

VOL. III NO. 3

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# INTELLIGENCE BULLETIN

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MILITARY INTELLIGENCE DIVISION  
WAR DEPARTMENT • WASHINGTON, D. C.

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*“As the head of the main body reached Y, the tail was approaching X. At this moment the four Japanese machine guns opened fire.”*



JAPAN

## AMBUSH WORKS BOTH WAYS

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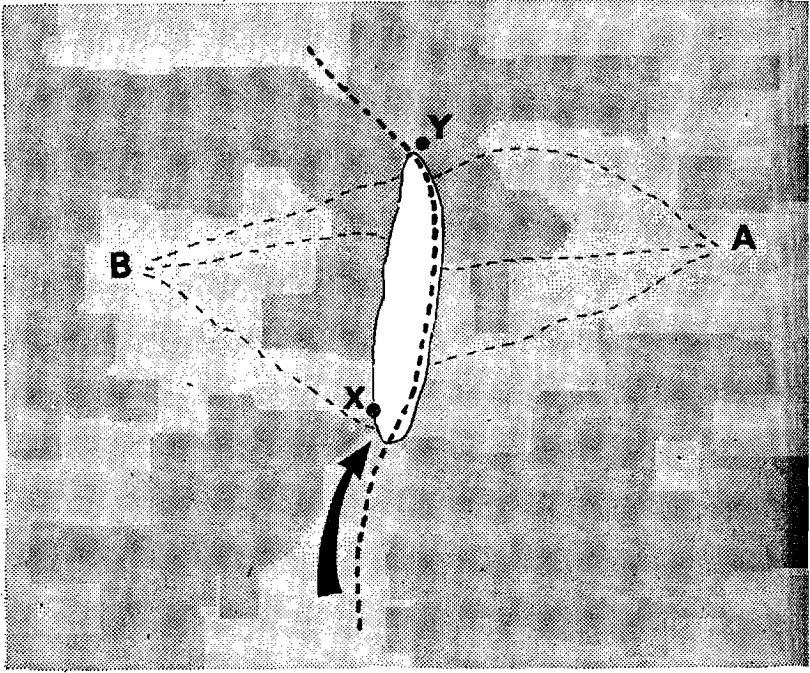
There has been a growing tendency on the part of U. S. troops to use the word "ambush" loosely. Many contacts with hostile patrols and outposts have erroneously been reported and treated as ambushes. As an aid in clarifying the matter, the *Intelligence Bulletin* presents two instances of true ambushes that the Japanese prepared against the British in Burma, and also discusses the reaction of Japanese troops when ambushed by British forces.

### AMBUSH BY THE JAPANESE

A British company was pursuing a Japanese force along a trail, moving in the direction indicated by the arrow in Figure 1. The company had an advance guard for its own protection.

Between X and Y the trail ran comparatively straight for about 150 yards. It followed an old stream bed, which formed a clearing about 60 feet wide. The advance guard examined the edges of the clearing for signs of a Japanese ambush, and, finding none, notified the main body and moved forward.

What the advance guard failed to discover was that the Japanese had built platforms in the trees at X and Y, and had placed two light machine guns in each tree. The platforms had been concealed with great care, and were barely visible from the ground. The advance guard failed to reconnoiter the various minor game trails which led away from the clearing, and which



**Figure 1. Japanese Ambush at a Jungle Clearing.**

converged at points A and B, where the Japanese had posted ambush parties.

As soon as the advance guard had passed point Y, the Japanese parties at A and B quickly moved in, and stationed themselves along the edges of the clearing.

As the head of the main body reached Y, the tail was approaching X. At this moment, the four Japanese machine guns opened fire. Taken by surprise, the British troops immediately headed for the cover of the jungle, but here they were met by the Japanese ambush party, armed with knives. Many of the British suffered severe slashes on the arms and shoulders. The total

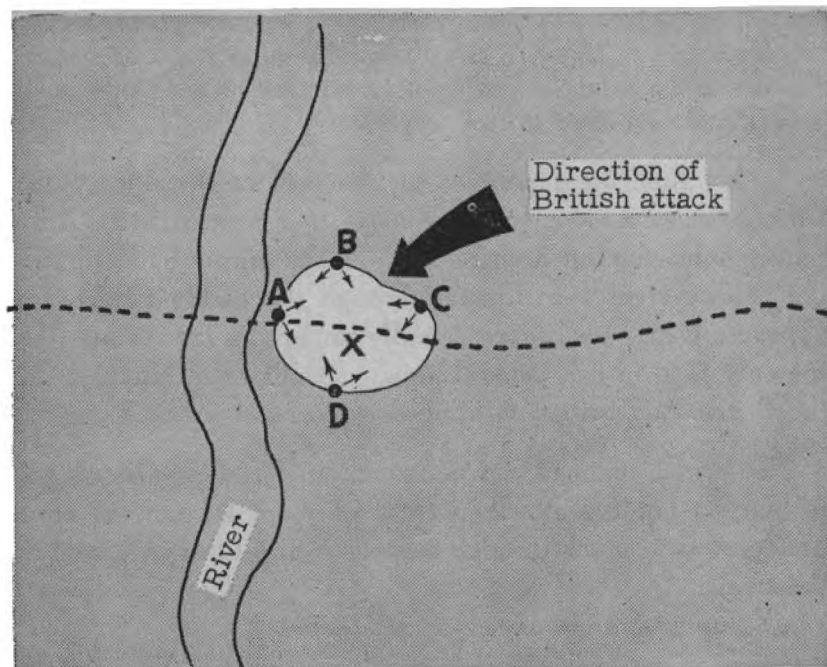


Figure 2. Japanese Ambush at a Small Paddy Field.

casualties numbered about 40 percent of the company, and included the company commander. In the confusion which followed, the Japanese succeeded in escaping.

*British Army comment:* If security troops work well and are really alert, they can prevent a column from being ambushed. As a rule, there will be some little sign which will give a useful warning. It may be only a footprint or the distant crackle of a twig, but either should be sufficient to arouse the suspicions of well trained men and cause them to take additional precautions in that particular area.

Clearings always have been dangerous places for the inhabitants of jungles. Sometimes a hunter sits silent and concealed, with a rifle ready, hoping that a tiger or a panther will cross a jungle clearing.

Very often the hunter's place of concealment is a tree, where he hopes to remain unseen, inasmuch as an animal is unlikely to look upward. Warfare in the jungle is hunting of an extremely serious kind, and a soldier must be trained to look upward.

At any time the Japanese may ambush an attacking force. On one occasion the enemy had taken up a position in the small paddy field, marked X in Figure 2. The only trail leading to the nearby river ran directly through the paddy field. The Japanese position was exceptionally important, for it controlled the only ford in that general area. (Neither the Japanese nor the British had bridge-building equipment available.)

The British planned a two-platoon attack. One platoon was to make a holding attack in front of point D, and the other platoon was to break through between B and C, as indicated by the arrow.

The attack was launched as planned: But the Japanese, anticipating the time and direction of the attack, withdrew in front of it as the attacking troops went in. Encountering no opposition, the attacking platoon burst into the clearing, and headed for the opposite side to engage the Japanese at D. When the British soldiers were well into the clearing, enemy machine guns situated in trees at A, B, C, and D opened up and caught the attackers in a deadly cross fire. Only 14 men escaped. The other 16, including the platoon commander, were killed.

*British Army comment:* British troops must be taught that if the Jap jumps out of his foxhole, trench, dugout, or pillbox, and runs away, this does not necessarily mean that he is beaten. The chances often are that the Jap is trying to make them forget the elementary principles regarding the use of terrain and the need for covering fire.

## AMBUSH BY THE BRITISH

Because of his habit of advancing rapidly along jungle trails, often without adequate protection, the Japanese soldier is especially susceptible to ambushes. His behavior when he is ambushed usually follows certain patterns. For this reason, the records of past experience are a useful guide to what his reaction is likely to be. The British Army offers a number of valuable comments on this subject.

No one ambush will ever be exactly like another. A leader preparing an ambush first satisfies himself that the move will be a profitable one; he then considers every possible factor, and makes his plan. An important thing to remember is that an ambush relies for its success entirely upon surprise. Also, an ambush must have a reserve, to take advantage of favorable opportunities and to deal with the unexpected.

Japanese reaction to ambush is remarkably predictable:

1. The enemy gets his leading elements off the path, and tries an outflanking movement.
2. He brings his mortar into action (he nearly always has a mortar with him) with the least possible delay, and attacks astride the trail and general area in which the ambush has been prepared. This sometimes takes place after a lapse of no more than 5 minutes.

It follows that, unless arrangements have been made to the contrary, the Japanese will be left in possession of the battlefield and will be able to dispose of our wounded, collect their own, and prevent us from getting identifications. This often has happened in the past. Therefore, any plan for laying an ambush may well provide for our men to remain in at least temporary possession of the battlefield.

When an ambush takes place and a fight follows, there is bound to be a certain degree of confusion; for this reason, a rendezvous for the ambushing party is essential. It may take some hours before the entire

ambushing party can assemble at the rendezvous. Therefore, if we are to take advantage of the situation during the period of confusion, it is clear that the reserve should be brought into action and boldly handled.

The relative strengths of the ambushing party and its reserve depend largely on the mission. If the mission is merely to cause confusion, and then to permit the reserve to undertake the main fighting, the actual ambushing party may be very small indeed, possibly just a leader and two men. On the other hand, if it is known that a large number of Japanese are about to be ambushed—more, in fact, than could be dealt with by a very small ambush party—the ambush party will have to be proportionately stronger, and be subdivided into two, three, or more groups. A method which has been employed in the Chin Hills is an example of the type of job the reserve may undertake. After an ambush has been carried out, the reserve moves forward in the same direction from which the Japanese have advanced, and destroys the Japanese mortar which always comes into action, generally about 1,000 yards back.

A series of factors regarding Japanese reaction to our ambush methods should be borne in mind:

1. When ambushed, Japanese soldiers have been known to drop down and feign death, lying still for long periods. It has been found



*The British are well aware that Japanese soldiers may be feigning death.*

advisable to ensure that they really are dead—either by firing bullets or using the bayonet, or by doing both.

2. The use of bamboo spike jungle traps, or “panjis,” has been proved most effective against the Japanese.<sup>1</sup> Panjis are placed just off a trail, and parallel with it, so that Japanese soldiers who leave the trail to scatter into the jungle are impaled on the sharp spikes.

3. Japanese curiosity is not always proof against the temptation to examine “bait.” In one ambush an old Japanese helmet was left in the middle of a trail. The Japanese stopped and collected around this helmet, examining it and asking questions. This gave our men



*“The Japanese stopped and collected around the helmet, examining it and asking questions. This gave our men a concentrated target at short range.”*

a concentrated target at short range, which almost would have justified the employment of automatic fire.

4. A British ambush party may be on one side of a trail or on both sides. If it is one one side only, it must be expected that the Japanese will plunge into the jungle on the other side. (In such instances,

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<sup>1</sup> For discussion of panjis, with illustrations, see *Intelligence Bulletin*, Vol. III, No. 2, pp. 88-92.

panjis prepared on the far side should prove effective.) If the ambush party is on both sides of a trail, there is always a danger that the subdivided elements will fire on each other. Staggering the elements on both sides of the track furnishes the most practical solution, it has been found. As a rule, the terrain will dictate the answer to this problem.

5. When an ambush is prepared on a hillside, there may be a question as to whether the Japanese should be trapped on higher or lower ground than that employed by the ambush party, or whether the ambush party should employ both high and low ground so as to sandwich the Japanese. High ground puts the ambush party in a more advantageous position; however, the enemy will disappear more rapidly when he is fleeing downhill. It may be found that snipers, suitably dispersed, can handle this aspect of the situation.

6. The problem of preparing an ambush along a dusty trail without leaving footprints, or any other evidence that we have been there, deserves very careful consideration. Often it will be found advisable to approach the ambush position by cutting an approach for some distance through the jungle. As an alternative, it sometimes is possible to approach barefooted. Many other methods may be improvised, but the danger of leaving footprints is something which always must be given first consideration. Neglect of this single factor may result in the entire ambush proving a costly failure.

7. The command to open fire must be given only by the commander of the ambush party. Therefore, his position usually should be in a place from which he can observe how many rats have entered the trap before he gives the command.



# *How We Fight...* MIXED Jap OPINIONS

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Although Japanese appraisals of U. S. combat methods are not always accurate—colored, as they so often are, by an imperfect understanding of the American fighting man and by a fondness for putting the Japanese Army in as favorable a light as possible—it is worthwhile for us to know just what the enemy soldier is being taught about our combat techniques. It long has been a Japanese boast that the “crass materialism” of the United States eventually must bow to the “spirit of Bushido”—in other words, to Japan’s “spiritual strength.” While the enemy still repeats this boast on occasion, he places less emphasis on it than formerly. The enemy now tends to admit that the industrial might of the United States is formidable enough to warrant respect. And even though Japanese commanders like to tell their men that our successes have depended entirely on our barbaric aptitude for things mechanical, there now seems to be a tendency for unit leaders to admit that our tactics, too, can be skillful. The Japanese, who like to believe that they have a monopoly on ingenuity, still find it hard to concede that Americans can be imaginative.

The opinions of commanders of large and small enemy units, as well as views enunciated by Imperial Army Headquarters, are represented here.

## Customary Tactics

The basis of the tactics of the U. S. Army may be said to be a belief in the almighty power of materialistic fighting strength. Although the Americans are not adept at military deception and subterfuge, their leadership is extremely reliable and their spirit in the offensive should not be treated lightly. In an offensive the customary tactics of the U. S. Army are to cut supply lines, isolate strategic key points, and, by concentrating air and ground strength, exhaust and eventually capture these points.

In daylight attacks against U. S. troops deployed in prepared positions, it is best to effect a breakthrough in the enemy's lines at one blow by neutralizing his fire power with well-prepared artillery fire. Even when we can take advantage of jungles in assaulting the enemy, neutralization of his fire power must not be neglected. It is also important for us to devise plans which will tempt the enemy to scatter and waste his fire. In this connection, it should be noted that feints are useful.

Night attacks against U. S. forces must be continued.

---

## Assets and Weaknesses

The enemy understands machinery, and is adroit at handling it. Speed characterizes his construction of airfields, motor roads, and communication networks, and also his strengthening of positions. His strong air forces execute day and night attacks.

It has been established that the enemy is capable of altering his tactics quickly. [*Ed. Note:* This represents quite a concession on the part of the Japanese.]

Against these admitted military assets, we must set down the decided weaknesses of the American soldier. He depends too much on his material power, and is deficient in spiritual strength. He is very susceptible to our artillery bombardments, and becomes passive when we strike at him in this manner. In the U. S. Army, the men's sense of

personal responsibility is not consistently high, *and there are many flaws in their security measures.*

---

## **Problems in Jungle Fighting**

The U. S. forces, who place all faith in fire power, are weak in hand-to-hand combat. In this respect they certainly are not to be feared. We must guard against making headlong and reckless advances, however, even when we are achieving success in hand-to-hand combat. It is foolish to make gains and then run a risk of losing them.

In jungle areas such as this [New Guinea], our mortars are highly effective. Automatic rifles and light machine guns also have proved most valuable.

In the past the humidity has caused a large number of duds in the ammunition for our 70-mm infantry guns, trench mortars, and grenade dischargers, as well as in our hand grenades. Recently we have been supplied with ammunition protected against humidity. This ammunition is proving most successful.

We must become much more skillful at using hand grenades.

Our artillerymen are doing good work. Even so, they must become more adept at target recognition, and must realize the importance of making every round count.

Although the positions constructed by our engineer units are strong and can be held for a long time, many of the positions constructed by other branches of the service have been destroyed shortly after completion.

There are times when the jungle is transformed into an open field by bombing and artillery fire. Consequently, when we construct positions, we must take into account the possibility that, for an indefinite period, we may not be able to find cover. We must be prepared to deploy laterally and in depth.

Infiltration into U. S. lines by patrols and platoons is generally possible, and can produce excellent results.

Although the battle charge and hand-to-hand combat should be encouraged, heavy losses will be sustained if the charge is made frontally into hostile fire. When conditions permit, it is advisable for platoons to infiltrate patiently to the enemy's rear and to launch surprise attacks. In general, the best method is to attack with hand grenades and then to switch promptly to hand-to-hand combat.

In facing a U. S. force entrenched on a slope, it usually is best to take up positions 20 to 30 yards below the crest or on the reverse slope.

Because of the frequency with which the various U. S. artillery shells explode in tree tops, we must pay strict attention to the situation of our shelters. It is advisable either to cut down the trees or to select the bases of tall trees.

The gaps between U. S. positions are relatively large—70 to 100 yards—and often no security precautions have been taken. (This is particularly true in the rear areas.) Consequently, infiltration is easily accomplished.

Dawn and dusk are the best times for attack. It is especially easy to approach U. S. positions and launch an attack when it is raining, inasmuch as the U. S. soldiers lie low in their trenches and try to stay under the cover of ponchos.

Since U. S. soldiers direct their fire at sounds even when they cannot see a target, and are likely to fire their rifles blindly from their trenches, it is comparatively easy to infiltrate and surround their positions if one acts with coolness and deliberation. (U. S. soldiers do not show their heads when they fire.) Most of our casualties are caused by hand-grenade fragments, rather than by firearms.

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## **Fire in the Jungle**

In the attack, groups of from three to eight Americans creep through tall grass or jungle growth [Wau area, New Guinea], and open up with automatic rifles, fired from the hip at ranges of from 10 to 50 yards. As soon as we return the fire, they attack with concentrated

fire from grenade rifles or light trench mortars, followed by concentrated fire from heavy trench mortars from their rear. Americans are skillful at using automatic rifles, grenade rifles and trench mortars; this accounts for the majority of our losses. [*Ed. Note:* The reader will observe that this contradicts another unit commander's statement, in the previous paragraph.]

The Americans do not specialize in charges. Very few carry rifles or bayonets.

In the defense, the Americans do not construct trenches. As a rule, they shift their positions skillfully and make use of roving fire.

When the enemy abandons his weapons and flees, it is important for us not to linger in the immediate area vacated by the enemy; this area is sure to receive sudden and concentrated fire from grenade rifles and trench mortars.

U. S. expenditure of ammunition for guns and automatic firearms is enormous. When a force of about 100 men sets out to attack, the sound of their firing is almost continuous, and gives the impression that a much larger force is being employed. At first, this is likely to have a disheartening effect on our morale.

U. S. observation of only one or two Japanese soldiers may result in sudden and concentrated trench-mortar fire. This happened to our regimental commander and myself when we were in a place where the grasses were above our chests. As I took out my glasses to observe the situation, we received a trench-mortar shelling 7 to 8 yards away.

Prior to U. S. artillery shelling of the area our unit occupied, the enemy dispatched a number of small patrols armed with automatic rifles and rifle grenade throwers to perform reconnaissance. We concluded that liaison was accomplished by means of radio. I must point out that U. S. communications and liaison are excellent. Although our withdrawal was carried out during the night, the enemy shelled us all along the route. While the main strength of our regiment was being withdrawn, several other men and I fortunately discovered the enemy's telephone lines and cut them. This enabled us to escape without further interference.

U. S. artillery fire in the Buna area [New Guinea] was expertly delivered. All guns seemed to have an abundant ammunition reserve, and fired continually, night and day. In support of front line advances, they often placed heavy curtains of fire over wide areas. However, these curtains of fire, although heavy at the front, tend to thin out at the flanks. Our covered positions constructed of coconut logs stood up against fire from mortars and Browning automatics, but were destroyed by concentrated fire of delayed-fuze projectiles and rapid-fire guns.

The U. S. infantry is not aggressive, and does not attack with any-think like enthusiasm unless it is capable of maintaining terrific fire power.

U. S. artillerymen are comparatively brave, and are good at infiltrating. The infantry's sniping is very effective. The artillery and infantry are skillful at joint action. They communicate successfully by means of pyrotechnics and tracers.

*For some reason the Americans do not exploit their battle successes promptly. After winning a battle, they are likely to remain static for a considerable time.* Night operations are not numerous, but are not conducted briskly.

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## Notes on Positions

American soldiers are terrified by our night attacks [Bougainville], and fire blindly when they are assaulted in this manner. Although they expend the light-mortar and automatic-weapon ammunition in great quantities, the projectiles tend to travel too high because of the blind firing.

*U. S. troops are noisy, and a security-conscious soldier is the exception, rather than the rule.*

Since U. S. troops lack ability in the assault, their usual method is to penetrate positions where they do not expect to encounter Japanese forces. Americans always advance over low terrain, and make extensive use of valleys.

The Americans prepare fields of fire in front of their positions, and establish four or five rows of barbed wire entanglements in this same area. When advancing Japanese units destroy these entanglements and approach the positions, the Americans try to halt our attack with sudden artillery, light-mortar, and machine-gun fire at minimum range.

In jungle areas they place fallen trees in front of their positions, and snipe at our men who are obliged to clamber over these trees, often stumbling in the process. For this purpose, U. S. snipers often take up positions in standing trees nearby.



*“In jungle areas, U. S. soldiers place fallen trees in front of their positions, and snipe at our men who are obliged to clamber over these trees.”*

Double-apron barbed-wire entanglements are widely used. Sometimes a microphone is installed very near the front of an entanglement, and a triangular piece of red cloth is attached to serve as a base point for the direction of fire power.

Artillery belts of fire are approximately 200 to 300 yards wide and 500 yards deep.

The Americans have been known to attach barbed wire to the rear of their tanks, so that our tank hunters cannot stage a close-in attack from that direction.

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## **Estimating U. S. Capabilities**

We are now at the front line [Cape Dinga, New Guinea], on an important mission, not an exercise. Day and night we face an enemy who has air superiority and who is threatening to advance by sea, air, and land.

To perceive the enemy's situation and plans may seem difficult, but good estimates of enemy plans and movements may be made as soon as the fighting begins, by a close study of its progress. Our estimates will be more nearly accurate if we deduce from past experience and known statistics, maintain thorough observation and liaison, and carry out each reconnaissance mission with a definite aim in mind, and at the most appropriate time. However, we must be accurate in estimating our own situation and fighting strength, and must give full consideration to the difficulties which are to be overcome before we can subdue a stubborn enemy. In other words, we have a tendency to judge any situation from our own point of view exclusively and to let external appearances deceive us. This can work in two different ways. If we overestimate ourselves, excessive self-confidence will lead to being caught off guard. On the other hand, if we note certain disadvantages on our side, we are likely to feel that we are considerably inferior to the enemy, and our proper confidence in our own great fighting spirit will diminish. Extreme optimism and extreme pessimism are equally dangerous, and jeopardize our opportunities for victory. We should know the enemy well, and, at the same time, analyze our own capabilities realistically. When we detect our weak points, we must strengthen them. We must be open to new ideas and be willing to put them into effect, so that we can gain the upper hand over the Americans and, with the help of Providence, achieve certain victory.

## HOW THE JAPS CONCEALED BARGE-UNLOADING POINTS

---

The Japanese barge-unloading points at Nambariwa, New Guinea, which supplied all the enemy troops in the southern part of the Huon Peninsula during the Lae, Salamaua, and Buna campaigns, were so unusual and exploited the terrain so successfully that the part they played in these operations deserves comment.

The use of semicircular river-bank canals, masterfully camouflaged with tropical growth, is especially worth noting.

When Allied air observers began to sight an increasing number of barges in the vicinity of Nambariwa, it became evident that there were sizable facilities for unloading in that area. However, neither reconnaissance from aircraft nor a study of air photos revealed anything except the usual luxuriant jungle growth. Soon, however, intelligence was obtained which proved conclusively that an important barge-unloading and supply base existed at Nambariwa. On the basis of this intelligence, and because of the cumulative sightings in this vicinity, our planes bombed and strafed the area. After the first bombing, the returning crew members reported that they had observed nothing out of the ordinary. However, strike photos revealed large chunks of debris which were easily recognized as barge plankings.

Figures 3 and 4 illustrate the Japanese barge-unloading and concealment points at Nambariwa, and show the great skill and care that the enemy devoted to these installations. By means

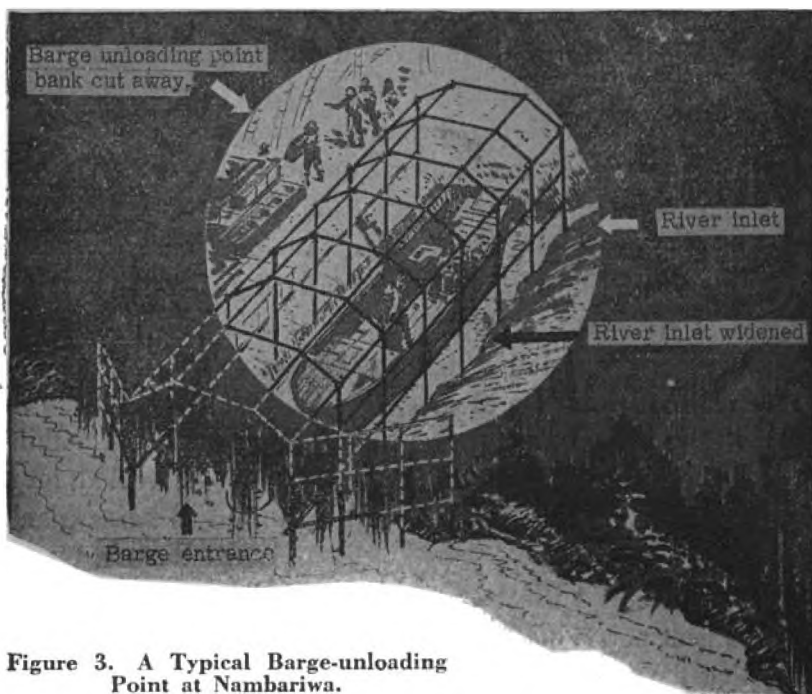


Figure 3. A Typical Barge-unloading Point at Nambariwa.

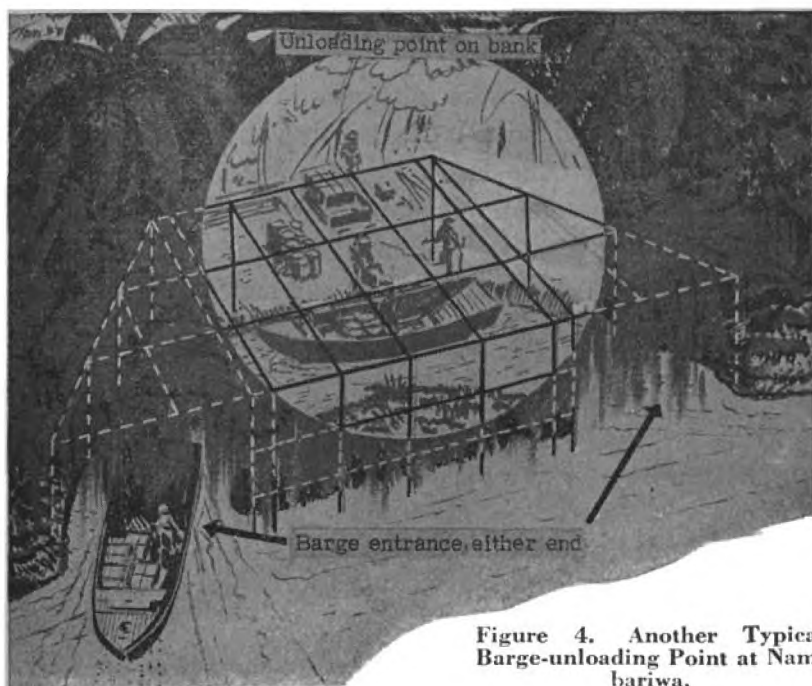


Figure 4. Another Typical Barge-unloading Point at Nambariwa.

of vines and bamboo trellises, the Japanese created a false river bank. To enlarge their unloading facilities, they dug semicircular canals into the river bank, camouflaged them with garished trellises, and used them as slips.

In nearly all instances, each hideout was garrisoned by a detachment of shipping engineers, which handled the traffic running in and out of its particular unloading point, and by another detachment of rear-echelon troops, which attended to the needs of transient troops and maintained the supply point generally. All evidence of the presence of Japanese troops was concealed with the same care used in hiding the barges. Supply dumps and huts for personnel were completely camouflaged by the natural jungle growth, and, wherever necessary, additional garished trellises were constructed.

After these hideouts were discovered, they were bombed almost daily. Intelligence later revealed that the success of Allied operations on the Huon Peninsula definitely was furthered by these systematic bombings, which kept the barge-unloading points in a state of continual disrepair, and prevented all but a trickle of vitally needed food and matériel from reaching the hard-pressed Japanese forces to the south.



## **IN THE ADMIRALTIES**

**Fanatic Jap Rushes  
Withered by Steady U. S.  
Defense**

---

Although Los Negros and other islands in the Admiralty group were garrisoned with good, well-equipped Japanese troops, the enemy resorted to wild counterattacks which failed to break the steady defense put up by U. S. troops. Logical avenues of approach were well protected, but skimpy road building hampered enemy mobility. The Japanese were unable to move troops and matériel quickly to defend areas where they had failed to anticipate landings by U. S. forces.

Japanese soldiers fighting individually or in small groups were wary, cunning, and intent on making every round count. But when they fought in large groups, they seemed unable to develop, or to follow, a well-conceived plan. Headlong "suicide" rushes were the rule. Fanatical and shrieking, the larger groups charged without taking cover, and were mowed down. In the words of one observer, they were "stupidly inefficient."

### **INITIAL INFILTRATIONS**

On the first night after the U. S. landing, the Japanese organized several patrols which infiltrated Allied positions for the purpose of locating and attacking command posts, and execut-

ing general harassing operations. At about 0400 one of the patrols, numbering 18 or 20 men, stealthily penetrated the perimeter. This patrol was knocked out, but not until it had succeeded in reaching a point only about 100 yards from a highly important command post. Japanese officers in this patrol used swords unsuccessfully, except in one instance, when they encountered a U. S. officer sleeping in a hammock. For the most part, the infiltrating Japs used hand grenades. They also succeeded in setting up two light machine guns within a squadron command-post area before they were killed or driven out. Some of the enemy then crawled back into their old, abandoned pillboxes along the beach, and hid until morning, when they emerged and tried to cause as many casualties as possible in the beach area. These enemy soldiers, too, were liquidated.

On the following day, 1 March, a Japanese suicide patrol infiltrated the U. S. perimeter in broad daylight. This patrol consisted of about 14 officers and men, and was led by the battalion commander of a unit which had been assigned to defend the Momote airstrip. The entire patrol was wiped out after it had penetrated to within 100 yards of a most important command post.

It was estimated that, as a result of these infiltrations, 99 Japanese were killed, as opposed to only a few Allied casualties. The intelligence officer of the task force stated: "The tactics of the enemy—although harassing, annoying, and dangerous to the individual—appear to be stupidly inefficient. Few of the infiltrating Japanese could have escaped. Many of them were casualties. Along one unit's perimeter, enemy bodies literally were massed in bunches of 5, 7, and 14. The estimated result of this attempt by the Japs is better than 10 to 1 in our favor."

## ALL-OUT COUNTERATTACK

On the nights of 3 and 4 March, the Japanese garrison launched its all-out counterattacks against our perimeter. The U. S. task force intelligence officer made the following comments on these actions:

“Jap operations on the night of 3 March are reported to have originated from the west, where the Japs landed from barges at their landing jetty at Porlaka. These reinforcements undoubtedly had been sent from Lorengau. Jap assault parties attacked our perimeter during the night, and suffered many casualties. An hour and a half after daylight, about 50 Japs made what proved to be a suicidal charge against our emplacements. These Japs must have been ‘doped up.’ When they came in on the attack, they were yelling and singing ‘Deep in the Heart of Texas.’ The entire party was annihilated by our antipersonnel mines and by devastating small-arms fire from every weapon in our emplacements. On the morning of 4 March, a total of 168 Jap dead were piled up in front of — Troop’s perimeter.

“On the night of 4 March, enemy operations took the form of attacks on our positions by officer-led patrols, each consisting of from 10 to 15 men. Seventy-nine Japs later were found piled up on the western edge of the perimeter held by the — Squadron, — Cavalry.”

“In an open field fight,” another officer reported, “it was simply slaughter. The Japs came out hollering and yelling, rushing forward foolishly without taking advantage of cover and without giving a thought to flank protection. Many lacked helmets; many wore white gloves. Acting like drunken men, they fired with fixed bayonets and sometimes closed with fixed

bayonets when they should have fired. We took advantage of cover, established ourselves in our firing positions, waited until the Japs were within range, and then let go with everything we had."

## THE INDIVIDUAL SOLDIER

The Japanese soldiers in the Admiralties were at their best as snipers operating along jungle trails, singly or in small groups. They maintained excellent camouflage, and were adequately supplied with food and ammunition. They were cautious about expending ammunition, and ridiculed what they considered the "waste of ammunition" by U. S. troops. (A Japanese comment: "Americans are ready to fire at anything; they must get bonuses for the number of rounds fired.") The enemy soldiers carefully selected what they considered the best targets, and did not necessarily fire on our forward elements. Also, to avoid disclosing their positions, the Japanese usually held their fire until a period when U. S. troops were firing. Although the Japanese soldiers sometimes changed positions, they stayed in the fight until they were killed, or until they were able to depart because our troops had abandoned the area. The Japanese did not snipe from trees exclusively; they frequently used undergrowth, the bases of trees, or other natural cover.

"The Japanese soldiers in the Admiralties were cagey and treacherous," an observer reported. "Occasionally a Jap would come in with his hands up, offering to surrender; but when he was close enough, he would hit his helmet with a grenade he had tied to his wrist and had kept concealed in his hand. His object, of course, was to injure as many of use as possible while he was killing himself."

Several instances of Japanese fanaticism have been reported. An enemy officer stood in a clearing about 30 yards in front of positions which had been established by a lieutenant and his platoon. The Japanese waved his saber, to which he had attached a flag, and yelled that he alone would kill the "American dogs." He was shot down immediately.

Labor troops were identified among the enemy dead. They had attacked with bayonets fixed to long poles. The Japanese soldiers in this particular area had an ample supply of hand grenades, but were short of other types of ammunition.



"Labor troops . . . attacked with bayonets fixed to long poles."

## ATTEMPTED RUSES

One of the attempted enemy ruses involved sending an individual Jap to move about in front of our defensive perimeter, so as to draw the fire of our automatic weapons. Next, two or three enemy riflemen would fire tracer at the automatic weapons.

Japanese mortars then would direct their fire on the weapon emplacements.

The Japanese called out to the men in — Troop, which was commanded by a Captain Frank —, "The regiment's falling back. Retreat, Frank!" and used similar colloquial phrases. However, the U. S. soldiers did not leave their positions. In many instances, the Japanese yelled, "Move over, Joe! I'm coming in!"

Such enemy ruses are of long standing. In every campaign since Guadalcanal, the Japanese have tried methods like these in an attempt to create confusion. Nor is the use of bayonets on long poles unprecedented. Australian forces reported encountering the same type of improvised weapon during the Finschhafen campaign on New Guinea.

## **LAST-DITCH FIGHT ORDERED**

After the capture of the Momote airstrip on Los Negros, it was learned that, following our landings, the garrison commander had issued forceful orders calling for last-ditch resistance on the part of his troops. Such orders are issued in equal profusion by German and Japanese commanders, but, in the case of the Japanese, there always is far greater likelihood that they will be obeyed. The Japanese colonel on Los Negros ordered:

"This is not a delaying-action type of warfare. Counter-attack!

"No reinforcements are expected.

"The battalion has no personnel in reserve.

"We must carry out our mission with our present strength.

“Do not withdraw unless you have been ordered to do so.  
“Be resolved to commit suicide.”

The effect of these pessimistic instructions upon the morale of the garrison can readily be imagined. A hint as to what the soldiers thought may be obtained from the way an individual Japanese soldier expressed himself on 1 March: “Yesterday an enemy task force of cruisers and destroyers bombarded us. The enemy began landing operations at 1000. Our radio was temporarily out of commission, but has been restored. We have been given no reinforcements. If only one Japanese plane or ship would appear! We are isolated and cannot expect any aid. The day of defeat draws near. So it must be, and the people at home will have to realize this!”

Although the feeling of hopelessness must have been fairly widespread, it should be noted that the enemy soldiers, in literally obeying the commander's injunction to commit mass suicide by hurling themselves in desperate and futile counterattacks against our forces, reacted in characteristic Japanese fashion. Obviously, the resulting enemy casualties in killed and wounded were out of all proportion to the results obtained.

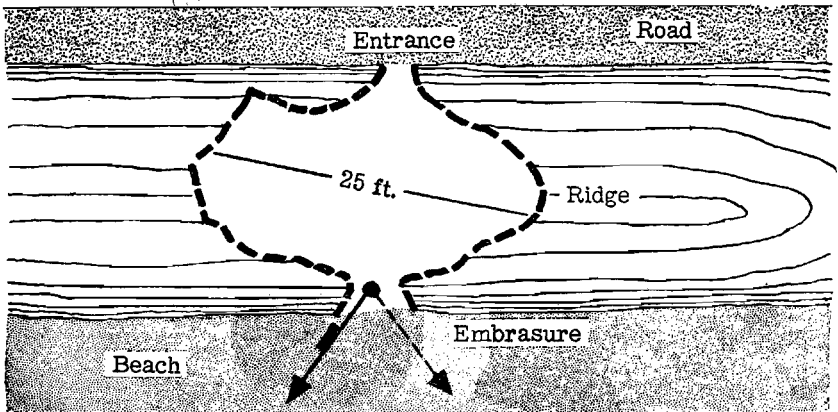
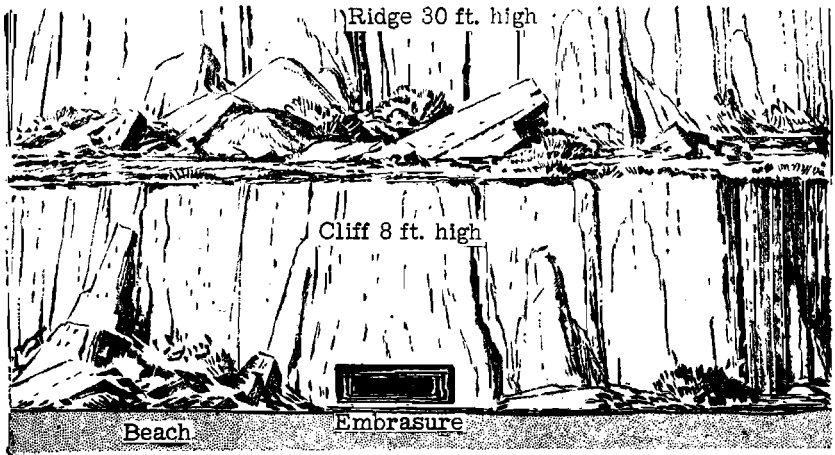
## JAPANESE CAVE DEFENSES ON BIAK ISLAND

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Japanese cave defenses on Biak Island, off northwestern New Guinea, which were made possible by a number of unusual volcanic and coral formations, have been described by an Allied military observer as "one of the most amazing defensive installations observed in the Southwest Pacific." These fortified caves permitted the enemy to conduct a type of warfare which, in the future, may be encountered elsewhere—although probably with certain variations. While the Biak caves are in some respects peculiar to Biak Island, the lessons learned there are adaptable to other lava-and-coral terrain found in the Southwest Pacific.

Biak Island, one of a group that the Dutch call the Schouten Islands, lies in the mouth of Geelvink Bay. After a volcanic eruption had created the initial land mass, a fringing coral reef was formed around this eruption. Evidently successive eruptions raised the mass from time to time, and, in the intervals between these thrusts, additional coral reefs were formed at sea level. These must have been raised with the land mass in later upheavals, forming, above sea level, an irregular series of broken cliffs, rises, and ridges, each from 8 to 200 feet high. Erosion, faults, fissures, and the action of sea water during the "submarine life" of these formations resulted in a network of caves and underground passages.

No two caves on Biak Island are exactly alike. However, each cave may be classified as being of a certain type.

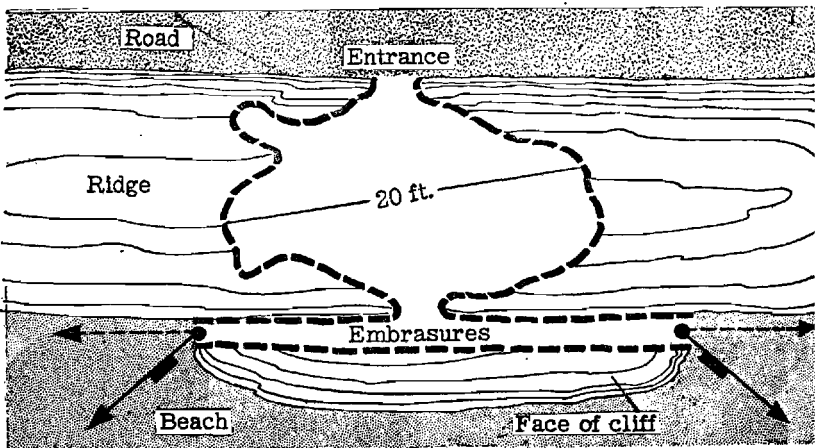
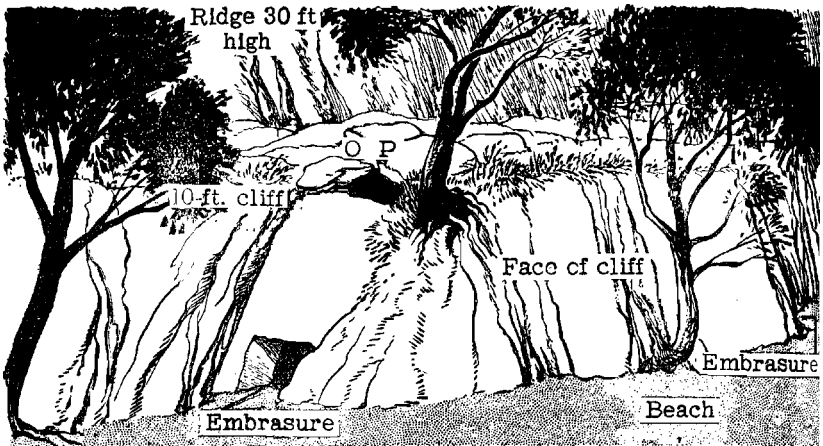


PLAN VIEW

Figure 5. Tunnel-type Cave with an Embrasure Added.

## BEACH CAVES

Fortified caves facing the beaches were of two varieties: the cavity type and the tunnel type.



PLAN VIEW

Figure 6. Terrain Variation—a Natural Alley, Fortified by the Japanese.

The cavity type usually is a cavern from 3 to 50 feet deep. Occasionally a transverse tunnel, 10 to 50 yards long and running parallel with the face of the cliff, gives access to another

cavern. The Japanese used beach caves of this type as machine-gun positions and as food and ammunition dumps.

Caves of the tunnel type traverse the base of a narrow coastal ridge 20 to 30 feet high, and have a forward opening, 6 to 12 feet high, commanding the sea. Usually the Japanese improved an opening of this kind by preparing a concrete machine-gun embrasure and by knocking out an opening at the landward end of the tunnel, near a road suitable for motor transport (see fig. 5). The dimensions of tunnel-type caves are of course irregular; as a rule, such caves are 15 to 25 feet long, 8 to 15 feet wide, and 3 to 6 feet high. The Japanese used the rear opening only when bringing in personnel, ammunition, and food. (Containers attached to coral teats in the roofs of the caves caught a ample supply of fresh, cool water, which dripped down slowly from the earth overhead.) Although the field of fire from each embrasure generally was more or less frontal, a terrain variation like the one illustrated in Figure 6 permitted effective oblique fire. Such a variation occurs when the seaward opening is masked by an apron consisting of a portion of cliff broken away from the main face or separated from it by the action of the sea. This results in a narrow alley between the apron and the face of the cliff. The Japanese sealed the ends of at least one such alley with concrete, but provided embrasures for observation and firing.

## GALLERIES

Galleries may occur at any elevation. One series was about 200 yards back from a beach and 80 feet above the coastal road (see fig. 7). These galleries, which were reached by a 75-degree

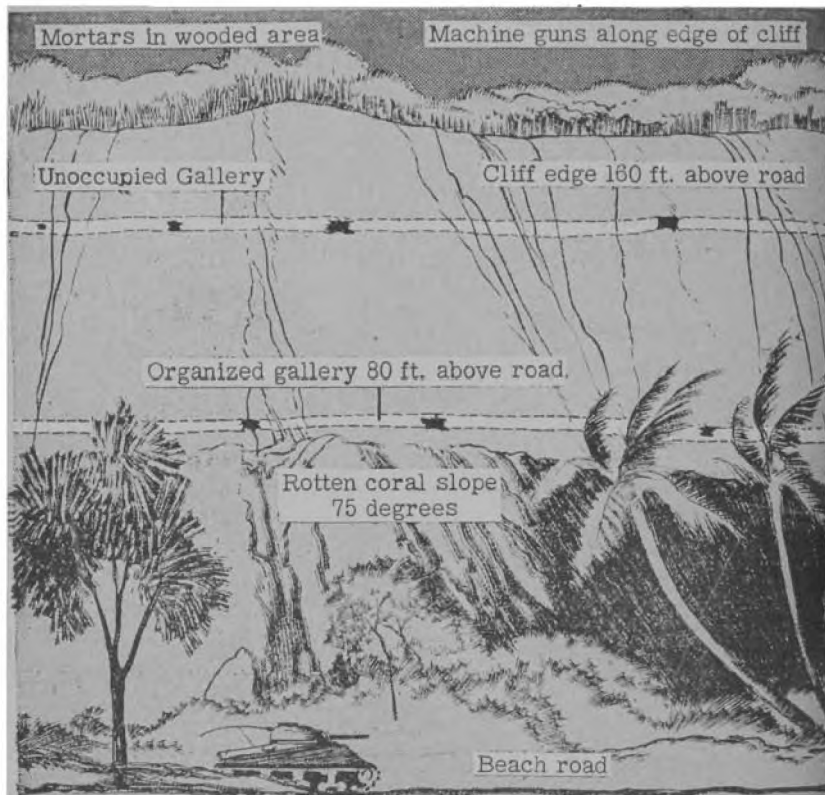


Figure 7. Cliff Galleries on Biak Island.

slope of crumbled coral, consisted of a level series of irregularly connected cavities, 4 to 8 feet high and 3 to 6 feet deep. Merging stalactites and stalagmites and hard limestone formations sometimes prevented continuous passage; in several instances, tunnels arched over, or bypassed, these obstructions. Wood flooring, blankets, and food were found in some of the inner "rooms."

The face of the cliff rose another 80 feet above the galleries, and was pockmarked with additional caves at one or more levels, depending on the locality. The Japanese did not utilize these higher caves. Instead, they placed machine guns along the cliff's edge, and sited mortars in the wooded area which extended back from the top of the cliff.

## SUMPS

On the ridges north of the coastal plain, holes or faults are found. (Possibly they were formed when the roofs of subterranean chambers collapsed.) They are more or less circular, and have sheer or abruptly sloping sides. In general, the holes

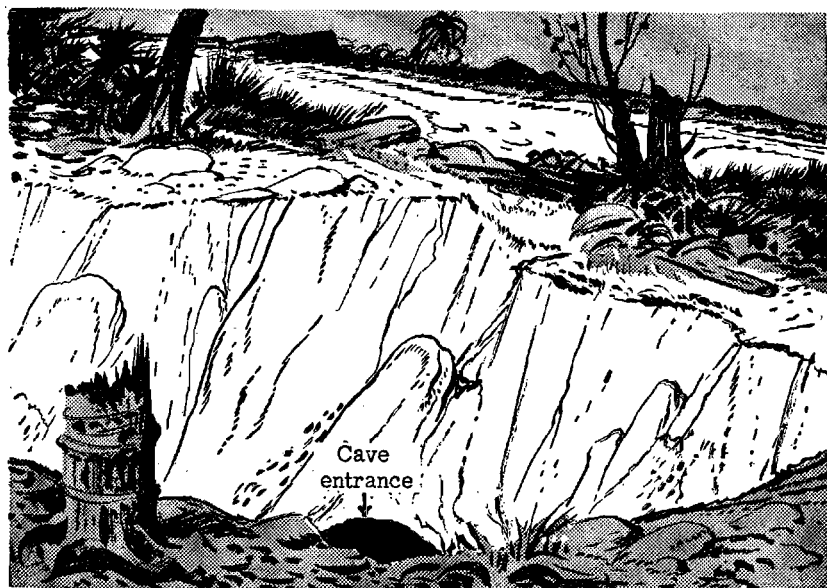
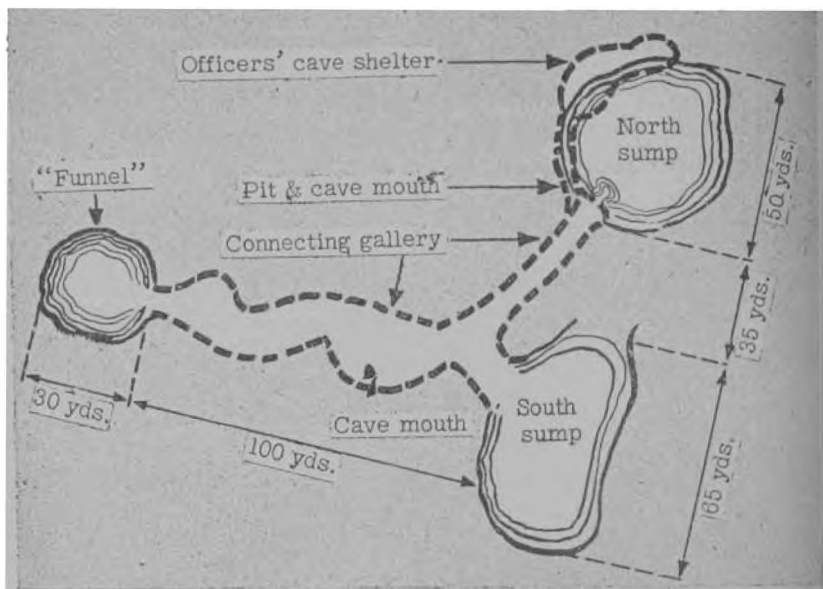
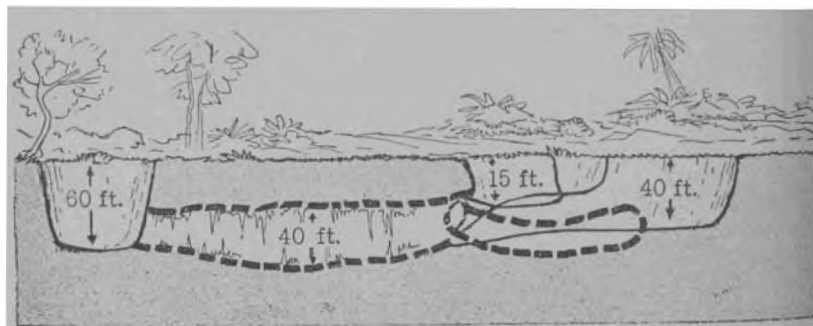


Figure 8. "One or more caves open at the base of the sides, or from small pits in the bottom of the sump."



PLAN VIEW



PROFILE VIEW

Figure 9. "A series of chambers and connecting galleries."

are from 30 to 75 yards in diameter, and from 15 to 75 feet deep. One or more caves open at the base of the sides (see fig. 8), or from small pits in the bottom of the sump. The caves may be nothing more than cavities from 5 to 30 feet deep. On the other hand, they may be entrances to a series of chambers and connecting galleries, some as high as 40 feet (see fig. 9). Three different sumps, 35 to 100 yards apart, may have entrances to such a network. The "West Caves" on Biak Island could have accommodated about 900 men, were lighted by electricity, and were equipped for radio communication.

## VARIATIONS

While most of the caves on Biak Island fall within one of the classifications already discussed, it has been observed that some caves combine the outstanding features of two or more types. An important characteristic of many caves is a screen of natural foliage which makes the entrances or embrasures very hard to detect, even when the observer is standing only a few feet away. In "sump" caves, the screening sometimes consists of stalactites and stalagmites, which do not conceal the mouth of the cave, but which stop or deflect a considerable portion of the attacker's fire, regardless of caliber. Further screening may be afforded by coral formations in front of the mouth. When a cave opens from a pit in the sump floor, still further natural concealment is provided, because of the angle of observation from the rim of the sump.

An example of the screening coral wall occurred in the main sump employed by the Japanese. The sump was about 75 feet deep. In the landward or north wall, and level with the sump

floor, was a cave. A natural coral wall ran directly across the entrance. Mortars placed in the cave had a limited but effective field of fire seaward. The trajectory barely cleared the forward edge of the cave's roof, the top of the coral wall, and the rim of the sump. The emplacement was virtually bombproof and shellproof.

## **FORTIFICATION OF THE MOKMER POCKET**

The fall of the so-called "Mokmer pocket" area on Biak Island permitted examination of a Japanese position which had withstood two aerial bombings and strafings, naval gun fire, heavy mortar and artillery concentrations, and almost daily poundings by tank guns.

The coral reef which parallels the coast rises to a height of more than 240 feet behind the village of Mokmer. The cliff at this point is not so sheer as in the vicinity of Parai, but it is very steep and cannot be ascended without the use of hands. About three-fourths of the way to the top, there is a relatively flat ledge with two large, perpendicular depressions like those of the "West Caves." Caves in these depressions lead to a honeycomb of tunnels and passages, at least one of which leads to an opening in the face of the cliff. Forward of the caves, Japanese had built two observation shelters on the ledge. Behind the caves, and on the steep slope that led to the top of the reef, the enemy had constructed five pillboxes. In the caves were a total of five 81-mm mortars in position, an extra mortar tube, five 20-mm antiaircraft guns, two heavy machine guns, and about 1400 rounds of 81-mm mortar ammunition. Excellent cover and concealment for snipers and automatic weapons

was available in the area surrounding the caves. The observation posts permitted unobstructed observation of the whole coastal plain, from the Parai jetty to the east end of the Mokmer airdrome. Machine-gun and mortar fire could be placed on most of this vital area. The cave in the face of the cliff originally had only a small opening, but this had been considerably "enlarged" by naval and tank gun-fire.

A destroyed heavy machine gun in the entrance indicated that an emplacement had existed there. Ingenious, but gruesome, was the Japanese use of one of their dead as a decoy to draw hostile fire. A body was lashed to a pole and placed upright on the ledge, its back resting against the face of the cliff. Tents had been erected on wooden platforms in the two larger caves, and quantities of food and clothing had been hidden in the tunnels.

It is believed that the position was manned by fewer than 100 men, although it probably provided shelter for a great many more.

## "HOME-MADE" OFFSHORE OBSTACLES

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With Japanese shipping becoming more and more hard-pressed, enemy use of "home-made" offshore obstacles requiring little or no imported material is certain to become increasingly widespread. Concrete, cement, and angle-iron obstacles still will be encountered, but many beaches in outlying Japanese-held territory cannot be supplied with these luxury items. Instead, obstacles requiring either no imported material at all, or little more than barbed wire and nails, will be employed in the preparation of outlying beach and offshore defenses. The following sketches, based on U. S. Navy analyses of low oblique photographs, show the principal types which will be encountered.



Figure 10. Rock Mounds.

These mounds, approximately 3 feet high and 10 to 12 feet square, are staggered at 10 to 15 feet intervals on the outer edges of reefs. Such mounds may contain mines.

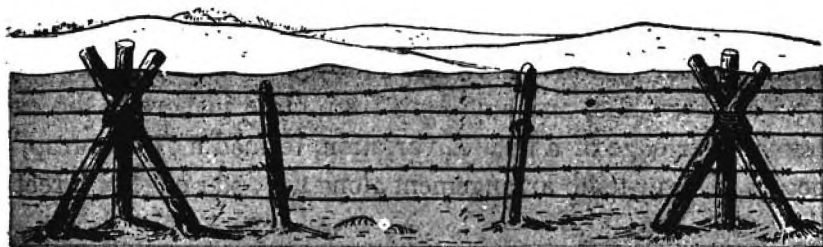


Figure 11. Wire Fences.

Fences of this type consist of barbed wire strung on a series of upright posts, often interspersed with "spiders" and light *chevaux-de-frise*.

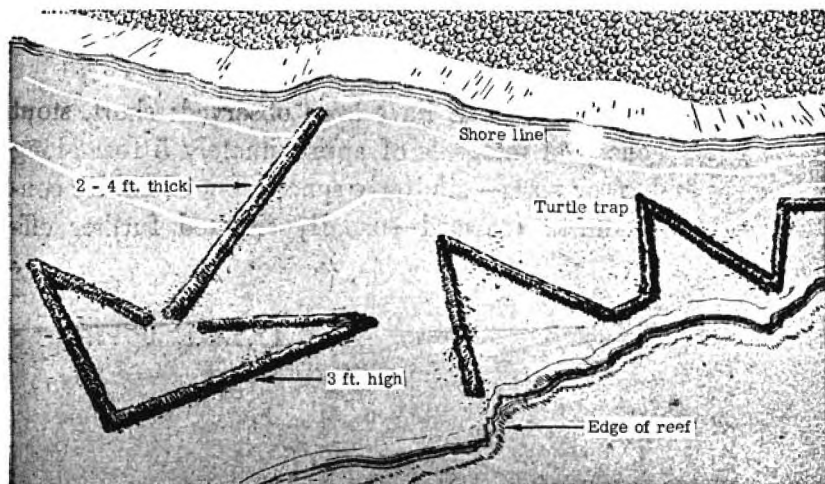
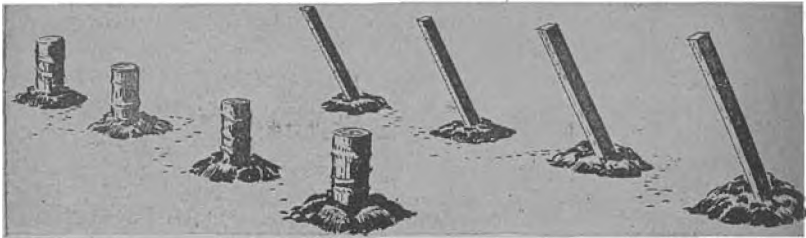


Figure 12. Fish Weirs.

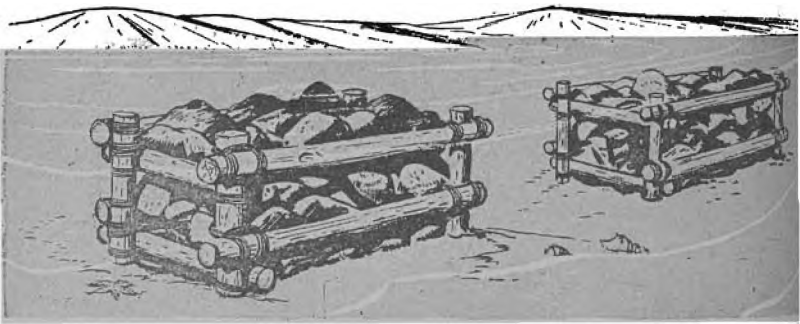
Constructed by natives and not intended primarily for defense, these coral-rock fish weirs are arrow-shaped. The arrow averages 200 yards in width at the base of its head, while the length

of the shaft may be as much as 500 yards. The weirs, which usually point seaward, may be employed on reef flats off any type of shore line, and anywhere from close inshore to the extreme outer edge of a flat. A variation, termed a "turtle trap," occurs in a saw-tooth arrangement along the outer edge of a reef.



**Figure 13. Post Lines.**

Two general types of posts have been observed: short, stout vertical logs spaced at intervals of approximately 5 feet along the shore; and taller posts—similarly spaced, but of lighter construction and inclined seaward—usually situated further off shore.



**Figure 14. Rock-filled Cribs.**

Log cribs, approximately 10 feet long and 4 feet wide, have been filled with coral rocks, and spaced at intervals of about 5 feet.

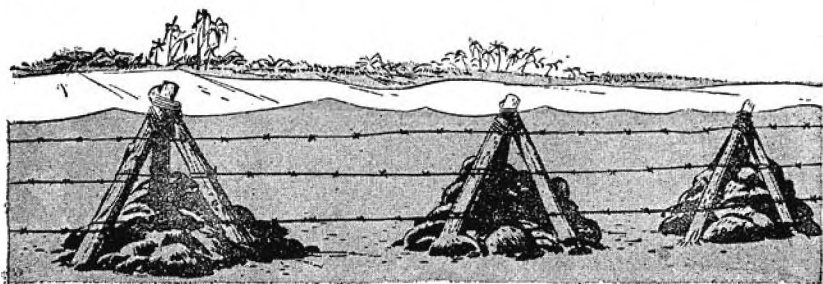


Figure 15. Tetrahedra.

Most of the examples of this type appear to be made of wood, although some may be made of steel. They often are partly, or completely, filled with rocks.

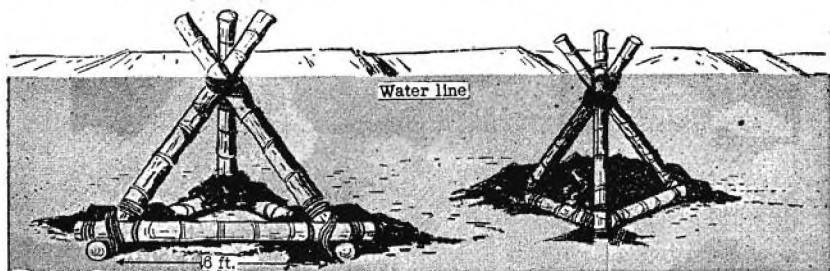


Figure 16. “Spiders.”

A variation of a tetrahedron, a “spider” is constructed of logs or poles, either braced by cross members at the base and weighted with rocks, or anchored with its ends buried in the sand. “Spiders” are spaced at intervals of from 15 to 30 feet, and often are incorporated in wire fences.

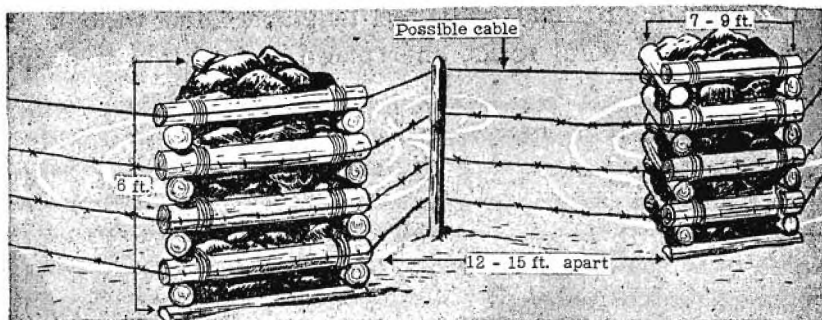


Figure 17. Rock-filled Pillars.

These forms are connected by barbed wire, and may also be connected by a cable.

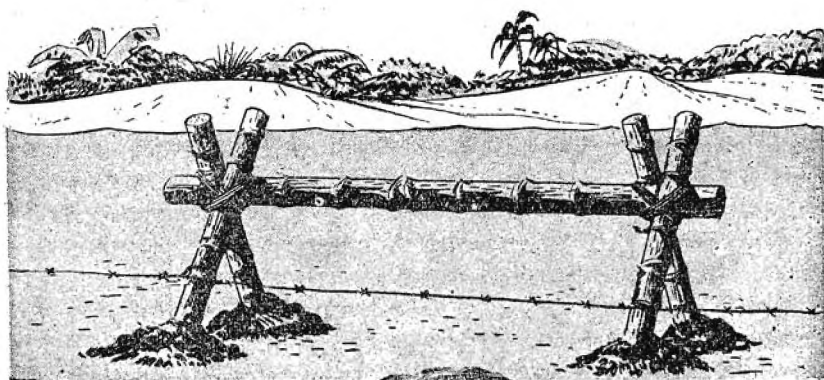


Figure 13. Log Barricades.

Barricades are constructed of logs or poles, and sometimes are strung with barbed wire. Spaced at intervals of 6 to 10 feet, they usually occur just offshore.



Figure 19. Rock Walls.

Rock walls, approximately 4 feet high and from 3 to 4 feet wide, have been observed in sections as well as in continuous lines. In some instances they may be topped with wire.

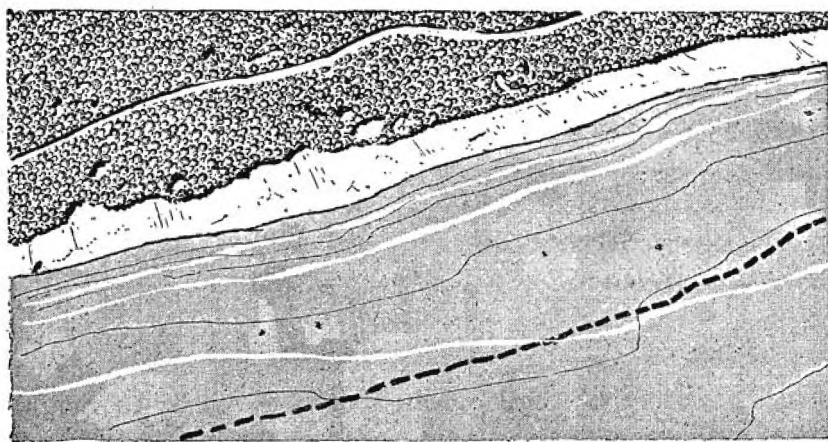


Figure 20. Rock-filled Mesh Wire.

The Japanese fill rolls of mesh wire with rocks, and arrange them in a line along the outer edge of a reef. (Obstacles of this type were encountered at Guam.)



# **DIVERSIONARY UNITS**

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Japanese Army elements known as "Diversionary Units" are organized for the purpose of penetrating deep into hostile territory and executing surprise attacks on hostile headquarters, airfields, supply lines, and other military installations. The chief enemy intention, in launching these diversionary attacks is to disorganize the opposition's rear and to facilitate operations by other Japanese Army forces.

Early in 1944 the Japanese General Staff issued combat instructions to be used by Diversionary Units. The following extracts from the combat instructions indicate how such enemy units may be expected to operate.

## **PLANS AND EQUIPMENT**

1. The success of a Diversionary Unit depends on the degree of surprise that it is able to achieve. This means that all preparations must be extremely thorough. When the Unit reaches hostile territory, the secret of its success lies in its ability to conceal its plans and movements. Concentration and dispersion of Japanese strength must remain a mystery to Allied commanders, so as not to prevent them from retaliating with a clever maneuver or a decisive attack.

2. When diversionary tactics are being undertaken, the natives must be won over and put to practical use.

3. A Diversionary Unit can not expect a smooth flow of supplies. Although all Japanese troops must know how to live off the land, members of a Diversionary Unit must be especially skillful in this respect.

4. A great deal of intelligence must be gathered before the infiltration takes place. Aerial photographs are especially useful.

5. The following equipment will be needed:

a. Necessary equipment for scaling cliffs, crossing rivers and swamps, and penetrating jungles.

b. Weapons to be used against the enemy; equipment for self-protection; demolition equipment.

c. Signal instruments and equipment for communicating with planes.

d. Bivouac equipment, rations, medical supplies and sanitation equipment.

e. Trinkets for winning over the natives.

f. Camouflage equipment; clothing to serve as disguises.

## TACTICS

1. There are three ways to infiltrate into hostile territory: by air, by sea routes, and by land routes.

2. Infiltration by sea routes frequently offers the distinct advantage of an advance well back into the enemy's rear, and an opportunity to transport a large quantity of material. Submarines, as well as surface craft, may be utilized. Night is the ideal time for movement; however, landings must be made before dawn.

3. The method and route of infiltration by land should be governed not only by the tactical situation but by the terrain. Infiltration should be made through gaps—between dispositions of hostile elements and in places where an intelligence net is not maintained. Great advantages are afforded by darkness and bad weather. Radio may be used only with the greatest caution. It is extremely important to keep all personnel from making telltale tracks on roads. Also, enemy dogs are a threat to security. When a small hostile force is encountered, it should be annihilated in a surprise attack so that the infiltration can proceed with the strength and dispositions of the Diversionary Unit still unknown to Allied commanders.

4. One or more key points from which the actual assault should be established near the objectives. The following objectives are all pri-

mary: enemy headquarters (including its signal and liaison installations); airfields; vital armament (airplanes, tanks, motor transport, heavy and light weapons); such essential combat matériel as ammunition, fuel, river-crossing equipment, and so on; rear supply warehouses, dumps and transport systems. As always, it is essential to kill commanding and staff officers so that their subordinates will become demoralized.

5. The following points will be observed in attacks against static objectives:

a. In attacking enemy headquarters, kill the commander and staff officers, capture or destroy every document, and destroy the actual buildings and communication installations. As a rule, it is hazardous to reconnoiter enemy headquarters. Try to gain information in advance from the natives or from captured headquarters personnel. It is best to kill commanding and staff officers in their quarters, which usually are not too well guarded, or while they are riding in their staff cars.

b. In attacking airfields, destroy the headquarters, ammunition and fuel dumps, signal towers, and all planes on the field and in the hangars. It is very important to kill Allied pilots. When a Diversionary Unit is cooperating with friendly planes, ground targets should be indicated by prearranged signals.

c. Explosives and incendiaries will be used to destroy firearms of all types, including the armament of airplanes and tanks. If circumstances do not permit complete destruction of all enemy equipment when attacking warehouses and dumps, it may be advantageous to concentrate on destroying the most vital types of combat matériel.

d. In attacking ships, destroy their sources of power by blasting or burning. Destroy navigation markers; water, coal, and oil supply installations, and signal installations in, and overlooking, harbors. This type of work may well call for imaginative trickery and indirection.

If feasible, it is best to return by the same route that was used for the approach.

6. In attacking high headquarters, especially those of armored units, artillery, engineers, and the vital combat matériel of such forces—either employ a direct attack in force, or ambush the enemy and inflict all possible damage.

a. In a direct attack against moving objectives, swiftly assault the most vulnerable vehicles, and seize them. Effect the maximum amount of damage with all possible speed, and then withdraw.

b. There are direct and indirect methods of executing an ambush attack against a moving target. The direct method is to attach time bombs directly to the vehicle, so as to kill personnel and destroy vehicle after the lapse of a predetermined interval. An indirect method is to lay mines at tactically advantageous points along the road, to destroy the target as it passes.

## IN BRIEF

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### NIGHT ATTACKS

Japanese night-attack doctrine has been summarized in the following manner by an enemy source:

All officers who will be engaged in the operation take part in reconnaissance during the afternoon before the night when the attack is to be launched. A thorough terrain study is made from commanding ground or the edge of a woods, and the plan of attack is laid out. The attack is ordered to follow well-defined terrain features; this permits easy control and maintenance of direction as the force approaches hostile positions.

After dark a reconnaissance patrol, which consists of three to five men led by an officer or a very able noncom, is sent out to reconnoiter the routes of advance, mark the turns with strips of paper or white cloth, and secure last-minute information regarding the dispositions of the hostile force. This reconnaissance is carried out as stealthily as possible, to maintain surprise. While the reconnaissance is in progress, the units designated for the attack are moved up ahead of the Japanese main line and into a forward position, from which the prearranged routes of advance can be recognized easily. As a rule, machine guns are not carried. Firing is avoided, and reliance is placed upon the bayonet.

Initially, a night attack aims at hitting both flanks of a position at the same time. After the flanks have been rolled back, the two attacking prongs continue to advance, moving beyond and behind the opposition's front lines, where they meet at a prearranged rendezvous. The direction of attack of these two elements of the attacking force is generally at an angle to the opposition's front line, to facilitate this meeting. After effecting a rendezvous, the attacking forces reorganize, and another attack is launched against the center of the opposition's line—striking from the rear.

If the attacking force is to seize and to hold the defender's position, the former digs in and awaits any counterattack.

If the unit which sends out an attacking force is on the defensive, the attacking force retires to its own lines after inflicting as much damage as possible upon the enemy.

Squads move in one or two columns, with each man close behind the man ahead. All elements of the attacking force try to maintain visual contact with neighboring units. Security to the front, rear, and the flanks is provided. The security elements also maintain visual contact with the main body. Security elements to the front of a platoon normally consist of an officer and two or three men. Individual soldiers provide flank and rear security.

In this description of a Japanese night attack, the most significant point is the dispatching of a reconnaissance party prior to the attack, to reconnoiter and mark the routes of advance, and to locate the flanks and the general disposition of the defending forces.

## **GROUND TACTICS, NEW GEORGIA**

In New Georgia the Japanese defended effectively both on low and high ground, according to a U.S. infantry division's summary of the opposition it met during this campaign.

A high proportion of automatic weapons was encountered. These were mutually supporting, and were protected by riflemen.

Both protective and tactical wire was encountered. In one instance, a double-band obstacle, constructed of stakes and vines, enclosed a strong, well-knit center of resistance.

Well dug-in outpost positions were found considerably forward of main positions. Apparently mortars had been registered on these outpost positions.

The action of the Japanese was defensive, terminating in a covered withdrawal. The enemy showed his customary determination when fighting on the defensive, but seemed less in-

clined to hang on and die in his positions than he was on Guadalcanal, for example. The Japanese took advantage of our failure to maintain contact at night, and withdrew under cover of darkness.

Five Japanese counterattacks were experienced, one of which took place at night. The night attack was launched chiefly with grenades—possibly from grenade dischargers held in a horizontal position. The daylight attacks were characterized by intense, sustained automatic fire, waist high. In one attack, when the Japanese failed to locate any of our flanks, because of our all-around defense, they employed grenades and machine guns in an effort to clear the undergrowth and thus reveal our positions.

Japanese troops were under orders to move forward under U.S. artillery fire, so as to be in a better position to deal with the U.S. attack which was expected to follow.

A large number of U.S. weapons—grenades, especially—was employed by the enemy.

There were no authenticated instances of Japanese snipers concealed in trees, and no enemy booby traps were reported.

## **“FLYING PIG” MINE**

In addition to the Japanese antivehicle mine known as the “Yardstick,”<sup>1</sup> a second type of Japanese mine also was encountered for the first time during the operations in the Admiralty Islands. This second mine, which has been dubbed the “Flying Pig,” was installed as a remote-controlled mine, in connection with double-apron barbed-wire fences at Lorengau Harbor, Manus Island. While there have been conflicting statements as

<sup>1</sup> See *Intelligence Bulletin*, Vol. II, No. 11, pp. 55-59.

to the use of this mine, the best information indicates that it was used only on the beach, where it had been laid at 50-foot intervals, under the barbed-wire fences.

Basically, the "Flying Pig" consists of a sheet-steel cylinder, about 10 inches long and 8 inches in diameter, with domed ends. (The sheet steel is approximately  $\frac{1}{4}$ -inch thick.) At each end there is a sheet-metal yoke with an eye, to which a towing cable may be attached. Near the ends of the cylindrical sides are two pairs of bar-steel arms, about 7 inches long, which project from the body of the mine at angles of about 20 degrees. The total weight of the mine is about 30 pounds, including a black crystalline explosive charge weighing about 19 pounds. The mine is fired electrically by means of a detonator inserted into the side of the cylinder and connected to a suitable length of heavily insulated double-conductor cable.

The use of the "Flying Pig" as a remote-controlled mine in connection with wire obstacles on Manus apparently was more or less of an improvisation. Reports indicate that the mine was designed to be used in destroying submarine mines. Evidently the "Flying Pig" may be towed from a minesweeper by a length of cable attached to the towing eyes. The projecting arms are intended to engage the anchor cable of a submarine mine, thereby permitting the "Flying Pig" to be drawn into contact with it. After this, it would be possible to fire the "Flying Pig" electrically from the minesweeper.

## **ALL-AROUND DEFENSE OF A HILL**

An interesting Japanese defensive position in the Burma-India border area has been described by British observers.

In this area, terrain feature 124 is a horseshoe-shaped hill, with point 124 at the northwest end. The Japanese defensive system was all-around, and consisted of a series of one-man sniper posts leading from a common connecting trench which ran in an unbroken line around the terrain feature.

The connecting trench was  $1\frac{1}{2}$  feet wide, and normally 2 to  $2\frac{1}{2}$  feet deep—except where it passed a stretch of vegetation so sparse that the trench had been dug 12 feet deep to provide adequate concealment.

In excavating, the Japanese had taken care not to destroy the undergrowth; as a result, concealment against air and ground observation was unusually good. The enemy had disposed of the spoil so successfully that no trace of it ever was discovered.

The sniper posts had been so dug that they were opposite places where there was a natural thinning of the undergrowth. These positions were occupied day and night.

Kitchens and other service installations usually were nothing more than sections of the connecting trench, which had been widened and roofed with bamboo mats; however, two kitchens were found 20 yards in front of the connecting trench on the slopes of the hill. A number of dugouts leading from the connecting trench had been built into the hillside.

When British troops first attacked this terrain feature, the defenders fired a red Very light, and the enemy placed mortar, grenade, machine-gun, and small-arms fire on his own position from mutually supporting features, to pin down the advancing force. Then, before British troops could stage a concentrated attack, the Japanese evacuated the position.

## JAPANESE 105-MM AMMUNITION

A study of Japanese 105-mm ammunition has revealed some limitations with respect to interchangeability, which will be of interest to U.S. troops who may have occasion to fire captured Japanese artillery. The results of this study have been incorporated in the chart which appears on page 54.

The chart shows the interchangeability of projectiles only. Cartridge cases for three of the guns are of different lengths, and information about the Model 14 and Model 38 guns is lacking.

It should be noted that Model 88 fuzes occur in the instantaneous and delay versions. Both Model 88 Instantaneous and Model 88 Delay may be marked either "for howitzers and mortars" or "for guns." Rounds fitted with fuzes marked "for howitzers and mortars" may be fired from guns, as well. However, fuzes marked "for guns" may be fired from guns only.

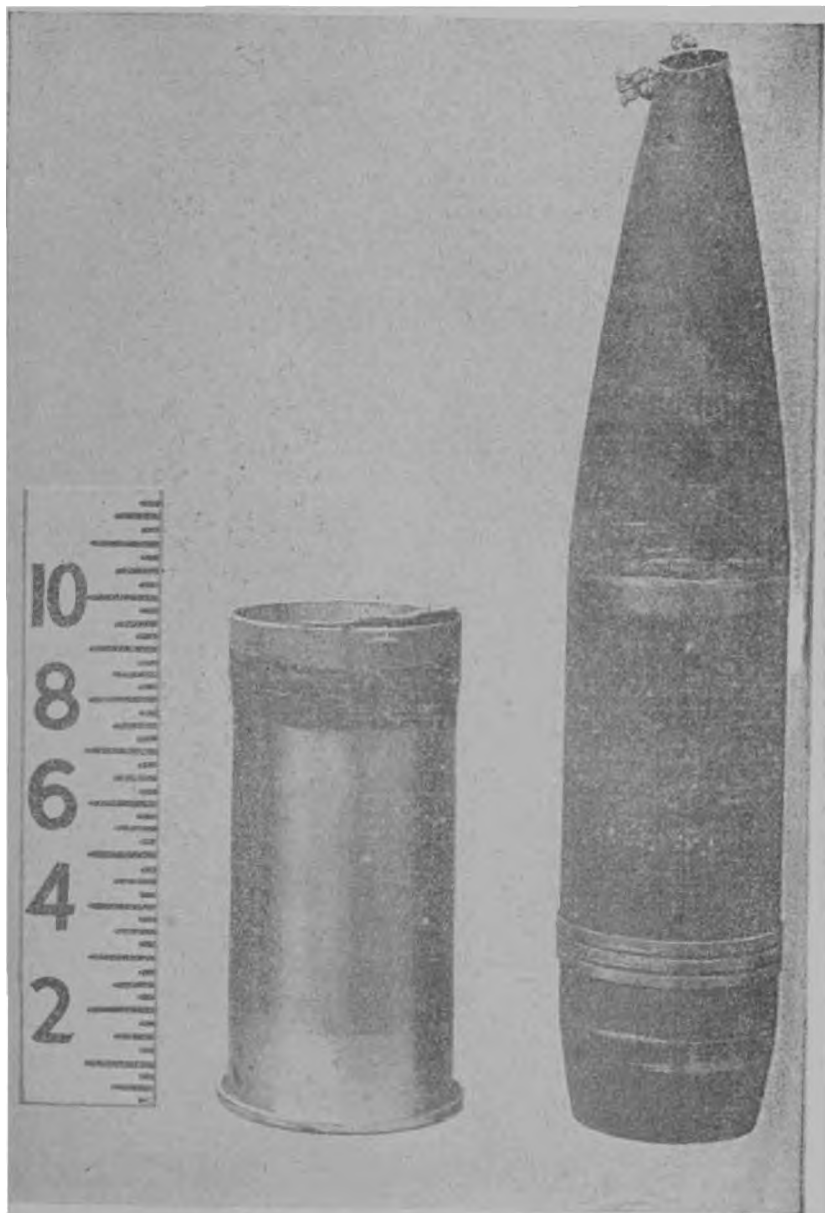
The "pointed HE rounds" are also called "streamlined projectiles." The best information available indicates that the Model 92 (1932) gun, which fires this ammunition, has a maximum range of 20,000 yards. The maximum range for the same weapon with other types of high-explosive ammunition is only 15,000 yards.

Throughout the chart the letter "M" is used as an abbreviation for "model."

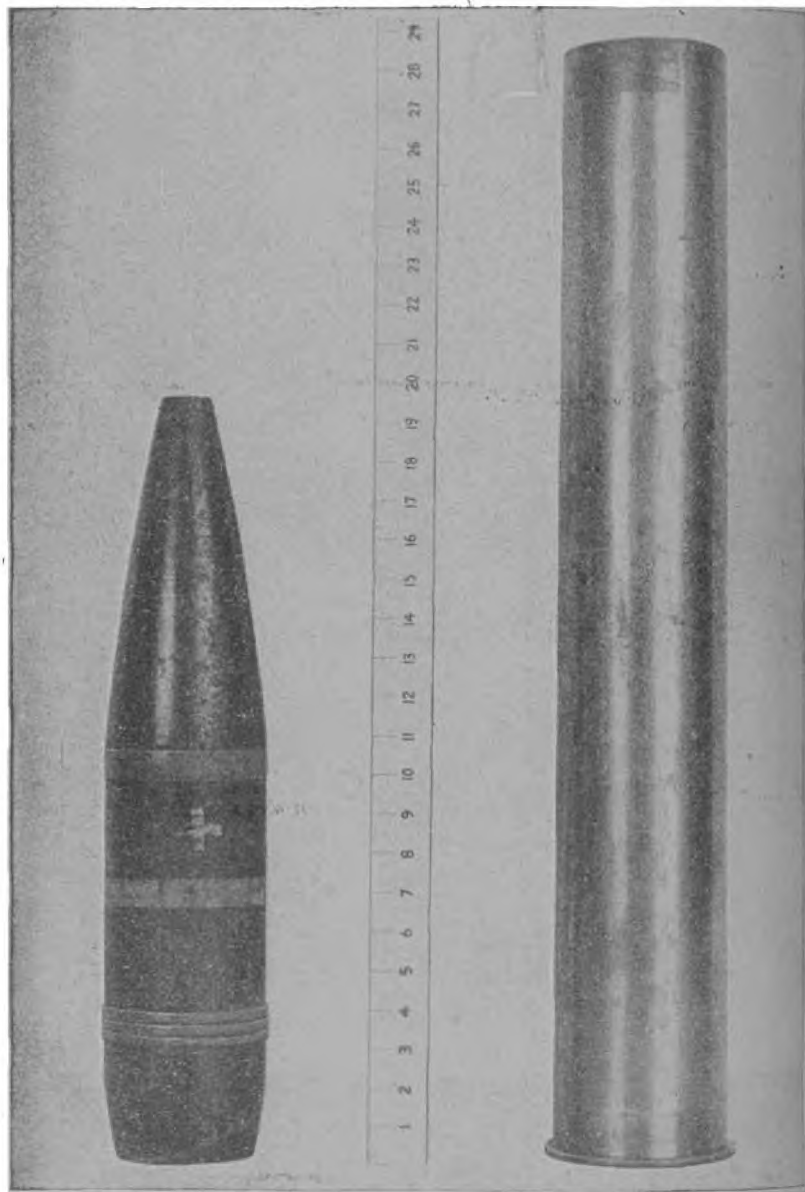
# JAPANESE 105-MM ARTILLERY AMMUNITION

Projectile	Bursting Charge	Projectile Weight (lbs.)	WEAPONS (and Length of Cartridge Case)					Standard Fuze
			M14 A/A Gun 22.26"	M91 Howitzer Approx. 9½"	M92 Gun Approx. 29"	M14 Gun	M33 Gun	
M91 AA Pointed HE	TNT (or Amatol)	35.26	Yes	No	No	No	No	M89 Pointed AA
M91 HE	TNT (or Amatol)	35.26	No	Yes	Yes	Yes	Yes	M88 Inst. and Delay
M91 HE	Ammonium Nitrate Guanidine Nitrate Cyclonite	34.91	No	Yes	Yes	No	No	M88 Inst. and Delay
M95 APHE	Picric Acid Dinitronaphthalene	35.06	No	Yes	Yes	Yes	Yes	M95 BD
M14 HE	TNT (or Amatol)	35.26	No	Yes	No	Yes	Yes	M88 Inst. and Delay
M91* HE	TNT (or Amatol)	35.26	No	Yes	Yes	Yes	Yes	M88 Inst. and Delay
M14* HE	TNT (or Amatol)	35.26	No	Yes	No	Yes	Yes	M88 Inst. and Delay
M91 Pointed HE	TNT (or Amatol)	31.71	No	Yes	Yes	Yes	Yes	M88 Inst. and Delay
M95 Pointed HE	TNT (or Amatol)	31.71	No	Yes	Yes	Yes	Yes	M88 Inst. and Delay
M95 Incendiary	Black Powder	35.26	No	Yes	Yes	Yes	Yes	M5 Combination
M95 Shrapnel	Black Powder	36.94	No	Yes	No	No	No	M5 Combination
M14 Shrapnel	Black Powder	36.94	No	No	Yes	Yes	Yes	M5 Combination
M14* Pointed HE	TNT (or Amatol)	35.26	No	No	No	Yes	No	M88 Inst. and Delay
M14 Smoke	Black Powder	35.64	No	No	No	Yes	Yes	M5 Combination
Type "A" APHE	Picric Acid Dinitronaphthalene	37.76	No	No	No	No	Yes	M88 Base (for guns)
Type "B" APHE	Picric Acid Dinitronaphthalene	39.76	No	No	No	No	Yes	M88 Base (for guns)
Type "A" Cast Iron APHE	Picric Acid Dinitronaphthalene	40.13	No	No	No	No	Yes	M88 Base (for guns)
Type "B" Cast Iron APHE	Picric Acid Dinitronaphthalene	39.67	No	No	No	No	Yes	M88 No. 2 Base
Type "C" Cast Iron APHE	Black Powder	37.17	No	No	No	No	Yes	M88 No. 2 Base
M38 Shrapnel	Black Powder	37.67	No	No	No	No	Yes	M5 Combination

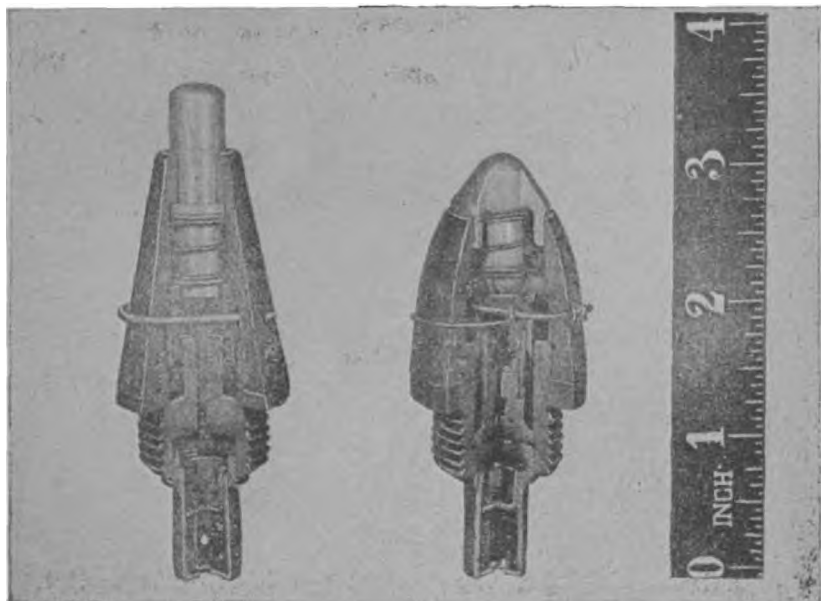
\* Referred to as "Steel and Pig Iron" by the Japanese.



**05-mm High-explosive Shell and Cartridge Case for 105-mm Howitzer.**



**Long-pointed High-explosive Projectile and Cartridge Case  
for Model 92 (1932) 105-mm Field Gun.**



**Model 88 Fuzes for 105-mm and 150-mm Guns and Howitzers.  
(Left, instantaneous type; right, delay type).**

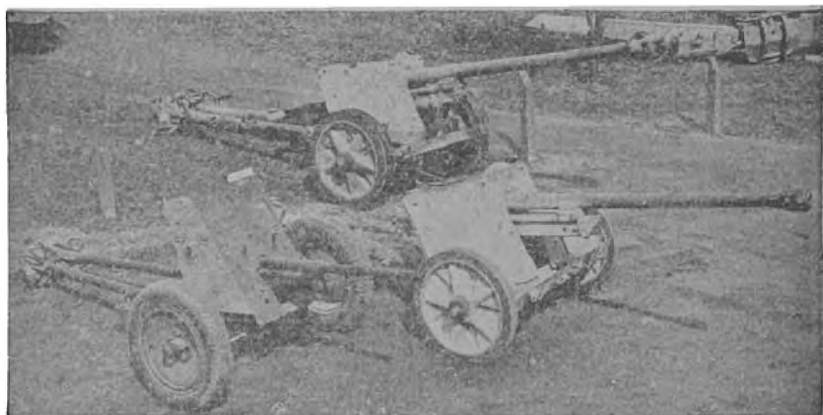


GERMANY<sup>1</sup>

## GERMAN ANTITANK WEAPONS

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German antitank weapons are divided into several classes. The main class comprises guns built specifically for antitank missions and falls into three groups—guns of conventional German design, guns built with tapered-bore tubes, and captured antitank weapons.



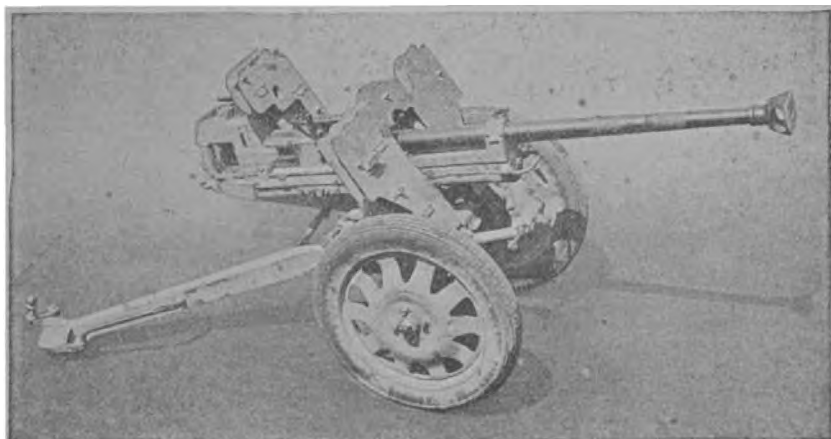
German antitank guns of the normal type. At the left is the 3.7-cm Pak; at the right, the 5-cm Pak 38; in the rear, the 7.5-cm Pak 40.

The orthodox German guns in the first group are designed to achieve armor penetration at maximum ranges by using rela-

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<sup>1</sup> In *Intelligence Bulletin*, Vol. III, No. 2, p. 19, lines 9 and 10 should read ". . . the Germans have a new 88-mm (3.46-inch) tank gun, the Kw.K. 43. . ."

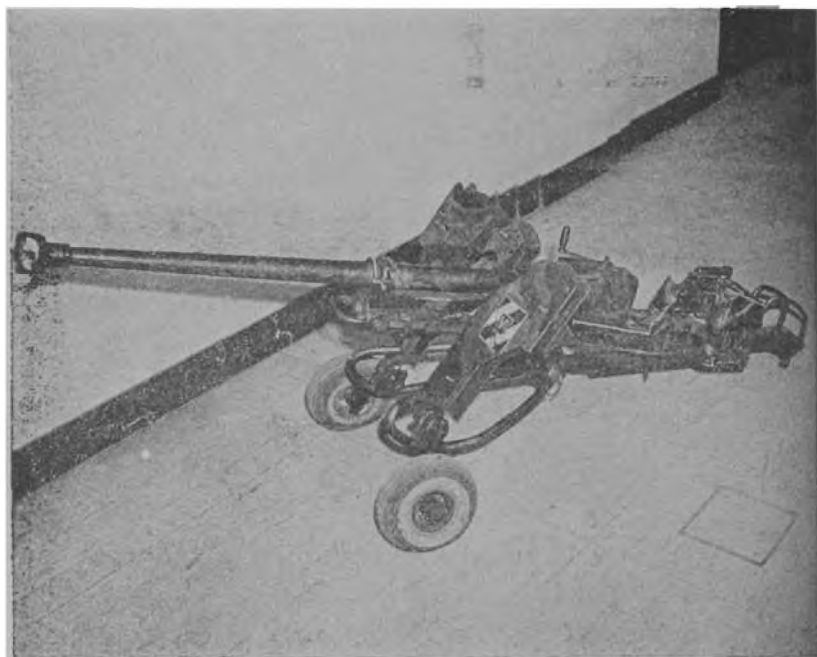
tively heavy projectiles with high velocities. The first such gun was the 37-mm Rheinmetall (the 3.7-cm *Pak*). This was too limited in power at the time of the Battle of France (1940), and was superseded by the 50-mm 5-cm *Pak* 38. This 50-mm weapon is gradually being replaced, in turn, by the 75-mm 7.5-cm *Pak* 40, which is the standard German antitank gun of today. Since the *Pak* 40 is capable of penetrating 4.43 inches of armor at 500 yards, it is considered an adequate weapon. These three guns all have similar basic features: split tubular trails, a low silhouette, and a large shield. All have been kept as light as possible to increase tactical mobility. The 50-mm and the 75-mm guns employ muzzle brakes to reduce recoil and thus permit lighter carriages. In 1944 another gun, the 88-mm



The tapered-bore 28/30-mm gun, *s.Pz.B.* 41.

#### Glossary of German Terms

- Elefant* (Elephant)—an 88-mm gun mounted on the *Panzerjäger Tiger P* (a highly modified Tiger tank chassis). This was formerly known as the Ferdinand.
- (*f*)—a French weapon officially adopted by the German forces. The letter follows the weapon designation.



**The airborne 28/20-mm antitank gun.**

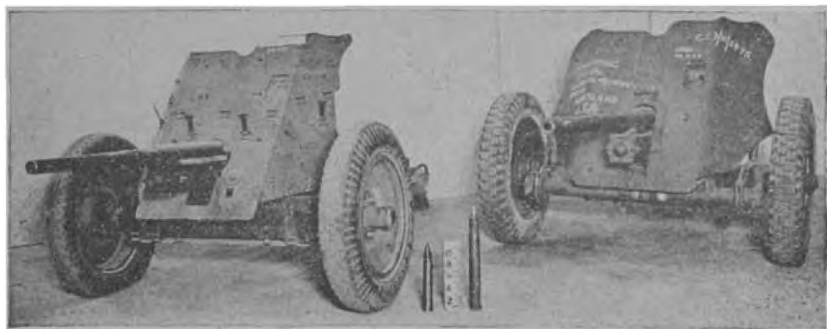
*8.8-cm Pak 43/41*, was added to this group. Although this gun is extremely powerful (it penetrates 4.4 inches of armor at 2,500 yards), its great weight on its split-trail, two-wheeled carriage somewhat reduces its mobility. Another version of this gun—the *8.8-cm Pak 43*—mounts the same tube, but on a carriage like that of the well-known 88-mm antiaircraft guns of the *Flak 18* and *36* types.

*Faustpatrone*—obsolete name for a *Panzerfaust*.

*Flak (Flugabwehrkanone)*—antiaircraft, or antiaircraft gun.

*Gr. B. (Granatbüchse)*—a special rifle for launching antitank grenades.

*Jagdpanther*—an 88-mm antitank gun mounted on the *Panzerjäger Panther* (a highly modified Panther tank chassis).



The tapered-bore 42/28-mm 4.2-cm Pak (right) resembles the 3.7-cm Pak (left).

The guns in the tapered-bore group are intended to have greater mobility than conventional guns capable of achieving identical armor penetration. Tapered-bore guns seek to achieve penetration at short ranges, using light projectiles fired at very high muzzle velocities. Tungsten, which is becoming increasingly difficult for the Germans to obtain, is necessary in the manufacture of projectiles for these guns; also, the performance of the guns in combat has been a disappointment to the Germans. All three of the tapered-bore guns bear the same date of standardization—1941. First to be introduced was the very light 28/20-mm gun 2.8-cm *s.Pz.B. 41*. So light that it can easily be

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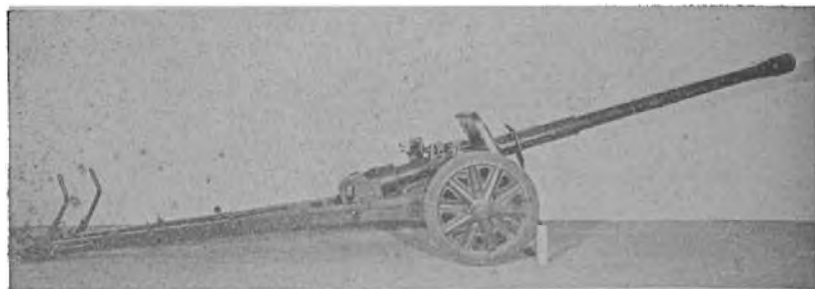
*Marder* (Marten)—name of a bird, used to designate three types of tank destroyer (*Panzerjäger*) chassis:

Marten I—the *Panzerjäger Lr.S.* chassis, which is a highly modified French Lorraine tractor chassis.

Marten II—the *Panzerjäger II* chassis, which is a highly modified *Pz.Kpfw. II* chassis.

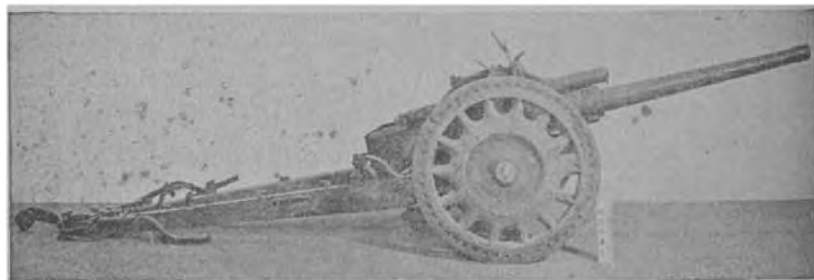
Marten III—the *Panzerjäger 38* chassis, which is a highly modified *Pz.Kpfw. 38(t)* chassis.

These chassis when designated Marten mount either the 75-mm *Pak 40* or the 76.2-mm *Pak 36 (r)*.



The 75/55-mm tapered bore 7.5-cm Pak 41.

manhandled by one gunner, the 28/20 has been used by mountain troops, who can break it up into loads and climb with it, and also has been used in an airborne version. It has been issued extensively to armored and motorized infantry as a rifle company antitank weapon. The next larger tapered-bore gun; the 42/28-mm 4.2-cm Pak 41, is mounted on a modified 3.7-cm



The French Model 1937 47-mm Gun.

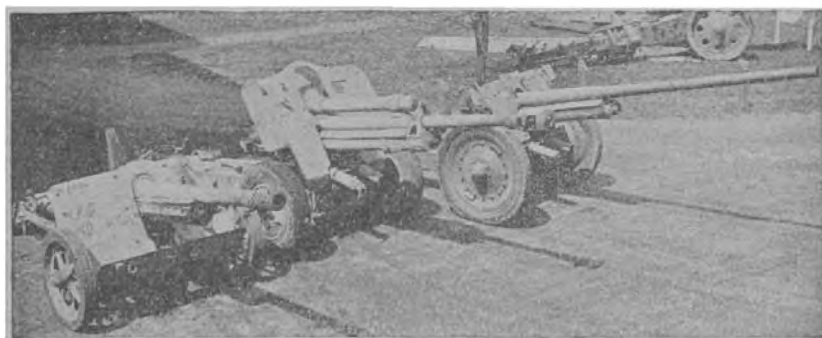
*Nashorn* (Rhinoceros)—an 88-mm antitank gun mounted on the *Panzerjäger III/IV*, and formerly known as the *Hornisse* (Hornet). (The *Panzerjäger III/IV* is a highly modified chassis made from parts of the *Pz.Kpfw. III* and *IV*.)

*Pak* (*Panzerabwehrkanone*)—antitank, or antitank gun. (*Panzerjägerkanone* is the new word for antitank guns, but the abbreviation still is *Pak*.)

*Panzerfaust*—a recoilless, one-man antitank grenade launcher. At one time *Panzerfaust* referred only to one model of launcher

*Pak* carriage; this weapon also has been used by mountain troops. The largest is the 75/55-mm 7.5-cm *Pak 41*. The 75/55 has a most unusual carriage. There is no axle; instead, the wheels are secured to the thick shield, with the gun trunnioning on the shield as well. This gun has not been issued in large quantities.

The group of captured antitank weapons includes a number of types that the German Army had seized in the course of its



Two non-German guns that the German Army uses in an antitank role are shown at the left and right. At the left is the French 75 fitted with a muzzle brake and mounted on the *Pak 38* carriage. At the right is the Russian Model 1936 field gun rebuilt as the 7.62-cm *Pak 36 (r)*. The gun in the center is the gun with which the Russians intended to replace the Model 1936; it is known as the 76.2-mm Model 1939 field gun. The Germans have fitted it with a muzzle brake, and although they class it as a field gun, they also use it in an antitank role.

*Pz.B.* (*Panzerbüchse*)—antitank rifle; if preceded by the letter “s”, a heavy antitank rifle.

*Pz.Jäg.* (*Panzerjäger*)—(1) Antitank and tank destroyer (new term).

(2) A chassis of some vehicle highly modified in order to mount an antitank gun.

*Pz.Kpfw.* (formerly *Pz.Kw.*) (*Panzerkampfwagen*)—tank.

(*r*)—a Soviet (Russian) weapon officially adopted by the German forces. The letter follows the weapon designation.

conquests. Most of these guns had been designed and built before 1940. The Germans have used them as stop-gap weapons, substituting them for the better matériel that German factories have not been able to produce in sufficient quantity. For example, extensive use is made of the French Model 1937 47-mm gun (*4.7-Pak 181 (f)*), which has an effective range of only 550 yards. However, there are two really useful and efficient weapons that the Germans have put to considerable use. One is the Soviet 76.2-mm Model 1936 field gun, which the Red Army designed with an eye to using it for antitank and even anti-aircraft purposes. The Germans have found this high-velocity gun valuable, and have modified it by adding a double shield and, sometimes, a muzzle brake. Although it is an alternate weapon with the 75-mm *Pak 40* and the 88-mm antitank guns in the German Army, the Soviets have found it too heavy and badly balanced, and have issued what they consider superior antitank and field guns to replace it. Another foreign gun favored by the German is the famous 75-mm Schneider field gun, Model 1897. Many of these have been captured from various European countries, especially from France. The Germans have modified the 75-mm Schneider by fitting it with a large muzzle brake and by putting the gun on their own 50-mm antitank gun carriage. They call the result the *7.5-cm Pak 97/38*. Since the French 75 lacks muzzle velocity, it cannot be regarded as a satisfactory modern antitank gun.

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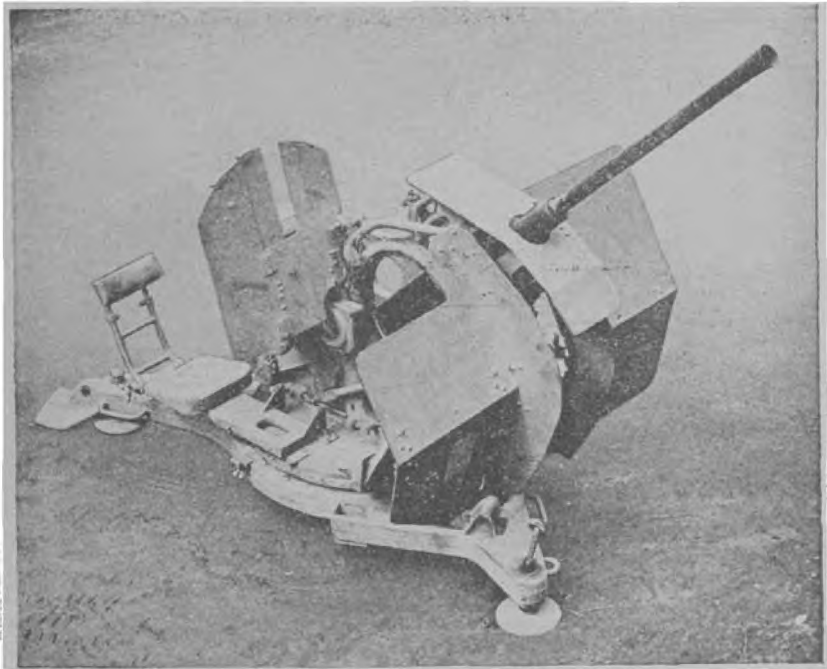
*R.Pz.B. (Raketen-Panzerbüchse)*—a rocket launcher of the bazooka type.

*s.I.G. (Schweres Infanteriegeschütz)*—a heavy infantry cannon.

*Stu.G. (Sturmgeschütz)*—an assault gun (refers to complete unit of gun and carriage).

(*t*)—a Czechoslovakian weapon officially adopted by the German forces. The letter follows the weapon designation.

A second and highly important class of antitank weapons consists of anti-aircraft guns employed in an antitank role. The high velocity of anti-aircraft guns makes them suitable for antitank missions, and, since 1940, German designers have paid special attention to the possibility that any German anti-aircraft gun may be used as a dual-purpose weapon. The smaller guns—the 20-mm *2-cm Flak 30* and *38*, and the 37-mm *3.7-cm Flak 18* and *36*—are now of little value in an antitank role because of their lack of power. They remain effective against lightly armored vehicles, and against the vision slits, ports, and optical



The 20-mm anti-aircraft gun, *2-cm Flak 38*.

apparatus of larger tanks. The newer 50-mm *5-cm Flak 41*, which resembles the 37's, is not much more effective. The 88-mm guns are notorious for their effectiveness against tanks of all sizes. These guns include the *Flak 18* series (that is, the *Flak 18, 36, and 37*) and the *Flak 41*. Those in the *Flak 18* series have mobile cruciform carriages with four outriggers, and are capable of effective fire with heavy projectiles at great ranges. They differ in minor details only. The *Flak 41* is a somewhat similar weapon, but much more powerful, having a greatly increased muzzle velocity. Introduced in 1942, it is similar to the *8.8-cm Pak 43/41* in that its great weight renders



**The 8.8-cm Flak 36, emplaced (in Russia). When this gun is off its carriage, as shown here, it can fire against aircraft. However, the Germans fit it with a shield when they intend to use it primarily against tanks.**

it less mobile than would seem desirable. Fitted with a large shield, it was designed with greater consideration for antitank fire than were the guns in the *Flak 18* series. The latter, as a matter of fact, usually are fitted with a special carriage and

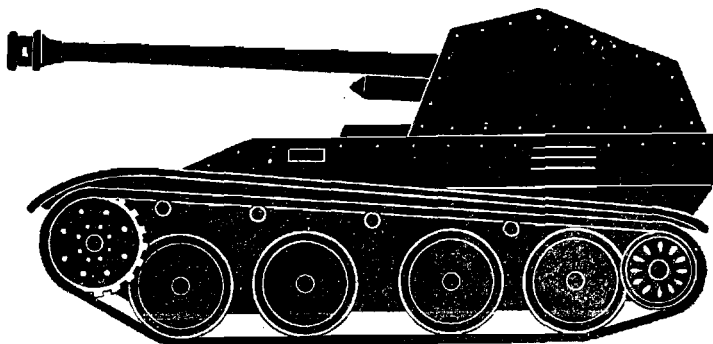


*An 8.8-cm Flak 41, emplaced (in Italy).*

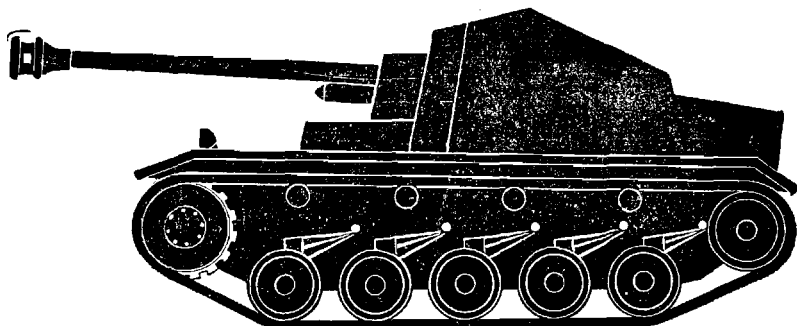
shield when they are to function primarily in an antitank role. This carriage permits a limited field of forward fire from the wheels without the necessity of emplacing the gun. A Soviet gun—the 85-mm Model 1939—has been fitted with an 88-mm liner, and is now in German service as the *8.5/8.8-cm Flak 30(r)*. This gun bears a general resemblance to those in the *Flak 18* series, and gives a similar performance.

It is notable that, in the case of most of the guns mentioned, the Germans have made every effort to cut down on weight so as to gain tactical mobility. While the use of light metals and lighter carriages through employment of recoil-reducing muzzle brakes has been general, there has been a recent tendency to retain mobility but to increase muzzle velocity by reducing the gun-tube safety factor. This appears to have been done even in the case of such heavy weapons as the 88-mm *Pak 43/41* and the *Flak 41*. The tendency has been especially noticeable in German adaptations of such captured weapons as the Soviet Model 1939 antiaircraft gun and the Soviet Model 1936 field gun, the chambers of which have been altered to take more powerful charges.

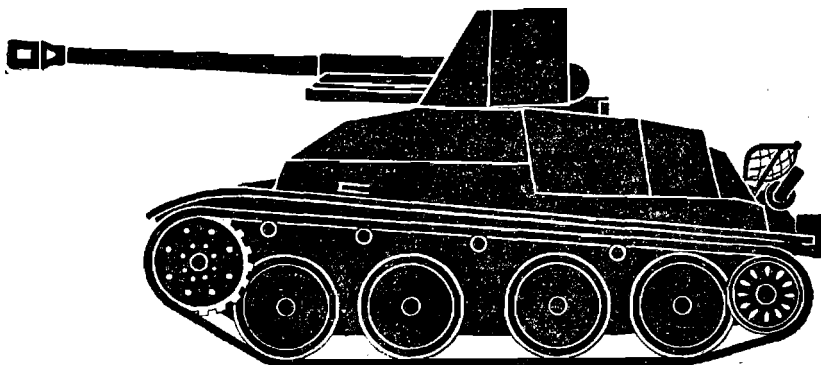
Another important class of antitank weapons is composed of the self-propelled antitank guns, or tank destroyers. These generally comprise modern antitank guns mounted on lightly armored tank chassis. Typical of the best of this class are the Rhinoceros (an 88 mounted on a modified tank chassis made of *Pz.Kpfw. III* and *Pz.Kpfw. IV* parts), the 75-mm 7.5-cm *Pak 40 (Sf)*, and the 76.2-mm 7.62-cm *Pak 36(r) (Sf)* on the *Panzerjäger II* (or *Marder II*) chassis or the *Panzerjäger 38* (or *Marder III*) chassis. (The terms *Marder II* and *III* refer to highly modified tank chassis of the *Pz.Kpfw. II* and *Pz.Kpfw. 38(t)*, with engines moved forward so that gunners can stand on the floor of the hull. *Panzerjäger* is a general term referring to all highly modified chassis for German tank destroyers.) Such changes give the vehicles a lower silhouette. They represent an advance from the period 1941-42, when the Germans quickly mounted any sort of antitank weapon on any sort of chassis. Since many of the latter types of self-propelled guns are in use



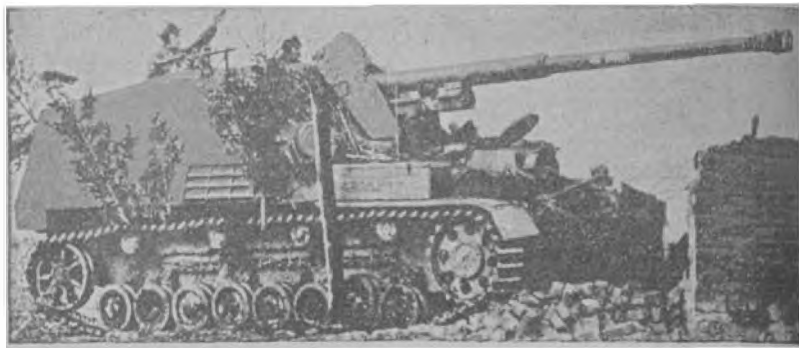
A 75-mm tank destroyer on a modified chassis—7.5-cm Pak 40  
(Sf.) auf Pz. Jäg. 38 (Marder III).



A 75-mm tank destroyer on a modified chassis—7.5-cm Pak 40  
(Sf.) auf Pz. Jäg. II (Marder II).



76-mm tank destroyer on an unmodified chassis—7.62-cm Pak  
36 (r) auf Pz. Kpfw. 38 (t).

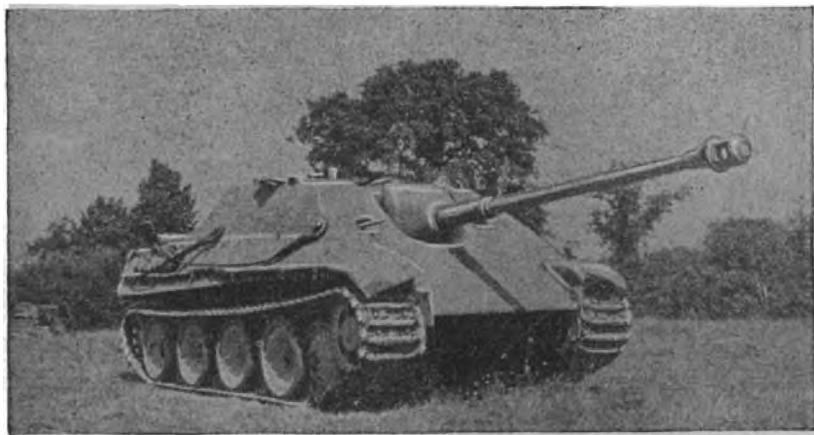


The 88-mm tank destroyer Rhinoceros.

today, it may be said that there are as many types of German self-propelled antitank guns as there are possible combinations of guns and chassis.

One of the latest and most powerful tank destroyers is the *Jagdpanther*, or *Panzerjäger Panther*. This weapon is an 88-mm gun of late design on a Panther tank chassis, suitably modified. The gun is so well armored that there is actually hard to distinguish the *Jagdpanther* from an assault gun.

German assault guns now must be listed as a class of available antitank weapons, although their primary mission is direct infantry support. The most common type of assault gun is the long 75-mm gun with muzzle brake, mounted on a *Pz.Kpfw. III* chassis. This type is known as the *7.5-cm Sturmgeschütz 40*. A big assault gun formerly called the "Ferdinand," but now known as the "Elephant," mounts an 88. It is thought that production of this heavy 70-ton vehicle may have been discontinued. German assault guns of the types mentioned have guns mounted in low armored boxes, instead of in turrets. Fire is only to the



The 88-mm tank destroyer *Jagdpanther*.

front, with very limited traverse. Armor is weak on the rear and top.

German development of the hollow-charge shell, which began as early as 1938, has permitted employment of all low-velocity infantry howitzers and field artillery in emergency antitank roles. The principle of the hollow charge is well known. Low-velocity weapons merely have to throw their hollow-charge projectiles against an armor surface. On striking the armor, the light streamlined cap of the shell is crushed. The explosive then exerts a concentrated force against a small area of the armor. The concentrated blast which results is intended to effect a penetration of the tank armor.

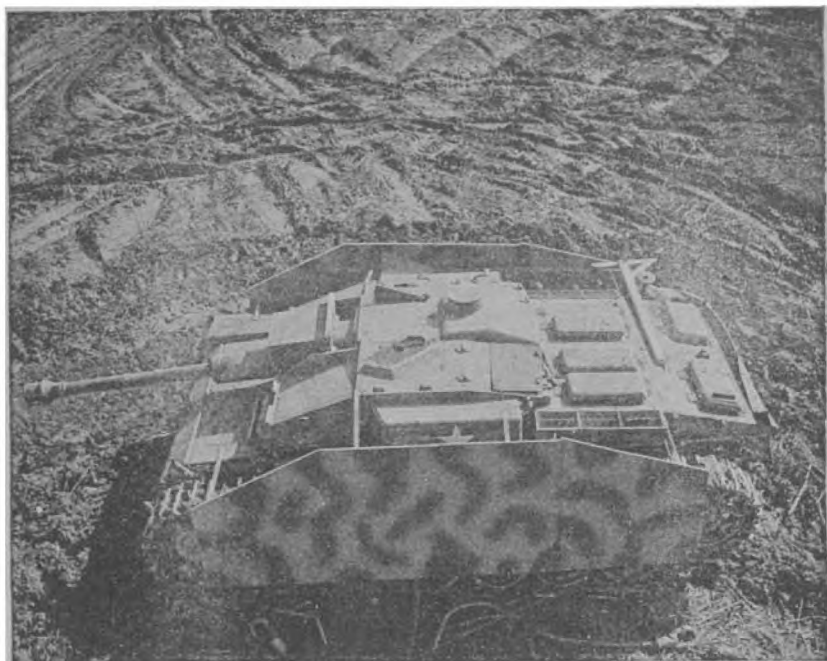
Hollow-charge shells have been furnished for standard infantry guns and artillery of German divisions of all types—in particular, the 75-mm and 150-mm infantry howitzers, the 105-mm and 150-mm field howitzers, and the 105-mm guns.



A side view of the widely used 75-mm assault gun, 7.5-cm *Stu. G. 40*.

Since many antitank guns of obsolete models still are in service, the Germans have introduced the stick bomb, another development of the hollow charge, in an effort to make the most of such equipment. Stick bombs consist of very large charges mounted on a spigot. The spigot is inserted in the gun muzzle, and the whole is propelled by firing a special blank round. Stick bombs are furnished for the 3.7-cm *Pak*, 15-cm *s. I.G. 33*, and the French Model 1937 47-mm antitank gun. Such bombs have short range and limited accuracy. The French 47, for instance, fires its stick bomb at ranges of from 200 to 275 yards only.

A most important class of antitank weapons was almost completely neglected until Germany invaded the Soviets. Only then, apparently, did the German High Command become seriously interested in the effectiveness of close-combat antitank weapons and techniques. The Germans were in such a hurry to introduce this type of warfare that the first German manuals on the subject hardly bothered to change the Soviet drawings that



**A top view of the 7.5-cm Stu. G. 40. This is a slightly earlier model than the one shown in the preceding photograph. Removable anti-bazooka/antitank grenade plates are in place.**

they copied. As a result, German soldiers studying antitank close combat were created to illustrations which showed Soviet troops successfully demolishing *Pz.Kpfw. I's* with all varieties of close-combat weapons.

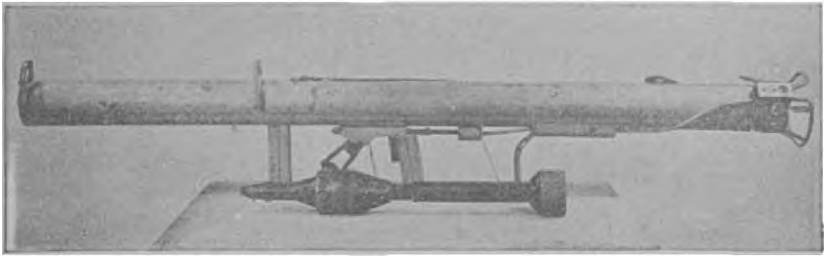
Prior to the Russian campaign, the Germans had issued a company antitank weapon—the 7.9-mm antitank rifle. But after the Russian campaign had got under way, the Germans began to convert this weapon into a grenade launcher which could fire hollow-charge antitank grenades.



**The antitank rifle modified into a grenade discharger.**

Readers of the *Intelligence Bulletin* already are familiar with the simpler devices used in close antitank combat—Molotov cocktails, bottles of phosphorus, sliding and hand-thrown mines, magnetic hollow charges, sticky bombs, and weapons of a similar nature. Readers also are familiar with such weapons as the antitank hollow-charge grenade which can be launched from the standard rifle, and with the signal pistol fitted to fire hollow charges. However, the non-recoil weapons of the bazooka type—a most important group—have not yet been discussed.

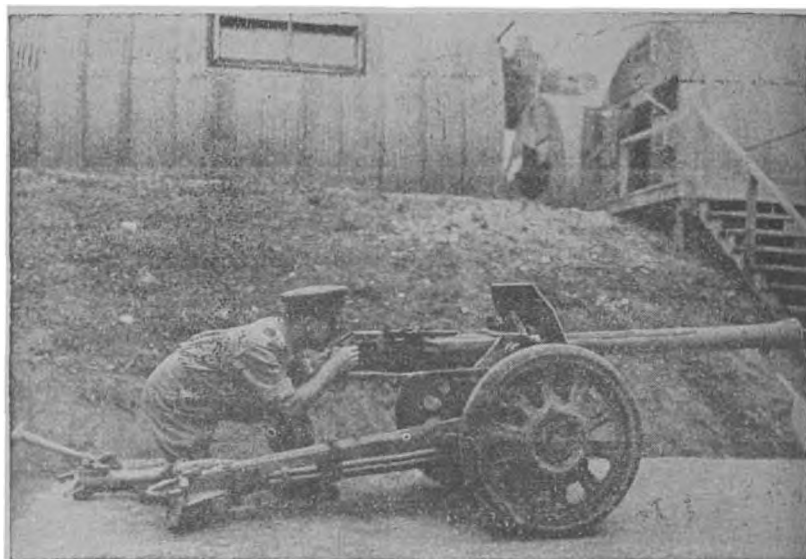
Of this group the first weapon to be adopted was a frank copy of the bazooka. The larger German version is called the *8.8-cm Raketenpanzerbüchse 43*, or *Ofenrohr* (stovepipe) for short. Sometimes it is called the *Panzerschreck*—(tank terror). The *Ofenrohr* fires an 88-mm hollow-charge projectile weighing 7 pounds. The maximum range is about 165 yards. The *Ofenrohr* is clumsier than the bazooka, and is reputed to be less accurate.



The *Ofenrohr*, with the projectile used in it and in the *Püppchen*.

The *Püppchen* ("Dolly"), a carriage-mounted rocket launcher with breechblock also fires the 88-mm rocket. Although the *Püppchen* has wheels, the gun can be fired from little sleighs to achieve a very low silhouette. While the *Püppchen*, has a range of 770 yards, is very lightly built, and is likely to smash up when towed by motor vehicles.

The great majority of the non-recoil weapons are devices known as *Panzerfaust*. There are three of these—the little *panzerfaust klein 30* (formerly the *Faustpatrone I*), the *Panzerfaust 30* (formerly the *Faustpatrone II*), and the *Panzerfaust 60*. The little *Panzerfaust* is called *Gretchen* for short, while the 30 is known simply as *Panzerfäuste*. The tubes are similar, and have a sight and firing mechanism. They are 1¾ inches in diameter and 2 feet, 7½ inches long. The projectiles are very large hollow charges. The charge for the *Gretchen* weighs 3 pounds, 4 ounces; that for the *Panzerfaust* weighs 6 pounds 14 ounces. Each is mounted on a wooden tail rod fitted with spring-steel vanes. These vanes wrap around the rod when the rod is inserted in the muzzle of the launching tube, and spring out to guide the projectile after firing. The tubes are expendable, and contain



*The Püppchen*

the propelling charge fired by percussion. The range is very limited, and is indicated by the designation (*30* means 30 meters range, or 33 yards; *60*, 66 yards). The operator must take cover after discharging a projectile. Also, he must wear a helmet as protection against a rain of fragments and debris, keep his eyes closed, and keep the front edge of his helmet against the ground. The jet of flame to the rear is fatal up to 10 feet; the operator must take this into account when firing, and make sure that no walls or other obstacles will block the jet. The tubes are held under the right arm. The left hand supports the front of the tube, while the right hand is free to pull out the safety pin, cock the striker, and press the release button. Sighting is effected by aligning the top of the sight and the top edge of the projectile.

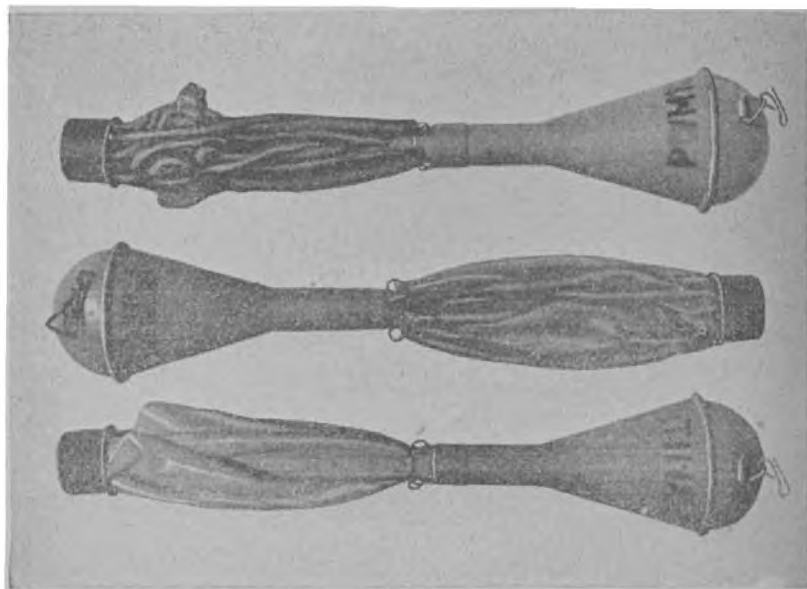


The *Panzerfaust 30*, with sight raise and projectile shown separately. The projectile vanes are extended.

To date, all the *Panzerfäuste* have proved dangerous to the user. It is believed that every effort will be made to improve them—



A U. S. soldier demonstrates the *Panzerfaust klein 30*.



Three *Panzerwurfmine*, with vanes folded.

especially with regard to increasing the range. Armor penetration is good; the Germans claim as much as 7.9 inches for the *Panzerfaust 30*. It is estimated that actual penetration is around 6 inches.

Since Allied airpower has curtailed the mobility of German antitank guns, the Germans have been compelled to place great stress on the *Ofenrohr* and the *Faustpatrone*. Large quantities of these have been issued. The *Ofenrohr* is chiefly a regimental antitank company weapon, but the *Faustpatrone* is furnished on a generous scale to each rifle company. Reports from the field indicate that the *Faustpatrone* has been especially well liked by German soldiers.



Demonstration throwing of the *Panzerwurfmine*.

An even more recent development is the *Panzerwurfmine*. This is a hand-thrown hollow charge; it is similar in size and shape to the *Faustpatrone* projectiles, except that its vanes are made of cloth.

## FOUGASSE FLAME THROWERS

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The first recorded use of fougasse flame throwers in this war was in Soviet static defenses around Moscow in 1941. These fougasse flame throwers were remote-controlled cans with nozzles designed to be embedded in the ground and set off from a distance. Since the Germans have been on the defensive, they have used similar flame throwers.

The German type of fougasse flame thrower resembles the Soviet type. The cylindrical body, which carries the fuel, is of heavy cast-iron, with a height of 21 inches and a diameter of  $11\frac{3}{4}$  inches. It has a capacity of about 8 gallons of fuel. The fuel fills the greater part of the body, the upper part being reserved for a pressure tank. This space is separated from the fuel compartment by a baffle plate. Pressure is generated by a propellant located in a tube screwed on a nipple in the upper surface of the flame-thrower body. The propellant is ignited by electricity. As it burns, the gases thus generated mass in the pressure chamber and, passing through the baffle plate, force the fuel out of the tube. As the fuel leaves the nozzle, it breaks a light metal seal, and is ignited by an electrically detonated squib located beneath the nozzle.

In practice, fougasse flame throwers have been found emplaced behind and among mine fields and barbed-wire entanglements. They are dug-in, and are covered with stone, earth, or other local natural materials so that only the nozzle shows. Proper camouflage of the nozzle makes detection difficult. In



A fougasse flame thrower which has just been lifted from its emplacement.



**A fougasse flame-thrower emplacement, partly uncovered, showing the control wires leading to a central switchboard.**

Italy, as many as seven flame throwers have been emplaced together. Groups are controlled from a central switchboard, from which run four wires to each flame thrower. Sometimes the group may be emplaced in line at 30-yard intervals to give parallel lanes of fire. A prisoner has said that the principle of such arrangement is to site the flame throwers so that the cones of fire (15 yards wide at 40 to 45 yards) combined with intense heat between the cones, would produce in effect a wall of fire. In France, fougasse flame throwers were reported to have been set from 23 to 28 yards apart with nozzles aimed to give cross-fire. Reports by French officers and noncoms who have encour-



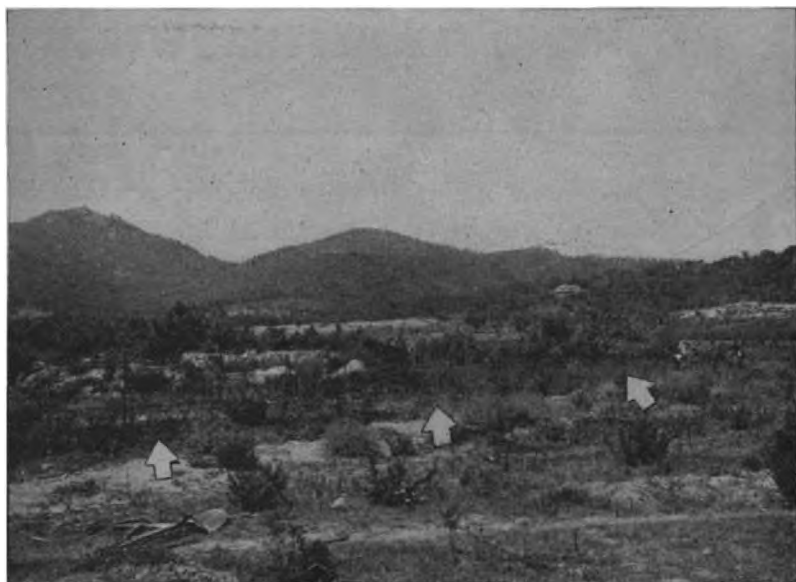
**A fougasse flame thrower emplaced under a barbed-wire entanglement. Only the nozzle and propellant cylinder show above ground.**

tered the fougasse flame throwers state that the estimated jet of flame was 5 yards wide and 3 yards high, and that the range was 5 to 15 yards. Heat was intense 10 yards from the jet. The duration of the burst was only 1 to 1½ seconds.

While flame throwers of this type may have a temporary psychological effect, it can be seen that they suffer from limited range and very limited endurance. Direction of fire must be predetermined, and it is unchangeable in action. The weapons are extremely mobile. Their control wires are subject to damage by preparatory mortar and artillery fire. While luck might



**The central switchboard for the fougasse flame throwers shown in the preceding photographs.**



**The terrain in which the fougasse flame throwers in the preceding photographs were emplaced. Ten flame throwers are situated along a barbed-wire entanglement indicated by the white arrows.**

bring about a few instances of considerable success, the general tactical value of the fougasse flame thrower is slight. As a weapon of fixed defenses, it may be classed with the anti-personnel mine and the booby trap.

# TACTICS OF PERSONNEL CARRIERS MOUNTING FLAME THROWERS

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The official German Army directive which is paraphrased below discusses the tactics of the armored half-track flame-thrower vehicle (see fig. 21). This is the medium personnel carrier used in Panzer Grenadier units, fitted with two large flame throwers and one small flame thrower, in addition to the regular machine-gun mounts at the front and rear.

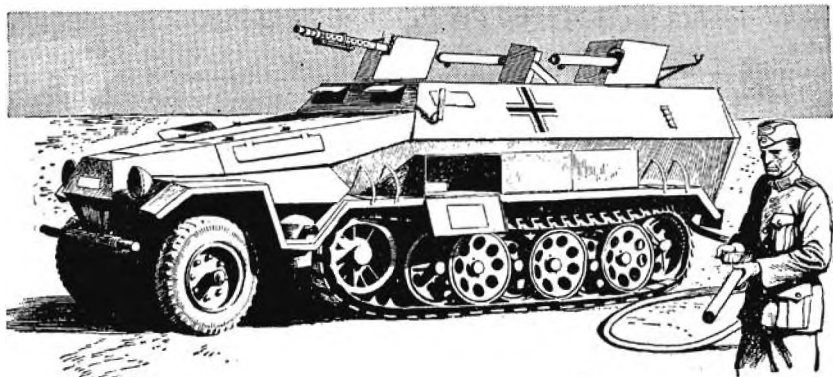
A large flame thrower is mounted in a V-shaped shield on each side of the vehicle. The small flame thrower on the back of the vehicle is simply the cartridge ignition projector used in the small portable flame thrower; this projector is attached to one end of a 33-foot length of hose, which connects it to the propulsion unit and fuel tank. Tanks situated next to the side armor plates, in the interior of the vehicle, carry 154 gallons of flame-thrower fuel. A small gasoline engine and a pump, used to propel the fuel, are situated in the center of the interior.

The effective range of the large flame throwers is about 40 yards, whereas that of the small equipment is unlikely to exceed 30 yards. The fuel carried is sufficient for about 80 bursts, each lasting from 1 to 2 seconds.

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1. The medium armored flame-thrower vehicle is a close combat weapon of the Panzer Grenadiers. It is used in the offensive when the other weapons used from the vehicle do not promise to be sufficiently effective.

2. In addition to employing its machine guns against personnel at ranges of as much as 440 yards, the vehicle may direct flame against



**Figure 21. Armored Half-track Flame-thrower Vehicle.**

personnel and static targets at ranges of as much as 40 yards. If the flame does not destroy hostile troops, it should at least force them to leave their cover. Attacks with flame are particularly effective in mopping up ground quickly, in liquidating hostile soldiers who put in a sudden appearance near the vehicle, and in destroying hostile personnel in hasty permanent field fortifications.

3. These flame-thrower vehicles normally are employed by whole platoons, and always in close cooperation with mounted Panzer Grenadier units in the attack.

4. For combat in fortified areas, attacks on permanent fortifications, and so on, the vehicles may be employed singly, under the command of mounted Panzer Grenadier platoons. When the latter dismount, the flame-thrower vehicles will be left behind with the armored personnel carriers.

5. It is forbidden to use these vehicles like infantry tanks or assault guns, as "point" vehicles on the march or in action, for protective duty, or as independent patrol vehicles.

6. In the pursuit, the platoon will support local and prepared counterattacks by mounted Panzer Grenadiers.

7. Every effort must be made to employ the platoon as a whole, for greater effectiveness.

## TACTICS

1. Preparations for the attack (terrain estimate, tactical reconnaissance, protective duties, camouflage, and so on) follow the same principles as are observed by tanks and Panzer Grenadiers.

2. In the attack the flame-thrower vehicles move in extended order behind the mounted Panzer Grenadier units. The action normally is opened by machine-gun fire. Covered by the fire of other weapons, as well as by the weapons in the personnel carriers themselves, the flame-thrower platoon will break into the hostile position.

3. If the opposition remains under cover, it will be burnt out. Bursts of fire from the flame throwers should be projected only against those targets which definitely are within range. To fire flame bursts indiscriminately, before reaching the opposition, merely wastes fuel and obscures vision.

4. It is important to direct the flame against the bottom of the target first and then work up, so that hostile personnel who may have close-range antitank weapons in readiness will be destroyed.

5. The type of target and the course of attack will determine whether fire is to be opened while on the move or at the halt.

6. Trenches will be crossed and engaged from the flank. Tree tops, roofs, and raised platforms may be set afire if the presence of hostile soldiers is suspected.

7. If a large conflagration is desired, the target first will be sprayed with oil and then ignited by a burst of fire. This is especially effective when attacking dugouts, trenches, entrances to pillboxes, and — of course—wooden buildings.

8. Fire will not be opened in thick, natural fog, except by special order.

# WITHDRAWAL TACTICS IN ITALY

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From time to time, U. S. enlisted men who are fighting the Germans in Italy provide the *Intelligence Bulletin* with helpful first-hand information regarding the tactics and weapons of the enemy's small units and of the individual German soldier. This month a number of noncoms who have been in action in various combat areas of the Italian theater furnish us with some fresh information about enemy combat methods and also corroborate information previously reported.

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## Patrols

"The Germans sometimes use suicide squads of about 50 men to determine the strength of an Allied position. I have observed this procedure on several occasions. One instance is particularly worth noting. Our patrol was holding a hilltop. The Germans knew the approximate location, but did not know our strength or fire power. The enemy sent a patrol of about 50 men to determine our strength. One of our outposts succeeded in spotting the German soldiers while they were some distance away. From the Germans' behavior, the outpost deduced that an officer was giving them instructions. Since their advance was anticipated, we were ready for them when they approached. The 50 men were so deployed that the distance from the left flank to the right flank measured no more than 75 yards. The Germans approached through the darkness, making no very great effort to maintain

silence. As a result, it was possible to hear them while they were still some distance away. We allowed them to reach a point about 30 or 40 yards from our line, when we opened up with everything we had. The Germans, who were directly in front of my company, returned the fire. Since they lacked good cover, about 20 or 25 were killed. Soon the others had to seek cover. The balance of the patrol did not surrender until they had been brought out of hiding by white-phosphorus grenades.”

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### **Engineer Ruses**

“While we were clearing mines from a beach, I found a number of Tellermines embedded in the sand. About 6 of these mines had been laid fairly close together, and when these 6 were detonated, a field of about 25 or 30 mines exploded simultaneously. The entire group had been connected with primacord to produce this result. As our work progressed, we found that the Germans had gone in extensively for this method of booby-trapping.

“On one occasion, at the Rapido River, my company had cleared a road through a minefield and had marked the clearing with tapes. Our unit moved ahead without leaving a guard at the clearing. During the night the Germans infiltrated into the area. They discovered the tapes, moved them some distance from the clearing, and set them up again, marking a road directly through a minefield. The Germans were well aware that an infantry advance the following morning would have to be delayed until engineers could clear another pathway for the advance.”

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## Machine-gun Tactics

“The Germans are strong believers in automatic weapons, and use them in greater numbers than we do. The Germans seem to operate on the theory that if they fire enough ammunition into an area occupied by our troops, they are bound to inflict enough casualties to make the expenditure profitable. whether or not they aim.

“Enemy machine-gun positions sometimes consist of two concealed guns sited to provide converging fire and a third, less well concealed, off to one side. An observer is posted between the two concealed machine guns. The third machine gun is fired in a deliberate effort to attract attention, and tracer bullets are used. The other two guns remain silent. This ruse is intended to deceive Allied troops into thinking that they face only one machine gun and that they have spotted this position accurately enough to warrant an attempt to take it. The two concealed machine guns await just such an attempt, with the hope of causing many casualties by surprise fire.

“The Germans experience considerable difficulty in holding down their machine pistols and machine guns. Generally speaking, the first few rounds of a burst are at the desired height, and then the remainder are too high.

“Often enemy machine guns are sited in groups of three across a suitable route of advance for an Allied force. The intention is to permit an advancing Allied squad to reach a point about even with the flanking guns, which are forward of the center gun, the latter forming the apex of a triangle. A flanking gun opens up, and when the Allied soldiers direct their attention to the gun, the one dead ahead starts firing. Usually the third gun will wait until the Allied soldiers have moved far enough

forward to permit it to place fire on them from the rear. The German idea is that even after our men succeed in silencing one or two of the guns, the third still may make the Allied advance a costly one.”

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### **Combat in Hilly Terrain**

“In hilly terrain the Germans make special efforts to keep tabs on the movement of Allied forces. A system of listening posts seems to be maintained. Using tracer bullets, the Germans fire machine pistols toward the U.S. troops moving in the hills, and German mortars immediately begin shelling the spots indicated by tracer.

“The German combat patrols I’ve encountered have consisted of from 9 to 16 men armed with machine pistols, light machine guns, and light mortars. I’ve noticed that these patrols fan out and allow only one man to fire at any one time, so as not to disclose the whereabouts of the rest of the patrol. Also, I’ve observed that German patrols don’t skimp on the quantity of ammunition they carry.

“German outposts use colored flare signals to call for mortar or artillery fire. The colors don’t always mean the same thing—that is, in the areas where I’ve been in action. German artillery and mortars are able to ‘zero in’ an attacking force almost immediately after the signal flares have been sent up. As soon as we found this out, we were prepared to meet an artillery or mortar barrage whenever we saw flares of a significant color or colors.”

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### **More on Target Designation**

“The Germans use their machine pistol as a means of communication. For example, I’ve observed that a German patrol might fire two or three bursts, which would be answered a few seconds later by other machine pistols in different areas along the front and behind it. Later the nearest German patrol would fire tracer bullets over a certain area, and then, after approximately 4 or 5 minutes, the Germans would place heavy mortar fire on the area indicated by the tracer. It was the consensus of opinion among the men in our platoon that a German patrol would spot a target and then communicate with German mortars and artillery, pointing out the exact location of the target.”

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### **Cover Trap**

“Thirteen other men and I had just reached a prepared ditch, which the Germans had deserted. We were about to start digging foxholes in the ditch when German 88’s suddenly began firing on us. I am of the opinion that the Germans deliberately prepared these ditches with the intention of luring U.S. troops into using them and of placing registered fire on us as soon as we did so. The 88’s were fired in bursts of five, always followed by a lull of about 10 seconds. This lull was general, and would seem to indicate that all the guns were loaded and fired simultaneously. It was during one of these lulls that I managed to escape from the ditch.”

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## IN BRIEF

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### MORE NOTES ON MACHINE-GUN TACTICS

Useful information is at hand regarding the German section of two light machine guns, such as is found in the infantry regiments of the Panzer and Panzer Grenadier divisions.

For operation purposes, a section of this type is divided into two parties, an assault party (*Stosstrupp*) and a support or covering party (*Deckungstrupp*). The assault party consists of one light machine gun and its crew, a rifle-grenade launcher, and four riflemen with hand grenades. The party's mission is to make the final assault on a hostile position. It is supplied with extra ammunition, including belt drums for the light machine gun, so that a very heavy rate of fire combined with rapid movement can be achieved in the decisive moments of the attack. The covering party, with the second light machine gun, remains behind to provide supporting fire. A sharpshooter, with a sniper's rifle equipped with a telescopic sight, has the special mission of pinning down (*niederhalten*) hostile movement and observation.

The tactical procedure for the platoon of six light machine guns, to which this double machine-gun section belongs, follows the same pattern as that of the regular infantry platoon; however, the manner in which a platoon of the former type advances in terrain like that of Normandy should be of interest. One section is deployed as an advance screen, with its two light machine guns on the flanks. The two other sections follow in echelon, each with one of its light machine guns in the rear. This

formation is designed to permit a thorough combing of wooded or otherwise broken terrain and the speedy preparation of a defensive "hedgehog" in the event that the platoon is outflanked or surprised from the rear.

## **ENGINEER ASSAULT SQUAD**

The manner in which German engineer assault squads are trained to attack pillboxes suggests that the same methods may be used against prepared positions. It is useful to know something of these methods, in view of the German belief in counter-attacking positions captured and held by Allied forces.

It is known that for a field exercise in which a pillbox was to be attacked, an assault squad of a German engineer battalion was armed as follows:

Squad leader (probably a sergeant): machine pistol, automatic rifle, 2 stick grenades, 3 egg grenades, 2 smoke grenades, and 1 pair of wire cutters.

Smoke crew (Nos. 1 and 2): for each man—a rifle, 4 egg grenades, 4 smoke grenades, and 10 smoke pots.

Wire-cutting party (Nos. 3 and 4): for each man—a rifle, 7 grenades (unspecified), 2 Bangalore torpedoes, and a pair of wire cutters.

Pillbox assault party (Nos. 5, 6, and 7): for each man—a rifle, 7 grenades (unspecified), and 2 pole charges.

Flame-thrower crew (Nos. 8 and 9): for each man—a pistol and a rifle; No. 9 carried 7 grenades (unspecified), while No. 8 carried the flame thrower and 5 grenades.

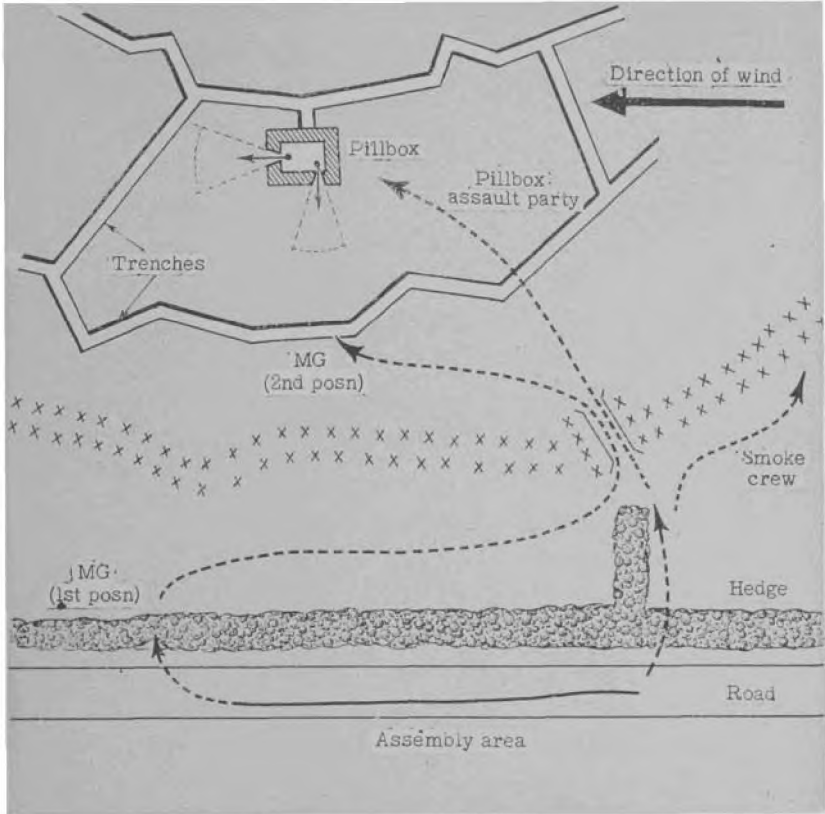
Machine-gun crew (Nos. 10, 11, and 12): armament unspecified, but probably consisted of 2 pistols, a rifle, and possibly a few grenades, in addition to a machine gun;

when a machine gun is not employed, these men remain in reserve and serve as ammunition carriers.

The squad assembled on the road shown in Figure 22. After reconnoitering the terrain, the squad leader selected the position for the machine gun and the point where a path was to be cut and blasted through the wire. He then gave his orders to the rest of the squad.

The machine gun crew took up its position on the left flank, and covered the embrasures of the pillbox, while the smoke crew took up a position, dictated by the direction of the wind, on the right flank. When a smoke screen had been laid, the wire-cutting party cleared a path through the wire and called to the others, "Path here!" The wire-cutting party then advanced to the first trench to mop up, followed closely by the pillbox-assault party and the flame-thrower crew. The machine-gun crew advanced through the gap, while the smoke crew covered the right flank. The flame-thrower crew worked its way forward, and directed flame against the embrasures of the pillbox. As the fuel neared exhaustion, the No. 8 man shouted, "Last burst!" The pillbox assault party then placed charges in the embrasures and against the door, and detonated the charges. After the second trench had been stormed, the entire squad assembled there to await further instructions.

One of the most interesting aspects of this field exercise is that the squad leader took his men forward and reconnoitered the terrain and the point to be attacked. The implication is that the Germans foresee an assault of this type as useful in an advance against a hostile prepared position, as well as in an attempt to neutralize a troublesome pillbox. Presumably the Germans anticipate that when one of their forward infantry companies has



**Figure 22. An Engineer Assault Squad Attacks a Pillbox.**

been pinned down by fire from pillboxes or prepared positions, the assault squad should be brought forward to knock out such opposition and to permit the advance to be resumed.

Such a mission might be performed equally well by a specially trained squad from the assault companies and platoons now being organized as regimental troops on the Italian front.

At present, however, there is no evidence that these units have all the necessary equipment, although a very few are known to have flame throwers or to have undergone flame-thrower training.

## S-MINES IN GRAINFIELDS

Figure 23 illustrates how "S" mines were concealed in grainfields in the vicinity of Cetona, in Italy. The Germans laid the mines at odd intervals, quite far apart, and mostly in or beside the existing farm-vehicle tracks along the edges of the fields. In one place a vehicle had been run through a field, and after this, "S" mines were laid in the tracks. The mines were laid with strands of grain pressed across the top of the 3-prong igniter and the prongs bent over them.

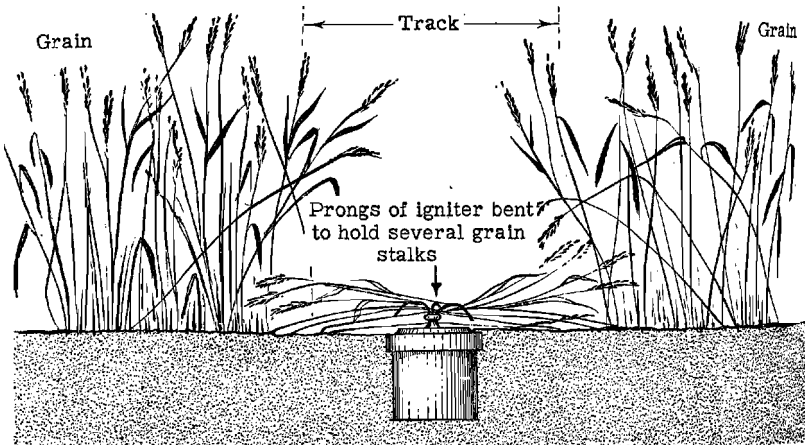


Figure 23. An S-mine Concealed in a Grainfield.

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