Army Group was 35 miles in rear of the right of the 1st Ukraine, which was being held for the Russian center to catch up.

The 1st Ukraine demonstrated with its right, but did not push its attacks in the vicinity of Kepno. The center advanced toward Oppeln.

From its new front the 2nd White Russian attacked with strength and pushed across the border to the line Nowe Miasto—Tannenberg—Neidenburg (a 50-mile front).

On 22 Jan the 1st White Russian found little opposition opposite its right; it reached a line from Inowroclaw to Gniezno. The left was still being opposed by the German Panzer Army around Kalisz.

The 1st Ukraine, attacking southwest from Lubliniec, advanced into Silesia as far as Gross Strehlitz. Here it met strong armored counterattacks; the advance stopped after a gain of 8 miles or more. The 2nd White Russian advanced about 12 miles to the line Deutsch Eylau—Osterode—Allenstein. On the wings, the 3d White Russian arrived at Insterburg while the 4th Ukraine made a small advance.

#### EXTENSION OF RUSSIAN OFFENSIVE TO 28 JAN

On 23 Jan two additional Russian Army Groups (one at the outside end of each wing) entered the Great Winter Battle.

In the north the 1st Baltic (Colonel General Ivan C. Bagramian) launched an attack against the German Latvia beachhead, with main effort against Liepaja (Libau), Saldus, and Dobeles. Like previous attempts last November and December, this had no success. This enemy beachhead was a standing threat to Russian lines of supply north of the Pinsk Marshes. The 30 enemy divisions therein had to be contained to prevent their irrupting into Russian rear areas. It would be safer to eliminate this beachhead, which had a high nuisance value.

On the south the 2nd Ukraine (Marshal Rodio Y. Malinovsky) attacked northward against the south border of Slovakia from the

area north of Miskolcz, on a 25-mile front. The mountainous and wooded terrain was suitable for defense. Only a slight advance was accomplished.

Near Kalisz the 1st White Russian had a hard battle with the German Panzer Army withdrawing from Poland. This Panzer Army completed its withdrawal mission this day and joined the main German forces on the frontier line. The Russian right appears to have been driven out of Gniezno, but it advanced elsewhere to the line Bydgoszcz—Mogilno—Stupca—Golina—Kalisz.

Against light resistance the 1st Ukraine reached the Oder River on a 37-mile front. Their line extended from Kepno to the Oder near Brieg, thence along the east bank to Oppeln (exc), thence to Tarnowskie and Krakow—about 165 miles in all.

The 2nd White Russian expanded its front to 140 miles, with the head along the line Freystadt—Saalfeld—Mohrungen—Allenstein—Ortelsburg. The 3d White Russian crossed the Deime River with its right, while the left was on the line Wehlau—Aberapp.

On 24 Jan the 1st White Russian advanced its right against increasing opposition to Szubin, Znin, Janowiec, Gniezno, and Wrzesnia. The 1st Ukraine captured Oppeln on the east bank of the Oder, but failed to force a crossing to the west side. An advance to the Skawa River was made on the right, southwest of Krakow. The 2nd White Russian advanced to a line Miswalde—Mohrungen—Allenstein—Ortelsburg—Ostroleka—Lyck. The right Russian wing occupied Angerburg; the left wing in the Carpathians reached the Skawa River.

Next day the 1st White Russian continued its advance, its left (which was south of the Warta) continuing to receive stronger resistance than the right (north of that river). The line reached was Keynia—Kostrzyn—Sroda—Jarocin—Kalisz. The German Panzer Army which had withdrawn from the Kalisz area had left near that city a road block which had held out, delaying the Russian advance.

The 1st Ukraine attacked all along its front. Again it failed to cross the Oder, but the flanks made progress. On the right the vicinity of Breslau was reached; on the left Gleiwitz was taken after a hard tank battle.

The 2nd White Russian attacked with its right northeast from the line Allenstein—Ortelsburg, while the 3d White Russian in cooperation attacked west from the Lyck area. At the same time the advance against Koenigsberg was continued. All attacks on the Russian right wing made good progress.

On the 26th the 1st White Russian, having eliminated the Kalisz road block, pushed forward without serious battles. The right reached Bydgoszcz without taking it nor Torun, which had been by-passed. These remained as road blocks. The center closed in on Poznan, while the left reached Krotoszyn.

Continuing its attacks, the 1st Ukraine succeeded in crossing the Oder for a number of small bridgeheads which were immediately attacked and in some cases driven back by hostile forces. Its left in upper Silesia made progress in the coal and industrial district.

The 2nd White Russian in a strong attack reached the Frisches Haff—above Elbing, against which an attack was started. The 3d White Russian reached the line Deime River—Swine River—Lake Mauer. German forces in East Prussia appear to have been relatively weak. Instead of contesting the Russian advance they fell back to a central position between the Passarge River on the west, the line Wormditt—Bartenstein on the south, and the line Koenigsberg—Bartenstein on the east. The Frisches Haff in the German rear is navigable for warships. As the German Navy was superior to the Russian Navy in these waters, the ground troops were assured of supplies.

Next day the Germans from their central position attacked the 2nd White Russian south of Wormditt. The Russians interpreted this movement as an effort to fight their way out to the west. It is probable this was not the German mission, which was more likely the preventing of the much larger Russian forces (two Army Groups) from being sent elsewhere.

Against minor opposition the 1st White Russian reached a line nearly north and south through Poznan which, however, was held by the enemy. He elected to defend Schneidemuehl as another RB, and placed a garrison there. The 1st Ukraine fought hard to get over the Oder River. Success was mixed: some of the smaller bridgeheads were enlarged, others were lost or narrowed by enemy counterattacks.

On 28 Jan the 1st White Russian advanced 6 to 12 miles due west on a 60-mile front. On its right the 2nd White Russian arrived near

Grudziadz, clearing the east bank of the Vistula as far as that fortified town. The right of this army was engaged in repelling German attacks, while the center started a street and house battle in Elbing. The 3d White Russian closed toward Koenigsberg, the Germans fighting only a delaying action. The 1st Ukraine was having a hard time crossing the Oder, but its left reached Katowice. The 4th Ukraine in Slovakia reached a line through Poprad. The Germans evacuated their bridgehead around Memel.

At the end of this period the German defense had become stubborn on the flanks. In Silesia and south thereof, further Russian advances were being bitterly contested. In the north, the Germans in East Prussia were committed to detaining a large Russian force in that area. No strong German force had yet appeared in the center, and the advance of the 1st White Russian Army Group was being only delayed and not seriously opposed. Later events indicate that the German High Command had not yet engaged all its reserves, but was saving them for eventual action on the flanks.

#### RUSSIAN ADVANCE TO THE LINE KUESTRIN—FRANKFURT (29 JAN TO 6 FEB)

The Russian center (1st White Russian Army Group) which had lagged behind the wings, was now getting ahead. Its mission remained as before: to advance directly on Berlin.

On 29 Jan the right of the 1st White Russian reached the Hammer River, the center and left the German border. The 1st Ukraine made gains near Katowice, but was unable to do much about crossing the Oder. The left wing (4th Ukraine) reached Nowy Targ, on the north side of the Carpathians. The 2nd White Russian was busy repelling German attacks near Allenstein, while the 3d White Russian closed in on Koenigsberg, meeting only delaying forces. The German Panzer Army which had been around Kalisz was now near Leszno, separating direct communication between the 1st White Russian and 1st Ukraine Army Groups, but in view of the advance of the Russians to their north and the fact that the 1st Ukraine had already passed beyond them to the Oder, the Panzer Army was ordered back and retired during the ensuing night.

On the 30th the 1st White Russian advanced its center westwardly to just over the German border. Its left hung behind. Maybe it was not certain that the Panzer Army had gone. The right advanced northwest, crossing the border to the line Linde to Schneidemuehl, still held as an enemy road block. The front of the Army Group, which had originally been a straight north and south line, had become a blunted spearhead with a north-south head of 50 miles. The flanks turned off at angles of about 45° and faced northwest and southwest.

In the south the 1st Ukraine continued to make progress in the Katowice area. It definitely established a bridgehead over the Oder near Steinau.

In the north, the 2nd White Russian kept fighting Germans around Allenstein, was engaged in a street and house battle in Elbing, and advanced its left to Marienwerder. The 3d White Russian moved close to Koenigsberg.

On the last day of January the 1st White Russian advanced to the line Landsberg—Meseritz—Schwiebus, where it met German reserves who counterattacked in a hard battle. The Germans withdrew after dark. By now the 3d White Russian had almost circled Koenigsberg.

Next day the center of the 1st White Russian advanced about 10 miles without meeting strong opposition. The left, which had again been delayed around Leszno by the German Panzer Army, moved forward to Fraustadt, the Germans having withdrawn. In rear areas Torun was captured. This left Bydgoszcz, Poznan, and Schneidemuehl as major road blocks not yet reduced. The Germans claimed that the Torun garrison fought its way back.

On 2 Feb the left of the 1st White Russian reached the Oder and was in line with the 1st Ukraine. The center advanced another 10 miles toward the line Kuestrin—Frankfurt—Fuerstenberg. The right made an important gain by crossing the Netze River near Landsberg and reaching Soldin.

On the 3d, German forces in some strength appeared in line on a 75-mile front from Pyritz through Arnswalde to Jastrow. A severe battle started against the right of the 1st White Russian although without material changes that day. The Russian center closed westward toward Frankfurt, seriously opposed by a German rear guard

which was routed while the left was on the Oder.

Next day the 1st White Russian attacked the new forces opposing its right, but made little headway. The 2nd and 3d White Russians concentrated in a joint attack against the German force in the Wormditt—Bartenstein area, while the 3d White Russian at the same time undertook operations to clear the Samland (peninsula between the Frisches Haff and the Kurisches Haff). Attacks on Koenigsberg failed. German warships heavily shelled all Russians in this vicinity in range of their guns.

The 1st Ukraine made another effort to cross the Oder southeast of Breslau. The river in this area was about 650 yards wide, and was frozen only along the banks. The Russians got a few men over by improvised boats and rafts, and established small bridgeheads.

On 5 Feb the Germans withdrew from the area east of the Oder in the sector of Frankfurt and Kuestrin, less the fortified bridgeheads of these two places. Elsewhere bridges were demolished. The right of the 1st White Russian continued its attacks against the German force in Pomerania, but failed to make progress. The 1st Ukraine succeeded in reinforcing its bridgeheads southeast of Breslau. It was holding its bridgehead near Steinau, northwest of Breslau.

On 6 Feb the 1st White Russian was up against the Kuestrin and Frankfurt forts, with its center on a 40-mile north-south front. Its right trailed back along the line Pyritz—Arnswalde—Jastrow—Swiecie, and was heavily engaged with strong German forces which for several days had prevented a Russian advance. The left of the Army Group stretched southeast along the Oder. The front was continued on by the 1st Ukraine, which held the east bank (less Breslau), had a bridgehead on the west side near Steinau, and had just gained another which it greatly enlarged this day to the line Ohlau—Wansen—Grottkau—Loewen. The 4th Ukraine was making very slow progress in Slovakia and the 2nd Ukraine none against the south Slovak border. In the north, the 2nd and 3d White Russians had not eliminated the German force holding the Wormditt and Bartenstein position. Koenigsberg was encircled by land, as was Elbing. Schneidemuehl, Bydgoszcz, and Poznan still held as major road blocks.

#### DEVELOPMENT OF THE RUSSIAN SUCCESS (7 TO 18 FEB)

Up to this date the Russian advance had not met very serious resistance. The original front, which had been 560 miles from the Baltic Sea to north Hungary in an almost straight north-south line, had taken the form of a blunted spearhead. This pointed directly at Berlin, and was 50 miles from north to south—in contact with the German-held fortresses of Kuestrin and Frankfurt. It was 40 to 45 miles from Berlin. The 50-mile base was too narrow to warrant a major operation toward Berlin against strong opposition. To advance through Berlin and a short distance beyond would require a 50-mile jump, for which a base of not less than 100 miles was desirable.

Russian operations now concentrated on building up such a base. The blunted head of the spear stood fast, pending its enlargement to north and south. At the start of this period the flanks of the blunted head trailed off to the rear at angles approximating 45°. The current Russian mission was to move these forward. On the north this required an advance to the Oder River, extending the blunted head north to Stettin. On the south, an advance to the Neisse River was indicated. If these objectives could be attained a new front would be established from Stettin, past Kuestrin and Frankfurt, to Goerlitz. This is 160 air miles, and ample as a base for a major advance into the heart of Germany.



*Broadening the conquered belt southwest of Breslau, the Russians captured Pudigau and Landau (1) at the end of the period. To the northwest they took Naumburg (2) and Sagan (3). The stronghold of Grudziadz was encircled when Soviet forces seized Warlubie and Matawy (4).*

The German High Command was aware of the danger of an enlargement of the Russian base. They had already reinforced their forces north of the blunted spear. They did not similarly reinforce their troops to its south, in the Silesia area. They did furnish reinforcements to the sector south of Slovakia. These German decisions are worthy of attention as indicating that the High Command feared a Russian advance north of Berlin more than one to the south. It established the fact that divisions yet remained in GHQ reserve, and that the German army was not yet exhausted.

On 7 Feb the severe fighting was in Pomerania (where the Germans attacked to prevent a Russian advance) and in Silesia (where the 1st Ukraine attacked enlarged its bridgehead south of Breslau as well as the one to the north). Continuing these offensives, by 10 Feb the 1st Ukraine had expanded its north bridgehead to Liegnitz and the south one to Strehlen. An operation was now initiated to join the two by mutual attacks toward each other against the enemy in the Breslau area between them. In Pomerania the Russians, attacking along the whole front, were just beyond Arnswalde, which had been by-passed and remained as a road block. In East Prussia, Elbing fell. Vigorous attacks continued against the German army around Koenigsberg. The German navy rendered substantial aid to their ground troops in this sector.

On the 11th the Pomerania battle extended along the line Baerwalde—Pyritz—Arnswalde—Kallies—Jastrow. Both sides fed in new troops, and the fury of the contest increased daily while the front of battle was extended constantly to the east. In Silesia the Russians had some success in uniting their bridgeheads, the north one advancing to the south. Not waiting for this operation to be completed, the north bridgehead attacked from its front and on the 12th reached Goldberg (16 miles SW of Liegnitz), while further northwest the Bober River was reached from Bunzlau to Sagan.

The 1st Ukraine had more trouble joining their bridgehead than in expanding the north one. On 13 Feb the Tschine River was reached and the goal—the Neisse River—was in sight. The fierce battle in Pomerania kept right on, but the Russians met more resistance than in Silesia and their progress was slow. On the 14th, however, the road block at Schneidemuehl was captured.



On 15 Feb the 1st Ukraine reached the Luebst River while the great battle in Pomerania was extended eastward by the 2nd White Russian, which captured Chojnice. To balance this success the Germans drove back the Russians to in rear of Arnswalde and south of Pyritz. Next day the 1st Ukraine joined its two bridgeheads west of Breslau, which city remained in German hands as a road block.

On 17 Feb the Germans started a counteroffensive on a 25-mile front headed east between the Danube on the south and the Slovak mountains on the north. After a powerful artillery preparation, concentrated on two narrow sectors, two Panzer divisions broke through in the area east of Komarom. The objective of this operation had not appeared when this account closed. It did not, for the time being, affect operations elsewhere.

By 18 Feb, when this account closes, the line and situation were:

a. **A German army held Latvia along the line Lielupe River—Dobele—Saldus—south boundary of Latvia to Baltic Sea.**

b. **A German army held Koenigsberg and an area around it bordering the Frisches Haff as far as the Passarge River—thence inland to the vicinity of Wormditt—thence northeast parallel to the Frisches Haff to the Pregel River.**

c. **In Pomerania there was fierce fighting along the general line Nogat River—Vistula River—Nowe—Tuchola—Chojnice—Jastrow—Kallies—Arnswalde—Pyritz—Baerwalde. In this sector Gruzdiadz was a German RB in Russian rear areas.**

d. **The center of the Russian advance was along the Oder River, from near Baerwalde to opposite Krossen. The enemy held bridgeheads at Kuestrin and Frankfurt, and an RB in Poznan. This sector was fairly tranquil.**

e. **In Silesia was hard fighting along the approximate line: Bober River south to Sagan—Queis River south to Naumburg—Goldberg—Kanth—Strehlen—Brieg—Oder River—Ratibor.**

f. **The Carpathian sector ran along the line: Strumien—Bielsko—Nowy Targ—Poprad—south border of Slovakia eastward to Hron River—thence south to the Danube, with Russian bridgehead west of the Hron. A strong enemy counteroffensive against this bridgehead was under way.**

#### OPERATIONS IN HUNGARY

On 18 Jan the line was Esztergom—Felsőegalla—Székésfehérvar—Lake Balaton—Somogyszob—Bares. Budapest was held by German and Hungarian forces and was besieged by elements of the 2nd and 3d Ukraine Army Groups, which were respectively east and west of the Danube River.

The Germans and Hungarians were trying to relieve Budapest, in which the German IX and the Hungarian I Corps were surrounded. This started on the 18th, between Lake Balaton and Székésfehérvar. It went right through the Russian front and reached the Danube. The Germans now changed front to face north, while a containing force faced in the opposite direction to protect against the south. By 20 Jan the Germans had reached an east-west line between Lake Valence and the Danube.

The German offensive made slow progress until the 26th. The day after, the 3d Ukraine attacked south from the vicinity of Budapest and northward south of the German penetration. The Germans were able to maintain themselves, but their efforts to relieve Budapest ceased. This fighting continued to include 16 Feb, when it ended with the fall of Budapest and its garrison.

Budapest is reported by Russian sources to have had a garrison of about 160,000 men. It was first encircled on 24 Dec; and thereafter a continuous and ferocious street and house battle continued day and night. At first the garrison had the use of parks and other open sites where it was practicable to land planes. By this means they received ammunition and other supplies and evacuated sick and wounded, all mostly at night. Until the end supplies were dropped to the garrison by air.

The Russians gradually reduced the perimeter of the defense. At the end the last stand was made in the citadel on the west bank. This was evacuated by the garrison on 13 Feb, in an attempt to escape to the northwest. The Russians report only insignificant elements got away; the Germans, that the movement proceeded according to plan. The Russians accounted for the garrison as 49,000 killed and 110,000 captured during the entire siege, including captures from that part of the garrison which made the final get-away. A large part of those taken were wounded.

#### THE HUNGARIAN ARMISTICE

On 20 Jan, at Moscow, Russia for herself and her Allies signed an armistice with a provisional Hungarian Government previously organized. The terms do not involve further participation of Hungarian troops in the war to aid the Allies, as had been required of Romania and Bulgaria. Hungary is otherwise to aid the Allies to its utmost extent and at its own expense, surrender all territory taken from neighbors, and make restitution for damages resulting from its part in the war. It is to be supervised by an Allied Commission, which until the end of hostilities is to be Russian.

#### THE BALKANS

On 19 Jan the Germans south of the Drava River held the territory within the line Virovitica—Brod—Drina River—Priboj—Mostar—Dinaric Mountains to head of the Adriatic Sea.

A strong German force (reported from different sources as from 6 to as high as 20 divisions) was at the south end of the salient. These included troops who had been stationed in Greece and Aegean Islands. They were on the way back to Germany, but were held up by constant attacks and sabotage by Partisans of Marshal Tito's command who infested the entire area. Bulgars were attacking in the southeast sector and Russians on the east and northeast. British aided the Partisans by furnishing supplies flown from Italy, and with a few troops. Croat troops aided the Germans.

Strong Partisan attacks, aided by British elements, started at Mostar on 29 Jan. They continued until 14 Feb, when the Germans abandoned the place. The German withdrawal on the east passed through Zvornik on 5 Feb. Practically surrounded, the Germans had to fight to move in any direction. As all bridges were demolished and numerous obstacles were encountered, they had organized a special force of engineers expert in quickly improvising passages over rivers and mountains. Supplies, including food, appear to have arrived by air regularly.

Secondary operations have been under way between the Drava and Sava Rivers, where the Germans have succeeded in repulsing Partisan and Russian efforts to cut across the salient southward into the Balkans.

On 18 Feb the line was approximately  
**Bares — Slatina — Vinkovici — Mitrovica — Drina River—Zvornik—Sarajevo—Konjic—Dinaric Alps to head of the Adriatic Sea.**  
During the period the German withdrawal was about 75 miles.

## THE PHILIPPINES (19 Jan to 18 Feb 45)

The important operations have centered in Luzon. An invasion force consisting of the Sixth Army (Lt. Gen. Walter Krueger) had landed in Lingayen Gulf on 9 Jan. Meeting no initial opposition except from patrols the I Corps, with the 6th, 25th, 32nd and 43d Inf Divs, had by 19 Jan occupied a line

**Rosario (Jap)—Sison (Jap)—Bobonan (US)—Pozorrubio (US)—Binanlonan (US)—Urdaneta (US)—Cabaruan (Jap)**

while the XIV Corps, with the 37th and 40th Inf Divs and 1st Cav Div (dismounted) continued the above line to

**Bautista (US)—Moncada (US)—Paniqui (US)—Santa Ignacia (Jap)—thence northwesterly along foothills of the Zambales Mountains to Bolinao.**

Strong enemy opposition had been met between Rosario and Pozorrubio. According to Japanese accounts this was their main body, and had originally taken a flank position with regard to Lingayen Gulf, along the hills just east of the Bued River. From there their long range

artillery shelled Lingayen beaches. The advance of the I Corps through Pozorrubio had turned the Japanese left. In view of this situation the Japanese withdrew to a second position in the mountains just east of Route No. 3, which extends through Pozorrubio and Rosario, during the night 18-19 Jan.

This Japanese force, whose strength has not been identified, has since made only a passive resistance. Japanese accounts indicate that their GHQ are in rear of this line, presumably in the Cagayan valley. It was officially announced that the rebel Filipino Government, headed by Jose Laurel, is with Jap GHQ and functioning.

Although the Sixth Army is charged with operations in Luzon, General of the Army MacArthur, Supreme Commander, has been constantly present and has been directing operations. The I Corps has been charged with containing the enemy in the mountains east of Lingayen, and the XIV Corps with an advance toward Manila.

#### EARLY OPERATIONS (19 TO 28 JAN)

On 19 Jan the I Corps attacked. The right moving north from Bobonan captured Sison, while the left had a hard fight against the enemy who counterattacked around Rosario. The XIV Corps, meeting only minor enemy forces, advanced 6 miles to the south.

On 20 Jan it was officially announced "On our left, enemy resistance is crumbling and his troops are breaking up into disorganized groups." It was then added that the enemy was attacking between Rosario and Urdaneta. The XIV Corps continued its advance south. On the 21st the I Corps advanced its right from Binalonan eastward to San Manuel against enemy opposition, a 6-mile gain which threatened to turn the enemy's second position. At Rosario the fighting continued to be severe, with no material change in the situation. The XIV Corps reached Tarlac.

On the 23d the I Corps seized an enemy battery southwest of Sison, on Mt. Alava. Heavy fighting occurred around Rosario, north of Pozorrubio, and at San Manuel. On the 24th the Navy heavily shelled presumed enemy positions about Rosario, but new attacks failed to get forward. They were renewed again on the 25th, with no better results. The right was engaged with hostile forces who were back in San Manuel. The XIV Corps reached Fort Stotsenburg and Clark Field, still meeting no enemy other than patrols. Next day, however, a hostile force was discovered in the foothills of the Zambales Mountains just west of Fort Stotsenburg, from which positions enemy artillery shelled Clark Field. The 40th Div was assigned the mission of suppressing this enemy while the corps pushed on toward Angeles. The I Corps continued its attack.

On 28 Jan the I Corps captured Rosario and had a tank fight with enemy armor near San Manuel. The enemy was identified as the 23d Inf Div, 58th Mixed Brig, and 2nd Armd Div. GHQ announced that 6 other Japanese divisions had now been identified as in Luzon, but their locations were not given. The XIV Corps reached Angeles.

#### THE ADVANCE ON MANILA (29 JAN TO 6 FEB)

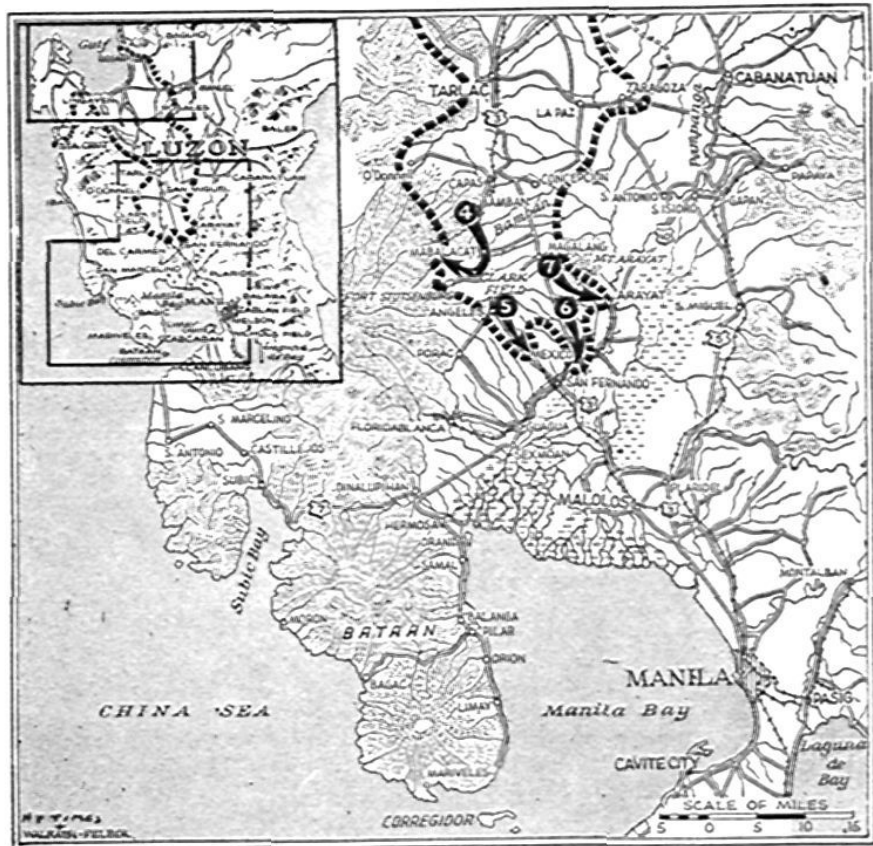
It now appeared fairly certain that there was no important enemy force north of Manila. The enemy east of Lingayen Gulf was still there, was not crumbling, and was resisting all efforts to push him back. In 19 days this hostile force had been driven on the north flank to just beyond Rosario, perhaps 6 miles from the sea. His south flank had been forced back about 12 miles to near San Manuel. The immediate defeat of this force was not in sight. Its position on the American flank exactly opposite the beachhead was a threatening one. Still, the enemy had not to date been aggressive and showed no signs of attacking. It seemed safe to pass by his flank position on to Manila.

On 29 Jan the XI Corps of the Eighth Army landed the 38th and part of the 24th Inf Divs on the Zambales coast between San Narciso and San Antonio. No enemy was found, and the troops started off for Olongapo and Subic Bay. It had been intended to precede the landing by the usual naval and air shell and bomb preparation. The admiral in command, Rear Admiral Struble, suspended the preparation, being convinced from reconnaissance that no enemy were present.

At Rosario and San Manuel the I Corps was strongly attacked. The right of this corps was

extended south to San Quentin by an advance from the west. The XIV Corps arrived at San Fernando.

On 31 Jan the right of the I Corps was further extended south, to Talavera in Nueva Ecija Province. Tayug (on the road between San Manuel and San Quentin) was occupied, affording direct connection. Japanese reports indicate that their south flank did not extend south of the vicinity of San Manuel. The XIV Corps advanced 13 miles to the Rio Grande de Pampanga at Calumpit. This is the largest river in Luzon, but it was not defended.



Late in Jan, east of Lingayen Gulf troops of the 43d Div finally captured Rosario (1) and pushed on to a point half a mile from the junction at Camp One and half a mile from an American column pushing up from Sison (2). Beyond San Manuel (3) the 25th Div was reducing enemy installations. Northwest of captured Clark Field (4) elements of the 37th and 40th Divs moved into the hills to clean up Japanese remnants. Beyond Angeles (5) on Highway 3 our troops were well on the way to San Fernando. Other units moving on the same junction took Mexico (6). American patrols drove into Arayat (7).

On 1 Feb the I Corps found that the enemy had withdrawn from the San Manuel area to across the Agno River; it advanced as far as San Nicolas, 6 miles from San Manuel and on the east bank of the Agno. Further south the enemy advanced to west of San Quentin. The XIV Corps continued on south, while the XI Corps started across the mountains east of Olongapo, meeting only light resistance.

The Eighth Army landed the 11th Airborne Div at Nagsugbu in Batangas. No enemy was found, and the division started inland. Nagsugbu is about 50 miles southwest of Manila with a good road all the way (at this season). It was officially announced that this new landing was to seal off the possibility of enemy troops south of Manila joining those to the north.

On this day a detachment of the 6th Ranger Bn made a raid in Nueva Ecija. After dark it arrived at a Prisoner of War Camp near Cabo, found lightly guarded. All the 510 prisoners were rescued, and conveyed back to the American lines.

On 2 Feb the 1st Cav Div launched a detachment to proceed rapidly along the east side of the Central Luzon Plain to arrive at Manila from the northeast, while the 37th Inf Div attacked from the north, astride the railroad and the main highway. At the same time the 11th Airborne Div was to attack from the south. No important enemy force had yet been located in the area of the contemplated operation. There were enemy patrols throughout; it was possible that these screened larger forces. The initial movement started after nightfall, from south of Gapan, Nueva Ecija, and from north of Malolos.

The I Corps, still having the enemy west of San Quentin, established a road block near Humingan with a view to preventing the enemy from withdrawing to the east. The XI Corps advanced 6 miles against light resistance, and the 11th Airborne Div 9 miles to Caylungan, just inside the boundary of Cavite Province.

On the 3d the 1st Cav Div arrived at Bustos and the 37th Inf Div near Bocaue, only 15 miles from Manila. The 11th Airborne Div advanced 4 miles. It is assumed that this short advance was due to opposition, but no support on this has been received. The XI Corps in its march east over the mountains met increased resistance and gained only 2 miles. The road by which this corps was advancing is a good road, but in the mountains there is dense jungle which makes it difficult to deploy troops against a defensive position.

The I Corps had a hard fight on its right. The RB established west of San Quentin failed to cause the enemy to withdraw. After heavy fighting the 25th Div reached the line Humingan—Lupao—San Jose.

To include 3 Feb, American casualties since the invasion on 9 Jan had totaled 5,589. Enemy casualties were estimated as 33,000.

On 4 Feb the 37th Div reached the north edge of Manila on the line Caloocan—La Loma Church. Broken bridges and minor infantry actions had caused some delay. The 1st Cav Div reached the northeast edge of Manila at 1900 hrs, having also met small enemy bodies en route. This division pushed right in and captured the buildings of Santo Tomás University, filled with about 3,700 prisoners of war. A company of Japanese infantry was allowed to depart with hand weapons, as otherwise their defense from inside the concrete buildings would surely have caused heavy casualties among the prisoners. The cavalry reached the north bank of the Pasig River within Manila in the San Miguel district. Only small enemy detachments were met.

The 11th Airborne Div leap-frogged the enemy, delaying his advance by a parachute movement, and moved north to Tagatay, a gain of about 8 miles.

On the 5th that part of Manila which was north of the Pasig River was occupied by the two divisions from the north. Some 800 more PWs were released from Bilibid Prison. It was officially announced that the 11th Airborne Div had entered Manila from the south and that the Japanese were surrounded with their complete destruction imminent. This was a rosy view. The 11th did not reach Manila, being stopped 6 to 7 miles short of the city by hostile resistance near Nichols Field. Small enemy detachments remained in north Manila.

On 6 Feb these small enemy detachments in north Manila set large fires, under cover of which Jap patrols harassed the American forces. As the fires died down the enemy withdrew, demolishing the two (out of four) bridges over the Pasig not yet destroyed. The 11th Airborne Div was still stopped south of the city. The enemy held all Manila south of the Pasig, including the old walled city (Intramuros), the port, and the best residential areas. The Americans held the business district (now burned out) and the residential areas north of the Pasig.

In the north the I Corps fought in Nueva Ecija against enemy forces who had closed in behind the XIV Corps after it had advanced south, and had established an RB at the end of the branch railroad at Muñoz. The enemy attacked Rosario at night, but failed.

#### THE SIEGE OF MANILA (7 TO 18 FEB)

According to Japanese sources their troops were in three detachments:

**a. The main force in the hill position east of the Lingayen area.**

**b. On both sides of Fort Stotenburg (one was in close contact with the U.S. 40th Inf Div in the Zambales foothills).**

**c. In the vicinity of Fort McKinley, just southeast of Manila.**

The Japanese C-in-C was Gen. Yamashita.

The Japanese estimated the American strength on Luzon as 10 or 11 divisions. In fact, 10 divisions have been named in official American dispatches. Japanese G-2 reported 20 American divisions in all of the Philippine area and predicted that several more would arrive on Luzon.

Gen. Yamashita's instructions commented on the difficulty of receiving reinforcements by sea and the consequent necessity of preserving the troops Japan did have on Luzon. In lieu of major battles, operations would be directed to constantly harassing the Americans with a view of causing more casualties than were received.

No Japanese source noted gives identifications of divisions. The main body has remained constantly in the same position and resisted all efforts of the U.S. I Corps to drive it out. The Japanese reported as east of Fort Stotenburg had not been previously mentioned, but enemy activities did increase in that area within the next few days. And the enemy did shortly appear at Fort McKinley.

The Japanese main body not only maintained its mountain line but sent troops out to the south, threatening the American line of supply from Lingayen to Manila. To meet this threat the 6th and 25th Inf Divs joined to attack enemy road blocks on the main road between San Quentin and Talavera, while the 32nd Inf Div attacked eastward from north of San Quentin, and established an RB on the main road over Baleta Pass to the Cagayan valley—thereby, it was hoped, cutting the line of communications of the Japanese fighting the 6th and 25th Divs. The 43d Inf Div covered the left to as far north as Rosario.

The 11th Airborne Div attacked about Nichols Field, the 1st Cav and 37th Inf Divs cleared north Manila.

On 8 Feb the 37th Inf Div crossed the Pasig River east of south Manila and launched an attack westward, to support the 11th Airborne Div. The 6th and 25th Inf Divs won a notable victory in Nueva Ecija against the Jap 2nd Armd Div on a 10-mile front from Lupao to Muñoz. The Japs are reported as having lost 104 tanks and armored cars.

Following this battle the 6th Div, on the south, advanced on the 9th to Rio Grande de la Pampanga near Bongabon. The 37th Inf and 11th Airborne Divs started a street and house battle in south Manila against very determined resistance which involved the destruction of a large section of the city.

On 11 Feb the 1st Cav Div crossed the Pasig River east of the 37th Inf Div to protect the rear of the latter against a hostile force which had appeared in the vicinity of Fort McKinley. In the north the 6th Div sent armor east across the mountains toward Baler to establish an east-west line across Luzon south of the enemy's main force. This armor reached the Pacific coast next day south of Baler (at Dingalan Bay) without finding any enemy. The main body of the 6th Div and all of the 25th continued to engage enemy armor in the general vicinity of San José.

On the 13th the 11th Airborne Div cleared Nichols Field after a 9-day fight. The street and house battle within Manila continued with great intensity, with the enemy slowly being driven in toward Intramuros.

By the 14th the XI Corps had completed crossing the Zambales Mountains and was moving down the east coast of Bataan. Next day it landed an amphibious expedition at Mariveles, at the south tip of Bataan. No enemy was met. The expedition had started from Olongapo. The 37th Inf Div had reached the Philippine University in south Manila, while the 11th Airborne Div was fighting further

south. The 1st Cav Div covered the rear toward Fort McKinley.

On 16 Feb the 503d Parachute Regt, starting from Mindoro, was dropped on Corregidor Island after that fortified place had been heavily bombed for a number of days. XI Corps troops were then ferried over from Mariveles. Enemy resistance was slight.

By 18 Feb the advance in Manila by three divisions had reached the General Hospital and was approaching Intramuros. Fighting continued on Corregidor against what appeared to be small enemy parties in underground shelters. No enemy remained in Bataan. The 40th Inf Div continued its efforts to reduce the enemy west of Fort Stotsenburg. There

the Japanese were partly in cave positions having multiple entrances, making it difficult to reduce them. The 1st Cav Div covered Manila toward Fort McKinley.

The I Corps, with the 43d, 32nd, 25th, and 6th Inf Divs in line from north to south, held the front:

**Rosario (US)—Alava (US)—San Nicolas (US)—San Quintin (US)—San Jose (?)—Bongabong (US)—Baler (US).**

South of this line, on the east side of the Central Luzon Plain small hostile forces were reported along the line Norzagaray—Novaliches—Mariquina.

## THE WAR AGAINST JAPAN (less the Philippine Islands) (19 Jan to 18 Feb 45)

### SOUTHEAST ASIA

At the beginning of the period three British forces were engaged in a concentric attack against the Japanese in Burma. This centered about Mandalay, the front forming roughly a quarter-circle around that city. The XV Indian Corps on the south held the line

**Myebon—Minbya (exc)—Myohaung (exc)—Kyauktaw—Paletwa—Daletma—Gangaw.**

The Fourteenth Army extended this to

**Monywa (exc)—Budalin—Shwebo—Singu (exc).**

The Northern Area Command continued on to Twinng—Shweli River.

The XV Indian Corps on 21 Jan landed an amphibious expedition of the 26th Indian Div on Ramree Island after a severe naval and air preparation. There was little resistance and an advance was started south from the north end of the island. Considerable opposition then developed, and the island was not cleared until 17 Feb.

The 81st West African and 25th Indian Divs operated against strong enemy forces along the line Myohaung—Minbya, which two places were captured respectively on 27 Jan and 2 Feb; this was a severe battle, the enemy being reported by British sources as having lost 1,000 killed and 20 guns on 2 Feb alone. The situation does not appear to have been materially changed. At the end of the period the line included Ramree, Minbya, and Moahaung; otherwise there was no change.

The Fourteenth Army, directly opposite Mandalay, has met strong resistance. The 19th Indian Div expanded its bridgehead near Singu to include that town. The right of this army—XXXIII Corps—has taken Monywa and advanced to near Sagaing. A bridgehead has been established south of the Irrawaddy east of Myaung. Both British bridgeheads have been under constant attack by the enemy. The line reached was Monywa—Myaung—Sagaing (exc)—Singu.

The Northern Combat Area has the 36th British Div and the Mars Task Force along the Shweli River. They have advanced a short distance to the south. The Chinese First Army and the 38th and 50th Inf Divs are on the east end of the line. An advance was made, without meeting opposition, along the road from Namhkam to Mongyu (where the Ledo and Burma Roads join), which was reached on 22 Jan. The advance then turned around and went southwest toward Lashio, following the Burma Road. By 18 Feb this had arrived at a point 48 miles from its objective. Uniting of the Ledo and Burma Roads permit motor vehicles to run through from Ledo in India to Kunming in China. One convoy has made the trip, taking 24 days for it one-way. The enemy attacked the convoy by air and shelled it from certain positions still held between Wanting and Lungling. The convoy got by.

*Miscellaneous Operations.* A strong British Naval Task Force convoyed aircraft carriers from which planes flew to attack Palembang on Sumatra on 25 and 29 Jan. Special effort was made to destroy oil plants. On the first occasion the attacking planes were intercepted by Japanese planes before they reached their destination; on the second trip, afterwards. British losses are reported as small and no damage to ships, although they were attacked by 7 Jap planes of which 1 got through.

On 27 Jan the U.S. 20th Air Force (using super-bombers) attacked Saigon, and on 11 Feb, Rangoon. There is no available information as to damage inflicted.

### SOUTHWEST PACIFIC COMMAND (less Philippines)

Active ground operations have been limited to New Guinea and Bougainville in the Solomon Islands. Air operations have involved continuous reconnaissance and much bombing. More bombing has been carried out in north Borneo and in Celebes, less in areas to the east.

In New Guinea, Australian troops have enlarged their beachhead around Aitape on the north coast. The enemy is aggressive in this area. He has a considerable force to the east near Wewak and to the south in the Sepik valley. Wewak is being heavily and frequently bombed.

In Bougainville, Australian troops have an expedition under way from Empress Augusta Bay, northeastward across the island toward Numanuma, which is the enemy's main base on the east coast. The Australians are in the mountains 13 miles from their objective. This part of Bougainville is a maze of ridges and deep ravines, thickly covered with jungle. It rains almost every day. Trails are so steep that steps have to be cut out. Then the rain washes the steps away and the work has to be repeated. American air forces are aiding the Australians.

### PACIFIC COMMAND

Active air reconnaissance is maintained constantly all over the Pacific. In connection therewith occasional bombings have occurred:

**In the north Pacific—the Kurile Islands, including Paramushiru and Shimushu; Marcus Island.**

**In the north central Pacific—Chichi, Haha, Iwo, and Rota Islands.**

**In the central Pacific—Palau Islands, Yap, Woleai, Puluwat, Truk, and 4 islands in the Marshall group held by the enemy.**

At all places strong AA fire has been encountered, which is reported as growing stronger. It is believed that communication with the home land is maintained by submarines. The tropical islands are capable of raising sufficient food for Japanese garrisons.

Main operations have been bombings of Japan. The 20th Air Force (based on Saipan and Tinian) has raided and bombed over Japan:

<b>Jan 19</b>	<b>Osaka</b>	<b>and</b>
	<b>Kobe</b>	
	<b>23 Nagoya</b>	
	<b>27 Tokyo</b>	
<b>Feb 4</b>	<b>Kobe</b>	
	<b>11 Tokyo</b>	

A Naval Task Force with over 500 planes conducted a major raid over Formosa and adjacent islands on 21 and 22 Jan, sinking numerous small ships and heavily bombing enemy air fields and railroads. Only 15 of our planes were lost.

On 16 Feb a major operation started for the capture of Iwo, believed to be garrisoned by not over 20,000 Japanese troops. Iwo, a radar and observation post, regularly reported movements of American planes flying from Saipan toward Japan. This gave the enemy several hours' notice of coming raids.

An amphibious Marine Corps of three divisions was detailed for this task, covered by two powerful task forces. The outer force under Vice Admiral Marc A. Mitscher took post in bad weather making reconnaissance difficult south of Tokyo. Notwithstanding the weather, planes left the aircraft carriers and attacked in waves of about 50 planes at about 1-hour intervals, going deep inland to enemy air fields and continuing all day. On the 17th this attack was repeated, except that waves were 1½ hours apart and had about 80 planes. Targets were in and close to Tokyo.

While this attack was underway the 5th Fleet (Admiral R. A. Spruance), which contained the reconditioned battleships previously sunk at Pearl Harbor, plus cruisers and destroyers, shelled Iwo night and day during the 16th, 17th, and 18th. The fleet was aided by the air force, including land-based army planes using bombs and rockets. Enemy batteries fired from shore, damaging 1 ship. The Marines did not land during the period covered by this article.



## F. A. S. EVENTS

An Officers' Refresher course designed to cover the latest tactical and technical developments in field artillery has been added to the curriculum of the Field Artillery School. Organized by the Department of Combined Arms, it replaces the Officers' Advanced course.

The course covers a period of eight weeks. The first class reported January 29. Subjects covered include gunnery, tactics, communication, motors, and materiel. There are also classes in field artillery intelligence and amphibious operations.

The course was planned under the supervision of Colonels Paul C. Boylan (director of the Combined Arms department), Edward M. Edmonson (assistant director), and Jess Larson (executive).

Senior instructors of subsections include Lt. Col. Joseph E. Westbury, nondivisional artillery and special operations; Lt. Col. Willoughby I. Stuart, attack and defense; Maj. Charles A. Reinhard, artillery intelligence and maps; and Maj. Robert S. Reaves, combat orders, staff employment, and supply. Secretary for the course is Capt. John J. MacGregor.

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Army, Navy, and Marine Corps officers, members of Class No. 10 of the Army and Navy Staff College, visited the Field Artillery School February 15 and 16 to observe and study field artillery organization and technique as a part of the comprehensive course for selected officers of the armed forces. The students, including several senior ranking officers of the British army, were welcomed Thursday morning at the opening session in McNair hall by Maj. Gen. Ralph McT. Pennell, commandant of the Field Artillery School.

The two-day program included classes on field artillery weapons and techniques conducted by members of the staff and faculty of the Field Artillery School and a firing demonstration conducted by the Department of Gunnery.

With the students here were several officers from the Command and General Staff School, Ft. Leavenworth, including Brig. Gen. William A. Campbell, assistant commandant; Brig. Gen. Robert Candee, director of air instruction; Col. William Nalle, director of ground instruction; Lt. Col. John W. Morgan, class director; Lt. Col. Charles B. Everest, instructor, operations section; and Lt. Col. Clark G. Johnson, instructor in logistics.

Members of the college staff in the party were Col. Esher C. Burkart and Lt. Col. E. G. Watson.

The Army and Navy Staff College, operating under the jurisdiction of the Joint Chiefs of Staff, instructs qualified senior officers of the Army, Navy, and Marine Corps in the performance of command and staff duties in unified and coordinated activities of Army and Navy forces by increasing their knowledge of the technique of operations and logistics of land, sea, and air forces.

Members of the class arrived at Fort Sill from Fort Benning, where they studied at the Infantry School. They left here for Ft. Leavenworth for a course at the Command and General Staff School.

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Maj. Gen. L. E. Jones and Brig. Gen. R. E. Starr of Headquarters, Army Ground Forces, visited the Field Artillery School last month for conferences with Maj. Gen. Ralph McT. Pennell, FAS commandant, and Col. Thomas E. de Shazo, assistant commandant. Gen. Jones, a field artilleryman, was stationed at Fort Sill from 1934 to 1938 as director of the Department of Tactics.

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Lt. Col. Arthur M. Apmann, chief of the photo interpretation section at the Military Intelligence Training Center, Camp Ritchie, visited at the Field Artillery School last month. He was accompanied by Lt. V. A. Evers, instructor in tactical reconnaissance and observation, who was here to observe the use of the Field Artillery liaison airplanes.

\* \* \*

The 628th Field Artillery Battalion, activated at Camp Chaffee in April, 1944, arrived at Fort Sill to join the troops of the Field Artillery School. The battalion is commanded by Lt. Col. James B. Anderson. Executive officer is Maj. John L. Shearer.

\* \* \*

Five field artillerymen were presented awards last month at a ceremony on the Old Post parade grounds. The presentations were made by Brig. Gen. George H. Paine, commanding general of the 31st Field Artillery Brigade. Personnel receiving the awards were:

Lt. Col. Ernest L. Ramme, Cornell, Illinois, assigned to the Officers' Replacement Pool: Legion of Merit and Oak Leaf Cluster for outstanding services in Egypt and Libya August, 1941 to January, 1942, and in the China-Burma-India theater March, 1942 to October, 1943.

Lt. Col. Norman E. Poinier, Lawton, Oklahoma, FAS Department of Gunnery: Silver Star for gallantry in action in New Guinea on August 30, 1943.

1st Lt. Edward J. Hayes, Chicago, FAS Truck Regiment: Soldier's Medal for heroism during training at Fort Huachuca, Arizona, on June 27, 1944, when he grabbed the wrist of a soldier who was holding a hand grenade that was about to explode and whirled the soldier's arm in an attempt to fling the grenade out of the pit after the soldier had become excited and neither threw nor dropped the grenade. Lt. Hayes and the trainee were seriously wounded.

1st Lt. Richard L. Weil, Glenhead, New York, FAS Air Training Department: Air Medal for services with the Seventh Army overseas.

Sgt. John Matthews, Toledo, Ohio: Purple Heart for wounds received during the assault on Cassino at Mignano, Italy, in November, 1942.

\* \* \*

Brig. Gen. Jesmond D. Balmer, former head of the Field Artillery School, has been awarded the Distinguished Service Medal for his services as commandant of the school from January 29, 1942, to January 10, 1944. General Balmer, sixteenth commandant of the school since its organization in 1911, "commanded the Field Artillery School during the period of its peak enrollment of over 8,600 officers and enlisted men during the fall of 1942," the citation reads.

\* \* \*

#### NOTES FROM DEPARTMENT OF COMBINED ARMS

The following is a list of the War Department Modification Work Orders which have been issued to date on the Sound Ranging Set GR-3-C:

MWO SIG 11-444-1: Aluminum supports for the recording equipment are replaced with steel supports to increase strength, reduce breakage, and facilitate repair.

MWO SIG 11-444-2: A fixed resistance is put across millimeter to improve the performance of the recording system when the microphone lines are leaky due to wet weather and poor insulation. This MWO was superseded by MWO SIG 11-444-4, which only changed the values of these resistors.

MWO SIG 11-444-3: To replace the ring type, porcelain covered heater recently used, with a stainless steel immersion type heater.

\* \* \*

#### NOTES FROM DEPARTMENT OF AIR TRAINING

The Department of Air Training now has L-5 airplanes (in addition to the L-4 type) and will teach night flying in the forthcoming training course. Night cross-country flight training in L-5 airplanes will be included in the training schedule.

The Field Artillery Air Mechanics' Course will be changed from a five-week course to a ten-week one beginning with Class M-130, scheduled to enter on or about 23 March 1945.

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#### FEBRUARY PERSONNEL CHANGES

##### Arrivals

<i>Name</i>	<i>Present Duty</i>
Col. Joseph A. Cella	
Lt. Col. Jesse G. Faes	
Lt. Col. William T. Kirn	Dept. of Combined Arms
Lt. Col. Gerald F. Roberson	Dept. of Combined Arms
Maj. Francis C. Bartle	Dept. of Combined Arms
Maj. Ivan W. Bradley	School Troops, FAS
Maj. Carleton W. Dark	Dept. of Combined Arms
Maj. Mahlon S. Davis	
Maj. Glenn E. Greenwood	
Maj. Philip A. Grimes	FAS Detachment
Maj. William L. Harr	Dept. of Gunnery
Maj. Jacob G. Parker	Dept. of Materiel
Maj. Samuel M. Patten	
Maj. Adrian F. Sherman, Jr.	Dept. of Communications
Maj. Roy A. Scruggs	Dept. of Combined Arms
Capt. Eugene C. Clark, Jr.	FAS Detachment
Capt. Carl W. Detering	FAS Detachment
Capt. Dennis W. A. Edwards	
Capt. Charles J. Genster, Jr.	
Capt. Harry E. Harms	S-4 Section
Capt. Howard L. Hauge	
Capt. Ted Helmer	FAS Detachment

Capt. Karl S. Herendeen	FAS Detachment
Capt. Golden Hockaday	FAS Detachment
Capt. John R. Kivisto	Dept. of Gunnery
Capt. Albert J. Krabbe, Jr.	Dept. of Gunnery
Capt. Francis G. Kulleck	School Troops
Capt. Robert S. Leon	Dept. of Combined Arms
Capt. Glenn W. Pape	Dept. of Motors
Capt. Harry J. Parke	
Capt. Robert J. Reed	School Troops
Capt. Platho P. Scott, Jr.	Dept. of Gunnery
Capt. Thomas E. Shaughnessy	
Capt. Daniel D. Stok	
Capt. Peyton Tutwiler	Dept. of Gunnery
Capt. Stuart M. Vaughan	Dept. of Communications
1st Lt. William H. Ballard	
1st Lt. Granville O. Barclay	School Troops
1st Lt. Clelland C. Bland	Dept. of Motors
1st Lt. Edward C. Denny	Dept. of Motors
1st Lt. Ralph J. Kueker	Dept. of Motors
1st Lt. Russell P. Kurtz	School Troops
1st Lt. Norman L. Ginder	Dept. of Motors
1st Lt. John D. Grabski	Dept. of Motors
1st Lt. Omer M. McGee	Dept. of Motors
1st Lt. William J. McPherson	Dept. of Motors
1st Lt. Woodrow W. Porter	Dept. of Motors
1st Lt. Oscar B. Rich	
1st Lt. Walter R. Rowe	School Troops
1st Lt. Joseph W. Scott	Technique of Instruction
1st Lt. W. H. Strickland, Jr.	Dept. of Materiel
1st Lt. Ralph S. Tieche	
1st Lt. Harold F. Turner	School Troops
1st Lt. Dean P. Wiley	Aide-de-camp to commandant FAS
1st Lt. Charles D. Workman	FAS Detachment
2nd Lt. Henry M. Frances	
2nd Lt. Evelyn Lund (WAC)	WAC Detachment

##### Departures

Lt. Col. Carl L. Cramer	218th FA Gp, Camp Bowie
Lt. Col. Theodore B. Freeman	483d FA Bn, Camp Hood
Lt. Col. George T. Gunston	School of Military Govt., Charlottesville, Va.
Lt. Col. Norman L. Kistler	AGF Replacement Depot, Ft. George Meade
Lt. Col. Everett Lewy	AGF Replacement Depot, Ft. Ord
Lt. Col. Carl W. Miller	APO 4197, c/o Postmaster, New Orleans, La.
Lt. Col. Marvin B. Sterling	321st AAF Base Unit, Key Field, Miss.
Lt. Col. Charles A. Watrous	Borden General Hospital
Maj. Ivan W. Bradley	School Troops, FAS
Maj. Paul C. Brown	Hq. Second Army, Memphis, Tenn.
Maj. William D. Campbell	Separation Center, Ft. Dix
Capt. Francis G. Kulleck	School Troops, FAS
Capt. Robert J. Reed	School Troops, FAS
Capt. George J. Renoff	AGF Replacement Depot, Ft. Ord
Capt. Jacob H. Towers	FAORP, Ft. Sill
1st Lt. Granville O. Barclay	School Troops, FAS
1st Lt. Edward C. Denny	Borden General Hospital
1st Lt. Russell B. Kurtz	School Troops, FAS
1st Lt. Luppe H. Luppen	
1st Lt. Charles M. Marsh	FARTC, Ft. Sill
1st Lt. Norman C. Milne	Student, Liaison Pilot Training
1st Lt. Walter R. Rowe	School Troops, FAS
1st Lt. Arnold M. Smith	School Troops, FAS
1st Lt. John P. Steeper	
1st Lt. Harold F. Turner	School Troops, FAS
1st Lt. Donald W. Vreeland	Student, Liaison Pilot Training
1st Lt. Albert V. Weigel, Jr.	Hammond General Hospital
1st Lt. Charles D. Workman	Borden General Hospital
2nd Lt. Bruce F. Gill	Student, Liaison Pilot Training
2nd Lt. Evelyn Lund (WAC)	Borden General Hospital
2nd Lt. Ernest R. Meyers	Student, Liaison Pilot Training
2nd Lt. George D. Ramsey, Jr.	Student, Liaison Pilot Training
2nd Lt. Charles O. Smith	IRTC, South Camp Hood

# Combat Communications

By Capt. George Sammet, Jr., FA

Years of training in the States may perfect the communication procedure of a unit to what is thought to be a high criterion. Even so, in the first month of combat it is astounding to see the communication procedure advance to a new high and at a pace that is remarkable. This does not imply that the methods and aids of training in the States were outmoded or insufficient, but rather that under actual combat conditions the men can see that what seemed trivial mistakes there are magnified a hundredfold here. A lost word or mixed-up fire command or sensing on maneuvers was just more water under the bridge, while here it may mean the lives of many doughboys. Also, back in the States the Fort Sill methods and means of communication were accepted as the only means; in combat, the "school solution" becomes a foundation for methods to fit the situation—methods which are born and developed by the men as the situation demands. Here there can be no such excuses as "the radio is out of range" or "we just can't keep wire in to that area." These are the situations that inspire some corporal or sergeant to delve into a situation and come up with answers of which back home he would never have thought himself capable.

Perhaps the greatest improvement we have made in radio communications has been with the base sets. The old method of handling fire direction base sets was to set up three SCR-610 radios in the vicinity of Fire Direction Center and then, when the radios of the liaison officers and forward observers were almost out of range, send out a relay station. This method, although workable, proved very inefficient as it took a large number of operators. All calls had to go through the relay station, thus increasing the time of fire missions and also introducing one more chance of error in transmission; also, the only protection the operator had was his foxhole. In the case where a 608 radio was used for a relay it was necessary for the operator to stay in the command car, and when enemy artillery shells begin falling a command car is a very undesirable place to be. When the conception that "the worst house is better than the best tent" came into being, so did new ideas, with the result that a radio setup was evolved that completely eliminated all of the disadvantages listed above.

First of all, we took an SCR-608 radio out of a command car, put it in the cellar or a lower-floor room of a house, and ran a CD-278-A cable through the window to the battery terminal box in the command car, which was sometimes up to 40 feet away. A 5-section antenna was put up on the roof and connected to the antenna terminal on the radio by a 40-foot length of ordinary electric light cord that was found in the vicinity (but any good electric light wire that has a large copper core will do the job). We had been told back in training that to increase the lead to the antenna would decrease the efficiency of the set—but by using this set-up we increased the reception and transmission of the 608 radio so much that we eliminated the need of a relay station except in a few instances. Further, the basement location gave a more adequate protection to the operator and consequently increased his efficiency.



The above SCR-608 radio took the place of two base sets. For the third base set we used an SCR-610, which was placed on the top floor of the building with its regular antenna sticking out of the roof. We found that we could not use a long antenna lead to the radio as with the SCR-608 radio, as this decreased the efficiency of the SCR-610 considerably and there are no means of compensating for this loss as in the case of the SCR-608. We could, however, run a cable from the power pack of the SCR-610 to the vehicle battery terminals some 60 to 80 feet away. This did let us avoid using a battery pack. The main fear that was introduced here was the necessity of keeping an operator on the top floor, which is by no means safe and is considered foolhardy except in the case of observers who must sacrifice safety for observation.

To alleviate this condition we tried two methods with success. The cable from the microphone to the radio consists of two circuits, the transmitting circuit of three wires and the receiving circuit of two. By using five strands of W-110 wire made into a cable, we found that we could extend the "mike" wire down to the basement to the operator.

Another solution\* was by using a device which we borrowed from another unit. When a few minor improvements were added, this proved very successful and enabled us to keep all operators in a central location, thus setting up a radio control room which could be properly protected and supervised by the radio sergeant. The principle is to apply a force to the switch SW-175, on a remote control, from a remote means. This allows an operator in one room to talk through another remote control which has the switch SW-185 in the "telephone" position, while the remote control attached to the radio has its switch SW-185 in the "through" position. This device can be assembled in the following manner and steps:

- (1) Connect remote control number one to the radio on the top floor in the normal manner.
- (2) Using W-110 wire, connect the binding post terminals

\*A new remote control unit to serve this purpose has been developed, and should reach troops shortly.—Ed.

L1 and L2 of the two remote controls.

(3) Mount a relay (which is no more than an electromagnet) on the lower left corner of the face of the remote control.

(4) Then mount a TL-139 from a pair of wireman's test clips, with one end under the coil, the other end over the switch SW-175, and the pivot in the center. When the relay is energized the end of the clip under the relay is drawn up, and thus the other end goes down and pushes down the switch SW-175 on the remote control and permits the conversation to go through the remote control. The size of the battery needed to activate the electro-magnet depends on the relay used. One of our relays came from a commercial car radio and needed a battery which would put out approximately 110 volts, so we used a BA-40 which gave us 90 volts and performed satisfactorily. For another which we got from a captured German telephone and which needed only six volts to activate it, we used a corresponding size battery.

(5) We then ran two more W-110 wires from the coil down to a switch mounted on the remote control in the radio control room. This switch when put on the "on" position closed the circuit formed by the battery, switch, and relay, and thus activated the electro-magnet only when needed. Thus the operator was able to talk through two remote controls and the radio without anyone's having to be at the radio to push down the SW-175 button.

It was also found that a secondary and very important use of our liaison planes was to have them cruise on patrol with their radio on the battalion's common channel and act as a relay station. Thus, if a forward observer ever did get into a well masked area where line of sight transmission was impossible, or in a very fast-moving situation where the forward observer or S-2 gets 'way ahead of the unit, he can still have communications with his unit through plane relay. This relay became so important that in some cases the planes would go up with relaying as their primary duty since visibility was so poor that it would have been useless to send a plane up for observation purposes alone.

Complete wire communications, however, should still be the end toward which all communications sections should work. A conversation carried on by radio must be limited, whereas the person-to-person telephone conversation is more flexible. But to put the initial installation in and to keep it constantly serviced necessitates sending men out under constant hostile fire. Therefore, when it is installed it must be put in carefully and over a well reconnoitered route. Hasty and prolific wire laying is foolish as it increases the servicing of wire a hundredfold. Trunk lines should if possible go overhead and out of the way of tracked vehicles and impact bursts. Lines to forward positions (such as liaison officers and FOs) must be on the ground, however, preferably in ditches in order to facilitate their servicing. These forward lines are constantly being broken by mortar and artillery fire, and linesmen should have some protection when going out. We also found that by putting in a forward switchboard that took care of the liaison and forward observer lines primarily, we could shorten the trouble-shooting time on these lines since it provided the forward people with an additional crew for trouble-shooting. Two lines from our forward board to the rear board were sufficient to handle the traffic.

One of our greatest problems was the resupply of wire, batteries, new radios, and rations to the liaison and forward observer sections. These parties have almost always pushed ahead on foot with the infantry, thus limiting the amount of equipment that they could take with them. At times they may not see their vehicles for a greater part of a campaign. To eliminate the necessity of sending numerous vehicles and personnel over a dangerous route to the forward positions, all resupply was done by Headquarters Battery personnel. The necessary supplies were taken up to the infantry battalion CPs—which in itself is sometimes no mean feat—and then up to the gun battery FOs by infantry ration trains at night. All in all, the resupply of equipment was our greatest problem during an extended campaign such as we had in the Metz area.

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## In Combat Forewarned Is Forearmed—Part II

*a.* You cannot always fight in full "Christmas tree" equipment, but always have your steel helmet and pistol or carbine handy wherever you go in a combat area—and even in a rear area have your weapon handy. If you transfer from your command car to a jeep, unless you know it is only for a few minutes, I advise that you also transfer your overcoat and your musette bag so that if you are out late, or maybe all night, you will not be caught unprepared. Perhaps it will not be out of place to make a few suggestions as to the contents of this small haversack. It should always have, I think, the following:

- i. Shaving kit and mirror. Towel. Clean handkerchief.
- ii. 24-hour chocolate ration.
- iii. Knife.
- iv. Flashlight.
- v. Gloves and/or scarf.
- vi. Spare pair of socks.
- vii. Reserve of tobacco, cigarettes, and matches.
- viii. Spare pistol ammunition.

*b.* Have your field glasses around your neck. They are

vitaly necessary at all times. Do not leave them in the case, for if you do they will never leave the case and you might as well not carry them. Even in close country, field glasses are valuable. With the aid of glasses you will be able to make up your mind whether a distant tank or car is enemy or friendly. You will be able to detect otherwise invisible false crests, and locate small accidents of ground which will conceal guns and which cannot be seen with the naked eye. They are also an aid to detect the cars of senior officers approaching, in sufficient time to take necessary action!

*c.* Not only in the desert, but also in Europe is it necessary (though to a lesser extent) to have your compass handy, and furthermore to know how to use it.

*d.* A knowledge of stars is necessary to every soldier. By this I mean that everybody should know at least one and preferably two alternative methods of finding the Pole Star, every enlisted man should be able to identify the Big Dipper (sometimes called the "Great Bear" or the "Plough" or the "Wagon and Horses") and the North Star. He should also know Cassiopeia, and Scorpio (which can be readily recognized by the



pink star in the middle called Antares). Everyone should also know "Orion and his Belt," Leo, and the Sickie, which are all rough methods of finding North. These points should not be overlooked, as a small knowledge of the heavens has often prevented troops from marching straight into the enemy's lines.

*e.* By all means keep a fully marked situation map in combat, but never take it forward of your CP—and it is inadvisable to mark on it tactical or administrative information which is of no immediate interest to your own unit. Moreover, it is fatal, suicidal, and criminal to take such a map forward of your CP into the front line. I recall an instance in the Battle of Mareth where this was done, and the results of this negligence reached astronomical proportions. Maps showing shelling data and map reference codes are equally dangerous when they get into the wrong hands.

*f.* In combat one day is very much like another, but it does help to keep a check on the days and the weeks and the months, and to be able to wake up one morning and think, "Well, although we are still working, today is Sunday, and were it not for the war, I should have a good lay-in." Also there might be a possibility of getting to church if things are quiet, and that helps a lot. The Allied chaplains are a very fine body of men; I have seen them holding little services under the most incredible conditions: during the battle of E1 Alamein a chaplain in full vestments held burial service as calmly as if he were in a little country church yard, whereas in actual fact he was standing in the middle of an artillery barrage.

*g.* Make it your constant aim to accumulate and maintain small reserves on a unit basis, but do not adopt any means which is going to deprive another man of his share and do not overload your vehicles.

*h.* The British have an expression to "scrounge"; the writer is not aware of the American equivalent, although there undoubtedly is one. Scrounging is a good thing provided it is kept under sensible control, and is an indication of efficiency, but see remarks under "g" above, and do not carry junk.

*i.* A sense of direction is a very valuable thing, and although a person is born either with or without a sense of direction it is possible to cultivate one to quite an extent by constant practice. A man who has not a sense of direction must not be ashamed of admitting it, and he particularly must be more than ever vigilant and painstaking in his map reading, navigation, etc.

*j.* Men on the march in trucks must keep alert in a combat area; at a halt, an officer or senior NCO should check on this. In this connection, often it is found that the reason for a column of vehicles' stopping is that the leading driver has gone to sleep. Therefore, at all unscheduled halts somebody must go to the front every time and check. Furthermore, at all halts traffic sentinels (armed) must be posted to watch the vehicles and to wave on other traffic. Avoid double banking like the plague!

*k.* Do not trust any civilian until it is proved beyond doubt that he is worthy of your trust. Particularly, do not trust him against your better judgment based on your map reading. In relation to maps, if there is any doubt whatsoever rely on reading your map by contours and not by such landmarks as windmills, churches, cross-roads, bridges, etc.

*l.* Many officers entering combat for the first time take too much personal equipment. They should take the minimum overseas, and should leave most of that at the base. An officer should be able to fight indefinitely with bed roll, a small grip,

and a haversack. Likewise, the needs of enlisted men must be kept to a minimum.

*m.* In combat, vehicle cooking is generally the rule and all men should be capable of living this way. Within a very short time you will find that gun crews and so on are able to turn out tasty little meals, and really get enthusiastic about their own cooking. This happened even in the Western Desert, where the standard ration was just tinned corn beef, tinned potatoes, and biscuits!

*n.* Do not keep all your reserve—rations, gas, etc.—in bulk. Get them out to the platoons. They are the people who want the stuff.

*o.* Finally, ensure that platoon commanders give their company headquarters a daily administrative report which can be consolidated and passed on as necessary. Here is a form which I used in combat for some time. Every platoon commander carried a bunch of these, as by using them the likelihood of omission of any administrative point was brought to a minimum.

PLATOON COMMANDER'S DAILY ADMINISTRATIVE REPORT	
GAS: present radius of action (@ ..... miles per gallon) .....	
now required (to bring radius of action up to ..... miles) .....	
RATIONS: (if normal, no return required) .....	
	<i>Small Arms TD</i>
AMMUNITION: expended today: .....	
now held: .....	
WATER: (if normal, no return required) .....	
CASUALTIES: (names of ALL ranks evacuated beyond Bn Aid Post, WHERE evacuated to) .....	
.....	
.....	
.....	
.....	
	<i>WD Number Type Make Particulars</i>
VEHICLE CASUALTIES: .....	
.....	
.....	
.....	
.....	
(nature of damage; location; whether fit for recovery, and if so whether suspended tow is required)	
GUN CASUALTIES: .....	
.....	
STRENGTH:	
Yesterday's total .....	
less evac'd .....	
Today's total .....	(i.e., to be fed)
less casualties .....	(still with unit)
WORKING TOTAL .....	(fit to fight)
MISCELLANEOUS: (deficiencies, etc., as necessary)	

# Fifteen Days—The Defense of Damulaan

By Lt. Bruce H. Wells, FA

At the town of Damulaan on the western coast of Leyte in the Philippines, the foothills of the Central Range jut out suddenly to within 500 yards of the ocean. This natural barrier which thrusts itself across the broad, soggy plain running along the shore of the Camotes Sea is the only defensive position, save one, which blocks the level route between the strategically vital centers of Bay Bay and Ormoc. A small group of Americans, half of whom were cannoners, held this position against overwhelming odds. The enemy was beaten to the punch, and because he was unable to smash past this block his great bastion at Ormoc crumbled. With it went all his hopes of effectively stemming the liberating tide of MacArthur's forces. The "book" was thrown out the window to achieve this result. An unorthodox enemy was bested by unorthodox methods in which nearly every axiom taught in the schools was disregarded. Because artillery, almost in the front lines, played such an important part in the action, the story of the defense of Damulaan is of special interest to all artillerymen.

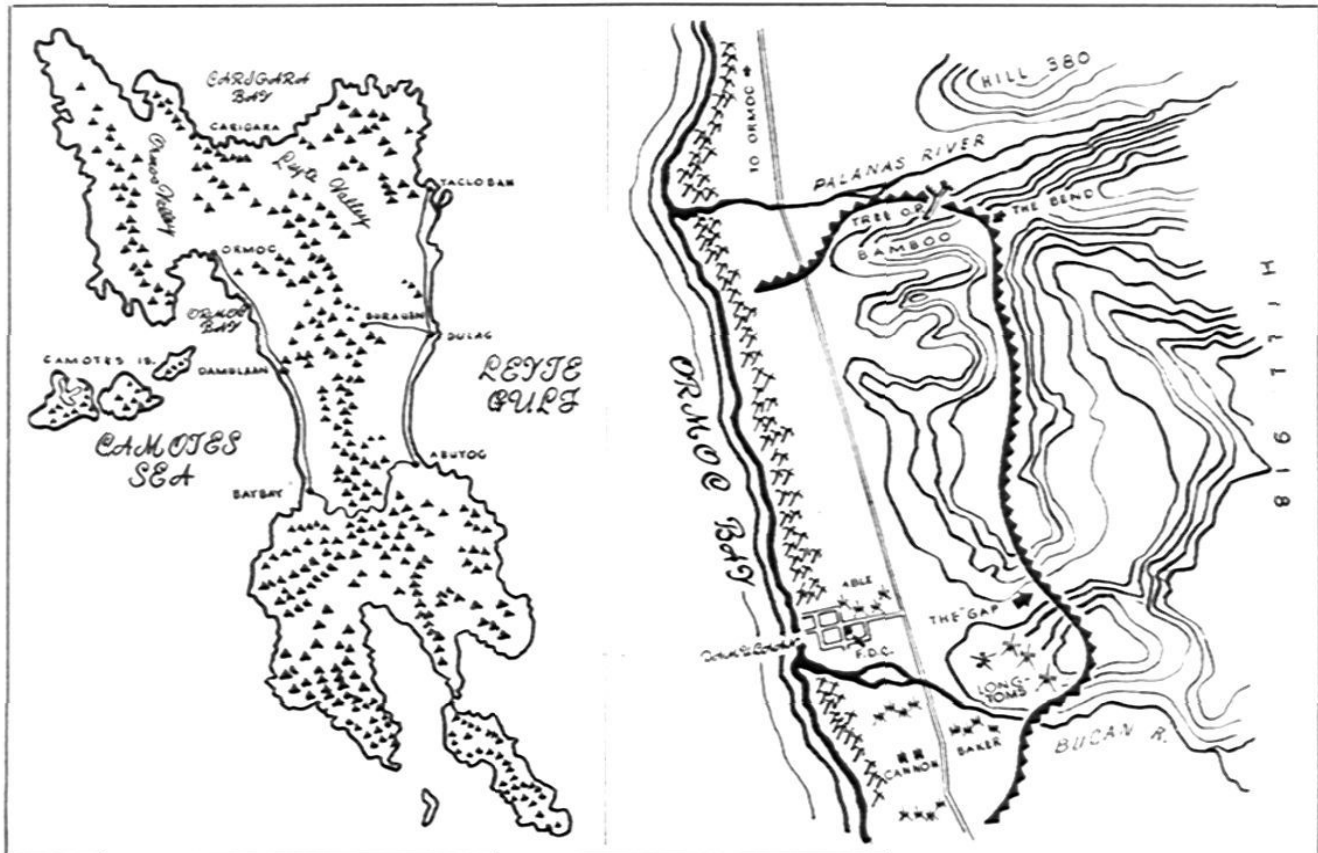
In order to understand the situation which placed the tiny force at Damulaan and its important river, the Palanas, a recapitulation of the events leading to it must be given. Warfare in the Philippines is intimately concerned with terrain, perhaps even more so than in other theaters. On small Leyte the action by both sides has run the gamut from paratroop and amphibious attacks on a grand scale to the painfully slow peck-and-hunt tactics of mountain warfare. On an island dominated by jungle-covered, precipitous ranges; broad, swift rivers; sweeping, rice-paddy-filled plains; and a solid perimeter of perfect landing beach, anything can happen—and has. The

torrential rains of the winter monsoons and typhoons have accentuated difficulties created by the countryside and made the supply problem an enormity. In this land where nature is always found in the extreme form, critical terrain features are at a premium and their presence exerts a profound effect on the decisions of both commanders.

Leyte is about 130 miles long and a third as wide. Militarily it is divided into two valley-coastal plains and a high, virtually impenetrable mountain range which separates them. Reading from east to west, the land formation consists first of the plain which extends from Abuyog in the south to Dulag, where it widens into Leyte Valley, which terminates at Carigara Bay. At this same body of water the Central Range starts and runs down the middle of the island until it reaches Bay Bay and Abuyog. Here it broadens and composes the southern part of Leyte. At Bay Bay the second plain begins; it is generally 2,500 yards wide (except where it is pinched at Damulaan) all the way to Ormoc, where it fans into a tremendous valley bearing the same name. Less than 1,000 yards south of Ormoc is another ridge, which closes this valley at Camp Downes. Another mountain range runs up the west side of Ormoc Bay to the northwest corner of the island.

## EARLIER OPERATIONS

Initial landings in Leyte Valley shattered the Imperial 16th Division, the barbarians of Bataan's Death March, and forced



them to set up delaying defenses in the mountains ten miles west of Dulag. The American forces quickly pushed south in the plain to Abuyog, meeting only scattered resistance, mainly in the foothills. From Abuyog a military road, built in pre-war days, goes over the range to Bay Bay. This is the only trans-mountain route on the island, save for narrow footpaths which are extremely difficult for even a half-naked native to negotiate. Surprisingly enough, this enormously important pass was not defended by the Nip, probably because of very effective guerilla action in that sector. By the first of November elements of the 7th Div, commanded by Maj. Gen. A. V. Arnold, were established in Bay Bay after having built more than 50 bridges in order to get there.

Until that time the winter rains had held off, but no sooner had the regimental combat team (less one battalion) set up its headquarters on the western side of Leyte than they began. Flash floods in the rivers knocked out most of the bridges so laboriously constructed. Sections hundreds of yards long disappeared in the road between Dulag and Abuyog, the MSR for the force. They soon felt an acute shortage of everything. The X Corps at the time was making the main effort by skirting the Central Range and pushing from the north down Ormoc Valley. They too were having extreme supply problems because of the waterlogged roads in their zone of action. Supplies all over the island could be moved only by superhuman efforts. The majority were consigned to the force at Carigara Bay. Artillery ammunition in particular was lacking where it was needed.

Initially the mission of Lt. Col. John M. Finn's combat team was to build up a force in secret and then push north toward Ormoc. Only a few days after it reached Bay Bay, two Japanese destroyers were sighted coming down the coast. The artillery battalion assigned to the combat team and led by Lt. Col. Francis B. Harrison had completed their survey the previous day and had as a base point a large, dilapidated pier extending some distance into the sea. The enemy warships creeping slowly down the coast line came so close to shore that a sensing of 100 short would have blown them clear out of the water. The mission was still secret, however, so upon first sighting the vessels all vehicles and personnel in the town were hidden from observation from the ocean. No fire was delivered by us but hundreds of eyes were glued on the ships as they came to a halt to search the town by sight.

#### THE MISSION

A few days later, despite vigorous action by our Air Corps, Japanese forces received their second large batch of reinforcements from the other Philippines. These consisted primarily of the 26th Div. Native reports and results of reconnaissance flights indicated that this body was moving south in force. In the meantime the rains had kept up and getting supplies was a nightmare. Despite the seriousness of that problem, it was becoming painfully evident that a drive north was essential. As has been previously mentioned, the only defensive position in the 28-mile stretch between the Camp Downes ridge just south of Ormoc and Bay Bay was at Damulaan, 17 miles from the latter town. Supplies or no supplies, roads or no roads, the decision was made to occupy Damulaan and hold the Palanas River line. On the 15th of November our Baker Battery and the 2nd Bn of the 32nd Inf were sent north.

Between Bay Bay and Ormoc there are 60 rivers and very few bridges. The main bottleneck existed at Bay Bay, where a large



*Road building was a major matter on Leyte. Logs, sandbags, bulldozers, and sweat all played large parts.*

river, swollen to its highest banks, could be crossed only by 2½-ton trucks at a ford usable only when the tide was out. Unlike the rest of the waterways, it could not be crossed at the beach because of its three deep mouths. Lacking pontoon or other adequate equipment, the engineers, who continually were performing miracles, had constructed a haphazard ferry which they christened the *S.S. Maybe*. Built years earlier by civilians, it was of weird design and continually getting mired on mud flats or quitting in midstream. It lived up to its name completely. The road running north is excellent but the absence of stream crossings forced traffic to use the beach from a point four miles up from Bay Bay. Consisting of nothing but loose rocks slightly smaller than footballs, this route took a terrible toll of mechanized equipment. The doughty Jeep at last had met something it could not master—at every river mouth some became stuck or drowned out. This was to be our only supply route. It was quite plain that only a trickle could be delivered over it.

#### FIRST BLOOD AT DAMULAAN

Heavy rain had fallen the night before Baker Battery headed north, and it was able to make only half the distance to the objective by nightfall. By early afternoon of the 16th it was in position, however, just south of the Bucan River. 1,500 yards ahead of it the infantry had established their line at the Palanas River, on the first ridge south of which the battery had established an OP. Considerable Jap activity was immediately picked up in the vicinity, particularly in the area north of the Palanas, where the enemy had a CP in a large schoolhouse. Several problems were fired, both by ground observation and by air spot from our cub based at Bay Bay. A group of several hundred Japanese was picked up near the schoolhouse CP. As this had already been registered upon as a base point, the slaughter created by the ensuing concentration was tremendous. By nightfall defensive fires had been registered. Baker, with one platoon of infantry attached to it, formed the right flank and rear of the front line. The audacious little force had needled the hide of the enemy and was now prepared to resist to the limit of its powers. The defense of Damulaan had begun.

The following morning broke clear and sunny, for a change, and with it came the weathercock of impending battle. A pitiful and never-ending stream of evacuating natives poured down the road from the direction of Ormoc in an attempt to seek the refuge offered to the south. As usual they were overjoyed

to see Americans, but warned us that large masses of Japs were moving in our direction, both in the mountains and along the plain. They mentioned several instances of heavy field pieces, both horse- and truck-drawn, being brought into the sector.

Little firing was done except for one mission adjusted from our Cub against two enemy landing barges, one of which was sunk and the other forced to beach itself because it was blazing from stem to stern. Many of these craft were plying the waters of Ormoc Bay and their presence created a constant threat against the Palanas position by amphibious assault.

The battery had done an excellent job of camouflage over its position and their good work immediately paid dividends. In the afternoon two enemy dive bombers circled the position but went away, apparently frustrated in their attempt to locate it. Earlier our own Cub had tried to spot the position but had to abandon the attempt. It was necessary to pop out a few rounds before the observer could pick it up.

The ammunition situation was becoming acute, as the firing already done had cut deeply into the supply with which the battery had moved north. An attempt to replenish it had failed miserably when the two trucks carrying the resupply broke down when their axles sheared on the beach road. One of the accidents occurred in a river, and the tide which came in covered it to the hood with rock. Most of the rounds were ruined by salt water.

That night, as on the preceding one, small groups of enemy were heard and seen prowling around the sector but no action took place except for a few short fire fights. Many times during the dark hours the cannoners could hear jabbering and the rattle of Jap equipment. As the enemy loves to employ such ruses to draw our small arms fire and locate our positions, absolute quiet was maintained and nothing further developed.

On the next day, 18 Nov, plans were made back in Bay Bay to displace Able and HQ batteries to Damulaan, while Charley and Service were to remain in position. The Palanas sector was quiet during the day but at 2030 that night the enemy began to probe our lines in earnest. Defensive and destructive fires were delivered almost continuously until 0300 of the 19th. They practically exhausted the local ammunition supply, but were well worth it as the enemy was driven off repeatedly.

#### SUPPLY, COMMUNICATIONS, CONTROL

By noon of the 19th the remainder of the battalion had reached their new position and were set up on the barrio proper of Damulaan, which was about 400 yards ahead of Baker. At that time there were only 1,826 rounds of 105 ammunition in the area for the two batteries. One day's rations were on hand; orders were issued to make them last for five. As gasoline for our few vehicles was low, driving was cut to the absolute minimum. It was a matter of small moment and naturally borne without complaint by the men, but coffee and cigarettes were virtually non-existent and their absence only heightened the misery caused by the unending rain.

In the three days between the time the first and second batteries displaced, the battalion wire and survey sections had done Herculean work. The former had laid a complete wire net back to Bay Bay and was in contact with all the units on the western side of Leyte. More than 100 miles of wire were in use, and the headquarters switching central employed three boards with a total of 30 drops. The survey group had already done extensive work north and south of Bay Bay, including much

shoreline mapping. Control to Damulaan was run from Bay Bay in a day and a half. When they surveyed in Able battery in its new location they polished off more than 28 miles of traverse initiated eight days earlier.

As soon as it was in position "A" Btry was registered on the base point, but no further firing was done in order to conserve our meager ammunition cache. Despite the lack of fire missions the group was far from inactive. Rapidly increasing enemy activity demanded that every preparation be made to stop a determined enemy attack. The majority of fire direction personnel were dispatched down the beach to salvage the ammunition from the two trucks which had been marooned the preceding day. Native huts were erected over "A" Btry's sections and all hands dug in for a siege. We received a great deal of help in this work from the Filipinos who still were evacuating from the north. An additional service came from a completely unexpected source. Damulaan was the headquarters for the island's WACs, and these good local ladies insisted upon laundering our grimy fatigues and made extensive efforts to add to our ration by giving us fruits and vegetables. This assistance was short lived, however, for the Filipinos, with complete justification, became increasingly nervous and in a few days deserted us completely for the sanctuary of the south.

At this time the 7th Div was woefully lacking in transportation, as it had left Oahu to attack another objective where a full complement of T/O mechanized equipment was not necessary. When its original mission was cancelled it was seriously hampered because of this shortage. Our artillery battalion was largely afoot and had only three ¾-ton trucks, three jeeps, and three "weasels" available to it. The infantry regiment to which it was attached made every effort to alleviate the ammunition shortage, but the best solution that could be arrived at was to employ native bancas—large outrigger canoes about the size of mediocre power fishing boats, able to carry either 40 cases of 10-in-1 rations or 50 rounds of 105 ammunition packed in 2-round boxes. Their use helped, but a lack of wind and perversity of the current made them take an interminably long time to navigate the 16 miles between Bay Bay and the Palanas.

#### COOPERATION

It would be well to mention at this point that, although there is little said of them because this is an artillery story, the



*Supplies came part way to west coast troops via LCIs. A wide variety of small native craft handled final delivery.*

work and indomitability of the infantry at Damulaan cannot be overemphasized. The sector could never have been held without their courage and skill. Both the artillery and doughboys mentioned so far in this account were veterans of the Attu and Kwajalein campaigns. Both had been in the line without surcease since October 20, which was D-day on Leyte, and both had suffered heavy casualties. All branches in our combat team have always worked together in the closest manner, even in pre-overseas days. The teamwork exhibited, together with the deep respect shown by each unit to the others, undoubtedly were responsible for the success we enjoyed in the desperate days which lay ahead.

#### PRELUDE TO BATTLE

By the 20th it was quite apparent that we were facing a large enemy force. Conservative estimates indicated that at least 3,000 Japanese troops of all elements were concentrating on the high ground to our front and right flank. At our OP on the south side of the Palanas the observers could look across the 600-yards-wide valley and see the enemy constructing trenches, machine gun pits, and OPs on the opposite ridge. Fire was placed on this activity intermittently during the day with good effect, but insufficient ammunition was available to do more than disrupt the work. The Japanese had one of their BC 'scopes set up in plain sight, but as both sides were still gathering their strength the opposing observers did little but watch each other like hawks. Occasionally the Nips would let a few rifle rounds fly in our direction but bursts of heavy machine gun fire discouraged this practice. Late in the afternoon three companies and possibly a battalion of enemy infantry were seen moving toward the sector. They were attacked by both batteries with good results until the group went out of sight.

Patrol activity on the 21st was markedly increased by both sides. One of our liaison officers went across the Palanas with a small infantry group which succeeded in clearing the ridge mentioned above with small arms and artillery fire, the latter adjusted with an angle "T" of 3200<sup>m</sup>. We did not have the available men to occupy it, however, and a few hours later the enemy was back. During the fire which cleared the ridge one round landed close to a machine gun pit, unoccupied at the time. The observer, a sergeant, had the data recorded for that spot and proceeded with the rest of his adjustment. His foresight was rewarded, for upon returning the Japs set up a heavy machine gun in it. In three rounds the weapon was knocked out and two Nips killed with it. The increased action evidenced by the enemy urged us to expend some of our precious ammunition. Eight concentrations were fired during the day against machine gun emplacements and troop concentrations, both in the open and in dug-in positions. The Jap continued poking around our lines during the night but infantry fire was sufficient to drive him off.

#### REINFORCEMENTS ARRIVE

The 22nd saw little action except that our rear area in Bay Bay was bombed at early evening. This was the first of almost nightly attacks which caused a great loss of sleep but little damage to either personnel or supplies. On the 23d the most unusual aspect (from the artillery point of view) of the entire situation occurred. A battery of Long Toms was added to our complement of weapons. These were soon followed by two M8s from the regimental cannon company, which brought our total up to 14 guns to support one shot-up infantry battalion! These pieces were jammed into a sector only 1,500 yards long

and 700 yards wide at its broadest point. The reason for this was quite apparent. All defenses in the Palanas line had to be close in. It was necessary to squeeze the artillery into the small area it occupied to have them there at all.

Fortunately, the two infantry cannon came equipped with a bountiful supply of ammunition. No time was lost in registering them in, both on the base point and on a normal barrage. The 155 rifles, however, were not so well equipped: their stock consisted of only 67 rounds. They were put in position in a large banana grove just north of the Bucan. No. 4 gun was dug in to cover the sea while the other three were laid on the center of Ormoc. The following day they were registered, but at that time the lines were so close that the infantry had to be cleared out of the area for a hundred yards in order to keep the muzzle blast from killing them.

There was a tremendously important reason for the guns' presence, however strange it may seem at first glance. Again terrain was the prime consideration—in this case it took the form of the Camotes Islands, which lie some 20,000 yards off Damulaan. It had been the enemy's practice to reinforce his group at Ormoc by employing barges to shuttle troops from Cebu, which is on the opposite side of the Camotes Sea and only 60 miles from Leyte. These trips were made at night; the Camotes Islands were used as a stopover until the next evening, when the run into Ormoc was completed. It was to stop this practice and also to prevent large shipping from entering Ormoc Bay that the big guns were brought to Damulaan. There was an additional and equally important factor, in that this sector was the furthest point from which fire could be delivered against Ormoc itself and the large supply dumps around it. Every man who had a rifle was more than welcome in the pocket, so none of us were disappointed to learn that because of the ridges at the Palanas River the Toms had a minimum range line of 7,500 yards. There was adequate light artillery to render close-in support.

We were dismayed to hear that the road situation on the eastern side of the island had become worse and brought the movement of supplies to a virtual standstill. The 7th DivArty HQ (commanded by Brig. Gen. Leroy J. Stewart) had utilized every piece of movable equipment to ease the ammunition situation and had managed somehow to build a small dump at Bay Bay. The banca system, now beginning to prove completely inadequate, was further complicated by the refusal of the natives to operate in bad weather or when enemy aircraft were overhead. As a result it was necessary to employ LCMs which had to skirt the entire southern part of the island and make a journey of well over 150 miles. All this was in order to bring us ammunition from a dump less than 20 miles away across the mountains.

#### DETAILS OF THE POSITION

It was on the night of the 23d that the Jap first showed his fangs. It would be well then, at this time, to describe our lines as they existed during the Damulaan—Palanas defense. As has been previously mentioned, the foothills in this vicinity came to within a few hundred yards of the sea. This occurs at the Palanas River, where the infantry defense had been set up on the south bank. The number of men to protect the area, however, was so small that company fronts extended for a thousand yards. A study of the accompanying sketch will show that the terrain was such that the enemy had a very

strong area to attack. From the ocean to the foothills the doughboys were in foxholes 50 yards apart. Along this line a mine field had been laid and a concertina barrier erected. To use the term "foxhole" is a trifle erroneous, as the stretch of ground referred to was soaking rice paddy. The "holes" were barricades of turf and sand bags about two feet high, planted in the muck. The road to Ormoc ran through the center of this field and was heavily mined in front of our lines.

The ridge immediately south of the river, on which the battalion OP was located high in a large dao tree, was covered on its western tip with a dense bamboo thicket. This ridge extends east for well over 1,000 yards; our line of infantry was stretched along it, save where it was in the valley to avoid the bamboo. The distance between the individual riflemen was never less than 50 yards, and despite the fact that we were somewhat reinforced by two groups of guerrillas the MLR unfortunately could not be anchored to the main mountain range to make our flank perfectly secure.

A few hundred yards east of the OP this ridge is joined by another running in a north-south direction clear to the Bucan River. It is broken in only one place, and that was directly opposite Able Battery's position and less than 200 yards from its right flank. After the tremendous attacks of the 23d, when our flank was turned by the enemy, our lines were bent to follow this terrain feature. The slopes of this hillock, some 150 feet high, are exceedingly steep: they vary from 45° to 60°. Just east of this mass is Hill 918, a commanding height on which the Jap had already been observed concentrating masses of troops, erecting mortar and artillery positions, and installing OPs from which he could look down our throats. Such was the position at Damulaan. Supplies and ammunition were scanty, withdrawal was impossible, the closest friendly troops were sprinkled for 16 miles to our rear, and our artillery was in the front line. But the enemy had been denied use of the most important piece of ground on western Leyte. It was vital that he never capture it, no matter what the cost.

#### THE JAP ATTACKS

The day of the 23d had been quite peaceful. Little of note occurred, except that the same liaison officer mentioned previously had gone out with another patrol and killed some 15 enemy at the extreme eastern edge of the ridge he had cleared earlier. At 1830 the Jap's artillery which had been reported brought into the area went into action for the first time. Using platoon fire, he opened up with smoke on "A" Btry and shelled with approximately 40 rounds where he thought the position was. These, fired at maximum rate, were half HE and half WP. None of this fire came closer to the guns than 100 yards. We immediately started counterbattery action with Baker and succeeded in silencing the enemy in a very short time despite the fact that he could not be seen. It was impossible to spot the hostile weapons or their flash, but a sound adjustment with time fire placed behind the high ground north of the Palanas achieved the desired result.

The company on our right flank, because of the tremendous distance between its flanks, was experiencing great difficulty in maintaining control. Half an hour after the initial shelling took place it was sharply attacked and forced to give ground. A short time later it was again hit—this time on all sides, as the enemy had succeeded in infiltrating through it in many places and had

also achieved complete envelopment. Our heavy machine gun was immediately captured or stilled with grenades. The unit began to withdraw in small groups which were subjected to intense fire from the enemy's many excellent light automatic weapons.

As all contact was lost with our forward observer attached to the company, no fire could be placed on the invaders. Intense small arms action took place at frequent intervals along our entire flank, in many instances only a few hundred yards from the battery positions. Our guns were far from inactive, however, for following his success in turning our front the Jap attacked our center savagely, preparing his assault with a heavy 81-mm mortar barrage. He was able to fire only about 40 rounds, as his battery was located in one of our concentrations which had been accurately registered upon. Denied the use of his heavies, the enemy was repulsed easily by our infantry with the aid of time fire placed close to our lines.

Shortly before midnight Japanese heavy artillery again opened up. This fire was as inaccurate as that which fell earlier; it landed far to Baker's rear. None of our installations were endangered by the shelling except the cub strip and our plane which had been installed in the afternoon. No precise location of the enemy pieces could be determined, but with the aid of two observers and several infantry listening posts our counterbattery, which started after the first unfriendly salvo, silenced the enemy howitzers.

In a few hours most of the company which had been on the right flank was re-assembled in or very close to Damulaan, but still over 30 men were missing. Our forward observer section returned with all hands uninjured and accounted for except the officer, who had told the section to return and had gone back into the melee to assist some infantrymen in rescuing a heavy machine gun.

By the early hours of the 24th the situation had calmed down sufficiently for our S-2 to talk to the observer in the tree OP. In the middle of the conversation some one was heard to say that there was a hell of a mess going on at the bottom of the tree. The line went dead and the second of our three observer groups was incommunicado. Communication was reopened within an hour, when a softly whispered communique from our officer revealed that there had been considerable enemy activity and hand grenade throwing at the base of his perch, but that he was OK and was sitting quiet. This was not the last time that "our tree" was to be isolated.

The attacks to "A" Btry's flank continued and all available infantry were sent to stem them, leaving Damulaan itself to be guarded only by artillery. Heavy machine gun, mortar, automatic rifle, and other small arms fire raged almost continuously but at 0500 the enemy gave up the attempt.

#### REPAIR, REINFORCEMENT, REGROUPING

With the arrival of dawn repairs were started in earnest. Our ammunition had been run to a dangerously low point by the night's firing and had to be replenished if we were to survive another evening. Our air section warmed up to search out the enemy battery which had shelled us, but miserable luck confounded this mission when a sudden cross-wind wrecked the plane during its take-off. Enemy shell craters were studied in an attempt to locate the guns but little could be learned except that they were fired from a howitzer of either 105-mm or 155-mm caliber. We were somewhat encouraged when the back-plot of these fell through the location upon which we had fired, but without detailed knowledge of the characteristics of Japanese artillery little of definite value could be

gleaned from this information. During the day an additional light battery joined us from another organization in the 7th DivArty. Despite the highest priorities which were granted it on the roads, it had taken this unit nearly 4 days to negotiate the 50 miles it had to travel to the Damulaan sector. It was small wonder that under these conditions supplies were so difficult to obtain! The new arrivals were put into position south of the Bucan on Baker's left flank and across the Ormoc highway.

One company of infantry was detached from duty to the south and added to our sector. Preparation fires were laid down and some of the ground we lost the night before was regained. It was obvious that although the better solution was to maintain our defense entirely along the Palanas's south bank and cut off the enemy from his units on Hill 918, we did not have sufficient men to accomplish this and there would be a repetition of last night's events. The lines were bent to follow the ridge running parallel to the sea past Able Battery, then were turned again at Baker to enclose our rear. It was essential that the artillery be included in this perimeter not only because it was only in this manner that they could be protected, but also because in themselves they formed a large part of our front. This shift put the Long Toms in a peculiar position since their front and right flank were now less than 150 yards from enemy territory. This outfit, part of a Marine Gun Battalion attached to our Corps Artillery, donated all of its concertina, one .50-cal. machine gun, and several of its personnel to the front lines. The defense of Damulaan, our rear, and a large part of the beach line was solely in the hands of cannoners. All infantry, including clerks, were put in the line.

During the day of the 24th our pieces continued to harass the enemy on all sides. Concentrations were placed on the beach, the road, Hill 918, and other high ground. A DivArty plane, rushed from the other side of the island when our own was wrecked, did a great deal of the adjustments. Ground OPs, both the three with the infantry and others set up in the battery positions employing transits and BC 'scopes, were also very active. Machine gun and artillery positions on all sides were accurately scored upon: a group of enemy consisting of about two companies were put to rout, leaving many dead and wounded behind, and 36 Japs firing mortars from under a house were destroyed along with their weapons. Our artillery, using the Fort Sill doctrine, has always put the fear of God into the Japanese, and we intended to use the daylight hours to their maximum to disrupt the enemy.

At noon the officer who had been with the company that had withdrawn during the night reported into our CP. He had spent the night entirely isolated from our own troops. The men he brought back with him reduced the missing to less than a dozen. Ammunition continued to arrive throughout the day, although it can hardly have been said to pour in. By nightfall there were a little better than 1,400 rounds in the area.

#### A SECOND HARD NIGHT

Shortly after dusk a nearly full moon arose. No sooner had we finished our sighs of relief at this welcome sight than the Jap artillery began. The first rounds landed less than 50 yards from "A" Btry but in a few salvos the fire, which could best be described as searching rather than zone, was in the center of the position. Two more enemy pieces opened up on our CP. Counterbattery was started but the hostile barrage continued unabated, and soon Baker was also being shelled. Despite the



*81-mm mortars fired large quantities of shells against Jap counterattacks.*

intensity and (unlike the previous night) accuracy of the enemy artillery, the cannoners remained unflinchingly at their posts completely without cover and delivered return rounds with unerring precision and coolness. After half an hour of preparation fire delivered at the maximum rate, the enemy with a force later estimated at 500 attacked our lines where they turned south at the Palanas. Due to the nature of the ground at this point artillery could not be placed within the 100 yards customary to us, so protection was weak at this spot. The line broke but the company managed to reform itself only a short distance away and continued to hold throughout the rest of the night. Although repeatedly attacked, it defended ferociously and killed an estimated 125. An unknown but small number penetrated our line during this action.

#### *Counterbattery*

After this assault failed it was but a short time before the Jap artillery went into action again. This time we had the good fortune to pick up the gun flashes. Our second volley landed in the middle of them but the firing continued from the same area and was soon joined by additional guns in the hills. Evidence of enemy survey control had been found in profusion throughout our sector, and the previous night's fire must have given him some sort of *K* to utilize it to the maximum effect. Excellent observation from his high ground positions surrounding us and information which he had obtained from his aircraft (which had searched our area frequently) gave him exact knowledge of the positions of our guns. Our artillery was now his prime objective. He began to pour it into us without let-up. At the same time his foot soldiers continued to hammer at our entire front with battering-ram fury.

Counterbattery fire and barrages were poured out of the three friendly batteries as fast as rounds could be put through the tubes. Some of the enemy artillery was either silenced or forced to move, as our observers could hear trucks or tractors working in the vicinity where it was believed the Japanese weapons were located. Our wire was soon knocked out except for the lines to Able and Baker. The line running to the infantry CP, which was in a house only around the corner from our FDC, went dead and with it all information as to the status of the front. It could not be replaced because of the intensity of the shelling in the town.

#### *FDC Difficulties*

In fire direction the lack of communication was taxing the

installation to the limit. One radio operator handled all incoming traffic, which had reached enormous proportions. A single computer took care of the missions for all the guns in the vicinity; he operated under a stifling poncho and, with the aid of a blacked-out flashlight, did the work of HCO and VCO in addition to his regular duties. Aside from the computer's phone there remained only one line in fire direction. It was used exclusively by the S-3. Incoming calls for all staff members from the CO on down were put on it as it was the last contact we had with the outside world. Fire direction had been installed in holes under the house it occupied during the day. As it was being bracketed continually by rounds which fell not 50 feet away, the smoke and noise inside it were almost indescribable. In spite of this handicap delivery of our artillery was almost as rapid as under normal conditions.

#### *Final Heavy Assault*

Just after midnight an enemy machine gun opened up on Able but it was quickly silenced by fire from the same battery. Immediately following this an exceptionally fierce attack was made by the Japanese in the draw, noted before, to "A"'s flank. Our infantry as well as our cannoneers were subjected to tremendous mortar, artillery, and machine gun fire, but in spite of all the fragments flying through their area the "red legs" poured out a constant stream of shells with the rate of fire going well beyond 8 RGM.

Somehow the enemy continued to advance against this wall of steel—which was being thickened considerably by our mortars, which fired over 1,200 rounds in that single action. The machine guns which had been manned and loaned to the front lines by the marine gun battalion initially spotted the concentration of troops and cut into them heavily before the barrage started. Later it knocked out two machine guns and throughout the fray it wreaked devastation upon the enemy. At least a battalion of Japanese were involved in this attack, but despite their best efforts they were being chopped to pieces by our fire. They pressed on, though—the range of the barrage was cut down to 800 yards, then 500, and finally to a point where the fuze time setting was less than a second. All available cannister was broken out in Able Battery and the sections were ready to cut fuze down to .6 second in preparation for a final rush against their position.

Soon after this the attack's back broke. It proved to be the last heavy assault of the evening. During it the infantry had run completely out of ammunition, and after sending back to their forward dumps they exhausted this new supply also. When the enemy finally retreated many a doughboy had less than one clip of M-1 ammunition left to fire. They were the lucky ones. The majority had none.

#### *"Baker" Is Battered*

By 0100 the enemy artillery was beginning to tell on us. Baker had been receiving about two-thirds of all the shelling, and at this time the tempo was intensified against it. In rapid succession the battery elements became knocked out. On No. 4 the gunner's sight was so damaged that it could not be used, No. 3 had both tires flattened and its recuperator punctured, No. 2's aiming stakes were shot into splinters and could not be re-aligned because they were then in enemy territory, and No. 1's line of fire was masked by a palm tree which had not previously

bothered it but now interfered because the main action had moved to our right rear causing a shift of over 1600'. A large percentage of both organizational and personal equipment had been severely damaged by fragments. The sections of the wrecked howitzers joined forces with the infantry platoon in its vicinity, and the battery mechanic with the aid of a few helpers set to work repairing the damaged guns. By trading parts they succeeded in restoring one piece into action by dawn.

Shortly after this an unknown number of enemy, probably those who had penetrated our lines earlier in the night, appeared on "A" Btry's front and right flank, as well as in the rear of town, between FDC and Baker. The moon had just set. Japanese commands could be heard clearly. The enemy set up a heavy machine gun about 30 yards behind "A" and raked the entire village. This apparently was the signal for a main attack to be launched—but only a huge volley of small arms, fired in every direction, resulted. The enemy behind the town attempted to work down the Bucan in order to cut us off completely but were repulsed by a fusillade of titanic proportions fired by the few guerrillas in the town. The enemy withdrew as rapidly and mysteriously as he had arrived. During this affair, which lasted about 15 minutes, not one small arm round was fired by our artillery troops. This was in accordance with our battalion's strict SOP never to shoot unless the enemy could actually be observed through the sights. In retrospect it seems this action may have saved the situation, for although the Jap had but a few minutes more to go before annihilating us all, he must have feared that he was walking into a trap and got out while the going was good.

We continued to receive artillery fire throughout the rest of the night. About 0400 it was suddenly increased, when the enemy succeeded in bringing a small mountain gun into action. No damage resulted and the piece retired before it could be located. Soon the firing ended. Quiet, save for sporadic rifle and machine gun shots, fell over the sector. More than 300 rounds had been hurled at our artillery. Despite its accuracy little damage had been done.

#### READJUSTMENTS

When daylight of the 25th came, it was decided to move the CP in secret to a palm grove near the beach. In its old location the steady flow of traffic in and out of it could easily be observed by the Japs on Hill 918. The new spot was to be occupied only at night, for it was quite obvious the enemy intended to destroy the former. It was equally plain that to camouflage Able Battery at the expense of protection was useless since the enemy had put so many rounds in the middle of the position. The native huts were thrown away, and after short work by a bulldozer heavy revetments were thrown up around each piece.

Opposing artillery continued to be active throughout the day but was employed only lightly. A group of wiremen who were repairing the lines running to our front line observers were chased down the road by shellfire, but they managed to complete their mission in spite of this annoyance. Infantry reinforcements continued to arrive in the sector by handfuls. Another battery of 105s was added to our collection, bringing our total number of pieces up to 22. This organization brought a unit of fire along with it; additional supplies of ammunition received throughout the day brought our stock up to a safe number. We continued to lash the enemy during the day with as much fire as we could bring on him, battering his troop concentrations, bivouac areas, and field pieces that could be



spotted. The OP that he was so doggedly attempting to erect on the ridge opposite "our tree" was again blown off the hill.

At dusk the daylight CPs, both infantry and artillery, were quietly vacated and set up in the new, virtually bomb-proof site. All hands were employed constantly on tactical work. Even the battalion surgeon had the additional duty of maintaining an OP looking out to sea from his new spot by the beach. This proved to be exceptionally reliable; it very effectively covered that front. The front lines were so close that one of our observers complained that the executive's commands could be heard clearly and he was afraid that the enemy would be able to adjust on us by the sound of our voices alone. Several times before midnight the enemy fired his artillery at our positions but prompt counterbattery silenced him before a prolonged shelling could take place. Activity along the front was very quiet in comparison to the events of the previous evening.

#### JAP ARTILLERY DEMOLITION TACTICS

At 0230 on the 26th the Jap tried to knock out "A" Btry again, with mortars this time, but these were immediately silenced and his attack was then taken up with two platoons of heavy artillery. These managed to squeeze out about 30 rounds before our return fire made them keep low. Quiet fell again on the sector until about 0400, when a sharp attack in the front lines required that Baker Battery fire its normal barrage. During the middle of this mission a suicide party of eight Japs, led by an officer, infiltrated into the position. They succeeded in their penetration by using as their route of entrance the overhanging river bank in front of the battery. This brought them out right under the muzzles of the pieces.

The executive had just received orders to cease firing when he heard strange noises in front of the first section. Before he could investigate them the enemy attacked with a heavy hand grenade barrage. A wild, almost hand-to-hand, melee erupted which did not die out until early morning. The initial grenade bursts blew the guard away from the first section and permanently deafened him. The action was so close in that it was too dangerous for the men to use their individual weapons. A hot grenade battle followed. One man, further removed from the rest, did use his carbine and was immediately spotted by the enemy, who killed him with a grenade after he had emptied his clips. The explosions of grenades grew to a roar as the Japs repeatedly attempted to scale the 3-foot bank on which the guns were in position. Finally one made it and was promptly killed beside the trail of the first piece by the chief of the adjacent gun section. Less than a second later another appeared on the opposite side of the weapon near the No. 1's position. One of our grenades caught him full in the chest—but before this happened he was able to place a heavy satchel charge in the sleigh, just behind the breechblock. The explosion which followed rocked the area and damaged the gun so severely, particularly around the breech, that it was put out of action permanently.

An infantry platoon, which had been dispatched to the scene on the double as soon as the CP in Damulaan had been notified of the attack, arrived at the battery just after the explosion occurred. The Japs covering the attack immediately took them under fire and killed three instantly. The battery together with its reinforcements was able, however, to keep the enemy at bay and prevent him from working down the line of guns. By dawn all eight had been killed but one, who was severely wounded and captured.

#### ANOTHER DAY

The day was spent much as the last few had been. Again our observers and air spotters hammered away at all types of enemy installations and personnel. Ammunition was brought up by the most expeditious means available, as our supply had been taken down to the near-zero point by the barrages fired during the night. As it was essential that the two guns remaining in Baker Battery be moved elsewhere, it was decided to make a 6-gun outfit out of Able. A borrowed



*In a pastoral setting in northern Leyte, this battery is hampering Jap efforts to land reinforcements at San Isidro. Note natives helping handle ammunition.*

bulldozer constructed two pits for these; they were in position and registered by noon.

At dusk an 8-ship enemy convoy with destroyer and cruiser escort was sighted entering the strait between Ponson Island in the Camotes group and the western end of Ormoc Bay. The Long Toms were made ready to engage them but fortunately this force, reeking with enough firepower to erase our pocket from the map forever, was attacked by our planes and completely destroyed.

#### THE JAPS' FINAL THRUST

The stage was set for another desperate night in the Palanas sector. Except for the usual artillery welcome at 2000, which we shut up with a minimum of effort, the first hours of evening were spent quietly. Beautiful moonlight drenched the scene and we entertained a few hopes that because of its brilliance the enemy, who loves a miserable night, would lay off. Just before 2300 the Jap made his last heavy attempt to penetrate our lines. As customary, his attack was preceded by heavy artillery and mortar concentrations. A good percentage of the long range fire was directed against Able Battery, with rounds falling close in to their front and flank. Although the enemy's effort was directed against a large portion of our lines, it was heaviest at the bend of the Palanas. Emergency barrages bellowed on all sides. As mentioned before, the conformation of the terrain at "The Bend" denied the maximum effect from our artillery. By 2300 the attack had slacked off but this sector had been forced and the company defending it had withdrawn a considerable distance in order to reform its lines.

It was known that 25 or 30 enemy armed with light machine

guns had slipped into the area, but at first the breakthrough was not deemed to be serious. In a short time our S-2 received a telephone message from our officer in the tree OP. In a whispered conversation he shed a different light upon the situation. The short battle had been furious. During the action he had ordered his section to withdraw with the infantry and return later if the doughboys did. He could hear the enemy rustling around in the bamboo on top of the ridge and unidentified persons, presumably Japanese, were conversing at the bottom of his tree. Completely alone, he was nevertheless ready to fire any missions but ended with a heartfelt plea not to ring his telephone.

Nearly an hour later he again contacted the CP in Damulaan and said that some twenty of the infantry had returned and were at the foot of the ridge. Most of them had skirted the hill and come around by the flats, but one rifleman, trapped on top by the enemy, had noiselessly wormed his way through the dense undergrowth to the comparative safety at the bottom. An extraordinary amount of racket was coming from above our men on the ridge; it was caused by a large, but unknown, number of Japanese. The doughboy who had arrived from the top said that while he was lying there an enemy column of over 150 passed him and made their way into the thick bamboo which covered the height several hundred yards from its western end. The enemy were armed with a large amount of light machine guns: the man stated that he counted up to 20 of them before he made his way out of the place.

It was decided to withdraw the remnant of our men from the vicinity of the hill. As soon as the last man had cleared the area our observer was to start placing artillery fire on the crest. It was felt by our infantry commander that the presence of so many automatic weapons indicated that these were to be used to spearhead a vicious attack within the next few hours. It was his desire for us to harass the enemy thoroughly and clear the crest of bamboo, as the growth would seriously hamper the counterattack he planned for daybreak. Despite having to struggle with his heavy radio and other equipment, in addition to avoiding detection, the artillery officer had the first rounds blasting the Japs in their hiding place less than 15 minutes after vacating his tree.

The area was laced all night long with impact, smoke, and time fire. In the morning all of our artillery, except the Long Toms which were shelling Ormoc, concentrated on the ridge and almost denuded it of vegetation. Enough pockets still existed, though, to permit the Japs to fight back skillfully and with great determination. Hostile artillery opened up on our attacking force and for once our counterbattery was not immediately successful. Within a few hours, however, the enemy heavy pieces had been located and neutralized. Again

the ridge was raked with 105 HE. Under cover of a rolling barrage placed less than 50 yards in front of them, the infantry regained the hill. Enemy artillery which resumed fire at this time was knocked out in less than 4 minutes after it opened up. When the Japanese dead were counted, over 100 were found slain by artillery shells. 25 light machine guns (approximately one to every four men) were captured along with them.

A heartening sidelight to this final assault was that Baker Battery was completely in action again and assisted the attack throughout its course. This was achieved by a near-miracle with the arrival of two fresh howitzers into our area on the night of November 26th. Gen. Stewart had given them to one of his most trustworthy corporals less than two days earlier, with instructions to get them to Damulaan as fast as he could. The only drawback to the situation was that he had to hitch-hike with them as absolutely no transportation was available. Faced with a problem that might well have confounded a field marshal, the non-com was completely undaunted. Roaring and bristling with determination, he mustered the services of the Navy, engineers, quartermaster, and officers from the grade of general on down to shavetail. Before 48 hours had ticked away he had completed his mission. Four days is considered remarkable time for his journey and the man was justly decorated for his feat. The grateful men of Baker battery, heartsick at having been put out of action, would have liked to have seen him awarded the Medal of Honor.

#### DUMULAAN FINALE

The next three days were much quieter than those they followed. True, many counterbattery duels were fought and snipers were active in the area. "The Bend" was lost again for a few hours but easily regained. The few enemy behind our lines were very active; among other things, they tapped our wire lines constantly. We could never find out if these people had communication with their forces or not, but all precautions were taken and many an order or piece of information was given in grammar school Pig Latin. The evening shelling by the enemy, which became a habit, was passed off with a shrug and a "There goes 'Wailing Willie' again." Infantry reinforcements arrived in great numbers. Chemical mortars strengthened our line of HE, and under artillery control made "The Bend" impregnable.

By the night of December 1st it was possible for us to place a simultaneous barrage around the three land sides of our perimeter. The fourth side, the sea, was covered by tanks. It would have taken an army to dislodge us. A brace of Japanese landing barges attempted to land in two separate points in the sector; they were driven off in ignominy. The 15 days at Damulaan were ended. Infantry guts and artillery skill together had held the sector. Ten days later Ormoc collapsed.

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#### FOR EFFICIENCY, *LIKE YOUR JOB!*

On 27 Dec 44 a lieutenant wrote in part,

"My job is that of aerial observer for my Field Artillery unit, and I wouldn't trade it for any other job. I have 430 combat hours in the air, 443 missions, of which 330 count officially toward the Air Medal and clusters.

"Another interesting item is that three out of four field artillery battalions in this division have fired well over 100,000 rounds since June 6th.

"I have had the pleasure of firing 20 battalions on one single target."

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Preventive maintenance is not a beauty treatment, but it prolongs the good looks and years of Field Artillery equipment.

# 75s On Guam

By Cpl. Fred R. Travis, USMCR

"We landed near the town of Agat behind the infantry on D-day, July 21, 1944, and registered the first shell on Mount Alafan just one hour later," said Lt. Benjamin S. Read, battery executive officer. "I set up the battery CP in an 18-foot bomb crater. Not long after dark, a forward observer reported the Japs were preparing for a banzai charge on one of the infantry companies. He asked for artillery fire to help stop the Nips."

"I was up front as forward observer with a company of infantry (Fourth Marines) when the Japs started their charge," said Lt. P. A. Rheney. "There was a gap in our lines where a road passed through our sector. We could hear the Japs in the woods down there. Suddenly the Japs charged.

"Rifle and machine gun fire killed a lot of them, but a lot more were getting in close. The infantry company commander asked me to bring the artillery fire nearer to his front. I told him I could bring it within 75 yards, but that I would not accept responsibility if any shells fell into our lines. The battery was firing at 1,500 yards, and with 75-hows you get a lot of dispersion at such close range. We laid down concentrated fire between 50 and 75 yards from the infantry front. Luckily, there were no short rounds.

"The Japs who got through our lines were armed with whatever weapons they could muster. Those without rifles and grenades threw rocks and clods of dirt at us."

"We traversed back and forth, laying barrages in front of the infantry company and firing into the gap," Lt. Read added. "All that night we kept firing.

"The Japs followed our telephone lines into our position. I don't know how many Japs infiltrated that night, but they seem to have been sent down specifically to knock out our guns. The Japs had an observation post on top Mount Alafan, and they observed the location of every gun and every unit in our force."

"There were only about forty of us in the area," said Cpl. Gervase A. Breider. "Some of the men were on working parties aboard ship, unloading ammunition. About 17 men had gone up with Lt. Rheney to set up the FO post.

**One battery of Marine artillerymen on Guam fought infiltrating Japs in the battery area while laying down a barrage which helped prevent the enemy from breaking through the front lines 1,500 yards away. Now a part of Maj. Gen. Lemuel C. Shepherd, Jr.'s Sixth Marine Division, it fired the first artillery shell on Guam in that operation. It spent that night defending its 75-mm pack howitzers and firing them at the same time. Their story is told by their own officers and men.**



*With plenty of rounds already prepared for firing, this Marine 75-mm pack howitzer is about to open up on the Nips on Guam.*

"The Japs had hand grenades and a few small demolition charges. We had some of our own men out trouble-shooting our telephone lines. When the Japs started coming in, we thought they were our own men coming back."

"I heard something in front of the CP," Lt. Read continued. "I raised up and saw four men. I thought they were our communications men. Then I recognized those Jap helmets. I shouted 'Halt,' and they hit the deck. I couldn't see them to shoot at them, and was afraid my shots might go into one of our own gun positions. The Japs lobbed grenades at us. They missed. One of my men threw a grenade out there and got two of them."

"I was working on number 2 gun," said Pfc. Johnnie J. Rierson. "A Navy flare lit up four Japs, silhouetted against the sky. McClurg (Pfc. Early B. McClurg) and I fired at them. We killed one, but another one was only wounded. He kept trying to toss grenades into our gun pit before he died, but they hit a pile of dirt. That saved us. I don't know what happened to the other two Japs, but next morning there were two dead ones out there."

"We knew there would be another attack, so Rierson went over to the position of our defensive machine guns for some grenades or a light machine gun to defend us," McClurg said. "That left only five men on the gun. We had to keep firing while we worried about those Japs. Rierson didn't come back that night."

"I went over to the machine gun position, but they didn't have any grenades," Rierson put in. "Then I went on to the first gun section. They didn't have any spare grenades, either. I started back and met a Jap. I ducked into the number 1 gun position and decided to stay there."

"I guess there were 60 or 70 Japs in our battalion area that night," said Sgt. James H. Bohanon. "They were after our battery because we were firing all night long, and, from our position, we had a 3200-mil traverse. We covered the entire front."

Lt. Read took up the story again. "When the Nips came over, we got an urgent call to lay down a barrage in the gap. The Nips had launched a heavy attack there with tanks and infantry and were threatening to break through. If they made it, the First Provisional Marine Brigade beachhead would be threatened.

"We cranked off everything we had into that gap. Next morning there were about 400 dead Japs and 4 knocked-out

Jap tanks in that area. I don't know how many of the Japs we killed or whether we had anything to do with knocking out the tanks. After all, our tanks were in there shooting, too, and destroyers off shore were firing and our mortarmen poured it on. I do know there were seven dead Japs in our own area.

"Our battery fired between 800 and 1,000 rounds of ammunition that night," the lieutenant continued. "All night long I could hear the men out there opening up ammunition cases and unloading the 'ducks' [amphibious trucks] which were bringing ammunition in from the ships. About the only time we got nervous was between firing missions when we didn't have anything to do.

"There weren't any outstanding men in my battery that night. There were just 40 men, and every one did a fine job."

"We were pretty nervous," Rierson added. "When daylight came next morning, it was the most beautiful dawn I've ever seen."

"All night long I kept wanting a cigarette worse than I ever wanted anything in my life," McClurg said. "But we couldn't show any light. I finally got that cigarette just about daylight. Lord, it was good."

Lt. Read said his battery fired more ammunition on Guam in the first ten days than it did in 65 days on Bougainville. "After ten days, the men were so deaf from concussion they had to stand facing each other and shout when they talked," he said. "It got so I'd give orders over the telephone to one gun section, and another section would start firing. The men's ears were so bad they couldn't hear what I was saying."

## ELECTRICITY IN THE PERIMETER

By Lt. John L. Linville, FA, and Sgt. Herbert L. Schermer, FA

Like many outfits in combat for the first time, Battery C, 921st Field Artillery Battalion, discovered within a few short weeks in the Philippines that everything was not all "in the book," especially with regard to perimeter defense. Abnormal conditions made a number of innovations necessary. An outstanding one we would like to pass on is our trip wire system.

Due in a large measure to the unceasing rains which made our supply lines too extended for further advances, our combat team position became fairly stabilized. Impassable or non-existent roads made our battery position equally permanent, so we had time to construct a more compact perimeter defense than our normal movements would allow.

When we hit this position we were given an area approximately 200 x 100 yards. Our battery front was 70 yards, with other battery installations established normally within the perimeter. We had five machine guns emplaced, three .30-cal. lights and two .50s.

Under normal conditions, with the men standing guard in shifts within the perimeter, this set-up would have been sufficient. We

had, however, to contend with a visibility problem caused by coconut trees and the tall cogon grass which surrounded our position. One of our first approaches to this problem was to cut down all the grass within a 50-yard radius of our position. This precaution was necessary because we were subject to nuisance attacks by small bands of infiltrating Japs, who could easily approach the battery without detection, especially during the heavy rainfalls which characterized our days and nights on this island. Nights were darker than the bottom of an oil well and the myriad noises of insects, frogs, birds, and falling coconuts made it well nigh impossible to rely on our eyes or our ears for detecting the approach of enemy troops. The need for a supplemented perimeter defense thus became apparent, and American ingenuity was called into play.

After trying and discarding several trip wire systems, including "C" ration cans strung between trees and the standard issue flares, two NCOs in the battery worked out the system we are using successfully now, which is illustrated in the accompanying diagrams. Several deficiencies were noted in the trip flares. When the wire is tripped the

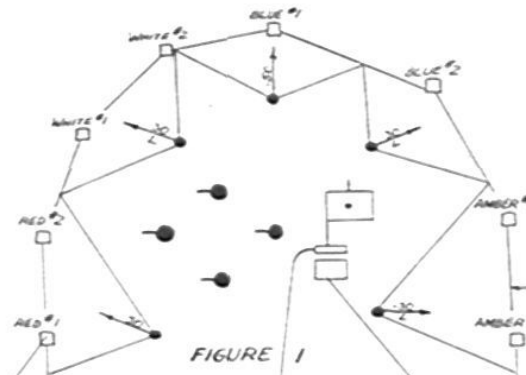


FIGURE 1

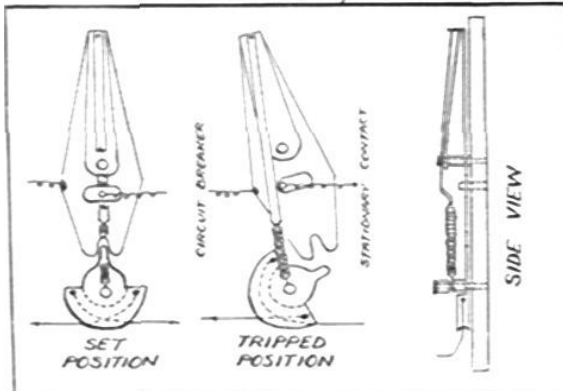


FIGURE 2



FIGURE 4

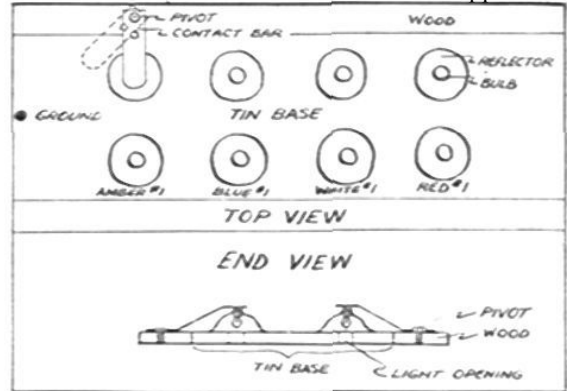


FIGURE 3

flare snaps like a grenade, thus warning any enemy in sufficient time to take cover before the area is illuminated. A second defect showed up after we had the flares set out for a few days, when several would not ignite at all from the heavy rains. In addition, the spring system on the flares should, for this use, work from two directions instead of one.

Our electrical system, worked out by Sgt. Hans Van Waart and T/4 Eugene H. Sundin, was constructed from materials available to every gun battery and can readily be set up in a short time. Using brass from old shell cases, some 8-penny nails, Philippine mahogany boards, and several small springs obtained from Ordnance, the trip device was built as illustrated in Fig. 2. These devices were attached to trees spaced about 50 feet apart surrounding the battery position, and connected with regulation trip wire. From each device W-130 wire was run back to the signal board at the CP (see Fig. 3). This board consists of eight 2.5-volt bulbs, set in flashlight reflectors which are soldered to a tin plate to provide ground contact. The power unit consists of six BA-30 dry cell batteries which are connected in series to provide a 9-volt system (Fig. 4). The 9-volt system was necessary in our set-up to compensate for resistance caused by the type and length of wire used. This voltage is sufficient to give satisfactory operation with W-130 wire extended as far as 100 yards from the batteries, and with

little danger of burning out the 2.5-volt bulbs. All other contacts were cut from brass shell cases, to which trip devices were connected as shown in Fig. 2. When the string is tripped a contact is made, lighting one of the bulbs on the signal board. Each bulb is of a different color and indicates the sector in which the contact has been made. When a bulb lights in the CP the man on watch at that time alerts the entire battery by telephone. If no indicative sounds are heard a parachute flare is launched by rifle from the CP to illuminate the sector.

Examination of the accompanying diagrams shows that any of the following circuits will work:

1. From stationary contact to battery negative.  
From circuit breaker to ground (tin base).  
From contact bar to battery positive.
2. From stationary contact to ground (tin base).  
From circuit breaker to battery negative.  
From contact bar to battery positive.
3. From stationary contact to contact bar.  
From circuit breaker to battery negative.  
From battery positive to ground (tin base).
4. From stationary contact to battery positive.  
From circuit breaker to contact bar.  
From battery negative to ground (tin base).

The arrangement has been extended to include the perimeters of the other batteries in the battalion.

## TRENDS in Field Artillery Organization & Equipment

By Maj. Shirley B. Metzger, FA

A revision of the Field Artillery Observation Battalion, T/O & E 6-75, dated 20 February 1945, is in the hands of The Adjutant General for publication and distribution. The principal change involved in this new table is the inclusion of personnel to operate the improved meteorological equipment. One (1) first lieutenant, Meteorological Artillery, and four (4) additional enlisted men are added to the meteorological section to augment the present personnel.

One (1) truck, 2½-ton, 6×6, cargo, with trailer, 1-ton, 2-wheel, cargo and a truck, ¼-ton, have been added to haul the increased bulk and weight of the new equipment. Complete new meteorological equipment is being authorized in the T/O & E 6-76 revision. Expendable supplies for the new equipment are being authorized in ASF Catalog SIG 4-1.

A motor officer, first lieutenant, has been added to the Observation Battalion. Other personnel changes include the deletion of the basic from the medical detachment and the two (2) repairmen, radio, from the Headquarters and Headquarters Battery, Observation Battalion. In the topographical section of the Observation Battery, two (2) corporals and technician, grade 5, surveyor, topographic, are indicated as computer, geodetic. The repairman, utility, is now classed as armorer, technician, grade 5.

An illuminated grid board to be known as Board, plotting, Field Artillery, illuminated, plastic, grid, 28-in × 28-in (38-in × 38-in) has been standardized. The basis of issue of the board will be two (2) per higher headquarters battery, one (1) per battalion headquarters battery, and one (1) per gun or howitzer battery, except pack and airborne. The overall dimensions of the 28-in × 28-in board are approximately 34-in × 34-in × 7-in; it weighs 70 pounds and occupies approximately 4.66 cubic feet of space. The 38-in × 38-in board occupies approximately 43-in × 43-in × 7-in, weighs 130 pounds, and occupies

approximately 7.5 cubic feet of space. A bank of four (4) miniature electric lamps mounted inside the frame, powered by either 6- or 12-volt storage battery current furnishes illumination which shines through translucent plastic plotting sheets, one with a grid in yards to scale of 1/25,000 and the other to scale of 1/50,000. The board is so constructed that when the lid is in place it forms a metalbound chest with carrying handle, thus eliminating the necessity of providing a separate carrying case for this item.

The Scabbard, canvas, carbine, cal. .30, M1A1, formerly authorized for parachutists, is being replaced by a Case, individual weapons, parachutists, which will accommodate a rifle, submachine gun, or carbine.

Cover, canvas, muzzle, rifle or carbine, is being replaced by an expendable item to be included in ASF Catalog QM-4 with the nomenclature Tape, cellulose, muzzle.

A revision of T/O & E 6-355, Field Artillery Battalion, Motorized, 155-mm Gun, Tractor-Drawn, dated 6 February 1945, is now being published and distributed. The revision incorporates into the new table all published changes and applies present War Department policy. No major changes have been made to the unit. In the service battery the designation of the operator, radio, is changed to that of a clerk and a note indicates that he is also operator, radiotelephone.

The Howitzer, 8-inch and Gun, 155-mm have been standardized as M2. The weapons are essentially the same as the M1 in both outward appearance and function. The principal change involved in the M2s is an improved breech ring.

The suspension of the Tractor, high speed, 18-ton, M4, is being spaced out so that extended end connections can be put on both sides of the track. As the result of this modification, which increases the flotation of the tractor, the model designation has been changed from M4 to M4A1.

# Southern Luzon

By Col. Conrad H. Lanza

## THE BICOL PENINSULA

The Bicol Peninsula forms the southern part of Luzon. With its south tip only 15 miles across the Strait of San Bernardino from Samar, it extends about 170 miles in a northwest and southeast direction. On the north it adjoins the province of Tayabas at a point where Luzon is only 20 miles wide.

Its coast line is greatly indented. At places the width of the Bicol Peninsula is only 10 miles, and its maximum width does not exceed 50 miles. This is a broken and irregular country, but there is no main mountain range, although there are several mountain ranges with widely varying axes. All the mountains are low. In between are scattered several volcanoes, some of which are active and which include the greatest mountain in Luzon—Mayon, with an altitude of 7,946 feet.

Political divisions of the peninsula, with areas and populations, are:

	<i>Square miles</i>	<i>Population</i>
Camarines Norte	779	98,324
Camarines Sur	2,072	385,695
Albay	979	431,177
Sorsogon	729	247,653
to which is attached		
Masbate	1,545	182,483

Originally the inhabitants were Bicolos. They still constitute the fourth largest group in the Philippines and have their own language. Numerous Tagalogs are now to be found throughout the area. Most of the people are centered about Miguel and Lagonoy Gulfs on the east side, and Sorsogon Gulf on the west.

Rain falls throughout the year, but there is less of it from March to June, both inclusive. Contrary to what occurs on the adjacent isle of Samar, and on Leyte, only 70 miles to the south, the typhoons do not bring the maximum rainfall, which usually occurs after the typhoon season is over and the northeast monsoon has started. This is during December.

Mountain ranges being low and scattered, there is an excellent road system. A railroad runs from Manila as far as the adjacent cities of Albay and Legaspi. All important towns are tied in to the road net. The main axial road follows approximately the center of the peninsula as far as the head of Albay Gulf. It then crosses to the west side, passes around Sorsogon Gulf, and reaches both east and west shores to the south. The railroad closely follows the roads as far as Legaspi and Albay, but does not extend beyond.

The entire peninsula is of volcanic origin. Its soil is very fertile, especially suited for the growth of the abaca palm, which is the hemp producing plant. For the cultivation of this product constant rains (like Bicol's) are needed.

*Camarines Norte* is next to the smallest of the Bicol Provinces and much the smallest in population. Most of the inhabitants live in the vicinity of Daet on the east coast, the local capital (pop. 20,066). 17 miles northwest of Daet is the

minor port of Paracale, near which are important gold mines. 7 miles still further northwest is the port of Jose Panganiban. This has an improved harbor and good wharves. Not far inland are iron mines. Prior to the present war large quantities of ore were regularly shipped to Japan from there. A narrow gauge railroad from the mines to the wharves transmits the ore directly from cars to ships. Large shipments of cocoanuts are also made. Excellent lumber is forested.

This province has an economical value to Japan. It is one the nearest sources of iron ore which Japan has. The yield can be expanded. Whether since their occupation the Japanese have increased production or not is unknown.

Both coasts are low. Littoral swamps and mangrove thickets are numerous. The west side borders on Ragay Gulf for 20 miles. There are no towns of importance and few roads in this area. Although there are mangrove swamps on the east side, there are practical landing spaces near the three principal towns mentioned.

The gold mines are the principal source of wealth. They normally employ several thousand workmen.

*Camarines Sur* is the largest of the Bicol Provinces. The center of its population lies around the Bicol (Vicol on some maps) River, with major development at its mouth at the head of San Miguel Bay on the east coast. The capital is Naga (pop. 22,505), formerly known as Nueva Caceres. Near the mouth of the river is Calabanga. Directly across the island on the west side is Pasacao. All these places are on the road net. The railroad passes through Naga. Unusually large nipa and mangrove swamps exist near the mouth of the Bicol River, which is navigable for motor launches. There are a number of possible landing sites on both sides of the river.

13 miles east of Naga is the high volcano Mt. Isarog (6,493 feet). 13 miles south of it is another, Mt. Iriga (4,000 feet). At the southeast corner of Mt. Iriga is Lake Buhi, renowned for having vast quantities of the smallest fish in the world: a hundred will not make a handful. These two mountains are isolated, as the road net goes around and between them.

The Bicol valley is thickly cultivated and raises an excess of rice which is available for export. Normally this goes to other places in the peninsula.

The west coast has few inhabitants, with Pasacao as the sole point of entry. It is 15 miles from there to Naga, over a low, rough mountain range suitable for defensive purposes.

At the northeast end of the province is the Caramoan section. This is a rough area with few towns and roads. Landing on this coast is practicable, but an advance inland (if resisted) might be difficult.

*Islands off the Camarines.* On the east (or Pacific Ocean) side a number of islands lie not far off shore. Off the iron and gold ports of Jose Panganiban are Jomalig Island and the Calaguas Group. Jomalig is rectangular in shape, being 14 miles long parallel to the main coast and 3 miles wide. The



Pacific Ocean side is probably the easiest to land on, when the surf is not too rough. This island could be used as an air base but it lacks port facilities. The Calaguas Islands, 23 miles east of Jomalig, are less suitable for air bases. They extend 15 miles parallel to the coast and are 10 miles wide. Excluding islets, there are 9 islands, the largest of which is 3 by 4 miles. Seizure of these islands by relatively small forces is possible. They would be subject to air attacks from hostile airfields on Luzon.

*Albay* is the most populous of the Bicol Provinces, although it has less than half the size of Camarines Sur. Mayon volcano occupies the greater part of Albay. It has gentle, even slopes, and as the soil is particularly fertile it is highly cultivated. Mayon's last eruption was in 1928, when it destroyed several small villages. Usually the volcano is not dangerous.

Except for the volcano, the remainder of this province has no special mountains. The main road is on the south side of Mayon, and with the railroad extends into the joint cities of Albay (the capital) and Legaspi (pop. 41,468) (a good port and the business center). Legaspi is the largest town in the Bicol peninsula. It formerly had a large commerce by water, exporting hemp and coconuts. Most of that trade was transferred to the railroad and to trucks after these became available. The port is suitable for a small base. There is ample space in Albay Gulf to handle large fleets.

Much of the coast on both sides is lined with nipa or mangrove swamps. Best landing places are on the Pacific Ocean side, north of Legaspi. The west coast is mostly swamps. It is off the road net and has only a few small towns.

Across the north side of Albay Gulf are four islands, plus a number of islets. They lie in prolongation of a spur of Mayon and are separated from each other by straits a mile to 2½ miles wide. The largest island, which is next to the outermost one, is Batan, about 8 miles from east to west and 3 to 5 miles from

north to south. This island has good coal mines with a wharf suitable for loading coal directly from cars into ships. It would be practicable to seize this island and establish an airfield, for which space is available, subject to attack from enemy planes elsewhere in Luzon.

Attached to Albay as a sub-province is the island of Catanduanes. This island is the twelfth largest of the Philippine Group, being 40 miles long (from north to south) and 20 miles wide. Catanduanes is opposite Camarines Sur, separated from it by the 5-miles-wide Maqueda Channel. At the north end of the island is Yog Point. To its west is the port of Pandan, and to the east Bagamanok. A third port on the northeast is Payo. Three ports are on the south side—Bato, Virac (Birak on some maps), and Kalolbon, all of which are on open bays. The east shore is rough.

Catanduanes has a population of just under 100,000, the larger portion being at the south end. It is a rugged island, with an indented coast which accounts for its numerous harbors. Virac is the capital and principal town. Coconuts and abaca are raised for export. There is a satisfactory road net. This island is suitable for a small air or naval base.

*Sorsogon* is the tip province of the Bicol Peninsula. Its capital of the same name (pop. 22,097) lies at the head of an enclosed bay entered from the west side. From the city to the Pacific Ocean on the east side is only 5 miles. The entrance to Sorsogon Bay is 1½ miles wide with an island in the center. Other islands lie further out. Although there is no information on the matter, this bay can so easily be fortified that it would seem that the Japanese have probably taken steps to establish batteries and lay mines across the entrance.

Sorsogon is separated from adjacent Albay by a range of low hills. The main axial road crosses them and leads to Sorsogon. There is no railroad connection. On each side of the entrance to Sorsogon Bay is a small port where landings could be made—Pilar 4 miles north and Bulan 5 miles south. Both these places are on the road net.

Sorsogon is a hilly province but is well cultivated. Five miles south of Sorsogon city is Mt. Bulusan, a volcano which last erupted in 1915. This is not a dangerous volcano. On its southwest side is the town of Irosin (or Irocin), which is the main business center of the province. It is built inside the crater of another volcano, supposed to be extinct. Two other volcanoes, both rated as inactive, lie just west and northwest of Irosin.

The hills are largely covered by forests which yield fine lumber but which would be serious military obstacles.

Hemp has been the principal crop of Sorsogon. In recent years the people have taken more to the growing of coconuts.

*Masbate Province* is a group of islands just west of Bicol Peninsula. The island of that name, on which is the capital also named Masbate, is the important center of the province. The island is nearly 50 miles long and about 10 miles wide.

Masbate island is 11th in size among the Philippines. It used to be a great cattle country. Most of the cattle were lost through disease. The people now live by raising coconuts and other crops. This is the home of the buri palm, known for the exhilarating qualities of its juice and for the fiber which it produces. Gold is found: the gold mines of Aroroy on the northeast coast are the third largest producer in the Philippines.

Masbate city (formerly Palanog; pop. 23,312) lies on a small bay on the northeast coast. A good road leads to both the north and south ends of the island, which is irregular in shape. Its form approximates a fishhook, with the shaft extending

from southeast to northwest, there turning to a prong pointing southwest. The principal towns are all on the outer side of the shaft. In the curve of the hook there is one town and port—Milagros (formerly Tinadipan)—which might be the best for an invasion landing. The bay off Milagros is sheltered, and the town is on the road net.

At Masbate is a small bay, too small except for minor military purposes. At the southeast end is the small port of Calainingan. This place is less than 20 miles from Leyte.

Masbate is a good island for airfields. There are numerous rugged hills, but small open plateaus (formerly

used for grazing) are to be found scattered throughout the interior.

Ten miles north of Masbate island, and part of that province, is Buriyas island, which is 43 miles long and some 7 miles wide. It is named after the buri palm, there found in quantities. Another attached island is Ticao, 15 miles by 4. This is just off Masbate city across a 3-mile strait. Its possession would be indicated should Masbate be invaded. It has one town, San Jacinto, on the east side, but no good port. At the north end of Buriyas is the small port of Pascual.

## SOUTH LUZON (less Bicol Peninsula)

That part of Luzon which lies south of the Manila plain differs considerably from north Luzon. The axis of south Luzon extends in a westnorthwest and eastsoutheast direction instead of due north and south. Whereas in the north the island of Luzon is comparatively broad, with coast lines having but few bays suitable for invasion purposes, south Luzon has numerous bays. Here the island is narrower, being in places only 15 miles wide and at two places (one in the Bicol peninsula) but 5 miles wide. In the north, islands off invasion areas are scarce or non-existent; in the south almost every bay has some islands, and all have islands within short flying distance.

North Luzon has high mountains which on the east coast are seldom under 3,500 feet high. Its west coast has still higher mountains. South Luzon has plenty of rough terrain, but there are no mountain chains suitable for defense lines. Neither are there any rivers of importance, whose crossing incidental to military operations might offer the enemy certain advantages. In north Luzon are a number of rivers which might require elaborate preparations to cross under hostile fire.

Although south Luzon has no regular mountain lines there are a number of volcanoes, some of which are isolated, rising out of low ground, while others are parts of short ridge lines. In general the entire area is densely populated, with many towns, villages, and barrios. There is an excellent road net and an axial railroad.

As compared with north Luzon, south Luzon offers decided geographical advantages to an invader. For the Allies it is the area nearest their lines of supply.

The area considered is divided into the provinces of Cavite, Batangas, Laguna, and Tayabas.

### CAVITE

"Cavite" in the native Tagalog language means a *book*. There is a hook of land on the north side of this province extending into Manila Bay. In the rear of the book is the important naval station of Cavite. This used to be the main American naval base in the Far East.

Cavite has an area of 462 square miles, and in 1939 had a population of 238,581. It lies on the south side of Manila Bay. Its average width on a west-east line is 19 miles, and from north to south 24 miles. There are no volcanoes but the ground is volcanic in character, formed from mud, ashes, and small stones thrown out by volcanoes in adjacent provinces. This type of soil has been eroded by watercourses, resulting in deep ravines in the hills along the south boundary. The center and north sections are flat and cultivated with rice, sugar, bananas, mangroves, and other tropical fruits. This low ground is traversed by a large number of stream lines, narrow but unfordable and navigable for the native sampans. Most are lined

with bamboo or other vegetation, limiting visibility. These stream lines run nearly normal to the coast line. They cut across invasion lines starting south of Cavite.

Everywhere the coast is low, has few beaches and many swamps. Except for the hook of Cavite it is not very suitable for invasion landings, even assuming that entrance to Manila Bay was practicable. Cavite's thickly cultivated fields and numerous watercourses offer opportunities for protracted defense.

Routes of invasion are along the coast where there is a good road. Main parallel roads are 7 and 12 miles inland, affording three possible axes of advance.

The climate of Cavite (less the south highlands) is the standard west Luzon climate with a pronounced dry season through December to April, both inclusive, and a pronounced wet season during the remainder of the year. In the highlands rain increases with the altitude and there is a small amount of rain regularly during the dry season. In this section the crops are coffee, cacao, and upland rice.

Except for a narrow coastal strip, the dry season is best for invasion. Streams are lower and practicable for tanks; fields are dry. As well as by swamps, the coastal strip is obstructed by fish ponds and salt basins (where sea water is evaporated). It is a difficult country to fight over.

Towns are largely of wood construction. Churches and public buildings, and the central section of important towns, are stone or concrete. On the coast road towns and villages follow one another almost without interruption. Cavite, the capital, is the most important city in the province. On the east road the important towns and road centers are Alfonso, Indang, and Silang. These are on high ground affording observation toward the north and west. On the center road Dasmaringas and Imus, both in the north section, are the main critical points.

### BATANGAS

This province, immediately south of Cavite, is about three times as large. Its area is 1,270 square miles, and its population of Tagalogs was last reported as 442,034. The width from west to east averages 43 miles; from north to south, 30.

Batangas is divided from north to south by Lake Taal, of oval form, 15 miles from north to south and 9 miles wide. It is supposed to be the crater of an extinct volcano. In the center of the lake is Taal Island, a parallelogram 4 miles on a side. On it is Taal volcano, which is active; it exploded without notice in 1910. The force of the explosion caused tidal waves 15 feet high to inundate the lake shores, drowning over 2,000 people.

The north of Lake Taal is only 2 miles south of the Cavite boundary, and the same distance west of Laguna Province. These boundaries are ridge lines seldom exceeding 500 feet in



height and are supposed to have been the crest of the original volcano of prehistoric times whose discharges form the soil of Batangas, Cavite, and Laguna.

The south end of Lake Taal is only 3 miles from the sea at Balayan Bay. There are roads around the lake at both ends. Both are military defiles, of which that south of the lake is exposed to naval fire. The lake is connected to the sea by the swift Pansipit River, navigable only by launches.

Lake Taal divides Batangas into two sections. To the west are three roads into Cavite Province. From the east section two roads enter Laguna Province. All these roads lead toward Manila. From the east section two roads lead to (or enter from) Tayabas Province.

Batangas is heavily cultivated. Main crops are sugar, bananas, oranges, sweet potatoes. There is a deficiency of rice, which is the main food for its nearly half million people. Hogs, chickens, and horses (native variety) are raised in considerable numbers.

The capital and principal city is Batangas (pop. 50,000), situated at the head of Batangas Bay. It is practicable to debark invasion troops in this area and good roads lead around both ends of Lake Taal. The bay, 6 miles wide and 8 deep, can shelter many ships.

At the head of Balayan Bay, just west of Batangas Bay, are the towns of Lemery and Taal, west and east of the Pansipit River. A landing here would lead to either or both sides of Lake Taal. The landing area extends intermittently for 12 miles around the west side of the bay. Outside Balayan Bay, and further west, a landing is possible near Nagsubu.

East of Batangas Bay landings are possible in Tayabas Bay near San Juan de Booboc or Bolbok.

Landings in any part of Batangas Province will meet rolling upland country immediately back of the coast. It is quite suitable for defensive purposes; hard fighting could be expected. Main critical points and road centers are Rosario and Lipa, 12 and 15 miles inland from Batangas (city) on different roads. The railroad extends from Batangas inland by Lipa on its way to Manila, passing east of Lake Taal. This railroad handled most of the products of the province, and in 1941 had nearly displaced water transportation from the ports. Assuming that the enemy would destroy this railroad, its repair would be of first importance.

Batangas Province has a pronounced dry season, but it is shorter than the standard. There are only four dry months—January to April, both inclusive. Heaviest rainfall is normally between July and November, also both inclusive.

#### LAGUNA

Laguna is a crescent-shaped province encircling on the west, south, and east sides the Laguna de Bay, which is the largest and most important lake in Luzon. The lake has three prongs, being in the shape of a trident with prongs pointing northwest, north, and northeast. Its north side is not in Laguna Province. The lake is shallow; its bed is covered with grass, so water does not seep through the bottom as in ordinary lakes. This results in floods during the rainy season. The lake bottom is only 3 feet above sea level. This water is connected with Manila and the sea by the Pasig River, which flows out of its northwest corner. The Pasig is navigable for launches, sampans, and similar small craft.

The area of Laguna Province is 722 square miles. Its population at the last census was 279,505. Its greatest east-west length is 35 miles; maximum north-south, 30 miles. The capital is Santa Cruz, a small town of about 18,000 people at the southeast end of the lake. Tagalog is the local language.



Laguna has no sea coast—an invasion force can reach it only by first landing elsewhere. On the south Laguna is bordered by Batangas and Tayabas Provinces, in both of which are suitable landing areas. Tayabas also bounds the province on the east or Pacific Ocean side. The boundary between Laguna and the two provinces mentioned is highland, but not a mountain ridge, except for isolated volcanoes. Of these, the adjacent Mounts Banahao and San Cristobal (near the center of the south boundary) are the most important. These volcanoes are listed as extinct, but they once erupted enormous quantities of material which now forms the extremely fertile soil of the lowlands around the lake.

Mount Banahao has an elevation of 7,149 feet. With its neighbor San Cristobal, which is slightly lower, it is covered with cocoanut trees, about 40% of all such trees in the whole Philippine archipelago being located here. This is also the most rainy area anywhere in the Philippines, there being rain in every month of the year. The reason is that these mountains, being isolated, attract from all directions clouds which, becoming cooled, usually deposit rain in the afternoon of three days out of four.

The axial railroad and high road from Manila follow the west bank of the lake as far as Calamba at the south end of the lake. At this point they split. Main lines continue south through Tayabas to the Bicol peninsula. A branch road and railroad turn off for Batangas just south of Calamba. Another branch road and railroad turn west at Calamba, following around the south end of the lake to Santa Cruz. Calamba is the main critical point within Laguna. It is also of local importance as the center of extensive sugar plantations and of large banana plantations.

The lowland circling the lake is densely cultivated, and full of small towns. Besides sugar, hemp and cocoanuts are produced. The great quantity of cocoanuts has resulted in cocoanut alcohol's being produced in reasonably large quantities.

This is used for beverage purposes with undesirable results.

The south boundary is rolling, cultivated country. It is passable at all seasons. The lake area has a dry season similar to the Manila standard; the highlands have more rain as the altitude increases, and vary considerably within relatively short distances. There are two good roads into Batangas, and two to the south into Tayabas. One road extends from the east end of the province to the Pacific, over high but not mountainous land. All of these are available as invasion routes, and all converge at Calamba.

North of the latter place is a good road leading due west into Cavite province and city. East of Calamba the main road closely follows the south side of the lake.

#### TAYABAS

This province is 250 miles long from north to south, but its width nowhere exceeds 40 miles and averages under 16 miles. It consists of a long, narrow strip along the Pacific Ocean just east of the Sierra Madre range and an isthmus connecting Laguna and Batangas provinces (which are to the north and east) with the Bicol peninsula (to the south). Area is 3,839 square miles; population in 1939 was 279,505.

The more than 200 miles of coast fronting the Pacific north of the south boundary of Laguna are nearly uninhabited, and have no lateral road communications. Isolated towns are Infanta and Baler, at both of which there are beaches available for landing. Frequently there is very heavy surf. Routes over the mountains are difficult trails, easy to defend.

South of the Laguna boundary, Tayabas is well populated and has excellent roads. The main axial railroad coming south from Calamba traverses this part of the province and continues on to the Bicol peninsula. The capital of the province is Lucena, a town of some 22,000 and with a good port on the west side of Luzon. Near here Luzon is an isthmus extending nearly west and east, and at one place but 5 miles wide; for 20 miles it does not exceed 10 miles in width. The port of Lucena is at the end of this isthmus nearer Manila; at the far end (on Lamon Bay, on the Pacific side) is Hondagua, which is a port constructed only in the past 20 years; it also is suitable for

invasion purposes. Holding this isthmus or any part of it prevents land connection to enemy forces in the Bicol peninsula.

Lucena is at the head of Tayabas Bay. The east side of this bay is the Bondoo peninsula, 50 miles long and not over 15 wide. A coast road follows the shore line, and it would be practicable to land at various places along this. The interior of Bondoo peninsula is not high but it is rough and heavily wooded.

Tayabas province has considerable rain at all seasons with maximum in November. Due to constant rains streams are often swollen and vegetation is heavy. There are numerous forests. In the central parts there is considerable open country, used for grazing.

An invasion through Tayabas offers a choice of routes toward Manila, either through Batangas and Cavite provinces on the west side and/or through Laguna on the east. The axial railroad passes through both the ports of Lucena and Hondagua, continuing north through Calamba to Manila. There are good roads for an advance through Batangas, but no direct railroad by this route.

Tayabas is inhabited partly by Bicolans and partly by Tagalogs, both languages being in use. The province does not raise sufficient rice for local use: it is more profitable to raise hemp and coconuts. There is a considerable lumber industry, the product of which is used locally, very little being exported. For military purposes the lumber and lumber mills might be of considerable value.

#### MARINDUQUE

Off Tayabas Bay is the island of Marinduque. It is a round island with a diameter of about 19 miles. It is rather heavily populated—81,768. This is a very rainy place.

Plains in the southeast section are suitable for airfields. There are two small ports—Boac on the northwest and Santa Cruz on the northeast. The island raises quantities of rice, corn, sugar, and coconuts. From a military point of view this island, like its neighbor Mindoro, is valuable chiefly as an assembly area prior to an invasion of Luzon. It is 20 miles from Bondoo peninsula.

## MANILA AND VICINITY

Manila Bay is the finest large protected harbor in the Far East. Most of its 770 square miles of water are available for anchorage of ships. There are 120 miles of coast. At the head of the bay is the city of Manila, 35 miles from its entrance. This entrance is a dozen miles in width, but is broken by the island of Corregidor (some 2 miles from the north side) and by some islets about the same distance from the south side. On these islets and Corregidor were built an extensive series of coast fortifications intended to block the sea entrance to Manila Bay.

When war broke in December, 1941, the Manila Bay fortifications accomplished their mission. No hostile ships entered Manila Bay until after Corregidor had been taken after a merciless bombing and shelling. The shelling came from batteries on the mainland of Bataan, the province immediately north of Corregidor.

Maneuvers held as early as 1910 had established that Corregidor could be easily shelled by artillery on Bataan, where the terrain is higher. OPs established there could see about everything on Corregidor, while the garrison could see

little of dispositions on Bataan due to extensive forests and jungle. For batteries on Bataan, firing at Corregidor was firing at a plainly visible marked target at ranges from 5,000 yards up—the easiest kind of shooting.

No defense of Corregidor can be maintained unless the adjacent mainland is held. In a similar manner, the islets on the south side, of which one is less than a mile off shore, can be held only if the mainland on the south side within artillery range is also held.

*Zambales* is a long, narrow province, 75 miles from north to south and 15 to 20 miles wide. Its area is 1,376 square miles and its population (1939 census) 106,945. The capital is Iba on the coast, a village of 8,299 people.

This province is bounded on the west by the China Sea. With one important exception it has no good harbors. There are some small harbors, but these can not be used in bad weather and none are suitable for ocean-going ships. Until recently Zambales was difficult to visit, due to uncertain sea routes. Since American occupation a good hard-surfaced road with substantial bridges has been opened, parallel to and close to the China Sea. It connects all principal towns. At the

north the road enters Pangasinan Province and, always following the coast, passes around the Zambales Mountains on into Lingayen. At the south the road enters Bataan.

On the east Zambales is bounded by the mountains of the same name. They are rough and difficult, and within the limits of the province only a few trails go over them. The mountains are inhabited by a respectable number of Negritos, or negroes of reduced stature, usually not exceeding 4' 6" in height.

The one harbor which Zambales does have is at the extreme south end. This is Subic Bay (at the head of which is Olongapo), 12 miles deep and about half that wide. A well sheltered bay, it has been a naval base since the years of Spain's dominion. Until the present war it was an American base—the site of a large floating dry dock and a repair base for smaller naval craft. The entrance to the bay was defended by coast fortifications of modern type erected by the Americans. There were no defenses on the land side, and the position became untenable as soon as the enemy approached from the interior.

Coming from the north, the main road of Zambales goes around the head of Subic Bay, turns inland into Bataan, crosses the mountains by a pass, reaches Manila Bay, and then continues around it into Manila. This road—Route 7—is the main artery of traffic and commerce for Zambales. It has entirely superceded the earlier sea communications.

If Subic Bay and the Olongapo base are retained for military or naval purposes, a land defense will enclose the main road and block all entrance into Zambales from the south.

The inhabitants of Zambales originally were entirely Zambals, a recognized tribe similar to the Tagalogs. During this century there has been a large immigration from the Ilocos provinces; consequently that language is now commonly spoken.

Close to the China Sea the land is low. At the mouth of the rivers and creeks it is often swampy and has numerous mangrove forests. It is not an easy coast over which an invasion force could be maintained unless the few ports available are secured.

At Iba is a small harbor, and adjacent thereto another at Botolan—the two forming a shelter for small craft. The fertile coast land normally raises an excess of rice. Mangoes form another large crop. The slopes of the mountains are largely free of jungle, and have been used for the raising of cattle, horses (Filipino type), and carabaos.

Military operations within Zambales would consist of movements parallel to the sea. They would encounter a succession of river lines to cross.

Zambales contains chromium mines. These were worked during the later years of American occupation. There has been no report that the Japanese have used them.

The climate is the same as that in the Central Luzon Plain, with a pronounced dry season from December (inc.) through April, and a wet season during the balance of the year.

*Bataan* province is a peninsula separating the China Sea to the west from Manila Bay on the east. Its length from north to south is about 30 miles, while its width varies from 12 to 20 miles.

The center of the peninsula is a rough, jungle-covered mountain range. Near the south end is Mt. Mariveles, nearly 4,700 feet high, affording excellent observation over the entrance to Manila Bay. At the north end of the peninsula is Mt. Natib, about 4,200 feet high. Between these two mountains



*In the middle of February enemy efforts to raid our lines around Rosario (1) were broken up. Having previously driven to the east coast of Luzon, our troops reached Baler (2). In the foothills of the Zambales Mountains (3) American infantrymen were mopping up. Near Manila, airborne troopers cleared Nichols Field and occupied the Cavite naval base (4).*

is a pass between the east and west shores. A good road goes over it.

North of Mt. Natib is the pass to Subic Bay, traversed by Route No. 7. This road comes around the north end of Manila Bay, entering the province at the small town of Dinalupihan. Here it turns west over the mountains, reaching Subic Bay (16 miles away) at Olongapo, which is just at the boundary between Zambales and Bataan.

Along the east coast of Bataan is a good road through a low coastal plain from Dinalupihan to Mariveles (30 miles). Near the midpoint is Pilar, from where a road goes across the southern pass to Bagac on the China Sea coast. There is no road from Bagac south to Mariveles, but a poor road extends northward to Olongapo.

The entire area of Bataan is only 525 square miles. Its population was last reported as 85,538, most of whom reside along the Manila Bay coast, where rice, sugar, and tropical fruits are normally raised in sufficient quantities to export to Manila. The capital is Balanga (11,684 people), just 2 miles north of Pilar.

The south pass is 15 miles north of Mariveles, at the tip of the peninsula. The north pass is 30 miles away. Either of these passes can be used as a base for a transverse line across the Bataan peninsula, denying access to an enemy from the north to the vicinity of Mt. Mariveles. Defense of the south pass requires a 12-mile line, that of the north pass 10 to 20 miles.

From Pilar directly across the bay to Manila is 28 miles. This used to be the normal route between Bataan and Manila. It is 70 miles by road, which has become the usual means of communication.

Outside of its agricultural products Bataan has no economic value of military importance. Commercially it is about the



A few days later, while Admiral Mitscher's carrier planes attacked Tokyo (A on inset) for the second day and the fleet continued to shell Iwo (B), Gen. MacArthur's men struck to capture Bataan. Landing at and around Mariveles (1) as our warships blanketed the guns of Corregidor (2), they met other forces that swept through Limay and Lamao (3). In the Manila area (4) the Americans reduced the foe's positions in the southern part of the city, reached Ft. McKinley's western gate, and seized two airfields at Mandaluvong. Marikina and Santo Nino (5) were mopped up in the region east of the capital.

only source for capis shells, universally used in the Philippines for window panes, in lieu of glass, unsuitable on account of earthquake hazards. Bataan is the principal, but not the sole, base for the Luzon fish industry. It hatches fish, shipped out annually between April and July, to stock the numerous fish ponds in Pampanga and Bulacan Provinces.

The climate in Bataan is the same as in the Central Luzon Plain, and in Zambales.

*The City of Manila* is politically a separate administrative unit of 14 square miles, bounded by Manila Bay on the west and the province of Rizal on the other three sides. At last census the population was 623,492.

Manila is a first-class military base. The unrivaled landlocked bay is supplemented by an artificial harbor in rear of a massive breakwater on the south side of the Pasig River. The harbor water front has two large piers, another pier reported to be the largest in the world, and a fourth one (smallest of all) which belonged to the Army. The largest ships can lie alongside these piers, which have modern facilities for handling cargo.

The Pasig River splits Manila into north and south sections. The business section is on the north side. The lower part of the Pasig is available for small ships such as are commonly used in the coast trade. Commencing about a mile from the mouth of the river numerous bridges are found. Ocean-going ships can not pass these, but motor launches, cascocs, sampans, and similar craft can. Following up the Pasig, access is had to the Laguna de Bay, allowing supply by water transportation to the area around that lake.

There is an extensive series of esteros (canals) through the north and east sections of Manila, by which considerable freight is moved to industries and warehouses. These esteros connect with the delta country along the north side of Manila Bay. They afford an inside water passage as far north as San Fernando, with connections to all intervening rivers.

Manila is almost halfway between the north and south ends of the Philippine archipelago. It is the main distributing point for the entire Philippines. Its warehouses (known locally as *godowns*) are vast, and suitable for military purposes. There are facilities for minor ship repairs but not for major ones.

Manila is the center of the railroad system. It has good railroad slips about 3 miles out from the terminal, at Caloocan. This is a 42" railroad, but handles a very large traffic. It is government-owned.

Most buildings in Manila are of wood and other inflammable material. In some sections, including the business district, the lower story may be of stone but upper ones are usually of wood. Consequently Manila is subject even in ordinary times to serious fires, and in war is exceptionally liable to damage from bombing or shelling.

The water system centers at El Deposito, a reservoir on top of a hill about 3 miles from the center of the city. The walls can be blasted by bombing or wrecked by shell fire, letting the water out. El Deposito receives water from three sources. The first is the Mariquina River at Santolan, 3½ miles away. Further up the Mariquina River and 12 miles from El Deposito is the Montalban Dam, connected by a pipe line. The third source is the Angat Dam, 21 miles away, from where an aqueduct leads to El Deposito. The two latter sources are in the mountains northeast of Manila. The two lines converge 4 miles from El Deposito at the filter station, and then pass through the intermediate reservoir of San Juan. The water is normally safe and pure. Loss to an enemy of the sources of water, or destruction of the local reservoir, deprives Manila of good water.

Manila, except for a few outlying suburbs, is on low ground. Considerable parts are subject to flood during the rainy season. Due to this condition, sewage has to be disposed of by pumping. Disabling the pumps, either directly by shelling or bombing or by cutting off the power, leads to highly unsanitary conditions.

Ordinarily Manila is a healthy place. The two plagues of the Philippines—malaria and dysentery—are under control due to destruction of mosquitoes and care as to water. Following a few simple health rules, such as to abstain from eating such uncooked foods as lettuce or tomatoes and to boil water for cooking and washing as well as for drinking purposes, usually suffices.

Manila is like any city dependent upon the outside for food. Unless trade lines are kept open, starvation will appear. This happened in 1898, when Manila and its Spanish garrison were

invested by the Filipinos; and it is reported to have happened during Japanese occupation. Manila is now also dependent upon imported fuel for power and gas.

As the capital of the Philippines, Manila contains numerous fine buildings suitable for administrative purposes. There are two universities, many schools, and numbers of public buildings suitable for military purposes. Large areas are available for camps. Fort McKinley was a large post just outside the southeast edge of Manila, and has space for at least a division. Airfields both north and south of the city could be expanded almost indefinitely.

Manila is not an easy city to defend from its immediate vicinity. There are no natural physical features upon which a system of defense could be built. If desired, defense could be anywhere—one line is about as good as another.

*Rizal* is a small province of but 505 square miles, which surrounds Manila on the north, east, and west. It is about evenly divided into two parts by the Pasig River, which flows out of the Laguna de Bay through the heart of Manila into Manila Bay. This river is nowhere fordable. Its banks are vertical, their height depending upon the season of the year. In the dry season they seldom exceed 20 feet, but require cutting down if pontoon bridges are laid. In the wet season especially, the current may be quite rapid.

Rizal is heavily populated, the number of inhabitants being 444,805 at last census. Centers of population are a continuous string of small towns and villages along Manila Bay, both above and below Manila; along the Pasig River; and along the Mariquina River, which flows into the Pasig from the north near where the Pasig leaves the Laguna de Bay. The capital is Pasig (pop. 27,541) on the Pasig River.

The province extends into the foothills and mountains of the Sierra Madre around the north end of the Laguna de Bay. The mountains are close to the Laguna, and leave only a narrow plain between them and the shore. The Mariquina valley is densely cultivated. Manila is the principal market; vegetables, fruit, and poultry are raised for sale in that city. Large numbers of ducks are raised in corrals.

The lake front is generally lined with fish corrals. These are bamboo inclosures in series, the smallest being close to shore. Entrances are so arranged that a fish can get in but not out. In seeking to escape from the outer corral he enters the next one closer to shore, and so on until he is finally in the smallest inclosure and can be taken by hand or by scoop nets.

On the Manila Bay front are good beaches, suitable for landing south from Manila. The area north of Manila is lined with low, flooded ground cut up by numerous canals and esteros and not suitable for landings. The railroad northward from Manila, with the main highway, is 1 to 2 miles inland and not visible from the sea. Offshore the sea is shallow, requiring naval vessels to remain about 2 miles out.

South of Manila the main road is close to the sea and can readily be kept under fire by naval vessels. The railroad to the south starts from the north side railroad station, then goes east and, curving around, crosses the Pasig River by a double track bridge within the city limits to the Paco RR station within a mile of the center of Manila. It then separates, one branch following around the south side of Manila Bay into Cavite province and the main line turning off diagonally to the Laguna de Bay, from where it continues into south Luzon.

There are numerous good all-weather roads throughout Rizal. Military operations are practicable at any season. A close defense of Manila would be within Rizal. There being no natural features suitable for defense, except the Pasig River, the defenders can select almost any place. The Pasig, being right in Manila and with closely built houses on both banks, would at best be good for only a limited defense.

In 1898 the Spaniards successfully defended Manila by a circle of minor fortifications on a radius of 3 to 4 miles from the center of Manila. These were held by detachments of troops detailed by roster from garrisons within the city. The enemy at that time was the Filipinos who had no artillery; the time was of course before the days of air forces.

In 1941 General MacArthur elected not to defend Manila, obviously believing it could not be held against troops with modern artillery and air forces.

#### COMMENTS

**Manila can not be defended if control of the sea is held by the enemy. In 1941 Manila Bay was denied to the Japanese due to the entrance of the Bay's being covered by American-held fortifications. In 1945 the reverse was the case; the American Navy was denied entrance to Manila Bay by reason of Japanese control of the bay entrance fortifications. In 1898, by night Admiral Dewey sailed by the then Spanish-held fortifications on Corregidor. These were inefficient; although they opened fire on the American ships, no hits were obtained.**

**If direct attack on Manila by sea is impracticable, Manila can be attacked by landings in Lingayen Gulf or north thereof; or in south Luzon, on either the west or east coasts. In 1941 the Japanese landed in all three possible sectors. In 1945, up to date of writing American landings have been on the west coast both north and south of Manila, but not on the east coast, where suitable places can be found in Tayabas.**

**If a permanent line of land fortifications around Manila is desired to protect it from overland attacks, this would have to be at least 30 miles out, in order to include the water supply system and enough agricultural land to insure food supplies. Lines still further away would be practicable. Best ones would be on the north to the vicinity of San Fernando, which would cover the land route to Bataan. Nearest best line on the south would be through Lake Taal.**

**Lines still further out are practicable. In 1941 attempts were made to stop the enemy at Lingayen Gulf on the north and in Tayabas on the south. They failed, but there were no permanent fortifications. For the future, consideration must be given to some system of defense which would insure safety of the very important Manila base, should control of the sea temporarily pass to an enemy as it did in 1941.**

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Confidence in artillery is assurance that it is in the best possible condition, which is brought about only by never-ending inspection and servicing. If you do not let up on preventive maintenance, then your pieces will never let you down.

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Signed "Men of 3d, 36th, 45th Divs," a letter in the February 8th issue of the Nancy edition of *The Stars and Stripes* says

"This is a letter of thanks to the boys who have anything to do with artillery. We as doggies recognize you to the highest extent. We can never name the number of times you got us out of a jam. Time and time again we were saved by artillery. In fact, without it, it's almost impossible to go on.

"So if anyone makes any squawk against men of artillery units, he has got a good stiff kick coming from us doggies. Wherever you are, artillery, thanks a million. 'Keep throwing 'em.'" Said *The Stars and Stripes*, "Don't mention it." So do we.

# Tank Destroyers As Assault Guns

By Col. John Lemp, FA, and Maj. Ernest C. Hatfield, Cav

Task force commanders in theaters of operations have found it necessary to utilize self-propelled tank destroyers as assault guns when they were not being used in their traditional role as "tank killers." In many instances the tactical decision calling for their use was made because there was an immediate requirement for a high velocity gun and no other effective assault weapons were available. This increased use of tank destroyers should not be viewed with alarm. Rather, it should serve as an indication that a modern army requires another tool. Warfare has always required commanders to make the maximum use of tools at hand, as dictated by the situation and circumstances on the battlefield.

Tank destroyers were first conceived by the War Department as one answer to the immediate problem of developing a method to stop the German armored blitz. Since that time the self-propelled tank destroyer has been used for many purposes other than that originally intended. The widespread use of the tank destroyer has been due to its fire power and mobility. In the final analysis the self-propelled tank destroyer is an antitank gun equipped with tracks to provide mobility and light armor for protection. One of its primary advantages is its ability to be moved hastily to newly won ground in support of other arms to break up the inevitable counterattack. As a versatile weapon it has no peer. It is used effectively in many roles other than the primary one of destroying enemy tanks. The more important secondary ones are:

- (1) Direct or indirect fire to reinforce or supplement the fire of artillery units.
- (2) Destruction of pillboxes and permanent defensive works.
- (3) Support of landing operations.
- (4) Defense of beaches against waterborne attack.
- (5) Roving gun and roving battery missions.

When it was found through combat experience and tactical exercises that tank destroyers were capable of performing these secondary missions satisfactorily, doctrine was developed and training literature revised. Tank destroyer units not in combat were given additional training in preparation for these secondary missions.

Warfare is never static. The art of making war is dependent upon many factors, of which materiel holds a very dominant position. When gunpowder destroyed the knights in armor the foot soldier came into his own again. In like manner tank destroyers have limited the plunging independent movement of large waves of tanks over the modern battlefield.

As in all new ideas which go through a process of evolution to the final answer, tank destroyer materiel and doctrine have undergone change. The first tank destroyer used in combat in Africa was the 75-mm gun mounted on the M3 half track. Due to the gun's inability to penetrate the heavier German tanks, and the poor armor protection given personnel by the half track, this tank destroyer gave way to the high velocity, flat trajectory, 3-inch gun on the M10 carriage. In many respects this carriage was similar to the medium tank's, except that it did not have a closed turret nor heavy armor. The gun was powerful enough to destroy the German PzKw IV tank, and the M10 carriage offered

personnel protection from small arms fire and shell fragments.

As German armor was developed, tank destroyers had to keep pace in order to meet the newest threat. In the Spring of 1944 the M18 (commonly known as the "Hellcat"), a full track, highly mobile, lightly armored vehicle, made its appearance. It had the new torsion bar suspension and mounted a high velocity 76-mm gun. This was followed shortly by the M36, which was designed to destroy the new German Panther and Tiger tanks. This latter tank destroyer is similar in appearance to the M10 but mounts a very effective 90-mm gun that will immobilize a Tiger tank at 2,500 yards.

When the infantry division was reorganized in 1942 consideration was given to making tank destroyer units organic to the division. Although such an organization would have proved desirable, it was finally turned down because it would require too many tank destroyer units and flexibility would be limited. As an alternative, tank destroyer units were organized as army troops, which provided necessary flexibility and reduced the required number of units to a minimum. In the meantime the infantry division was reorganized to include antitank companies to provide necessary cross-in antitank defense and a cannon company to carry out many of the missions which normally would have been performed by a tank destroyer unit. The antitank companies and platoons act as the first line of defense against tanks, supported by tank destroyers, while the cannon company in its present towed form provides the infantry commander with a form of artillery support under his immediate control. The 57-mm gun (towed) and the towed howitzer in the cannon company do not meet the present command requirement for an effective assault gun to accompany the infantry. In neither case is the personnel handling the gun protected from shell fragments and small arms fire. Furthermore, it takes too long to place the towed guns in action due to weight and limited mobility.

In order to advance infantry units against organized defensive positions involving pillboxes, bunkers, and strong points, it is clear that direct fire, high velocity weapons in close support are absolutely essential. Since neither the towed antitank gun nor towed weapons of the cannon company can provide this essential close support, other means have had to be found to overcome this outstanding deficiency in the infantry division.

Due to the fact that German tanks are not so plentiful as heretofore, tank destroyers are being assigned more and more to secondary missions. They are not being held idle in a state of readiness for their primary mission. In the European and Mediterranean theaters tank destroyers have recently been employed on assault gun missions. Although the use of tank destroyers in close support of small infantry units was not anticipated originally, self-propelled tank destroyers have been used for this purpose—first, because they were available, and secondly because there were on the spot no other units that could do it better. The technique of utilizing tank destroyers in the capacity of assault guns is very similar to that of using them to destroy pillboxes. When used in this manner, however, tank destroyer personnel must be thoroughly grounded in infantry tactics and technique, because such use calls for

intimate and detailed knowledge of infantry operations in order to participate effectively in combined missions. Close liaison has to be maintained constantly with the infantry units, and problems of supply and communication must be foreseen and worked out on the ground before H-hour. Prior planning for one of these operations is a prerequisite to success.

In a recent operation in Europe a tank destroyer company was assigned to support an infantry regiment which had been given the mission to attack a town. One tank destroyer platoon, in position on dominating ground, supported a battalion of infantry. The infantry moved against light resistance until it came to a railroad track, where it was pinned down by fire from a fortified position. Because the infantry was in such close proximity to the enemy, artillery fire could not be used. The tank destroyer platoon leader who was at the infantry battalion OP called his guns, identified the target, and ordered direct fire to be placed on the enemy strong point from a position in the infantry front line. As soon as the fortified position was reduced the infantry advanced into town. In town the tank destroyers were used to destroy the upper floors of buildings which were enemy strong points, while the infantry cleared out the lower floors. This close support was possible because the guns were mobile and the platoon leader was able to communicate with his platoon and immediately take under fire enemy targets designated by the infantry.

In hedgerow fighting in Normandy the self-propelled tank destroyers were used in direct support of infantry. Although tanks were present under division control, tank destroyer companies which were attached to the unit or placed in support of infantry regiments were used many times to assist the infantry in reducing pillboxes, machine gun nests, and local strong points, because they were more readily available. In these particular cases tank destroyers performed missions normally assigned to tanks. In one instance a company supported an infantry attack and destroyed one tank, two antitank guns, and at least a platoon of infantry. Moreover, the company effectively aided the supported unit in repelling an enemy counterattack in the same vicinity by firing against enemy infantry with all weapons, ranging from the 90-mm gun to hand grenades and small arms.

Battlefield experience has indicated that tank destroyers are particularly effective when the enemy uses artillery fire sparingly. Under such conditions the tank destroyer guns can closely follow the attacking infantry. The open turret, which is a characteristic of all tank destroyers, affords no protection to crews from high burst artillery fire. To overcome this defect some units in the theaters have improvised covers for the turret out of salvaged armor plating. The need for protection has been



*An M-36 of the 607th TD Bn takes position in a Metz street.*

recognized, however, and a proposed answer to that problem is undergoing service tests at the present time. In the assault gun role the turret cover is absolutely essential, as by protecting crews from artillery air bursts it permits the destroyers to follow the infantry closely without suffering casualties.

Tank destroyer platoons have been attached to the leading elements of the infantry regiments to act in a capacity of accompanying gun because they are instantly available for direct fire on point targets and are not susceptible to small arms fire and shell fragments. Due to its high velocity and flat trajectory, the self-propelled tank destroyer gun serves as an excellent weapon for use against enemy automatic weapons located in strong points. Furthermore, its antipersonnel fire is extremely accurate and effective. Rapid, high velocity, direct fire is very demoralizing. Aside from the destructive capabilities of tank destroyers, reports from overseas indicate that the presence of these effective weapons unquestionably bolsters the morale of the infantry with whom they are working.

Inasmuch as self-propelled tank destroyers are used as assault guns and will continue to be used as such in combat, tank destroyer units and replacement personnel should receive necessary training in carrying out this vital role. Combined training, using tank destroyers as assault guns, should be given in rear areas prior to the assignment of a joint battlefield mission to insure successful operation. Although the battlefield may act as a stimulant, inspiration and sound tactics are born of knowledge and confidence. There can be no substitute for timely combined training under effective supervision.

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## Indirect Fire Pocket Reference Card—Part II

*For Key Tank Destroyer Personnel*

By Lt. Eugene T. Oborn

Efficiency of a Tank Destroyer Platoon in indirect firing is directly proportional to its training in and understanding of the secondary mission. Particularly in Tank Destroyer units, it is not only important to learn the principles of the secondary mission but also to remember them. Since most of the time of Tank Destroyer crews is spent performing the primary mission, direct firing, fundamental and essential principles on indirect firing can and do become hazy with the key personnel of these units.

To aid in maintaining the highest degree of proficiency within the organization a pocket reference card has been prepared covering much of the material involved when a Tank Destroyer Platoon goes into an indirect firing position.

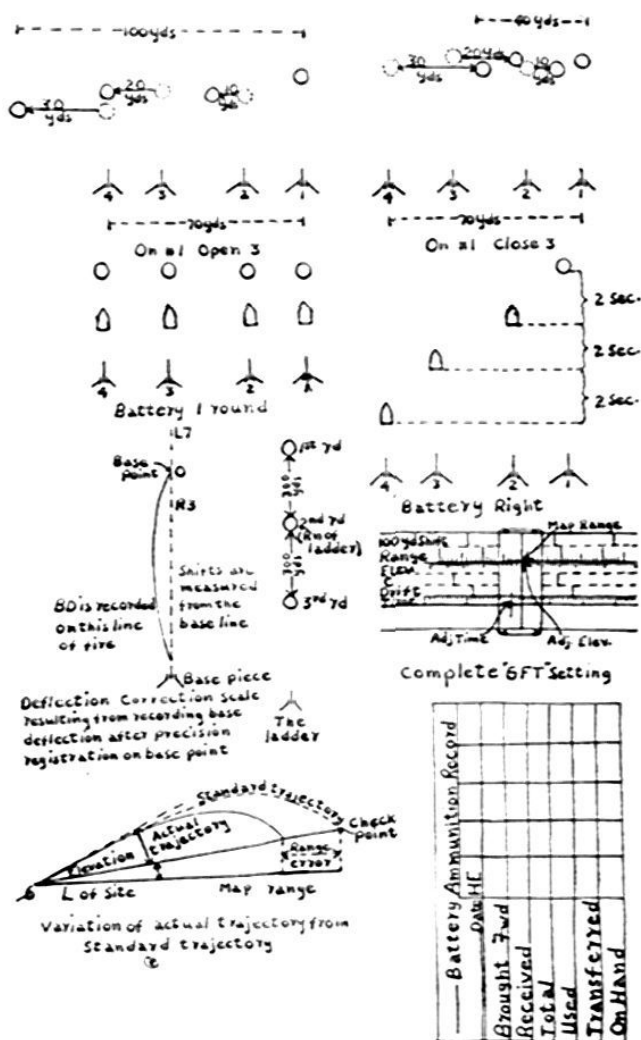
The issuing of this card to Gun Commanders, Gunners, Computers, and Recorders does not purport to be a substitute

for further training of the platoon and company in indirect firing methods when circumstances permit. It is, however, a useful aid in helping the above men to better understand and accordingly more proficiently to perform their duties when occupying indirect firing positions. The material on the reference card is first learned, then the card is used as a "refresher" for the men concerned.

BEFORE FIRING	GENERAL
1. Check recoil mechanism.	1. The recorder (recon cpl) keeps a record of all fire commands, reports, and messages.
2. Boresight the pieces.	2. The recorder (recon cpl) keeps the ammunition record and <i>at any time</i> is able to furnish information as to the amount of indirect fire ammunition at the battery (i.e., platoon) position.
3. Check the gunner's quadrant.	3. All rounds fired through each 3-inch gun will be recorded in the respective gun books at the end of the <i>same day</i> in which the rounds were fired.
4. Test firing mechanism, breech mechanism, gas-check pad, etc., for proper operation and functioning.	4. All guns follow fire commands unless the command is "No(s). Adjust." Normally, in battery firing, the first fire command is "Battery adjust," although only one gun may be given the command to fire.
5. Inventory the ammunition to see that it meets the requirements as to quantity and type; spot check it for condition (clean, dry, rotating bands uninjured).	5. Gun commanders repeat all commands of the platoon leader.
6. Have field glasses and firing tables at the battery position.	6. Initial fire commands include all data necessary for laying, loading, and firing the guns. Subsequent commands include only such data as are changed, except that the command indicating the range or elevation is always announced.
7. Check errors <i>before</i> they are fired, not after. Always make the visual check of sighting over the tube for proper direction.	7. A change for an individual gun is announced and set after any change of the same element is given for all guns.
8. Check concealment and camouflage, including restrictions on the use of lights and fires, particularly at night.	
9. Compute minimum elevation.	
10. Send battery executive report to FDC.	
<b>GUNNER ZEROES AZIMUTH INDICATOR ON COMMAND</b>	
1. Record base deflection.	
2. Record referred deflection.	
<b>TO DESIGNATE A TARGET, OBSERVER SENDS INFORMATION IN THE ORDER:</b>	
1. Location of center of target.	
2. Nature of target.	
3. Method of attacking target.	
4. When to fire.	
<b>COMPLETE GFT SETTING</b>	
MAP RANGE/ADJ. ELEV./ADJ. TIME	<b>FIRING REPORT (SENT IMMEDIATELY)</b>
	1. Time.
	2. Target.
	3. Coordinates.
	4. Results.
	5. Any additional operational or intelligence data.
	<b>"SHELREP" (SENT IMMEDIATELY)</b>
	1. Where shells landed, when, and how many.
	2. Direction shells came from.
	3. No. of seconds from muzzle flash to sound of gun firing.
	4. Type of gun.

"NCO'S OF ALL GRADES WILL BE THOROUGHLY CAPABLE OF PERFORMING THEIR ASSIGNED DUTIES WITHOUT SUPERVISION"

- |                            |  |
|----------------------------|--|
| A—Air (Sensing)            | L—Left   |
| ADJ—Adjust                 | NCH—Normal Charge  |
| AMC—at my command          | O—Open   |
| AP—Aiming point            | Q—Quadrant   |
| BD—Base deflection         | R—Right  |
| B—Battery (pieces to fire) | RN—Range   |
| BA—Battery adjust          | RCH—Reduced charge   |
| BL—Battery left            | Rd—Round   |
| BR—Battery right           | RD—Referred deflection   |
| C—Close                    | RGM—Rounds/Gun/Minute  |
| CA—Compass                 | SCH—Supercharge  |
| CF—Cease firing            | SH—Shell   |
| DF—Deflection              | SI—Site  |
| DNL—Do not load            | T—Target (sensing)   |
| EL—Elevation               | AC—Aiming circle   |
| F—Number one (first)       | TL—Traverse left   |
| S—Number two (second)      | TR—Traverse right  |
| T—Number three (third)     | OL—Orientation line  |
| L—Number four (last)       | ∠—Angle  |
| FD—Fuze delay              | O—Round(s)—Numeral inside circle as "S 3" for: "No. 2, three rounds" |
| FQ—Fuze quick              |  |
| G—Graze (sensing)          |  |
| HE—High Explosive          |  |



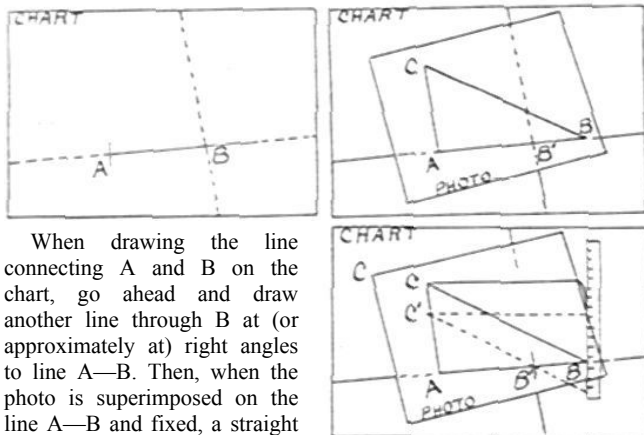


# Not in the BOOK

## RAPID RESTITUTION (ADDENDA) (Error Elimination)

Refer to *Rapid Restitution* by Lt. William J. Walsh, Jr., in this section of the December 1944 FIELD ARTILLERY JOURNAL.

A location of B' (over B on Chart) should be more accurate than any inspection can provide.



When drawing the line connecting A and B on the chart, go ahead and draw another line through B at (or approximately at) right angles to line A—B. Then, when the photo is superimposed on the line A—B and fixed, a straight edge will locate B' on photo line A—B exactly.

Even measuring along A—B from the edge of the chart would beat inspection.

CAPT. F. C. CLARK, Ord.

## A NEW TYPE BINOCULAR CASE

Binoculars are needed by every officer and noncommissioned officer when up front, but if they are not readily available when needed, they are just something else to carry around.

When carried in the case on the hip they certainly are not readily available for use. When carried slung on the neck they are available, but are not weatherproof and are always dangling in the way.

The pictures herewith show a metal carrying case that holds the binoculars in place, weatherproofs the lenses, makes the binoculars readily available, and does away with the conventional leather case. As shown in Fig. 2, the springs close the caps down flush when the binoculars are removed so that the case does not interfere when empty.

The pictures show the case attached to suspenders. When suspenders are not worn the case, which is light weight, is suspended from a second strap, the snaps transferred to the bottom of the case and attached to the belt.

Figures 3, 4, and 5 show better than words how this case is made. Of course it is a crude one, made in the electric shop of the Wilamena Coal Mine out of material the Krauts didn't carry off.

LT. COL. PAUL BELL, FA



Figure 3



Figure 4—Front



Figure 5—Back

EDITOR'S NOTE: This feature is devoted to ideas sent in by our readers describing methods or devices which, though not specified by official literature, have proved useful in service.

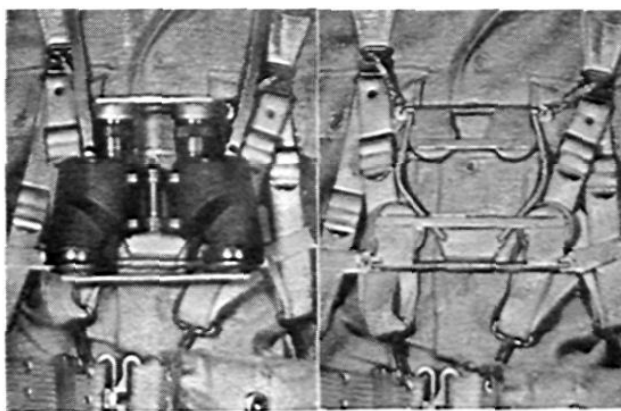
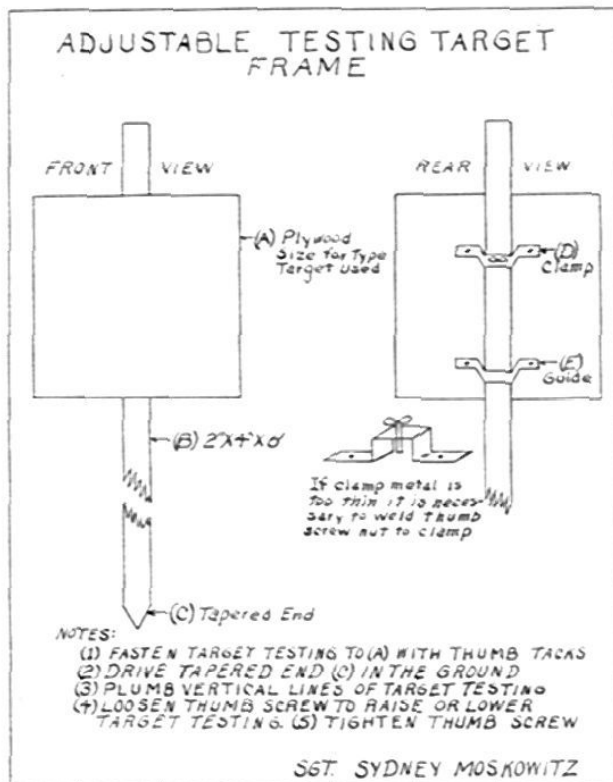


Figure 1

Figure 2

# Diary of War Events

(As taken from the American Press—Edited by B. H. W.)

## FEBRUARY, 1945

- 1st British and U.S. planes bomb Germans' reinforcement centers.  
U.S. 8th Army lands at Nasugbu on Luzon. Members of 6th Ranger Bn. and 286 Filipino guerillas rescue 513 prisoners from the Cabantuan prison camp near Cuba on Luzon.  
B-29s sink the mammoth drydock at Singapore.
- 2nd Allied aerial might of 3,000 planes blast German railway system and cripple attempts to rush reinforcements to the Eastern Front.  
U.S. 1st motorized cavalry Div. advances 32 miles to within 18 miles of Manila.
- 3d U.S. flying fortresses drop 3,000 tons of bombs on Berlin.  
U.S. 1st Army smashes through the Siegfried Line southeast of Aachen 3 miles.  
U.S. 37th Infantry Div. and 1st Cavalry Div. race toward Manila, 15 miles away.
- 4th U.S. troops smath into Manila. Snipers cause most of the opposition inside the city.  
B-29s bomb Honshu Island.  
The Red Army reaches the Oder River bend and at Baerwalde, 39 miles from Berlin.
- 5th U.S. 11th airborne, 32d Inf., and 1st Cavalry Div. liberate Manila.  
4 of Britain's most powerful carriers and 3 cruisers and destroyers smash Jap oil resources at Palembang, Sumatra. Destroy 93 planes and lose 15.  
Lt. Gen. Omar N. Bradley resumes command of U.S. First Army.  
Russians advance to Zellin, 33 miles from Berlin.
- 6th Russian troops cross Oder River southeast of Breslau and establish bridgehead 12 miles deep in Silesia.  
1,300 U.S. bombers smash rail and industrial targets at Magdeburg, Chemnitz and Leipzig.  
U.S. troops mop up Jap stragglers in Manila and push into Bataan. Fliers raid Corregidor with 180 tons of bombs.  
Jap troops in China capture two cities formerly used by U.S. planes and drive through the Wolfram mine district that has been supplying U.S. needs.
- 7th Washington, London, and Moscow announce simultaneously that Big Three conference is under way "in the Black Sea Area" of Russia.  
U.S. 3d Army smashes German defenses northwest of Pruem.  
B-29th from India raid French Indo-China and the Bangkok area of Thailand.
- 8th Canadian troops with British support launch an offensive southeast of Nijmegen.  
RAF bombs Cleve and Goch on the German side of the border, followed by a furious 11-hour artillery bombardment.  
U.S. 37th Div. on Luzon crosses the Pasig and joins the 11th Airborne Div. in clearing Japs out of southern Manila.
- 9th British and Canadian troops penetrate German lines 5 miles south of Aachen.  
1,300 U.S. bombers raid German oil refinery at Lutzkendorf.
- 10th Germans blow up Roer River dam southeast of Aachen in an effort to check U.S. 1st Army.  
B-29s again bomb Tokyo.
- 11th U.S. 3d Army advances into the outskirts of Pruem.  
Red Armies capture Liegnitz and Steinau in Germany and strong points in Pomerania.
- 12th Report of the "Big Three" meeting in Yalta, in the Crimea, made public.  
Agree to divide Germany into 3 separate occupation zones. To keep Germany under strict control until all her armed forces have been disbanded. To make her pay in kind for all war damage; such damage to be determined by commission from Moscow. France invited to take over a zone and sit on the commission.  
Canadian and British troops capture Cleve and U.S. troops seize Pruem on the western front.
- 13th Red Army liberates Budapest after a 6-week siege.  
U.S. escort carrier, *Omaney Bay*, sinks in Philippine waters.
- 14th 8,000 Allied planes bomb 10 major targets in Germany. Dresden, in the path of the Red Army, principal target.  
British troops advance on Goch and beat off German attacks to recapture Cleve.
- 15th Powerful U.S. task force attacks Tokyo area.  
B-29s bomb Jap city of Hagaya.  
U.S. 8th air force bombs Cottbus, Dresden, and Madgeburg.
- 16th Huge U.S. task force continues its attack on Tokyo.  
Allied amphibious forces seize Bataan.
- 17th U.S. forces land on Corregidor.  
Canadian 1st Army gains 2½ miles to split enemy defenses 16 miles from Ruhr.
- 18th Battle for Iwo Island continues.  
Canadian troops advance into the outskirts of Goch. U.S. 3d Army pushes into the Reich near Vianden.  
RAF planes bomb Berlin.
- 19th Bitter fighting continues for Iwo Island. U.S. Marines hold 4,500 yard beachhead.  
B-29s bomb Tokyo. Other B-29s from India raid Kuala Lumpur, in Malaya.  
Canadian 1st Army captures Goch.
- 20th Marines isolate Mt. Suribachi and capture the south airfield on Iwo Island. Bitter fighting continues.  
U.S. 3d Army gains 2 miles and captures 10 villages between Pruem and Merzig.  
Allied air might bomb airfields and rail lines in Germany.
- 21st U.S. 3d Army gains 5 miles on a 55-mile front.  
1,200 U.S. bombers pound Nuremberg.  
8 U.S. bombers raid Hitler's Berchtesgaden for 1st time.  
Red Army advances 9 miles to reach the Neisse River, 49 miles from Berlin.
- 22nd Approximately 6,000 Allied planes blast German communications and other vital targets.  
U.S. troops occupy Capul Island in San Bernadino Strait off the northwest coast of Samar—thus controlling the inland waters leading to Manila.
- 23d U.S. 1st and 9th Armies launch powerful attack east of Aachen and 20 miles west of Cologne.  
5,000 Allied planes blast military targets throughout Germany.  
U.S. troops in the Philippines capture Biri Island.  
Turkey declares war on Germany and Japan.
- 24th American drive toward Rhine gains 4 miles beyond Roer.  
U.S. Naval task force renews attack on Tokyo.  
Marines on Iwo capture half of the central airfield.  
Egypt's Prime Minister is fatally shot after reading decree declaring war on the Axis.
- 25th U.S. troops capture Dueren, the 2nd largest city to fall to the Allies in the west.  
6,000 Allied planes bomb Germany.  
Marines on Iowa continue to advance in spite of Jap fierce resistance.  
Carrier planes of the Pacific Fleet destroy 158 Jap planes, sink or damage 32 ships, destroy 2 trains, radar and airfield equipment in an attack on Tokyo.
- 26th 4 Allied armies sweep through western Germany on a 200-mile front. U.S. 1st Army drives to within 10 miles of Cologne, U.S. 3d nears Bitburg after a 7-mile march.  
1,200 U. S. bombers raid Berlin with 3,000 tons of explosives and incendiaries.  
U.S. troops in the Philippines occupy Verde Island between Mindoro and Luzon.
- 27th Allies break German defenses along Roer River and advance toward the Rhine. Canadian troops of the 1st Army capture Uedem and U.S. 3d Army takes Bitburg. R.A.F. fliers bomb Berlin.  
President Osmena resumes governmental functions of the Philippines.
- 28th Allied air might again bombs Germany. U.S. 1st Army crosses the Erft River, last barrier before Cologne.  
President Roosevelt returns to Washington.

# BOOK REVIEWS



*THE SECRET HISTORY OF THE WAR.* By Waverley Root. In 2 volumes: 645 pp. and 568 pp.; index. Charles Scribner's Sons. \$10.00.

Mr. Root is a well qualified newspaperman. His 13-year journalistic career in Europe was spent with leading American and European newspapers and magazines, press associations, and broadcasters. Back in America since the fall of France, he has continued to cover the war as editor, columnist, and radio news analyst.

In developing this background, Mr. Root also acquired a great deal of information and many friends. As happens with all reporters, he learned much that could not be published at the time. Protection of his friends, official censorship, or other causes prevented publication. Many items, too, were incomplete or unproven; when viewed in the light of subsequent events, however, they in turn shed light on causes, forces, motives.

In some respects *The Secret History of the War* is startling. In others, debunking. In still others, monotonous. Odd as it may seem at first, these are the very qualities that give it solid worth.

The author properly views this war as one which began in Manchuria 14 years ago. Ethiopia, China, Spain, *anschluss*—these were but parts of a single, completely global conflict. As he unfolds the background of each phase, and the development of conflicts and oppressions, an amazing similarity of methods, attitudes, and mental quirks emerges. Propaganda, political maneuvering, diplomatic deals, stratagems, and blunders are repeated time and again yet few among the democracies saw the facts or the pattern.

Some may say that detailed accounts of proved atrocities in nation after nation, against countless men, women, and children, is monotonous. The crimes against humanity are so enormous, however, as to be almost beyond belief. Their far-reaching effects are better grasped the more they are recounted. And may we never become so calloused that such a recital is deemed a bore.

Mr. Root does contribute considerable little-known or previously unknown background material which helps illumine and clarify the world's tragedy of the past several years. Perhaps his greatest service, however, results from his view of "one war"—he has brought together a great quantity of information hitherto pretty well scattered, and worked it into a coherent account of these times. Thus, although there is of course nothing truly "secret" about his writings, these volumes are invaluable for reference and for rounding out one's appreciation of what has been going on lately.

*BASES OVERSEAS.* By George Weller. 424 pp.; index; end paper map. Harcourt, Brace & Co. \$3.50.

George Weller, a foreign correspondent of the *Chicago Daily News*, is convinced from his study of history and his experiences in the present war that this nation had better come out of the clouds about the future. To his mind a peace is likely only if the United States discharges its responsibilities as a world power with the strength that would come from a worldwide system of bases.

This policy of possessory politics may be upsetting to those of us who have been trusting that a permanent peace might follow this war due to the united action of nations. Such a selfish attitude would seem to be dangerous. Suppose all nations adopted the same grasping policy?

But on the other hand the author seems to be of the opinion that other nations have already adopted this policy and that we are losing our opportunities through our political inertia and inability to be realistic about international affairs. The past—with its secret treaties of World War I—is certainly not reassuring. Examples cited by Mr. Weller concerning the present are equally disturbing. Therefore this forceful argument with its insights on history and little-publicized modern events merits the consideration of everyone concerned about the policy of the United States in the future whether or not the author's conclusions fit in our idealized picture of the world after the war.

J. R. C.

*THE MISSOURI.* By Stanley Vestal; illustrated by Getlar Smith. 347 pp.; bibliography; index. Farrar & Rinehart. \$2.50.

Stanley Vestal is well known for his historical works dealing with the Old West. Therefore he had a good background for this chronicle of the northern plains states.

Through countless centuries the Missouri has been a major boundary. East and north of it were dense forests, inhabited by stealthy Indians and woodland animals; west and south were rolling prairies with their buffalo and migrant tribes. When it was a main highway to the West it was also the West's boundary. Even now it divides two cultures: the farm land of the left bank and the saddle, ranch, and steer country of its right. And ever it is the greatest earthmover North America has known.

Mr. Vestal starts at St. Louis and gradually takes his readers upstream. For the whole way he has dug out the history and the legends and the lore; Sacajawea, the Mormon migration, the mountain men and the ranchers, explorers and Indians and ordinary folk. It is all excellent history—regional, perhaps, but of great importance to the growth and expansion of our country.

*MADE IN THE U S S R.* By William C. White. 154 pp.; index; illustrations. Alfred A. Knopf. \$2.00.

Mr. White makes the very good points that understanding among the world's peoples will help ease the course of tomorrow's world; and that if today's children know those of other countries, tomorrow's adults will be well acquainted. From there he proceeds to give an excellent picture of Russia through the ages, often in terms of handicraft. After chapters on the Russians and their land and on Russian churches and their ikons, follow others on village handiwork, Kazan's leather, the silver of the Caucasus, and the rugs of Bokhara. Siberia is dealt with separately. Then the arts are considered: painting, music, and the ballet. Tractors and dynamos have their space, then there is a final summary.

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By and large the text is unbiased, at least to the extent of not being just a paean for any one form of government. A middle initial will make quite a difference in the way the Russians themselves will regard this book, the tone of which is far different from that of the recent one by William L. White, excerpts from which in *Reader's Digest* lately raised such a storm in the Moscow press. Another reason for better reception is that the maps in *Made in U S S R* acknowledge Russia's *de facto* incorporation of the Baltic States into her Union. Still another, that although the author doesn't discuss governments as such, there is a pretty constant undercurrent of disapproval of most old Russian conditions; coupled with a number of hypothetical questions calculated to embarrass died-in-the-wool capitalists, this pretty well indicates the author's position relative to dead center.

This does not make the book a propaganda pamphlet, though. *Made in the U S S R* will help properly enlighten any youngster, and the donor need have no fears about its impact regardless of his own political views.

*LOOK TO THE FRONTIERS.* By Roderick Peattie. 231 pp.; index; maps. Harper & Bros. \$3.00.

*CLAIMS TO TERRITORY IN INTERNATIONAL LAW AND RELATIONS.* By Norman Hill. 231 pp.; bibliography; index. Oxford University Press. \$3.00.

These two books are concerned with one of the most difficult problems facing the future peace-makers: the complex field of territorial disputes. There is an inclination to believe that this should be left to the "experts" but these two volumes show that the basic problems can and should be understood by the average citizen.

Professor Peattie has made an interesting exposition of the elements of geography which affect national boundaries. It is written in a lively, chatty manner to attract the casual reader who may be induced to examine the subject by the author's assurance that the book has no touches of "intellectual aristocracy" but is rather "a contribution to democracy."

Probably Professor Hill's study belongs to the "intellectual aristocracy" (it has footnotes). It is an historical examination of the most important territorial disputes in history, particularly in the nineteenth and twentieth centuries, with the principal attention directed to the bases of the claims, the procedure used to treat the disputes, and the results. To my mind it is a clearer presentation of the problems caused by territorial disputes than Professor Peattie's book. It will reward a close examination by those readers who do not need a breezy style to attract and keep their interest.

The conclusions of both authors are strikingly similar. Until nations take the attitude that ownership of certain territory is not productive of power—until boundaries lose their importance—there are likely to be international disputes. Until that day such studies as these are important. J. R. C.

*FIGHTING JOE HOOKER.* By Walter Herbert. 296 pp.; index; illustrated. The Bobbs-Merrill Co. \$3.50.

This is biography of probably the only colorful major figure of the Civil War whose complete story has never before been told. Walter Herbert has done a remarkable job of giving a clear and penetrating account of all Hooker's major battles.

The nickname "Fighting Joe" has a double significance. Hooker fought the enemy as well as his colleagues and superiors. He was continually complaining about them to Stanton, to the congressional committee on the conduct of the war, or to anyone else who would listen. Generals Grant and Sherman became his implacable foes. Other generals strongly resented his criticism. The readers will understand after reading this book that Abraham Lincoln had been somewhat of a prophet in his dealings with "Fighting Joe" Hooker.

B. H. W.

*WALKIN' PREACHER OF THE OZARKS.* By Guy Howard. 273 pp. Harper & Bros. \$2.50.

Guy Howard has given his readers a rather naive story having to do largely with the astonishing naivete of Ozark mountaineers.

From an early background of homespun simplicity in rural Iowa he literally walked his way into the still more rural hill country, relieved at irregular, chance intervals by "lifts" from drivers on the road.

There in the Ozarks he identified his interests with the needs of

the mountaineers and worked against heartbreaking odds to achieve for his adopted community some halting steps upward in the level of existence. Corn-shuck mattresses, lack of plumbing, and a pitifully inadequate salary were taken in stride. The stride, itself, was a physical actuality for the tireless preacher of the Ozarks walked miles from mountain cabin to school and church and anywhere that his various duties required him to go.

The "walkin' preacher" was in fact more than a preacher: he was a sort of one-man social agency for the hills. Teaching school, conducting revival meetin's, "layin' away gran'pappy," and meditating an overripe romance between two bewildered young principals were only part of his miscellaneous tasks. With it all he found time for a romance of his own which he confides to his readers with the same engaging simplicity that marks the other chapters of his career.

This book is a remarkable chronicle of courage and hardheaded persistence, but the story, itself, has to concede a generous share of interest value to the hillbilly lore on which it rests.

F. E. J.

*THE FRIENDLY MOUNTAINS. Edited by Roderick Peattie. 528 pp.; index; illustrations. Vanguard Press. \$3.50.*

A book like this is a breath of air. Good, clean, mountain morning air. Air of the Green, White, and Adirondack Mountains, which are the book's theme. Air of all seasons, for this section holds appeal at any time.

It is a rounded book, with its several parts written by people well knowing their subjects. History and settlement are by one who has lived a lifetime in Vermont. Geology is described by Mt. Holyoke College's professor of the subject. Mountain weather and climate are detailed by a distinguished Viennese refugee. The author of the botany section is a practical field man who understands the reasons for plant distribution. Outstanding is a description of the turn of the seasons—a round-the-year diary, if you will—by a self-trained scientist who lives in the mountains. Mountain climbing and skiing are covered by experts.

Splendid photographs and skilful editing tie all this together. In the end you have a feeling that you know the region or that you know it better, depending on how close your earlier acquaintance was with it or its separate parts.

*FOREIGN POLICY BEGINS AT HOME. By James P. Warburg. 296 pp.; chronology; index. Harcourt, Brace & Co. \$2.50.*

This book is centered around a sound thesis: our domestic and foreign policies are inseparable. What we do at home determines our policy abroad.

But Mr. Warburg goes further than merely reviewing our past and present history in relation to this theme. The net result is a political handbook with snatches of the author's political philosophy and an interpretative history clearly marked by the author's bias. The introduction seems to indicate that the book is intended to be a collection of "simple, straight-forward information" which civilians and soldiers could use as a guide to the future. The result is hardly that. However, Mr. Warburg's interpretation of our past, present and future is interesting, particularly in the light of his experiences in the service of the government. With the warning that it is not an impartial or complete history, it can be recommended.

J. R. C.

*THE TEN GRANDMOTHERS. By Alice Marriott. 305 pp.; bibliography. University of Oklahoma Press. \$3.00.*

*KICKAPOO INDIAN TRAILS. By Louise Green Hoad. 129 pp.; illustrated. The Caxton Printers. \$2.50.*

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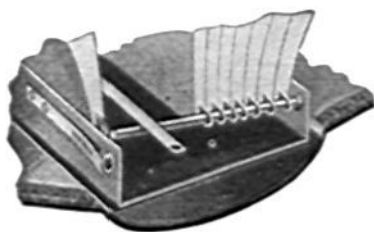
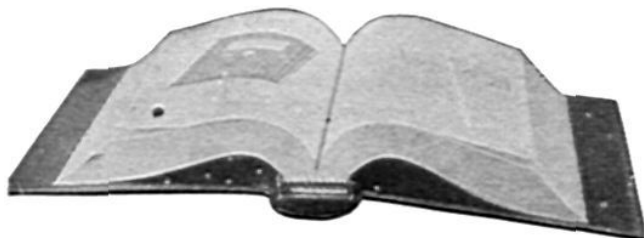
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theme is the life of the Kiowas, which unfolds in a series of graphically-told episodes from the past hundred years.

Miss Marriott's task was especially hard since these plains Indians were never acquisitive—roaming over the plains as they did, they left few permanent records. In the late '30s, however, she spent a great deal of time with the older survivors, tracking down and setting down a series of events in the life of the tribe. Her mentor was the late George Hunt of Mountain View, good friend and aide to Col. Nye, whose *Carbine and Lance* should be on the book-table of every field artilleryman.

Title of the book comes from ten medicine bundles, known by this name. Naturally, a series of legends sprang up about such holy objects. And like all Indian legends, they had a basis in fact, in some long-ago event which in the course of time became romanticized into legend form.

Mrs. Hoad's book falls into a somewhat different category. Primarily for children, it is a white woman's story of early Kansas days in and about the Kickapoo Reservation a few miles northwest of Fort Leavenworth.

As a girl, her mother spent two years there as a missionary. Later she returned, subsequently marrying and spending the rest of her life on the plains. As time went on, her descendants and their friends demanded stories of the earlier times. These have now been set down; they give a graphic account of a picturesque, little-known period.

*THE BERKSHIRE HILLS.* 360 pp.; index; illustrated. Duell, Sloan & Pearce. \$3.00.

One of the *American Guide Series*, this book was first published in 1939. No "quickie," it is a delightfully complete but informal guide to western Massachusetts. This is a land of sleepy villages, of Henry Knox's route with the guns from Ticonderoga, of early American industry, and later of superb summer and winter resorts.

Definitely a "regional" book, *The Berkshire Hills* holds interest not only for the New Englander, but also for all who like the charm of that section.

*CHINA TO ME.* By Emily Hahn. 424 pp.; index. Doubleday, Doran & Co. \$3.00.

For a book utterly unlike anything you've seen about China, this is "it." Miss Hahn lived in China eight or nine years and loved every moment of it; well, almost every. Although she moved in top Caucasian circles, she knew, understood, and liked the Chinese people—in fact, she was married to one for a time. As a journalist she garnered one of the choicest scoops: she became the biographer of the fabulous Soong sisters, Mmes. Chiang Kai-shek, Sun Yat-sen, and H. H. Kung.

Shanghai, Chungking, and Hong Kong knew her well, as she did them. She was in each place for a considerable time, in periods of supreme importance to each community. Although she was there in particularly rugged times, her wide acquaintance helped greatly to minimize hardships and difficulties.

Her last year and a half or so was spent in Hong Kong under the Jap occupation. Various ties with Chinese and British helped to confuse her true nationality enough that she escaped internment in Stanley (of infamous fame). Thus we have here a quite out of the ordinary account of life after the invasion.

China as Emily Hahn saw it is not the China of Pearl Buck. It is more understandable, in many ways—more practical, should one say, and somewhat less romantic. It is every whit authentic, and gives a vivid picture of another facet of life and conditions there.

*10-in-1 DICTIONARY.* Compiled by Marcel Rodd. 110 pp. Bernard Ackerman, Inc. Paper ed., 50c; cloth ed., \$1.50.

In the last couple of years have appeared a number of "pocket dictionaries," "language guides," and what-not. A few of them have been practical, but most seemed hastily thrown together.

It is refreshing to examine this compact, self-pronouncing dictionary. It frankly covers only basic language—the words and phrases needed to talk about health, time and weather, cities, streets and houses, food, measurements and numbers, elementary military matters. These things are covered uniformly (except for arrangement within sections) in French, Spanish, Portuguese, Italian, German, Chinese, Japanese, Russian, Arabic, and Esperanto.

Each word or phrase is rendered phonetically as well as being

properly spelled in the particular language. In addition, for each tongue are given the basic rules for pronunciation. Words and phrase are well chosen, especially considering the inevitable space limitations.

Thus for the first time to this reviewer's knowledge, we have available in one highly portable book a language guide that will greatly help anyone at least "get by" practically anywhere on this globe.

*PORT TERMINAL OPERATION.* By Lt. Col. Eugene H. Lederer, USA (Ret.). 420 pp.; index; illustrated. Cornell Maritime Press. \$5.00.

In most pre-war years American shipping languished. After this war our merchant marine must become the leader in this field. This will require "know-how" on the part of operations people, both to eliminate unnecessary costs and to give that service which shippers (and consignees) have a right to expect.

Port terminal operations offer one of the most fruitful fields for this so-important efficiency. Laxness and bungling there can be fatal to progress. Port terminal personnel must have a sense of economy. This book should help instill it.

In great detail it covers port terminal management, stevedoring, stowage, and lighterage and harbor boats. It gets down to cases, from paperwork to details of how to open a hatch and how to tally cargo. An excellent list for further reading is appended. All details are clearly stated and splendidly illustrated by photographs and drawings.

Best of all is the accuracy and authenticity of the material. Col. Lederer is an outstanding authority in this field, by virtue of a quarter-century of civilian and military experience in land and water transportation. He wrote TM 10-381, which has so greatly helped the Transportation Corps solve its world-wide problems. A practical man, he devised the unique marine cableway method for transferring cargo in spots lacking piers or lighter service. And in preparing this book he has drawn upon the experience of other experts, as well.

It should be mentioned too that much of his material, such as that on warehousing, is as applicable to other places as it is to port terminals. Indeed, so ramified is a port terminal that most any business will find itself represented in its operations, to some extent.

*FLIGHT TO EVERYWHERE.* By Ivan Dmitri. 240 pp.; photographs; maps. Whittlesey House. \$6.00.

*Flight to Everywhere* is considerably more than an account of the Air Transport Command. True enough, it is a crisp and graphic tale of a 32,000-mile flight via Ascension Island to Kunming and back by way of North Africa and the North Atlantic. Most and best of all, however, is the way it is illustrated.

Ivan Dmitri needs no introduction as a photographer—his work for the *Saturday Evening Post* has made him too well known. On this trip of his, his cameras were kept as busy as he was. Over 450 of his magnificent photographs show completely the life throughout this tropic-to-arctic tour. Fine as the black-and-white prints are, they are overshadowed by the magnificent color photos. This is of course as much a tribute to the engravers and printers as to the photographer himself—but after all, he had to furnish outstanding raw material for this to be possible.

And since Ground Forces and or Service Forces troops have been stationed at so many of the places Dmitri shows and speaks of, *Flight to Everywhere* has a wide Army as well as artistic appeal. The only fly in the ointment is that this book's special paper (for good reproduction) is so scarce that many who want copies of the book are apt to be disappointed.

*CHINA AMONG THE POWERS.* By David Nelson Rowe. 187 pp.; index; endpaper map. Harcourt, Brace & Co. \$2.00.

David N. Rowe attempts, in 200 pages, to analyze China's potentiality as a great power in the postwar world. That he falls far short of the mark is due largely to the magnitude of the task he set himself. The book is crammed with statistics, which makes for dry reading and sometimes leads to surprising conclusions. For example, in discussing the problems of industrial development, he calculates that in six provinces there are only 1,867 auto mechanics, or one for every 200 square miles of territory. How many cars and trucks these mechanics are supposed to service is completely ignored, so that particular statistic means nothing at all.

Despite these errors, Mr. Rowe has produced a useful book for those interested in international affairs. He analyzes China's future

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by considering such major factors as manpower, agriculture, raw materials, transport and communications, and government and social organization. The result of his analysis is not particularly cheerful. He finds China's manpower a debit, its resources largely insufficient for an industrial nation, and its agricultural future poor. Politically, he finds that the Kuomintang party represents less than 1% of the population and that "no radical venture into popular democracy is to be contemplated in the near future."

Mr. Rowe's book is by far the gloomiest I have read in many years. I hope he is wrong in his analysis. R. G. M.

*GERMANY BETWEEN TWO WARS: A Study of Propaganda and War Guilt.* By Lindley Fraser. 179 pp.; index. Oxford University Press. \$2.50.

Mr. Fraser's book is not a history but a study of the German version of the events from the end of World War I to the beginning of World War II. After a consideration of German claims, he marshals the facts to form an argument which effectively dispels any German claims to a justification for the actions of that nation. As it is written to show the inaccuracies introduced principally by German militarists and the Nazi propaganda machine, the book is primarily intended for the German people and for the American and British administrators who will come into contact with them during the occupation of Germany.

But it deserves a wider audience. The author's style is simple and interesting. The development of his argument is orderly and logical. His patient analysis of German thinking is an excellent introduction to a general understanding of German mentality—something which most observers say we lack. Although the book is not intended as a history and is more frank in its bias than most "histories," the author was aware that to be unfair in his presentation of the facts would totally destroy the effectiveness of his argument. His summaries of the facts pertaining to certain events give us a clearer view than do chronological histories, and on account of his studied attempt to be fair his conclusions can be relied upon as being as fair as any contemporary history can be. Moreover, there is probably some thought in our mind about the period which is similar to the Nazi version (for example, was the German army of 1918 stabbed in the back?) and which should be explored by this book.

If and when the German people are educated sufficiently to understand that there is a possibility that the Nazi version of the last 25 years is erroneous, this book should become very effective in Germany. But in the meantime it should be read here. J. R. C.

*CARRIER WAR.* By Lt. Oliver Jensen, USNR. 174 pp.; illustrated. Pocket Books, Inc. In paper, 50c; in cloth, \$2.50.

Although published by Pocket Books, *Carrier War* is a fully-finished, 8x11, slick-paper volume. It is the biography of Task Force 58, a fleet of big carriers and their escorts, from the start of the Pacific offensive through last fall's great Battle of the Philippines.

This story is told in crisp, action prose, and in some 200 photos and maps. All the photographs are of high standard, well reflecting the counsel of the eminent Commander Edward J. Steichen. Eight pages of them are reproduced in full color.

Many of the details told here for the first time (such as ship identifications, details of actions, accounts of personal heroism) were released through the personal interest of the Navy's Assistant Secretary for Air. In fact, Mr. Gates's enthusiasm for this grand account is largely responsible for advancing its publication date considerably. His confidence was well placed. You see, this is not a mere "glorification" tale—instead, it explains carrier tactics, details the technique, integrates all this into the over-all picture, and so is a notable contribution to an understanding of this war.

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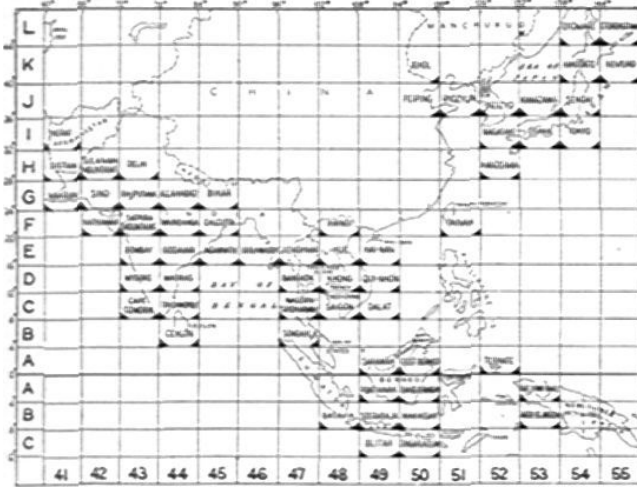
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