

VOL. II NO. 12

AUGUST 1944

INTELLIGENCE BULLETIN

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Each year the August issue of the *Intelligence Bulletin* contains an index to articles which have appeared during the past 12 months.

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JAPAN

RECONNAISSANCE METHODS

The Japanese continue to make extensive use of what they call "scouting parties." However, the enemy draws a sharp distinction between parties sent out with the primary mission of reconnoitering for information, parties detailed to form part of a sentry line, and parties dispatched for the purpose of undertaking combat reconnaissance. In the course of his training, the Japanese noncom is fully instructed in the tactics of all three types of scouting parties, any one of which he may be called upon to lead in the field. Japanese training calls for scouting parties to be approximately of squad strength, although for combat reconnaissance the enemy sometimes makes use of combat outposts. Combat outposts, which are discussed later in this article, vary in strength, and sometimes are as large as a company.

A SCOUTING PARTY RECONNOITERS

The leader of a Japanese "scouting party" which is to reconnoiter for information¹ gives orders as to what type of clothing is to be worn and what arms are to be carried. (Japanese doctrine recommends that as many

¹The nearest U. S. equivalent is the reconnaissance patrol.

light machine guns as possible be provided.) The leader designates a second-in-command, and assigns an observation mission to each man.

If the party believes itself to be some distance from a hostile force, the advance is made by bounds, from one promising observation point to another, with the leader in front and his second-in-command in the rear.



Birds in sudden flight are observed, and the direction of flight is noted.

If it is believed that contact with a hostile force may be established, the leader assigns new missions, with much smaller and more compact fields of observation.

When the leader reaches a spot which affords complete cover, he may halt and allow the party to assemble. This enables him to keep in fairly constant touch with his men. Discussing their observations, they speak in low whispers. They compare evidence of the most detailed kind, such as the odor of smoke considered in relation to wind direction, and any unusual activity on the part of wild animals and birds.

If Allied soldiers are encountered, the party's next move is determined largely by its mission. If the opposition consists only of a scout or two, or a weak reconnaissance patrol, an attempt will be made to take prisoners. However, if a stronger force is encountered, the Japanese try to detour around it and hurry back to report their observations.

COMBAT RECONNAISSANCE

It is a Japanese principle that combat reconnaissance be undertaken by a scouting party approximately of squad strength or by a combat outpost, depending on how much opposition the Japanese estimate the party may meet in the execution of its mission. Japanese companies employ combat outposts equal in strength to a platoon, while battalions employ combat outposts approximately of company strength.

After a careful preliminary observation of the terrain, the scouting party advances from one place of concealment to another. When the presence of hostile soldiers in a locality is suspected, that locality is fired upon promptly. The Japanese have been taught that if they act in too deliberate a manner, a target may take advantage of the terrain and slip away.

If the party itself is fired upon, the men instantly throw themselves on the ground and attempt to crawl to cover. They try to determine the point from which the firing has come, and, if they believe they have detected it, they report their conclusions to the leader. Observation is then conducted either by the leader or by sharpshooters whose rifles are equipped with telescopic sights—men who have been chosen expressly for this purpose. From the moment the first sound of hostile fire is heard, each Japanese soldier tries to watch not only the spot from which he suspects the firing has come, but also his leader and his fellow soldiers. As far as possible, the Japanese communicate by means of hand signals.

At each burst fired by Japanese heavy weapons or by other neighboring Japanese units—should such support be provided—the party makes the most of the distraction and works its way forward. Similarly, if the opposition is suddenly forced under cover by any circumstance—such as the sudden appearance of Japanese planes—the individual members of the scouting party move forward. The Japanese soldier is supposed to make the most of such opportunities without waiting for any authorization from the leader. All the members of the party are expected to advance simultaneously so that they will not lose contact with each other.

As to targets, the Japanese regard hostile commanders, forward observers, runners, heavy weapons crews, and machine gun nests as particularly dangerous, and give them priority.



"—the party makes the most of the distraction and works its way forward."

In performing combat reconnaissance, Japanese scouting parties pay special attention to individual camouflage. It is interesting to note that there are certain similarities between Japanese and U. S. doctrine regarding such precautions. The enemy gives the following camouflage instructions to soldiers who are to undertake combat reconnaissance:

Observe from depressions, not from elevations. Never look over such objects as stones, tree trunks, bushes, hedges, or fences; always observe from the side—and be sure to choose the shaded side—or through cracks or gaps. Often the prone position is your greatest safeguard. In observing from houses, do not stand directly in front of a window; stand farther back in the room. Take the same kind of precaution when you are observing from the edge of a wood. Avoid roads and paths, even at night. Instead, choose such natural depressions as roadside ditches. Go around fields and clearings. Move only on the shaded side of boulders, trees, ravines, and so on. When you rest, lie down beside a fallen tree. Stoop low when passing through waist-high underbrush, and crawl through still lower growth. Your head must never be exposed against a light background. When you are observing, never betray your presence by restless and unnecessary movement. When you are creeping forward in any kind of wooded or partly wooded terrain, camouflage yourself still further by holding branches in front of you.

In combat reconnaissance, the Japanese soldier pays attention to personal camouflage even when he is about to work his way forward by means of a rush or a series of rushes. Before a rush, he looks ahead for the next and most desirable place of concealment—or cover, if any is available. He may choose a small hill, a rock, a hollow, a ditch, a tree, or even a bush. First, he rises very slowly, so as not to attract attention; then he darts as fast as he can to the spot he has chosen, and throws himself on the ground. He does not always fall to the ground directly behind the protecting object, but may drop down 3 or 4 yards to one side of it. The Japanese theory is that if the hostile force becomes interested in the more obvious place of concealment, and fires on it



"He does not always fall to the ground directly behind the protecting object, but may drop down 3 or 4 yards to one side of it."

experimentally, without getting the expected result, that place will make a good alternate position later on. Meanwhile, as soon as the soldier has thrown himself on the ground, he covers his head with grass, leaves, or twigs, and remains there until he decides that it will be advantageous for him to move to

an alternate position.

When a man has been wounded, he does not move to the rear until the leader of the scouting party has been notified and has approved. Only the leader may detail escorts for seriously wounded men. Stragglers are under orders to report to the nearest Japanese commander and to participate in combat under his authority. The straggler is required to obtain a written certificate that he has done this.

The following Japanese order, which was issued during operations on Bougainville Island, refers to this type of reconnaissance activity.

"You will infiltrate and reconnoiter for information regarding conditions along the river. Search for U. S. positions along the right bank, and determine the enemy strength. Investigate for obstacles, the security line, gaps, microphones, and so on. Later you will be given further details. I wish you to reconnoiter carefully, positively, and boldly. If it should eventually

prove that reconnaissance has been insufficient, Japanese blood will be shed. Consider this point. I have nothing to send you except one cigarette. I wish you success."

Whenever possible, the party returns by a different route. The foremost consideration, Japanese doctrine maintains, is to keep hostile soldiers from discovering the whereabouts of Japanese units to the rear of the party.

Because of the deterioration of Japanese supply channels, the soldier going out on combat reconnaissance is told that no weapon must be lost or allowed to fall into the hands of Allied troops. The Japanese soldier is held responsible, not only for safeguarding his own weapon, but also for recovering the weapons of his comrades who have been killed or wounded.

Most of the preceding has dealt with the responsibilities of the individual soldier, rather than with those of the leader of the party. During the entire mission, the leader has been evaluating all the information that his men have given him about the opposing force, as well as the information that he himself has collected. His principal concern has been to judge when and where the main Japanese force behind him must expect to meet serious opposition. He has been estimating the strength and dispositions of the Allied force. Finally, he has been attempting to determine, as far as possible, what weapons they have at their disposal. This is the information that he must embody in his report to his superior officer.

PROBLEMS OF DEFENDING THE ADMIRALTY ISLANDS

Early in February, 1944, the colonel commanding the Japanese garrison in the Admiralty Islands officially welcomed an infantry battalion which had been sent to reinforce the Los Negros area. In explaining the unit's duties, the colonel frankly discussed the disadvantages of the situation confronting the garrison. He admitted the vulnerability of the area he was charged with defending, and outlined the methods by which he planned to improve the defenses.

The Admiralty Islands, the colonel remarked, constitute the key to a double corridor formed by New Ireland, New Britain, and New Guinea. He told his new infantry battalion that the garrison's success or failure would largely determine whether the Japanese Army and Navy could continue to operate in Melanesia and the Caroline Islands, and that even the safety of Imperial territories might be affected. What he said was partly "pep talk" and partly fact. It is undeniably true that the mission of the Japanese garrison in the Admiralty Islands was a highly responsible one.

The following extracts from the colonel's instructions to the battalion are significant:

Although the Japanese soldier should not have to be told that rigid discipline and high morale are important, I want to

emphasize that the men serving in the defense of this island must pay particular attention to their attitude toward the natives. The natives on Los Negros Island are simple and friendly. Because of propaganda and conciliation work, they have full confidence and faith in the Imperial Army. At present they are completely obedient. If we should behave in an undisciplined manner, however, or treat the natives with anything less than scrupulous correctness, this satisfactory state of affairs will deteriorate, and it will be impossible to expect the natives to assist in the defense of this island. If the Imperial Army always maintains strict discipline and the highest morale, the natives will look up to us, will submit to our orders, and eventually will realize the true significance of this sacred war.

I am not exaggerating when I say that we must be alert day and night for any sign of hostile activity. It will be fatal if we are caught off guard. Since the first of the year, hostile action against this island has intensified. Day and night patrols have increased. Three Japanese troop transports have been sunk in this area, and during the past week dozens of airplanes have raided us daily, causing considerable damage both to the Army and the Navy. On the nights of 1 and 3 January, hostile warships were detected off the south coast, and it is believed that a number of hostile soldiers already have infiltrated into the island. This is why I say that the battalion must be on the strictest alert and must not permit the slightest negligence. There is every possibility that the opposition may use parachute forces in an attack on Los Negros. Maintain vigilant guard against hostile air activity, as well as against hostile sea and land activity.

All present positions will be strengthened, and new ones will be constructed. Antiaircraft defenses must be increased. The area that this unit has been assigned to defend is extremely large, and the sea surrounds us on all sides. Under these circumstances, we are very vulnerable. I have decided

that the battalion must quickly construct strong positions and key points, from which positive and daring counterattacks can be made.

Faith in ultimate victory will be nurtured by thoroughness of training. The battalion will seize every opportunity to train, and will study in particular the types of combat training designed for the Southwest Pacific area.

You must pay the most careful attention to the care and preservation of weapons and matériel, especially signal equipment. This unit cannot afford to allow anything to be lost or destroyed. Remember that in the first phase of the landing operations at Arane and Cape Gloucester, our signal equipment was almost unserviceable. Furthermore, the supplies of military necessities that we have accumulated here have undergone a number of air attacks, have endured many other dangers, and finally have reached us after journeying for thousands of miles and at the risk of many Japanese lives. Thus the value of these supplies is now very much greater than it normally would be. In accordance with recent Army instructions, this battalion will collect all supplies which at present are stored in hangars and so on, and will see to it that they are dispersed and properly camouflaged [see cover illustration]. Strong revetments will be constructed around all the new storage places.

The main operational roads on this island are a vital part of our defense plan. Roads suitable for motor vehicles are of the utmost importance in shifting troops from one part of the island to another and in transporting supplies. For this reason, you must not permit road maintenance to slacken. When you discover that certain repairs or improvements are needed, do not wait for orders but take it upon yourself to perform the work without delay. If you do this, there will be no hitch in an emergency. It goes without saying that traffic regulations must be observed.

Study ways and means of living off the land. Our reserve

rations are limited. Unfortunately, all troop transports headed here recently have been sunk. Nor does it seem likely that the supply situation will improve in the near future. Be very cautious about using the rations held by the battalion; instead, make energetic efforts to use the island's resources, and cultivate edible plants. Prepare to endure a seige which may last for several months.

In short, this battalion is the backbone of my defense plans. When a hostile force strikes, destroy it in desperate, fearless combat, adding to the glory of the battalion and fulfilling the mission which has been assigned to you by the Emperor.

One month later, United Nations units had landed on Los Negros Island and had captured the Momote airfield. The Japanese defense plans had failed.

TWO BRIDGE DEMOLITIONS IN BURMA

The Japanese in Burma are now compelled to resort increasingly to delaying tactics. In this connection, the first two bridge demolitions of any importance performed by Japanese forces in this theater are of interest. These were partial demolitions, and showed signs of defective technique. One bridge was built of masonry and is referred to in this article as Bridge A. The other bridge, referred to as Bridge B, was of steel-girder construction. Both bridges had been designed to carry a narrow-gauge railway.

TWO-SPAN MASONRY BRIDGE

Bridge A (see fig. 1a) was a two-span, masonry bridge, which had one span of 15 feet and one span of 40 feet. The two spans, or arches, each 4 bricks thick, were supported at the center by a masonry pier rising from the watercourse below. The Japanese demolished only the 40-foot span, leaving intact the two bridge-end abutments, a pier between the spans, and the 15-foot span.

After examining the bridge, military observers report that six pressure demolition charges probably were employed by the Japanese to destroy the long span. The condition of the arch stumps and the nature

of the debris indicate that two charges were placed near the abutment, two at the span's center, and two

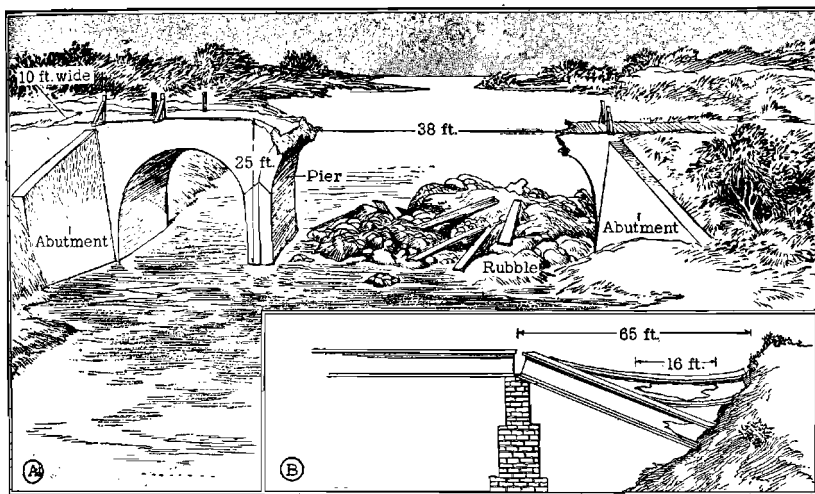


Figure 1a. Bridge A. The 40-ft masonry arch was destroyed, but the short span, the center pier, and the two bridge-end abutments were left intact. Figure 1b. Bridge B. The far I-beam (65 ft.) was damaged by a charge which blew out approximately 16 ft. of its vertical section. This beam buckled, but remained in place. One end of the near beam was forced from the abutment and slid down the hillside; its pier end remained in place.

close to the pier. That charges were placed at the span's center may be deduced from the fact that most of the rubble under the bridge was in comparatively small pieces. If no center charge had been used, the debris would have contained larger chunks.

TWO-SPAN STEEL-GIRDER BRIDGE

Bridge B (see fig. 1b) contained two steel-girder spans, each 65 feet long. Each span consisted of two steel I-beams, 4 inches deep and with horizontal mem-

bers 15 inches wide. At the center of the bridge, the two spans rested on a high masonry pier. Only one span was demolished by the Japanese. The second span, the center pier, and the two abutments were left intact.

This demolition (according to the observers) was effected in a rather unusual manner. Charges were so placed on the span that portions of the vertical panels in both I-beams were blown out, but the upper and lower horizontal members of the beams remained intact. Furthermore, charges were not placed in the same relative positions on the two beams. One beam, with approximately 16 feet of its vertical panel destroyed, merely buckled and remained in position. The other beam was damaged by a charge which blew out a few feet of the vertical section next to the abutment. The end of the beam was forced off the abutment and slid several feet down the hillside, while the end resting on the pier remained in place.

The technique employed by the Japanese in these demolitions was poor. Subsequently, both bridges were reconstructed by British engineers, who were able to utilize the piers and other elements of the bridges left standing by the enemy. According to an observer, "Bridge A could have been rendered far more useless if the pier had been destroyed and one or both abutments partially destroyed. If a demolition charge had been placed near the top of the center pier of Bridge B, the entire bridge would have collapsed and the obstacle would have been more formidable. The compara-

tive ineffectiveness of the demolitions probably was the result of inexperience and improper appreciation of demolition technique.”

JAPANESE MARCH PLAN FOR A NIGHT WITHDRAWAL

The details of a typical Japanese infantry march plan, which required a mixed force to cover approximately 13 miles a night, have been extracted from a Japanese order for a withdrawal along the jungle coast of northeastern New Guinea. The force was one of three from a single division which were involved in the movement. According to the plan, the force was to march from 2000 to 0400 hours on successive nights until it reached its destination, 50 miles away. The order warned that if any hostile activity occurred, it probably would consist of landings on the coast. Communications, security, bivouacs, and care of the weak and wounded were some of the problems dealt with in the order.

The force consisted of the following units: an attached headquarters detachment, an infantry battalion less two rifle companies, a battery of mountain artillery, a company of engineers, one wire and one radio signal section, a detachment of military police, a medical detachment, and a casualty transport (litter-bearer) platoon. It is interesting to note that the commander of this force was a captain.

THE MARCH COLUMN

The force was divided into three groups in order to facilitate the march and to make the force less vulnerable to air attack. Each group was organized to fight independently, and was instructed to attack immediately in case of a hostile amphibious attack. However, the group commanders were instructed to combine their strength, if possible, in the event that contact was made with the enemy.

Communications between the three groups were to be maintained by runners. Each group was ordered to detail a noncom and two orderlies to force headquarters to receive and relay messages. The group commanders were required to report their position, bivouac area, and the next day's route data by 1000 every day, and the force commander was to furnish similar information to the commander of the three forces involved in the withdrawal.

Sick and weak soldiers either were to be hospitalized or sent ahead of the march column. During the movement, medical examinations were to be made independently by each group. For this purpose, the casualty transport platoon was attached to the first group, and the medical detachment marched with the third group.

MARCH SCHEDULE

Unless weather, terrain, or unexpected hostile action made it necessary to alter the plan, the force was to march during the night between the hours of 2000 and 0400, and was to be at a bivouac area and ready

to take cover by dawn. (Since the hour between 0400 and 0500 is not accounted for in the commander's order, this period probably was used for preparing camp and camouflage.) During the day, from 0500 to 1800, the troops were to keep under cover, rest and make preparations for cooking. The two hours from 1800 to 2000 were assigned for cooking the evening meal and also enough food to last until the next cooking period the following evening.

The rate of march was set at $1\frac{1}{4}$ miles per 30 minutes, with 15-minute rests every half hour. Intervals were fixed at 55 yards between units, and at six-tenths of a mile between the three groups into which the march column was divided. In order to maintain a uniform pace, proper intervals, and the time schedule, officers were cautioned to keep firm control of their units, to use ropes, and to maintain contact by the use of panels and other means of visual signaling.

SECURITY

All personnel were cautioned to watch the sea closely during the march—especially at night—and to be prepared at all times to meet any unexpected hostile action from that direction. The troops were warned to keep a sharp lookout during the day for hostile aircraft and to carry out all necessary security measures. To ensure secrecy of movement, native villages were to be avoided, and certain precautions were to be observed in making camps. Bivouac areas were to be situated in suitable cover and camouflaged, and were to be no

closer to a village, road, or beach than 325 to 450 yards. Tents were to be pitched 30 to 55 yards apart.

To prevent detection by hostile forces during the night, Japanese soldiers were instructed to take care that cooking fires and lights were not exposed to the sky or to the sea. Smoking was permitted only in areas designated by the headquarters adjutant or by unit commanders. If a hostile aircraft should be heard, all fires and lights were to be extinguished immediately. Fires were prohibited during the day, and the troops were forbidden to walk on any road, on the beach, or through any native village.

RUSES ON KWAJALEIN

U. S. infantry officers whose units took part in the successful invasion of Kwajalein Island noted that the Japanese employed a number of ruses during the battle. Inland of the beach defenses (described in *Intelligence Bulletin*, Vol. II, No. 9, pp. 1-2, and Vol. II, No. 11, pp. 49-51), the Japanese had prepared virtually no fortifications. Since the landing caught the enemy off balance, it progressed rapidly, and enemy resistance in the interior soon dwindled to little more than occasional sniping. However, it has been found that a Japanese soldier fighting alone is just as likely to employ ruses as when he is with his unit.

Three days after the first U. S. landings on Kwajalein, Japanese soldiers still were sniping from foxholes, which were covered with a natural camouflage of palm fronds to blend with the surrounding terrain. Other enemy soldiers lay prone, and in full view, among the bodies of Japanese dead. Whenever the opportunity presented itself, the hidden or camouflaged enemy soldiers would fire upon U. S. troops—usually when circumstances enabled the Japanese to fire on a number of men from the rear while maintaining good personal security.

On one occasion a U. S. junior officer was standing near the bodies of several Japanese, one of whom was

very much alive and biding his time. (Later this soldier, too, was discovered and killed.) Although this enemy soldier had every opportunity to fire on the U. S. officer, he refrained from doing so, apparently preferring to wait until a time when he could kill not one man, but several.

Another sniper infiltrated behind U. S. lines during the night and hid himself very effectively in a rubbish heap. This man, too, allowed U. S. soldiers to go by and then fired on them from the rear. As a result, there were casualties, and a company advance was delayed. When the sniper was discovered, he did not give himself up until gasoline had been poured on the rubbish pile and set afire.

Japanese artillery attempted to place fire between the U. S. front lines and supporting artillery bursts to create the impression that U. S. troops were about to be fired on by their supporting artillery.

When U. S. forward units signaled to the rear with colored flares, the Japanese also fired flares of the same color, hoping to confuse the attackers. However, the Japanese were unaware of the exact meaning of the prearranged signals, and the ruse failed.

Since the invasion of Kwajalein was characterized by surprise and speed of execution, the Japanese did not have enough time to devise booby traps. Nevertheless, they succeeded in laying a number of anti-personnel mines. Inasmuch as some of these were laid near trees, it is reasonable to believe that the Japanese hoped to injure attackers seeking cover.

PREFABRICATED BOOBY TRAP

In the Arakan the Japanese are now using a small prefabricated booby trap device. It is of very simple construction, and is intended for use with a trip wire. There is a possibility that the Japanese may decide to employ the device extensively—either in its present version (see fig. 2) or in a modified form.

The container for the explosive charge looks like an ordinary tin can. The explosive itself is believed to be picric acid.

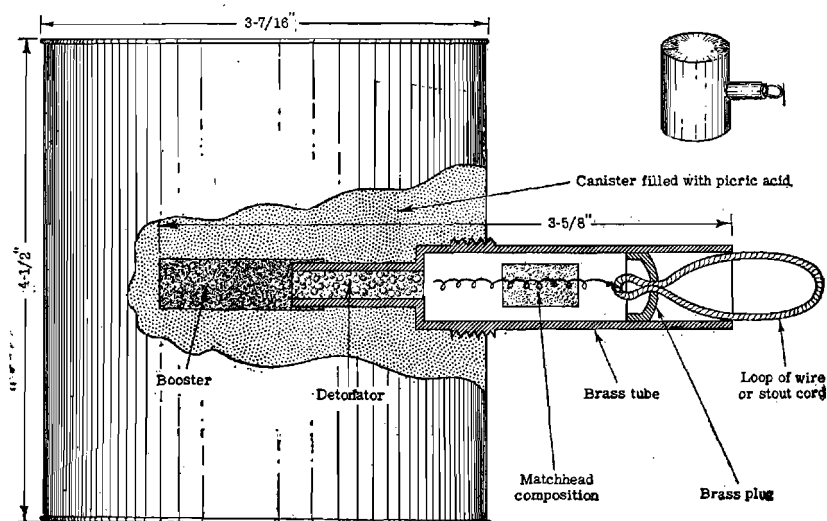


Figure 2. Japanese Prefabricated Booby Trap.

The firing mechanism, a pull-igniter, is a single unit. Its body is a brass tube, which is threaded so that it can be screwed into the side of the container. It is reported that a loop of wire (or possibly a stout cord) leads into the tube, where it is attached to an igniter wire. This igniter wire, in turn, is imbedded in a matchhead composition. Beyond the matchhead composition are a detonator and a booster charge.

In the jungle it is dangerously easy to mistake a trip wire for a tropical vine. Not only do such vines grow profusely beside nearly every jungle trail, but their tendrils are quite likely to creep across trails and roads—especially in a rainy season, when vegetation grows rapidly. The two best safeguards against trip wires are to keep trails as clear as possible and to develop the habit of keeping a sharp lookout for booby traps when moving in terrain where the enemy may have had an opportunity to prepare such devices. The Japanese soldiers themselves have learned this lesson, and move with caution over terrain believed to have been occupied by hostile soldiers.

NEW WIRE-CUTTING TECHNIQUE

Recently the Japanese in the Arakan evolved a new technique of cutting British telephone lines. The enemy cuts them in such a way that there is no interference with the ringing of the telephone bells, and yet, when a conversation is begun, the transmission of the voices is so weak that they are likely to be unintelligible.

When the Japanese discover a British telephone line, they cut a $\frac{1}{4}$ -inch section from all but two strands of a seven-strand wire. The remaining two are left intact (see fig. 3). Insulation tape then is wrapped around

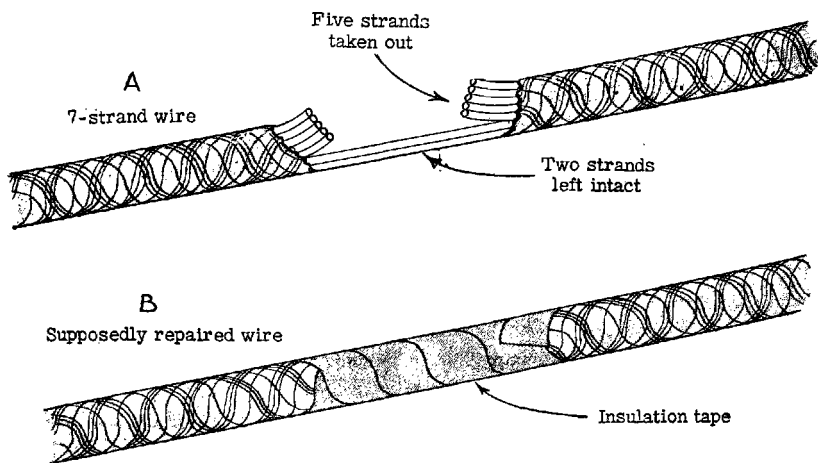


Figure 3. Japanese Wire-cutting Technique.

the wire to suggest that an ordinary splice has been made by British linesmen.

Military observers report that if linesmen are able to identify their own splices, the sections cut by the enemy can be detected and repaired much more rapidly.



GERMANY

TACTICS OF INDIVIDUAL GERMAN ARMS IN ITALY

The Battle of Italy has been primarily an infantry battle for the Germans. The machine gun, the mortar, and the mine have played parts of the greatest importance, chiefly because of the nature of the terrain, while the tank and the self-propelled gun have been obliged to undertake subordinate missions. This stress on the infantry arm, combined with a frequent need for the services of every available man, often has compelled the enemy to put men in the front line, regardless of branch. Engineers and reconnaissance units at times have been thrown into combat as ordinary infantry.

It has been a general German policy to commit only enough troops on the Italian front to block or delay the Allied advance. As a result, German commanders have had to use their strength very economically. After the Allied victory at Salerno, the Germans avoided committing a main force until the Winter Line had been reached. Instead, they used highly mobile rear guards, flexible combat teams, and well situated defense areas—all of which were characterized by economy of numerical strength and by generous allotments of auto-

matic fire power. Counterattack on a large scale has been avoided, except to repulse penetration of a main line of resistance, and local counterattack usually has been undertaken only for the sake of delaying the Allied advance to some extent. This is the picture in brief. However, the work of individual arms warrants description in greater detail.

INFANTRY

In the early stages of the campaign, when the German withdrawal was conducted without much contact with Allied forces, German infantry was organized in small, mobile rear-guard groups. The composition and strength of these groups naturally varied considerably, according to the speed of the withdrawal, the extent of the delay that the Germans wished to impose, and the terrain. In general, however, the groups consisted of motorized infantry or infantry in half-track vehicles—equipped with a high proportion of light machine guns, in either case—and often included support by tanks or self-propelled guns. Each rear guard included an engineer component, and sometimes a battery from the divisional artillery regiment. The basis of the rear guard is an infantry company. An infantry battalion fighting a rear-guard action normally sends only one of its rifle companies at a time on active missions. The three rifle companies are used in rotation, as long as their strength remains approximately equal. The following elements support the company (or companies, if the terrain makes it necessary to employ more than one): two or more antitank guns from the regimental

antitank company, and half the heavy support weapons allotted to the entire rear guard—that is, tanks, self-propelled guns, infantry guns, and gun howitzers. In country favorable to them, these reinforced infantry companies have proved capable of holding up a sizable Allied force on a fairly wide front.

When Allied pressure becomes strong, and disengagement consequently becomes more difficult, the single rifle company withdraws through the two remaining companies, which are supported by the remainder of the rear guard's heavy weapons. This leapfrogging procedure is continued until darkness approaches, when thinning-out takes place prior to a general disengagement. The withdrawal from one main position to the next, under cover of darkness, is an almost invariable procedure.

German rear guards in Italy withdraw by bounds to selected, but unprepared, positions. If it is the German intention to hold a line for some time, positions eventually are prepared.

During each stage of the withdrawal, individual company commanders can order retirement to the main rear-guard position, but only the commander of the main body can order withdrawal from one such position to the next. In the meantime the Germans make an effort to hold ground or to launch counterattacks to regain vital features essential to an orderly retirement; inasmuch as withdrawal often must be conducted on a time basis, the enemy cannot afford premature retirement. The Germans launch large-scale

counterattacks only when there is a threat to the main withdrawal or to the preparation of a main line of resistance, or when an established main line of resistance is in danger of being penetrated.

When a line is to be held for an extended period, German infantrymen take up a series of positions screening the main line and covering a network of observation posts. As far as possible, these positions are situated on forward slopes. Indirect fire is considered wasteful. Listening posts and outposts usually are established, to give warning of the approach of hostile forces. In the early stages of holding a line, wire and mines are not used. However, if further withdrawal seems unlikely—for a time, at least—mines and wire are used to give the forward positions additional protection. In such cases, the mines and wire are situated from 50 to 150 yards in front of the positions. Each of these positions, which are distributed fairly evenly over the company or platoon front, invariably holds two riflemen or two men and a light machine gun.

Heavy weapons, heavy machine guns, and mortars are sited behind the line of forward weapon positions. As a rule, the mortars are sited in pairs in the center—on reverse slopes, if possible—while the heavy machine guns are sited on the flanks. Where the field of fire permits, a mortar section may be strengthened by a pair of heavy machine guns. The heavy weapons remain under the battalion or company commander, depending on whether the battalion is Panzer Grenadier or Grenadier.

Dugouts for personnel and supplies are constructed to the rear of the forward positions, and are connected with the positions by communication trenches. (Whenever possible, the dugouts, too, are on reverse slopes.) It is interesting to note that the positions themselves generally are not connected with each other. Positions are lightly manned during the day—with the machine gunners usually carrying the burden of defense, while the remainder of the personnel rest in dugouts. At night, forward positions are fully manned.

The screening positions are likely to be only a few hundred yards in front of what the German soldiers themselves regard as their main line of resistance (*Hauptkampflinie*). In static defense the distances between the forward positions, combat outposts, and the so-called “main line of resistance” are greatly shortened. However, with the construction of switch lines (*Auffangstellungen*) to the rear, the main line of resistance tends to perform the work of combat outposts—that is, to blunt the attack, while mobile elements, operating within the framework of the switch lines, counterattack and try to liquidate penetration.

ARTILLERY

In the beginning of the Italian campaign, German artillery was principally engaged in covering infantry withdrawals and in delaying the Allied advance. For this function the Germans made extensive use of their self-propelled guns, which were employed so flexibly that they could be detached and assigned to rear-guard groups. The self-propelled guns had the mission of

denying the use of roads, bridges, defiles, and so on to Allied forward units, so that the infantry would be given a chance to retire to new positions. For this purpose the Germans made extensive use of 20-mm antiaircraft-antitank machine guns. Moreover, self-propelled guns were employed to cover road demolitions, and, in flat terrain, to form a mobile line of defense so that the infantry they supported could be concentrated on the main approaches. The self-propelled guns were committed in small numbers, often singly; they were well concealed behind walls or foliage, and frequently engaged targets at very close range. They were provided with infantry protection up to the time the infantry had to withdraw, and sometimes were employed to withdraw the infantry's heavy weapons, machine guns, and mortars, thus permitting the latter to fire until the last possible moment. When withdrawing as a battery, sections of self-propelled guns leapfrogged each other. As a result, one section always was ready for action while the others were on the move.

When the Italian front became stabilized, the self-propelled gun tended to fade out of the picture, except in support of raids and in local fighting, when it followed infantrymen and engaged strongpoints, machine-gun nests, observation posts, and other objectives.

The field gun, on the other hand, played an increasingly important part in the campaign—but not until after the early days of swift, evasive withdrawal, when tractor- or horse-drawn artillery had to move out well

ahead of the infantry so as to have the use of the roads.

Basically, there has been no important change in German artillery tactics, although the current trends of the war, such as Allied air and matériel superiority, have brought about certain minor modifications. Targets are engaged in the customary ways. However, observation post officers often have to obtain the approval of battalion headquarters before firing, and barrages in the accepted sense of the term seldom are fired—perhaps to economize on ammunition. The Germans are sensitive to Allied movement, and employ interdiction fire readily; but there seems to be no standard enemy thought as to which targets are the most profitable. At critical moments the main target is the attacking infantry, and the Allied artillery receives only occasional fire.

Harassing fire is placed on areas affording defilade, and wherever the enemy has seen, or suspects, considerable grouping or movement. German harassing fire usually is carried out with a small number of shells of various calibers, and may be employed either by day or at night. Identification of Allied tanks or self-propelled artillery is likely to draw this type of fire.

Counterbattery work is left to medium and heavy units, because of their range and the destructive area of their projectiles. Long-range firing sometimes is carried out without any attempt at precision adjustment. On the lower Garigliano and Anzio fronts, for example, shells were directed into fairly large areas known to contain guns and other targets.

The nature of the present campaign—a planned withdrawal—has enabled the Germans to register on all natural routes of advance and communication, as well as the most suitable sites for weapons, before their use by the Allies.

Allied air and artillery superiority, as well as effective counterbattery fire, has compelled the Germans to adopt several ruses to avoid disclosing their positions. They cease firing and halt all movement around their guns when hostile aircraft approach. To mislead attacking bombers, smoke shells are fired at short range when Allied smoke shells are indicating the positions to these bombers. Also, smoke is laid around the positions to obstruct observation by hostile observation posts. Dummy flashes are set off to confuse flash spotting. Single guns or roving batteries are employed to fire from positions away from the normal battery sites, or to fire from the forward areas.

The excellent German camouflage shows that the enemy recognizes the need for concealment and deception.

Rocket projectors have been used, but only to a slight extent; the ammunition is almost invariably high-explosive. Smoke shells occasionally are fired from these projectors for screening purposes, but seldom are used for range estimation. Firing is chiefly indirect, involving the normal system for observation posts and forward observers. Positions are carefully camouflaged at all times, but are dug in only when the

flash is hidden behind a crest and there is no need for an immediate move after firing.

ANTITANK WEAPONS

Antitank guns assigned to support rear-guard infantry companies are sited well forward and are employed with determination. As a rule, they are sited to the flank of good approaches and are concealed with great care. They tend to open fire at rather long ranges. Guns towed by half-track vehicles have taken part in infantry and tank attacks, in which they have supported the advance of the tanks. (The tanks have concerned themselves solely with the engagement of resistance holding up the infantrymen, and have left the neutralization of Allied armor to the antitank guns.)

The chief development has been the introduction of the antitank rocket launcher and the hollow-charge antitank grenade. Both are infantry antitank weapons for use by company antitank sections in forward areas, either on approaches that tanks are expected to use or in the protection of headquarters. Ordinary weapon positions are dug on each side of an approach; the rocket-launcher crew uses one side, and the section leader with the grenade launcher uses the other. If the rocket fails to stop the tank, engaged at ranges of from 120 yards down to 60 yards, the grenade is brought into action at a range of about 35 yards.

Antitank sections of three rocket launchers sometimes are employed ahead of the forward infantry fox-

holes at such points as road junctions, and are sited so as to place fire on both approaches.

Because of the pronounced flash of the rocket launcher, which makes firing from a prepared position dangerous, and because of the splinter effect and flash of the antitank grenade, neither weapon appears to be too well liked by the individual German soldier.

As a result of the introduction of these weapons, there is a trend toward reorganizing the tank-hunting units in infantry companies.

TANKS

The subordination of tanks to infantry has been brought about by the nature of the terrain in Italy and by the general withdrawal plan adopted by the Germans. Also, the relatively small number of tanks available for combat in Italy has been a contributing factor. Tactics have been influenced by Allied air superiority. At Salerno, this air superiority forced the Germans to undertake tank attacks at night. Tank units were assigned sectors to which they were to confine themselves, unless they were heavily hit; when this happened, they chose their own avenues of escape. (Air superiority also has forced the Germans to make all their movements at night, under cover of darkness.)

Operating exclusively in support of infantry, and with good coordination, tanks have been employed either in moderate strength, as at Anzio, or in twos and threes in rear-guard actions. The tanks move with the infantry, providing overhead covering fire for the

troops in front, and protecting fire for the troops to the rear.

In open terrain German tanks often operate near buildings which offer the best—sometimes the only—concealment, as well as a certain amount of protection. In such circumstances they are likely to operate in pairs, to cover each other's movements.

Flame-throwing tanks have been used in close support of raids on strongpoints. These tanks have directed their primary weapon at personnel trying to withdraw from a position after it has received fire from other weapons. Regardless of whether the targets are personnel in woods, blockhouses, trenches, or ditches, the German intention is to drive them out into the open, where they will be more vulnerable to small-arms fire. Normally, the flame-throwing tank operates with other tanks, but does not join in the action until the later stages. However, it may be used under conditions of poor visibility, when it tries to work its way close to a target without being detected.

ENGINEERS

As the *Intelligence Bulletin* has noted before, German minefields in Italy have been laid without much regard for definite patterns. Scattered mines are common. The intensity of antipersonnel mining is increasing, and so is the use of wooden-box mines.

Putting their knowledge of the terrain to good use, the Germans lay mines and set booby traps wherever the attackers are expected to advance or bivouac.

Mines and booby traps have been found on beaches, at beach exits, in towns and villages, across roads and railways, in detours around demolitions, in road shoulders, in the spoil of craters, and under vehicle tracks; they have been found beside streams and along river banks, especially on the German side and near suitable crossings.

Antipersonnel mines have been discovered along hedges and walls, and various types of booby traps have been found in haystacks, ravines, and olive groves, on hillsides and terraces, and in valleys.

A wide variety of mines has been encountered, including Tellermines of all types, S-mines, Schumines, wooden box mines, concrete mines, and improvised mines.

The nature of the terrain has enabled the Germans to prepare many demolitions, which have been an essential part of the delaying actions and which have been executed with great thoroughness. Culverts and bridges have been destroyed completely. Roads and all suitable detours have been pockmarked with craters, blocked with abatis in the country, and blocked with the debris of buildings in towns and villages. Railway tracks have been blown up and ties cut. The debris left to obstruct movement often is mined. During periods when the front is relatively stable, German engineer units prepare demolitions to the rear. After a withdrawal, demolitions frequently are covered by snipers, machine guns, and self-propelled guns.

FLEXIBLE COMBAT TEAMS

Flexible combat teams, or "battle groups" (*Kampfgruppen*) have been prominent in the Italian campaign. Usually they are organized to perform some specific mission during the withdrawal; this mission may be to undertake a local counterattack or to defend a particular feature, the retention of which is necessary to an orderly execution of the movement. Such teams also have been used to plug gaps, to bolster sectors in which a threatening situation has developed, and to oppose Allied landings until a major force could be brought forward to counterattack.

The combat teams have varied in size from a company or two, with weapons attached for close support, to a regiment or several battalions, reinforced with tanks, artillery, engineers, and reconnaissance elements. Whereas the strength has varied, the types of elements have remained fairly constant. A combat team charged with conducting a rear-guard action is built around the infantry component, to which are added heavy infantry weapons from regimental companies, self-propelled artillery or a small number of tanks, and engineers. Antitank guns, antiaircraft guns, and—less often—field guns from division artillery also may be added.

Every effort is made to produce a balanced force. All combat teams include holding and support elements. Assault elements are added if an offensive action is contemplated.

DEFENSE AREAS

The Germans cover the lines of resistance or phase lines, marking the successive stages in withdrawal from one defense line to another, with a system of defense areas, or strongpoints. Just as it was the mission of the rearguards to prevent the pursuing Allies from making contact with a main German force and pinning it down, so the defense areas were established to prevent an Allied advance while a main German force was retiring from one position to another.

The German defense areas, like the rearguards, represent an effort to economize on strength. The typical composition in close country has been one or two self-propelled guns, a few heavy mortars, and as many as six machine guns. In more open country, small groups consisting of a self-propelled gun, two or three tanks, and a party of infantry (with machine guns) riding in personnel carriers have been encountered.

Defense areas usually are organized on the hedgehog principle. Although provision for all-around fire is made, defense areas are not necessarily mutually supporting. They generally are established on commanding features—and sometimes on the forward edges of villages, if these command defiles. However, the Germans seem to feel that villages in flat terrain are too susceptible to artillery fire; for this reason, the enemy is more likely to establish defense areas to the rear of such villages, to engage the advancing forces as they debouch. Positions are changed frequently. In hilly country the Germans have used these defense areas

extensively to force considerable deployment and subsequent full-scale attacks; however, it is a favorite enemy tactic to slip away just before the attack materializes.

SOME FORTIFICATIONS OBSERVED IN ITALY

The imagination and painstaking workmanship which have gone into the design of German fortifications in Italy have been stressed in previous issues of the *Intelligence Bulletin*. The following illustrations and text indicate what a thorough and resourceful enemy the Allied forces in Italy have had to combat. (Even the fortifications which were constructed by Italian Army engineers reflect German influence.) Whether the enemy fortifications have been hasty or deliberate, nearly all have been planned to take every advantage of the terrain and to insure maximum effectiveness for the fire power to be employed.

An important, but little-discussed, aspect of the German defense has been the enemy's shrewd use of natural camouflage to blend fortifications with the surrounding terrain. Without neglecting the important factor of texture, the Germans have paid a great deal of attention to color, as well. They have capitalized especially on the presence of so much white and yellow-white in the Italian landscape. These colors, incidentally, characterize most of the houses, farm buildings, roads, and rocky stretches in the countries bordering the Mediterranean.



In an effort to block the routes to Naples, between the slope of Mt. Vesuvius and the sea, the enemy constructed pillboxes and casemates to dominate the main highway, the two railway lines, and the automobile highway (*Autostrada*). This circular pillbox, covering a road intersection at Camaldoli di Torre, represents a type of fortification widely used by the enemy. It has a subterranean entrance.



At Villa Literno six pillboxes and two casemates guarded a railway overpass. Each ramp leading up to the overpass was protected by a pillbox and a casemate. Here, a pillbox is seen in the foreground and a casemate in the background.



This pillbox was built to cover a road bend in Baia, south of Rome. The blocks with which it is faced blend with the wall of the house behind it.



Adjoining a restaurant in Baia, a casemate was built to resemble an extension of the restaurant building. The casemate has four ports close to the ground, and was well situated to deliver antitank-gun fire. A detail of one end of the dummy restaurant is shown here. A portion of the outer wall has been removed to show the wall of the actual casemate.

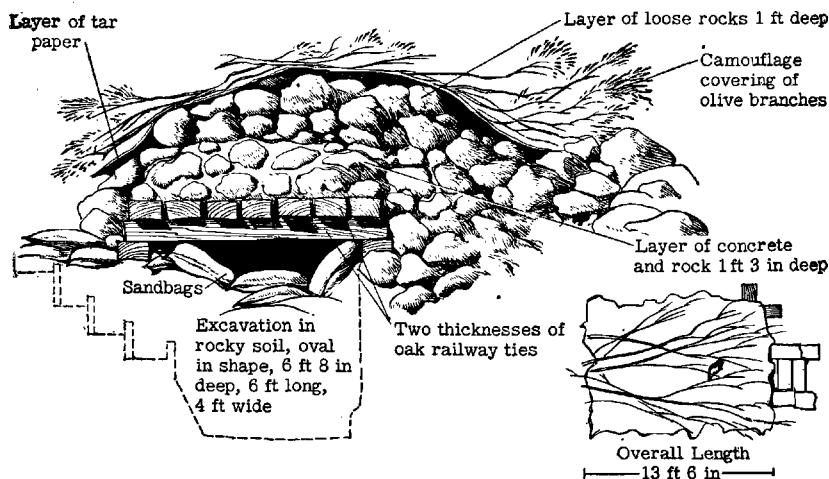
The firing ports of this pillbox, which commands a narrow road between Baia Harbor and Lake Fusaro, are protected by overhead ledges. Grass, wildflowers, and other vegetation have been cultivated on the roof of the pillbox to provide natural camouflage.





On Mt. Rotondo, northeast of Cassino, the Germans prepared a concentration of at least 25 machine-gun positions in a strategic area dominating a highway running through an exposed valley. These positions were dug in the rocky hillside, were well concealed with scrub growth, and, at 200 feet, were hard to distinguish with the naked eye.

Figure 4. The positions on Mt. Rotondo were constructed with such care, and were protected so strongly, that few were knocked out, although the area took a heavy pounding. First, the Germans cut a rough compartment out of the soft rock, or, in some instances, excavated an oval pit in a stretch of rocky earth. Heavy wooden sills were used to frame the edges of the hole, and then two layers of heavy timber (usually railway ties) were crisscrossed to roof the excavation. On top of this the Germans placed a layer of rocks and concrete, and then a layer of loose rocks. Tar paper was spread over the whole to provide waterproofing. Finally, a camouflage topping of small rocks and olive branches was added. Four or five wooden steps, heavily buttressed with sandbags, led down into the position. Most of the positions had only one firing port, well protected by sandbags and camouflaged with branches.

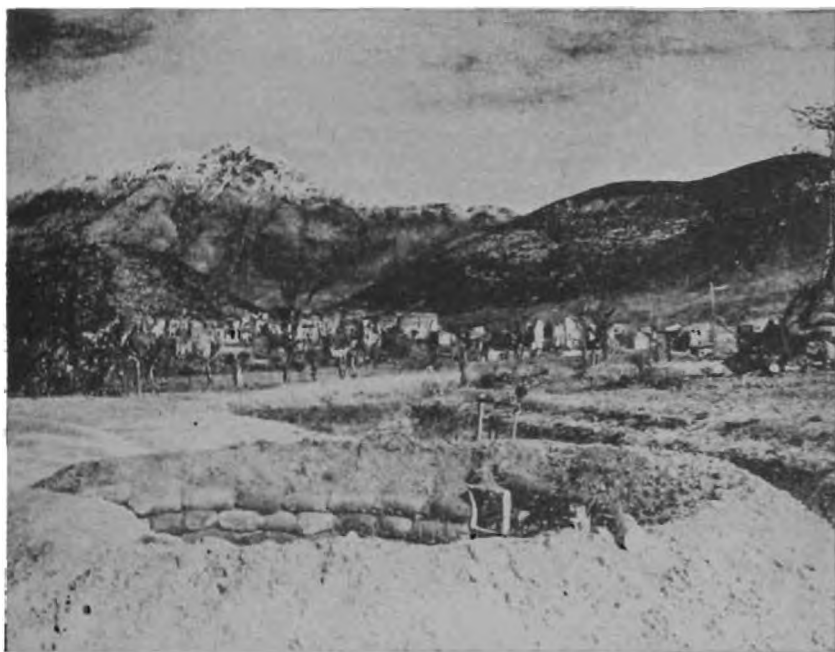




This is a machine-gun position with most of its camouflage removed. Heavy fighting and shelling took place in this area. Later, the positions served as very useful shelters for Allied troops.



Two covered German machine-gun positions, undamaged even after the heavy shelling which took place on Mt. Rotondo, appear in this photograph. That they are so hard to detect (one is at the lower left, the other at the upper right) is evidence of the success with which the camouflage blends with the surrounding terrain.



South of Mignano, two circular anti-aircraft-gun positions, each with an adjoining ammunition pit, were carefully built up with sandbags, stakes, and woven branches. Each contained two ammunition bays, revetted and roofed with boards and sandbags. This is one of the two positions.

This detail of one of the antiaircraft-gun positions south of Mignano shows the ammunition bays and the interior wall.





Two antitank ditches ran within a few feet of the position shown in the two preceding photographs. Underground personnel shelters had been dug deep in the slope of the ditch, and small auxiliary entrances to these dugouts had been prepared near the gun positions for hasty use in an emergency. One of these auxiliary entrances is shown here.

SMOKE-SHELL TACTICS USED BY GERMAN TANKS

As a rule German tanks employ smoke shells to achieve surprise, to conceal a change of direction, and to cover their withdrawal. The shells normally are fired to land about 100 yards in front of an Allied force. There are no reports to indicate that smoke shells are used in range estimation.

In attacking a village, German tanks fire smoke shells to lay a screen around the village in an effort to confuse the defenders as to the direction of the attack. Smoke shells always are used to conceal a change of direction of the attack, the wind permitting. When a German tank company (22 tanks) wishes to change direction, smoke shells are fired only by one platoon. With the fire tanks of a platoon firing three shells each, the total of 15 shells is said to provide enough smoke to cover the movement of the entire company.

If a German tank force knows the exact location of an antitank-gun position, it uses both smoke shells and high-explosive shells. If the force does not know the exact location, only smoke shells are used. When a single tank runs into an antitank position, it likewise fires only smoke shells, usually two or three rounds, to cover its movements.

Smoke shells are fired from the 75-mm guns of the Pz. Kpfw. IV's¹, and also, it is reported, from 88-mm guns on other armored vehicles. Smoke shells are not fired by the Pz. Kpfw. II² or the Pz. Kpfw. III³, both of which are equipped to discharge "smoke pots" with a range of approximately 50 yards. These pots are released electrically, and are employed chiefly to permit the tank to escape when caught by antitank fire.

¹ Henceforth the *Intelligence Bulletin* will designate the German tank (*Panzer Kampfwagen*) series by the abbreviation Pz. Kpfw. followed by a roman numeral indicating the model. This is done to conform with German Army practice.

² Obsolete as a combat tank.

³ Rapidly becoming obsolete as a combat tank.

DEFENSE MEASURES FOR THE ANZIO PERIMETER

In an effort to contain the Allied forces in the Anzio beachhead indefinitely, the Germans organized a system of numerous self-supporting positions which, they hoped, would trap any attacking force in an elaborate network of cross fires. From the German Army engineers' point of view, the defense of the Anzio beachhead perimeter presented special problems. If the greatly feared Allied breakthrough were to occur in any one sector, the prepared defenses in the other sectors would be relatively powerless to halt it, and might be outflanked by swift encircling maneuvers. For this reason the German defense areas around the perimeter not only had to be numerous, but had to be organized into a close mesh of strongpoints. (In operations to the south, German defense areas had depended less on the principle of mutual support and more on the advantages offered by mountainous terrain, where it had been possible to make the most of a wide variety of commanding features.) It was obvious to the Germans that the plans and activities of all arms at Anzio would have to interlock. On 4 March the engineers at Fourteenth Army Headquarters issued an order which has a fresh significance now, in the light of German efforts to contain beachhead forces elsewhere.

The construction of defensive positions on the line which had then been reached was to be undertaken at once and developed as rapidly as possible. Combat patrols were to be employed constantly while the engineers were adding depth to the main defensive belt.

Headquarters at all levels—regimental, battalion, and so on—were to organize for all-around defense. The same instructions were to apply to rifle, machine-gun, infantry-gun, and antitank-gun, and other positions. Furthermore, the bivouac areas of reserve units were to be developed for all-around defense.

All the defense areas in each sector were to be organized according to a coordinated plan which was to be established by the sector commander. The mutual support was to be so thorough that any attacking force—"even the strongest"—would be caught and held in an elaborate network of defenses.

In terrain suitable for tank operations, the engineers were to coordinate their plans for minelaying with the plans of antitank and tank-hunting detachments. In terrain unsuitable for tanks, S-mines were to be laid, but a number of marked gaps were to be left open for the use of combat patrols and for the possible development of future counterattacks.

With regard to the laying of scattered mines, it was announced that the authority of Army Headquarters would have to be obtained for any project of this kind and that each request would be decided on its own merits. Should the Germans gain ground, mined areas remaining in the rear were to be marked by posts or

surrounded by wire; in either case, the posts or wire were to be placed at least 60 yards beyond the edges of the mined areas.

Considerations of economy were to govern the preparation of wire obstacles. Only trip wire was to be laid at first. Because of the increasing shortage of materials, wire obstacles in rear areas were to be salvaged and used in the preparation of forward obstacles.

A limited number of wooden frames was being manufactured, and would be used primarily in the construction of dugouts situated in the immediate vicinity of firing positions. It was specified that the prefabricated roof arches (*Heinrichbogen*) which already had been issued to troops would not be used in the front line. Dugouts designed to accommodate more than six men were prohibited. All slit trenches were to be sufficiently narrow to afford adequate protection against tanks, and were to be not more than 5 yards long.

The possibility of further withdrawal, or retreat, was not forgotten. The order mentioned the regular inspection and maintenance of obstacles in rear areas and referred to plans for future demolitions.

ANTIVEHICLE WOODEN-BOX MINES

German raw material shortages and the relative difficulty of detecting wooden-box mines make it virtually certain that the enemy will continue to use various types of these mines on an increasing scale, in Italy and elsewhere. The metal industries of the Reich have been taxed so severely by Allied bombing that the Germans are substituting wood or plastics for metal in as wide a variety of war matériel as possible.

HOLZMINE 42

The Holzmine 42 (see fig. 5), a wooden-box mine designed for use against tanks and other vehicles, requires a pressure of about 200 pounds for detonation. The mine itself weighs 18 pounds. It consists of a wooden box, 13 inches by 12 inches by 4 inches, divided internally into four compartments; the compartments at the sides contain the main explosive charge, the central compartment contains the primer charges, and the end compartment holds the operating mechanism. The explosive filling usually consists of two cast blocks and three small standard slabs, the total weighing about $11\frac{3}{4}$ pounds. The Z.Z. 42 igniter, which has a bakelite body and a metal striker, pin, and spring, is the igniter most often used with the Holzmine. The only metal parts in the mine are the metal parts of the

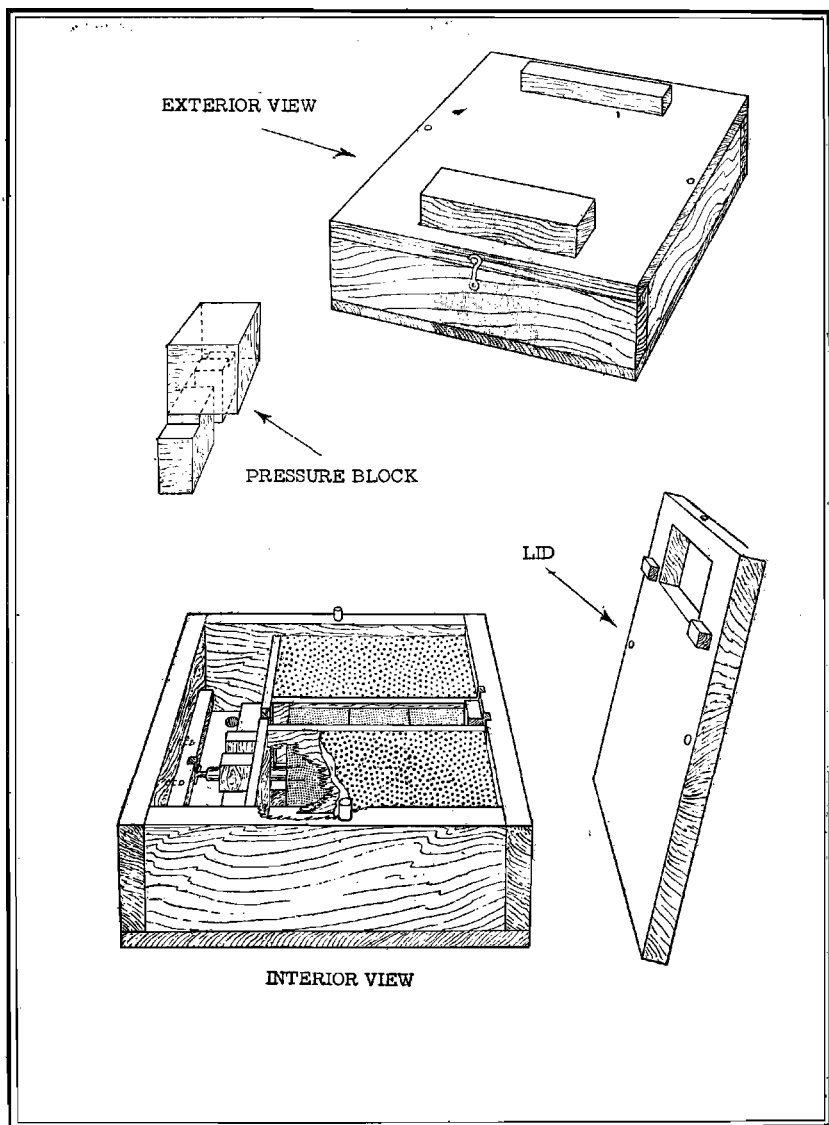


Figure 5. Holzmine 42.

igniter and a few small nails and screws in the body. Reports indicate that the Holzmine is difficult to detect with an electric device.

The lid of the box is secured to the mine by metal hooks at the front and back, and is held in position by wooden dowels. Along one edge of the lid there is a rectangular hole, through which the pressure block protrudes. Along the opposite edge there is a cleat. When the mine is armed, the top of the pressure block is higher than the top of the cleat; when the mine is unarmed, the tops of both are approximately even. The sole purpose of the cleat seems to be to make stacking easier. The Holzmine may be identified by a red band painted down the center of the end where the pressure block is situated. This band is continued on the lid, and when the mine is armed, the side of the pressure block facing this band also is revealed to be red.

The center compartment of the box contains a bottom packing piece and two small wooden blocks; one of these blocks is nailed to the bottom packing piece, while the other is nailed to the back. These hold the primer charges firmly in position. The wooden partitions between the compartments are removable. The end compartment contains a shearing flange secured to the outside wall. This has a central slot, which permits the end of the striker to pass when the mine is being armed. Two wooden blocks nailed to the base on each side of the igniter rest carry the pressure block when the mine is not armed. This igniter rest consists of a small piece of wood with a U-shaped section cut out at

the top, opposite the slot which is cut in the partition.

On the underside of the lid, there are two wooden pegs, which prevent the two wooden feet on the underside of the pressure block from moving toward the center of the box, and which also keep the pressure block from being inserted the wrong way around. When the mine is armed, the feet rest on the shear flange, and the top of the pressure block protrudes about two inches above the lid.

A vehicle passing over the mine depresses the pressure block, shearing the dowel pins which secure the shear flange to the outer wall and forcing the shear flange down upon the igniter pin. As a result, the igniter pin is withdrawn, freeing the spring-loaded striker.

The Holzmine is laid with the red strip facing the defending troops, so that the explosive charge will be detonated just a little further under the chassis of the approaching vehicle. The Holzmine may be booby-trapped in a number of ways. One way of rigging up an anti-handling device is to make a hole in the base of the central compartment and then screw a pull-igniter through the hole and into one of the primer charges. (Experience has shown that if a Holzmine lies in the ground for any length of time, it deteriorates.)

To neutralize a Holzmine,¹ first investigate for, and neutralize, any anti-handling device which may be present. Remove the lid carefully. Reverse the pressure block so that it no longer rests on the shearing

¹ If properly authorized to do so.

flange attached to the side of the box, but on the cleat fixed to the bottom. Replace the lid.

To disarm a Holzmine,² carry out the directions given for neutralization, but do not replace the lid. Remove the pressure block. Holding the actuating pin of the Z.Z. 42 igniter in position, remove one of the blocks of the priming charge in the center compartment (but *not* the block into which the igniter is screwed). Slide back the block into which the igniter is screwed, until the actuating pin is clear of the shearing flange. Lift out the charge and the igniter together. Carefully unscrew the igniter, holding the pin in position. Remove the detonator.

V.B. MINE

The V.B. mine is a wooden box mine which is identical with the Holzmine 42, externally, but which differs from it in the following respects, internally:

There are no dividing partitions inside the V.B. mine. The wooden blocks on each side of the igniter extend the entire length of the box. The end compartment is narrower than that of the Holzmine: consequently the two side compartments are somewhat larger and can accommodate 24 small standard charges. The lid of the box is secured by four screws. Instead of wooden dowels holding the lid in position, two wooden cleats are nailed to the underside of the lid. Also, two wooden slabs are nailed to the underside of the lid, fitting over the explosive charges in the two

² If properly authorized to do so.

side compartments and holding them in place. The center compartment contains three small standard charges.

The Holzmine 42 and the V.B. mine are used for the same purposes, are operated in the same way, and are neutralized and disarmed by the same methods.

RIFLE GRENADES AND GRENADE LAUNCHERS

German rifle grenades and grenade launchers have played increasingly important roles since American troops first encountered them in North Africa. Now they are basic infantry weapons. One man in each infantry squad is armed with a grenade launcher for his rifle, while the platoon antitank rifle is gradually being replaced by a modified version, which is intended to fire all types of rifle grenades. Two types of launchers are issued: the cup type and the spigot type. The cup-type launcher is the most common, and is usually the type fitted to the standard Mauser rifle of the man designated as grenade launcher for an infantry squad. This type is also fitted to the grenade-throwing rifle created by modifying the old antitank rifle. The cup-type launcher fires grenades of the following types: high-explosive, small hollow charge antitank, large hollow-charge antitank, and propaganda-dispersing. The spigot-type rifle-grenade launcher fires a hollow-charge antitank grenade.

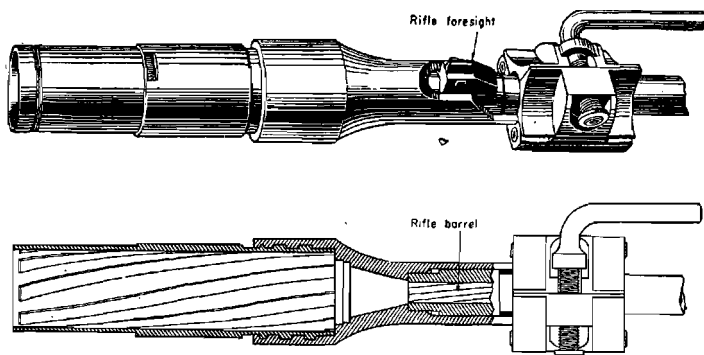


Figure 6. Cup-type Grenade Launcher.

The cup-type rifle-grenade launcher (*Schiessbecher*) consists of a 30-mm rifled barrel, which screws into a holder. This holder has a clamp to attach it to the rifle barrel. The grenades, also rifled, are inserted in the barrel with a twisting motion. A special sight, graduated from 0 to 250 meters (about 275 yards), is attached to the left side of the rifle, immediately to the rear of the normal rear sight.



Figure 7. Grenade-throwing Rifle (*Granatbüchse 39*).

The grenade-throwing rifle (*Granatbüchse 39*) is a modification of the standard antitank rifle (*Panzerbüchse 39*). This modification consists of shortening the barrel and attaching a cup-type launcher to the muzzle, of replacing the standard sights by special grenade sights, and of making still further changes, some of which are indicated in figure 7.

The high-explosive grenade (*Gewehr Sprenggranate*) used with the cup-type launcher is 5.5 inches long, weighs 9 ounces, and has a maximum range of about 250 yards. When this grenade is fired from the launcher, the grenade functions on impact, or after 11 seconds—by means of a self-destroying device, if the fuze has failed to function. The base attachment for screwing the grenade into the launcher can be removed, the igniter string pulled, and the grenade hurled as a hand grenade, with a delay interval of $4\frac{1}{2}$ seconds.

The small hollow-charge antitank grenade (*Gewehr Panzergranate*) used with the cup-type launcher is 6.4 inches long, weighs 8.5 ounces, and is effective at ranges up to 100 yards. It is made on the hollow-charge principle, with a cone-shaped cavity at the forward end of the bursting charge so that, on impact, the blast is concentrated in a forward direction. The armor penetration depends upon this blast rather than upon the striking velocity of the projectile. The armor (homogeneous) penetration of the small antitank grenade is 1.5 inches.

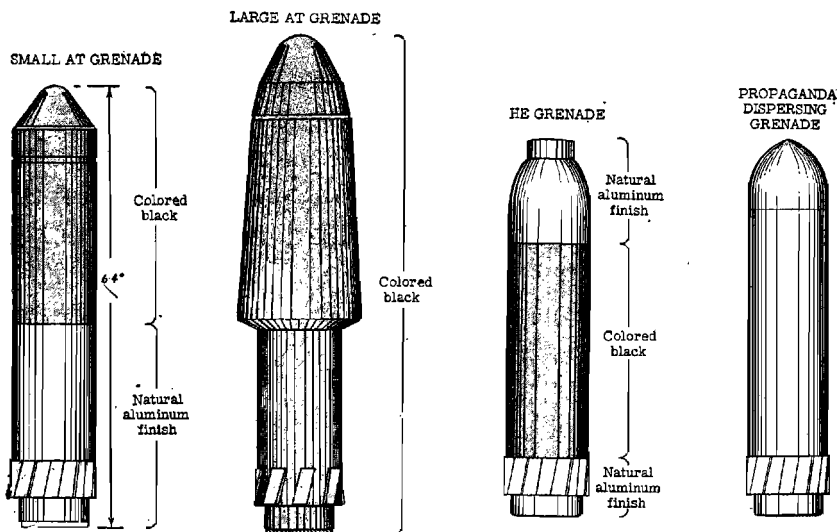


Figure 8. Rifle Grenades Used with Cup-type Launcher.

The large hollow-charge antitank grenade (*Grosse Gewehr Panzergranate*) used with the cup-type launcher is 7.2 inches long and weighs 13.4 ounces. It

is effective at ranges up to 100 yards, and can penetrate as much as 2 inches of homogenous armor. It is similar in construction to the smaller antitank grenade, except that the front half of the larger grenade is enlarged to hold a bigger bursting charge.

The propaganda-dispersing grenade (*Gewehr Propaganda Granate*) used with the cup-type launcher is 5.5 inches long and bears a general resemblance to the small hollow-charge antitank grenade. The propaganda grenade consists of a steel case for holding propaganda leaflets, a fuse, and an ejecting charge. The range is believed to be about 500 yards.

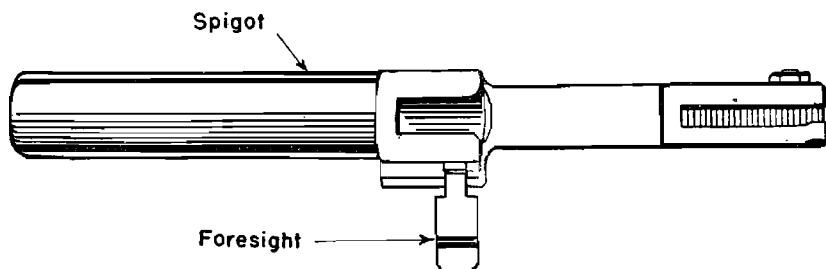


Figure 9. Spigot-type Grenade Launcher.

The spigot-type rifle-grenade launcher consists of a tubular spigot, about 1-inch in diameter, which terminates in a part resembling the hilt of a bayonet. It is attached to the rifle in the same way as a bayonet, with the spigot prolonging the muzzle of the rifle so that the gases from the cartridge pass from the muzzle through the spigot to discharge the grenade. A folding front sight is attached to the spigot, and a special rear sight graduated from 25 to 100 meters (about 27 to

110 yards) is attached to the rifle. The spigot-type rifle-grenade launcher fires a hollow-charge antitank grenade. An experimental type no longer in general use, the spigot-type grenade launcher may be reissued as attrition compels the German Army to make use of whatever matériel it has on hand.

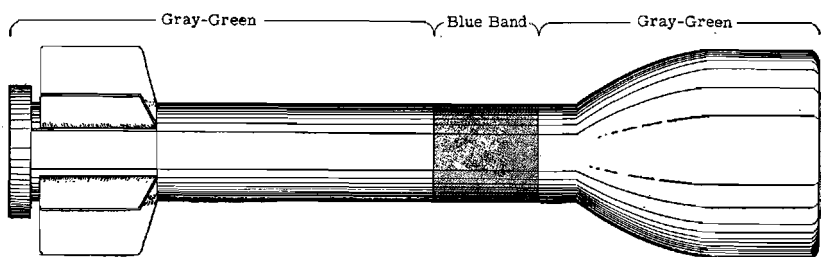


Figure 10. Hollow-charge Antitank Grenade (spigot-launched).

A hollow charge antitank grenade (*Gewehr Granatpatrone 30*) is believed to be the only projectile used with the spigot-type launcher. It is 9.3 inches long, with a maximum diameter of 2.4 inches and a maximum range of about 100 yards. It is constructed on the hollow-charge principle, with a bowl-shaped cavity, and has fins at the base to give it stability in flight.

The propelling charges for all these grenades are blank cartridges. The cartridges for the various types have different charge weights, and are not interchangeable.



Figure 11. Large Hollow-charge Antitank Grenade, Propelling Cartridge, and Carton.

Antitank grenades for the cup-type launcher are packed in black cartons, and high explosive grenades for this launcher are packed in gray cartons. The cartons are stencilled with an abbreviated marking, such as G.Pzgr., for the small hollow-charge antitank grenade.

UNITED NATIONS

THE BRITISH DISCUSS COMBAT IN TOWNS

With fighting in streets and towns becoming increasingly important as ground operations in the European theater progress, the following British Army "model discussion" of this type of combat should prove interesting and useful to *Intelligence Bulletin* readers.¹ The model discussion is presented as a dramatic sketch in which a British officer, who is to command a combat team in an assault on a German-held town, confers with his adjutant; an artillery battery [U.S. battalion] commander, an antitank battery [U.S. battalion] commander, and a tank squadron [U.S. tank company] commander. The discussion is not limited exclusively to the men who represent these officers; each man in the audience is asked to regard himself as an officer of the combat team, and is invited to offer constructive comments at stated intervals.

Before the sketch begins, the officer who is about to play the commander of the combat team says to the

¹ For the latest U. S. Army doctrine on this subject, reference should be made to FM 31-50, "Attack on a Fortified Position and Combat in Towns."

audience: "The model you see in front of you represents a town of about the same size as Ortona.² Some of you may well recognize the similarity, but I do not intend to enter into any argument as to how accurate it is. Let's just say that the model represents a typical layout of a town you may have to tackle. I have got you all together to try to clear up this problem of street fighting. I propose to deal with it as though we were getting out an operation order—but with the following difference: I intend at the end of each part, not only to request advice from the officers who are sitting here with me as members of the cast, but to ask all of you to consider what has been said and speak up if you believe that anything has been neglected."

THE OFFICERS TALK IT OVER

COMMANDING OFFICER—The enemy strength is unknown, and the Germans can send in reinforcements at will. As far as we know, the German garrison consists of paratroops and engineers well dug-in behind prepared demolitions. There are bound to be machine-gun nests in the houses and other buildings. Houses will have been demolished to form road blocks, and snipers will be well placed to cover all approaches. The enemy's equipment consists of antitank guns, tanks, mortars, automatic weapons of all kinds, flame throwers, mines, "beehives," and grenades. It appears likely that the Germans intend to hold the town at all costs. As to

² The unsuccessful German defense of Ortona against an attack by Canadian infantry was described in *Intelligence Bulletin*, Vol. II, No. 11, pp. 1-4.

ourselves, we have our own infantry brigade [roughly equivalent to a U.S. infantry regiment], which, as you know, is the best out here, and we'll be supported by tanks and antitank artillery. We are lucky in that we have worked with both of these before, and know their capabilities. The field artillerymen will do everything in their power to help us, but we must realize that they aren't going to support us with block-busters or anything like that. We shall also have help from elements of the brigade support group and the engineers. Have we left out any elements that you believe should be included?

(Here five minutes are allotted for consideration of the question and five minutes for discussion.)

It is our intention to capture the town. Now we come to the method. I propose that we discuss this very fully. It seems to me that we should be systematic and divide the town into sections. What do you think, Tanks?

TANK OFFICER—Yes, I think that's much the best way. Have we plenty of maps showing the streets of the town? I consider it essential for each officer to study his particular section very thoroughly.

ANTITANK OFFICER—Is it really necessary for each officer to have a map?

COMMANDING OFFICER—I think it absolutely essential, and for the following reasons:

a. From an infantry point of view, this job will be very slow going. It takes time to neutralize well sited

and well dug-in machine guns, not to mention snipers. Also, as a precaution against being stabbed in the back, we must consolidate repeatedly as we advance by pre-arranged bounds.

b. The expenditure of ammunition will be great, and we shall have to replenish our supply continually. The demands for smoke and grenades will be especially heavy. In the battle for Ortona, for example, a single Canadian battalion used 2,000 rounds of 2-inch-mortar smoke. During the forthcoming operation, the supply headache will be eased considerably if everyone has a map—even if it is only a freehand map.

c. Narrow streets tend to make fighting confused. For this reason a thorough knowledge of the streets will be essential. We must be able to order that a definite street be held by the men farthest forward so that we can push fresh troops through and so that the men farthest forward can reorganize for their next push.

TANK OFFICER—I agree. From a tank point of view, each troop [U.S. platoon] leader should carry a marked map for the following reasons:

a. The forward boundaries of all objectives should be well defined on the map, so that they can be identified readily.

b. Definite rendezvous with the infantry commander should be shown, so that it can be identified by all personnel.

c. When the ground situation makes it impossible to

give an eyewitness description of targets, it should be possible to describe them from the map.

d. So that we will not engage buildings occupied by our own troops, changes in the situation should be noted on the maps as promptly as possible.

ANTITANK OFFICER—I think your arguments are very sound. Also, the maps will be useful to me when I am siting my guns and engaging targets which may be hidden by buildings.

ADJUTANT—We must not forget the brigade. Duplicate maps marked to show the current status of bounds, objectives, and so on will be a great help in keeping the brigade commander informed about the progress of the battle.

COMMANDING OFFICER—I suspected that all of you would agree about the advisability of dividing the town into sections and having plenty of maps available. Therefore, I have had a map prepared showing sections and bounds, and I have numbered them from left to right and from front to rear.

(He displays the map.)

TANK OFFICER—It seems to me that all the bounds are too short. At this rate it will take days to take the town, and the higher commanders will probably begin to get impatient.

COMMANDING OFFICER—I've thought of that, but in a show of this kind control is essential. We must not be too ambitious. If we fall into this error, the show will rapidly be come disorganized. We must make up,

by speed of action and reorganization, for what we lose by short bounds.

ANTITANK OFFICER—Is it your intention to have a fresh party of infantry and tanks all set, on the mark, and ready to go as soon as it is reported that a bound has been made?

COMMANDING OFFICER—That's right. A point to remember is that the days are short and that, except for continual harassing of known enemy locations, there isn't much fighting after dark. If this leapfrogging at each bound is handled properly, we shall save a lot of time and also be able to maintain the pressure and hold our gains. Now let's consider the following questions:

a. What is the general opinion of all the officers about using maps showing street plans?

b. Do you think this method of leapfrogging a good one? In other words, is it really practical?

(Here ten minutes are allotted for consideration of the question and ten minutes for discussion.)

TANK OFFICER—Now, then, from my point of view, I've got to decide where we are likely to encounter anti-tank guns. I think the Germans will probably have antitank guns up these alleyways and at the curves in the Esplanade. *(He indicates several points on the map.)* The enemy may not actually have them in position, but I think he'll have them handy, so that he can deal with such threats as may develop. I can also visualize the enemy strengthening the defenses of these

two railway tunnels. (*He points to them.*) Wouldn't it be a good idea to send some antitank guns and tanks into that area so that they can place direct fire on the enemy, or else fire according to instructions that the assaulting infantry can send via tank radio? The range is only about 2,000 yards, and I know that a troop [U.S. platoon] of tanks can provide good high-explosive concentrations on request.

COMMANDING OFFICER—That's a very good idea. Can the antitank commander spare a couple of 17-pounders to accompany the tanks and help with that job?

ANTITANK OFFICER—Easily.

TANK OFFICER—I'll send a troop of tanks there, and have plenty of ammunition dumped with them.

COMMANDING OFFICER—Is this mission suitable for tanks and 17-pounders, or can any of you officers suggest a better procedure?

(Here ten minutes are allotted for consideration of the question and ten minutes for discussion.)

COMMANDING OFFICER—In the past I have lost too many good officers who tried to talk to tank commanders from exposed positions and who tried to point out targets. Has anyone had any brain waves lately as to how we can overcome this?

TANK OFFICER—We might have a head set and transmitter hanging out of the pistol port of the tank, so that it can be caught with a hook or something from a safe doorway or street corner. It would mean rig-

ging up the apparatus in a new and unorthodox way, of course, but I still think the idea has possibilities.

COMMANDING OFFICER—It sounds interesting. We already have excellent communications on the battalion commander—squadron [tank-company] commander—company commander basis, using a No. 18 radio set and an infantry liaison officer in the co-driver's seat. But it seems to me that we should hit on some way of letting the individual tank commander know than an infantry company commander wishes to talk with him, and also some way of indicating in which doorway, or at which corner, the infantry company commander is waiting.

ADJUTANT—The Canadians have a method which has proved very successful. The infantry commander informs a tank that he wishes to speak, simply by firing a white Very light parallel to the ground along the axis on which the tank is moving. The tank immediately proceeds to the doorway from which the light was fired. The tank's armor then shields the infantry commander from any small-arms fire. Since the pistol port is on the left rear of the turret, the infantry commander must choose his position with this in mind. The Canadians have also found that the same method worked well when the infantry commander was behind the tank. The Very light was fired in exactly the same way, and the tank commander then retraced his course, observing through his pistol port until he spotted his man.

COMMANDING OFFICER—Is this the best way of com-

municating with the tanks, or have you any other suggestions to offer?

(Here ten minutes are allotted for consideration of the question and ten minutes for discussion.)

TANK OFFICER—The next point I would like to raise concerns the method of indicating targets to tank commanders. In the past we have used smoke, Very lights, or tracer. I think that these, combined with the radio extension we were discussing, should serve the purpose satisfactorily.

COMMANDING OFFICER—Agreed.

TANK OFFICER—There are several other matters I'd like to see cleared up. Here's the first one. I know that the infantry will insist that the tanks keep on fighting in the town with them at night. This is hard on the tank crews, and I don't see what the tanks can accomplish that the infantry can't accomplish themselves. At night we are blind, and must rely on the infantry to protect us—that is, we rely on the infantry to keep the Germans from dashing at us with "beehive" demolition charges and so on.

COMMANDING OFFICER—I'm afraid I'm going to ask the tanks to stay in the town during the night, and for this reason. Each tank can use its two machine guns to fire on fixed lines and, if good positions are chosen, can give valuable assistance with defensive firing. Also, remember that your gunners are behind armor plate and have many advantages that the infantry machine gunners lack. The principal advantage is that you can

choose almost any position you like. (*He indicates a point on the map.*) Look at this. Here is an excellent field of fire for a couple of mobile machine guns, right at an exit from the town. The Germans might well decide to launch a counterattack from this point.

TANK OFFICER—Why can't the infantry handle jobs like this with their own machine guns?

COMMANDING OFFICER—Because they would have to be sited forward of cover. There is nothing at that point which could be improvised into a blockhouse. Also, I shall need the medium [U.S. heavy] machine guns for left flank protection and harassing tasks during the night. Now for another question: should the tanks be kept in the town during the night, or should they be withdrawn?

(Here five minutes are allotted for consideration of the question, and five minutes for discussion.)

ANTITANK OFFICER—Having studied the map, I think I can guess where the enemy is likely to site his antitank guns and tanks. I suspect they will be down those side alleys and will fire point blank at any tank as soon as it shows itself around the corner. What should our remedy be?

TANK OFFICER (to Antitank Officer)—I'm afraid your antitank gunners can't help me very much with that. However, I expect the infantry to be able to give me some warning, inasmuch as they will be able to observe a good deal from the places they are combing out. There's one thing I'd like you to do, and that is to

study this map carefully and try to determine, from your point of view, the probable sites of the enemy's antitank guns. In other words, I'd like you to amplify what you were saying about the side alleys. Once we have decided about these enemy sites, either the infantry can take them on with smoke, or we can indulge in something we have come to regard as SOP—that is, speculative firing of a couple of rounds of AP, fired diagonally through the corners of buildings at intersections, followed by HE. A careful study of the latest possible aerial photographs may also help.

ARTILLERY OFFICER—At this stage I feel that I ought to ask about the mission of the artillery.

COMMANDING OFFICER—I was coming to that. In an operation of this kind, the best use for the field guns, owing to the fact that they are not block busters, is to harass the approaches to the town. I feel that the 4.2-inch mortars are also suited for the same type of work.

ARTILLERY OFFICER—As a matter of fact, I think the artillery's job of harassing the approaches to the town should be carried out with even greater vigor at night, when the enemy is bringing up his supplies.

ADJUTANT—The last time we conducted an operation of this sort, we used pioneer and engineer personnel to great advantage, and could have used more. The possibility of keeping a bulldozer in the background also is worth considering.

COMMANDING OFFICER—It's absolutely necessary to have pioneers and engineers. Forward troops often

need tank support very badly, and can't get it, owing to mines and obstacles. In such cases the infantry must protect the sappers while they are at work, and the tanks must be prepared to give covering fire whenever possible. It is also very important for pioneers and engineers to keep checking the whereabouts of forward troops to save time in clearing mines and booby-trapped areas. We must also remember that smoke can be very useful as concealment for the clearing of obstacles.

ADJUTANT—Will prepared charges figure as prominently in this show as in the last one?

COMMANDING OFFICER—Yes. We'll have to use "bee-hives" to penetrate walls that tanks and antitank guns can't get at. Grenades can then be thrown through the gaps that have been created, and men can crawl through afterward. Prepared charges are also very useful for the following purposes:

- a. To clear obstacles.
- b. To clear ways for passage from one building to another.
- c. To demolish buildings (containing enemy soldiers) in such a way that the resulting debris does not interfere with our progress.

TANK OFFICER—The last time we conducted an operation of this kind, we found it essential to secure a high building in the town for an observation post—not only for the gunners, but for ourselves.

COMMANDING OFFICER—That's true. There was a tall building in the town square that we found very useful. This time it will be just as imperative to cap-

ture a suitable observation post at the earliest possible moment.

ANTITANK OFFICER—I suppose we can count on the tanks hauling the 6-pounders in the early stages. This seems to be the safest way of bringing them up, and of providing protection at the same time.

TANK OFFICER—Yes, I think our method of coupling up tanks and 6-pounders has proved satisfactory, and they can be uncoupled very easily.

COMMANDING OFFICER—At this point we'll open the discussion to all officers again. How do you think the antitank guns should be towed up?

(Here five minutes are allotted for consideration of the question and five minutes for discussion.)

COMMANDING OFFICER—There are certain administrative problems which must be covered. Chiefly the question of ammunition. In the last show we used an enormous amount, and employed the carriers and tanks to transport it. Has anyone a better idea?

TANK OFFICER—I have come to the conclusion that the best thing to do is to establish dumps as near to the town as we can get cover. Since my tanks have to run a shuttle service to and from a dump to keep the forward tanks supplied with fuel and ammunition, why don't you put an infantry dump in the same area, and then we can help carry the infantry's stuff forward. There is enough room on the back of a tank to carry practically any item you want. Inasmuch as my tank units and your infantry units are working in close

harmony anyway, all requests could be made by the infantry on their "I8" sets, or verbally to individual tank commanders when they are going back to pick up fresh supplies.

COMMANDING OFFICER—That should work very well. Incidentally, we had better use "compo pack" rations until the situation becomes reasonably stable.

ADJUTANT—What about the problem of evacuating the wounded? That caused trouble the last time.

COMMANDING OFFICER—There are bound to be a lot of casualties in a show of this kind. Minor casualties, especially. A lot of these will be walking wounded, so it is important that all ranks know where the Regimental Aid Post is. Every man must carry first-aid dressings. Every available means of transport should be used to evacuate the wounded. Carriers and any extra jeeps should be detailed for this, and even the rear decks of tanks which are going back for supplies should be utilized. Also, we may have to use smoke to get the casualties out.

TANK OFFICER—We'll all cooperate in getting the casualties back as fast as we can.

COMMANDING OFFICER—For this operation, and for all future operations, we must keep thinking of new ways to get the better of the enemy. We should encourage the men in our outfits to come to us and suggest new tricks, no matter how far off the beaten track of normal tactics the suggestions may seem to be—no matter how strange they may sound at first. And if any of you have good ideas that you would like to air

right now, I'll be very glad if you'll bring them up so that we can discuss them while we are all here together.

SUPPLEMENTARY NOTES

The British training center which originally staged this discussion was aware that a number of useful points could be added to it, and, as a further aid to junior officers, prepared the following notes:

a. Such elementary principles as keeping back from windows, changing positions frequently, and so on not only must be remembered, but must be applied.

b. The best method of attacking houses is from the top down. In most Italian towns and villages, one house adjoins another. When the first house has been cleared, "mousehole" your way into the top story of the adjoining house. Keep repeating this procedure.

This method of clearing will call for a plentiful supply of "beehives." All personnel must be thoroughly familiar with this type of demolition charge.

c. Village fighting is mainly a platoon commander's show. The platoon commander must display great initiative, and must keep well forward at all times. Initiative will also be required of noncoms and enlisted men. Since control will be decentralized into sections, because of the general confusion which results from street fighting, platoon commanders must know their bounds and stick to them. For example, if a section is detailed to clear a certain house, and on arrival finds the house clear, that section will not push on to another house. Were the section to do so, the platoon commander would lose control over it temporarily. When a

house has been cleared, or is discovered to be clear, the section leader must indicate this fact to his platoon commander by means of a prearranged signal.

d. Definite report centers must be established on a platoon-to-company basis. Definite times must be set for reports to arrive at these centers.

e. Consolidation must be attended to promptly. Once a house has been cleared, two men will be detailed to hold it. If this is not done, the Germans will "mouse-hole" back and reoccupy the house. During the battle for Ortona, the enemy used this method of infiltration a number of times.

f. The company commander's biggest problem is deciding which positions he will attempt to hold throughout the night. Such a position should have a street or an open space in front of it. This permits mutual support, and affords fields of fire. At night, automatic weapons should be sent to the top of the house to help consolidate the position thoroughly. If this is not done, the Germans will grenade the defenders from rooftops and openings in the walls.

g. The enemy is likely to leave grenades and other ammunition in houses throughout the town. He does this with the intention of reoccupying the houses and of finding plenty of ammunition when and where he wants it. Another favorite German trick is to leave a machine gun sited in a window to cover a probable avenue of approach. This machine gun is manned for very short periods—in fact, only long enough to fire two or three good bursts. This gives a false impression

of strength. Still another German trick is to employ a cupboard or bedstead to cover a hole that has been smashed through the wall of a room. When one of our soldiers enters the adjoining room, a burst of automatic fire is likely to come from the hole. The best preventive is to spray the cupboard or bedstead with fire from a Thompson submachine gun, on entering the room.

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