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FIELD ARTILLERY
Journal



NOVEMBER, 1945

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The Field Artillery Journal

NOVEMBER, 1945 — Vol. 35, No. 11

"THE VOICE" on our cover doesn't sing smooth, soothing songs. Rather, it cracks with a tone of authority. Its Marine crew on Okinawa helped it lull a good many Japs to sleep, though.

OUR CIRCULATION DEPARTMENT isn't keeping busy enough these days, hard as it is working. With the army's reshuffling, notices of change of address are flocking in, but judging from the number of magazines returned by the Post Office Department there are a good many who overlook telling us their new whereabouts. If your friends aren't receiving their copies, tell them to drop us a line giving their current addresses. And when you yourself move, be sure to advise us accordingly.

IN PEACE as in war, the JOURNAL will continue to be both interesting and useful to you. Whether you are an officer or an enlisted man; in the permanent establishment. National Guard, or reserve; or revert completely to civilian life—you will still find its pages filled with items of value. Keep your membership alive—even after separation from the service you continue to be eligible for membership, you know. And maybe best of all is the fact that through our Book Department you can readily save much more than the cost of membership, if you or your family do much reading at all. It's just a care of "heads you win"—but nobody loses!

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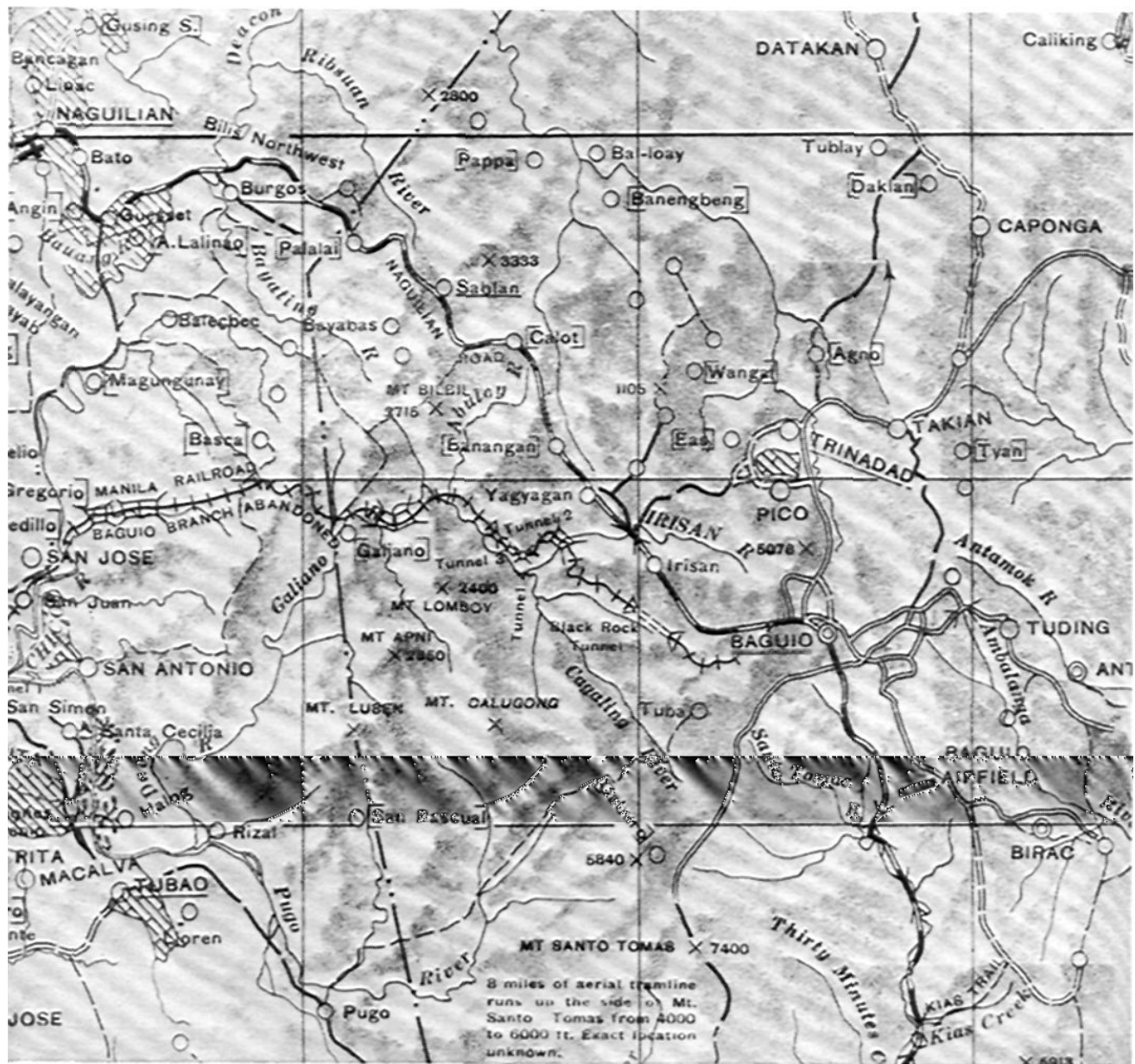
The Battle for Baguio

By Maj. Archibald M. Rodgers, FA

With the American landings at Lingayen on January 9th, 1945, the Japanese forces on Luzon withdrew into the mountains where superior American materiel could be least readily and effectively employed, and where a prolonged defense of the island could be conducted. Strong delaying forces were left in the Central Plain—especially in Manila, where they put up a fanatical suicide defense, destroying the city in an effort to make the recapture of that great metropolis a costly and empty victory.

The principal Japanese defenses were situated in the rugged mountainous terrain covering the approaches to Baguio and Balet Pass. Here the Japanese commander,

General Yamashita, had committed his major forces to defense in depth from elaborate cave and tunnel fortifications dug into precipitous mountainsides rising to heights of 5,000 feet and over. Here the superior arms and equipment of the American forces would be least effective; and the Japanese, fighting in their typical manner, could exact a long, strenuous, and bloody battle as a condition precedent to their ultimate defeat. And as long as these mountain strongholds survived, the broad, fertile Cagayan Valley would remain as a source of food for the Japanese, the only other entry to that valley being by way of a major amphibious assault on the heavily defended beaches in the



vicinity of Aparri. As a final resort, even if the Cagayan Valley and Baguio were lost, the Japanese could withdraw into the almost impenetrable Cordillera Central Mountains in the vicinity of Bontoc. Even there food would be available, for the ingenious natives had in centuries of development constructed terraced rice fields on the sides of the 9,000-foot mountains. To destroy the Japanese forces on Luzon the Americans had no alternative but to go into these mountain strongholds and dig the Nips out of each viciously defended cave and tunnel. How this was accomplished is the story of some of the most bitter

was secured; continued advances against strong resistance reached Quioeng April 15th. The engagement at "Hairpin Hill" had cost the Japanese artillery dearly as a result of our heavy supporting and counterbattery artillery fires.

Following up this initial success, the division secured the road to its rear and rapidly pushed a spearhead of infantry and armor toward Baguio. This spearhead broke through enemy positions southeast of Yagyagan and beat off a counterattack in which the Nips employed two infantry-carrying tanks speeding down the road directly into our positions. The advance to



"End of the Line"—Jap tank and crew on Baguio-Naguilian Road, in vicinity of Baguio.

and difficult mountain fighting of this war, a war which has seen the battles of Italy and Burma. It is the story of Baguio, the Villa Verde Trail, and Balete Pass.

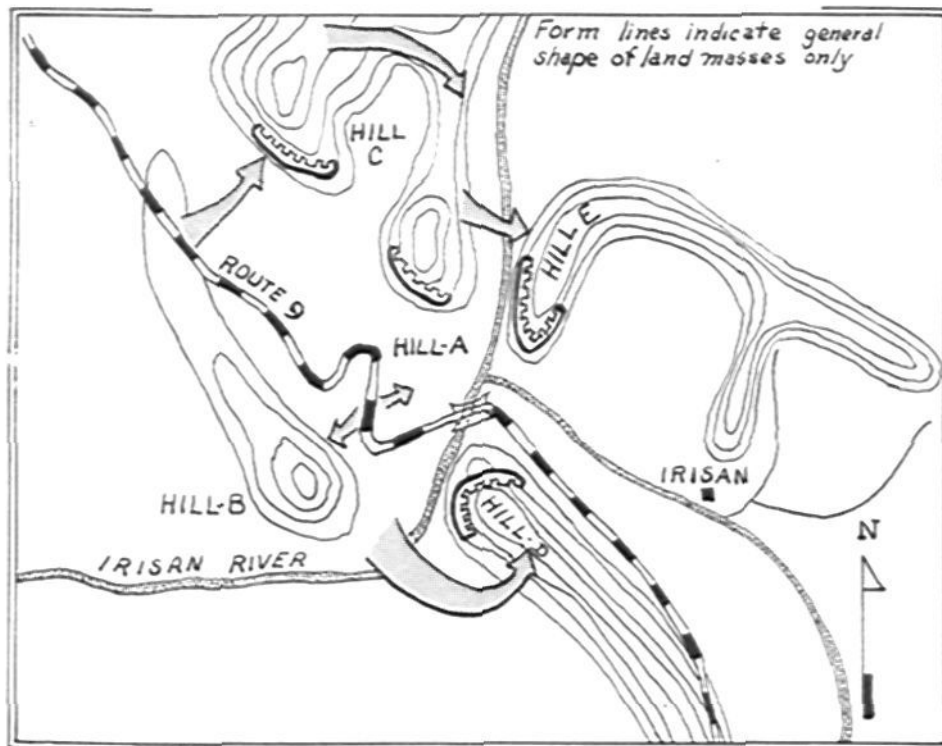
General Yamashita, the Japanese commander in the Philippines, Jose Laurel, puppet president of the Philippines, and many lesser notables of the Japanese regime were ensconced in Baguio. Three months of bitter fighting had brought the American forces to the principal Baguio defenses, on a line generally from Sablan on the Naguilian Road, through Mt. Bilbil and Mt. Lomboy, thence south and east across the Kennon Road to tie into the Balete Pass defenses.

Elements of the 37th Division were committed along the Naguilian Road on March 27th, and by April 11th had secured the high ground 2,500 yards southsoutheast of Salat. The division attacked on April 12th, driving astride the Naguilian Road in the face of heavy fire from all types of weapons, particularly artillery, and succeeded in securing the commanding terrain 1,000 yards southeast of Sablan. By April 14th a foothold had been obtained on the well defended commanding ridge in the hairpin turn of the road at Calot. After beating off numerous night counterattacks, "Hairpin Hill"

Baguio was halted 100 yards west of the Irian River by heavy small arms, antitank, and mortar fire covering the destroyed bridge.

The enemy's Irian position was well situated. Approach was canalized on the road by a precipitous mountainside rising on the left and dropping on the right. The deep gorge of the Irian River presented a natural obstacle to the advance; armor could not be moved across the river until a bridge was constructed, and the bridge site was covered by heavy fire from weapons on the high ground north, northeast, and southeast of the bridge.

An infantry assault gained and held positions north and west of the bridge against determined opposition, particularly heavy concentrations of mortar fire. For two days the key enemy strong points were subjected to continuous artillery and air bombardment. On April 19th infantry, moving through the difficult ravine south of the bridge, secured the key hill southeast of the bridge (Hill D). The following day, under heavy fire from enemy mortars, infantry supported by heavy and extremely close-in artillery fire destroyed the well entrenched enemy occupying the U-shaped ridge northeast of the bridge (Hill E). On April



21st the engineers were able to bridge the Irisan River.

The drive to Baguio was resumed with a vengeance, and reached Cemetery Hill at the west edge of the city on April 22nd. Here a Nip tank-led night counterattack was repulsed by combined infantry, tank, and artillery action.

By this time the advance had permitted the movement of a force into position near Yagyagan. An attack was now launched against the flank and rear of the strong enemy positions on Mt. Bilbil and Mt. Lomboy. Collapse of the Baguio bastion was imminent.

On April 25th Mt. Mirador and Quezon Hill, overlooking Baguio from the west, were taken. And the next day Baguio was secured by the 37th Division, along with large quantities of supplies and equipment the Japanese had stored in their mountain stronghold.

The morning of April 27th the division took up pursuit of the now fleeing enemy. Preceded by a heavy artillery preparation, the infantry drove rapidly through Trinidad. By the morning of April 30th all units had reached their final objectives.

The Naguilian Road winds through extremely rugged mountains, rising to 5,000 feet at Baguio. It clings to the mountainsides. By-pass routes are non-existent. At no point could artillery be moved any distance from the road; even the Japs with their penchant for carrying artillery into inaccessible places bowed to the inevitable here and emplaced their guns along the road. Artillery positions were extremely difficult to find and to occupy, often requiring an unusual amount of ingenuity and originality in their selection and occupation. However, good defilade was almost always obtainable; this was of considerable importance as the enemy held the higher ground all the way and had superb observation. To a more limited extent the terrain also provided good observation for our forward observers. Vantage points along the road provided

positions from which tanks, multiple .50-caliber machine guns, and self-propelled guns were able to place direct harassing fire on Nips, moving through the draws and over the ridges to the front and flanks.

The nature of the terrain confronted fire direction centers with sites of over 100 m and high minimum elevations which required high angle of fire. Unusual weather conditions involving sudden and drastic changes accompanied the unusual terrain conditions. Although the heat of day was not unlike that elsewhere in these islands, after 1700 hours a field jacket was needed and a sleeping bag was very comfortable during the cold nights. Meteorological corrections changed approximately 40 yards per thousand for range and 10 to 15 mils for deflection during a 24-hour period. Corrections for range

followed a fairly regular pattern, maximum ranges being fired around 1400 daily and minimum ranges being obtained around 0330. This required changing elevations at intervals throughout the night when firing night protective or harassing fires. Deflection corrections followed no definite pattern. 155-mm guns, M1, and 90-mm AA guns reported premature bursts when firing in rainstorms.

Weather and terrain also presented specific problems in the employment of liaison planes. No advance landing strips could be found and it required an abnormally long time, especially in the later phases of the operation, to get planes over the target area. This was due to the distance the planes had to travel from field to target, but even more to the time consumed in obtaining sufficient altitude to operate over a target area at an elevation of 5,000 feet. Planes consistently had to operate at altitudes up to 8,000 feet, and the power loss at such altitudes was appreciable. It was found inadvisable to attempt to use the airfield at Baguio for liaison planes because of the difficulty in taking off at such a high altitude. Strong winds and dangerous air currents over the mountains, coupled with rapidly descending clouds, gave the liaison pilots good reason to be wary; many anxious moments were spent when pilots found themselves closed in by clouds and prayerfully sought to find an opening or to feel their way back to base through the cloud-filled passes. It was a usual daily occurrence for the mountains to be suddenly blanketed by clouds which reduced even ground visibility to zero. Generally good visibility was existent from 0900 until the clouds closed around 1500; and it could be expected that the clouds would open over the target area around 1730, permitting observation until dusk. Rainfall was not heavy during the operation, although Baguio claims a record of over forty inches in a 24-hour period. Despite all difficulties the liaison planes

performed their mission in an eminently satisfactory manner.

Fighter bombers provided excellent close support. The division air support officer and an artillery liaison officer accompanied each other to a forward OP from which marking by artillery smoke shell and the subsequent runs of the planes could be controlled. The artillery liaison officer was customarily the one with the infantry battalion on the line, although the commander of the direct support artillery battalion frequently accompanied the air support party. During one particular strike the certainty that God was on our side could not be doubted. A pocket of Nips remained in a deep ravine between two elements of our forces; the ravine was too narrow for either of our units to employ mortars against them without endangering the other friendly unit. An airstrike against Jap positions farther forward resulted in a hung bomb which miraculously fell directly into the confined ravine, eliminating the enemy pocket without a casualty to our troops.

Indirect artillery fire destroyed a number of enemy tanks during the operation. Forward observers and liaison pilots adjusted these missions, and on one occasion the turret of an enemy tank was blown clear across the road when a forward observer scored a direct hit while adjusting a 105-mm howitzer battery. Although suicide tactics by enemy tanks can inflict serious damage, the employment of armor by the Nips was largely an abortive effort. Our 37-mm AT gun will penetrate their medium tanks.

Japanese employment of artillery, although it constituted a serious problem until terminated by counterbattery fire, was characteristic of that encountered in previous operations. Weapons employed included 15-cm howitzers, 12-cm howitzers, 75-mm mountain guns, and 75-mm AA guns. Time fire against ground targets was attempted by the AA guns with very meager results. Artillery was emplaced in open pits along

the road for firing. Although innumerable caves were used for storing supplies and protecting personnel, the typical cave and tunnel types of artillery emplacements were not encountered as they have been in other sectors. Apparently the Japanese artillery relied principally on direct fire. Experience has indicated their strong inclination toward direct fire, and their almost universal custom of emplacing artillery very close to their OPs for indirect fire. Massed fires seem to be a technique unfamiliar to the Nips; they customarily place one to three guns on a target and use comparatively little ammunition on a single target, obtaining a result more akin to harassing fire than to neutralization. They have expended several hundred rounds on a single target, however, but not with anything like the rate or intensity achieved by our methods of massed fires.

The Nip artillery was rapidly eliminated by counterbattery fire despite the fact that terrain and weather prevented the satisfactory use of sound and flash equipment. The counterbattery mission was performed most effectively almost solely by forward observers and liaison pilots. Audacious tank reconnaissance also provided the artillery with the locations of several enemy gun positions which were subsequently destroyed under air surveillance, it being extremely unhealthy for the tanks to remain and adjust fires.

Mortars were employed by the Japs with their customary skill and effectiveness. As usual, the countermortar problem was one of the most urgent and difficult. Solution resulted from the judicious adjustment of very close-in supporting artillery fire by forward observers.

The locations and details of the enemy defenses and lines of communication were gleaned from photo interpretation

Typical mountains, covering the approach to Baguio.





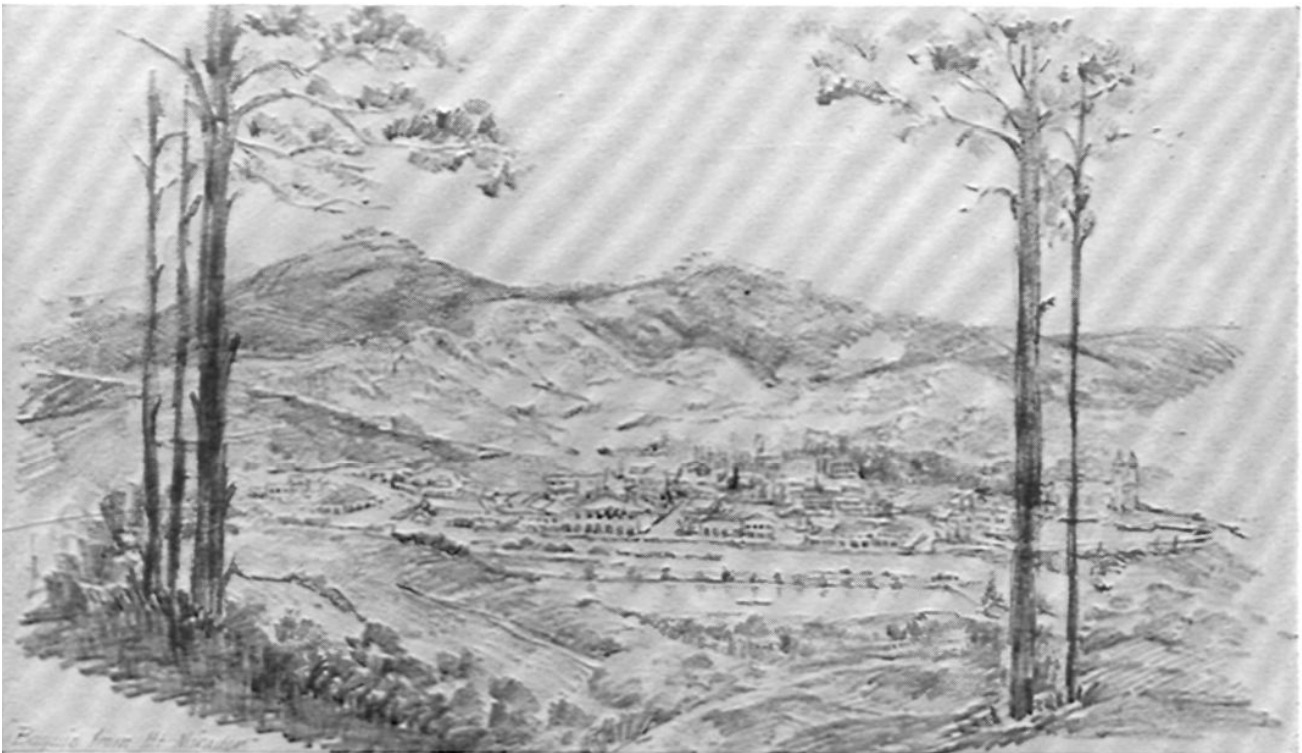
The Naguilian Road

and aerial observation, permitting the artillery to place accurate harassing and interdiction fires on these targets night and day far in advance of the infantry. The Nip positions at Calot had been appreciably weakened as a result of the volume of artillery fire to which they had been subjected prior to contacting our advance troops. From Baguio there was only one suitable vehicular route of withdrawal for the Japs. This was the Mountain Trail or Highway 11, leading to Bontoc. This road was interdicted heavily, especially at night, as soon as our artillery could be brought within range. At Trinidad Highway 11 crossed an unfordable river by way of a

large quantities of supplies and equipment in the Baguio area was due in no small part to this effective interdiction of routes of withdrawal. The role of artillery night fires assumes increased importance when our air supremacy forces the enemy to conduct all major movements at night.

Throughout the operation it was demonstrated that very close-in and heavy artillery fires could be coordinated closely with all infantry moves, even under the most adverse terrain conditions. The excellent results of these fires were a tribute to the skill of our fire direction centers and particularly to the courage and skill of our forward observers and liaison officers.

substantial bridge which was early destroyed by our heavy artillery. The resulting constriction of traffic multiplied the effectiveness of our harassing and interdiction fires while the Nips sought to construct a by-pass. In an effort to escape their dilemma the enemy established an alternate road farther east, but liaison pilots immediately noted the evidences of vehicular use on the alternate route and it was accorded the same daylight surveillance and nightly pounding which had cut off Highway 11. There is no doubt that the Nips' abandonment of



Baguio from Mt. Mirador, Luzon, P. I.

PERIMETER DEFENSE

By Col. C. deW.
W. Lang, FA



Automatic weapons have high defensive value. Here a rifleman of the 1st Battalion, 165th Infantry, has his BAR ready as he watches a trail leading into the flank of his outfit at Red Beach, Butaritari Island, Makin Atoll.

There are few experiences more nerve-shattering than a Jap "Banzai" attack or attempted infiltration by demolition squads on your battery position in the middle of the night. You can't see your hand at arm's length, nor recognize friend from foe. Conditions of terrain, visibility, and type of attack are so variable that no standard answer to the problem of defense is possible. Commanders must resort to their own ingenuity and initiative to fit the disposition of their defenses to the situation and to instruct all personnel accordingly. It is the purpose of this article to point out certain advantages and disadvantages that have been learned the hard way—through actual experience.*

Japanese counterbattery measures by artillery fire were encountered in relatively few of the operations against them. Where they have employed it, the results have ranged from excellent to completely ineffective. In general they lacked initiative, failed to take advantage of excellent opportunities, ignored the flexibility of their weapons, and seemed reticent about firing when there was a possibility of retaliation on our part.

That they feared our artillery is unquestionable. Interrogation of prisoners of war has continually disclosed this fear. There is ample proof that orders were issued troops not to fire on our air OPs lest their own positions be revealed to us. This practice was by no means universal; it is not intended to imply that cub planes were immune from attack.

To counteract this thorn in their side the Japs resorted to the formation of demolition squads whose duty it was to penetrate our artillery defenses and destroy materiel, often as not by suicidal methods. To all intents and purposes this was their

counterbattery. A few examples of these attacks should be of value in arriving at an answer to the problem.

A. Headquarters Battery, Xth Artillery Battalion, plus its air section with two planes, was in position in a large bunker in the dispersal area of an airfield. In the middle of the night one of the men on perimeter defense became seriously ill. Aid men from the aid station went out to the perimeter to give this man assistance. When they returned to the center of the perimeter they were followed by two Japs who, in the dark, were unnoticed, having taken advantage of movement within the perimeter. One of the Japs used a match to light the fuze of a wooden box mine and ran toward one of the cub planes. He was recognized and shot just as he reached the plane. He fell on the mine as it exploded; both plane and Jap were damaged beyond repair. The other Jap in the meantime had been recognized and shot before he could do any damage.

B. Apparently having thoroughly reconnoitered the position of a howitzer battery, by stealth and completely unnoticed the Japs placed themselves in advantageous positions around the perimeter. At about 2300 hours an unknown number of Japs opened fire on one side of the perimeter with small arms and also threw a number of hand grenades. At the same time two or three Japs sneaked up to the perimeter's edge on the opposite side and, standing up, threw wooden box mines, as you would throw a discus, into the perimeter. They were detected and shot when they stood up, but not in time to prevent their throwing the mines. Fortunately both mines were duds, one of them landing in the battery kitchen and the other about five yards from one of the pieces. On the other side of the perimeter the guards returned fire, suffering no casualties to men or materiel. After about ten minutes the firing died down: the Japs apparently withdrew.

*With the 24th Inf Div. Ed.



This dense jungle near Munda, New Georgia, illustrates the typical low visibility of this type of terrain.

In almost all cases it is evident that the enemy groups had reconnoitered the positions, and in all probability kept observation on the area during daylight from concealed positions in the immediate vicinity. In such cases they habitually employed mines, grenades, and dynamite charges, and very frequently came without small arms. The attacks were always at night and seemed to increase in number and intensity the darker the night, and during heavy rains. Only in rare instances were battery positions subjected to attack by large groups whose intent was other than destruction of materiel.

The following paragraphs present some principles of perimeter defense learned through actual experience. Commanders disagree on the advantages of some points, but taken all together they should present a sound basis upon which to arrive at a solution of the problem involved in any particular situation.

PERIMETER

No one side of the position is completely immune from attack, although the possibility is lessened considerably by the presence of rivers, ocean beaches, other units, or substantial terrain obstacles adjacent to the position. For this reason it is necessary to establish a cordon of guards and automatic weapons enclosing the entire area. To save personnel who are needed for service of the piece and other duties, it is obviously advisable to have as compact a position as possible, even though dispersion becomes necessary at daylight. This can be accomplished by moving transportation and planes inside the perimeter at night and moving them back out in the morning.

AUTOMATIC WEAPONS AND FIELDS OF FIRE

Maximum fire power is highly advisable. For this reason all .50- and .30-cal. machine guns and all available Tommy guns

should be employed around the perimeter. The four .50-cal. machine guns should, if the terrain and undergrowth permit, be so emplaced that each sector of the entire surrounding area is covered by at least one weapon. Otherwise the likeliest avenues of approach should be covered; .30-cal. machine guns should be used to fill in the gaps not covered by the heavies.

Ground mounts should be used, well dug-in. At least two men should be placed in close proximity to each machine gun for its protection. Tommy gun positions are then scattered around the perimeter so that all areas are covered. Time permitting, undergrowth should be cleared away to at least thirty yards on all sides to give fields of fire and observation. Time lacking, fire lanes for machine guns should be cut and if possible made interlocking. Guns should also be sandbagged for protection and to prevent firing into perimeter or adjacent troops.

Sound power telephone communication between all machine gun positions and the battery commander's foxhole for control and reports of activity is very useful. Being able to talk to each other, they can check with adjacent posts before opening fire; also, greater control can be obtained.

COORDINATION BETWEEN PERIMETERS

Many unnecessary casualties have occurred because of the absence of coordination between perimeters and within perimeters. To prevent firing into the perimeters of adjacent units and also into your own perimeter it is of paramount importance that each guard know the exact location of all friendly troops, and safety stakes for all machine guns must be erected to prevent each weapon from firing into another or its own perimeter.

This one item, coordination between perimeters, has probably been completely ignored more than any other principle of perimeter defense. The unit commander, or a responsible representative, must make a personal inspection of the entire defensive installation and coordinate by personal conference with the commanders of all adjacent units. It is frequently necessary and certainly advantageous for each machine gunner to make his own personal reconnaissance to see in detail what the nearby installations look like.

When shifts of personnel are made, the new men must be thoroughly familiarized with all of these points.

In many cases, saving of personnel can be achieved by two units' going into position close together and each taking one half of the perimeter for defense. This is particularly applicable in the case of the headquarters battery, the nerve center of the battalion. Where possible they should be given added protection by including them in a firing battery perimeter, or at least by combining them with one of the other batteries.

INSTRUCTIONS TO INDIVIDUALS

Needless to say, each man on perimeter guard must be thoroughly instructed in his duties. He must know for what sector he is responsible, both for observation and for firing. He must understand all signals and must be cognizant of adjacent posts and their duties. Paroles and countersigns have proven impractical and their use is not advised. *If instructions and discipline are thorough*, you can shoot first and ask questions later.

When movement in and around the perimeter becomes necessary it has been found that the best procedure is for the individual who must move to talk continuously to reassure the guards, letting them know who he is and what he is doing.

In addition, all personnel inside the perimeter must be thoroughly instructed in what actions they are to take if the perimeter is attacked. Many commanders advocate the use of a mobile reserve within the perimeter to be used to repel any attack in force. However, this may well cause confusion and loss of life by failure to recognize friend from foe. This procedure is not recommended. Other commanders adhere to the principle of no movement within the perimeter in the event of an attack. Every man remains in his individual foxhole; all movement within the perimeter is considered enemy and disposed of as such. Use of small arms within the perimeter is generally frowned upon because of the possible danger to friendly personnel. Instructions are habitually given for the men to use machetes and jungle knives to dispatch those of the enemy who manage to get inside the perimeter. My own experience has proven to me that the latter method (no movement within the perimeter) is by far the better.

DISCIPLINE

Probably the most important single item in the defense of a perimeter is *discipline of the individual*. Battle-experienced troops have overcome "trigger-happiness," but on many occasions still fire at sounds and movements which tend only to reveal their location to lurking Japs armed



A double apron barbed wire fence, well hung with warning cans, along the perimeter of Company E, 145th Infantry, 37th Division, on Bougainville, in March, 1944. Next day the Nips began the

desperate attack mentioned by Lt. Col. Haines (page 444, July 1944) and further detailed by Capt. John C. Guenther (page 330, June 1945).

with grenades. It is extremely important that fire be held until there is definitely something to shoot at. Nothing is accomplished and much may be lost by firing promiscuously at sounds, movements, or suspected enemy locations. The firer's position is revealed, and in a few minutes a Jap with a hand grenade polishes him off. When one man opens fire the natural result is that many others commence firing and much ammunition is wasted. It must be thoroughly impressed on all men that they must not fire their weapons except at definitely identified enemy activity.

It is advisable to instruct perimeter guards to throw hand grenades into areas, outside the perimeter, where movement or sound has been detected, but nothing definitely seen. This way they will not reveal their own location. It is also good procedure to require individual riflemen to open up first because the .50-cal. machine guns make so much noise that they drown out all other noises, particularly those which might reveal the enemy. The .50-cal. machine guns should open up only when they become unquestionably necessary.

WARNING DEVICES AND PROTECTIVE MEASURES

Of great advantage are devices and measures which will give warning of the approach of the enemy and which will be protective in character. Some in common use are given below. There are many others which ingenuity can devise from materials normally available to a firing battery.

A. Barbed wire on which are hung empty cans containing stone or into which are hung spikes will reveal by their noise any disturbance and at the same time deny an easy entry into the perimeter. Caution must be used when these are employed because wind will cause them to make a noise; consequently, their use on windy nights is not recommended.

B. Booby traps with trip wires and pull or pressure type detonators will warn of approach when they go off and may also cause casualties to the enemy. The pressure release type combined with a pull type detonator gives complete protection. When booby traps are used, it is of course essential that they be disarmed during daylight to prevent casualties to our own troops.

C. Empty shell cases placed around the area, open end up, with wire strung between them and two of the metal horseshoes (found in the packing cases) hung down inside the cases, will by their noise warn of approach.

D. Trip flares placed well out and low down so that they will not light up your own perimeter will reveal enemy personnel and also warn of their approach. Improperly sited they are suicide. Adjacent perimeters must always be considered and notified when they are to be installed.

E. For the protection of individual operating personnel who have to work at night, a dug-in parapetted place to carry on their duties must be prepared. You cannot allow the battalion to be completely silenced simply because one of the perimeters might be under attack.

F. For added protection of howitzers during the night, it is a sound practice to put on muzzle covers and elevate pieces to maximum elevation when no firing is being done. This will prevent the enemy from dropping grenades or charges down the tubes.

PATROLLING

Even though the area to be occupied has previously been patrolled by friendly infantry, it is always advisable to have an advance party in the area patrol the immediate vicinity and prevent ambush before the position is organized. It is further advised that patrols be sent out late every afternoon to determine the presence of enemy in the area, since they frequently lie low during the daytime preparatory to a night attack. Each morning all bushes, ditches, and other possible hiding places within three hundred yards of the position must be searched to pick up snipers or scouts who are waiting for a favorable opportunity to attack.

CONCLUSIONS

There is little doubt that a battery commander who has experienced a successful Jap attack on his battery position will never allow it to happen a second time. There is no better instructor than experience. Blind occupation of position with little or no attention to defensive measures may lead to a rude awakening with unnecessary loss of life. To be forewarned is to be forearmed; sound analysis of the problem involved in a particular position, with proper attention to the most advantageous measures to be taken, will prove invaluable. It must be remembered that there is no one answer which fits every situation encountered and that initiative and ingenuity, coupled with common sense and sound judgment, will lead to a sound solution. By these means we can efficiently neutralize some commonly used counterbattery methods.

NOTICE OF ANNUAL MEETING, U. S. FIELD ARTILLERY ASSOCIATION

In compliance with Article VII, Section 1, of the Constitution, notice is hereby given that the Executive Council has fixed 5:30 P. M. Monday, December 17, 1945, as the time of the annual meeting of the Association to be held at the Army and Navy Club, 1627 Eye St., N. W., Washington, D. C.

The business to be disposed of will be the election of six members of the Executive Council (three Regular Army, two National Guard, and one Organized Reserve), and the transaction of such other business as may properly come before the meeting. Nominations may be made by proxy, or from the floor of the meeting.



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

END OF THE MANCHUKUO AND KOREA CAMPAIGNS

August 19th the situation was:

The Russian TransBaikal Army Group (Marshal Rodion Y. Malinovsky) advancing eastward had reached the line **Chalantun (Russ)—Taoan (Russ)—Toanan (Russ)—Kaitung (Russ)—Tungliao (Russ)—Kailu (Russ)—Wutangshen (Russ)—Shangtuho (?)—Kuyuan (Jap)**.

The 2nd Far East Army Group (General Purkayev), advancing south, held a bridgehead across the Amur River: **Taheiho (Russ)—Sunwu (Jap)—Sunho (Russ)**.

The 1st Far East Army Group (Marshal Kiril A. Meretskov) advancing west had reached the line **Tangyuan (Russ; to 2nd Far East Army Group)—Han (Jap)—Hailin (Jap)—Lake Chingpo—Wangchin (Russ)**.

On the extreme right were the following auxiliary forces: **The 1st Mongolian Army (Marshal Choy Bolsan), advancing on Peiping, was on the line Changpeh (Russ)—Hingho (?)**. **A Chinese Communist Army was on the line Yangkao—Yangyuan—Yuhsien facing east, with unknown mission**.

The Russian C-in-C, with CP at Khabarovsk, was Marshal Alexander M. Vasilevsky. The Chinese Communists were not under his orders, but were operating independently. Two detached Russian forces were:

from the 1st Far East Army Group, in northeast Korea near Seishin;

from the 2nd Far East Army Group, on Sakhalin, advancing south in the vicinity of Keton,

The Pacific Fleet, in general support, was operating between Korea, Sakhalin, and the Kuril Islands. Hostilities had officially closed as of sunset, 18 August.

Few details of the Japanese organization have yet become known. The C-in-C was General Otozo Yamada. Under him were three Army Groups, the 1st, 3d, and 5th, commanded respectively by Generals Kite, Ushiroku, and Shinwazu.

THE RUSSIAN OCCUPATION OF MANCHUKUO

A treaty was signed at Moscow on 14 August. With regard to Manchukuo it provided that during hostilities the Supreme Command would be in the hands of the Russian C-in-C, but after hostilities ceased it would be Chinese-governed. Russia was to have a 50% interest in the main railroad lines, China the other 50%. Branch lines were to be 100% Chinese-owned. China granted Russia the use of Port Arthur as a naval base for 30 years, with right to fortify it as desired by Russia;

Chinese ships were to have the use of the base, but not those of any other nation. Russia is to have a commercial base at Dairen.

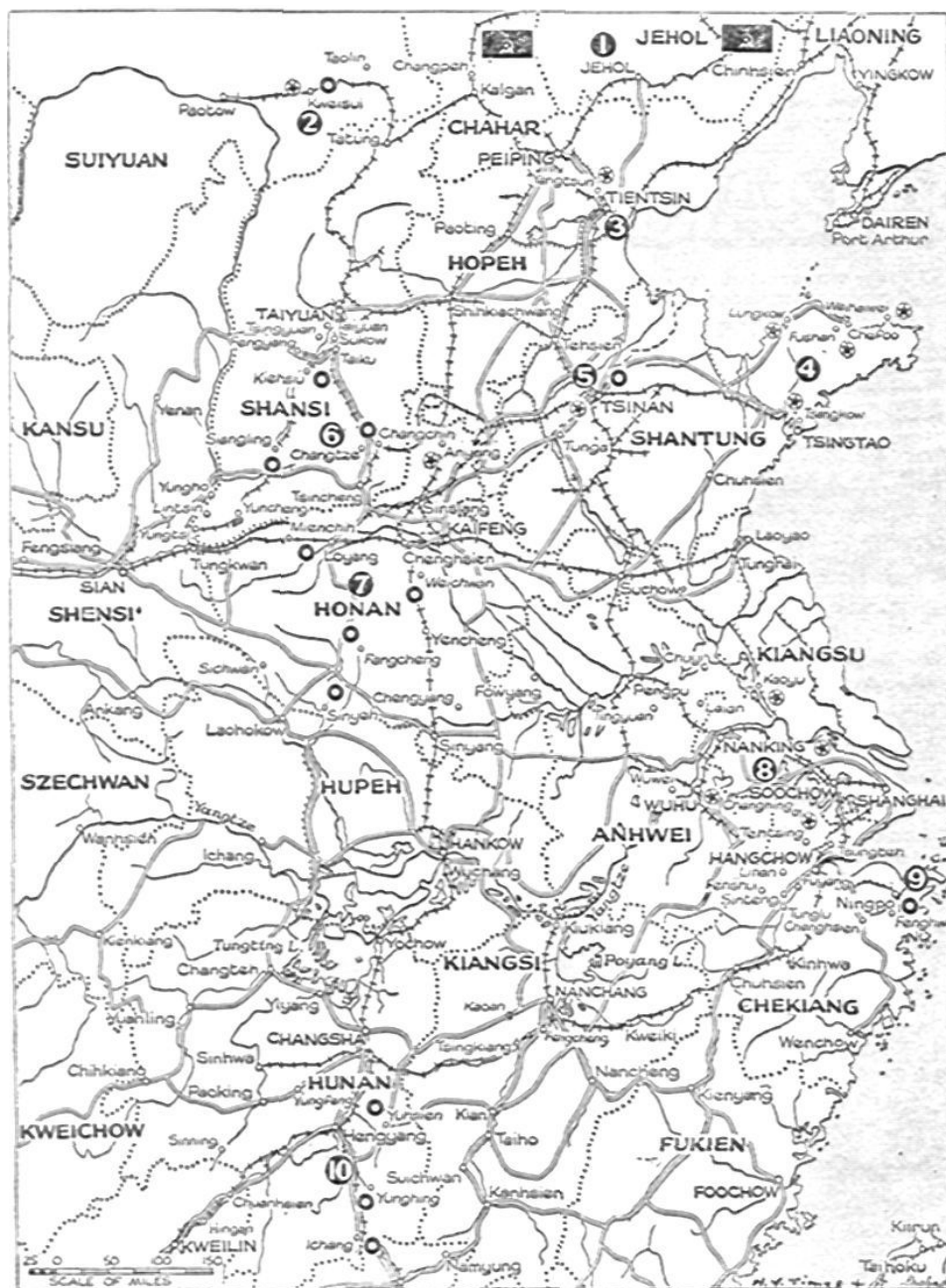
The treaty provided for cession by China of Mongolia, which will become nominally independent, but as a Soviet will be included within the Soviet Union. In return for this, Russia has not recognized the Chinese Communists.

China has the right to send troops into Manchukuo. However, there are no Chinese troops near Manchukuo other than Communist forces, which China particularly does not want to occupy former Japanese-controlled territory. The Regular troops which China does have have no transportation and are unable to reach Manchukuo. The United States does have transportation in China, in its Air Transport Command; this has not been made available for taking Chinese troops to Manchukuo.

In view of the foregoing treaty and situation. Russia proceeded to occupy Manchukuo. She moved with great rapidity.

On 19 August the TransBaikal Army Group reached by broad motor jumps the railroad from Lungkiang (or Tsitsihar) to Liaoyuan, thence southwest to Chengteh (or Jehol). In two columns the right of the 2nd Far East Army Group reached Nunkiang and Lungchen, following the adjacent roads and railroads leading to Lungkiang and Pinkiang (or Harbin). The left of the Group reached Ilan, on the Sungari River. The 1st Far East Army Group arrived on a north-south line through Weiho on the China Eastern RR. There was no resistance, and about 98,000 Japanese troops (including Manchukuo troops) surrendered. The detached force on Sakhalin met resistance; hard fighting developed, with no advance made.

On the 20th, the Japanese on Sakhalin ceased resistance and commenced to surrender. In Manchukuo the 1st Far East Army Group advanced to the line Yungki (or Kirin)—Chuho. The 2nd Far East Army Group pushed rapidly with all columns, astride the Sungari River and down from the north, to unite the formerly separated right and left wings at Pinkiang (Harbin). The TransBaikal Army Group reached the South Manchuria RR from Chanchun (or Hsinking), which was the capital of Manchukuo, southward to include Shenyang (or Mukden).



Late in August the Chinese Communists announced the seizure of places designated by stars: troops of Generalissimo Chiang Kai-shek reported the capture of those indicated by circles. While Soviet forces were operating northwest and northeast of Peiping (1), both sides claimed Kweisui. Suiyuan's capital (2). The Communists said they

had taken Yangtsun, north of Tientsin (3), several ports in Shantung (4), thirty strong points in Shansi (6), and places in the Nanking-Shanghai area (8). Chungking troops laid claim to towns in Shansi (6), Honan (7), and Hunan (10), and to Fenghwa in Cheking (9). The Japanese said both sides aimed at Tsinan (5).

It was found that although the country had been little damaged by war, trade had nearly disappeared. As a consequence the inhabitants were receiving little food and were generally undernourished. The South Manchuria RR, formerly a double track, standard gauge line of the American type, had

had one track taken up. It was assumed that this had been used by Japan for building some other railroad line elsewhere.

On 21 August the Russians entered Shikuka, the former Japanese base on Sakhalin. While there had been few surrenders on the 20th, 71,000 gave up on the 21st.

Next day airborne Russian troops were dropped near both Port Arthur and Dairen. About 35,000 Japanese surrendered. Dairen, formerly a busy commercial port, was without business. It was reported that the activity of American submarines had destroyed the shipping and kept the port virtually closed since the spring of 1944. There had been no subsequent attempt to operate shipping in the adjacent seas. Next day an amphibious expedition from the 2nd Far East Army Group landed on and occupied the naval base on Shumushu and Paramushiro Islands.

On 24 August the Mongolian Army arrived in the vicinity of Peiping, but did not enter that city. Part of this force by-passed Peiping and continued on toward Tientsin. The left of the Far East Army Group advanced down the coast of Korea, the leading elements arriving at Kishshu.

According to a report from London, prior to the Yalta conference President Roosevelt had rejected a Russian proposition for the occupation of Korea. Russia likewise objected to American occupation. A compromise was made, and it has been tentatively agreed that Russia shall occupy the north half and the United States the south. The dividing line is Latitude

38° N. To hasten their occupation the Russian ground troops were aided by airborne troops which landed detachments at various places, including Kanko, 120 miles beyond the ground forces.

The 2nd Far Eastern Army Group detachment on Sakhalin

advanced to Honto, almost at the south tip of the island.

The Russian High Command, having secured the Manchukuo Emperor Kang Teh with the capture of Changchun and vicinity on the 22nd, formally placed him in confinement as an internee. The Manchukuo Emperor succeeded to the throne of Manchukuo and China when an infant, and was deposed by the revolution of 1911-1912. He then retired to Manchukuo. In 1932 he was reestablished on the throne of Manchukuo only, where he had since been the ruler.

On 26 August an amphibious expedition from the 2nd Far East Army Group landed on and occupied without resistance the islands of Onnekotan, Shasukotan, and Matsuwa among the Kuril Islands. On the 28th the additional islands of Shimushiru, Uruppu, and Etorofu were occupied, completing the seizure of the important islands of the group. On this day the balance of Sakhalin was occupied. On 1 September all remaining Kuril Islands were occupied.

Russia thereupon announced on the 3d that she intended to fortify the Kuril Islands and hold them as a screen of steel to cover the approach to Siberian ports, and to insure Russia free access to the North Pacific. An official declaration from Washington stated that the United States saw no objection to Russian control of Sakhalin and the Kuril Islands.

Russian troops arrived at Shanhaikwan (on the Liaotung Gulf) on 1 September. At this place the great Chinese Wall starts. This was built along the boundary between China and Manchukuo, which prior to the Manchus' conquest of China were separate states, usually hostile to each other. According to a Japanese report, the local Japanese commander in surrendering to the Russians requested a Russian agreement not to cross the Wall into China. Presumably the Japanese commander had instructions from superior authority. In any case the Russians for the time being agreed to the conditions demanded, and stayed out of China. Neither have Chinese troops entered Manchukuo. Chinese Communist troops hold that part of Shanhaikwan which is south of the Wall, which traverses the town.

On 4 September Japanese GHQ in Manchukuo formally surrendered. It had previously cooperated to secure an absence of friction with Russian commanders.

On 9 September Russian GHQ announced that the surrender of the Japanese armies in Manchukuo, including north Korea, had been practically completed. Japanese forces were accounted for as follows:

Killed (estimated)	80,000
Wounded, captured	20,000
Surrendered	574,000
Total	674,000

The foregoing figures are understood to include Manchukuo troops. There is no information as to the strength of these. The large Japanese army which had been in Manchukuo appears to have been largely withdrawn since April. Japan had then become convinced that with the fall of Okinawa, realized as to be expected soon, an American invasion of Japan would occur. It therefore withdrew divisions from Manchukuo and China to reinforce the Home Command.

The Russians reported the following equipment as having been captured:

Planes	925
Tanks, including armored cars	403
Guns, including SP and AA	1,226
Mortars, infantry	1,340
Trucks and tractors	2,425
Horses, including mules, camels, etc.	17,497
Rifles	300,000

The foregoing include the contents of 742 depots and dumps. Taking this into consideration the equipment listed would hardly suffice for 12 divisions.

Russian losses for the entire campaign from 9 August to 9 September inclusive were

Killed	8,219
Wounded	22,264
Total	30,483

Russia's occupation of her half of Korea was completed by 15 September.

MISCELLANEOUS

The Russo-Chinese treaty of 14 August, in addition to the provisions previously mentioned, provided for Sinkiang's remaining Chinese. No mention is made of Chinese Communists. There is no information as to the relations between the Russian and Chinese Communist forces, other than that the absence of friction along the boundary between their respective forces indicates that some kind of working arrangement has been arrived at.

In accordance with usual practice, no information as to the nature of the occupation has been released from areas occupied by Russian troops.

OCCUPATION OF JAPAN (19 Aug to 18 Sep 45)

In accordance with radio instructions from Gen. MacArthur's headquarters, a Japanese mission of 16 officers arrived at Manila at about 1800 hours, 19 August. They had flown from Japan in one day, transferring at Okinawa from a Japanese plane to an American one.

The mission was immediately received by the Chief of Staff and discussions continued until 0200 hours, 20 August. They were renewed at 0930 hours and completed in about two hours thereafter. The mission then flew back.

The Japanese emissaries imparted information requested from them, as to facilities for the debarkation from the sea

and air of American forces in Japan. It was agreed that Gen. MacArthur would proceed to Japan with the first troops, in time to arrive about 31 August. At that time Japan would sign formal surrender papers. Pending this hostilities were to be suspended everywhere. Gen. MacArthur announced that following the formal surrender he would issue appropriate orders directing that Japanese commanders, wherever situated, surrender unconditionally themselves and all of their forces to the local theater commander. In the Southwest Pacific, this would be British and Australian commanders.



As the Supreme Allied Commander, General of the Army Douglas MacArthur signs to accept Japan's formal surrender during ceremonies on the U.S.S. Missouri in Tokyo Bay, August 31, 1945. Behind him are Lt. Gen. Jonathan Wainwright (left), who surrendered to the Japanese after the fall of Bataan and Corregidor, and Lt. Gen. A. E. Percival, the British commander who surrendered to the Japanese at Singapore.

This day strong American and British fleets anchored in Sagami Bay, adjacent to Tokyo.

On 28 August Japan reported deplorable conditions in Korea, including numerous crimes and disturbances. The nature of these was not given in detail, but appears to have been due to zeal by Koreans to attack any Japanese found. Japan asked that in occupying Korea,

Japanese administration and police troops not be relieved until the Allies were prepared to maintain peace and order.

An advance detachment of 150 men of the 5th Air Force landed at Atsugi airfield near Tokyo, being the first Allied troops to land in Japan. Thereafter other American troops arrived by air and by sea without incident.

Tokyo and Yokohama were entered by small parties. Both cities had been badly damaged by bombing. The people appeared to be well fed, but clothing was poor and shoes had been generally replaced by sandals and wood clogs. Railroads, trolley cars, and buses were in operation. Automobiles were few; many of these used charcoal instead of gasoline.

On 2 September, off Yokohama, the official surrender ceremonies took place at 0900 hours on board the U. S. battleship *Missouri*. Representatives of the Japanese Foreign Office and of Imperial GHQ signed for Japan articles which in part read:

1. We, acting by command of and in behalf of the Emperor of Japan, the Japanese Government, and Japanese GHQ, hereby accept provisions in the declaration issued by the heads of the governments of the United States, China, and Great Britain on 26 July, 1945, at Potsdam, and subsequently adhered to by the Union of Soviet Socialist Republics, which four Powers are hereafter referred to as the Allied Powers.

2. We hereby proclaim the unconditional surrender to the Allied Powers of the Japanese Imperial GHQ, and of all Japanese armed forces, and all armed forces under Japanese control, wherever situated

8. The authority of the Emperor and the Japanese Government to rule the state shall be subject to the Supreme Commander for the Allied Powers, who will take such steps as he deems proper to effectuate these terms of surrender.

Orders were issued directing the surrender to the Commander of the Pacific Fleet of Japanese forces in the Central Pacific Islands.

In the surrender ceremonies Gen. MacArthur represented the Allied Powers as a whole, but each of the four principal Powers also signed through a local representative. Admiral Chester W. Nimitz signed for the United States.

On 4 September the Supreme Commander issued orders for the occupation of Japan, the Ryukyu Islands, and Korea south of Latitude 38° North. The Japanese First Army in the Tokyo area was to surrender to the U. S. Eighth Army. The Japanese Second Army at the west end of

In compliance with arrangements at the Manila conference, Japanese GHQ on 21 August announced that advance American parties would arrive in the general area Shizuoka—Tokyo, both inclusive, on 25 August. All Japanese troops within that area, less the 1st and 8th Infantry Divisions, were to withdraw to the interior prior to the arrival of the Americans. The program was:

- | | | |
|----|--------|--|
| 25 | August | American air reconnaissance over indicated area. |
| 26 | “ | Air-Borne troops land in morning, and Allied naval fleets enter Sagami and Tokyo Bays. |
| 28 | “ | American and British troops debark from transports. |

On the same day, orders were issued to cease hostilities. In most places this had already occurred. However, fighting continued on Sakhalin to include 22 August, and on that date submarines (supposed to be Russian) sank three Japanese ships off Hokkaido.

On 22 and 24 August Japanese detachments of 225 and 299 men on the Kerama Islands surrendered to an American detachment from Okinawa, after psychological warfare officers had prepared and dropped appropriate leaflets announcing Japan's surrender. The Kerama Islands are 15 to 25 miles west of the south tip of Okinawa.

On 26 August Gen. MacArthur issued an order directing Japanese surrenders as follows:

in the Philippines	to the CG, Western Pacific, at Manila
in the Ryukyu Islands	to the CG, Tenth Army, at Okinawa
in Korea, south of Latitude 38° N	to the CG, XXIV Corps, due to arrive in Korea shortly.
at Hong Kong	to Rear Admiral Harcourt, RN, after 31 August.

Due to bad weather, the initial date of American landings in Japan was postponed to 28 August.

By exchange of radiograms it was decided on 27 August that as to Japanese surrenders:

<i>Japanese Troops</i>	<i>Surrender</i>
In New Guinea, the Bismarck Islands, and Solomon Islands (less British mandate)	To CG, Australian Forces.
Elsewhere north of Australia	To the Supreme Commander, Southeast Asia Command
In Babuyan and Bashi Islands	As prescribed for the Philippines.
In Jehol	As prescribed for Manchukuo.
In Yoron and Amami Islands	As prescribed for Japan proper.

Honshu, Kyushu, and Shikoku was to surrender to the U. S. Sixth Army. Japanese naval forces were to surrender to the commanders of the 3d, 5th, and 7th Fleets of the U. S. Pacific Fleet.

At this date it was contemplated that the American Army of occupation would total 500,000 men. So far the 11th Airborne Division had spearhead detachments near Tokyo and on Kyushu. The Eighth Army had near Tokyo the 1st Cavalry Division (dismounted) and the 27th Infantry Division. The occupation was proceeding without incidents. The Japanese government issued various proclamations calling for submission to the American occupation, and providing for maintaining internal economy.

On 8 September the Japanese naval base at Ominato, in north Honshu, was occupied by the U. S. Navy. The Eighth Army received at Yokohama the XIV Corps Headquarters and the Americal Division. The Sixth Army landed its troops on Kyushu. The XXIV Corps landed the 7th Infantry Division at Jinsen, Korea; this division then advanced on to Keijo (or Seoul), the capital. The 1st Cavalry Division moved from Yokohama into Tokyo.

Next day Gen. MacArthur issued a proclamation. He announced that his orders would be issued to the Emperor or to the Japanese Government, and that no further compulsion would be used if it could be avoided. The occupation troops would be used only if Japan failed to comply with orders. The Japanese economy was to be controlled only to the extent necessary to achieve the objectives of the United Nations. What these objectives were was not stated.

On 10 September Gen. MacArthur ordered Japanese GHQ to be abolished by the 13th. A report was made on that date that this had been accomplished. On the 11th, Japan was directed to surrender 32 named war criminals. Most of these were promptly delivered.

At the close of the period, announcement was made that the proposed army of occupation might not exceed 200,000 men, and there were suggestions that the occupation might last from one to 100 years.

THE PLAN TO DEFEND THE MAIN JAPANESE ISLANDS

It is now known that Japan had completed extensive measures for home defense. She expected initial attacks about October, probably on Kyushu and Shikoku. The main attack, it was believed, would be launched during the winter 1945-46.

Troops available for the proposed defense were:

On Kyushu	an Army of 16½ divisions
On Shikoku	4 "
On west Honshu	2½ "
Total	23 "
In vicinity of Tokyo	17 divisions
On north Honshu	4 "
On Hokkaido	4 "
Total	25 "
Grand Total	48 divisions.

American GHQ estimates were that including army and corps troops, services, and depots, there were about 3,000,000 Japanese troops in the home islands; 4,000,000 were believed to be overseas, making in all a force of 7,000,000 to be demobilized.



The 27th Infantry Division took over Hiratsuka, Odawara, and Zama, southwest of Tokyo. Tentatively scheduled operations of some other divisions are shown by the boxed legends on the map.

THE U. S. ARMY OF OCCUPATION

The schedule has been frequently changed, usually decreasing the strength of the forces. Latest available information at time of writing is that ground occupation troops are to be as follows:

Unit	Date	Objective
Eighth Army, XI Corps,		
Americal Div	8 Sep	Yokohama
1st Cav Div	8 Sep	Tokyo
43rd Inf Div	13 Sep	Yokohama
97th Inf Div	21 Sep	Yokohama
112th Regiment	3 Sep	Tateyama
XIV Corps	15 Sep	Sendai
11th Airborne Div	15 Sep	Sendai
27th Inf Div	23 Sep	Niigata
IX Corps	5 Oct	Sapporo-Hokkaido
77th Inf Div	5 Oct	Otaru-Sapporo
81st Inf Div	25 Sep	Aomoro
4th Marine Regt	28 Aug	Yokosuka
6th Army	unannounced	Lower Honshu-Kyushu
Fifth Amphibious Corps	23 Sep	Nagasaki
2nd Marine Div	23 Sep	Nagasaki
5th Marine Div	22 Sep	Sasebo
32nd Inf Div	unannounced	Sasebo
25th Inf Div	2 Oct	Nagoya
33rd Inf Div	25 Sep	Kobe-Koyoto
98th Inf Div	27 Sep	Kobe-Osaka
X Corps	25 Oct	Kochi
24th Inf Div	25 Oct	Kochi
41st Inf Div	30 Oct	Kure
127th Inf Bn	4 Sep	Kanoya
XXIV Corps	unannounced	Korea
7th Inf Div	8 Sep	Jinsen-Kekjo
40th Inf Div	26 Sep	Fusan
96th Inf Div	unannounced	
20th Armd Div	unannounced	
Third Amphibious Corps	30 Sep	Tsientsin
1st Marine Div	30 Sep	Tsientsin
6th Marine Div	10 Oct	Tsing Tao
158th Regtal Combat	21 Oct	Yokohama
First Corps	unannounced	
6th Inf Div	unannounced	

CHINA (19 Aug to 18 Sep 45)

At the beginning of the period the Kuomintang Government, recognized by the Allies as the only government in China, had two armies in the field. The Chinese First Army, which was American-equipped and -trained and some of whose units had been in action in Burma, was in south China west of the line

Inning (Jap)—Liuchow (Jap)—Lung River—Pak River—Siang River—Nanning (China)—Li River.

It was under orders to take over Kwantung east of that line, including Canton and Hong Kong, from the Japanese forces who were to surrender.

The Chinese Sixth Army, having similar orders to take over the Yangtze valley, was south of that river along the line

Lake Tung Ting—Paoking (Jap)—Sinning (?)—Inning (Jap).

A mixed force was north of the Yangtze River along the line Laohokow—Ichang.

North of the latter force was the independent Chinese Communist Army, with GHQ at Yen-an. Its front (with Fourth and Eighth Armies in line) was along the east boundary of Shansi Province, thence south to Laohokow. The left was in contact with the Mongolian First Army (Russian—see section on Manchukuo). The Communists had formally refused to recognize the authority of Generalissimo Chiang Kai-shek at Chungking, and had notified the Japanese before their lines to surrender to them. The Kuomintang formally notified the Japanese to do nothing of the kind; it designated Gen. Ho Ying-chin as its C-in-C, and authorized (and on 19 August directed) him to negotiate surrenders throughout China.

On 21 August at Chihkiang, Hunan, a conference was held between Gen. Ho and representatives of Gen. Okamura, Japanese C-in-C. An American representative attended. It was agreed that Chinese forces, reinforced by about 6,000 French troops then in south Hunan, should occupy Tonkin and those parts of Anam and Laos north of Latitude 16° N. Prior to this date Anam, which has been an independent kingdom under French guidance, had announced complete independence and a desire that no foreign troops enter her territories, which she claimed she was able to clear of Japanese herself.

At this time hostilities were continuing along the China-Japan front, and the Japanese formally complained on 22 August, claiming that incessant attacks were being made against them by both Kuomintang and Communist forces. This fighting appears to have been unauthorized by the Kuomintang government, which was sincerely seeking to arrange for Japanese surrenders without further hostilities and in an orderly manner. Both Chinese governments had but loose contact with many units, and they had poor means of communication.

On 25 August Generalissimo Chiang Kai-shek officially announced that the former orders to take over Hong Kong from the Japanese had been revoked. The Chinese Sixth Army had no transportation, and had counted upon the American Air Transport Command to fly in its troops. The

Air Transport Command, presumably under instructions from superior authority, declined to furnish the planes. It was announced that the British would reoccupy Hong Kong and that China would make no objection.

At the same time announcement was made that Chinese troops in the north would stay on the south side of the Great Wall west of Manchukuo and would abandon Mongolia. In 1924 Mongolia had revolted and shortly afterward had been occupied by Russia, which ever since has controlled a puppet government in that vast but sparsely settled province. At this time Communist troops were north of the Great Wall north and northeast of Peiping, in liaison with the right of the Russian armies operating in Manchukuo.

Manchukuo was to remain Chinese, but occupied by Russian troops permanently in part and totally during the war. Tibet, which has close relations with British India, was to become an autonomous state, presumably nominally within China. The south boundary of the occupied area in Indo-China was changed to 18° North Latitude.

The United States intervened to unite the Kuomintang and Communist governments. The U. S. Ambassador (Maj. Gen. Patrick J. Hurley) flew to Yen-an, and on 29 August brought back with him the Communist leaders under a guarantee of immunity. A conference thereupon commenced between the leaders of the two parties.

On 30 August a British naval force arrived at Hong Kong. A formal surrender was not immediately arranged, but the Japanese made no objection to a preliminary occupation of that colony. Next day planes from aircraft carriers attacked Japanese motor torpedo boats, alleged to be seeking to escape. One was sunk, one was beached, and the fate of the others is doubtful. Hong Kong was not surrendered until 16 September.

On 5 September the American Air Transport Command commenced to deliver troops of the Chinese Sixth Army at Nanking. At the same time Communist troops occupied some suburbs. Next day the ATC commenced to move elements of the Chinese Ninety-fourth Army from Liuchow to Shanghai. It was announced that the Chinese Kuomintang forces to occupy all of China in the Yangtze valley and south thereof would amount to 80,000 men. The ATC would move about 2,000 a day, complete with equipment, and complete the movement about 15 October. At the same time the ATC was flying food, medical supplies, and personnel to Japanese prisoner of war camps, and taking out the prisoners and refugees.

The railroad from Nanking to Shanghai was found useable, but in bad shape. Communist bands (called bandits by the Kuomintang) operated along the railroad and attacked about 2 trains a week.

On 9 September a formal act of surrender was signed at Nanking by Gen. Yusuji Okamura (Japanese C-in-C) and Gen. Ho Ying-chin (Chinese C-in-C). As the Chinese troops had no means of occupying the vast territory under

Japanese rule, it was agreed that Japan's troops should remain armed until such time as Kuomintang troops could take over.

Gen. Ho issued a General Order abolishing the independent pro-Japanese Government whose capital had been at Nanking, together with all laws, regulations, and taxes issued by it. Nanking Government troops were not immediately disarmed, but co-operated with the Kuomintang troops. Temporarily Nanking Government MPs, Japanese MPs, and Kuomintang MPs all functioned simultaneously.

Gen. Ho issued an order on Gen. Okamura to turn over under arrest Chen Kung-po, who had been President of the Nanking Government, together with seven leading Nanking officials. Gen. Okamura explained that it would be impracticable to comply as Chen Kung-po was a suicide. Other information indicates that high-ranking Nanking officials, including Chen, fled to Japan on 23 August.

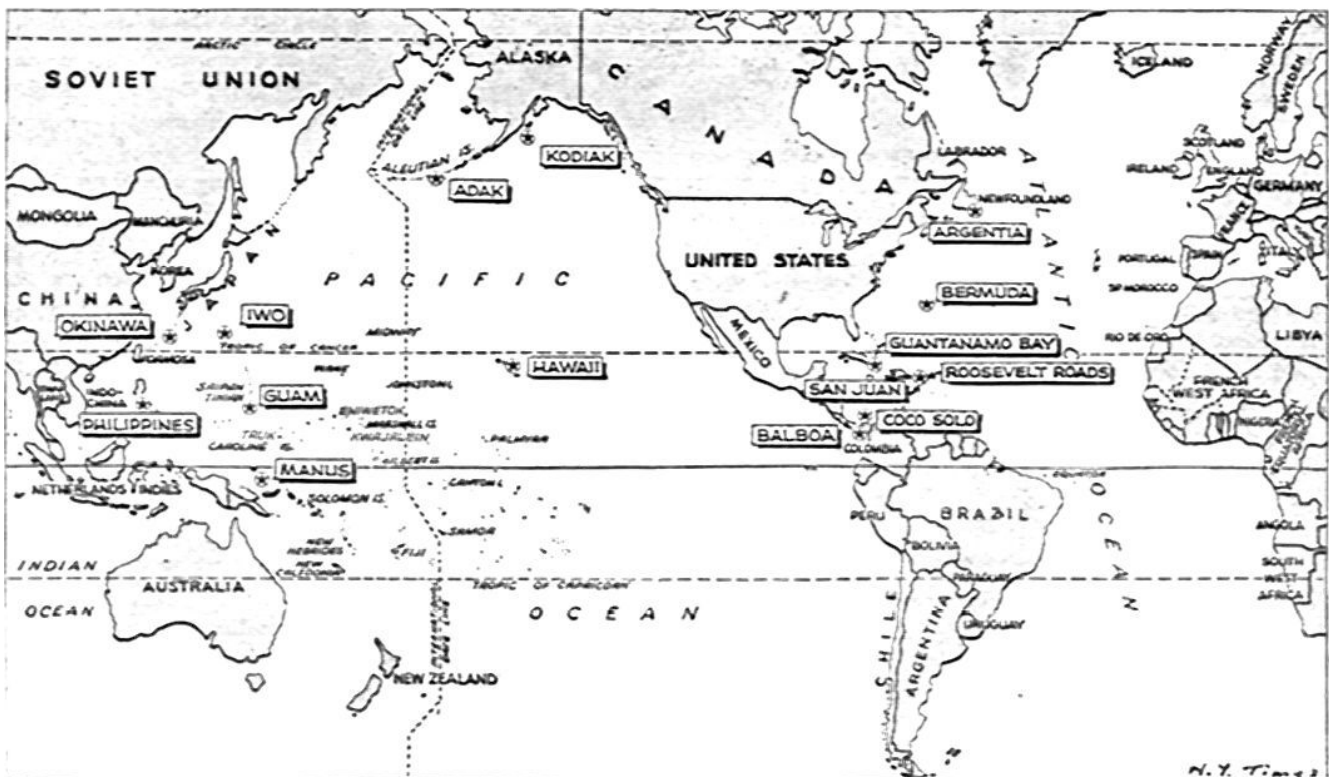
On 12 September Chinese troops arrived at Canton and at Shanghai, and commenced to relieve the Japanese in those two great cities. Shanghai had not been materially damaged. It was estimated that the replacement of the Japanese troops in the two cities would be completed by 20 September.

In the meantime, Communist troops had not been idle north of the Yangtze River. Japanese troops, reinforced by elements of the Nanking armies, held all railroad lines, including that from Peiping to Hankow. Communist troops crossed the railroad, without taking the defended cities, and proceeding eastward occupied the greater part of north China, less Shantung.

Communist troops closed in on Peiping, and by-passing it, relieved troops of the Russian-controlled Mongolian First Army, taking over the territory south of the Great Wall, including the corridor along the Liaotung Gulf between hills and sea. The key cities of Kalgan, Shanhaikwan, and Chingwangtao were occupied. By some arrangement with the Russian High Command not yet released, Communist troops moved north of the Great Wall and relieved Mongolian troops at Chengteh (or Jehol). It is probable that the treaty providing for occupation by Russia of Manchukuo does not consider Jehol as part of Manchukuo. Previous to 1932 Jehol had been a separate province. It had been united to Manchukuo through Japanese occupation. There has been considerable fighting between Communists and Japanese. The latter have not surrendered. The Communist attacks were constant, but as had been the practice for years, were largely harmless.

CHINA'S OCCUPATION OF INDOCHINA

During the first week of September Kuomintang troops crossed the frontier into Tonkin. They overcame minor opposition from IndoChina troops. On the 12th Hanoi was entered. A formal declaration was made that the Chinese occupation was temporary and in order to secure peace and order. It was further announced that a French general would accompany the Chinese troops. The French government thereupon designated Gen. Alessandri for this purpose. According to his report, Gen. Lu Han (commanding



It has been recommended by the Navy Department that in the Pacific we maintain important fleet centers at Kodiak, off Alaska; Adak, in the Aleutians; Hawaii; Balboa, Canal Zone; Guam, Saipan, and Tinian, which are considered as a single base; Iwo;

Okinawa; the Philippines; and Manus, in the Admiralties. In the Atlantic it is proposed that we have major bases at Argentina, Newfoundland; Bermuda; Roosevelt Roads and San Juan, in Puerto Rico; Guantanamo Bay, in Cuba; and Coco Solo, Canal Zone.

the Chinese), refused to accept him.

According to French reports the Chinese "army" at Hanoi consists of about 2,500 men equipped with American infantry weapons but without artillery and transportation. This force arrived by marching from the Kunming area. Four other Chinese "armies" are en route to Tonkin and one to Laos. An American detachment of about 150 men arrived by air at the same time as the Chinese. The Tonkinese started anti-French rioting and the Americans intervened to assure order. The natives are anti-foreign, and want neither Japs, Chinese, nor French. In view of this situation the Japanese were not disarmed at date of the close of this article.

USE OF AMERICAN TROOPS

On 13 September, in view of the growing difficulties in China and particularly the non-cooperation between Kuomintang and Communist troops, the American commander (Lt. Gen. Albert C. Wedemeyer) issued a statement. It foresaw American occupation of important centers, naming Peiping, Shanghai, Tientsin, Canton, and others. It explained that

"The object of bringing in American troops would be to maintain order and facilitate the control of the Central Chinese Government in areas that have been occupied by the Japanese."

DIFFERENCES BETWEEN KUOMINTANG AND COMMUNIST GOVERNMENTS

Under the patronage of the American ambassador, who has earnestly sought to solve the problem, the discussion between Generalissimo Chiang Kai-shek and the Communist leaders continued at Chungking. The Communists were represented

by Mao Tze-tung, their leader, and Gen. Chou En-lai, their C-in-C. - Commencing on 29 August, and up to when this account closed on 18 September, no arrangement had been arrived at.

The issue between the two great Chinese parties is this. The great mass of Chinese—at least 98%—do not belong to either party. Local government is materially better in Communist territory, and is honest. This appeals to the people, who although not interested in Communism, do appreciate better government. Kuomintang China is notoriously corrupt and its government is inferior as compared with Communist government. Kuomintang is supported by the Allies, receives lend-lease supplies, arms, and munitions, which the Communists do not. If the Communists do not secure arms and munitions (say from Japanese surrenders) and the Kuomintang does, the latter may by force suppress the Communists. The contrary may happen if the Communists do secure arms.

The Communists' proposition is to have an election to determine the leader of China. They have no objection to Chiang's appearing as a candidate, but desire that pending an election he withdraw. In the meantime, Kuomintang and Communist troops are to receive Japanese surrenders, each within its present respective territory.

The Kuomintang is willing to have an election, but not until after the Communists have formally surrendered, turned in their arms, and submitted to Generalissimo Chiang.

It is impossible to foresee the outcome. The action of local Japanese commanders may affect the ultimate result

THE SOUTHEAST ASIA COMMAND (19 Aug to 18 Sep 45)

Japanese GHQ at Singapore did not accept surrender until 19 August, when it acknowledged receipt of instructions from Tokyo to cease hostilities. Next day Admiral Lord Louis Mountbatten (Allied C-in-C) radioed Field Marshal Count Juichi Terauchi (Japanese C-in-C) to send a representative to a conference to be held at Rangoon on 23 August. The Japanese representative arrived on the 26th, and preliminary arrangements were concluded for British occupation of the Southeast Asia Area.

The Japanese reported that irregular troops, under British regular officers, were operating in Malaya rear areas. They had not recognized the surrender, but continued to raid communications, destroy railroad trains, etc. In view of the surrender of Japan, the Japanese commander had withdrawn his rear area guards and declined to operate against the irregular troops. He would concentrate in agreed-upon places, and surrender in as orderly a manner as conditions permitted.

Burma. On 2 September a strong Japanese force in their bridgehead northeast of Pegu raided the British lines at Gyogon, which was held by Burma troops. Object of the attack appears to have been to open a gap through the British lines to enable Japanese troops to withdraw from the Pegu Mountains into the bridgehead, which had been established

for the purpose of affording a line of retreat for Japanese troops west of the Sittang River.

The Japanese C-in-C was requested to advise his troops that the war was over. The result of the attack was not revealed. It appears that about 10,000 Japanese troops were in the bridgehead. Japanese commander in Burma is Gen. Hyotaro Komura, with about 50,000 men. He signed a formal surrender at Rangoon on 13 September.

Malaya. The Japanese commander at Penang signed surrender articles on board the battleship *Nelson* on 2 September; and on the 3d, Marines were debarked at that place. Japanese service troops were retained in order to operate public facilities. The Japanese garrison numbered about 500 men.

On 5 September British and Indian troops arrived at Singapore and commenced to debark. It was not until the 12th that formal surrender articles were signed at that port. The Japanese C-in-C was absent on sick report (he had had a cerebral stroke, verified by British medical officers). The local commander was Gen. Seishiro Itagaki, Japanese Seventh Army. This surrender on paper covered the whole of Southeast Asia, with an approximate area of 1,500,000 square miles and an estimated population of 128,000,000. It was believed that the Japanese garrisons within this area

would total about 500,000 men. At the same ceremony, Vice Admiral Fugedome surrendered all Japanese naval forces.

Only a part of the Japanese force in Singapore laid down their arms. The main body withdrew northward by marching into and through Johore. Singapore city was not badly damaged from the war, but the naval base, including all drydocks, was a mass of ruins.

The British occupied Ports Sweetenham and Dickson on 9 September. The Malaya occupation troops consist of the Indian XXXIV Corps, with the Indian 23d and 25th Divisions, the Indian 50th Tank Brigade, and the British 5th Parachute Brigade.

On 14 September the Indian 34th Division, landing in Malaya, received the surrender at Kuala Lumpur of the Japanese Twenty-ninth Army (Lt. Gen. Teizo Ishiguro).

Thailand. This state by a palace revolution had, upon notice of Japan's surrender, revoked all Japanese orders in effect, and had withdrawn its declaration of war against the Allies under plea that this had been effected through superior hostile force and was involuntary.

By letter of our State Department, dated 19 August, the United States recognized the new Thailand government and the explanation submitted. In accordance with instructions received, the Thailand Asst. C-in-C (Lt. Gen. Akdi S. Narong) flew to Kandy, CP for the Southeast Asia Command, and reported in person on 2 September for orders.

Java. An Allied occupation fleet arrived at Batavia on 16 September. The Japanese commander was instructed to concentrate his troops at certain indicated places, preparatory to disarming and surrendering.

About 130,000 prisoners of war are reported to be in Java, of which only about 100 are believed to be Americans. These are being flown out.

IndoChina. A confused situation exists in this country, which consists of five states: Tonkin, Annam, Laos, Cambodia, and Cochin-China (Saigon). Previous to the war it was a French colony. With the surrender of Japan the natives started a movement for complete independence, claiming that they could manage their own countries and wanted neither French, Japanese, Chinese, nor other foreign troops to enter under pretext of "liberation."

As a result of arrangements by the Allies, in which France was included but (as far as is known) the natives were not, it

was announced that south IndoChina was in the Southeast Asia Command and would be liberated by its troops. North Indo-China was to be liberated by Chinese troops. The boundary between the two areas was to be Latitude 16° North, which was shortly afterward changed to 18° North.

In accordance with this arrangement Chinese troops under Gen. Lu Han entered Tonkin near Langson on 29 August, overcoming minor native resistance. They proceeded toward Hanoi, capital of Tonkin.

Thailand entered a protest to a proposal that IndoChina be given certain areas which had been ceded to Thailand in 1941 by the then French Government. A proposition to arbitrate was rejected in Paris on 31 August, on the grounds that the justice of the French claim was indisputable and that the cession had been made only under threat of Japanese force. It was announced that France proposed to forward 40,000 troops to IndoChina, and that the leading elements would sail from Marseille on 6 September.

In the meantime Tonkin proclaimed itself an independent republic. The Japanese made no objection. On 12 September the Chinese force of Gen. Lu arrived at Hanoi. Street fighting broke out at once, but a small force of Americans with the Chinese arranged for a temporary cessation of hostilities.

Of the five IndoChina states, Japan had troops only in Tonkin and Cochin-China. Annam, Laos, and Cambodia had native rulers. Of these three Laos had been pro-Ally. The situation in Laos is unknown. Annam is ruled by an emperor who has a European education. It is understood that this state is arming to maintain its independence. It is claimed, but not proved, that 10,000 Japanese have been discharged in order to serve with the Annamite troops, and that substantial quantities of Japanese weapons and munitions have been obtained by Annam.

There is no information as to events in Cambodia.

A mission from the Southeast Asia Command arrived in Cochin-China on 31 August, and has been there since. Its objective is to head off future possibilities of more wars, local or otherwise. Lt. Gen. Sir William J. Slim, promoted from command of the British Fourteenth Army to the Southeast Asia Command's Land Forces, has been at Saigon. On 17 September he reported that the situation was tense, but that no fighting was probable unless there was a "challenge from either side."

THE PHILIPPINES (19 Aug to 18 Sep 45)

At the beginning of the period hostilities had not ended. The XIV Corps in north Luzon was engaged with a considerable body of the enemy in the general vicinity of Kiangan, and against a lesser number of the enemy in Sierra Madre Mountains to the east. The X Corps was engaged with another large hostile force in Mindanao, near but beyond Davao and in the Agusan valley. Smaller enemy forces were holding out in the mountains about 25 miles east of Manila, on Cebu, Palawan, and in other places. All hostilities were of a guerrilla variety.

Following two enemy attacks against the 32nd Infantry Division north of Baguio on the night 18/19 August, an enemy flag appeared during the ensuing day from the Japanese 2nd Armored Division, suggesting surrender negotiations. This proposition was accepted. On the same day a second enemy flag from their 103d Infantry Division made the same offer to the commander of American guerrilla forces near Bontoc. To hasten the surrender the Air Force dropped nearly 800,000 leaflets throughout the Cagayan valley which, less the main road, was overrun by enemy

forces.

East of the Cagayan, emissaries from the American 38th Infantry Division, consisting of released Japanese prisoners of war suitably equipped with cigarettes and candy, contacted the Japanese commander in the mountains with an offer to come in and surrender. This led to meetings on 22 August in which unarmed American officers entered the Japanese lines to discuss surrenders. The 6th Infantry Division sent a party into the hills near Antipolo on the same day to discuss surrender of the enemy opposite Manila. It was received by the Japanese, who had explained to them that the Rules of Land Warfare as prescribed in the Hague Conventions would be followed scrupulously by the Americans. The 38th Infantry Division sent a similar party into enemy-held territory on a similar mission.

Contact was established with the enemy commanders on Cebu and on Mindanao.

It later developed that the Japanese C-in-C in the Philippines (Gen. Tomoyuki Yamashita) received radio instructions from Tokyo on 20 August as to cessation of hostilities. He thereupon issued a General Order to that effect. Due to his dispersed command it took some time to get the information around. There appears to have been nothing in the Tokyo message as to surrender. In the meantime there were no surrenders.

Gen. Yamashita had captured an American pilot, who had crashed within his lines about 15 August. This officer was uninjured. Receiving no further instructions from Japan, Gen. Yamashita sent the pilot—Capt. Dan Shaw, AC—back to the 32nd Infantry Division lines for information. The division commander thereupon wrote a letter to Gen. Yamashita, which Capt. Shaw dropped near where he knew the Japanese CP was located. The letter gave information as to surrender and as to making contact. A set of panels was dropped, with a note to set them out at an indicated field if Gen. Yamashita accepted the surrender proposition. On 26 August the Japanese displayed these panels as had been prescribed.

On this date the first Japanese to surrender on Mindanao came in near the Pulangi River. They numbered 110 men out of an estimated enemy total of 5,000 in that area.

On the 27th Gen. Yamashita replied in writing to the letter from the 32nd Division. He stated that he had received from Japanese GHQ no orders to surrender. Until such orders were received, he did not feel that he could undertake to negotiate regarding surrender. He expressed a hope that orders would arrive shortly. To hasten this result, the 32nd Division issued a good radio set to the Japanese flag to take back to Yamashita, and thereby enable him to request necessary official instructions. Gen. Yamashita in his letter had stated that his CP was in the mountains near Kiangnan, about half way between Routes 3 and 5.

The contact thus made resulted in Gen. Yamashita's entering the American lines on 2 September, same day as the formal Japanese surrender in Tokyo Bay. It was arranged that Yamashita should sign a similar formal surrender covering the Philippine Islands on the following day. This he did at Baguio. He reported that his command had 40,000 troops for duty, which was more than twice as many as had been estimated in American G-2 reports.

In the meantime, on 2 September Vice Admiral Furuse, formerly commanding the Manila Base, surrendered the Japanese forces in the mountains near Antipolo. Also on this day Lt. Gen. Tadasu Katioka, on Cebu, surrendered elements of the Japanese First, Fourteenth, and Thirty-fifth Armies within the Visayas.

On 10 September "several thousand" of Yamashita's troops surrendered in the sector east of the Cagayan valley. Up to 18 September, when this account closed, no further surrenders nor any statement of prisoners taken had been released.

On 16 September, GHQ of Gen. MacArthur announced that American troops would be withdrawn at an early date from Mindoro, Cebu, Palawan, east Mindanao, and the Sulu Islands.

On 23 August José P. Laurel, President of the pro-Japan Philippine Government during Japanese occupation, resigned. He had taken refuge in Japan. On 15 September he was arrested by American authorities near Nara, Japan. He was to be sent to Manila for trial.

THE SOUTHWEST PACIFIC AREA (19 Aug to 18 Sep 45)

In general the Japanese forces refused to surrender in advance of the official signing of surrender papers at Tokyo. As all Japanese forces were on the tactical defensive they made no attacks, but held their lines. The Allies—mostly Australian, but with some American, British, and Dutch units—refrained from attacking. A period of armed truce continued through 2 September. During this period contact was made between various Allied and Japanese commanders, with a view of arranging surrender. This led to the results indicated below.

Borneo. The Australian 7th Division was engaged in the Balikpapan area. Negotiations with the Japanese commenced on 3 September and were concluded on the 9th, on which date the Japanese commander (Vice Admiral Kamada)

surrendered to the division commandet, Mai. Gen. E. J. Milford. This surrender was to include all of Borneo.

On 14 September the Japanese at Sandakan, under a colonel, surrendered to an Australian detachment which appears to have been flown in. On the same day Kuching was surrendered to another Australian detachment.

The remainder of Borneo has not been taken over, except that a detachment of the Australian 7th Division had previously occupied the Brunei sector.

Morotai. The Japanese on this island surrendered on 9 September, to Lt. Gen. Sir Thomas Blamey, Australian C-in-C. Morotai was an American intermediate base during the campaign in the Philippines. The American troops have been ordered withdrawn.

Notwithstanding the American base on Morotai, that island appears to have been the CP of the Japanese Second Army, whose commander (Lt. Gen. Tishima) signed the surrender.

Timor. Australian troops from Darwin, north Australia, arrived in the Portuguese sector on 5 September. About 6,000 Japanese troops were estimated as forming the garrison. A surrender which included Dutch Timor was signed at Kupang on 11 September.

Portugal has announced that her own troops are on the sea, en route to take over Timor.

Amboina. Australian troops are reported as having arrived on this island on 12 September.

New Guinea. The Japanese Eighteenth Army (Lt. Gen. Hatazo Adachi) was in the vicinity of Wewak. An independent naval force (Rear Admiral Sato) was based on Kiriru, an island off Wewak. The CP of this force was a mile inland, and so well camouflaged that its presence had not been previously known. It was well equipped, and had electric power and lights. The naval force surrendered on the 11th, and the Australian 6th Division occupied Kiriru on the 17th. The land forces surrendered at Wewak on the 13th to the same division (Maj. Gen. H. C. H. Robertson).

New Britain and New Ireland. On 6 September, off Rabaul, on board the British aircraft carrier *Glorious*, Gen. Hitoshi Imamura and Vice Admiral Jin-ichi Kusada, army and navy commanders, surrendered their forces to Lt. Gen. Vernon A. H. Sturdee, Australian First Army.

On 11 September the Australian 4th and 13th Australian Brigades commenced landing at Rabaul. The Japanese cooperated in transferring command. It was arranged that the Japanese would be concentrated south of Rabaul, pending transportation back to Japan.

Nothing remained of Rabaul, which had been one of the most intensively bombed places in the southwest Pacific. Until the end of the war the U.S. Air Force had attacked Rabaul almost every day. There was no town. It had completely disappeared. In its place the jungle had grown up to a height of 20 to 30 feet. Appearances indicated that the place had been evacuated at least two years.

The Japanese had withdrawn, and were living in tunnels



While Japanese emissaries were being received by American officers in Manila (1) early in the period, surrender maneuvers were set in motion by the enemy in northern Luzon (2), in the Wewak area (3), and on Bougainville (4). In Manchuria, too, where Soviet forces were close to Mukden (6), the Japanese were for the most part abandoning resistance, according to Moscow. There was no Allied response to Tokyo's complaint that troops had begun

Kuriles. Thailand (7) declared herself for the United Nations, asserting that her war declaration had been made under Japanese compulsion. Meanwhile, Allied medical troops parachuted onto enemy prison camps in nine areas to take charge of Allied captives. In one at Sian (A) they found Lt. Gen. Jonathan M. Wainwright. Other camps are situated in Korea (B), at Peiping (C), at Weihshien (D), at Shanghai (E), on Formosa (F), in the Canton-Hong Kong area (G), on Hainan Island (H), and in Indo-China (J).

in the adjacent volcanoes and mountains. The natives had followed their example. The total length of tunnels has not yet been ascertained, but is reported as being a considerable number of miles.

The harbor had numerous wrecks of all sizes, from large transports down to launches.

Solomon Islands. On 2 September Lt. Gen. Kanda, Japanese Seventeenth Army commander on Bougainville, announced his readiness to surrender to Brig. Gen. Garrett, Australian II Corps. First Australian occupation troops arrived in Buin, in south Bougainville, on 10 September. The adjacent Kahili air field was found generally unusable due to

accurate Allied bombing, which had been largely by American planes.

Australian naval forces commenced removal of enemy mine fields. Due to shortage of equipment this work has been proceeding slowly, and nothing further has been reported as to occupation. The Australian 3d and 11th Divisions were last reported respectively as in north and south Bougainville.

Nauru. Naval Captain Solda, commanding Japanese forces, on 14 September surrendered to Brig. Gen. J. R. Stevenson, Australian Army. The Japanese were near starvation. They are reported to have killed their own men, as well as some Chinese, for food. Notwithstanding, 300 Japanese had died from starvation.

THE CENTRAL PACIFIC AREA (19 Aug to 18 Sep 45)

Marshall Islands. The Japanese held four islands—Wotje, Maloelap, Mili, and Jaluit. On 22 August the destroyer *Levy* visited Mili and received a surrender on paper. Jaluit was visited on 26 August by the destroyer-escort *Amick*, with same result. No report has been received regarding the other islands, or the relief of the Japanese garrisons.

According to a Japanese report the garrison of Mili consisted of 4,300 men. By permission of Gen. MacArthur a Japanese transport was sent to Mili to load 1,200 sick and wounded during 12/13 September.

Caroline Islands. On 23 August the Japanese garrisons at Yap and in the Palau Islands signified their willingness to surrender. Truk did likewise on the 27th. The Japanese garrison in the Palaus was estimated as 44,000 men. No report of the relief of Japanese forces in the Carolines has been received.

The Marianas. On 27 August a detachment of 164 Japanese who had held out on Saipan, surrendered. On 4 September 64 Japanese under a lieutenant colonel who had continued to resist on Guam, also surrendered. It is believed that these islands are now clear of hostile forces.

On 27 August Rota surrendered formally to a Marine force sent from Guam. About 4,000 Japanese who formed the garrison were brought to Guam.

Bonin Islands. The Japanese commander at Chichi signed a formal surrender on 3 September.

Miscellaneous. Wake Island surrender by radio on 2 September.

Marcus Island was evacuated by the Japanese, whose garrison of 300 men arrived in Japan on a Japanese transport on 4 September.

TRIBUTE TO OUR AUTHORS

It is not our wont to toot horns. Performance of the artillery in this war speaks for itself in a resounding, outstanding way. Excellence of the articles prepared by interested artillerymen for the JOURNAL has also been apparent. In publishing the following paean we still have no notion of blowing our own horn. We believe, however, that our contributors should know how valuable has been the cumulative effect of their work. Perhaps too this young officer's remarks will encourage more unit commanders to see to it that their men receive ample unit copies for general distribution. It will be just as helpful, useful, and interesting in the coming years as it was during combat.

"When I left the Solomons I failed to change my address so that my copy of the JOURNAL would continue to go to the men in my old outfit, to whom I normally turned over the JOURNALS after I read them. Since then I have had several APOs en route from the Asiatic Pacific, and at present have a more or less permanent one [in Germany]."

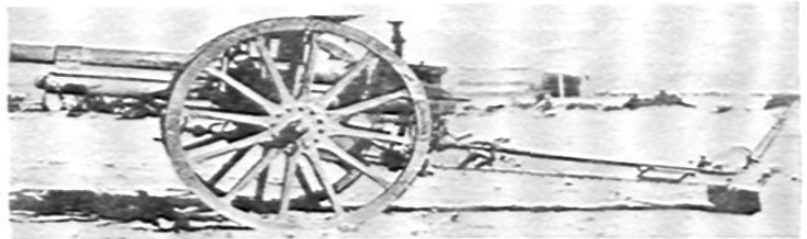
"In all my travels I was able to obtain each month's copy of the JOURNAL and must say that it helped immeasurably to remember what others had said of the Jerry in the JOURNAL. When I participated in operations against the Japanese it was interesting and instructive to read of my present division's activity in Africa and Sicily."

"Now I find that what was formerly interesting reading is damned helpful information. For one thing, it allowed me to meet the German infantry with better understanding of my job than I had when I attacked my first Jap target. The result certainly has made me a better friend of the doughboy, and from having personally interrogated PWs I know how Jerry felt about us artillerymen: thanks to the JOURNAL, he hated us."

Italian Artillery

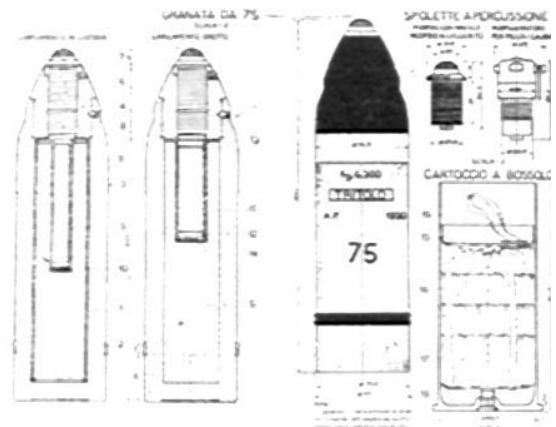
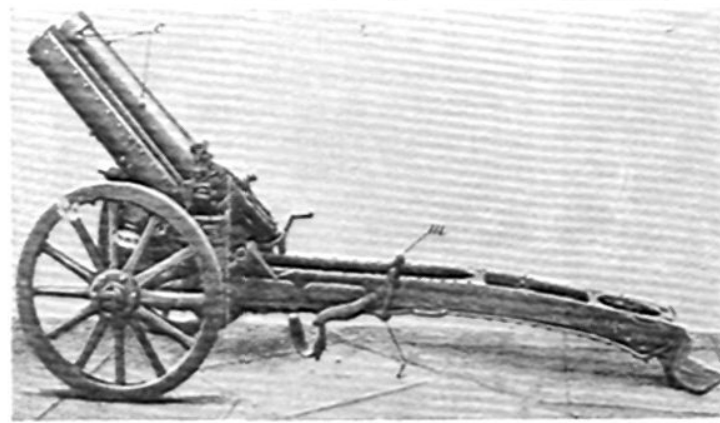
By Lt. Col. G. B. Jarrett, Ord.

A 20-mm Breda AA gun appears at upper right. Below it is a 77/28 with the old Austrian wheels, not modernized. In left center is a 65/17 pack howitzer captured by Indian troops in Libya. At the bottom of the page, at left is a 75-mm Skoda howitzer, Model 1915, called the 57/13 by the Italians; at right are examples of old pattern 75-mm shells used in both World Wars.



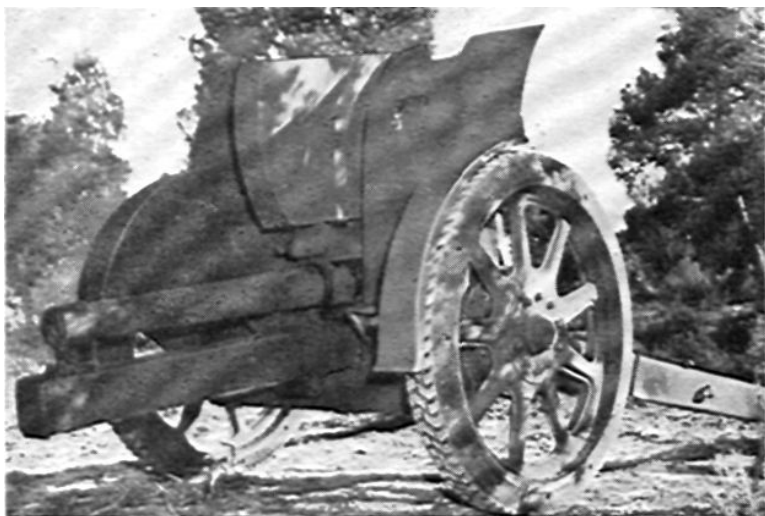
In looking over the Italian artillery pieces one wonders what policy could have been followed, in view of the hodgepodge of weapons and calibers found among the Allied captures throughout this war. Since 1918, in all Ordnance matters the Italian military leaders have had a policy whereby any captured piece on hand would be used "as is" or slightly modified. Some instances suggest that logical development of a better piece by their own engineers was stifled in favor of these modifications, although some parallel research was carried out in the late '20s and '30s. The net result was an illogical series of artillery on hand for World War II.

This situation contributed to the poor showing of Italian arms in 1940-43. Their artillery support failed them badly, even though the Italian gunner was usually a very brave





75/27 Mod. 12, modernized with rubber-tired wheels.



75/27 M11 showing tube locked down for transport. This piece was captured at Gafsa, Tunisia, 7 Feb 43.



Ansaldo 75/46 AA gun.

man. Briefly, their troubles lay in poor design of both carriages and ammunition.

Too many of the Italian regimental weapons were field pieces captured from the Austrians in the Piave battles of 1918. Many of these had not been modernized at all, and even had an Italian serial number stamped on with the original Austrian number crossed out. Pieces of this vintage rarely had much traverse or elevation, and with box trails (or at best a modified box design), naturally their field of fire was restricted. The horse-drawn type of steel-tired wooden wheels was still on many of these pieces, cutting mobility to that of 1918 warfare. In 1940 Wavell's armies, poorly equipped and with barely a fourth the strength of Italian forces in Libya, relentlessly ran down first Graziani in Libya and then the Duke of Aosta's men in East Africa. By May of 1941 all Italian resistance had ceased in East Africa, a bitter blow to Italian prestige.

Ammunition in many of the dumps captured in Eritrea was often found to be some originally taken from the Austrians in 1918, Italian copies of more recent manufacture, or occasionally some of their own designs. All this ammunition found in Eritrea was the flat-based, basic HE type with unreliable fuze systems not at all acceptable to modern ordnance engineering for safety, accuracy, reliability, and optimum ranges. These causes made for miserable and inadequate artillery support.

In 1918 the Italians had obtained the French Schneider 105s, building them afterward at Ansaldo. Many of these found in Eritrea had been slightly modified for higher speed towing. A trailer had been devised upon which the piece with its wooden, steel-rimmed artillery wheels rested for transport. The final modification of this piece consisted of a new, light, cast alloy wheel with hard rubber tires, specimens of which appeared in Libya.

The 6" field of both howitzers and guns was covered in a series of 1890-1918 designs of many schools of thought. Krupp took most honors. Skoda was second, then followed Italian designs. Six-inch guns taken in East Africa were as a rule all non-recoil types employing wooden ramp-rocker devices to take up recoil, with a ski-type device on the tail, replaced in more conventional trails by a spade. Most of these guns were from 149- to 152-mm in caliber, and provided with flat-base, blunt ogive types of projectiles which included shrapnel, HE, and some chemical-filled shells. In the '30s some streamlined shells were introduced for most calibers.

In reading the following discussion of some of the more interesting weapons, it would be well to remember that Italian practice is to refer

to the caliber in millimeters followed by the tube length in calibers. Thus 65/17 means a 65-mm bore diameter and a tube 17 calibers long.

Many 65/17 light guns were found in Eritrea. Most of these weapons were built during World War I, and are decidedly inadequate for modern warfare. Obviously the shell caused a few casualties, but in the over-all picture these pieces fell woefully short of their infantry-support mission.

The 65/17 light infantry gun fired a 9½-lb. shell about 7,000 yards, at its maximum elevation of 20°. This piece weighed 1,223 lbs. This weapon, in spite of being obsolete, saw service in all the Italian campaigns of World War II. This undoubtedly accounts for the wide variety of ammunition provided for this gun and captured in all the dumps. This included a PD, fuzed, heavy wall HE; a high capacity HE with T&P fuze; a BD fuzed APHE, capped and ballistic capped; a hollow charge; and a case shot.

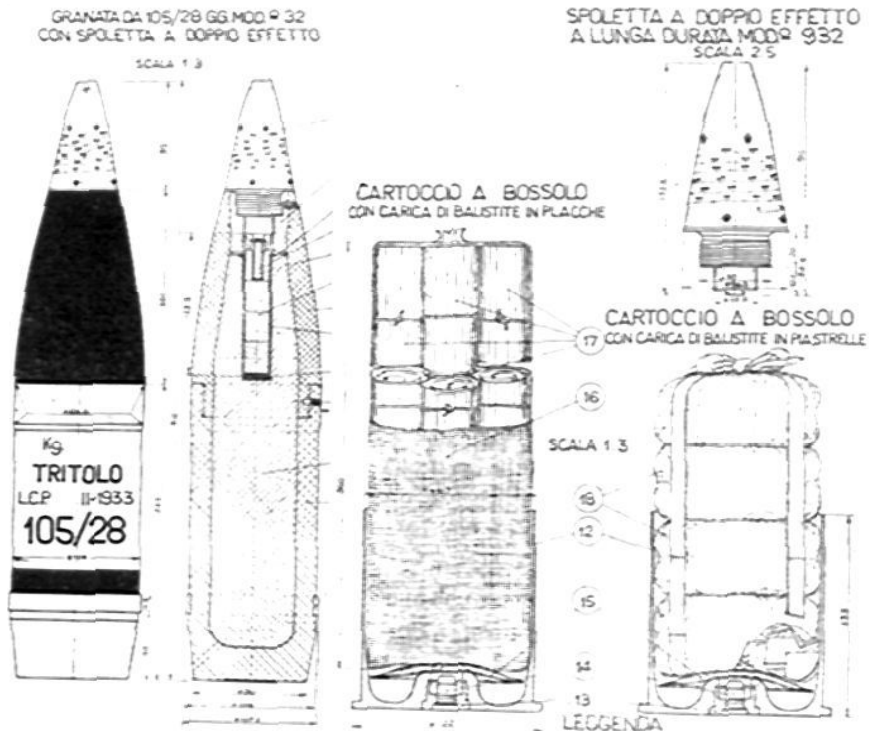
The Italians had one other mountain howitzer, one taken from the Austrians in 1918—the Skoda 75-mm piece of 1915. This they called the 75/13. As it had more range and a heavier shell, it was a more formidable weapon. The Italians thought so much of it that Ansaldo produced a large number after 1918. Pieces with the names of both manufacturing arsenals and various dates stamped on the tubes were captured in Africa. The over-all tactical advantages of such a piece might be compared with the long-obsolete U. S. 2.95" mountain howitzer of the early 1900s.

This 75/13 mountain howitzer was the successor to the 65/17 piece. Developed by the Austrian Skoda Works, this weapon was adopted in 1915. It offered considerable advantages over its predecessor as it fired a 14-lb shell about 9,000 yards. Two types of HE were provided, as for most Italian pieces: a thinly-walled shell and a heavier-walled model. APHE could also be used, though this was rather optimistic at 1,340 foot seconds. A shrapnel was also provided. The piece was often pulled by a single horse or mule. For regular mountain assignments it was packed on seven mules. Several batteries were sent to the East African theater, prior to opening of the campaigns.

Another size much in favor with the Italians was the 75/18. This chamber size reflected Krupp styles current before World War I. Its cartridge case is quite short and not bottlenecked. With an 18-caliber tube it offers about 1,350 foot seconds. Use of this design appears in three field weapons and in a fourth modification in the Semovante or SP carriage, a modification



Two specimens of the 105/28 at Cappuzzo in November of 1940. At left the modernized wheels are seen. On the right is the high speed adapter or bogie.

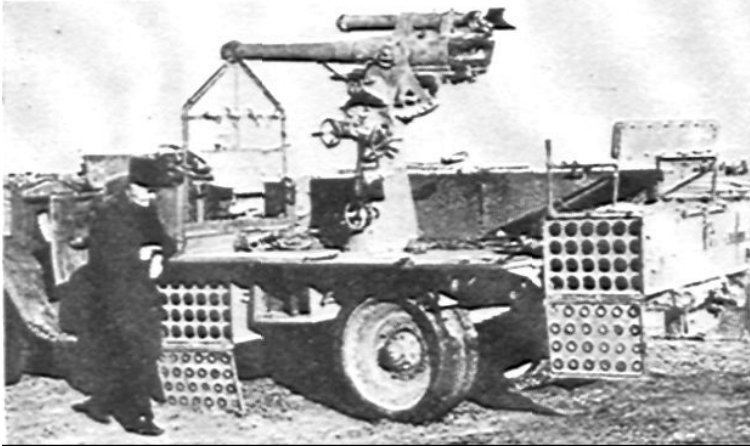


Ammunition for the 105/28. At left, time and percussion fuzed Mod. '32 HE shell. In center appear rolled powder sheets. In upper right is the Italian time and percussion fuze.

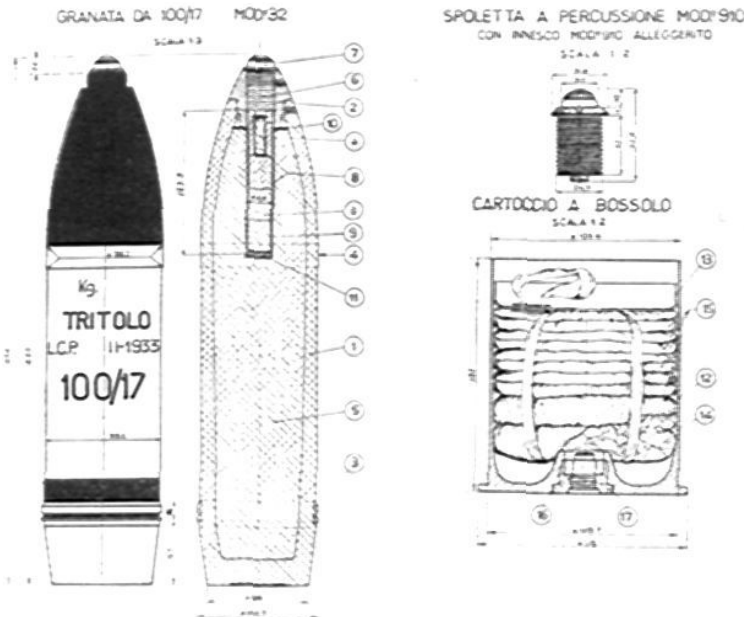


Italy's Ansaldo 105/28 gun-howitzer is patterned after the French Schneider.

of a 13/40 tank chassis as an armored force supporting artillery weapon and with the tube provided with a brake. The field pieces differed only in their carriages; all were quite mobile. The Semovante version was on either a Fiat or Ansaldo tank chassis. With this low muzzle velocity, performance of this piece on any mount was not overwhelming. The field guns usually fired but one type of HE shell, a 14-lb., heavy-walled projectile.



1918 75/27 AA gun mounted on a truck for AT use.



Here is the modern design of shell for the 100/17 howitzer.



100/17 howitzer, made by Ansaldo.

The Semovante, however, used a lighter HE shell (about 12 lbs.); this was an attempt to improve the range slightly for armored operations. In addition an APHE, a hollow charge, and a shrapnel were issued. Shrapnel rounds were not fired from the Semovante version.

Another Italian 75-mm series existed of which there were several designs, all of them pre-World War I. This is the 75/27 group. Models 1906 and 1912 have almost identical carriages, but the model 1911 is quite different from conventional artillery carriages.

The '06 and '12 carriages have modified box trails and favor earlier Krupp designs. The model '11 carriage is a very early thought on the split trail idea. Its tube has a very odd traveling lock on the recoil system. The recoil housing remains horizontal during firing, while the tube is elevated independently of it. This gives the weapon a quite strange appearance.

One of the 75/27 versions was used to a limited extent on SP mounts, but is not believed to have been used in the African phase of operations.

A 75/34 field gun was built, but in such limited numbers as to not be encountered in the field.

The 77/28 is an odd size, an original Skoda piece with a Krupp flavor. It shoots a 13-lb. shell about 7,300 yards. It also fires a heavy-walled shell. Two patterns of shrapnel and a case shot are also provided. Some of this ammunition captured in Eritrea bore Austrian dates and marks, indicating the Italians had captured it—probably on the Piave. It is not known whether or not the Italians had renovated the ammunition since 1918.

Four model numbers of this piece existed: 05, 05/8, 14, and 17. There were minor differences. The 05/8 version could be split up for pack mules. Model 14 could be elevated to 80° for AA fire (barrage fire was the only type used, as tracking means were so inadequate). All the tubes had bronze jackets over the steel tube.

From here the bore diameter now goes up to 100-mm. Italians refer to it as a 100/17 Model 14 field gun. By U. S. standards this is a howitzer, and a short tubed one at that. When seen in photos it is often confused with the 75/27 Model 06, as they are quite similar. The 29.9-lb. shell is on the light side for this caliber but is shot about 10,000 yds. Four patterns of HE shell existed, one hollow charge, and a shrapnel. A Model 16 version also existed using the same ammunition. It differed slightly from the Model 14 pattern in that it had a little less traverse but went to 70° elevation, the earlier pieces having 48°. Both weapons were considered very accurate

by the Italian gunners. A large percentage of such weapons were in use.

Without a doubt, however, the outstanding Italian field piece was the Ansaldo 105/28. This is actually a long range howitzer and approaches nearest our own famous 105-mm howitzer. Again the Italians call this piece a field gun. Made by Ansaldo at Genoa, it basically favors the 1913/18 French Schneider design. It is reliably accurate and has a typically smooth Schneider recoil. Due to its modified box trail it has little deflection and so its field of fire is hampered. It fires a 35.5-lb. shell at 1,880 foot seconds to a 15,000-yd. range. This weapon really could have had possibilities with well trained personnel and determined leaders. Chemical, hollow charge, and five patterns of HE shell were provided (some of them streamlined).

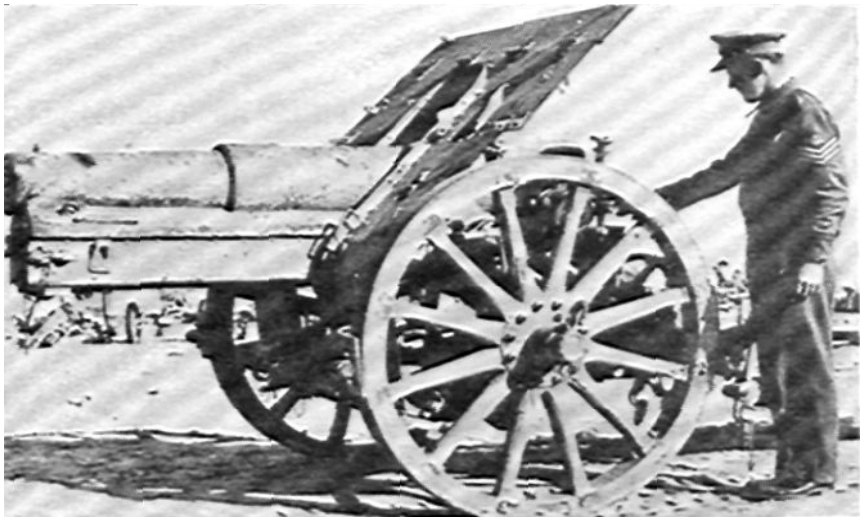
Most of these weapons found in Eritrea and Ethiopia at the close of the East African campaigns had trailer modifications for towing behind tractors. This device lifted the gun carriage wheels off the ground. The trailer wheels were cast metal and with solid rubber tires. When using these trailers the weapons were still equipped with their original steel-rimmed, wooden artillery wheels. The scant mobility of such equipment is pathetic in such a modern age as this war was fought in. A few 105/28 units like this were with Graziani's forces in Libya.

But most of the 105/28 pieces in Libya had been modernized by having cast metal wheels with heavy solid rubber tires. This eliminated the trailer idea, but in range and general field of fire this weapon was still of World War I vintage. Even so, it doubtless was the best Italian field piece available.

A 104/32 weapon existed, but was little seen and certainly not in Africa. Italian references indicate that it took the same ammunition as the 105/28. It was likely a range-increasing development.

The 6" types of artillery in use by the Italians are rather confusing, as so many caliber lengths exist in both the howitzers and guns. Some ammunition is interchangeable for these various weapons, while some is special for the piece in question.

Howitzers start with the 149/12 group. The parent piece is the Model 14, followed by Models 16 and 16/18. All of this series use the same ammunition. They



149/13 howitzer, Ansaldo's version of the 15-cm Skoda.



Here is the newer pattern 149/40 gun. Few were ever seen, although some did reach Libya.



149/40 in action in Libya.



152/37 gun (Ansaldo).

CHART I

Breakdown of important data concerning the most used Italian pieces

	M.V. (ft. sec.)	Range (yds.)	Elev.	Traverse	Wt. lbs.*	Ammunition
65/17	1,140	7,100±	20°	8°	1,223	HE, AP-HEC&BC, Hol. chg.
75/13	1,240	9,000	50°	7°	1,348	HE, AP-HEC&BC, Shrapnel
75/18 Model 34 (This piece was found on 3 carriage models, and was also used on the Semovente or S.P. M13/40 tank version.)	1,300	10,300	65°	50°	1,760	HE, AP-HEC&BC, Shrapnel, Hol. chg.
75/27 Model 11 (A modification of this weapon was seen on S.P. carriages.)	1,640	11,100	65°	52°	2,200	HE, AP-HEC&BC, Shrapnel, Hol. chg.
75/34	1,650	13,500	65°+		2,500	HE, AP-HEC&BC, Hol. chg. (streamlined shells)
77/28 (Originally Krupp 1896 design.)	1,762	7,300	18°	8°	2,115	HE, shrapnel and case shot
100/17 Model 14	1,400	10,100	48°	5°	2,912	HE Shrapnel Hol. chg.
105/28	1,880	15,000	37°	14°	5,152	HE (several patterns flat-based and streamlined)
149/12 Model 14	1,100	7,500	43°	5°	5,152	HE and Shrapnel (several patterns of HE)
149/13 Model 14	1,100	9,600	70°	6°	6,040	HE and Shrapnel (several patterns of both)
149/17	1,660	12,500	65°	8°	12,096	HE, Shrapnel (several patterns)
149/40 (Modern gun.)	2,600	23,900	45°	60°	11 tons	HE (2 patterns)
152/13 How.	1,300	10,400	45°	8°	3.6 tons	HE (several patterns)
152/37	2,270	21,800	45°	6°	6 tons	HE (several patterns)
210/22	1,870	17,400	70°	75°	15.5 tons	HE and an AP (likely anti-concrete)
(Not seen in Africa.) 305/8	1,300	12,000	75°	120°	20.5 tons	HE (base fuzed and Shrapnel)

(Skoda mortar 1916 and not seen in Africa.)

ANTI-AIRCRAFT ARTILLERY

	Vertical Range (feet)					
2-cm Breda	2,755	7,000	80°	360°	677	HE, SD and AP
2-cm Scotti	2,720	7,000	85°	360°	501	HE, SD and AP
37/54 Breda	2,620	13,500	90°	360°		HE—time fuzed HE—PD fuzed
75/27 Krupp	1,500		85°	360°		HE and AP
75/46 Ansaldo Model 34	2,350	27,200	90°	360°	3.3 tons	HE and AP
75/50 Skoda	2,690	30,000	85°	360°	2.8 tons	HE
75/53 French Model 30	2,280	31,000	85°	360°	2.4 tons	HE
76/40 Ansaldo	2,460	31,000	85°	360°	2.2 tons	HE
90/53 Ansaldo	2,500	39,300(?)	85°	360°	5.1 tons	HE and AP

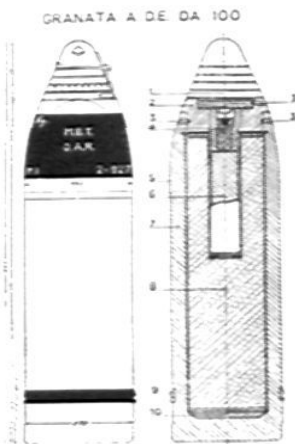
*Unless noted otherwise.

have identical range tables, shooting an 85-lb. shell about 7,500 yards. As the pieces differ only in recoil designs, they offer illustrations of Italian development in World War I. HE shells in four patterns varied from 85 to 91 lbs., and in addition a shrapnel was provided.

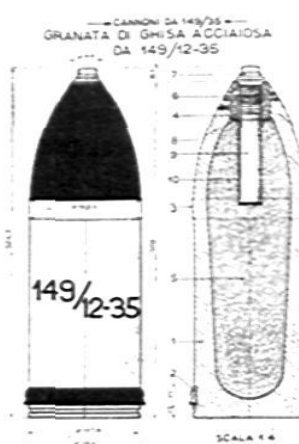
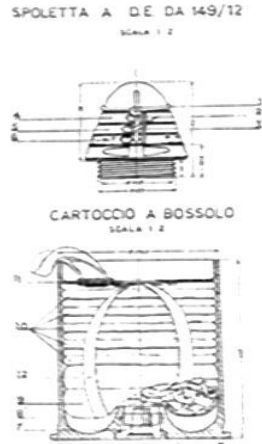
A confusing situation exists where a 149/13 piece was also used. This weapon, quite different from the 149/12, is largely of Skoda extraction though made by Ansaldo. It is the model of 1914. Further confusion exists as certain 149/12 rounds could be used as well as six newer types which were provided. This howitzer fired a 93-lb. shell 9,600 yards and used others ranging from 81 to 93 lbs. It was also provided with three shrapnel patterns of 67, 80, and 93 lbs. It used five charges and could be elevated to 70°.

Two other 149-mm pieces existed, also called howitzers. These were in caliber lengths of 17 and 19. Increased ranges of 12,500 and 16,000 yds. were claimed for them, using shells lighter than 95 lbs. Little substantiating data is available on these two.

In 6" guns the Italians throughout the African campaigns relied largely on very old patterns, the majority of which had no recoil mechanism and employed rockers to check the recoiling piece. Such weapons will not be enlarged on here. It is apparent, however, that the Italians realized the need for a reliable, accurate weapon which would give a satisfactory range. Such a piece was



Old pattern shell and charges for the 149/13 howitzer; fuze in upper right is time and percussion type.



This old-style shell was used in either the howitzer or the gun.



developed and became known as the 149/35 gun. Its limitations lay in practically no traverse, necessitating shifting of the carriage. It did shoot a shell weighing about 80 lbs. some 17,900 yards, however. Six patterns of HE shells were provided, one of which weighed 101 lbs.

Around 1940 this caliber of gun was completely redesigned and called the 149/40. Its carriage was split-trailed. A new HE round designed for it weighed 93 lbs. The heavy 101-lb. shell of the 149/35 could also be used for shorter ranges. With the new shell a velocity of 2,600 foot seconds and range of 23,900 yards was claimed. These guns do not appear to have seen much action, although a few were taken at the close of the Libyan Campaigns and may have been in position at Alamein.

In further complication of the 6" type of weapon, the next caliber in line is the 152/13 howitzer. This is an older pattern firing a 99-lb. shell about 10,000 yards. Four designs of HE shells were provided, most of which were copies of British designs and used British fuze patterns.

This is followed in sequence by a 152/37 gun, which fired a 123-lb. shell—an exceptionally heavy projectile in this caliber. In addition, this gun was provided with a 96-lb. shell for which a range of 21,800 yards was claimed. A 109-lb. shrapnel was provided too. This piece, like so many other Italian guns, did not have much traverse and required much relaying.

A still longer-tubed 152 existed in which the caliber length was 45. This piece again was confusing in its ammunition. 2,730 foot seconds velocity and a range of 21,300 yards were claimed. Much of the ammunition intended for the 152/35 could be used in this piece. Two APHE and two HE shells were provided, the shells marked for use in both weapons.

A heavy siege mortar was in existence, though not seen in Africa. This was known as the 210/8. Three HE shells were provided, weighing 133, 221, and 228 lbs., respectively. The lighter shell gave 1,200 foot seconds and a range of 8,700 yards.

In 1935 the length was increased to 22 calibers and the carriage underwent a lot of changes. With a 222-lb. shell a range of 17,000 yards was claimed and an APHE was



A 104/32 Ansaldo at El Guettar, Tunisia, 23 March 43.

CHART II
General Listing of Italian Artillery by use and caliber
FIELD ARTILLERY

- 65/17
 - 70/15
 - 75/13 Austrian Skoda
 - 75/18 M34 } Newer Patterns—same ammunition.
 - 75/18 M35 }
 - 75/18 M40 }
 - 75/18 Semovante (any of the 75/18 tubes but on SP mount, usually the M13-40 tank).
 - 75/27 Mod. 06 } Same ammunition. The shells for all these 75-mm calibers
 - 75/27 Mod. 11 } were interchangeable, some even having as many as 3
 - 75/27 Mod. 12 } weapons indicated.
 - 75/34
 - 77/28 Austrian
 - 100/17 Mod. 14 } Same ammunition.
 - 100/17 Mod. 16 }
 - 100/22 Mod. 16 }
 - 100/22 Mod. 19 }
 - 100/22 Mod. 33 }
 - 104/32 } Same ammunition.
 - 105/28 }
 - 149/12 Mod. 14 } Same ammunition.
 - 149/12 Mod. 16 }
 - 149/12 Mod. 16 modified 18 }
 - 149/13 }
 - 149/17 }
 - 149/19 }
 - 149/35 Old pattern }
 - 149/40 }
 - 152/13
 - 152/37
 - 152/45
 - 155/25
 - 210/8
 - 210/8 Fist
 - 210/22 Mod. 35
 - 260/9 M1916
 - 260/9 Skoda
 - 305/8 Models 11 and 11-16 (Modified)
 - 305/10
 - 305/17 Mod. 1916 and 1917
 - 380/15 Skoda
 - 420/15 Skoda
- A. T. GUNS
- 47/32 Breda
 - 47/32 Austrian Boehler
 - 47/50 Schneider (French captured)
 - 75/27 Series, using AP, Hollow charge
 - 75/46 AA Dual purpose
 - 90/53 AA Dual purpose
 - 100/17 series, using AP, Hollow charge
- A.A. GUNS
- 2-cm Breda M.35 (fully automatic)
 - 2-cm Scotti (Isotta Fraschini)
 - 37/54 Breda
 - 75/27 (1918)
 - 75/46
 - 75/50 Skoda } Same ammunition.
 - 75/50 Ansaldo }
 - 75/43 Dutch (Vickers)
 - 75/43 M.1930 (French) also Models 33 and 36
 - 76/40 Ansaldo
 - 76/45 Ansaldo
 - 77/28 (1918)
 - 90/53 Ansaldo
 - 102/35
 - 102/47
- SEACOAST GUNS
- 57/30
 - 57/43
 - 120/21 } Same ammunition.
 - 120/25 }
 - 120/40
 - 149/35
 - 152/32 } Same ammunition.
 - 152/50 }
 - 280/9 (two versions)
 - 280/10
 - 280/11 } Same ammunition.
 - 280/16 }
 - 305/17
 - 305/50
 - 381/40
 - 420/12



152/45 coast defense gun assembled for transport.

introduced. This weapon had a 70° traverse.

As we near the end of the list we find two 260/9 mortars firing up to 480-lb. shells. The 305/8 Skoda mortar series was left over from Austrian captures at the Piave. Several tube lengths existed in this caliber, with varying ranges for up to 970-lb. shells. The 1916 version of 17-caliber length was provided with eight shells weighing from 642 to 970 lbs.

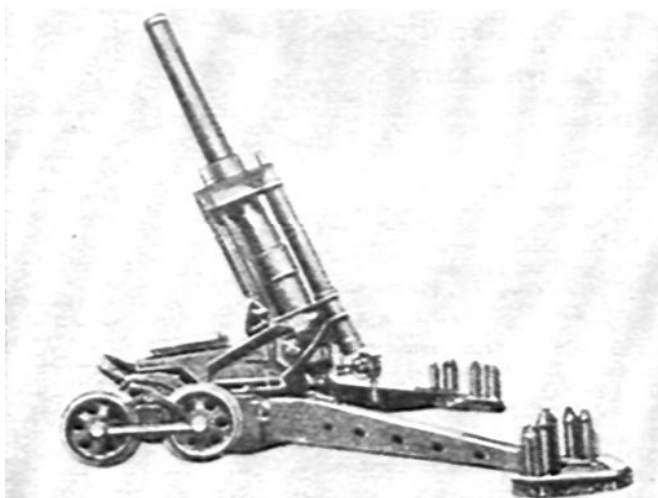
Finally, the Austrian Skoda 38-cm mortar winds up the list. The Italians called this the 380/15, Model 1916. This mortar

was exceedingly heavy, weighing 80 tons. It fired a shell weighing 1,600 lbs. about 16,300 yards. These heavier siege weapons were not seen at all in the African campaigns.

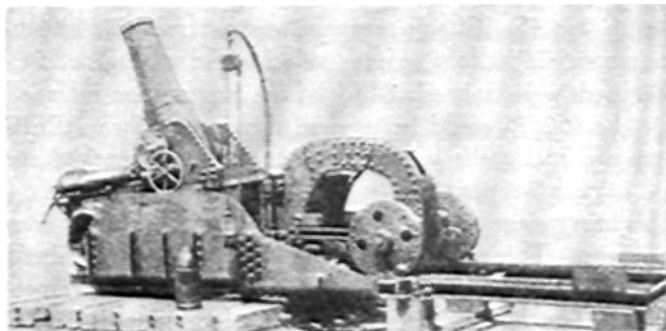
Chemical shells, some filled with mustard and tear gas, were found in Eritrea for some of the 75 and 149-mm weapons. None, however, appeared in the captured ammunition dumps taken in Libya. It is believed no records exist of any chemical shells (other than normal smoke rounds) being used by the Italians during World War II, from any of their cannons.

The 20-mm Breda AA gun was considered by the Allies in the Western Desert as a worthwhile capture and many

were used by the Eighth Army. This appears to be one of the few good weapons produced by the Italians. As both AP and HE were provided, it served as a dual-purpose weapon. Its chamber design was copied from the original Solothurn; actually, both German 2-cm Flak 30 and 38 and the Breda ammunition were interchangeable. However, the German rounds worked better in the Breda than vice versa. Strip fed, the Breda gun developed about 2,500 foot seconds.



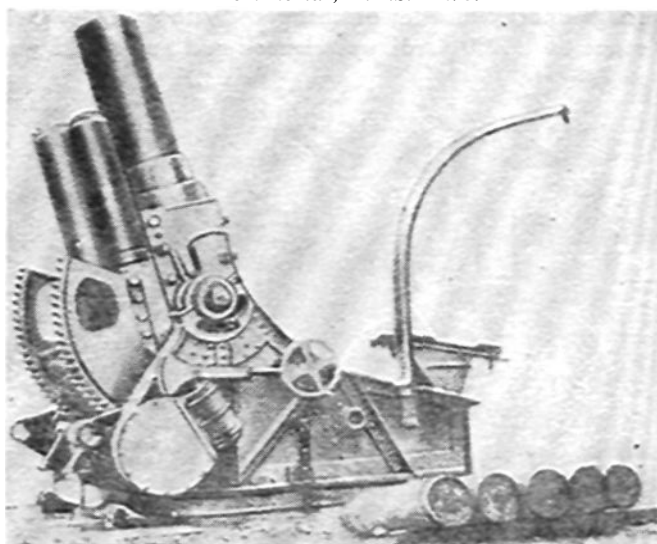
21-cm Ansaldo mortar, M. 210/22.



21-cm mortar, M.D.S. 210/8.



26-cm Schneider mortar, M. 260/9S.



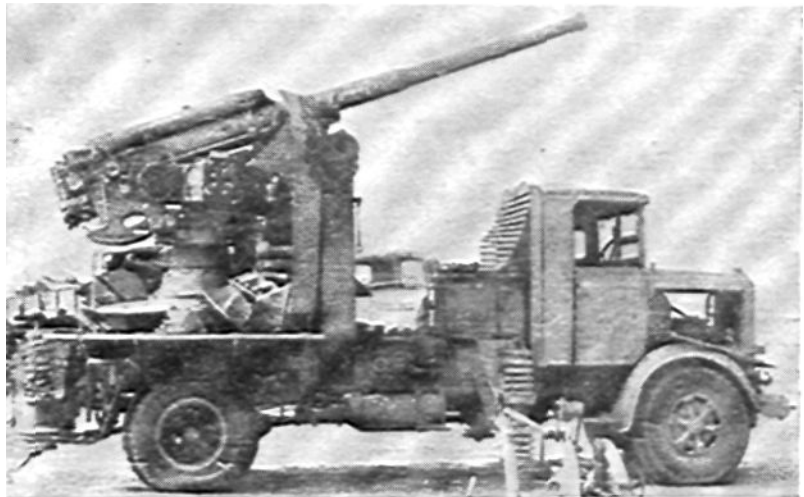
30.5-cm Skoda mortar, M. 305/10.



152/45 coastal gun at Palermo, Sicily, 26 October 43

A very old AA gun used considerably in East Africa was identified as a 75/27. This had appeared at the close of 1918 as an AA gun. In Libya it was relegated to an AT gun and mounted on truck bodies. It is possible that this was a German modification, as most such units captured bore the German cross painted on the side. This gun was provided with standard HE and APHE rounds. Several truck-mounted units were captured at Alamein.

The remaining 75 for AA use was the 75/46 Model 1934 weapon. It had a peculiar carriage, with the pedestal mount folding back on the closed trails for transport. The gun assembly was partially upside down when in transport. The pedestal was operated by a winch arrangement on the bottom carriage.



90/53 Ansaldo AA-AT gun on dual-purpose mount on Lancia 5-cylinder diesel truck; captured at El Alamein in November 1942.

While a reasonably good gun, this piece was only 75-mm and of 2,550 foot seconds. To combat modern aircraft a better and larger weapon than this is necessary.

The Italians likely realized this and developed a 90/53 weapon, but although this gun approached the operational value of the famed German 8.8 Flak 18 the Italian piece only realized 2,550-foot-seconds velocity and actually fell far short of necessary performance demanded in 1942-43. As few had been completed by late 1942, none saw AA use in the African theater. Most were mounted on trucks and assigned dual-purpose tasks which were mainly AA. Before the fall of Tunisia a few 90/53s appeared mounted on a modified 13/40 tank chassis as a Semovante (SP). Still another few were later captured on original mountings, used mainly by the Germans in the early part of the campaigns in Italy.

Thus confusion in ordnance engineering and design within the Italian Army is apparent—the artillery was a hodge podge of patterns, sizes, and shapes, failing in the overall fulfilling of their missions.

CHANGES IN ARMY MAGAZINES

Artillerymen in particular will be interested in changes taking place in *The Ordnance Sergeant* and *Army Motors*. Both carry material that is useful not only in the Army, but in following many hobbies and businesses as well.

After the September issue, the Army will no longer issue *Army Motors*. It will be continued, though, by its civilian staff, as a commercial enterprise. Except for ownership it will be exactly as its readers expect it to be month after month, changing only as it has always done to meet changing Army maintenance requirements. Paid advertising will produce profit revenue so that it can be furnished to field troops in large quantities at absolute cost. Individual subscriptions cost \$3 per year or \$5 for two years. *Send directly to Army Motors Magazine, Industrial Bank Bldg., Detroit 26, Mich.*

The Ordnance Sergeant, which has had a free circulation as a restricted magazine, goes on a straight subscription basis without any free distribution. Cost is \$3 per year, which all interested persons should *send directly to The Ordnance Sergeant*. The Ordnance School. Aberdeen Proving Ground, Md.

T/Os & Es for FA as of 15 Sept 45

Higher Headquarters Batteries:

6-10-1 1 Jun 45—Inf Div Arty
 6-10-1-OS 27 Sep 44—Inf Div Arty
 6-12 20 Oct 44—Group
 6-20-1 20 Oct 44—Brig
 6-50-1 20 Oct 44—Corps Arty
 6-110-1 30 Sep 44—Cav Div Arty
 6-150-1 4 Nov 44—Mt Div Arty
 6-160-1 22 Nov 44—Armd Div Arty
 6-200-1T 16 Dec 44—AB Div Arty

Battalion Headquarters Batteries:

†6-26 1 Jun 45—105-mm How
 †6-26-OS 27 Sep 44—105-mm How
 †6-36 1 Jun 45—155-mm How
 †6-36-OS 27 Sep 44—155-mm How
 6-46 30 Sep 44—H-Dr
 †6-56 7 Sep 45—Hv
 †6-56-OS 20 Oct 44—Hv
 6-76 20 Feb 45—Obsn
 6-86 10 Apr 45—Rocket
 6-166 22 Nov 44—Armd
 *6-176 28 Jul 43—Pk Trk-Dr
 *6-186 4 Nov 44—Pk, Mt
 *6-216T 16 Dec 44—Prcht
 *6-226T 16 Dec 44—Gli

†Common to 2 or more battalions.

*Combined Hqs & Hqs & Sv Btry.

Special Tables:

6-78S 31 Jan 44—Sound Ranging Plat
 6-212S 18 Aug 43—AB Group
 6-597S 20 Mar 44—240-mm How Btry, Immobile

Batteries:

6-27 1 Jun 45—105-mm How, Trk-Dr
 6-27-OS 27 Sep 44—105-mm How, Trk-Dr
 6-37 15 Jul 43—155-mm How, Trk-Dr (Med Arty)
 6-47 1 Apr 42—75-mm G, H-Dr
 6-57 20 Oct 44—155-mm G, Trk-Dr (Hv Arty)
 6-67 20 Oct 44—8-in How, Trk-Dr (Hv Arty)
 6-77 20 Feb 45—Obsn Btry
 6-87 10 Apr 45—Rocket
 6-117 30 Sep 44—75-mm Fld-How, H
 6-127 29 Sep 43—155-mm G, SP
 6-167 22 Nov 44—Armd
 6-177 28 Jul 43—75-mm How, Pk, Trk-Dr
 6-187 4 Nov 44—75-mm How, Pk, Mt
 6-217T 16 Dec 44—75-mm How, Prcht
 6-218T 16 Dec 44—AA and AT, Btry, Prcht
 6-227T 16 Dec 44—75-mm How or 105-mm How, M3, Gli
 6-327 1 Jun 45—105-mm How, Trac-Dr
 6-327-OS 20 Oct 44—105-mm How, Trac-Dr
 6-337 1 Jun 45—155-mm How, Trac-Dr (Med Arty)
 6-337-OS 27 Sep 44—155-mm How, Trac-Dr (Med Arty)
 6-357 6 Feb 45—155-mm G, Trac-Dr (Hv Arty)

6-367 2 Jul 43—8-in How, Trac-Dr (Hv Arty)
 6-397 18 Aug 43—240-mm How, 8-in G. Trac-Dr (Hv Arty)
 6-457 7 Sep 45—155-mm G, SP
 6-467 8-in How, SP

Service Batteries:

6-29 1 Jun 45—105-mm How, Trk-Dr
 6-29-OS 27 Sep 44—105-mm How, Trk-Dr
 6-39 15 Jul 43—155-mm How, Trk-Dr
 6-49 30 Sep 44—H-Dr
 6-59 20 Oct 44—Hv Arty, Trk-Dr
 6-89 10 Apr 45—Rocket
 6-129 29 Sep 43—155-mm G, SP
 6-169 22 Nov 44—Armd
 6-329 1 Jun 45—105-mm How, Trac-Dr
 6-329-OS 20 Oct 44—105-mm How, Trac-Dr
 6-339 1 Jun 45—155-mm How, Trac-Dr (Med Arty)
 6-339-OS 27 Sep 44—155-mm How, Trac-Dr (Med Arty)
 †6-359 6 Feb 45—Hv Arty, Trac-Dr
 †6-459 7 Sep 45—Hv Arty, SP

†Common to 2 of more battalions.

Medical Detachments:

6-10 1 Jun 45—Inf Div Arty
 6-10-OS 27 Sep 44—Inf Div Arty
 6-12 20 Oct 44—Group
 6-25 1 Jun 45—105-mm How, Trk-Dr
 6-25-OS 27 Sep 44—105-mm How, Trk-Dr
 6-35 15 Jul 43—155-mm How, Trk-Dr
 6-45 1 Apr 42—H-Dr
 6-55 20 Oct 44—155-mm G, Trk-Dr
 6-65 20 Oct 44—8-in How, Trk-Dr
 6-75 20 Feb 45—Obsn Bn
 6-85 10 Apr 45—Rocket
 6-110 30 Sep 44—Hq, Cav Div Arty
 6-115 30 Sep 44—H Arty
 6-125 29 Sep 43—155-mm G, SP
 6-150 4 Nov 44—Hq, Mt Div Arty
 6-160 22 Nov 44—Hq, Armd Div Arty
 6-165 22 Nov 44—Armd Arty
 6-175 28 Jul 43—Pk, Trk-Dr
 6-185 4 Nov 44—Pk, Mt
 6-200T 16 Dec 44—Hq, AB Div Arty
 6-215T 16 Dec 44—Prcht
 6-225T 16 Dec 44—Gli
 6-325 1 Jun 45—105-mm How, Trac-Dr
 6-325-OS 20 Oct 44—105-mm How, Trac-Dr
 6-335 1 Jun 45—155-mm How, Trac-Dr
 6-335-OS 27 Sep 44—155-mm How, Trac-Dr
 6-355 6 Feb 45—155-mm G, Trac-Dr
 6-365 2 Jul 43—8 in How, Trac-Dr
 6-395 18 Aug 43—240-mm How, 8-in G. Trac-Dr
 6-455 7 Sep 45—155-mm Gun, SP
 6-465 8-in How, SP

CP = OP

Some of the ground fought over by American forces was so flat that one of the 2nd Division's field artillery battalions was able to use its Command Post for an Observation Post.

The 17th Field Artillery Battalion was able to watch where the shells from its guns landed by merely looking from a second story window in the house. Observations then were called downstairs to the fire direction center, where corrections were made.

"VARSITY'S" ORGANIC ARTILLERY



By Lt. Samuel C. Myer

In the crossing of the Rhine by the 17th Airborne Division, the artillery was organized about the same as that of any ground division. Three direct support 75-mm pack howitzer (two parachute and one glider) battalions matched the infantry regiments; one additional glider battalion (105 how M3) furnished general support.

A rectangle approximately 4,000 by 5,000 meters about a mile north of Wesel, Germany, was selected for Division Artillery. It was predominantly farms with fence and tree lines, flat, but with a central area slightly higher and heavily wooded which was to be the last defensive position in case of failure. The entire area was completely mapped; in addition, 1/5000 vertical photographs were available, the latest taken two days before the operation. These showed the area to be heavily entrenched and fortified. Prisoners captured a week before D-day stated that the Germans expected an operation in this area, and for the previous week had given priority to flak and anti-aircraft guns.

The general plan was that the XVIII Corps (Abn), consisting of the 17th (U.S.) and 6th (British) Airborne Divisions, would drop in the rear of the Rhine defenses, thereby assuring the bridgeheads to be made by the British ground forces. The 13th Airborne Division was held in reserve at a marshalling area. Commandos were assigned the job of sealing off Wesel. The initial assault was to be preceded by a 15-hour artillery preparation and followed at H + 10 by an airborne invasion supported by artillery emplaced west of the Rhine. The 53d (Welsh) Division Artillery (consisting of three light regiments and one medium regiment, the latter being in general support and the former reinforcing the direct support artillery battalions) reinforced the fires of the 17th Airborne Division. The 8th Army Group Royal Artillery was in general support of the XVIII Corps (Abn).

Briefing on Division Artillery level came approximately one month before the operation, two weeks before on battalion level, and one week previous on battery level. As the weight of the artillery was to be west of the Rhine, this was primarily a communications and liaison problem. Organic artillery furnished some of the personnel and equipment necessary; as

things turned out, it used its own weapons primarily as single pieces against enemy artillery positions and strong points, although it had been anticipated that they would be used in mass. Communications at first were primarily by radio, with some wire installed at battalion and battery levels.

Heavy equipment is virtually non-existent in an airborne operation. Jeeps and guns can be transported by glider, but the bulk of supplies, heavy equipment, and transportation must come by land. Initial resupply for this operation was accomplished by parachute from B-24s. A "Land Tail" was poised on the west bank of the Rhine; on this operation it was able to make contact within 12 hours of the landing. Traffic control, however, prevented the artillery elements from joining their units until D+2. Priority went to the infantry, tank destroyers, and the like.

On the morning of March 24th Division Artillery was poised on five fields. The parachute battalions were using a few gliders to bring in such essential items of equipment as jeeps, trailers, and spare guns. Weather was warm and clear. Forward observers and liaison officers were spotted with the infantry, rather than with their own battalions. A 3-hour flight was about average, the last five minutes of which were (as Berlin Sally had warned us the night before) "filled with flak thick enough to walk on." Due to the smoke from Wesel, which the artillery preparation had leveled, and perhaps the remains of a ground haze or smoke screen, the planes and gliders had difficulty in locating previously designated zones. But the flak was correspondingly inaccurate even though the amount was considerable. Instead of being at 600 feet as planned, the gliders were between 1,600 and 2,000 feet when they were cut loose—which made four turns of the field necessary instead of merely one 270° turn.

The dispersion inherent in any airborne operation was increased by these conditions. For example, the 464th Parachute Artillery Battalion dropped some of its equipment in trees beyond the drop zone and had to fight as infantry to recover it; some of the equipment was 1,500 yards to the northwest of its position. The 466th Parachute Artillery



Three members of the Allied airborne army that took part in the assault on Holland load a 57-mm gun into a glider. Notice how much space is saved by lashing ammunition and equipment onto the trails.

Battalion dropped one complete howitzer west of the Rhine by mistake, and the infantry which was to help in securing its drop zone was two miles to the north. The 681st Glider Field Artillery Battalion landed generally in its assigned area, although a number of units were scattered—some even across the Issel Canal, which was to be the initial line of defense. The battalion commander's glider cut loose just after it left the field; after another tow ship and glider were procured, he was landed some distance north of his zone with another formation. The 680th Glider Field Artillery Battalion was very scattered, only 50% of its gliders landing in its drop zone.

Certain losses were sustained, of course. Casualties during the three days covered varied with the area. The 464th lost about 5%; the 466th, slightly more than 20%; the 680th, about 10%; and the 681st, just over 10%. Battery grade officers with whom the writer has talked feel that from ten to thirty per cent of the casualties were caused by poor infantry tactics, such as failure to take cover or ill-considered "bravery." Those sustained while landing were inevitable under the circumstances. Glider pilots who had made three or more combat flights stated that the flak and ground fire were the heaviest in their experience; and as the altitude was greater than planned, the time in landing was increased. Brig. Gen. Gaither (Commandant of the Parachute School), Brig. Gen. Dalby (CG of the Airborne Center), and Col. Dickerson (of the War Department Observer Board) jumped in with the 466th and commended very highly the infantry and artillery tactics of that unit.

As this operation was not a complete surprise to the enemy, fairly elaborate preparations had been made. Information received a week before D-day indicated that the Germans expected the airborne elements to arrive at H + 9. Nearly all fields were covered by at least one light artillery piece in the

76- to 88-mm class. In addition, mobile flak guns were used against ground forces together with machine guns and small arms fire. One field which had 76-mm guns trained inward from each corner still contains three burned gliders and a burned jeep. Nearly all houses and farms had zig-zag trenches, and all gun and machine gun positions were dug in.

In such circumstances materiel losses were fairly heavy by ground force standards, but were to be expected. Each battalion lost an average of three howitzers. The glider battalions lost around five jeeps each and three or four trailers. On the whole, the latter losses were due to the entire glider and crew being knocked out by direct fire artillery. The 680th lost its 193 and 608 radios in two of its jeeps. Salvage operations conducted

by the battalions over the next two or three days improved the situation.

Around 1025 the first artillery elements dropped north of Wesel. By 1200 the 464th had collected and assembled four howitzers. By 1600 the majority of the howitzers in the division had been collected and were under battalion control. The 680th's howitzers were 500 yards from the positions decided on before the operation; the others were about as planned. Fifteen missions were shot by Division Artillery itself. The 53d (Welsh) Division fired 26 missions from the west bank of the Rhine, and Corps observers shot a number more. Wire was in from battalion to the 681st's firing batteries by 1400. The 466th reports wire to the infantry by 1800. Radio communication between Division Artillery and the battalions was established between 1205 (466th) and 1415 (680th, by relay).

The 466th Parachute Artillery Battalion encountered more heavy resistance than any other unit upon landing. It is estimated that there were ten 76-mm, eight 20-mm AA, and 20 machine guns destroyed in its area on the first day. Fighting continued until 1500 hours in one battery drop zone. It lost eight officers, including all from A Battery, and 40 non-commissioned officers among its casualties. At the day's end it had captured 320 prisoners, had 15 enemy wounded and 50 enemy dead in its area. Other units had similar difficulties, however. B Battery of the 681st, for example, had to dislodge 46 Germans from a house before they could occupy their position.

That evening there were fierce fights throughout. The infantry had to withstand a general counterattack, and the massed artillery west of the Rhine is credited in large part with stopping it. Snipers had hidden in the wrecked gliders and caused some annoyance to messengers and staff officers.

At 2200 the 681th reported in the rear of its CP a fierce fight in which one tank was knocked out. At 0200 the morning of the 25th, the 466th fought off an enemy patrol, killing two officers and one soldier. The 464th displaced during the night using five jeeps and five horse-drawn carts. Total number of rounds fired by Division Artillery on the 24th: 162.

The 25th continued warm and clear. Small pockets of the enemy held out in the division's area, but the artillery zone was clear. 33 missions with an expenditure of 460 rounds were fired by Division Artillery, the 464th firing three of these and the 681st 14. At 1300 the battalions started coming under division control and a Division wire net was established.

Transition from the airborne to the ground phase of the operation came on the 26th. The overland elements of the artillery arrived in the morning with bed rolls, kitchens, and additional ammunition. Transportation became less of a problem. The Division Artillery fired 47 missions, expending 906 rounds. The 692nd Field Artillery Battalion was in general support of the division.

Division Artillery furnished one liaison officer to each infantry battalion headquarters and one forward observer to each infantry battalion. Command liaison was established at regimental headquarters by the direct support battalion. In addition, Corps furnished a liaison officer to each artillery battalion and one forward observer to each infantry battalion. The latter dealt directly with the British through "translator" teams established at the British FDC, and did most of the firing in the initial phase of the operation. They had been trained in a special school which Corps had established some months before the operation. All forward observers were assigned by their liaison officers to a company with which they remained during the operation; as the land was flat, with few natural OPs, this policy was the most successful in bringing fire where it was needed.

The air OPs were assigned their normal mission, and in addition were to insure radio contact in case of relay failure. Due to the heavy smoke over the area they were unable to observe the first day, but flew six sorties to insure communications. The next day observation was excellent; Division Artillery planes made fifteen sorties. One plane was lost to flak, but there were no casualties. On the 26th, 21 sorties were flown.

Communications have been covered in the discussion of other phases of the operation. The 609 and 608 radio were the basis of the operation. Forward observers carried the 609 radio on one or two packboards, according to individual preferences—a clumsy but workable arrangement. Relay stations were established by 609 at artillery battalion headquarters through the Corps liaison officers, but they were not always necessary. The artillery battalions were authorized in addition one 608 and one 193 mounted in ¼-ton trucks provided for the purpose. British FDC on the west bank of the Rhine had 608 radios. Corps established special channels for its forward observers, and the air OPs were equipped with these frequencies in addition to regular channels. Division Artillery used two channels per battalion. On the first day wire was on battalion level only.

Supply within the battalions concerned itself mostly with ammunition and transportation. Some unit ammunition gliders were destroyed before they could be unloaded. Division ammunition gliders were close to enemy pockets of resistance and were not well marked, making recovery difficult. Resupply was dropped some distance from three of the four battalions and was scattered over a considerable area. Had sustained fire been attempted by Division Artillery on the first day, the ammunition problem would have been acute although not necessarily prohibitive. A shortage of transportation, especially in the parachute battalions, did not make the situation any easier. As this was predominantly a farming country there was considerable local exploitation to supplement K rations, of which there was an abundance.

The battalions organized salvage and scavenger teams to relieve the difficulties. These recovered jeeps from wrecked gliders, found and started abandoned German vehicles, hauled ammunition, collected German signal equipment, and generally "liberated" any items which they felt would be of use. On the second day the Division services had established offices and were able to undertake very limited repairs and to issue such items as gasoline and boxed rations. But the ground was still littered with paracrates and parachutes, although crews were out collecting equipment dropped for resupply. It was often easier to gather up what was needed rather than travel the six miles to the rear.

The "Land Tail" contained all the organizational GMCs



A glider of the 17th Airborne Division in France receives a 57-mm antitank gun.

and other heavy equipment. It was found necessary to furnish the 75 pack howitzer glider field artillery battalion (681st) with three additional GMCs taken from the parachute battalions, to give it a total of seven. Ammunition and rations were given priority in loading in that battalion. It was anticipated that the vehicles would not move as a unit from their advance position but by a system of priorities, due to the traffic control across the Rhine. The parachute battalions naturally came first as they carried in fewer airborne vehicles. Kitchens, motor shops, trailers, and liaison and medical vehicles made the bulk of the "Tail" for the artillery in the direct support glider battalion (681st), while the other three had their prime movers in addition. Personnel sections moved under division control with the "Land Tail."

A small base camp section was left behind to guard unneeded baggage.

In "Operation Varsity," officers to whom the writer talked feel that poor German morale or lack of training was the saving factor. Two examples may illustrate this: Although entrenchments were prepared, the Germans frequently abandoned them and ran into houses from which they could be dislodged by artillery pieces or bazookas; and one 88-mm gun position was surrendered by a sergeant who had refused to fire against advancing infantry "because he had no orders to do so."

As long as communications were satisfactory the organic artillery was almost unneeded, the battalions averaging only three missions each the first day in spite of German counterattacks in the same period. But a communications failure or determined German resistance would have altered the situation.

The glider pilots were great. To start with they brought the units in very close to their assigned landing zones (by airborne standards), and then organized to fight as infantry.

"Operation Varsity" saturated the German defenses, which made possible a rapid crossing of the Rhine by the ground

force units without deployment and also prevented the German forces from gradually withdrawing and fighting a delaying action as they dropped back. But the British had considerable forces across the river before the airborne arrived, and with their artillery to support them probably could have advanced as fast as they actually did with fewer losses using standard infantry tactics. The majority of the Germans no longer had any heart for fighting.

On the first day, perhaps the greatest contribution made by organic artillery (excepting the liaison officers and forward observers) was its actual occupation of its area. In this operation all units secured their own zones without assistance from the infantry or spearhead paratroopers, although it had been anticipated that support would be available in some cases. As things turned out, this was not the case. If artillery are to be used in this manner it is imperative that they be trained as infantry in addition to their normal work. In addition, they must be above average in intelligence and alertness so that positions may be picked from maps in advance and then occupied on



For airborne operations, all equipment must be well braced and lashed. This 75-mm howitzer belongs to the 82nd Airborne Division.

the ground without prior reconnaissance. It is very difficult to locate terrain features and fight at the same time.

This is not the only difficulty. In this operation, units could not assemble for some time due to enemy action—and such a situation is normal for airborne operations. If airborne forces are to fight as ground troops after the initial operation, ground force equipment should be provided for them, particularly transportation, tools, and perhaps heavier guns. Above all, complete briefing is essential, for privates sometimes act as officers.

Such was the use of organic artillery on "Operation Varsity," the airborne crossing of the Rhine. The records of the 6th (British) Airborne Division are not available, but it must be remembered that on the whole this was a British operation: the 17th Airborne Division was supported by British artillery and worked as a part of the British Second Army.

RED FACE DEPARTMENT

In last month's JOURNAL we inadvertently failed to give credit for the photographs illustrating Cpl. Raymond Carlson's graphic *Howitzer Firing With Kentucky Windage*. They were taken by Sgt. Clyde S. Call of the 53d FA Bn, who took part in the action he illustrated.



F. A. S. EVENTS

NOTES FROM DEPARTMENT OF OBSERVATION

Radar, that secret of secrets of the armed forces, has been highly developed as an adjunct of the field artillery at the Field Artillery School, it now may be revealed. Details of the mechanisms employed still are secret, but now it can be told that radar, as developed here, has been used in every theater of operations to locate targets on which artillery concentrations have been brought.

Col. William C. Bullock heads the Department of Observation at the school, under which the program has been carried on, and Maj. Sidney S. Combs is in charge of new radar developments.

Radar is an application of electronics, the branch of electrical engineering and physical science which deals with the behavior of electrons, the smallest units of electricity, in vacuum tubes and gas-filled tubes.

The word "radar" was coined as an abbreviation of "radio detecting and ranging," meaning the use of radio methods for warning of the presence of specific targets and for measuring their direction and distance. Other terms used in the past to describe the same function were RDF (radio direction finder), RPF (radio position finding), and radio location.

An essential feature of pulse radar is the technique for generating the pulses; many other applications of the technique also were referred to as radar. A pulse is a very brief burst or packet of radio waves generated by special electronic circuits in the radar transmitter. In radar the pulse is sent out into space by a directional antenna so that successive pulses travel along a beam.

The radar directional antenna, depending on its construction, may be an array or a dish, the dish being similar to a searchlight mirror.

When the pulse reaches a target it is reflected. The reflection, or echo, is picked up by the antenna of the radar receiver, which usually is combined with that of the transmitter.

* * *

Constituting the largest group of foreign officers and enlisted men ever to study in one class here, more than 300 Canadian officers and enlisted men underwent a special training program at the Field Artillery School.

The Canadians were instructed in the latest artillery tactics and techniques. Courses for both officers and enlisted men were included. They paralleled those provided for American

students. In the past, groups of students of other nations coming to Fort Sill were placed in classes with the Americans, but the size of the Canadian contingent necessitated the arranging of a special program.

* * *

Eleven representatives of the Brazilian Army visited the Field Artillery School in August. The group consisted of six majors and five captains who inspected the school informally and looked over the various installations.

The visitors from the South American country included Maj. Aleindo Quintaes de Castro, Maj. Antonio Alves Bendocchi, Maj. Lafayette de Britto Castro, Maj. Andre Fernandes de Souza, Maj. Sylvio Guimaraes, Maj. Acindino Ferreira da Silva, Capt. Antonio da Costa Lins, Capt. Hiram Soares Bulcao, Capt. Ari de Abreu Berreto, Capt. Eneas Marques das Santos Sabriaho, and Capt. Oscar Jeronimo Bandira deMello.

* * *

Col. Norman E. Poinier, former commanding officer of the 205th Field Artillery Battalion with the 41st Infantry ("Jungleers") Division in New Guinea, has been named Director of the Department of Gunnery. Col. Poinier, who had been assistant director of the Officers' Refresher course in the Department of Gunnery, wears the Silver Star Medal for gallantry in action in New Guinea.

* * *

Colonel Harold A. Doherty, Omaha, Nebraska, has been assigned as S-1, relieving Col. Thomas M. McCaw, who had been acting as S-1 in addition to his other duties as secretary of the school.

Col. Doherty was at Fort Sill in 1926 with the 18th Field Artillery, School Troops. He attended the Battery Commanders' course at the school in 1927. In June 1944 he went overseas with the American Ninth Army. He was injured in France and invalided back to Brooks General Hospital in September 1944. Last May Col. Doherty went to Headquarters, Replacement and School Command, Birmingham, Alabama, as artillery officer.

* * *

Col. William Carson Bullock, veteran of 19 months' service in the European theater of operations, including the Normandy invasion, has succeeded Lt. Col. Paul R. Walters as Director of the Department of Observation.

Col. Bullock went overseas with the 13th Field Artillery Observation Battalion and later was assigned to the VII Corps Artillery. He holds the Bronze Star Medal, the Croix de Guerre with palms, and five campaign stars.

* * *

PERSONNEL CHANGES, 16 AUGUST-15 SEPTEMBER

<i>Name</i>	<i>Arrivals</i>	<i>New Duty</i>
Col. Robert H. Adams		
Col. William C. Bullock	Department of Observation	
Lt. Col. Walter E. Barker	Department of Gunnery	
Lt. Col. John H. Bittner	Department of Gunnery	
Lt. Col. Thomas J. Drake	School Troops	
Lt. Col. Orland G. Hunt	Department of Communication	
Lt. Col. L. N. Taylor, Jr.	Department of Gunnery	
Lt. Col. J. L. Thompson, Jr.	Training Literature	
Lt. Col. C. M. Wood, Jr.	S-3 Section	
Lt. Col. Robert L. Woodard	Department of Combined Arms	
Maj. Howard D. Dodge	Department of Combined Arms	
Maj. Robert C. Dunnington	Department of Combined Arms	
Maj. Charles W. Horn	Department of Combined Arms	
Maj. Keith I. Ingalls	Department of Combined Arms	
Maj. Hugh M. Latimer	Department of Materiel	
Maj. Morris P. Miller	Department of Communication	
Maj. James C. Milton	Department of Observation	
Maj. Harry A. Randle	Department of Combined Arms	
Maj. Robert S. Stafford	Department of Gunnery	
Maj. Willard L. Stobaugh	Department of Motors	
Maj. Irving B. Tietze, Jr.	Department of Gunnery	
Capt. William E. Allen	Department of Motors	
Capt. John D. Durbin	Department of Communication	
Capt. Lawrence E. Gailen	Department of Communication	
Capt. George O. Hubbert	Department of Combined Arms	
Capt. Preston D. Johnson	Department of Observation	
Capt. Robert L. Johnson	Department of Combined Arms	
Capt. LeRoy J. Kaniuth	Detachments	
Capt. Albert Klein	Department of Combined Arms	
Capt. Charles E. McKeown	Department of Combined Arms	
Capt. William E. Miller	Department of Combined Arms	
Capt. David M. Scott	Department of Air Training	
Capt. Robert E. Simons	Field Artillery Board	
1st Lt. J. Edwin Becht	Department of Air Training	
1st Lt. Stanley J. Birnbaum	Department of Observation	
1st Lt. George R. Cruze	S-3 Section	
1st Lt. John Donald	S-1 Section	
1st Lt. Floyd G. Fountain	Detachments	
1st Lt. Daniel H. Garver	Department of Communication	
1st Lt. W. R. Grapczynski	School Troops	
1st Lt. A. J. Howell	Department of Air Training	
1st Lt. Bayless E. Kirtley	Department of Gunnery	
1st Lt. John H. Iwan	Department of Observation	
1st Lt. Walter J. Manning	School Troops	
1st Lt. William P. Maslak	Department of Air Training	
1st Lt. John E. McCann	Department of Air Training	
1st Lt. Gale R. McTavish	Department of Gunnery	
1st Lt. Dalton Y. Medlen	Detachments	
1st Lt. George J. Mutter	Detachments	
1st Lt. Maurice W. Newell	Department of Motors	
1st Lt. Wayne E. Penny	Department of Air Training	
1st Lt. John G. Pfenninger	Department of Materiel	
1st Lt. Irving Pikser	Department of Motors	
1st Lt. Walter R. Prange	Department of Air Training	
1st Lt. John T. Russell	Department of Gunnery	
2d Lt. Albert S. Genna	School Troops	
2d Lt. Clellan H. Green	School Troops	
2d Lt. William E. Houser	School Troops	
2d Lt. W. W. Holmes, Jr.		School Troops
2d Lt. James A. Henry		School Troops
2d Lt. Andrew Kilgariff		School Troops
2d Lt. Gerald D. Marcus		School Troops
2d Lt. H. L. McKusick		School Troops
2d Lt. Edward Rhoaders		School Troops
2d Lt. W. D. Singleton		Detachments
CWO H. A. Thompson		Adjutant General's Office
WOJG S. L. Campbell		Department of Motors
WOJG John E. Gunn		Department of Motors
WOJG Glenn A. Johnson		Department of Motors
WOJG John B. Larkins		Department of Gunnery
WOJG Edward J. Norman		Department of Motors
WOJG Albert Vasicek		Department of Motors
		<i>Departures</i>
		Overseas
Col. Herman J. Crigger		Hq. First Army, Ft. Jackson, S. C.
Col. Lewis S. Griffing		Hq. VII Corps, Cp. San Luis Obispo, Calif.
Col. Paul R. Walters		Sep. Center, Ft. Sam Houston, Tex.
Lt. Col. Neil D. Cox		Sep. Center, Cp. Chaffee, Ark.
Lt. Col. Russell D. Funk		McCloskey Gen. Hosp., Temple, Tex.
Lt. Col. John A. Todd		442nd FA Gp., Ft. Bragg, N. C.
Maj. Del Val Dale		Sep. Center, Ft. Leavenworth, Kan.
Maj. Maurice R. Hubbard		FARTC, Ft. Sill, Okla.
Maj. Hugh M. Latimer		Sep. Center, Cp. McCoy, Wis.
Maj. Robert S. Reaves		Sep. Center, Jefferson Bks., Mo.
Maj. Charles R. Sexton		Cp. Stoneman, Pittsburgh, Pa.
Maj. Paul C. Thomas		Overseas
Maj. James S. Thornton		AGF Repl Depot #2, Ft. Ord, Calif.
Capt. Louis J. Ammel		AGF Repl Depot #4, Cp. Adair, Ore.
Capt. Arthur M. Bach		FARTC, Ft. Sill, Okla.
Capt. Albert E. Barends		AGF Repl Depot #4, Cp. Adair, Ore.
Capt. Darwin T. Bauman		FARTC, Ft. Sill, Okla.
Capt. Earl I. Brown		Sep. Center, Ft. Meade, Md.
Capt. Albert V. Carr		FARTC, Ft. Sill, Okla.
Capt. Lee T. Cossar		AGF Repl Depot #4, Cp. Adair, Ore.
Capt. Charles B. Cox		AGF Repl Depot #4, Cp. Adair, Ore.
Capt. Keith W. Dahl		AGF Repl Depot #4, Cp. Adair, Ore.
Capt. Ralph H. Engstrom		FARTC, Ft. Sill, Okla.
Capt. Bob M. Fagerberg		AGF Repl Depot #4, Cp. Adair, Ore.
Capt. Alvin E. Graham, Jr.		Sep. Center, Cp. Chaffee, Ark.
Capt. Donald R. Greenhaw		Sep. Center, Ft. Douglas, Utah
Capt. Richard C. Hansen		Sep. Center, Ft. Douglas, Utah
Capt. Ralph S. Heath, Jr.		AGF Repl Depot #4, Cp. Adair, Ore.
Capt. Ted V. Helmer		Sep. Center, Ft. McArthur, Calif.
Capt. Joseph P. Holloway		FARTC, Ft. Sill, Okla.
Capt. Hugh A. Jennings		FARTC, Ft. Sill, Okla.
Capt. Robert C. Larmore		FARTC, Ft. Sill, Okla.
Capt. David R. Lyon		FARTC, Ft. Sill, Okla.
Capt. W. E. Matschulat		AGF Repl Depot #4, Cp. Adair, Ore.
Capt. Joseph W. Narmore		McCloskey Gen. Hosp., Temple, Tex.
Capt. Harold N. Parker		AGF Repl Depot #2, Ft. Ord, Calif.
Capt. Marshall J. Pujo		AGF Repl Depot #2, Ft. Ord, Calif.
Capt. Vernon E. Rottstedt		AAF Regional Hosp., Sheppard Fld., Tex.
Capt. Guy R. Shoemaker		AGF Repl Depot #4, Cp. Adair, Ore.
Capt. Robert E. Simons		FA Board, Ft. Bragg, N. C.
Capt. Harold A. Steinke		FARTC, Ft. Sill, Okla.
Capt. F. M. Thieriot		AGF Repl Depot #4, Cp. Adair, Ore.
Capt. Richard L. Wood		FARTC, Ft. Sill, Okla.
1st Lt. Mark J. Appleman		AGF Repl Depot #2, Ft. Ord, Calif.
1st Lt. Lawrence E. Bell		Sheppard Field, Tex.
1st Lt. Lewis B. Blumberg		FARTC, Ft. Sill, Okla.
1st Lt. K. D. Cooke		FARTC, Ft. Sill, Okla.
1st Lt. John L. Cunningham, Jr.		Sheppard Field, Tex.
1st Lt. E. L. Czenkusch		Sheppard Field, Tex.
1st Lt. L. L. DeFrancesco		Sheppard Field, Tex.
1st Lt. Franklin H. Dubsy		95th Inf. Div., Cp. Shelby, Miss.
1st Lt. Christopher Dyer-Bennet		Hq. VII Corps, Cp. San Luis Obispo, Calif.
1st Lt. John L. Flaherty		Sep. Center, Cp. Atterbury, Ind.
1st Lt. E. K. Gibbons		Sheppard Field, Tex.

1st Lt. George H. Grommes	FARTC, Ft. Sill, Okla.	1st Lt. G. C. Thimmesch	AGF Repl Depot #2, Ft. Ord, Calif.
1st Lt. Jesse L. Guthrie	Sheppard Field, Tex.	1st Lt. Evan O. Thomas	Sheppard Field, Tex.
1st Lt. Arthur R. Hart	Sheppard Field, Tex.	1st Lt. Charles E. Tryon	Hq & Hq Det Sch Troops, Ft. Sill, Okla.
1st Lt. Thomas J. Hekl	Sheppard Field, Tex.	1st Lt. D. W. Vreeland	FARTC, Ft. Sill, Okla.
1st Lt. Peter L. Janke	AGF Repl Depot #2, Ft. Ord, Calif.	1st Lt. Richard L. Weil	Sep. Center, Ft. Sheridan, Ill.
1st Lt. Ervin V. Johnson	Sheppard Field, Tex.	1st Lt. Walter R. White	FARTC, Ft. Sill, Okla.
1st Lt. Wilmot J. Kinns	Sheppard Field, Tex.	1st Lt. William H. Willis	R&SC, Birmingham, Ala.
1st Lt. Ernest N. Kleiner	Sheppard Field, Tex.	2d Lt. William A. Barter	Sheppard Field, Tex.
1st Lt. Stanley D. Llewellyn	Sheppard Field, Tex.	2d Lt. Lowell H. Brammer	Sep. Center, Ft. Sheridan, Ill.
1st Lt. Thomas R. Marsh	Sheppard Field, Tex.	2d Lt. Clente A. Bevitori	Sheppard Field, Tex.
1st Lt. John Moment	Sheppard Field, Tex.	2d Lt. John D. Comer	Sheppard Field, Tex.
1st Lt. John A. O'Connor	Hq & Hq Det Sch Troops, Ft. Sill, Okla.	2d Lt. William V. Crook	AGF Repl Depot #2, Ft. Ord, Calif.
1st Lt. Parnell C. Powell	Sheppard Field, Tex.	2d Lt. John Fedeshen	Sheppard Field, Tex.
1st Lt. Marvin C. Pratt	FARTC, Ft. Sill, Okla.	2d Lt. Everett L. Goings	Hq & Hq Det Sch Troops, Ft. Sill, Okla.
1st Lt. Oscar J. Rainville	FARTC, Ft. Sill, Okla.	2d Lt. Mortimer Gordon	Sheppard Field, Tex.
1st Lt. Robert G. Redmon	Sheppard Field, Tex.	2d Lt. Darwin E. Gubser	Sheppard Field, Tex.
1st Lt. Walter L. Reynolds	Sep. Center, Ft. Dix, N. J.	2d Lt. Harry H. Messmer	AGF Repl Depot #2, Ft. Ord, Calif.
1st Lt. Marion J. Rice	Sep. Center, Cp. Atterbury, Ind.	2d Lt. L. M. McFadden	AGF Repl Depot #2, Ft. Ord, Calif.
1st Lt. Arnold E. Risinger	FARTC, Ft. Sill, Okla.	2d Lt. George Otis, Jr.	Sheppard Field, Tex.
1st Lt. Horace E. Robinson	Sheppard Field, Tex.	2d Lt. George A. Steiner	Sheppard Field, Tex.
1st Lt. Wilford T. Sawyer	Sheppard Field, Tex.	2d Lt. Henry B. Wallace	Sep. Center, Cp. Chaffee, Ark.
1st Lt. Richard N. Schriber	Sheppard Field, Tex.	2d Lt. John R. White	Sheppard Field, Tex.
1st Lt. Jack V. Schurman	AGF Repl Depot #4, Cp. Adair, Ore.	2d Lt. Lendel E. Wilson	Sheppard Field, Tex.
1st Lt. Gene O. Sinex	FARTC, Ft. Sill, Okla.	CWO J. G. Brandenburg	FARTC, Ft. Sill, Okla.
1st Lt. Julius A. Stevens	Sheppard Field, Tex.	WOJG H. M. Bradshaw	97th Inf Div, Ft. Bragg, N. C.
1st Lt. C. A. Templeton	Sheppard Field, Tex.	WOJG Ralph H. Glasgow	AGF Repl Depot, Cp. Beale, Calif.

TRENDS in Field Artillery Organization and Equipment

Although this column announces only approved changes, it does not constitute authority to requisition personnel or equipment listed herein.

By Maj. Irvine F. Belser, Jr., FA

Revisions of all tables of the infantry division artillery and also of the tractor-drawn 105-mm howitzer battalion are now being distributed. These revisions, dated 1 June 1945, will be accompanied by a Change 1 dated 1 July 1945, stating that "Reorganization to be effected under this table requires specific War Department approval" and that the former table has been redesignated, for example, T/O & E 6-10-1-OS. At the same time changes to old standard tables will be published redesignating each one as "so-and-so-OS" and bearing the notation "Units organized under this table will remain organized under the renumbered table."

The major changes made in the revised tables are increases in communication personnel and equipment. In all headquarters batteries wire crews have been increased to provide standard teams of a corporal, a driver, and five (5) wiremen and telephone operators each. Radio operators are provided on the basis of one (1) per voice set and three (3) per CW set, resulting in a considerable increase in number of operators. One (1) additional switchboard operator has been included in each battalion headquarters battery, and three (3) additional in the division artillery headquarters battery. In the division artillery headquarters battery the duties of the battery commander and communication officer have been separated and a captain, communication officer, added to assume the communication duties on a full-time basis. In the howitzer batteries communication personnel have been increased by one (1) additional radio operator, one (1) additional

switchboard operator, and one (1) additional wireman and telephone operator.

Communication equipment changes add a Radio Set SCR-608-() in each headquarters and howitzer battery, and one (1) ¼-ton trailer and two (2) ¼-ton trucks in each headquarters battery to transport the Radio Set SCR-193-() already authorized and the SCR-608 being added. In T/O & E 6-10-1 a ¼-ton trailer has been added for the Telephone Central Office Set TC-4. In each battalion headquarters battery wire section one of the ¾-ton weapons carriers has been replaced by a 2½-ton SWB truck.

The new division artillery tables provide extensive mortar-locating facilities. The division artillery headquarters battery includes a captain, countermortar assistant S-2, a technical sergeant, radar repairman, a driver, and a ¼-ton truck and trailer. Each light battalion headquarters battery, when an organic part of an infantry division, will include a countermortar section of one (1) officer and fifteen (15) enlisted men, one (1) 2½-ton truck with 1-ton trailer, two (2) ¼-ton truck and trailers, and a Radar Set AN/TPQ-2-() or AN/TPQ-3-(). Each section will also have three (3) Radio Sets SCR-619-(), telephones and wire, and a small amount of surveying equipment.

Several augmentations to be provided when specifically authorized by the War Department are included in the revised tables. T/O & E 6-27, Field Artillery Battery, Motorized, 105-mm Howitzer, Truck-Drawn and T/O & E 6-327, Field Artillery Battery, Motorized, 105-mm Howitzer,

Tractor-Drawn provide an augmentation for two (2) additional howitzer sections with which to form 6-gun batteries. The augmentation provides, in addition to the personnel and equipment for two (2) standard howitzer sections, an extra sergeant, chief of section to replace the staff sergeant, chief of section, who is reassigned from one of the howitzer sections to the firing battery headquarters as chief of firing battery. Each headquarters battery contains a note stating that "When specifically requested by Theater of Operations and approved by the War Department, 2 additional Field Artillery first lieutenants may be provided in order that air observers may be utilized without reassigning personnel normally required for other duties."

The tables for each battery of the 105-mm howitzer battalion, both truck-drawn and tractor-drawn, prescribe additional "Personnel Augmentations" to be provided when specifically authorized by the War Department. The augmentation for T/O & E 6-26, Headquarters and Headquarters Battery, Motorized, 105-mm Howitzer Battalion, Truck-Drawn or Tractor-Drawn, contains a second fire direction center crew (including a first lieutenant, assistant S-3), three (3) truck drivers, six (6) machine gunners, four (4) survey and instrumentmen, one (1) cook, and one (1) basic, and a 2½-ton truck for transportation of the personnel. The augmentation for T/O & E 6-27, Field Artillery Battery, Motorized, 105-mm Howitzer, Truck-Drawn and T/O & E 6-327, Field Artillery Battery, Motorized, 105-mm Howitzer, Tractor-Drawn provides twenty-six (26) additional individuals, principally cannoneers, ammunition handlers, drivers, and machine gunners, and a 2½-ton truck. The augmentation for the service batteries, T/O & E 6-29 and 6-329, provides twenty (20) extra persons, the majority being ammunition handlers, truck drivers, and machine gunners, and also a 2½-ton truck for transportation.

A new table, T/O & E 6-465, Field Artillery Battalion, Motorized, 8-inch Howitzer, Self-Propelled, is now in the hands of The Adjutant General for publication and distribution. The battalion includes a standard medical detachment, the standard heavy artillery headquarters and headquarters battery, T/O & E 6-56, the standard heavy self-propelled artillery service battery, T/O & E 6-459, and three (3) howitzer batteries, T/O & E 6-467. The howitzer battery is virtually the same as the self-propelled 155-mm gun battery, T/O & E 6-457, differing only in having ten (10) cannoneers per section instead of eight (8), an additional cook, and 7½-ton trucks with 8-ton ammunition trailers instead of 2½-ton trucks with M10 ammunition trailers in the fifth section.

Changes to T/O & E 6-185, Field Artillery Battalion, 75-mm Howitzer, Pack, Mountain, and associated tables are now being published to add a note that these tables supersede T/O and T/E 6-155, dated 4 May 1943, and allied tables. This will have the effect of permitting reorganization of all separate

non-divisional pack battalions from T/O and T/E 6-155 to T/O & E 6-185, and cancellation of the whole T/O and T/E 6-155 series.

The Radio Set AN/GRC-9-() will replace the SCR-694-() in all pertinent field artillery tables. The AN/GRC-9-() is an amplitude-modulated set with a frequency range of 2-12 megacycles—considerably greater than in the SCR-694-(). The set is moisture-proofed and tropicalized, and weighs 114 pounds complete.

In all field artillery tables except pack, the Desk, field, empty, fiber, headquarters and the Chest, record, fiber will be replaced on a one-for-one basis by the Desk, field, M1945. In pack artillery tables, the Chest, record, fiber will be replaced by the Desk, field, empty, fiber, company. The Desk, field, M1945 is larger than either of the items it replaces, and provides drawer space designed from field experience to hold the morning reports and other materials usually carried in the field. One drawer is lockable, and the desk itself is lockable with a padlock. When opened out for use, the desk provides folding seats and table space for typing or other clerical duties.

The Packboard, aluminum has been standardized to replace the Packboard, plywood in all tables. A qualifying remark will provide that the Packboard, plywood will be issued in lieu thereof until exhausted. The aluminum packboard is stronger and lighter than the plywood variety, and will merely bend rather than shatter when dropped fully loaded.

In airborne tables the Cart, hand, M3A4 will be replaced by the M7. The new utility cart is of light tubular construction, with an aluminum body, and is smaller in overall dimensions than the M3A4. The tongue has been modified to permit the bed of the cart to remain level whether towed by hand or by ¼-ton truck, and can be detached to make delivery from the aircraft easier.

Antenna Equipment RC-292-() has been standardized with a basis of issue which includes two (2) per headquarters battery in field artillery tables. Only one (1) will be included in T/O & E 6-26, Headquarters and Headquarters Battery, Motorized, 105-mm Howitzer Battalion, Truck-Drawn or Tractor-Drawn, T/O & E 6 160-1, Headquarters and Headquarters Battery, Division Artillery, Armored Division, and T/O & E 6-166, Headquarters and Headquarters Battery, Armored Field Artillery Battalion. The antenna equipment provides a non-vehicular elevated antenna of the ground-plane type for use with Radio Sets SCR-508-(), SCR-528-(), SCR-608-(), and SCR-628-() to increase communication range. The antenna is mounted on a 30-foot light-weight sectional mast. Weight complete with 68-foot coaxial connecting cable is 48 pounds.

The M1, M1-C, and M1A1 models of the 155-mm gun have been reclassified as obsolete. The breech ring in guns of these models will be scrapped, and the rest salvaged for use in the standard M2.

LIAISON PILOTS FLY 3,686 SORTIES

WITH THE 8TH INFANTRY DIVISION IN EUROPE.—During the 8th Infantry Division's ten-month period of ETO combat, liaison pilots of the 8th Infantry Division Artillery flew a total of 3,686 missions, representing a total of 3,484 hours in the air.

KYUSHU

By Col. Conrad H. Lanza

Kyushu is the southernmost of the four main islands which constitute Japan. It is approximately egg-shaped, with a north and south major axis 85 miles long and a minor east-west axis 50 miles in length. Like all of Japan, Kyushu has many mountains. They belong to two systems, often referred to as the outer and inner.

The outer system is a prolongation of a range which starts in Asia and appears above water in the southwest corner of Kyushu. It then continues northeastwardly, dips under water, and enters the island of Shikoku. This range is rugged, has few plains, and consists of parallel ridges and intervening valleys. Facing the Pacific Ocean, it has a mild climate.

The inner system faces Asia. It is a series of plateaus which over a long period have become broken down into separate parts, having steep slopes. It has a slightly cooler climate than the outer zone's.

Interspersed between both mountain chains are numerous volcanoes, some of which are active and others inactive. The northern volcanoes form a major seismic zone, being the center of origin of frequent earthquakes—which are occasionally of destructive force.

Kyushu is in the same latitude as South Carolina and Los Angeles. The outer zone has a mean annual temperature of 61° Fahrenheit; the inner zone is 3° cooler. Rain occurs in all months, but in the outer zone has a well defined maximum during the summer. There is no snow. Summers are quite hot, and during that season mosquitoes are a pest. Winters are mild and with considerable sunshine.

Mountains contain numerous forests and reforested areas which are recognizable by trees' being in rows. At elevations below 3,000 feet forests are mainly pine and cryptomeria.

There are extensive coal deposits, including a small amount of anthracite. None is good coking coal, but becomes so if mixed with imported coal of proper characteristics. Coal deposits are in the northeast inner zone close to the sea. In some cases the mines extend out under the sea. Iron ore (imported by water), the local coal, and lime (available in the mountains), form the base for an extensive industrial development. The coal serves also to support certain chemical industries and synthetic oil plants.

Copper is found in the outer zone. Ordinarily it is so deep down as to make it more profitable to buy foreign ores than to mine the native sources. Under war pressure the local copper was probably mined to its limit, although there is no definite report on this as yet.

The west coast is very irregular and full of rocks and cliffs. There are numerous harbors and coves. The east coast is nearly straight, has few harbors, but does have good beaches



in rear of which are cultivated areas over which maneuvers are possible. Cliffs facing the coast often have natural caves. Some are at sea level and admit small craft. A few are extensive, but most are small. It must be presumed that in view of recent Japanese tactics the caves have been utilized as sites for weapons and that they may have been enlarged and new ones artificially constructed.

At the last recorded census the population of Kyushu was 9,646,476. People are most densely settled along the coasts and in the comparatively few level areas. The mountainous interior is only lightly populated.

All available low land is cultivated. Rice is the main crop. The land that produces rice is usually replanted during the same season with a dry crop such as wheat, barley, or radishes. At the extreme south two crops of rice per annum are practicable.

Fishing is a main industry, the surrounding seas abounding in fish.

A railroad and a coast road encircle the island. There is a good net of roads along coasts and plains. A cross railroad extends southwest and northeast along the divide between the inner and outer mountain zones. The inner zone—separated plateaus—has cross roads and railroads in the northwest third of Kyushu. The outer zone—rugged parallel ridges covering the southeast two thirds—has no cross railroad and but few cross roads. Roads are good, but of the narrow Japanese type.

Northwest Kyushu, containing the great coal mines and a very important industrial district, suggests itself as a better invasion area. A penetration in this sector would at once have a strong economic effect. Advance into the interior would be facilitated by existing lines of communication.

Southeast Kyushu has no major economic areas, so an invasion in that area might have no immediate reaction. Landings would be facilitated by good beaches, but an advance thereafter would be hampered by inferior (or nonexistent) lines of communication.

THE NORTHWEST SECTOR

Kyushu is separated from Honshu—the main Japanese island—by the Shimonoseki Strait. This is 12 miles long and varies from a half to a full mile in width. It is navigable for large ships. The east entrance of the strait leads into the Inland Sea, the west into the Tsushima Passage, which connects in turn with the East China Sea on the south and with the Sea of Japan on the north.

On Kyushu near the east mouth of the Shimonoseki Strait is Moji, a city having a population of nearly 125,000 and the first of a string of industrial towns running westward along the coast. A railroad tunnel extending underneath the strait to Honshu is probably immune to bombing except for entrances. The railroad yards are on the water front, where there are over three miles of wharves and quays available for debarkations.

Moji is the headquarters for the Kyushu Railroads; all parts of the island can be reached by rail from there. The main lines proceed around the island via the east and west shores. Coal is a main export from this port. A large cement plant is at the west end of town. The city is dominated by a number of hills, mostly wooded, on the south side, and varying from $\frac{1}{4}$ to a mile from the sea.

Across the strait, not over a mile wide, Shimonoseki town is similarly at the foot of wooded hills. A landing or invasion through the strait would be difficult. Beaches exist east and southeast from Moji, facing the Inland Sea. This also would be a difficult method of approach: after landing it would be necessary to capture the hills separating Moji from the east shore.

The north shore is continuously lined with towns, villages, and plants. Seven miles west of Moji is Kokura, where the railroad for the east turns off and, passing through a gap between the hills, soon reaches the coast. Kokura is a cotton center with a population of about 100,000. It is connected by Moji by an electric line, besides the railroad.

Three and a half miles further west is Tobata, with over 50,000 people. It lies at the entrance of Shimonoseki Strait. It has good debarkation facilities. Just to its west is a large harbor—Kukino-Umi—extending inland for four miles in an oblique direction. The north side of this harbor is separated from the sea by a peninsula some two miles wide and with wooded hills which protect the harbor from shelling by hostile naval forces. On the south side of the harbor is Yawata, contiguous to Tobata, which is just north. Yawata is a great steel center, ore being brought in by water and coal

coming by rail from neighboring mines. Its population is about 200,000.

Across the harbor from Yawata, a mile to the north and $\frac{1}{4}$ mile west of Tobata on the opposite side of the harbor entrance, is Wakamatsu, a major coal shipping center. The chief coal center of Kyushu (known as the Chikuho fields) is about 10 miles inland from Yawata. There are some 170 mines, which produced over 20,000,000 tons yearly. What their war production may have been is unknown. The entire coast from Moji to Wakamatsu (both inclusive) is a densely populated and intensely developed narrow industrial belt between the sea and hills. It is an almost ideal bombing target, but not so easy for an invasion landing.

At the head of the harbor for Yawata (Kukino-Umi) the railroad and main highway are parallel to the coast, but inland behind a range of low wooded hills. A good road follows the coast. The shore would be practicable for invasions, which would, however, meet immediate resistance from forces on the hills within a mile of the shore.

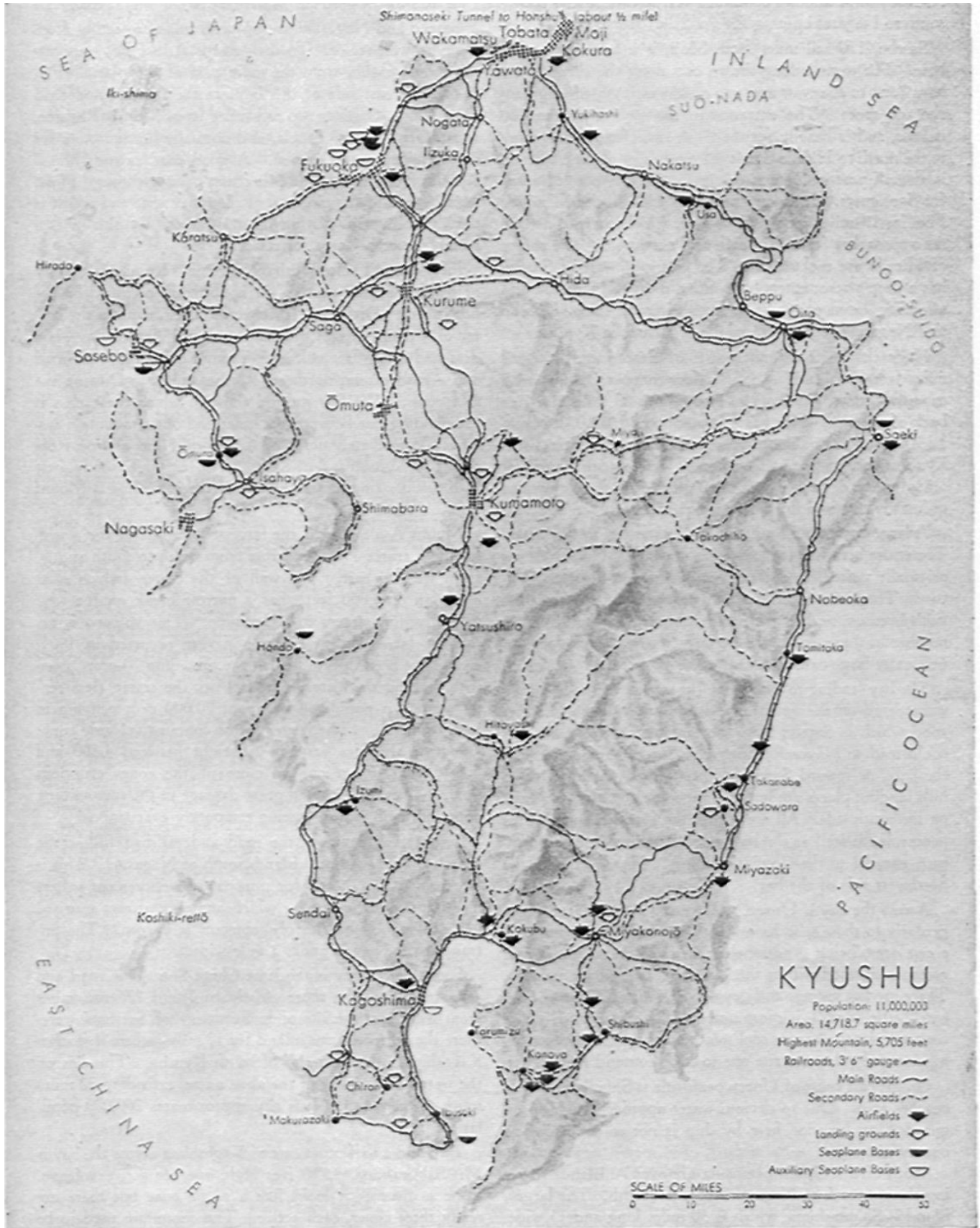
Twenty-five miles southwest of the head of Yawata's harbor is the large city of Fukuoka, with 300,000 people, located on the south side of Hakata Bay. The north side of the bay is a long sand spit extending out from the east. It is pine-covered, concealing fortifications. At its end is a two-mile-wide entrance to the bay. A large airfield is at the base end of the sand spit.

Prior to the war Fukuoka was the post for the 12th Infantry Brigade and other troops. Like other north coast towns, there are hills back of the towns within a mile of the sea. Hills are detached and do not form a continuous ridge. The city has a university and large tobacco factories. Small lakes to the west afford defense possibilities in connection with the hills.

From Fukuoka the coast westward has numerous small bays. Shores are rugged, with a few beaches and intervening steep slopes. They extend some 33 miles to Karatsu, a port on a bay having the same name and having a seven-mile-wide entrance. Karatsu normally ships coal. To the east of the town is a five-mile sand beach; its pine covering conceals defenses. To reach this beach it would first be necessary to clear the bay's entrance. Hills adjacent to Karatsu are higher than usual, rising to an elevation of 2,600 feet in places.

Ten miles northwest of Karatsu is Nagoya, at the north end of the Higashi-Matsuura peninsula. This is a smaller port. Karatsu and Nagoya face Tsushima Strait. An invasion in this area is practicable and would threaten the more important ports of Sasebo and Nagasaki to the south.

A line of mountains extends eastward from south of Karatsu to southwest of Fukuoka. Their maximum elevation does not exceed 3,600 feet, but they are rough and a military obstacle. Their axis is almost due east and west. Around the east end of this range is the main west coast railroad line and the main highway, which extend south from Fukuoka around the east end of the range to Tosu, 18 miles from Fukuoka. At Tosu the railroad and road continue south. An important branch turns west along the south side of the mountain range. This again splits, a branch turns west along the west end of the mountains to



Karatsu, while another continues west to Sasebo and thence south to Nagasaki.

Sasebo, 120 rail miles from Moji, is a first class naval base. The town is long drawn out along the shore. Two bays (one to the west and one southwest) afford large anchorage space. The entrance to the bays is covered by islands, and is heavily fortified. A road follows the shore to the north to Hirado Strait, 25 road miles distant. Hirado is a small port which was originally the sole port of entry for foreigners. It is on the north end of the island of Hirado, 19 miles long and 6 wide, which covers Sasebo's sea approaches from the north and northwest. The shores of Hirado are rocky cliffs. The bay southwest of Sasebo has a deep pocket extending south almost to Nagasaki and affording large possibilities for shelter of ships. Sasebo and Nagasaki together form the best bases in Kyushu.

Nagasaki is 30 air miles SSE of Sasebo and 166 rail miles from Moji. It is a first class commercial port with extensive quays, warehouses, etc. As usual, hills rise just back of the city, which has a population of 211,000. Nagasaki has long been the main center of foreign interests in Kyushu; foreign commercial houses were extensively represented there. By rail it is 166 miles to Moji; through trains ordinarily required five hours for the journey.

A large bay over 12 miles wide gives access to Nagasaki. The entire area has for long been fortified. Nagasaki was originally visited by Catholic missionaries in the 16th Century. They were expelled soon afterward but the Christian faith lived on, and on the Restoration in 1868 a substantial number of Japanese Catholics were found. They have an unusually large cathedral seating 6,000 persons.

The bay leading to Nagasaki (known as Chijiwa Nada) is bordered on the north by a narrow hilly peninsula, beyond which is Sasebo Bay. A landing on this peninsula could lead to Nagasaki if invasion forces turned south at the base, or toward Sasebo if they turned north. Due to hills landing places are limited, but some good beaches exist on the south side. All are within the fortified zone. This peninsula, as well as the bay, extends southwest and northeast, parallel to the mountain ranges. Nagasaki is on the northwest side of the bay.

Across the bay is Unzen, well known to Americans, particularly to those who have served in the Philippines. It is a rest area, being a national park with several hotels and cottages situated within the crater of an inactive volcano. There are hot springs and geysers, of which Kojigoku (Jap for "Little Hell") is most noted. The elevation is 2,400 feet, sufficient to assure cool weather in summer. Surrounding inactive volcanoes rise one to two thousand feet higher.

On the east coast of Unzen peninsula is Shimibara, where beaches exist. Due to devious water approaches which are guarded, an invasion here by ship is not so promising as one by air.

South of the Unzen peninsula are over 70 islands covering the approach to Nagasaki from the south. The largest island is Shimo-shima, which is 30 miles long and 15 wide. It is covered with rough hills, but has excellent beaches at the north tip.

THE WEST SECTOR

Sasebo and Nagasaki are on peninsulas projecting from the northwest sector. To their east is Ariake Bay, separating the peninsula from the main part of the island. Following the east side of this bay are the railroad and road from Moji. Seventy-two rail miles from Moji is Kurume, with nearly 100,000 people, and normally headquarters for the 12th Infantry Division. A good road extends across Kyushu from here to the east coast, passing through Hida, which is one of the plateaus of the inner zone and which is thickly cultivated. Lying halfway across Kyushu, it is a suitable assembly area for reserves.

Fifty-one rail miles south of Kurume is Kumamoto, a city of nearly 200,000 people. It is normally occupied by the 6th Infantry Division. It lies eight miles inland in the center of a plain. Right near the sea—still Ariake Bay—is a detached 2,100-foot volcano. From Kumamoto a railroad and a road extend northeast 92 road miles to Oita on the east coast. The low ground through which these pass is the dividing line between the inner and outer mountain systems. Immediately north of the dividing line and near the center of Kyushu is Mt. Kuju, 5,900 feet high, the highest in Kyushu. Immediately south of the same line is Mount Aso.

Mount Aso is one of the largest volcanoes of the world, having a crater 15 miles across from north to south and 10 from west to east. The wall of the crater (which is at elevation of 3,000 feet) has a narrow break on the west side affording access to Kumamoto. This volcano is active, its latest violent eruption having occurred in 1904; there have been three others in the preceding 20 years. Notwithstanding the history of Mt. Aso, the crater (less center sector) is populated by about 70,000 people living in several villages. The center sector contains volcanic cones rising to altitudes varying in height between 4,200 and 5,250 feet. From one or more of the cones eruptions occur. They have caused great damage in the surrounding occupied main crater, forcing temporary evacuations.

South of Kumamoto the road and railroad follow the coast, covered by the 70 islands south of Nagasaki. This is Yatsushiro Bay, noted for unusual phosphorescent waters in August and September which annually attract tourists. No explanation of the phenomenon is known. The entrance to the bay is under a mile wide.

South of the bay is the East China Sea. The road and railroad follow the shore closely to Ijuin, 236 rail miles from Moji and the site of manufacture of Satsuma ware. Here the railroad turns inland for 13 miles, where it reaches Kagoshima, the main city of south Kyushu. This lies on the west side of a bay of the same name, extending 30 miles south to the ocean. This city approximates 200,000 population.

Two and a half miles east of Kagoshima across the bay is Mt. Sakura-jima, 3,750 feet high, another active volcano. From a distance it looks like a single cone but there are really three cones, each active. This mountain used to be an island and was cultivated by 25,000 people who lived on it. In 1914 a violent eruption destroyed all villages, forced

all inhabitants to leave, and ended the mountain's existence as an island by filling with lava the channel around its east end. As usual in Japan the people have moved back, and the volcano is estimated to now have a population of about 15,000.

Kagoshima and its bay form an excellent base. All shores are lined with mountains, but there are numerous beaches and generally there is flat cultivated country between the shore and the sea. This is the warmest part of Kyushu; oranges, bananas, and palms abound. The area is noted for raising large quantities of radishes, which grow to a size of 65 lbs.

Roads extend down along both sides of Kagoshima Bay. On the east side are only a few villages, but the west side has many. Near the mouth is Ibusuki, 30 road miles from Kagoshima. Immediately in its rear is the 2,400-foot Mt. Kaimon, another active volcano.

THE EAST SECTOR

The water passage between Kagoshima and its adjacent volcano leads into an inner bay 14 miles broad from west to east and 8 deep from north to south. The road and railroad to the east coast from Kagoshima follow around this bay to Kokubu at the northeast. Just to the north is a group of volcanoes, of which one—Mt. Kirishima—is an active volcano and a national park suitable for a rest and recreation area.

The rail distance from Kagoshima to Moji via the east coast is 293 miles, as compared with 249 miles by the west coast. The railroad reaches the east coast via a valley between parallel ridges leading to Miyasaki, a town of 60,000. Then both road and railroad turn north and follow the coast.

The east coast has few bays, hardly any islands offshore, and no large towns such as are frequent on the west side. It has numerous beaches facing the Pacific but they often have heavy surf, particularly during the summer, when the prevailing winds are from the southeast. The south end of the coast where not cultivated has dense shrubbery of semi-tropical plants which are an obstacle to invasion parties. North of Miyasaki flat country extends inland for from four to ten miles. The mountains in rear have elevations up to over 5,000 feet.

From Miyasaki two roads extend west across the island. One substantially follows the railroad to Kagoshima; the other passes to the north through the Mt. Kirishima national park area. North of Miyasaki there is not another cross road for 50 miles. Then at Nobeoka a road goes west to Kumamoto.

The next cross road starts from Oita, and has already been referred to as following the boundary divide between the outer and inner mountain systems. Oita has a large bay, sheltered except for winds from the northeast. It should be practicable to land on this bay at almost any time, either at its head or on one of its sides, according to the wind and sea. This is Beppu Bay. The town of Beppu is 8 miles north of Oita and 82 rail miles from Moji. Beppu is a summer resort with extensive sand beaches. A special feature is hot sand baths supposed to confer physical comfort and benefit to those who bury themselves in the sand. There are numerous hot mineral springs and plenty of hotels. This is another rest and recreation resort. There are excellent (but narrow) roads throughout this area.

Going north from Beppu the road and railroad cut across the base of a peninsula extending to the northeast and occupied by Mt. Fubago, another volcano. There is a coast road around that peninsula, but little maneuvering area behind it. This peninsula covers the entrance to the Inland Sea, and of course is fortified.

Northwest of the peninsula and 43 road miles from Beppu is Nakatsu, which is a small port. This would be suitable for debarkations provided the entrance to the Inland Sea has been forced. Ten miles southeast of Nakatsu is Mt. Hiko, 3,700 feet high. It is really several mountains, forming a choice group of inactive volcanoes. On its southeast side is the Tabakei valley, through which is a cross road to the Hida plateau and thence on to Kurume on the west coast. Mt. Hiko and the Yabakei valley are renowned for the natural beauty of their scenery, and together form a resort area. It contains numerous shrines sacred to Buddhists.

At Nakatsu commences a large plain of rolling country which extends 30 miles northward to the vicinity of the northwest industrial area near Yawata. Through this, the road and railroad continue to Moji.

COMMENTS

Kyushu is a natural entrance to Japan for forces arriving from the south. It affords sites for almost unlimited air, naval, and ground bases. Its best ports are on the west side, and are defended.

The mountainous nature of most of the island tends to aid defenders. Caves are not infrequent, but seldom occur at points where they are tactically advantageous. A system of cave and tunnel defenses would require extensive construction. First work of this nature appears to have started during the latter part of 1944.

A good suggestion for improving unit maintenance comes from a Field Artillery officer, who tells how his outfit worked. He reports that a weekly meeting of all motor and supply officers was held, at which time specific instructions on maintenance and supply problems were discussed. Each officer was then able to carry out the plans and suggestions in his unit during the following week, and all members of the battalion received the latest instructions on what to do about supply and maintenance problems. The officer states that in this way most of the problems were quickly solved.

GHQ Test I to the Rescue

By Col. Donald B. Harriott, FA

AUTHOR'S NOTES

(1) **The following units of the VIII Corps Artillery were engaged in this operation:**

**203d FA Gp Hq and Hq Btry
687th FA Bn (100-mm How)
949th FA Bn (155-mm How)**

(2) **The Tank Destroyer Battalion mentioned was the 808th TD Bn.**

The expressions: "The Lord is on our side" and "God sure had you by the hand" were never more apropos than on the morning of April 7th, 1945, when a Corps Field Artillery Group consisting of one 155-mm howitzer battalion and one 105-mm howitzer battalion, working in close cooperation with a Tank Destroyer battalion, was largely responsible for effectively stopping on an exposed flank a German counterattack in which participated some 14 to 18 Tiger tanks, more than 15 armored personnel carriers, and from 800 to 1,000 picked SS troops.

Unquestionably, divisional artillery has pressed Test I into service on many occasions during the war in Europe, particularly during its final stages. There have also been occasions when Corps Artillery battalions in direct support or reinforcing roles have used to good advantage the lessons taught in Test I, but the likelihood of a complete Group of Corps Artillery battalions simultaneously putting the GHQ Test I mechanism into high gear is rare indeed. Nevertheless, that unique happening actually occurred on the morning of April 7th.

In a setting in the hilly Thuringian section of Germany near Treffurt, the operation was a succession of fortunate circumstances for the American artillery involved. In the first place, the group headquarters and the two battalions were ordered to march at daylight of the 7th first to the west and thence south to another division sector to take up a typical reinforcing role, their current reinforcing mission having been accomplished as the division they had been assisting was scheduled to be withdrawn from the line to go into Corps Reserve.

Secondly, the advance of the division which had been reinforced by this Group had been slower along its left (north) flank. Practically all the divisional artillery were facing due east in positions beyond the exposed spot on the left flank. The reserve regiment with its direct support battalion, committed on the left of the line, had started to fill in the gap, but at this time the organic field artillery battalion was still out of range of the location where the threat finally materialized. Couple all this with the fact that the two Corps Artillery battalions at daylight were in the process of proceeding due west by two parallel roads approximately five thousand yards apart, on what would normally have been a simple administrative march from one

division sector to another. Fortunately, the heavier caliber battalion was marching on the more southerly route, away from the threatened area, but the greater distance could be easily compensated for by its greater range.

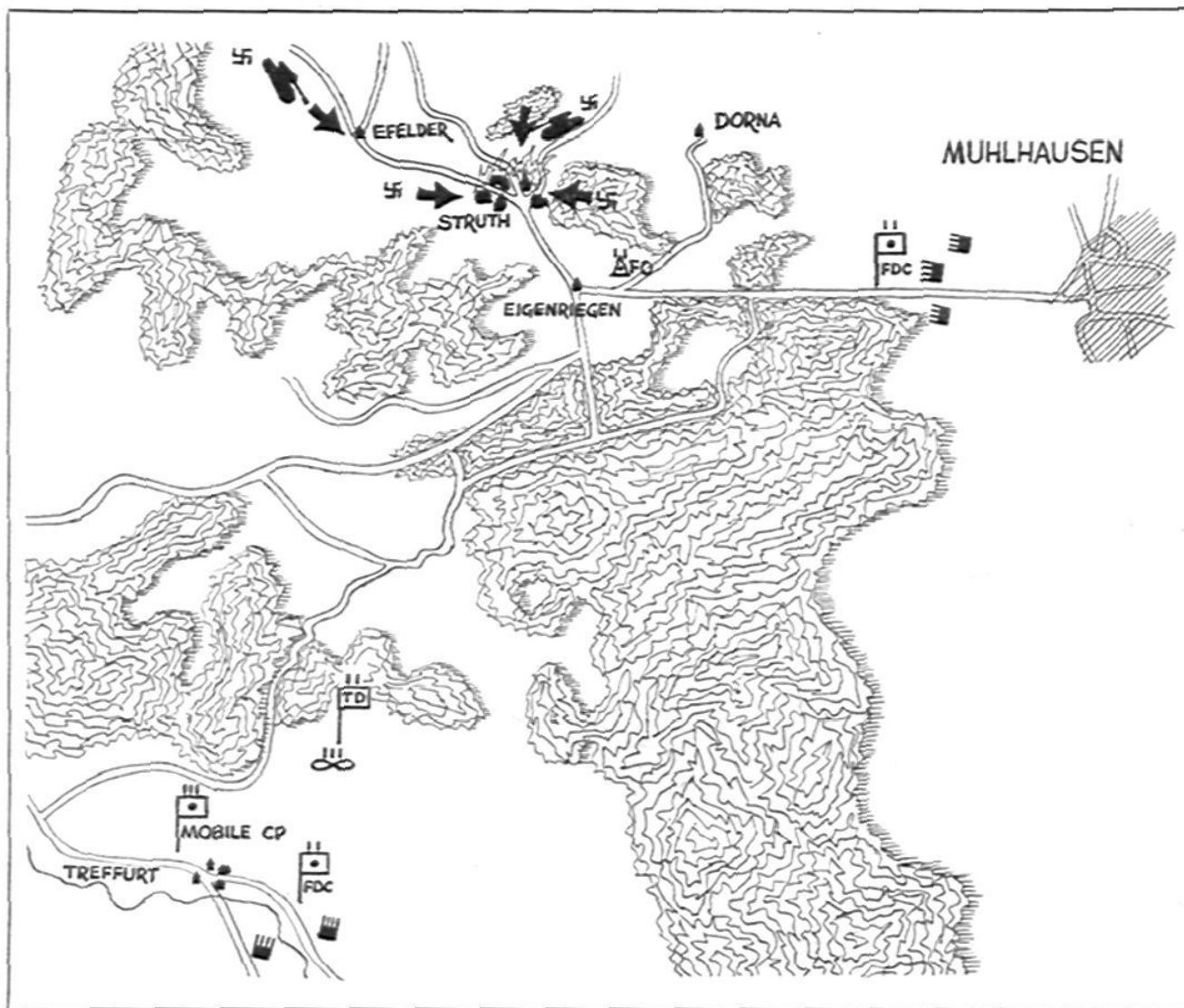
A third factor which soon became apparent was the fact that all concerned had laboriously gone through the training phase back in the states, which required successful completion of the Army Ground Forces Battalion Firing Tests particularly G.H.Q. Test I. For the first time in the long combat experience of both battalions and the Group headquarters, the previous training experienced in Test I was pressed into service. Although somewhat modified by the situation and the materials available, the Test I procedure was extremely successful and proved its value as an aid in combat. Throughout the whole episode one crystal-clear fact stood out: the artilleryman who possesses the initiative and ability to hurriedly adjust himself to a changing situation needs only the barest of essentials—the guns, the big bullets, the eyes to see with, and the means whereby he can communicate what he sees to the guns.

At 0530 on the morning of the 7th the 105-mm howitzer commander was advised by a lieutenant from an armored division that several armored supply train vehicles had been caught in the town of Struth and that a part of the road over which the battalion had started its march was being interdicted by mortar fire. Immediately, the battalion went into position off the road; the forward observer teams were quickly organized and, accompanying the battalion commander, rushed forward along the route of march to the point of danger. Contact with an infantry unit was made on the way and shortly afterward the battalion began its opening salvo.

The action was so rapid that the Fire Direction Center had barely enough time to set up a simple Observed Fire Chart on the back of a grid sheet. To illustrate the lucrative nature of the Jerry targets presented, one FO fired over a hundred and fifty rounds in one mission by shifting from the last target to the next. At one time, the division commander of the unit whose flank was threatened stood with the battalion commander and watched the battalion go to fire for effect on two hundred German Infantry as they advanced across the fields; the line broke under the withering and extremely effective fire, forcing them to retire leaving at least fifty dead or wounded behind. Needless to say, quick action and grasping the initiative without delay resulted in a field day for the battalion, which still had an unsettled score to pay back to the Germans for losses sustained in the Battle of the Bulge. It can be safely said that the slate was wiped clean by noon of that day.

While the light battalion was employing its howitzers in true Test I fashion its commander sent the following radio message to the Group Commander by SCR-193: "Counterattack—I am in firing position at (coordinates) and will be unable to move farther along designated route—further details later."

At this time this was the status of the Group Headquarters



and Headquarters Battery. All vehicles and personnel had started to march by infiltration to the new assembly area some twenty-five miles away, with the exception of the Group Commander's ¼-ton with SCR-610, the Forward FDC ¾-ton C & R with SCR-608 and 284, the Air Officer's ¼-ton, the S-2's ¼-ton, and the Radio ¾-ton WC with SCR-608 and 193. To all intents and purposes the Group CP had closed station in its reinforcing role and was completely mobile. Present for duty at the moment were the Group CO, S-3, Asst S-3, S-2, Asst S-2, Air O, Operations Sergeant, Intelligence Sergeant, four radio operators, and the vehicle drivers. Further movement was halted immediately, a Situation Map miraculously appeared out of nowhere and was placed on the flat hood of the Group Commander's Jeep, the end of the wire line (which had been pulled out of the switchboard) was spliced to another line and quickly run to the Group CO's ¼-ton, a telephone appeared out of the radio truck, finally the Operations Sergeant dug up a protractor and scale, and with a few grease pencils which popped out of various pockets the Command Post became

completely operational again in the short space of five minutes. DivArty was apprised of the fact that we were operational, that one battalion was in position and ready to fire, and that the other battalion was on the road but that steps had been taken to put it in position.

In the midst of all these hectic preparations a German civilian, apparently unconscious of what was happening and entirely oblivious to the dire threats to his personal safety that might be directed at him by a group of officers and enlisted men feverishly making plans to stop a sizable counterattack, asked permission to go into an unoccupied house in the vicinity of the CP to pick up some peas with the assurance that he needed them badly to fill up the vacuum in his stomach. One of the men waved a Tommy gun in his direction and all were amused to find that the only evident vacuum was the spot where he had been standing.

During the course of these procedures the S-3 and S-2 were ordered to take the FDC vehicle, contact the medium battalion then on the march, and pull it off the road and into position on the outskirts of the town of Treffurt. The

Group Commander took a quick look at the map and without benefit of protractor (still hiding in the dispatch case) shouted some last minute instructions. "Have them lay on compass 500." The S-2 was sent to DivArty CP to represent the Group Commander and to apprise them further of the situation. The Air Officer was dispatched to stop, if possible, the displacement of Group and Battalion liaison planes. He was told that there was a possible ambush in the vicinity of Struth, to get our air eyes airborne, and to contact the Group CO on the Group air channel.

The commander of the medium battalion had picked up word of the counterattack while on the road, and believing that the Group Headquarters had displaced rushed to the DivArty to offer his assistance. Upon returning to his vehicle he heard the following message issuing from the Group FDC vehicle at the battery position: "Baker Battery is laid and ready to fire." The battalion headquarters battery and one firing battery had progressed too far along the route of march to be recalled and put in position, but the other two batteries were caught in time. They quickly made the transition from an administrative march, no danger imminent, to a rapid occupation of position in the best Test I tradition. Any artilleryman would have been delighted to have seen this change take place. Upon arrival at the designated spot the first battery went into position, was adjusted by air OP, and fired for effect on a Tiger tank within fifteen minutes. The other battery followed very soon and was firing effectively fifteen minutes after the first battery's initial round was on the way. With a direct hit the battalion knocked out one Tiger tank which had stuck its long nose into the outskirts of the town of Struth to play havoc with direct fire on the bottled-up doughboys. The battalion's known score for the operation was nine tanks and armored personnel vehicles plus a sundry assortment of other vehicles and an unknown number of enemy Infantry.

An interesting incident was the manner in which the second battery received its instructions. As the first battery was engaged in occupying position, the Group staff officer sent instructions relative to the situation to the officer in charge of the second battery, through the Acting First Sergeant of the battery then going into position. Due to other duties no officers were present at the time, and the First Sergeant marching at the head of the second battery received the orders, emplaced the battery, and issued his instructions with such clarity that there was absolutely no lost motion. Once again it was demonstrated that a resourceful and well qualified non-commissioned officer can take hold in an emergency in such a manner as to bring commendation both to himself and to his organization.

The Battalion Commander arrived back at the battalion as the second battery was completing its occupation of position. Quickly grasping the situation from the Group staff officer, he immediately proceeded to set up a one-man Fire Direction Center until such time as other officers and enlisted personnel could be gathered into a varied and somewhat unique FDC. Since the Headquarters Battery was long gone down the road, the same scurrying for firing tables and for a range deflection fan and protractor, the same peering into dispatch cases for

articles which had been in a state of disuse for so long, the setting up of a jerry-built plotting board near the most convenient tree, all the same hurried preparations occurred here as had been accomplished in setting up the Group CP sometime earlier. Oddly enough, the combination of the Group Commander's laying his open hand across the map between the approximate battalion area and the general target area and coming up with "Compass 500" coupled with the Battalion Commander's announcing the base deflection, range, and quadrant elevation to the first target by practically the same method, still the first round hit the dirt *50 right 100 Over* the enemy tank which had the doubtful honor of becoming the battalion's first victim.

The part the Tank Destroyers played in the engagement can best be explained by presenting the picture of what confronted the Air Officer as he received his hurried instructions from the Group Commander, and the events that occurred from the time he jumped into his ¼-ton to go to the Air Strip and the time when everything returned to normal again. The following situation faced the Group Air sections. All the ground crew personnel, all the observers except two, and all air section vehicles with all the extra gasoline had taken off to the new area with the remainder of the Group Headquarters Battery. All engines in the L-4s were in the process of warming up for take-off to the new area when the Group Air Officer arrived on the scene. As the Air Officer was orienting the pilots, the TD Battalion Commander came tearing across the strip. What followed is a masterpiece of what can be done when initiative, clear thinking, and complete on-the-spot cooperation sit in the driver's seat.

The TD commander asked for information relative to the counterattack. He and the Air Officer quickly exchanged what knowledge they both had. Arrangements were rapidly made to set up a Tank Destroyer CP at the Air Strip, to bring up additional maps for the pilots and a hundred gallons of gasoline. Having issued instructions relative to flying patrols to work with each battalion, the Group Air Officer then took off with the Tank Destroyer CO to accomplish two things. First, to seek information on the WHAT, WHERE, WHEN, and IN WHAT FORCE for the Group Commander, and secondly, to give the TD commander a complete picture of what confronted him in the accomplishment of his mission. They flew under a four hundred foot ceiling and discovered that twelve American vehicles were burning furiously in Struth. At about the same time approximately twenty German tanks and accompanying personnel were seen coming out of the woods and slowly lumbering across the fields toward the town. This word was dispatched and four planes took the air to work for both artillery battalions and to assist the Tank Destroyers. The Air Officer then came down to fly at altitudes varying between fifty and a hundred feet, to afford an opportunity for the TD commander to get a complete picture of the terrain and avenues of approach so that he could more intelligently plan his defense against the German tank attack. During this period of air reconnaissance

at low altitudes they were subjected to hostile machine gun fire almost constantly.

Among the highlights of the complete Field Artillery-Tank Destroyer cooperation were such incidents as the setting up of a TD CP truck complete with situation map at the Air Strip, and manually tuning the TD base radio set to the Group and Corps Arty channels to facilitate control by picking up what the air observers saw and then counteracting the hostile effect by proper employment of the destroyers on the ground. In addition to their normal artillery role, the Group planes adjusted Tank Destroyers on enemy tanks and even led the TDs in pursuit of their quarry through radio relay at the base radio set. An interesting bit was the record time in which the TD Battalion Executive Officer laid wire by "Weazel" (Cargo M-29) from the Division Headquarters up the precipitous slopes to the Air Strip so that all operating headquarters were entirely tied in by wire. Local defense of the Air Strip, in the event of a breakthrough, was taken over by the Tank Destroyer Headquarters personnel. It was the first time that the TDs had worked with liaison planes, and the Battalion Commander was convinced that the fact that his destroyers had accurately knocked out eleven tanks so quickly was due in large measure to the Artillery Air support. In addition to this support, the air

observers fired eleven missions on enemy tanks and personnel with the Group Artillery.

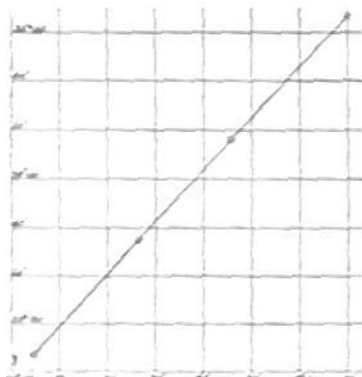
By monitoring the Group channel the Corps Artillery Fire Direction Center was able to give a complete up-to-the-minute blow-by-blow description of the counterattack to the Corps Commander over the normal wire communications net.

By noontime the counterattack had been completely crushed, the encircled infantry had been freed from the towns of Struth and Eigenregen. All concerned could now return to their original plan, that of displacing to new assembly positions preparatory to taking up a reinforcing role with another front line division. G.H.Q. Test I had demonstrated its value in combat, all who participated had experienced the exhilaration and personal satisfaction which always accompanies a job successfully completed, and the box score for the day can best be told by the following quotation from the Corps Artillery G-2 Periodic Report for the day: "Enemy launched counterattack involving estimated 800-1,000 troops and 14-18 tanks in vicinity of Struth (H7994) at 0700B. Heavy fighting continued in this area until around 1200B with our troops and friendly artillery accounting for 8-9 of the enemy tanks. Heavy personnel casualties inflicted on enemy who then retired in disorder to the north and northwest."

Azimuth from Astronomical Observation

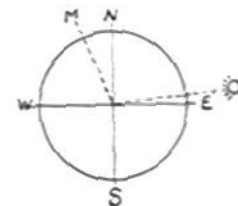
By Comdr. Emmett H.
Sheridan, USC&GS

The problem of determining or transmitting direction for Field Artillery survey may be done by astronomical methods. With battle maps, since the variation between



Sample plot of observations.

AZIMUTH FROM ASTRONOMICAL OBSERVATION			
DATE: 6 May 1945			
AT STA:	AREA:	CELESTIAL BODY:	
7126	Okinawa I.	Sun	
INITIAL MARK:	Rock (pinacole rock)	LAC:	28 15.0'
HOR ANGS:	VERT ANGS:	TIME:	(Feet)
107° 04.5'	32° 46.5	06 24	(Var per Hr..... 0.7
107 26.5	33 35.0	06 28	x OCT (interval)... 1.5
107 48.5	34 24.0	06 31	DECL CORR:..... + 1.05
108 10.0	35 07.5	06 34	DECL 22 HR:..... 20.71
146.5	35 45.0	117	DECL: 16 21.71
ME HOR ANG:	ME VERT ANG:	ME TIME:	16 21.7
107° 36.6'	33° 56.2'	06 29	202 00.0'
	CORR:	CORR: -09.00	P* = 732 36.3'
	h:	33° 54.9'	OCT: 23 29
L =	26° 16.0'	Sec. 10.04 727	
h =	33 54.9'	Sec. 10.08 100	
P =	73 36.3'		
Sun =	133 48.2'		
Sun/2 =	66 54.1'		
S-L =	46 59.1'	sin 0.67 366	
S-h =	36 59.2'	sin 0.73 626	
	Sin = Log.Hav. ang = 0.67 610		
	Polar Angle Cel. body = 87° 16.71		
Comp. by:	E.H.S.		
Ch. by:	M.L.		
		POLAR ANG CEL. BODY:	
		TRUE AZ. CEL. BODY:	87° 16.71
		ME HOR ANG:	107 36.6'
		TRUE AZ INIT MARK:	309 42.1'
		GRID CORR:	-22
		GRID AZ INIT MARK:	309° 20.1'



* P is celestial angle from nearest pole to celestial body. In Northern Hemisphere, angle is from north pole. If celestial body is observed in east, the polar angle will be the true azimuth. If body is in the west, the polar angle must be subtracted from 360° to obtain true azimuth. In Southern Hemisphere, if celestial body is observed in the east the polar angle must be subtracted from 180° to obtain true azimuth. If observed in the west, polar angle must be added to 180° to obtain true azimuth.

true and grid north is indicated on the map, the determination of true north permits the laying on any desired grid azimuth.

Solar observation seems to be the most practical, for observations upon stars require a certain amount of light. This sometimes draws fire from the enemy as well as from friendly troops. The following method is not found in any of the various manuals on Field Artillery survey, but undoubtedly is used, with variations, by some units because of its speed, ease of computation, and simplicity.

Four sets of observations are taken upon the sun. For the first set, starting with the circle direct, the sun is observed in the first quadrant; with the circle reversed it is observed in the third quadrant. In the second set with the circle reversed the sun is observed in the second quadrant, and with the circle direct it is observed in the fourth quadrant. For the third and fourth sets the above procedure is repeated. The resulting observations are then plotted on a piece of cross-section paper or on the graph page of the Field Record Book, the horizontal angles against the vertical angles.

The resulting curve closely approximates a straight line for the short interval of time required for the observations. If any set of observations does not lie along the straight line it is rejected and the other three sets are used in the computation of the azimuth. The only corrections to be applied to the observed vertical angles are for parallax and refraction. These are combined and are found in table "E" of the Nautical Almanac or in either of the following mentioned books. The method of computation is the same as found in Hydrographic Office publication No. 9, *American Practical Navigator* by Bowditch, on page 174. The computation requires the use of the Haversine Table, which is found in the back of the above volume. The Haversine Table is also included in Hydrographic Office publication No. 9, Part II, *Useful Tables from the American Practical Navigator*, which is a much smaller volume.

In observing the sun, a piece of exposed film is cut in a circle slightly larger than the objective head of the telescope and is fitted to a piece of cardboard with cellulose tape, forming a small cap which fits over the objective lens of the telescope. This can be removed by the observer while pointing on the mark and replaced while pointing on the sun. Any number of caps can be made with exposed film of varying degrees of opaqueness to fit all climatic conditions. This method will be found to be much easier and just as accurate as the more conventional means of the prismatic eye piece or the interception of the sun's image on a hand-held card.

FIELD RECORD BOOK

TIME	CIRCLE	HOR. ANGLE	MEAN	VERT. ANGLE	MEAN
DATE: <u>6 May 1948</u> AREA: <u>Okinawa I.</u> WEATHER: <u>Partly cloudy</u> <u>light brly air</u>					
STATION: <u>Fine</u> INST: <u>Berger #27688</u>					
MARK: <u>Rock (pinnacle rock)</u> OBS: <u>E.H.S.</u> REC: <u>W.F.</u>					
	MARK D	00 00	00 00.0		
	R	180 00			
<u>08 22</u>	D	<u>108 42</u>	<u>107 04.5</u>	<u>30 16</u>	
<u>08 23</u>	R	<u>287 29</u>	<u>(107 04.5)</u>	<u>30 14</u>	<u>30 45.5</u>

	MARK R	180 00	180 00.0		
	D	00 00			
<u>08 27</u>	D	<u>287 03</u>	<u>287 26.5</u>	<u>33 46</u>	
<u>08 27</u>	R	<u>107 50</u>	<u>(107 26.5)</u>	<u>33 24</u>	<u>33 35.0</u>

	MARK D	00 00	00 00.0		
	R	180 00			
<u>08 30</u>	D	<u>107 24</u>	<u>107 45.5</u>	<u>33 51</u>	
<u>08 30</u>	R	<u>288 07</u>	<u>(107 45.5)</u>	<u>34 41</u>	<u>34 15.0</u>

	MARK R	180 00	180 00.0		
	D	00 00			
<u>08 33</u>	D	<u>287 45</u>	<u>288 10.0</u>	<u>35 16</u>	
<u>08 33</u>	R	<u>108 38</u>	<u>(108 10.0)</u>	<u>34 56</u>	<u>35 07.5</u>

Computation of the azimuth using the Haversine Table and rejecting the doubtful observations will be found very rapid, and will give results with an average error of about one minute. This percentage is also applicable to observations on stars.

For best results the body should be observed between about 20 degrees and about 40 degrees in order to avoid excessive refraction and to obtain a good astronomic triangle. The plate level should be checked before each set, for the program of observing does not eliminate the error due to lack of horizontality of the graduated circle.

EDITOR'S NOTE

Commander Sheridan of the United States Coast and Geodetic Survey is serving as Survey Officer of the Marines' III Corps Artillery, III Amphibious Corps. Thoroughly familiar with precision survey methods, he has found the method described here "far superior to any method described in the various manuals on the subject." He says further, "The speed, ease, and simplicity of computation by which the azimuth is determined are especially useful in training uninitiated personnel to perform this operation."

ARTILLERY—AIR FORCES COOPERATION

WITH THE 83D DIVISION IN GERMANY.—An artillery liaison officer, Capt. Max Dalley of the 323d Field Artillery Battalion, called for a bombing mission on the outskirts of Greene where his forward observer had reported enemy infantry and tanks. Cpl. Elzie Kinder, his radio operator, had relayed the message back to Maj. Raymond D. Stevens, Thunderbolt Division Air Support Officer, who had in turn called upon the P-47s. The planes were en route to their target when it was learned that there was a hospital very close to the German positions, and there was danger that it would be hit in the attack. Immediately Dalley changed the target to the positions on the other side of the river. The bombers changed their course to the new target. The whole operation was accomplished in a matter of minutes, even though it was also necessary to mark the target with smoke. The 323d threw in several rounds of white smoke shells, and the 25th Field Artillery Battalion coordinated in marking the target by firing several rounds of red smoke.

COMMAND LIAISON

By Lt. Col. Robert M. Ewing, FA

Not all the commanders of direct-support field artillery battalions have the same conception of the principles of command liaison, and the book allows considerable latitude. Each commander must decide, before going into combat, how he will handle this phase of his work.

FM 6-101 states that, "The commander of the supporting artillery establishes command liaison with the infantry regimental commander. Command liaison is most essential during the initial planning phase and during critical phases of the operation, when the infantry plans are most likely to change. At other times the artillery commander leaves a representative with the infantry commander." The above paragraph doesn't give the artillery commander anything very definite on the subject of just how much time he will spend with the infantry, but it does give him the basic principles from which he can work out a solution to fit the particular problem as it exists in his own combat team. In arriving at his decision the artillery battalion commander must consider several factors.

First, what are his personal relations with the infantry regimental commander? There should, of course, be friendly relations and a mutual respect existing between the two commanders. Unfortunately, this is not always the case. In any event the status of their personal relations is bound to have some influence on the type of command liaison to be used.

Second, is there any other officer on the artillery battalion staff who is qualified to handle command liaison for the battalion commander? In other words, if you are not going to be with the regimental commander, yourself, what officer can you send to him who can be relied upon to perform your duties as artillery adviser to the infantry colonel? He must be sufficiently experienced to be able to advise the infantry commander and at the same time insure the proper employment of your battalion.

Third, if you plan to handle command liaison yourself the majority of the time, can you leave your battalion for several days at a time and still be sure that it will function properly? This will depend, to a great extent, on the caliber and ability of your executive officer.

Fourth, what is your policy with regard to the location of CPs? Will your CP be physically with the infantry regimental CP in most positions? Or will you be separated by several thousand yards in the majority of situations?

In considering the first of these factors, both the personality of the infantry colonel and that of the artillery lieutenant colonel are involved. If your division has been together for some time, in training, you should have worked together enough to know each other pretty well. Any differences in personality should be reconciled during the training period and a basis established for mutual friendship and respect. In the ideal situation, the artillery battalion commander should be as much at home in the infantry CP as in his own. He is, in

a definite sense, a staff officer of the regimental commander, although the T/O does not show him as such and he does not come under the direct command of the doughboy colonel, except in the case of orders directing attachment. He should be welcome at any conferences that the infantry colonel has with his staff officers or subordinate commanders and his advice and recommendations at such conferences should be solicited and given due consideration by the infantry officers present. But he should be careful at all times that he does not offer advice and recommendations on matters that do not concern him, unless he is requested to.

The second factor, that of finding a qualified subordinate to handle command liaison, is not always given sufficient consideration. It is reasonable to assume that the officer selected should be of field grade. You have only two officers of this grade on your staff. The S-3 cannot be spared from the fire-direction center, but you can send your executive up to the infantry. This is done by some battalion commanders. To me, however, this appears to be reversing the accepted procedure. You or someone else will have to assume the normal duties of the executive, who, according to FM 6-101, should "control the rear or loading end of the battalion trajectories." In the Hurtgen Forest in Germany I took over a sector from a battalion in another division. While arranging the details of the turn over, I inquired as to the command liaison procedure which they used and was told that the battalion executive officer was the command liaison officer. I asked whether he lived with the regimental commander and was told, "No. He lives with the infantry regimental S-4. When the colonel wants to consult with the artillery, he calls his own S-4, who turns the call over to the artillery battalion executive." I asked the battalion commander what he did "for a living." He said that he spent all of his time on reconnaissance for positions. I stuck my tongue in my cheek, as the position area he was turning over to me was about 7,000 yards behind the front lines. The first thing I had to do was to go out and find an area closer to the supported troops and displace my battalion forward. I turned the old area over to the medium battalion and even they thought they were too far back.

Another battalion commander, whom I knew, couldn't seem to get along with his infantry colonel so he sent up a first lieutenant. This lieutenant lived with the junior officers of the regimental staff. That is not my idea of command liaison. I believe that the artillery adviser to the regimental commander should be of such rank that he can talk to the infantry colonel without embarrassment, and that his experience and background should be such that the infantry commander will instinctively call on him for advice as to the employment of the artillery. It is my observation that a junior officer used on this job becomes little more than a messenger boy between the two commanders.

Factor three, in a well-trained and well-organized battalion,

should be a minor one. If your executive, the balance of your staff, and your battery commanders are efficient and well trained, your frequent absences from the battalion should have no deleterious effect on its efficiency. Actually you will be in communication with the battalion the major portion of the time and can be readily consulted when matters come up requiring a decision from you. A daily conference with your executive will suffice to handle all routine matters.

The problems discussed as factors one, two, and three disappear if you are able to have your CP with the infantry CP. Quoting again from FM 6-101, "The command posts of the infantry regiment and its direct-support or combat team artillery battalion should be together . . . Limited communication facilities and the necessity of quick and effective control necessitate placing the fire-direction center reasonably close to the battery position area. The artillery battalion command post should include the fire-direction center. . . . Sound procedure indicates that the infantry regimental command post, on its second or third displacement forward, generally will be at a distance which warrants the displacement of the artillery batteries, and the combined command posts are reunited again completely."

In spite of this quite definite statement of "sound procedure," I was not able to have my CP with the infantry regimental CP, very often. The infantry colonel was an aggressive officer who seldom had his CP more than 1,000 to 1,500 yards behind the forward elements of his regiment. We weren't exactly timid in our selection of position areas, but whenever possible we preferred to keep the batteries about 3,000 yards back of the forward elements of the infantry. Artillery can generally do a better job if it isn't harassed too much with enemy mortar and machine gun fire. I am in complete agreement with the principle of having the two CPs together, but in practice I was able to do this in only a few situations. During the rapid advance across France and Belgium, the infantry regimental CP was on the road most of the time. On many days no actual CP was established until the doughboys stopped to dig in for the night. During this phase of the operation it was my policy to have at least one and preferably two batteries in position at all times. I have had as many as five CPs in one day, while the infantry had only one. In stabilized positions my CP was, as usual, in the vicinity of the position area, while the infantry CP was closer to the front lines. This meant that the command liaison problem was always with us.

At the risk of too much use of the personal pronoun, I will describe how command liaison worked between the 109th FA-Bn and the 110th Inf during my five and a half months in command of the former, in Normandy, France, Belgium, Luxembourg, and Germany. First of all I had an excellent staff. My executive officer, Maj. Robert Payne (who was killed, following his capture in the Ardennes), was second to none. All members of the staff and the battery commanders were ready and able to take over any other job in the battalion. Second, our relations with the 110th Infantry were excellent. During the training period in England, where I joined the battalion, we borrowed instructors from them to

help us teach scouting and patrolling and close-in defense of the position area. At the same time we taught every officer in the infantry regiment how to adjust fire by forward observer methods. On trips to the range for service practice we always took along a number of infantry officers and were able to get an extra allowance of ammunition so that each doughboy officer could actually fire a problem. In addition we had one or two officers helping with the training of the infantry cannon company most of the time. This mutual exchange of instructors, together with the several joint maneuvers and overhead fire exercises which we held, went a long way toward establishing a true "combat team" spirit. My men were proud of their membership in the 110th CT and the doughboys lost no opportunity to brag about "their" artillery.

When we got into battle, this feeling of mutual trust and respect continued. It was my policy to spend the major portion of my time with the infantry colonel, not only during the planning phases of our operations but while the plans were in operation as well. On any marches where contact with the enemy was at all possible, I marched with the regimental commander. I used a command car with a 608 radio, my driver, and a radio operator, and was able to keep in contact with the fire-direction center at all times. As soon as a new infantry CP was selected wire was run to it from the FDC. I do not recall losing contact with the battalion except on two occasions: once when I accompanied the assault company of the infantry on an attack in Normandy and got "pinned down" (my former division commander does not permit the use of that term), and once during the German Ardennes offensive, when the infantry CP was completely overrun and I was invited to become a "guest" of the German army.

As a member of the infantry regimental staff I was included in all of their conferences and was always present when plans were being formulated for future operations. If an operation extended over a long period of time I would occasionally send for my executive officer to come up. He would bring his car, driver, and radio operator and take over the command liaison while I spent several hours with the battalion. This would give me an opportunity to inspect my batteries, spend some time in the FDC, and get some clean clothes (maybe). My driver and radio operator would get their equipment checked over and restock the car with C, K, and D rations.

When the situation stabilized and we spent more than a few days in one position, I would send an officer, usually the Ass't S-2, to the infantry CP for liaison and would spend as many days as possible with my own battalion. During such periods it was my practice to make a daily visit to the infantry CP. As soon as a new operation was imminent I would move back up there myself.

The procedure outlined above worked very successfully for us. I do not hold that it is the best or the only way to have successful command liaison. I do believe that the subject should be given careful consideration and that a definite plan should be worked out before any unit goes into combat. As in everything else, prior planning pays dividends.



For Heroism and Service



CONGRESSIONAL MEDAL OF HONOR

T/4 ARTHUR O. BEYER, Ogema, Minn. for stalking a string of German foxholes near Arlencourt, Belgium, 15 Jan 45, and accounting for eight Germans killed and 18 captured. The actions of this gunner of Co. "C" 603d TD Bn, 6th Armd Div, enabled his unit to gain its objective.

Pfc. GEORGE B. TURNER, 1629 Van Ness St., Los Angeles, Calif. for singlehandedly destroying two charging enemy tanks and preventing a German counterattack from retaking the

American-held town of Philippsbourg, France, 3 Jan 45 while a member of Btry "C" 499th Armd FA Bn, 14th Armd Div.

1st Lt. TURNEY W. LEONARD, Dallas, Texas, displayed extraordinary heroism while commanding a platoon of Company C, 893d Tank Destroyer Battalion, at Kommerscheidt, Germany, on November 4, 5, and 6, 1944. During the three-day engagement he repeatedly braved overwhelming enemy fire in advance of his platoon to direct the fire of his tank destroyer from exposed, dismantled positions.

ROLL OF HONOR

Lt. JAMES R. ANDERSON, O-1184763, killed in action 9 Apr 45; Germany.

LT. CARL BAEHR, JR., killed in action while being transported from the Philippines to Japan, 15 Dec 44.

Lt. SYLVESTER M. BEYER, O-2006442, died of wounds Mar 45; Germany.

Lt. BRUCE H. BODE, died 2 Feb 45; France.

MAJ. STANLEY B. BONNER, killed in action while being transported from the Philippines to Japan, 15 Dec 44.

Lt. Col. JOHN BREWSTER, O-258370, killed in action 5 Apr 45; Germany.

Capt. DON R. CAMFIELD, O-378555, killed in action 5 Apr 45; Germany.

Lt. FRANCIS A. CANHAM, O-1181837, killed in action 25 Dec 44; Belgium.

Lt. MEREDITH M. CARTER, O-1176509, killed in action 9 Jan 45; Belgium.

MAJ. NATHANIEL C. CURETON, JR., killed in action in China, 20 June 45.

Capt. EDWIN S. DAVIS, killed in action 27 Jan 45; Germany.

Capt. JOHN H. FEATHERSTON, JR., killed in action 24 Mar 45; Germany.

Lt. A. R. FISCHBECK, O-1181245, killed in action 6 Mar 45; Germany.

1st Sgt. ORVILLE E. FREELS, killed in action 9 Apr 45; Germany.

Lt. M. C. GARRISON, O-1179075, killed in action 7 Mar 45; Germany.

MAJ. HARRY J. HARPER, killed in action while being transported from the Philippines to Japan, 15 Dec 44

LT. FREDERICK A. HIPPEY, died in China, 6 Aug 45.

Lt. FREDERICK C. JACOB, O-1175470, killed in action 1 Apr 45; Germany.

Lt. FREDERICK JANUSON, O-1168297, killed in action 18 Mar 45; Luzon.

Lt. EARL F. JENNINGS, O-1178201, died of wounds 25 Mar 45; Germany.

Col. NEWTON W. JONES, O-11928, killed in action 29 Apr 45; Germany.

Lt. JOHN J. KEMP, O-454328, killed in action 18 Mar 45; France.

LT. COL. EDWIN V. KERR, died in Japanese prison camp, 27 Jan 45.

Lt. Col. RICHARD W. KINNEY, O-381880, killed in action 25 Dec 44; Germany.

LT. JOHN A. LARKIN, JR., killed in action in Germany April 45.

LT. PHILIP G. LAUMAN, killed in action while being transported from the Philippines to Japan, 15 Dec 44.

LT. COL. CHARLES B. LEINBACK, killed in action while being transported from the Philippines to Japan, 15 Dec 44.

LT. COL. HANFORD N. LOCKWOOD, killed in action while being transported from the Philippines to Japan, 15 Dec 44.

Lt. KENNETH A. LUND, O-1168788, killed in action 17 Mar 45; Germany.

Capt. SAM D. MILLER, O-1175244, killed in action 24 Apr 45; Okinawa.

Lt. WILLIAM T. MORTON, O-550890, killed in action 25 Feb 45; Germany.

Lt. JOHN N. O'NEILL, O-420225, killed in action 25 Dec 44; Belgium.

Capt. MARION S. OWENS, O-322414, killed in action 30 Mar 45; Germany.

CAPT. HARRY B. PACKARD, killed in action while being transported from the Philippines to Japan, 15 Dec 44.

Lt. WHITNEY S. RUSSELL, O-1169317, killed in action 28 Jan 45; Belgium.

Capt. ROBERT F. SEIFFERT, III, killed in action 19 Feb 45; Germany.

Maj. FRANKLN C. SEILER, killed in action 27 Mar 45; Germany.

Lt. JAMES W. SPANN, killed in action 27 Apr 45; Germany.

LT. COL. GEORGE D. VANTURE, killed in action while being transported from the Philippines to Japan, 15 Dec 44.

BOOK REVIEWS

THIS IS WHERE I CAME IN. By Robert J. Casey. 307 pp. The Bobbs-Merrill Co. \$3.00.

Bob Casey has covered this war as few or even the long-legged reporters have seen it. His *Torpedo Junction* is reputed a classic; unfortunately this reviewer missed it, but after reading *This Is Where I Came In* I'm going to catch up with it.

For Bob Casey simply tells his story straight. He has a knack for seeing both the "big picture" and the "little picture." When it comes to the small, homely details he has no peer. Yet he conveys the sweep of forces, the very atmosphere of the moment.

This is implicit in the title of this latest book of his. In May of 1940 he watched Germany's armor roll into France, from the vantage of a hilltop outside Longwy. In September of 1944 he was back on that very spot, this time watching a beaten *Wehrmacht* limp from the country in broken columns.

The first part of this book is aptly called *War in Odd Corners*. It takes one back to '40 and '41, recalling some of the important and nerve-shaking events of those days. It describes a convoy run to Gibraltar in '43; Algiers of the period; and London under the buzz-bombs. Always there are the sidelights, ranging from the "auction" of a dead British sailor's effects to the exploits of Mike Annunziata of Brooklyn.

Then comes a magnificent account of battle from D-day to the crossing of Germany's frontier. Hedgerow fighting has nowhere been more graphically described. St. Lo, Hell's Corner, all of them are here. So too are events of the breakthrough and the German rout. But all is told in an easy, intimate detail and appreciation of the facts of fighting, a deceptively easy-reading manner that grips and holds the reader, civilian or military.

As I said, I'm going to brush up on my Bob Casey.

SPIES AND TRAITORS OF WORLD WAR II. By Kurt Singer. 285 pp. *index.* Prentice-Hall, Inc. \$2.75.

In *Duel for the Northland* Mr. Singer covered only a small segment of the global strife among secret agents. In this new book the world is his scene—not only all Europe, but Greenland, Hawaii, Central and South America, Iraq, and other spots as well.

Principal actors are Hitler's Admiral Canaris and Stalin's Laurenti Beria. (Presumably their British and American counterparts may not yet be named.) Some of the episodes related here will recall headlines—the cases of Tyler Kent (code clerk in our London embassy), of Mrs. Velvalee Dickinson (the Manhattan doll dealer, agent for the Japs), and of Capt. George Gough (Honduras sailor who

provided fuel for subs in the Caribbean) are examples. Many others are new in whole or in part, such as that of the "Swiss" who guided Prien's submarine when the *Royal Oak* was torpedoed within Scapa Flow just after the outbreak of war.

Presumably all these accounts are true. Certainly, all of them sound in broad outline as if they are—and many have been at least sketched in the public press. A peculiar carelessness in handling some known dates throws doubt, however, as to the authenticity of all facts which are newly presented. For example, the Trans-Sahara Railroad is described as still being under construction long after Christmas-time of 1943; as a matter of fact, all of Africa was freed from the Axis long before then. For another, Tyler Kent's May, 1940, compromise of our embassy's code is stated to have laid bare to the Germans the details of Lend-Lease shipments—which, if memory serves me right, did not start until long after that time.

This book is a good thriller, though, and tells some astounding tales in fascinating fashion.

SAINTS AND STRANGERS. By George F. Willison. 460 pp.; *notes; bibliography; index.* Reynal & Hitchcock. \$3.75.

Few books could be farther from the war than *Saints and Strangers*, for this is a group portrait of the Pilgrims and their families. Though often confused with the Puritans to their north, the Pilgrims were much more like Elizabethans than the Victorians whom popular fancy thinks they resemble. A lusty folk, these, and adventurous and hard-headed as well. Mr. Willison does a good job of bringing them to life, and especially in correcting the many mis-impressions that have become too standard. He makes them stand out as distinct personalities, often clashing, but a fine stock with which to found New England.

WE FLEW WITHOUT GUNS. By Flight Capt. J. Gen Genovese. 304 pp. John C. Winston Co. \$2.50.

Although a book of the war period, *We Flew Without Guns* is not primarily a tale of combat. Chiefly it is the story of those little known but extremely important outfits, Britain's Air Transport Auxiliary and China's C.N.A.C.—the China National Airways Corporation.

Gen Genovese flew for them both. For the first he ferried war planes of all types through England's sticky weather, taking them from port and factory to operational fields. For the second he flew the hump in all weathers, from Kunming to India.

Before that he was a commercial pilot, then a prospective Army flier at Randolph Field. Since returning to this country he has been a test pilot for Republic. Throughout he has had experiences

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that should have prematurely aged him. They don't seem to have, though, to judge from the way he tells what has happened in his flying career. His story makes good reading. And it covers a too-long-neglected aspect of the war.

HORSES: Their Selection, Care, and Handling. By Margaret Cabell Self. 164 pp.; glossary; index; illustrated. A. S. Barnes & Co. \$3.00.

FUN ON HORSEBACK. By Margaret Cabell Self. 224 pp.; index; illustrated. A. S. Barnes & Co. \$3.00.

In the army horses are officially practically a thing of the past, even though mounted units had to be improvised in such special situations as Italy, for example. But the horse as a means of exercise and enjoyment, and for self-fueling transportation in remote places, will always have a place.

Horses goes into the whole story of selection, care, and handling, from the novice's purchase of his first animal to the taking of blue ribbons in the ring. There is enough about breeds and characteristics to help one in his purchase. Care includes the cost in time and money, so the prospective owner will have some financial yardstick. First aid (for the horse) is important, especially if a "vet" isn't handy. There are also many hints of handling—"tricks of the trade"—that will make horse owning and handling more enjoyable.

Later comes the possibility of real *Fun on Horseback*. This book starts way back with the early handling of a colt, and its training both in harness and under the saddle. Jumping, games, gymkhana competitions, races, trail riding, hunting with hounds, military and semi-military organizations—all these make riding more varied and more fun.

The author has had over 30 years' experience in riding, breaking, training, hunting, and showing horses. Her books reflect this store of information.

FUNNY BUSINESS. Edited by Marione P. Derrickson and John Bailey. 152 pp. Whittlesey House. \$2.50.

BEST CARTOONS OF THE YEAR 1945. Edited by Lawrence Lariar. 122 pp. Crown Publishers. \$2.00.

The laugh season's on again. Each fall sees the blossoming of cartoon books, anthologies of the best the national magazines have chosen during the past year. Probably this season is chosen because of the coming of Christmas; anyway, books like this make mighty welcome gifts. Here are two swell new ones.

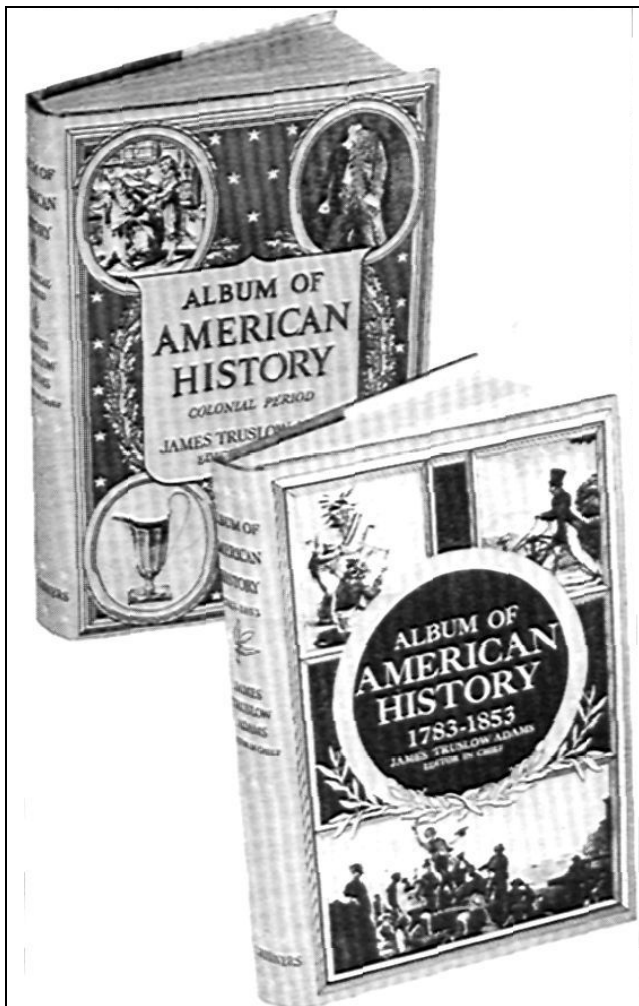
Funny Business is a collection from the *Saturday Evening Post*, more than 280 cartoons in all. They were drawn by people like Mischa Richter, Ted Key, Bill King, Colin Allen, and others of their kind. You know the laughs are here: the *Post* prints in each issue the best 20 or 30 of the 2,000 that are submitted each week—and here's the best distillate from a year's editions.

Lawrence Lariar, editor of *Best Cartoons*, is no mean cartoonist himself. In this book he's drawn from *Liberty*, *Collier's*, *PM*, *Saturday Evening Post*, *Parade*, and other publications. There are around 300 cartoons in this book, which has somewhat oversize pages. Oh, yes—there's an introduction by the famed Colonel Stoopnagle, too.

READ 'EM AND WEEP. By Sigmund Spaeth; foreword by Richard Rodgers. 243 pp.; index of titles; illustrated. Arco Publishing Co. \$3.00.

Sigmund Spaeth, famed for his "tune detective" screen and radio program, has revised and enlarged this treasury of American songs—"the songs you forgot to remember," as he puts it. Besides the songs themselves (words and tunes), merry, sad, and sentimental as the case may be, there are delightful anecdotes and stories about the songs themselves. That part makes as good reading as the lyrics are singable; it is witty, as well as crammed with facts.

Dr. Spaeth swings down through the years. *Yankee Doodle* was first sung about Oliver Cromwell, for instance. Boisterous ballads



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of over a century ago; songs reflecting the hatreds of the Civil War; minstrel and Irish songs of a later period, including the origins of *Frankie and Johnnie* and *The Lone Fish Ball*—there's a rich storehouse here, indeed. A wealth of song and story and abundant real humor.

THIS ONE'S ON ME. 171 cartoons by Mischa Richter. Whittlesey House. \$2.50.

Richter draws about 30 Peter Arno-ish cartoons a week. They're good enough that he places around 20 of them with King Features, such magazines as *The New Yorker*, *Collier's*, the *Saturday Evening Post*, and other publications. He's picked a batch of the best for his first collection of his work. Most have been published before, but some are new. They're a good batch for drawing laughs and chuckles from anyone who likes the ribald and ridiculous.

LAKE ERIE. By Harlan Hatcher. 404 pp.; index; illustrated. The Bobbs-Merrill Co. \$3.50.

One of the excellent "American Lakes Series," *Lake Erie* investigates and portrays one of the country's most varied and most important regions. To the War of 1812 the Erie country was penetrated slowly, was unimportant militarily. Oliver Hazard Perry's great building of a fleet in the wilderness and victory on the lake played a large part in settling that conflict. By the time peace came, all was ready for the real opening of Lake Erie's southern shore.

Great cities of the future were being founded. The Erie Canal was soon to link the lake with the eastern seaboard. A network of canals was to connect it with the Ohio River, the first great gateway to the West. Lake shipping multiplied. Soon iron began to come down from the upper lakes, forerunner of the great traffic through the Sault which was to make this area the center of the nation's heavy industry.

Agriculturally the region is rich; its islands grow fine grapes for wine, the mainland all manner of grains and fruits. But the real wealth of this section, its greatest national contribution, comes from steel. This is the main theme of its economic development, and of Dr. Hatcher's story.

Here is drama, too—from the Indian days, through the Civil War and the Johnson's Island prison camp, to the inventions of Brown and Hulett for handling ore.

In short, here's an excellent picture of an important American region.

THE FIRST AMERICANS IN NORTH AFRICA. By Louis B. Wright and Julia H. MacLeod. 214 pp.; index; illustrated. Princeton University Press. \$3.00.

A hundred and fifty years ago our invasion of North Africa was a much different thing from that of late '42. Yet it is interesting to note the many native traits which still persist. Those interested in little-known portions of our history will find this carefully done study of great interest.

It was the Barbary pirates and their forays against our shipping that took the Marines to the shores of Tripoli. That is the story told here, the background of which was William Eaton's struggle for a vigorous policy against those pirates during the years 1799 to 1805. Collaborating in the narrative are a historian and editor, and a member of the staff of the Huntington Library which contains much of the source material which made this authentic account possible.

AGAINST THESE THREE. By Stuart Cloete. 461 pp.; index; illustrated. Houghton Mifflin Co. \$3.50.

Paul Kruger ("Oom Paul"), great leader of the Boers; Cecil Rhodes, empire builder; and Lobengula, last of the great Kaffir kings. These were the antagonists in one of the world's last great struggles among native and newcomer, newcomer against newcomer. Three men of strong will, these, the epitome of three utterly different cultures and aims. One object only did they have in common—each wanted to occupy the same land.

Kruger was an almost Biblical patriarch, seeking an isolated

simplicity for his people, an agricultural domain; to him the discovery of gold and diamonds in his republic was a curse. To Cecil Rhodes gold represented power, and for power (both personal and national) he lived; ruthless in his drive for it, yet he had intense personal loyalties and friendships his enemies would not attribute to him. Both of these sought the land of Lobengula, barbaric priest-king who used gold and diamonds only as something in which to wallow. Each of the three sincerely believed in the things for which he fought so strenuously.

The setting of course is South Africa; the time, the late 19th century. The story is told "straight." It needs no embellishment—here is enough romance, strife, conflict, without fictional additions. It is a saga. One of the last.

YOUR PERSONAL PLANE. By John Paul Andrews. 185 pp.; directory of small airports; illustrated. Duell, Sloan & Pearce. \$2.50.

Right now there is a rash of figuring, planning, and discussing, all with reference to every man's buying and/or flying his own plane, his own light plane. Manufacturers are feverishly reconverting toward turning out peace-time versions of their trainers; they are advertising widely, whipping up the enthusiasm of the public, yet at the same time trying to tell a minimum of facts about their forthcoming products lest a competitor pick up some ideas. Enterprising men are trying to establish airparks for convenience to the public and profit for themselves—and often bumping into difficulties with zoning laws and protests from surrounding property owners who fear noise, hazard, or things more nebulous. Issuance of student and private pilots' licenses has skyrocketed, and many of these fledglings are looking into the facts (and economics) of plane ownership; to them can be added thousands of returning service people, both men and women.

For all these, and for forward-looking small communities as well, Mr. Andrews has packaged a lot of concrete information in a small space. He's been in a good position to get the facts, for he is editor of *Air News* magazine and so is in close touch with plane manufacture and design. He is naturally enthusiastic, but at the same time presents a pretty well balanced picture. Seldom does he go off the deep end, and those places are readily spotted by anyone not utterly willing to jump off with the author.

Perhaps the most important section to the average reader is the group of chapters describing in considerable detail, especially in terms of performance, those planes which can properly be termed "personal" ones. Plane after plane is discussed, with account taken of what the maker definitely has in the works. Nearly every one of these is pictured, too—Pipers, Ercoupe, Aeroncas, Commonwealth, Taylorcrafts, Beech, etc. So too is the "mystery" plane of the moment, the Republic *Scabee*, which is shown but about which there is not a line. Prices (actual or approximate), capacity, speeds, range, span and length, special fittings, and such are among the details given.

Operating costs, insurance, financing, and other matters common to all planes are discussed. There's a pretty shrewd look too at the prospects of the not distant future, as regards these things as well as general design.

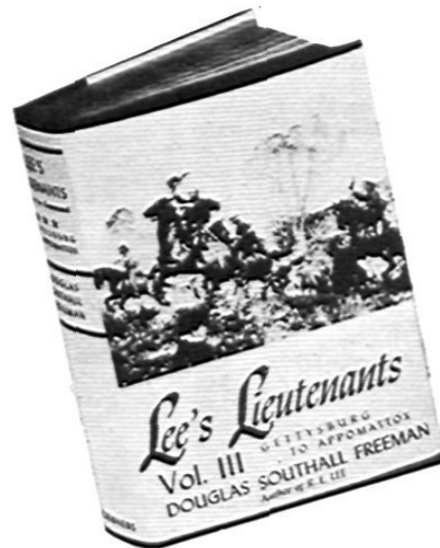
Opportunities of this growing business are covered, as well, for both the individual and the community. Planning (choice of location), arrangement, facilities, cost of land and improvements, concessions, etc., are all gone into to varying degrees. The book proper ends with discussions of planes for vacations or personal gain, and remarks about what must be done in the way of providing navigation aids for tomorrow's hoped-for fleets of private planes.

Last of all comes a directory of small airports, but don't buy the book just for it. This may be, as the jacket says, "the only CAA directory of airports available in book form," but even cursory examination shows it to be quite incomplete, omitting a good many small airports that have been in operation much longer than the time required to produce the book.

There is plenty else in the book, however, to make it a mighty valuable purchase for anyone at all interested in looking into the purchase of his own plane.

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THE BALANCE OF TOMORROW. By Robert Strausz-Hupé. 287 pp.; index. G. P. Putnam's Sons. \$3.50.

It takes quite a while to publish a book—the writing, editing, type-setting, correcting, making-up, printing, and distribution all require time. Consequently the "tomorrow" of this title actually is "today."

This is one book, however, which can stand on its own feet even after the swift developments of the past weeks and months. Axis capitulation doesn't "date" what Mr. Strausz-Hupé has to say. It just points up the urgency of the subject.

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All this may sound like "geopolitics." Well, perhaps it is, so far as subject-matter is concerned. On the other hand, geopolitics turned out to be a lot of fuzzy-wuzzy thinking based on a meaningless jargon of obscure words, a peculiar pseudo-language acceptable only to the self-styled geopoliticians. All that indefiniteness is carefully and ably avoided here, even though the author considers spiritual forces of peoples as well as more tangible assets.

Mr. Strausz-Hupé's conclusion in general is that, great as this country is, we shall still have need of allies in this world of ours. And we can find them only among countries with certain trends in tune with our own. The important thing, however, is for our people to become acquainted with analyses like this one.

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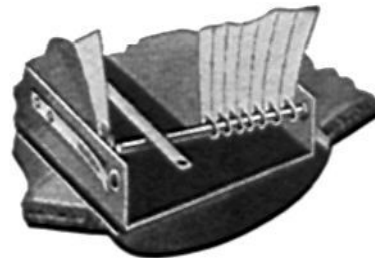
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