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INTELLIGENCE BULLETIN

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MILITARY INTELLIGENCE SERVICE
WAR DEPARTMENT

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MILITARY INTELLIGENCE
SERVICE
WAR DEPARTMENT
Washington, September 1942

INTELLIGENCE
BULLETIN
No 1
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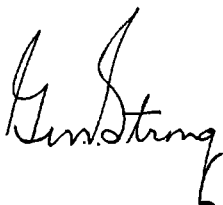
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Engr Bn--	6	Ren Sq-----	6	Med Bn-----	6
Med Bn--	6	Engr Sq-----	6	Maint Bn-----	6
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FOREWORD

When Napoleon said, "Every soldier carries a marshal's baton in his knapsack," he was unwittingly portraying the actual conditions of modern warfare, for today it is literally true that in the field of combat the individual soldier or squad leader may find himself in a position where he must make decisions which may have a direct bearing on the ultimate outcome of a particular engagement.

In order that the American soldier as well as the junior officer may be fully informed as to the enemy's methods and practices so that in an emergency he may be able to make as accurate an estimate as possible of a situation, the Military Intelligence Service is undertaking the collection and dissemination of information which will be of value to him for this purpose. Owing to the character of the material contained in the INTELLIGENCE BULLETIN, it has been necessary to classify it as "restricted." It is the hope, however, that it will be possible to permit of its general use by all enlisted personnel and junior officers, as it is designed primarily to serve as a vehicle for the dissemination, for their benefit, of the latest information received from Military Intelligence sources.



*Major General, U. S. Army,
Assistant Chief of Staff, G-2.*

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PART ONE: GERMANY

Section I. ARMORED FORCES

1. THE 88-MM. GUN

Field Marshal Erwin Rommel's use of the 88-mm. antiaircraft gun as an offensive antitank weapon in Libya has caused so much discussion among American soldiers everywhere that this seems a good time to describe it. In plain English, there is nothing strange or unusual about the 88. To the question "Is it vulnerable?" the answer is "Yes!"

Back in the 10-year period before Hitler came into power, the German 88-mm. antiaircraft gun was designed and built in secret. In those days the German Army was rigidly limited as to men and matériel. It is known that the designers of the gun were chiefly interested in constructing a double-purpose antiaircraft and antitank weapon. The news of the gun's antitank capabilities was not allowed to leak out, however, and not until the Nazis invaded Poland did the world discover what the German designers had perfected.

Basically, the 88-mm. is a tractor-drawn gun for firing on moving targets (fig. 1). It has a rate of fire of 25 rounds per minute, or slightly better, and is capable not only of a great volume of fire, but of extreme accuracy against moving targets of any type. This applies to targets on the ground as well as those in the air. When the 88-mm. is to attack armored vehicles, it is provided with a special armor-piercing projectile.

Rommel generally sends the gun into position under cover of medium tanks. The tanks are then withdrawn for offensive operations somewhere else, and the 88-mm. begins its mission of trying to pierce the armor of approaching hostile tanks.

What are the gun's weaknesses? First, it makes a good target for dive bombers, even though one of its duties is to oppose aircraft. The 88 has a hard time placing its fire on dive bombers. They can come down at a furious speed, blast the 88, and get away successfully. But the really important weakness of this, or any other gun, lies not in its manufacture but in its crew. The gun is not alive; the men are. They know that it may not be aircraft or long-range artillery which will end the big gun's usefulness to the Axis, but a detachment of perhaps 20 American soldiers. To meet such a threat, the crew wear their rifles strapped to their backs in readiness for close combat.

The natural question that arises is: "Do we have a comparable weapon—if so, what?" Fortunately, our 90-mm. is superior to the 88-mm. in every important



Figure 1.—88-mm. Antiaircraft and antitank gun.

respect, and we are building even better models. The clever tactics of the Germans, rather than the 88 itself, have been responsible for much of the gun's success.

2. TANKS IN THE SPOTLIGHT

Lately the Germans have been working their Mark IV tank overtime, especially in Libya. It is a medium tank of 22 tons, carrying a crew of five (fig. 2). Armed with one 75-mm. gun and two light machine guns, it has been used chiefly as mobile, close-support artillery in desert warfare. The reported substitution of a more powerful 75-mm. gun may send the Mark IV back to its normal task of serving as the chief element in a breakthrough. Its best possible speed is 31 miles per hour. In studying the photograph for identification purposes, note that the Mark IV has, on each side, eight small bogie wheels and four track-support rollers. Testing a captured German Mark IV tank, the British have discovered that it can be blinded by flame-thrower attack. Although the flames are not likely to enter the turret or the driving compartment, they will coat with thick soot all lookout points, including the telescopic sights on the gun. As a result, the men in the tank cannot fire effectively until they have changed or cleaned their sights.

The Germans also make wide use of the Mark III, a light medium tank of 18 to 20 tons (fig. 3). Formerly it was armed with one 37-mm. gun and two light

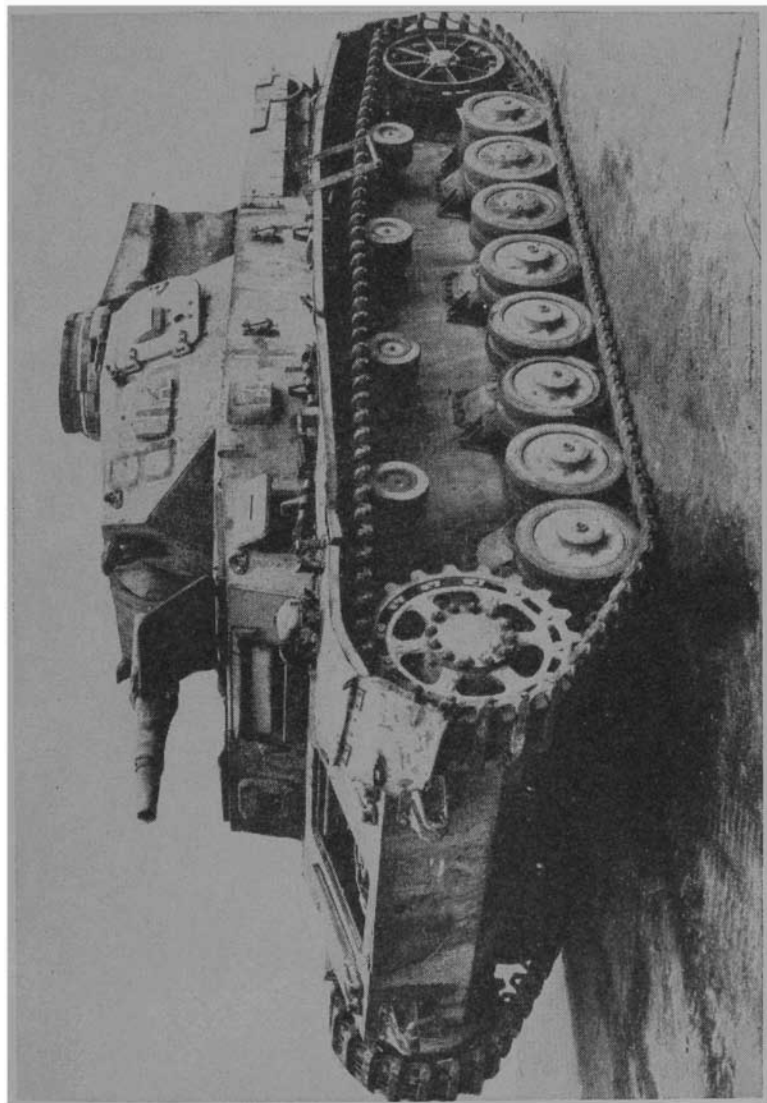


Figure 2.—Mark IV tank.



Figure 3.—Mark III tank.

machine guns, but in most cases the 37-mm. has been replaced by a 50-mm. Its best possible speed is 28 miles per hour, but it is much easier to maneuver on the battlefield than the heavier Mark IV.

The war in Africa has proved, however, that the American M3, known to the British as the "General Grant," has the best tank armor in the world. "General Grants" stay in the fight after as many as eight to ten hits by 50-mm. and smaller antitank weapons. In at least one case, a "General Grant" has continued to perform well after 27 hits. The new American M4, known as the "General Lee," is even more reliable. It has greater speed and more power, and is excellent for reconnaissance and pursuit. Among other improvements, its 75-mm. gun has been placed in the turret instead of on the side. This change gives it an all-around field of fire.

3. MECHANIZED WARFARE

The tactics used by the Germans in mechanized warfare are of interest to every American in the field. German mechanized tactics are likely to follow certain set patterns. Nevertheless, it must be remembered that German commanders are clever at changing standard tactics to fit the situation at hand.

Under normal circumstances, the first German move is to order armored car patrols, supported by anti-tank guns, to do a thorough job of reconnaissance. Motorcycle riflemen also lend support if the terrain is

suitable. These reconnaissance patrols are drawn from the reconnaissance battalions of the armored division. The size and makeup of each patrol naturally depends on the mission it has to perform. Sometimes the Germans even add a number of light tanks. These reconnaissance detachments not only report our movements and those of their own units, but are supposed to be strong enough to put up a fight, if necessary. While the patrols are trying to find out our strength, German air and ground observers are doing their best to detect our artillery and antitank-gun positions so that these may be dealt with when the main attack begins.

Having decided where to strike, the enemy next brings forward his tanks, supported by motorized infantry. He covers this move by a screen of antitank guns and tries to bring his forward elements, including a company of Mark IV tanks, to within about 2,000 yards of our own antitank guns and artillery. At this stage he generally tries to refuel his tanks under the protection of his forward detachments.

The Mark IV tanks direct their 75-mm. gun fire on our antitank guns and artillery. Meanwhile, Mark III tanks assemble for battle, and often challenge our defended area at different points in strong, close formations.

The enemy then decides where he wants to begin his main thrust. Having done his best to weaken the power of our defense by the fire of his Mark IV tanks

and artillery, he opens a strong attack with his Mark III tanks, followed by motorized infantry and guns, and advances on his objective.

In addition, he often directs at least one column (containing tanks, artillery, and motorized infantry) on some important locality in our area, such as a tank repair center. There may be more than one of these thrusts. As a rule, the Germans try to develop them into a pincer movement, with the advance columns pushing ahead to meet at the final objective.

If one of the enemy's Mark III tank columns succeeds in penetrating any part of our defenses and establishing a fairly good position, motorized infantry is then moved forward to within a few hundred yards of the position. The infantry dismounts and goes into action, mopping up as rapidly as possible and organizing the position. German machine guns and anti-tank guns follow the infantry closely. Every effort is made to turn the captured position into an area, or a series of areas, capable of all-around defense against any form of attack. In this last operation, speed is emphasized.

In Libya, the Germans often start these attacks late in the afternoon so as to have the advantage of fighting with the sun behind their backs. In this theater of operations, the action is usually completed by nightfall. Either side is likely to counterattack soon after dark. Experience has shown that the Germans especially dislike this form of combat, and United Nations counterattacks begun at night have often suc-

ceeded in recovering, at small expense, ground lost during the day.

It must be repeated that, although the Germans like to employ established and familiar tactics, they know how to change them when necessary. The best example of this is the new German technique of bringing up artillery in close support of tanks, so that tanks are never required to face antitank guns by themselves.

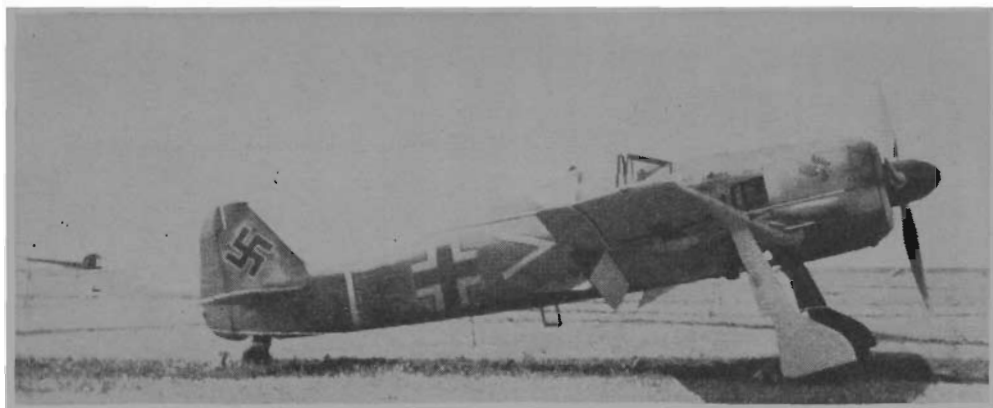


Figure 4.—Focke-Wulf—FW190 Fighter.

Section II. AIR FORCES

1. FOCKE-WULF—FW190

A new addition to the German Air Force is the Focke-Wulf—FW190. The Germans claim that it is the fastest and most easily maneuvered fighter in the world. However, in spite of its speed and maneuverability, the British have been able to destroy a number of these planes and recently captured one almost intact.

As shown in the accompanying photograph, the FW190 bears some resemblance to our P36 pursuit plane, which has been in service for several years. The wing form seems similar to that of the British “Spitfire.”

Powered by a new air-cooled, twin-row radial engine of high horsepower, this plane is capable of performing at an extremely high altitude.

It is well protected by armor, is heavily armed, and carries more cannons than is usual with planes of similar type.

Although the FW190 has not yet been known to carry bombs, it is possible that bomb racks may be fitted to the plane, since the Germans have done this with other fighters.

2. PARACHUTISTS

a. Introduction

A good many American fighting men have said that they would like to get a clearer mental picture of German parachutists—what they look like, how they train, what their standard tactics are, and in general how they do their job.

A common mistake is to imagine that the German parachutist is an ordinary infantryman who, on landing, goes into combat as a guerrilla fighter operating by himself, with help from any fellow-parachutists he may have the luck to meet. Actually, a German parachutist is a thoroughly trained specialist who fights as part of a well-organized unit. The German Army teaches him to believe that his is the most important of all jobs—that he is even more valuable than the aces of the German Air Force. After he has had a long, tough training in a parachutists' school, he is prepared not merely to jump well, but also to fight well. In fact, teamwork is the German parachutist's guiding principle.

b. Training

In choosing men who are to be sent to a parachutists' school, the German Army selects candidates who are young, athletic, quick-witted, and aggressive. Many of them are chosen with regard to certain special abilities (medical, engineering, and so on) which are just as much needed in parachute operations as

in any other kind. During the training, emphasis is placed on exact procedures; for instance, a man packs a parachute with special care if he knows that he himself is going to use it. After proper physical conditioning, the candidate works from a jumping tower, practicing landing methods under different conditions. The school also requires, and develops, fearlessness; to illustrate, in a transport plane any sign of hesitation at the command "Jump!" may cost the candidate his membership in a parachute company.

However, parachute jumping is only a small part of the candidate's training, inasmuch as the German Army hopes to make him a useful member of a crack combat organization. He must know how to take part in what is called a "vertical envelopment"—that is, the capture of an area by air-borne troops.¹

c. Tactics

Airfields and railway and highway junctions are likely to be among the foremost objectives of vertical envelopments. Usually they begin at dawn. To make the parachutist's task less difficult, the Germans send out bombers, dive bombers, and fighters ahead of time to place fire on the defenders' gun positions and to drive gun crews to cover. Special attention is paid to antiaircraft batteries.

After an hour or more of continuous air attack, one of several possible events may take place, since

¹The German capture of the island of Crete was made possible by a series of these vertical envelopments.

German tactics at this stage are not standardized. If reconnaissance has shown that the terrain is favorable, gliders may descend and try to land their troops (usually ten to a glider) in a surprise move under cover of the air attack.

If the landings are successful, the glider-borne troops will make every effort to kill or capture the defending gun crews, thereby paving the way still further for the arrival of the parachute troops. Or, it may be that gliders will not be used at all, and that parachutists will be required to perform this operation by themselves. Much will depend on how strong the Germans think the ground defenses are.

Even though the parachutists will use tommy guns, rifles, or grenades while they are descending, experience has shown that this is the time when the defending ground forces will get the best possible results with their fire power. The Germans cannot aim effectively while they are descending. As they are nearing the ground, and for the first few minutes after they land, they make ideal targets. In Crete, for example, the Germans suffered enormous losses at this stage. Nevertheless, it must be remembered that if there is an airfield to be gained, the Germans apparently will sacrifice their parachutists freely in a concentrated effort to put the defenders' gun crews out of action. The German command will be chiefly interested in gaining enough control of an airfield to permit the landing of big transport aircraft like the Junkers

52's, which carry twelve men (plus the pilot, observer, and reserve pilot) or heavy equipment and fewer men. If the parachutists cannot overcome the defenders' gun crews, the operation is likely to be a failure from the German point of view. To put it briefly, the parachutists (perhaps supported by glider-borne troops) are shock troops, and it is upon their fighting that future control of the airfield hinges.

Different German tactics may be expected, however, when a parachute unit is dropped on an area which in itself may not interest the Germans, but which may be reasonably near an airfield, a junction, or a communications center. In this case, whatever units are dropped will quickly try to assemble as a coordinated fighting force and then advance to carry out their mission.

The German method of releasing parachutists from transport planes over any given area is so carefully worked out that very little is left to luck. The planes are likely to arrive in flights of three. Arriving over their objectives, they may circle, and then fly at an altitude of 300 to 500 feet across the area where the parachutists are to land. Jumping is carried out in formation. An officer in the leading plane shows a yellow flag² two minutes before jumping as a sign to get ready. Half a minute before the jump, he shows a red and white flag. When the planes are over the area he pulls in the red and white flag. This is the

² Signals are subject to change.

signal to jump. If he waves both flags, crossing them back and forth, he is signalling "Don't jump!" At night, signals are given by colored flashlights, in which case red may mean "Get ready," green may mean "Half a minute to go," and white may mean "Jump!"

A leader in each plane gives the signal to jump by sounding an instrument like an automobile horn. Before jumping, the parachutists attach the ring of their parachutes to a wire running along the interior length of the aircraft on the right-hand side. The jump is made through the right-hand door, the ring yanking the cord of the parachute, which opens automatically after a 5-second delay (equal to a drop of about 80 feet). Equipment containers are dropped through the door on the left-hand side of the plane. Each container includes the equipment of three or four men, and is thrown out when, or just after, the men jump. The twelve men and four containers carried by each plane are supposed to be dropped within 9 to 10 seconds. When there is a delay, or when all the parachutists cannot jump while the plane is over the desired area, the plane will swing around in a circle and make a second run across the area.

Jumping at an altitude of 300 to 500 feet, the parachutists will reach the ground within 20 to 30 seconds.

The Germans have found it useful to attach parachutes of different colors to different kinds of loads. For example, a soldier's parachute may be a mixture of green and brown, to make him less conspicuous on the ground and to serve later as camouflage for cap-

tured motor vehicles. On the other hand, white parachutes may be used for equipment containers³ and pink for medical supplies. The Germans are likely to change the meaning of these colors from time to time. Since parachutists can request extra supplies by laying strips of white cloth on the ground in certain formations, there is always a possibility that the opposition will find out the code, and deceive German aircraft into dropping such supplies as ammunition, food, and medicine.

d. Organization of Division

A brief discussion of how the German Flight Division VII—nicknamed the “Parachute Division”—was organized at the time of the capture of Crete will show some of the elements that may be expected in a German parachute attack. In May 1941, Flight Division VII was composed of the following units:

Division Headquarters.

Three parachute regiments.

Parachute machine-gun battalion (three companies).

Parachute antitank battalion (three companies).

Parachute antiaircraft and machine-gun battalion (three companies).

Parachute artillery battery (three troops, four guns each).

Parachute engineer battalion.

³ (1' x 2' to 4' x 6', or even larger, with the bigger ones fitted with wheels for hauling.)

- Parachute signal unit.
- Parachute medical unit.
- Parachute supply unit.

Captured loading lists indicated a standard organization of 144 parachutists per company, carried in twelve aircraft, arranged in four flights of three aircraft each.

Before an attack, a parachute regiment may be reorganized to make its fire power more even. An exchange of platoons may be made between rifle companies and machine-gun and bomb-thrower companies so that, after the reorganization, each company may have, for example, two rifle platoons, a heavy machine-gun platoon, and a platoon of heavy bomb throwers.

e. The Parachutist's "Ten Commandments"

Here is a translation of a document captured from a German parachute trooper who was taken prisoner in Greece. Its title is "The Parachutist's Ten Commandments."

1. You are the elite of the German Army. For you, combat shall be fulfillment. You shall seek it out and train yourself to stand any test.
2. Cultivate true comradeship, for together with your comrades you will triumph or die.
3. Be shy of speech and incorruptible. Men act, women chatter; chatter will bring you to the grave.
4. Calm and caution, vigor and determination, valor and a fanatical offensive spirit will make you superior in attack.

5. In facing the foe, ammunition is the most precious thing. He who shoots uselessly, merely to reassure himself, is a man without guts. He is a weakling and does not deserve the title of parachutist.

6. Never surrender. Your honor lies in Victory or Death.

7. Only with good weapons can you have success. So look after them on the principle—First my weapons, then myself.

8. You must grasp the full meaning of an operation so that, should your leader fall by the way, you can carry it out with coolness and caution.

9. Fight chivalrously against an honest foe; armed irregulars deserve no quarter.

10. With your eyes open, keyed up to top pitch, agile as a greyhound, tough as leather, hard as Krupp steel, you will be the embodiment of a German warrior.

Section III. BOOBY TRAPS

1. GENERAL

A booby trap is any form of concealed explosive which causes destruction of men, equipment, or communications. It is so placed that it will be accidentally set off by the enemy or will function automatically by means of a time mechanism. Although explosives are the normal method of destruction, booby traps may also be designed to utilize flares or incendiary bombs.¹

The reason for employing such traps is to create an atmosphere of uncertainty and to make the enemy very cautious and uneasy, thereby lowering his morale and slowing up his actions.

Since booby traps get their success from surprise, both the charge and the operating mechanism are either concealed or made to resemble some common, harmless object.

2. OPERATION

In almost every case booby traps may be operated by one of the following methods:

¹ See also TF 25-394 and FM 21-45, Chap. 8.

a. Direct pressure of a foot, wheel, or track on the hidden explosive:

b. Movement of some harmless-looking object;

c. Movement of some hidden object, such as a thin trip wire;

d. Some form of automatic, delayed-action machine designed to explode without any human touch. The delay may be a few hours or many days.

In the first three cases, the trigger may fire the charge at once, or the explosion may not go off for several minutes.

3. PRINCIPLES OF USE

The following general methods are ordinarily used by the enemy in setting booby traps; by studying how the traps are set, we can more easily find and safely destroy them.

a. Keeping Normal Appearance

Every attempt is made to disturb the surroundings as little as possible and to remove or hide carefully all signs of preparation after laying the trap.

b. Small Spaces

The smaller the space in which the trap is laid—for example, passages, stairways, dugout inclines, and defiles—the more chance there will be of the trap's being sprung.

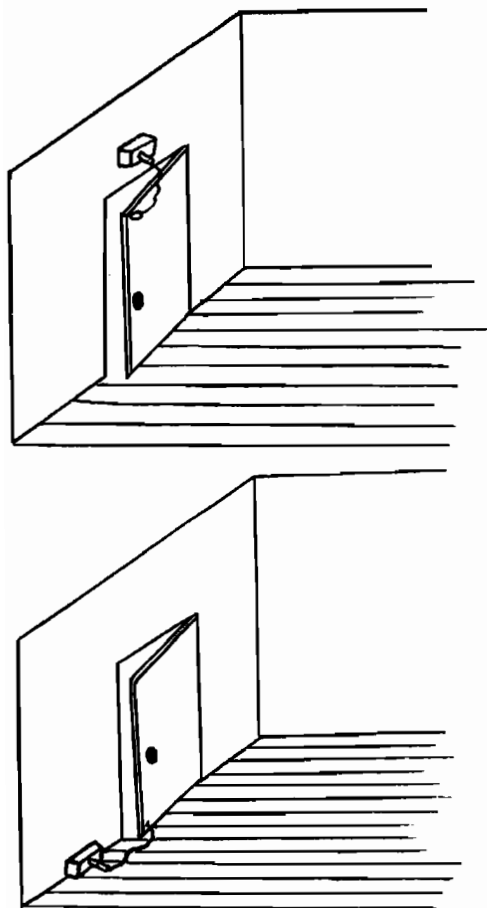


Figure 5.—Doors to Booby traps.

c. Many Traps in One Place

Many traps are usually laid in one place so that there will be less chance of finding them all without springing some. Dummies may be used freely.

d. Double Bluff

An easily recognized trap is often used to mask a well-concealed trap nearby.

e. Curiosity

The natural desire to handle souvenirs, pictures, food and drink containers, musical instruments, and other articles are considerations in setting the trap.

f. Everyday Operations

Traps may be fired by the opening or closing of doors or windows (see fig. 5), the use of telephones or electric-light switches, etc.

g. Firing

Each trap may be set off by two or more methods.

h. Variety

As many different types as possible are usually used in any one locality.

4. DETECTION

a. General

Since there may not be enough engineer troops to have complete charge of finding traps, it is necessary that other soldiers be on the look out for them.

A detailed reconnaissance should include, so far as time permits, the marking of known or suspected booby-trap areas as well as disarmament of detected traps. Reports of the types of traps found are also extremely important.

To find and safely destroy booby traps, soldiers must be trained to recognize telltale marks and clues quickly, and must know what the enemy uses for traps and how they are fixed.

Valuable information can often be obtained from prisoners, particularly soldiers of the engineer corps, about the sites where traps have been laid and the nature of the traps. Local inhabitants may give valuable information about the activities of the enemy before his withdrawal.

b. Places for Traps

Some of the more common places which are utilized for setting booby traps are:

(1) *Roads*.—Cuts, embankments, blind bends, bridges, culverts, obstacles, wooded stretches, junctions, crossroads, and general debris.

(2) *Open Country*.—Woods, trees, posts, gates, paths, hedges, obstacles, stores, dumps, and general debris.

(3) *Buildings and Dugouts*.—Steps, floors, doors (fig. 1), windows, cupboards, passages, furniture, fireplaces, water taps, closets, supplies, telephones, light switches, floor coverings, pictures, documents, and debris.

c. Suspicious Signs

The following signs may indicate the existence of an enemy's booby trap:

- (1) Disturbed ground, especially after the rain.
- (2) Explosive wrappings, sawdust, nose caps from shells, etc.
- (3) Traces of camouflage, withered vegetation, etc., showing some attempt at concealment.
- (4) Breaks or disturbances in vegetation, dust, paintwork, timbering, etc.
- (5) The presence of pegs, nails, electric leads, or pieces of wire or cord for which there is no apparent use.
- (6) Marks on trees, on paths, on the ground, or on walls of buildings for no obvious reason.
- (7) Movable objects, such as equipment, souvenirs, musical instruments, food and drink containers, and kitchen utensils.
- (8) Minor obstructions of all kinds on roads, in trench systems, and in buildings.
- (9) Irregular tracks of foot or wheeled traffic where there is no apparent reason for such marks.
- (10) Any indication that an area has been carefully avoided.

5. DETAILS OF BOOBY TRAPS

a. General

The following traps are typical of those which have been set by the Axis, principally the Germans. Varia-

tions on them are limited only by the smartness of the enemy, but they are usually apt to be based on the push- or pull-igniter (figs. 6 and 7) and can be disarmed fairly easily once they are detected and their type is determined.

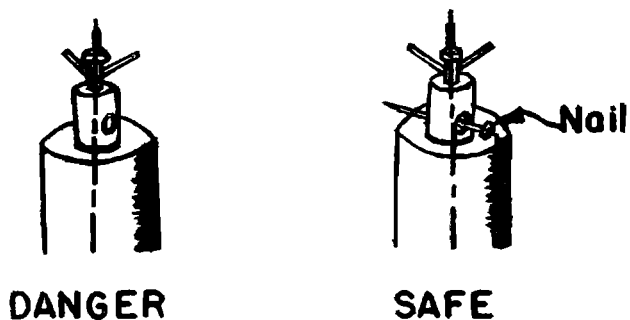


Figure 6.—Push-igniters.

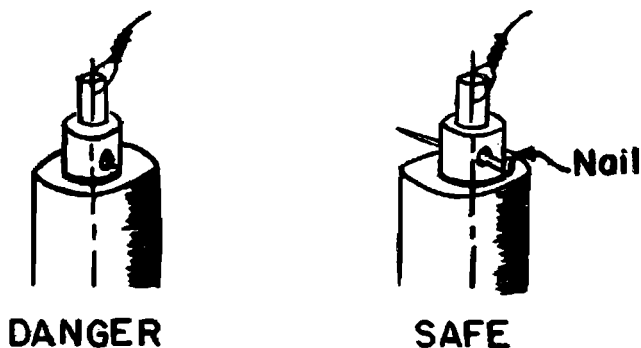


Figure 7.—Pull-igniters.

b. Shaving Stick Booby Trap

The so-called "Shaving Stick" booby trap consists of an aluminum cylinder, painted yellow, with walls 0.039 inch thick (fig. 8). It contains $\frac{1}{3}$ pound of

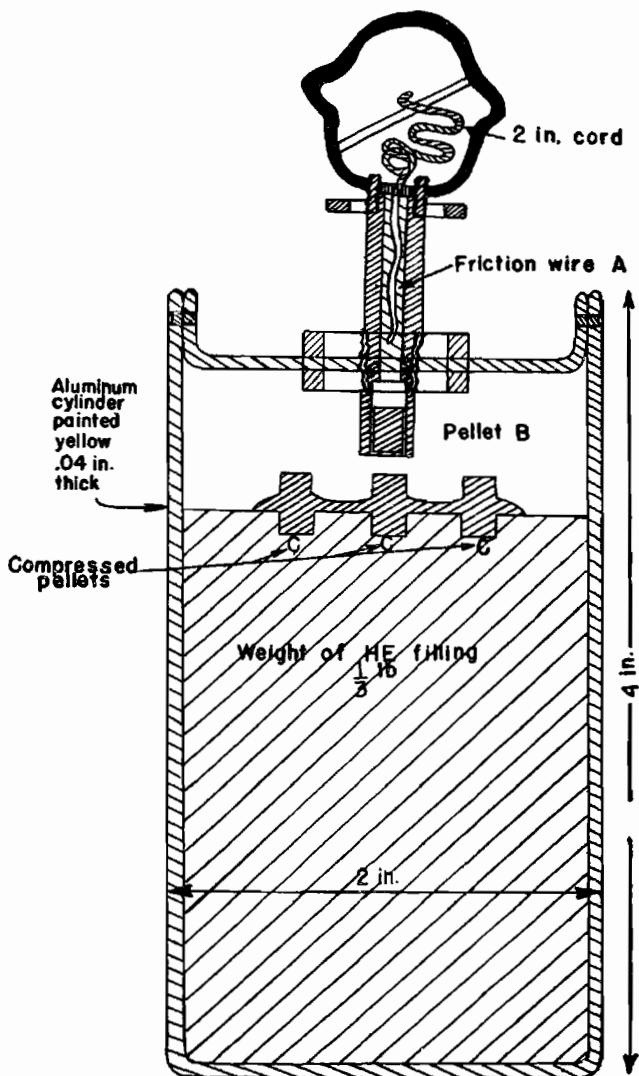


Figure 8.—German shaving stick booby trap.

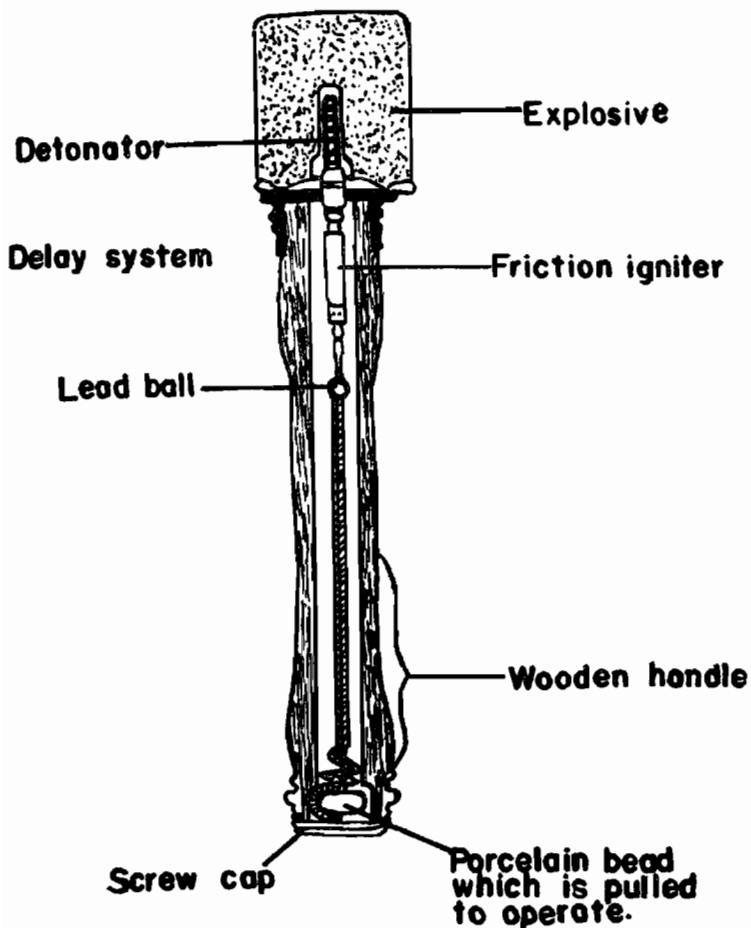


Figure 9.—Immediate-action grenade.

high explosive as a block filling. In the top of the filling are three black powder pellets, *C*, partly inside the main filling.

The top of the bomb is riveted to the body, and carries the ignition mechanism. A 2-inch length of cord is attached at one end to a disc in the cap, and at the other end to a loop in the friction wire, *A*. If the cap is pulled more than 2 inches the friction wire causes the friction composition to ignite the pellet, *B*, which fires the compressed pellets, *C*.

When the bombs are found complete, they are harmless. If the cap has been left unscrewed, the cord may be cut and the cap replaced to protect the friction wire.

c. Stick Grenades Used as Booby Traps

The German stick grenade, M24, may sometimes be modified to form a booby trap by removing the delaying device (fig. 9). When friendly troops attempt to use the captured grenades, pulling of the friction wire causes the grenades to explode at once, without the usual 4½-second delay.

To see whether or not the delaying device has been removed from the grenade, it may be tested as follows:

(1) Unscrew the explosive cylinder from the wooden handle.

(2) Remove the detonator and the fuze, which project from the handle.

(3) Unscrew the cap at the end of the handle and let the porcelain ring hang down.

(4) Unscrew the delayed-action device in the top of the handle to make sure that the delayed-action cylinder actually contains the column of compressed gun powder.

The grenades can then be put together again by carrying out the above operations in the reverse order.

If time is important, it will be all right to take one of each batch of suspected grenades, to unscrew the handles from them and operate the fuzes by pulling the cords from a distance. It will then be obvious whether the explosion takes place at once or after an interval of $4\frac{1}{2}$ seconds.

d. Miscellaneous Booby Traps

It is reported that the Germans in Libya have laid antilifting devices, using a pull-igniter, under mines.

Tar barrels have been left on roadsides, with three large shells of about 6-inch caliber in them, the whole device to be fired electrically.

At points where the road is cut into a hillside, stick grenades have been hung by wire down the steep bank overlooking the road, with a trip wire carried from them across the road.

On one occasion, a German whistle, of a dark brown bone type, was found to have a small charge in the body of the whistle, exploded by a striker and cap.

When the whistle is blown, the vibrating pea hits the striker, thus causing the explosion.

A German plane which landed recently at Malta had a new type of radio. When the British attempted to remove the radio, an explosion resulted in which five men were killed. Because of the extent of the damage, no details of the booby trap are available. Similar results have frequently been experienced in connection with the removal of radios from other German planes.

6. BOOBY TRAPS IN RELATION TO MINEFIELDS AND DEMOLITIONS

Captured German documents from the Middle East make it clear that the German command considers the placing of booby traps a routine part of the mining operations to be undertaken before abandoning a position. Elaborate instructions have been issued for the laying of land mines and for improvised mines, which contain practical suggestions for the arrangement of booby traps. How essential a part of the whole mining defenses the booby trap may become can be shown by the British experience at Agedabia: the ground was mined with land mines in a circle 3 to 5 miles from the center of the village, all the roads were mined, in many cases the shoulders as well as the centers, and the detours made by the Germans for their own use were heavily mined with both antitank and armor-piercing mines. In fact, the whole British account emphasizes the extreme re-

sourcefulness of the Germans in varying the standard patterns laid down in their training manuals. In the midst of these manifold contrivances were many booby traps. Wells and cisterns, for example, were left deliberately undestroyed, but the principal ones were artfully prepared with charges; the main cistern contained a 40-pound charge and a land mine, connected with a pull-igniter and cord to the manhole cover.

Many of the houses were equipped with similar traps, consisting generally of a land mine, connected with a pull igniter either directly on the door or to a trip wire across the door. In some cases, hand grenades were fixed inside the door, in such a fashion as to indicate that the man who had set the trap had then left by the window. In general, the Germans seem to be using pull-igniters to kill or disable soldiers more frequently than prepared demolition charges.

Section IV. LAND MINES

1. IN LIBYA

In Libya the Germans have been laying rows of anti-personnel mines in front of their plate-shaped antitank mines in an effort to make the cleaning up of minefields more dangerous.

The anti-personnel mines have push-igniters, and are usually laid with only an inch of the antennae visible. Although the disturbed earth is carefully smoothed back into place, the appearance of the danger spot is likely to be different from that of the surrounding ground. A sharp eye can detect the difference, especially since the Germans, after smoothing back the earth, don't seem to worry much about disguising their minefields elaborately.

German antitank mines in Libya are usually laid so that the tops of the push-igniters are flush with the ground. As in the case of the anti-personnel mines, not much concealment is attempted and the disturbed earth usually gives away the location.

For safety's sake, be on the lookout for trip wires. No mines with pull-igniters have been captured, but it is known that the Germans are using them.

2. IN RUSSIA

In Russia, when the Germans are retreating, they try to halt or delay the Russian advance by mining roads and bridges. The Germans bury the mines (small, round metal cans) under earth or snow. Sometimes, in their haste, they leave a small mound visible, but not often. Although the German mines are occasionally laid in rows or in a checkerboard pattern, as a rule they are not placed in exact order. Sometimes they are wired in series, so that if the Russians do not investigate carefully while disarming the first mine, they may be killed or injured by one of the others.

Another German method is to plant hundreds of empty tin cans in the hope that the Russians will become careless and overlook live mines. The Germans also hang mines from trees, particularly at night, letting them dangle low enough so that men and tanks will run a risk of colliding with them.

It is interesting to note that the Germans' chief reason for using land mines is not to cause great destruction but to spread "mine fever" or, in plain words, fear. The Germans consider that if their opponents stay cool and levelheaded, the mine-laying has been little more than a waste of time and matériel.

Section V. TRAINING METHODS

1. GENERAL

Present German military thought centers around the task force idea. The task force usually consists of all arms and services working under one commander to perform a single specific mission. The Germans spend a great deal of time developing their task forces, which may vary in size from a squad to a group of armies. The elements of the task force are so drilled that they will lose their identity as separate units and merge into a smooth-working task-force combat team. As a result of this joining together of units, the Germans stress cooperation, with every man and unit doing a definite job.

According to the best German military thought, there has been a change in the nature of fighting and also in the basic objective of battlefield combat itself. Formerly, the supporting arms made it easier for the infantry to surround and destroy the opposition. Now, even the destruction is done by the supporting arms—mainly artillery and combat aviation—with the infantry operating only in a supporting role. The mission of the supporting arms, according to the

German idea, is to keep the infantry advancing without engaging in combat. This the Germans have done, as a rule, in the present war. Following the armored, motorized, and air team with forced marches, the foot units have done mop-up work and have seized and organized strategic areas.

2. NOTES ON TRAINING

When a mission is assigned to a commander, he is given the troops and equipment with which to accomplish it. These are made available to him so that he can mold a combat team for the accomplishment of his assigned mission. Not only must the men do their own jobs, but all must work together in the accomplishment of the common task.

When the troops are first made available, they are like a football squad reporting to a coach on the first of September. They are a squad, but not yet a team. After a course of combined training, and particularly after some experience in combat, they may be considered a task force in the correct sense of the word.

Of course, all men in the German Army are given a basic course of instruction. At present, under war conditions, the basic instruction lasts about six weeks. This is followed by at least four weeks of training in large units. If possible, this instruction is extended an additional four weeks.

The idea here is to mold the individual units into the structure of the combat team as a whole, under the

leadership of its commander. In this change-over every effort is made to discourage rivalry between the components of the team. For example, there are no songs about the infantry being better than the cavalry and the engineers being best of all. There are no inter-company or inter-battery athletics. On the contrary, every opportunity is taken to develop teamwork among the parts of the force. Cooperation between the units is encouraged. This is impressed upon all subordinate commanders—so much so that they go out of their way to assist each other.

One important phase of the training of combined arms is the use of practice ammunition. This is regular ammunition with reduced bursting charges. The men taking part must be careful in handling these munitions, so as to escape injury. Use of real ammunition in training exercises is very valuable. Many men are accidentally killed in combat by fire of friendly troops lacking this valuable experience. Umpires are used in all these exercises.

During the training phase, the importance of surprise in combat is continually emphasized. According to German teachers, surprise is accomplished by three general methods: first, by secrecy; second, by deception; third, by speed of execution.

Surprise by secrecy and speed of execution is self-explanatory. During the training period, a great deal of time is spent in the construction of dummy positions, and in the execution of false movements to deceive the opposition.

With regard to infantry training, there is much more emphasis on volume of fire than on accuracy. Rifle marksmanship is not stressed, and there is good reason to believe that German standards do not compare with our own. The basic fire power of the infantry squad is provided by a light machine gun, supported by ten rifles. In combat the main effort of the squad members is to advance their machine gun. Although their marksmanship standards are not high, German infantry soldiers are likely to center a heavy volume of fire on vital points.

Since there is very little stress on the use of the bayonet in combat, there is little emphasis on its use in training.

Section VI. NIGHT DRIVING EQUIPMENT

1. GENERAL

German vehicles have special night-driving equipment which compares favorably with that used by the United Nations. The equipment includes the following:

a. Blackout Headlights

The headlight is mounted on the left-hand side of the vehicle, about 3 to 4 feet from the ground. The headlight-opening for passage of light is flat-shaped. A 35-watt bulb gives off light to the rear, against a mirror which is half oval in shape. The mirror, in turn, reflects the light forward through a glass panel under the overhanging hood. The glass panel spreads the light, which extends to the front a distance of 100 to 130 feet. The longest width of the light is about 80 feet. The light rays are scattered more on the sides than in the middle.

The headlight will burn at three stages of brightness. A three-stage switch will turn it on "dim," "medium," or "full." The Germans claim that at heights of over 2,000 feet the light cannot be seen while it is on "dim."

It is further claimed that it cannot be seen on "medium" at heights of 3,400 feet or more, and while on "full" it is not visible above 6,400 feet.

While in movement, the headlight of the leading vehicle is turned on at the lowest possible stage to permit travel. As a rule, the darker the night, the less light needed. The danger of observation also is taken into account in deciding the amount of light to turn on.

b. Interval-Judging Rear Light and Stop Lights

The panel containing the lights is divided into two parts, the upper half and the lower half. The upper half includes the interval-judging device itself, while the lower half contains the usual red tail-light and a yellow "stop" light, which goes on when the brakes are put on. The interval-judging device has four small windows, rectangular in shape and grouped in pairs. When the device is working, a yellowish green light shines through the windows.

The use of the interval-judging device is based on the way the human eye sees lights at different distances. When viewed from a certain distance, lights close to each other appear to be just one light. For instance, at 325 yards the lights shining through the four rectangular openings in the interval-judging device will seem to be only one light. At 35 to 40 yards, the four lights look like two, and at about 25 to 30 yards all four may be seen. In a convoy all drivers except the first one keep an interval so that two of

the lights are always visible. In other words, they maintain a distance of 35 to 40 yards.

On the under side of the housing which contains the interval-judging device is a shutter, which, when open, allows a dim light to shine down on the vehicle's number plate.

c. Additional Rear Lights

One is on the left side of the vehicle and the other is on the right. German regulations require this arrangement of rear lights to indicate the width of the vehicle's rear as well as its front. Each of these side rear lights has two windows, one above the other. The upper one shows a dim light and the lower one a normal light. A shutter is provided to shut out either of the lights so that only one can show at a time.

2. USE DURING CONVOYS

Only the leading vehicle will normally use its black-out headlight when convoys are close to opposing forces. All the other vehicles will have only the interval-judging rear light on. It cannot be seen from the air, and cannot be seen on the ground at distances of more than 325 yards.

Section VII. INSTRUCTIONS IN CASE OF CAPTURE

1. INTRODUCTION

At least some of you will have occasion, before the war is over, to capture a German prisoner. Therefore, the instructions the German High Command gives to all soldiers to follow in case they are captured should be of definite interest.

British forces in Libya captured a German manual which gives these instructions. The instructions are very thorough and show the great care the Germans take to warn their soldiers against giving military information to the opposing forces. The British Intelligence Service has *italicized* certain parts of the text with a warning that these passages may indicate Germany's own methods of treating prisoners. United Nations troops should read the manual with this in mind.

2. THE CAPTURED GERMAN MANUAL

SECRET.

Subject: *Behavior of German Soldiers Who May Be Captured by the British.*

Recent reports from reliable sources indicate how the British treat and question German soldiers who are taken prisoner on the battlefield.

These reports give all ranks of the army a chance to study the correct attitude to adopt in the event of capture.

Every soldier who is unfortunate enough to be taken prisoner, must consciously, and from the first moment of his capture, behave in such a way that no military information is given.

German prisoners who show a military bearing are usually very well treated by the British. *The prisoner is first of all hurriedly searched at the place of capture, and all papers, money, rings, his watch—in fact, everything he has on him—is taken away. On reaching England, he is taken to the first police station and put in a cell by himself. A few hours later an officer of the Intelligence Service who speaks fluent German appears for the first questioning. Under the pretext of wishing to inform his relatives as soon as possible, the prisoner is required to fill in an extensive questionnaire. This contains mostly military questions—especially the field post number, which is of great interest to the British.*

The inquiring British officers have a great deal of material for the questioning of prisoners of war. *This includes, among other things, the putting together of other prisoners' statements.* The information they have deals with field post numbers, organization, orders of battle, also peacetime establishments.

From captured British material it has been established that German soldiers who were taken prisoners in North Africa talked freely of military matters, thereby giving the British much information for the questioning of other prisoners.

At questioning, such material is used to convince the prisoner that any refusal to give information is useless, as the enemy already has exact knowledge of German military matters. If the prisoner refuses, his attitude is respected—even if a few threats are made in the first place.

A few days later the prisoners are moved from the first place to a transit camp, where a political questioning takes place. The questions here deal with the relations between the Army and

the Party, with the prisoner's own feeling towards National Socialism, and with the military and economic situation. As the Englishman in this case wants to get an idea of the political attitude of the armed forces, purely military secrets are not mentioned. This questioning is carried out by an officer in civilian dress, who frequently speaks German less well than the officer who asked the first questions.

Some hours later the prisoners are taken in special transport to the real "questioning camp." There a medical inspection takes place to establish the general state of the prisoners' health as regards feeding, etc., then two to three weeks confinement, either alone or with one other prisoner.

During this time the prisoner is questioned several times a day by Intelligence Corps officers on purely military matters; the statements of the various prisoners are played off against each other. Questions are asked about peacetime garrisons, military developments, the use of units in previous campaigns, and so on. Listening apparatus is installed in rooms in which two prisoners are put together. Germans in uniform, who have migrated to England, are also used as spies.

On one occasion a former Austrian in the uniform of an Air-Force officer introduced himself to a newly-arrived prisoner. He spoke German with a Viennese accent and claimed to be a reserve officer in a certain unit. He lived in a two-man cell with the prisoner and in the course of conversations tried to gain information on military and technical points of the prisoner's arm of the service.

The strict isolation in the "questioning" is supposed to induce a feeling of loneliness and helplessness in the prisoner, in order to break down his resistance. When the Intelligence Corps officer considers any further questioning useless, the prisoners are sent to officers' or other ranks' prison camps, as the case may be.

Recent reports show that similar procedures are carried out in other theaters of war besides Great Britain.

On the basis of this, the Germans issued the following instructions :

A. *Behavior at the Questioning.*

1. *Be strictly military, at the same time polite.* Threats of punishment or ill treatment must not influence the prisoner's duty to keep his mouth shut, any more than genial treatment, drinks, etc.

2. *Never speak in the enemy's language;* through interpreters at a questioning, gain time to think over the answer.

3. Don't let yourself be led to give any statements or to adopt any particular attitude through the chance remark of a comrade. Also, seemingly unimportant statements of single prisoners often give useful points to the enemy's Intelligence Service, when pieced together. Therefore, at the questioning, only name, rank, birthday, and home address are to be given, and these points are to be dealt with only in questionnaires.

Any other information—for example, to what unit prisoner belongs, depot, role of unit, strength, and so on—is to be refused on the grounds that the answering of these questions is against the international law dealing with the treatment of prisoners of war.

4. No reaction to technical questions is to be shown, *not even when the questioner tries to provoke an argument by belittling German weapons.*

5. *Don't try to deceive by false answers.*

6. *The prisoner must not let himself be fooled by an assumed knowledge, on the questioner's part, of the subject under discussion. This is only meant to convince the prisoner that he is giving away no secrets.*

B. *In the Prisoner of War Camp.*

1. The questioning is not ended with your individual interview. Therefore be careful when talking :

(a) To other comrades in the camp, barracks, etc., because *listening apparatus is installed.*

(b) *To strangers, who, sometimes in German uniforms, try to win the prisoner's confidence. Spies.*

2. *Don't speak over the radio or on a phonograph record.*

3. *No writing of war experiences, either before or during the period of captivity.*

4. Every prisoner must exert himself to get back home as soon as possible.

Every prisoner remains a German soldier. He must realize that after his return he will, if necessary, be called upon to answer for his behavior during his time of captivity.

Section VIII. 'SECRET' WEAPON AGAIN?

Remember how Germany, just before she opened her campaign against France, Holland, and Belgium, spread reports through neutral countries that the Germans soon were going to put into use a new secret weapon? These reports speculated on the nature of the weapon. They described it as a gas which affected armament but not men, as a gas which would put troops to sleep long enough for them to be disarmed, and as super-duper tanks that could easily batter their way through fortified lines.

Well, all these reports proved to be false—they were products of the huge German propaganda program, which seeks to strike fear and confusion into the ranks of United Nations forces.

Now, more than two years later, the German propaganda organization is spreading reports of another secret development. This time the German claim deals with a new tactical formation, which allegedly is being used in the 1942 campaign against Russia. The formation has been designated by various names, one of which is "Motpulk." This is probably an abbreviation of a German expression which means a force made up of motorized, armored, and air columns.

According to reports from neutral European countries—reports which most probably were put out by German propagandists—the new formation is a hollow square of tanks and other armored units, inside which are infantry, artillery, antitank, antiaircraft, and “flying” workshops. Powerful air elements supposedly fly overhead during operations of the formation and cooperate in the fighting. The combined forces, or “Motpulks,” carry enough supplies for limited periods. When these supplies run low, they are restocked with new supplies dropped from planes. The distance around some of the “Motpulks” is said to be nearly 300 miles. The formation is shaped somewhat like the old Greek Phalanx, which was popular back in the days of shields and spears.

Such a massing of armored and mechanized forces calls for large numbers of tanks and motorized vehicles, Berlin admits. But the Germans insist that their industries produced sufficient quantities during the winter months to care for all their needs.

The “Motpulks” are substitutes for spearhead formations used by the Germans, so the story goes. The new formation allegedly is much better than the spearhead formations—because the direction of attack can be changed quickly toward any of the four sides of the square. Also, the new formation permits the quick forming of a wedge. “Motpulks” are thrown into the attack to disorganize and confuse retreating opposition troops after the latter have been forced back by the German infantry, according to the reports.

Other "Motpulks," or detachments from the advancing "Motpulk," are left behind to mop up or surround any remaining centers of opposition resistance. The Germans claim the "Motpulks" have proved exceptionally strong in resisting Russian counterattacks in the Don river area. The formation is said to have been able to resist every threat to the German flanks by counterattacking forces.

The reports of the new formation are believed to be propaganda. Propaganda is an effective instrument of war, and the Germans use it to the utmost. As with other kinds of weapons, a defense must be devised and used.

Fear of the unknown is one of the greatest dangers on the battlefield. The Germans spread false reports to cause their opponents to fear so-called "new" or "super" weapons or tactics which they do not have. This is done to create an uneasy state of mind which readily leads to confusion when the action really does start. While carrying out an attack, the Germans continue to spread as much confusion as possible in their opponent's command. They do this by dropping bombs that make frightening noises, by using sirens on dive bombers, by terrorizing civilian refugees so they will rush away from their homes and block the roads, by dropping disguised parachutists, and by tapping telephone lines to spread false reports and even to give commands in the opposition's language. In many instances, the Germans also have used Fifth

Columnists to do some of these things, as well as to perform sabotage missions.

As an interesting sidelight, an American observer asked a German general staff officer immediately after the campaign in France about the nature of the "secret" weapon announced by the Germans before the campaign. He laughed and replied that it was the members and units of all the arms and services operating together in a task force combat team. The "secret" weapon was cooperation. The German officer added that this cooperation was possible only when all elements of the task force were under one commander.

In the future there will be other German reports of new weapons or tactics. It may be gas, or a tank, or an airplane, or something entirely new. These reports will be studied carefully because they may indicate new weapons or combat methods, or they may be propaganda—which can be as effective as bullets. Of course, there will be some improvements in German arms and tactics as a result of experience, but, in the main, their present combat methods are the ones they employed in Poland, France, and Russia. These are all well-known to our officers.

PART TWO: JAPAN

Section I. GROUND FORCES

1. INTRODUCTION

The Japanese must be recognized as vicious enemies who are highly trained and exceptionally well organized. They have proved themselves formidable foes in battle. Their calculated advances, successfully carried out, have shown them to be masters of detailed planning and execution of policies.

Nevertheless, the early successes of the Japanese were not the result of brand-new tactics or new super weapons. Basically, their tactics are no different from those employed by other modern armies and their equipment is, as a whole, inferior to that of the United Nations. They had large numbers of experienced troops and large amounts of equipment ready when they struck their first blows. They were much closer to the areas of battle than the bulk of our forces, and they had the added advantage of striking with surprise and getting the "jump" on all the fronts. In addition to these advantages, the Japanese modified their basic tactics to adapt them to jungle conditions. Their operations were carried out with

great speed and deception. Thorough reconnaissance usually was made ahead of each operation, and communications were well coordinated down to the lowest units. Camouflage, Fifth Columnists, and deceptions were widely used. The Japanese found in many instances that bluff was cheaper than force.

2. TACTICS

a. Movements

The fast movement of the Japanese during their early successes in the tropical battle areas was made possible by their physical stamina, light equipment and armament, as well as the use of all means of transportation and the aid given them by Fifth Columnist guides. They rode trucks and trains when possible, they obtained bicycles and small boats from the natives, and they swam streams when no other means of getting across were available. They made the fullest use of captured trucks, tanks, guns, and ammunition which were taken intact, or only partly destroyed. They quickly repaired the latter and used them. In addition to the boats obtained from the natives, the Japanese brought with them specially-designed small river boats to assist their movements. These they used often in Malaya and Burma to infiltrate patrols to the flanks and rear of defending forces. The patrols generally moved silently and at night.

The Japanese have used air transport planes both for personnel and supplies, but not on a large scale. It is known that they have trained air-borne troops.

b. Infiltration

(1) *General.*—The Japanese used infiltration tactics to great advantage in conquering the jungle areas now in their possession. This kind of attack is well suited for jungle warfare, especially when the attacking forces have more troops than the opposition. And in nearly every place where they fought during the first few months of the war, they were able to mass a much larger force than the United Nations.

There was nothing particularly new about the Japanese infiltration tactics. The principles they used are practically the same as those set out in our Basic Field Manual on "Jungle Warfare" (FM 31-20). Our methods of defense against infiltration, as given in FM 31-20, when properly carried out, are considered the best basis for combatting the Japanese.

(2) *Methods Used.*—Usually the Japanese avoided attacks to the front of United Nations forces, except in cases where the enemy sought to deceive our troops. The frontal attacks generally were made with a comparatively small number of men. These were armed with light machine guns, which were fired at a rapid rate in order to make our troops believe a much larger force was attacking. Also, on numerous occasions, the Japanese set off firecrackers to add to their efforts to confuse.

Regardless of whether these frontal attacks were made, the Japanese nearly always moved patrols

around the flanks of our forces, and, in many instances, patrols crept through gaps in our lines to reach the rear. The patrols usually were small, numbering from two to a few dozen men. They were lightly dressed, and generally were armed with light machine guns and grenades. Each of the men carried enough compact food to last for several days. By collecting food from the countryside, they often had enough to last much longer. These men had been trained and hardened to withstand many discomforts. All, or nearly all, were expert swimmers and handlers of small boats. They had been instructed to look upon woods and water as things to assist them—not as obstacles.

The infiltrating Japanese patrols had various missions. In all cases camouflage was widely used, and all movements were made as silently as possible. Some of the Japanese who acted as snipers painted their faces and hands green to conform to the leaves of the trees and covered their clothes with leafy branches. Others dressed as natives or in uniforms of opposing forces. Many of them climbed trees and tied themselves with ropes so they would not fall out if they went to sleep or were wounded. In many instances they were accompanied by Fifth Column guides. The sniper's equipment included the following:

Gas mask, green combination mosquito net, camouflage hood covering his helmet, head, and shoulders;

green corded net to camouflage the rest of his body; black wire eye-screen for protection from sun glare; coil or rope to use in climbing and tying himself to trees; a small sack of rice; small bag of hardtack; one-half pound of hard candy; package of concentrated food; can of field rations, can of tea; can of vitamin pills; can of chlorine to purify water; mess kit; canteen; a treatment for mustard gas; quinine; stomach pills; gauze pads, roll and triangular bandages; spare socks; gloves; toothbrush; flashlight with rotating lenses of different colors (one color apparently to be used as a recognition signal), and six spare lenses for eyeholes of gas mask (some usable in subzero weather).

Besides sniping, other missions performed by the infiltration groups were: to carry out reconnaissance, disrupt opposition telephone lines and block roads, destroy command posts, and create confusion in the rear of opposing forces. This last was one of the most important missions. The Japanese would withhold their fire until they got behind, and to the sides of, United Nations forces. Then they would open up with the rapid firing of light machine guns, and, frequently, with the explosion of firecrackers. Sometimes great batches of firecrackers were dropped from planes, with a lighted fuse to explode them after they fell. By giving the impression that large numbers of their troops were attacking, the Japanese tried to force quick with-

drawals in the hope of capturing large amounts of weapons, trucks and other vehicles, supplies, and men. Often the Japanese opened fire for the purpose of drawing fire from the opposing forces so that their positions could be located. The Japanese then would attack the positions with mortars, or infiltrate between our positions.

In their infiltration tactics, the Japanese moved fast at certain times and very slowly at others. They stood in rice-field ditches for hours, up to their necks in water, waiting for targets to appear. They lay hidden in underbrush for long periods waiting for chances to advance without being seen.

Often when the opposition counterattacked, the Japanese hid until opposing troops had passed, and then fired on their flanks and rear.

On some battlefronts the Japanese fortified their positions after infiltrating through and around the opposition flanks. These positions were prepared for all-around defense, and they included an unusually large number of foxholes with connecting trenches. The positions for the foxholes and trenches often were chosen to take advantage of cover, such as logs, rock piles, tree stumps, and roots. Light artillery, radio equipment, and large amounts of ammunition were found buried near a large number of the defensive positions. Once they were entrenched, the Japanese were hard to overcome.

c. Magnetic Mines

A relatively small number of Japanese soldiers in foxholes are equipped with magnetic mines. They attempt to attach these to the bellies of tanks which go over the foxholes. The mines are timed to explode shortly after the tanks pass over.

d. Use of Light Machine Guns

The Japanese have a light machine gun of .25 caliber which they sometimes use in the following way:

One soldier carries the machine gun on his back and stops and leans forward when a target is found. Another soldier immediately behind him shoots the gun. This weapon has a handle attached to it and can be carried like a handbag.

e. Mortars

In Burma, the Japanese transported their mortars in ox carts and on pack ponies. Elephants were used in a few instances to carry the heavy 5-inch mortars used by the Japanese. A second type of mortar used was 2 inches in diameter.

The bursting of the 2-inch mortar shell upon impact apparently was very poor. Some burst within 10 yards of United Nations soldiers without any of them being wounded.

To point out targets to mortar squads, the Japanese in Burma often crossed the fire of red tracer bullets. The position over which the bullets crossed was the target area.

f. Landing Operations ¹

Once the Japanese get a foothold, they follow through their landing operations with great vigor. The first troops to land usually pass directly inland, and they do not immediately try to establish a beachhead. Also, they usually do not land a large force at first. They push forward a constant stream of small forces, under cover of darkness, until enough troops are ashore to harass the defenders from the flanks and rear. Once this harassing causes the defenders to divide their fire, the Japanese begin landings on a large scale and attempt to establish a beachhead.

In one landing attempt in the Philippines, it was found when the first landing boats came ashore that each had been furnished only 6 gallons of gasoline. This amount was just enough fuel to get the Japanese ashore. By this allowance, the Japanese commander made sure that his troops would not get frightened and turn back to the transport ships. They had either to land or else be killed or captured.

g. Japanese "Graves"

Innocent-appearing Japanese graves, reverently and neatly fenced in, do not always contain corpses. Twelve "graves" were opened in an area where a Japanese spearhead had been slashed off. In only one was there a body; in the others was war matériel,

¹ Further details on Japanese landing operations are given in Information Bulletin No. 16, Japanese Warfare: A Summary, dated May 20, 1942, and published by the Military Intelligence Service.

which included three 75-mm. guns, two 37-mm. guns, more than 1,000 rounds of ammunition, a dozen combination telephone and telegraph sets, five rolls of telephone wire, and similar matériel.

h. Deception

The Japanese probably have used more deception in the present war than has ever been practiced in any other campaign in history. For the purpose of deception, they:

(1) Used lighted cigarettes, firecrackers, moving vehicles, barking dogs, and other ruses opposite one of the beaches on Singapore Island to lead the defenders to believe that the main attack would be made at that point (actually the first landing in force was made on another side of the island where the defenders were utilizing only small patrols for defense);

(2) Spoke out in English saying, "We give up," but blasted the United Nations troops when they approached to take the Japanese as prisoners;

(3) Talked to each other in English to attract the attention of United Nations troops, making them believe the conversation was being carried on by their buddies, with the result that the unsuspecting soldiers walked into enemy fire;

(4) Attached such objects as fountain pens, flashlights, watches, rifles, helmets, and bayonets to hidden mines and left the objects to be picked up by United Nations forces;

(5) Dropped leaflets from the air and returned soon afterwards to drop bombs on soldiers who came out in the open to pick up the leaflets;

(6) Told Japanese soldiers that United Nations forces would kill them if they allowed themselves to be captured;

(7) Played dead or hid in foxholes until United Nations troops passed, and then threw grenades at them or shot them in the back;

(8) Timed the firing of their artillery, mortars, and grenade throwers to that of United Nations artillery fire in order to create the impression on United Nations troops that their own artillery was falling short;

(9) Came forward with both hands in the air as if to surrender but when at close range they tossed two hand grenades—one from each raised hand;

(10) Flew the American flag on their ships approaching a landing place in the Philippines;

(11) Used a white flag of truce in order to get within close range of United Nations forces;

(12) Took advantage of the difficulty in distinguishing the Japanese from Malaysians or resident Chinese by frequently dressing as civilians and hiding their guns until they could spring a surprise attack;

(13) Dressed in British and Dutch uniforms and steel helmets;

(14) Put captured Indian soldiers as a screen between themselves and attacking Indian troops with orders to urge the attacking forces to hold their fire;

(15) Hired civilians to drive private cars to bridges prepared for demolition by United Nations forces so that Japanese hidden in the cars could shoot the troops guarding the bridges.

(16) Made noises imitating frontal fire to attract the opposition while lightly-armed Japanese troops worked around the flanks;

(17) Employed intelligence personnel with advance guards to confuse British native troops by speaking out in Malay, Tamil, Hindustani, Gurkhali, English, or Dutch—depending on the circumstances;

(18) Exploded firecrackers in the rear of defending troops to give them the impression that they were being attacked from the rear;

(19) Rapped bamboo sticks on hard objects to imitate machine-gun fire;

(20) Placed soldiers in an exposed swimming pool to draw the fire of Dutch machine guns so that their positions could be determined;

(21) Called out in Dutch for the whereabouts of the Dutch commander during a night attack and shot the commander when he answered.

i. Fifth Column

The tactics used by Fifth Columnists for the Japanese showed that thorough preparations had been made for this type of work before the war. In order to make our soldiers more alert to Fifth Columnists, a list of the different actions they have taken to date for Japan is given below:

(1) Collected ammunition and other supplies at secret dumps;

(2) Fortified secret positions to hold until the Japanese arrived or to divert United Nations strength;

(3) Collected United Nations uniforms for Japanese use;

(4) Laid explosive charges under vital military works by tunneling from obscure points;

(5) Attached under-water explosive charges to ships and docks;

(6) Fake missionaries or other unsuspected persons established secret radio transmitting and receiving stations in places such as cemeteries, abandoned quarries, and houses near airports (the tallest building in Singapore was not touched by Japanese shelling because Fifth Columnists operated a radio station there);

(7) Acted as snipers against troops and police behind the United Nations lines;

(8) Disrupted blackouts by connecting house electric systems to the street lighting lines;

(9) Gave signals at night by use of rockets, torches, colored lights, and burning haystacks and buildings (some of these signals were given from hideouts in chimneys, holes in roofs, hollow trees, and from the tops of tall buildings);

(10) Hid Japanese troops in their homes until late at night when surprise attacks were made on United Nations forces;

- (11) Served as Fifth Columnist organizers while pretending to be newspaper promotion men;
- (12) Sabotaged railroad tracks, motor vehicles, and roads;
- (13) Used false identity papers;
- (14) Used red-clothed scarecrows with arms pointing to United Nations defenses;
- (15) Indicated the direction of targets by trampling or cutting arrows in rice fields;
- (16) Pointed banana leaves, laundry, or planks to indicate motor transport parks or command posts;
- (17) Dressed as British and Indian soldiers and called out to the British not to shoot;
- (18) Furnished local food supplies;
- (19) Used fishing boats and lights to aid in landing operations;
- (20) Indicated airdromes with strips of cloth or paint and by flashing lights;
- (21) Acted as expert guides for Japanese troops;
- (22) Supplied information gathered before the war by local Japanese residents;
- (23) Gave assistance while serving as native officials;
- (24) Cloaked themselves as priests or monks to do Fifth Column work;
- (25) Obtained small boats for Japanese infiltration parties;
- (26) Tampered with air-raid warning systems to make them unworkable;

(27) Spread rumors among native troops;

(28) Drew up airdrome plans to turn over to the Japanese—a Malay overseer at Alor Star airdrome, Malaya, was arrested with airdrome plans, signaling apparatus, and Japanese propaganda;

(29) Used rice, salt, and white paper on roads to denote presence of opposing troops;

(30) Aided in the organization of the “Free Burmese Army”;

(31) Obtained information direct from United Nations airfields—possibly by transmissions from nearby undetectable short-wave radio sets² to adjacent field transmitters and then to Japanese air headquarters;

(32) Distributed propaganda pamphlets dropped from the air by the Japanese;

(33) Signaled to Japanese aviators by placing lights in hollow stumps where they could not be seen from the ground;

(34) Placed “puncture traps” on Burma roads to damage or delay United Nations motor transports. (The traps consisted of several sharp steel spikes, cut out of ¼-inch flat steel sheeting. The spikes were 6 inches long, with the upper 3 inches protruding from the road bed and camouflaged with mud, straw, or dried leaves).

²These sets were believed to be small, portable transmitters of such low power that they were not detectable at the United Nations airfields, but of sufficient strength to be received by nearby field receivers. Messages received from the small sets were then relayed by more powerful field transmitters to Japanese Air Headquarters.

(35) Two coolies walking together, one wearing a red shirt and the other a white, indicated that opposing troops were in the area;

(36) Soft drink sellers on bicycles signaled to the Japanese with a flag, waving it twice and pointing to British troops—after having served the British free drinks;

(37) A German dressed in civilian clothes walked in front of Japanese patrols by 50 yards and engaged opposing troops in conversation while the patrols took up firing positions;

(38) Telephone operators acted as chief Fifth Columnists in the Kedah, Malaya, area;

(39) Members of the Thakins Party, an anti-foreign political faction in Burma, organized to resist the British by Fifth Column activities and by joining the Free Burmese Army;

(40) German missionaries in New Guinea turned out to be Fifth Columnists—they helped the Japanese through the jungles to contact Australian forces.

3. EQUIPMENT

a. Rifles

All Japanese rifles captured to date are of .25 caliber—quite a bit smaller than either our Garand or Springfield. The Japanese use both long- and short-barreled .25-caliber rifles. The barrel of the short type is four-fifths as long as that of the long type. The sling of the short type is attached to the side of the

rifle instead of underneath, as in the case of the long type. The short rifle is used by engineers and signal corps men. Both rifles have detachable bayonets.

b. Swords

Japanese officers and noncommissioned officers often carry a long curved sword, which is used in combat.

c. Helmets

These are a muddy brown color and are shaped somewhat like a large bell. They are lighter in weight than our new type helmets and provide less covering protection. The Japanese helmet fits inside a tropical hat of similar shape. The hat has a camouflage net, which the Japanese usually cover with grass, leaves, or other natural covering.

d. Shade

To keep dust from their eyes, some Japanese soldiers wear a black screen shade, 7 inches long and 2 inches wide. The shade fits across the face, above the mouth and over the eyes. It is held in position by a string tied back of the head.

e. Entrenching Spades

More than one size is used. One type has a 10-inch handle and an 8-inch blade. A larger spade has a handle about 32 inches long. The blade of this spade has two peep holes through which the soldier observes

from the top of a trench or a rise in the ground. The blade covers the soldier's face while the rest of his body is hidden in the trench. The blade also has a bulge for the soldier's nose, like a Hallowe'en mask.

f. Water Purifier

The Japanese are instructed to boil their drinking water when there is any doubt as to its purity—if this can be done. In combat situations where drinking water cannot be boiled, a purifier tube is provided. The tube, made of rubber, has a purifying device at the end from which the soldier drinks. The device consists of two cloths, one of which contains purifying chemicals. The second cloth is used to remove the taste of chemicals from the water.

g. Rope

Each Japanese infantry squad carries a piece of rope 70 feet long.

h. Diaries

A large number of Japanese soldiers keep diaries. If you find these on the battlefield, be sure to give them to your unit commander. They will then be translated because they may contain valuable information about the enemy.

i. Wire-Scaling Device

The Japanese have a long "rug," made by putting pieces of bamboo together, which they throw over

barbed wire so troops can get over the wire without having to cut it. While the rug is being carried from place to place, it is rolled up so it will be easier to transport.

j. New Bomb

The Japanese recently introduced a new type of bomb for use against aircraft. The bomb is pear-shaped and is designed to explode in the air. When it has been regulated to explode at a given time, it is released about 1,000 feet above and to the front of our planes. The explosion produces a bright purplish light with white smoke streamers.

Section II. AIR FORCES

1. GENERAL

As a rule, Japanese pilots are well trained and compare favorably in all respects to those of other nations now engaged in the war. They have generally been very accurate in bombing and strafing attacks except when strongly opposed by anti-aircraft fire and fighter planes. While most of their planes have stood up well in combat, only the "0" fighter has been outstanding.

In their campaigns to date, the Japanese have used bombers, fighters, and reconnaissance planes to "soften" the opposition ahead of the ground forces, and also to lend close support to troops on the front lines. To soften the opposition, their planes usually bomb troops and military objects on or near roads and railroads leading toward the front. They attack exposed combat units such as road-bound, congested transport columns and command posts.

The Japanese regard the airplane as a necessary weapon to assist in military operations. Usually, before committing his forces to battle, the Japanese army commander has large air formations assigned to him and placed under his direct command. He, in

turn, often delegates command of air forces to commanders of units as small as a regiment.

The Japanese air forces perform independent missions when they are not busy giving close support to the ground forces.

2. METHODS OF ATTACK

a. Fighter Planes

Generally, these do not attack opposition airdromes until reconnaissance planes have obtained target information, weather data, and perhaps pictures.

Several different formations have been used. In Malaya four planes flying in a diamond-shaped group were the basic army unit, while naval fighters used a narrow vee formation of three or five planes. The vee was very rough in shape—probably as a defense against anti-aircraft guns.

One of the most common fighter-plane formations used against ground forces is a vee of three planes with two other planes on the left flank and two more on the right flank—a total of seven planes. If the planes meet no fighter opposition when the target area is reached, three of the four flanking planes drop back to form a second vee behind the first. The fourth flanking plane follows at a high level to protect the formation. If the group meets fighter opposition, the first vee of three planes goes ahead with the planned attack against ground forces, while one or both of the flanking pairs of planes engage the opposing aircraft.

Upon entering combat, Japanese fighter squadrons frequently divide into two sections. One of these flies low to tempt the opposing planes to dive while the other remains high to dive on the opposition aircraft. The Japanese make use of clouds as cover in approaching, and on clear days frequently get in a line directly between the sun and the target. After first strafing the target, sometimes the fighters break formation and attack individually.

The strafing of airdromes rarely occurs before careful reconnaissance and planning. Not only are the airdromes strafed, but the terrain around the field for a distance of 50 yards is also thoroughly covered, usually with incendiary bullets.

In attacks on opposing plane formations, Japanese fighter tactics usually have not been well coordinated. The Japanese break formation and attack individually from above and below the opposition aircraft. If possible, they generally attack our planes from the rear. However, frontal attacks have been made on some of our planes which have poor armament. These few frontal attacks have been better coordinated than the others. Instances have been reported where two Japanese fighters attacked a plane from its left-front and right-front.

Fighters usually accompany bombers if the bomb targets are within range. The fighters fly about 3,000 feet above the bombers.

Bomber Planes

The common tactical unit for bombers consists of nine planes. On large raids, three units, or 27 planes, generally are used. Often the 27 planes are split into two groups of 13 and 14 planes as far as 250 miles from the target area. Then the two formations converge on the target from different directions at the same time.

In practically all instances to date, the Japanese have dropped their bombs while flying in formation. They always fly close together, even in the midst of antiaircraft fire. Only a relatively small number of bombs are dropped, usually two from each plane.

When attacked, the bombers generally turn and face the opposition and the forward planes drop down so that all guns will have a field of fire.

(1) *Torpedo bombing*.—The tactical unit for this type of bombing also consists of nine planes. In the attack the formation usually glides in toward the target from a distance out of gun range. It deploys into a wedge or ragged diamond formation for the actual attack. The planes usually are never higher than 300 feet when they release their torpedoes.

(2) *Dive bombing*.—The Japanese usually dive at angles of 45 to 50 degrees. In the attack on Hawaii, they began gliding toward the target from heights of 3,000 to 5,000 feet. One after the other, they released their bombs just before reaching the target and then climbed steeply upwards. After the bombers released

their bombs, they strafed ground installations with machine-gun fire.

(3) "*Swing*" bombing.—This name was given by observers to a type of Japanese bombing sometimes used when the enemy knew the areas in which our antiaircraft fire was located. The Japanese fly directly toward the target until they reach the outside boundary of antiaircraft fire. Then they make a banked turn, releasing their bombs at the same time. This type of bombing is very inaccurate. In some instances, the distance between exploding bombs dropped from the same plane at the same time has been as great as 300 yards.

3. SUPPLIES BY AIR

The Japanese have often dropped supplies from planes by use of parachutes. Usually the supplies were intended for troops which had infiltrated into or behind opposition lines, but most of them fell into the hands of United Nations forces. The supplies included food, cigarettes, and medical equipment. They were contained in brown cases about 10 x 3 x 1½ inches in size.

4. JAPANESE "0" FIGHTER

The "0" fighter is considered Japan's best all-around plane. The plane's speed and maneuverability are its outstanding features. It will fly 310 miles per hour at sea level, and will climb at a rate of 4,000

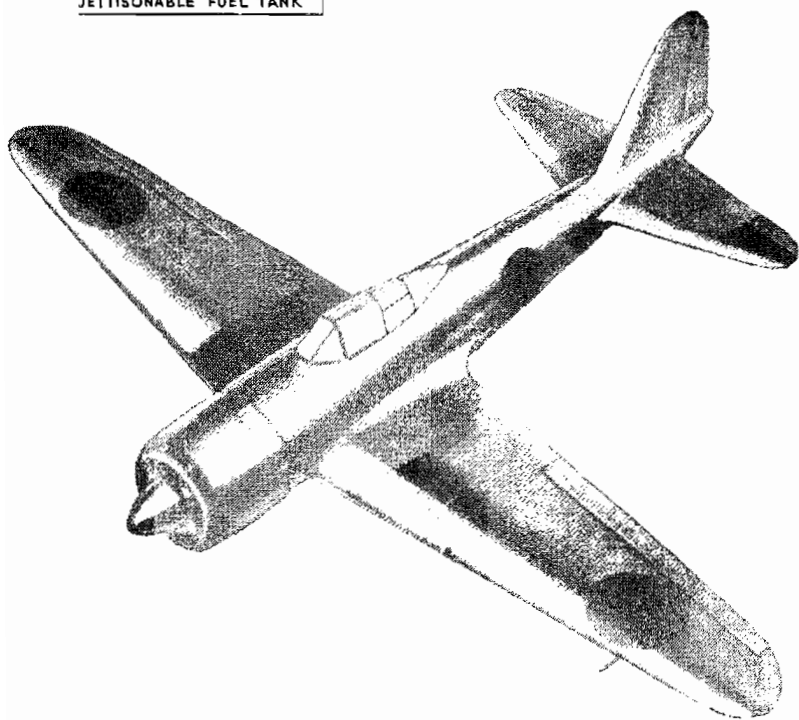
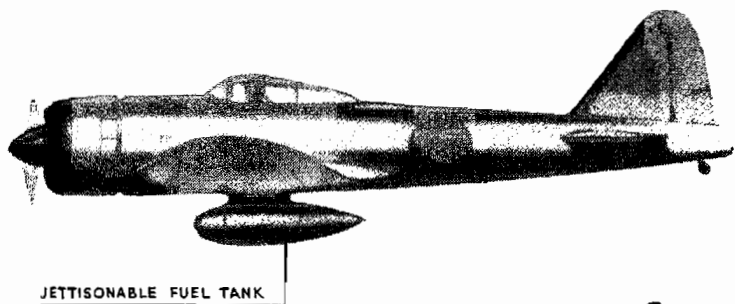


Figure 10.—"0" Fighter.

feet a minute; at 15,000 to 20,000 feet, the rate of climb is only about 3,000 feet a minute. An improved "O" fighter, first seen on June 8, is said to be somewhat faster than the one described above.

In comparison with American fighter planes, the "O" is better in some respects, but not so good in others. All American fighters have better construction and armor. The "O" sacrifices armor in order to attain greater maneuverability and rate of climb. Both the P-39 and the P-40 fighters have greater fire power and are faster than the "O" at low altitudes, but the "O" is faster and can outclimb and outmaneuver them at high altitudes. The "O" is armed with two 20-mm. cannons and two fixed machine guns.

Section III. FOOD

1. GENERAL

Each soldier in the Japanese Army is responsible for his own cooking while in the combat area. As a general rule, however, the men of a squad do their cooking together. No stove or other heating apparatus is carried. Enough food is often cooked in the morning to last throughout the day. Sometimes the Japanese have only rice and salt to eat. Sugar is considered a luxury. It must be obtained in the general area where the operations take place.

2. EMERGENCY FIVE-DAY RATION

Each soldier usually carries enough food to last him for five days in the field; infiltration groups may carry more. At times the Japanese kill and cook dogs, goats, and other small animals to add to their emergency rations. The five-day emergency ration includes:

- a. Half a pound of hard candy.
- b. Can of tea.
- c. Package of compact food.
- d. Vitamin pills.
- e. Package of hardtack.
- f. Small sack of rice.

3. OTHER TYPES OF EMERGENCY RATIONS

In Burma the Japanese used two types of emergency rations. One was known as the "A" scale and the other as the "B" scale. Each soldier carried rations for three days on the "A" scale and for one day on the "B" scale. Neither of the rations was to be eaten except on orders of the commanding officer when the unit was separated from its supply column. Each ration under the "A" scale consisted of about 1 pound and 3 ounces of rice (enough for two meals) and one small can of mixed beef and vegetables. The soldier usually cooked the rice in a small bucket which he carried for this purpose. The "B" scale ration consisted of three paper bags of hard biscuits (enough for three meals).

4. FIELD RATIONS

These generally are of two types, "normal" and "special." The soldier always carries the special ration, and is issued the normal ration at mealtimes.

a. Special Type

A single ration includes the following:

- 20.46 ounces of rice (probably polished);
- 8.113 ounces of biscuit;
- 5.3 ounces of canned meat (or 2.1 ounces of dried meat);
- 4.23 ounces of dried vegetables;
- 1.09 ounces of dried plums, and small quantities of salt, sugar, and sometimes a can of beer made from rice.

b. Normal Type

A single ration of this type includes the following:

- 23.3 ounces of rice;
- 7.4 ounces of barley;
- 7.4 ounces of raw meat;
- 21.16 ounces of vegetables;
- 2.1 ounces of pickles and small quantities of flavoring, salt, and sugar.

5. VITAMINS

The Japanese are using vitamins to supplement their rations to an unknown extent. Some of the vitamin tablets are known to consist mainly of vitamins A and D.

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October 1942

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**MILITARY INTELLIGENCE
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Washington, October 1942**

**INTELLIGENCE
BULLETIN
No. 2
MIS 461**

NOTICE

Owing to the character of the material contained in the INTELLIGENCE BULLETIN, it has been necessary to classify it as "restricted." It is believed, however, that it should be made possible for all enlisted personnel and junior officers to use this bulletin, as it is designed primarily to serve as a vehicle for the dissemination, for their benefit, of the latest information received from Military Intelligence sources.

Wise men learn much from their enemies.

—Aristophanes.

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PART ONE: GERMANY

Section I. THE INFANTRY DIVISION

1. INTRODUCTION

The German infantry division has played a decisive part in the successes of the German Army in the Polish, French, Balkan, and Russian campaigns. German armored divisions have penetrated enemy lines and have won freedom of maneuver. But the hard-fighting, quick-marching, ground-holding infantry with its great firepower has brought about final decisions. Why is the German infantry division so effective?

The Germans have always recognized the basic importance of the infantry. They select especially promising officers and men for this arm of service, give them the most thorough training, and provide them with the best possible weapons. These weapons range from carbines, antitank rifles, machine guns, and light and heavy mortars to 75-mm and 150-mm infantry

howitzers. German division artillery is very similar to our own in caliber, number of guns, organization, and employment.

Each infantry regiment in the division has an infantry howitzer company with three platoons of 75-mm howitzers and one platoon of 150-mm howitzers. This company is an organic part of the regiment and thus relieves artillery units of the division of many small but difficult direct-support missions. This set-up also simplifies the problem of liaison between organic artillery and infantry units. In contrast to our infantry division, three-fourths of the transport in the ordinary German infantry division is horse-drawn.

Above all, the American soldier should remember that the German soldier is trained in the use of firepower and infiltration. The newspaper stories about German infantry attacking in solid waves, only to be mowed down, are plain nonsense. The Germans take advantage of every bit of cover and look for soft spots through which they can drive. Furthermore, the Germans know how to use firepower to clear out opposing forces; they go about their business as methodically as if they were engaged in a training exercise.

2. ATTACK METHODS

When you run into German infantry, you will probably meet detachments of the reconnaissance battalion. Your first contact may be with the armored-car platoon. In country where roads and paths are fairly good—and

especially at night and in foggy weather—your first contact may be with bicyclists, with the horse cavalry troop, or with motorcycle patrols. In any case, machine guns (nearly the same caliber as our own) and infantry howitzers will soon arrive to support these forward troops.

After you have held up the reconnaissance unit, you can expect the supporting infantry to appear. They will reconnoiter your position quickly but thoroughly. They are well trained and keen-eyed, but how much they see depends on you.

In attacking, the infantry will appear by squads, each deployed in a wide, staggered column or in line as skirmishers. In either formation the men will be about 5 yards apart, and the squad probably will be preceded by its light machine gun and its leader with his machine pistol.

During the advance the light machine guns operate well forward. The light infantry howitzers are not far behind. The howitzers have a very loud report and a considerable flash, and can easily be distinguished from the mortars. The mortars are 50-mm and 81-mm, much the same as our own light and heavy mortars.

The howitzers may be 1 to 2 miles away from you, even closer if there is cover. The mortars, which cannot fire any farther than ours, will be much nearer. Experience has shown that the mortars are brought into action quickly. You may even spot them taking up a position without cover in order to save time.

Once the attack is held up, the Germans will quickly try other methods. Reconnaissance patrols may first reconnoiter your position more thoroughly. They patrol well. Their scouting is excellent, partly owing to their thorough training and partly because many men come from country districts, as is the case with our own troops. Patrols specially organized and lightly equipped—as they were in 1939 when they harassed the Maginot Line—sometimes stay out for days, working in pairs and marking your dispositions on their maps. Their map-reading, too, is very good, and they have plenty of field glasses.

If your positions are well concealed, the enemy may have to send out fighting patrols, 40 or 50 strong. Working at night, the patrols will send out ahead one or two men who betray their presence in order to draw fire. As soon as one of your posts opens fire, the enemy will attack it with light machine guns and mortars.

Small detachments infiltrate, engage defensive posts from flank or rear, and cut telephone wires. They try to create the impression of a much larger force in the hope that you, feeling isolated and in danger, will fall back. With this idea in mind, they are likely to form salients, projecting deep into your forward defenses.

Where you are protected by an obstacle, the enemy attack will be made with the help of engineers. Against wire in front of you they will use their equivalent of our Bangalore torpedo—a plank up to 10 feet long with

slabs of explosive placed end to end along its length. For action against your pill-boxes—if they can get near enough—they may use slabs of T. N. T. fastened to the end of a pole and pushed into or against the openings for firing. The man carrying the pole is your best target. They also use flame-throwers, the range of which is limited to some 25 yards and which cannot be operated continuously for more than 12 seconds. These are carried on one man's back and therefore are comparatively slow-moving and offer a fairly easy target. If the enemy is faced with a water obstacle, he will find any part that you have left inadequately guarded and will cross it by means of rubber boats. The larger ones can transport a rifle or machine-gun squad or one of the 37-mm antitank guns. These boats are very vulnerable to small arms fire.

The part played by the engineers must not be underestimated. They are very good at the rapid crossing of rivers—first by assault boats, then by rafts made up of rubber boats and pontoons, and, finally—when they are established on the opposite bank—by the construction of a ponton bridge. The motor vehicles can be ferried across on the rafts, which the engineers will already have constructed by the time the leading troops are across. Therefore, if you can prevent the leading troops from establishing themselves and keep the engineers from launching their rafts, you may delay the attack of a whole division.

3. USE OF DECEPTION

Another important point must be remembered. The Germans will use every method to fool you. Telephone calls in perfectly good American may order a bridge not to be blown up. Fifth Column operations may be well coordinated with military operations.

In general, German infantry are trained to create the impression of large numbers, and in this they are assisted by their close-support weapons—particularly the infantry gun, with its loud report, and mortars, which are brought into action very quickly.

4. CONCLUSION

Smooth cooperation, short clear verbal orders, a true appreciation of the value of speed—"Sweat saves blood"—and a high degree of physical fitness all combine to enable the Germans to exploit their opportunities to the full.

Section II. ENGINEERS

1. INTRODUCTION

German combat engineers have been in the front lines of every major Nazi engagement of the present war. They form a very definite part of the German combat team, which also includes the armored forces, air forces, infantry, and artillery. The major duty of these engineers is to keep the German Army moving. They assault fortifications or other obstacles; they span streams with everything from log rafts to large temporary bridges; they go regularly into combat, and under the most difficult conditions, to clear the way for the echelons that follow. The success of the Germans through surprise, deception, and speed has been due in no small measure to the front-line work of the combat engineers, who during World War I worked in the rear areas except when called to the front under rare critical conditions.

2. TRAINING OF COMBAT ENGINEERS

In line with a training principle used throughout the German Army, 90 percent of the instruction now given to the army's combat engineers deals with attack problems and 10 percent with defense problems. Stress is placed on engineer reconnaissance and on making use of all means available in the combat area to help the German forces continue their advance. Army engineering equipment is used only when local means are not available.

The combat engineers are trained basically as infantry soldiers, since most of them now advance with the infantry and other combat troops and engage regularly in battle.

German military leaders, however, do not try to turn a combat engineer into a "Jack-of-all-trades." After receiving basic infantry and combat-engineer training, each trainee is assigned to a group which concentrates on one special type of work. For instance, he usually qualifies specifically for one of the following tasks: demolitions, fortifications, storm-troop combat, combat at rivers, construction of military bridges, emergency bridge construction, and general obstruction duties.

Some of these different kinds of specialized training are elaborated briefly as follows:

a. Storm-troop combat, with special equipment for rush assaults.

b. The obstruction service, which prepares obstacles of all kinds. These men are trained to handle explosives and mines, as well as to use electric saws and boring equipment.

c. Combat at rivers, which involves the use of rafts and small assault boats, both in the attack and in the defense. These men learn how to cross water under all conditions—in rain, heavy wind, and snow, and especially at night.

d. Construction of military bridges—Also, establishing emergency ferry services, which provide transportation for men and matériel in motorboats and rowboats with outboard motors, or on improvised rafts propelled by these boats.

e. Emergency bridge construction, which calls for the preparation of many types of bridges, using material found locally.

f. Construction of field fortifications, which includes the building of defense installations of all kinds, large and small, with special training in the technique of preparing unusually deep foundations.

Looking over this whole set-up, the American soldier will see that a combat engineer in the German Army operates both as a fighter and a highly skilled technical expert. It may be said that if we destroy a German combat engineer, we destroy a man who is as useful to the Axis as any single person on the battlefield. Someone who is an infantryman—plus.

3. OTHER ENGINEER ORGANIZATIONS

The types of jobs done by combat engineers in World War I are now done almost exclusively by labor organizations, which include the so-called **Todt Organization**. The campaign in Poland taught the Germans that motor highways are likely to be more useful transport routes than railroads. The work of maintaining roads became so heavy that the government ordered a man named Todt, inspector of roads in Germany, to form a special organization for this important duty. The Todt Organization is composed of specialists and laborers who repair, construct, and maintain roads and bridges (with the Construction Engineers) from the rear and well into the combat zone. Sometimes it also assists in preparing fortifications (with the Fortification Engineers).

Another organization working with the engineers of the German Army is the **Reich Labor Service**. It trains boys of 17 and 18 to perform many of the tasks which in the last war were assigned to the regular engineers. These tasks include:

Constructing and maintaining important highways; constructing and improving fortifications, bridges, and airports; salvaging equipment, munitions, and matériel in battle areas, and camouflaging and sandbagging military establishments.

Section III. DIVE-BOMBING

1. GENERAL

Originally developed by the United States Army and Navy in the late '20's, the technique of dive-bombing was soon adopted by the German Air Force, which tested it under actual war conditions during the Spanish Civil War. In the present conflict the Germans have found dive-bombing tremendously profitable, especially in Poland and on the Western Front. As a special method of precision bombing, it is known to have been successful against artillery positions, front-line troops, bridges, crossroads, rail centers, dumps, and anchored ships. The main purpose of the dive-bomber is to drop explosives on vital parts of a target, with maximum surprise and minimum risk.

The development of dive-bombing was presumably an attempt to overcome the inaccuracy of the earlier bomb-sights and to give additional velocity to the bomb itself, thereby increasing its penetrative and armor-piercing qualities.

2. TYPES OF PLANES

At present the Germans seem to prefer the Junkers 87 as a dive-bomber for low-flying attacks. For higher dive-bomber attacks, they are likely to use the Junkers 88 and the Dornier 217.

Everyone has heard a great deal about the German Stukas. The name "Stuka" may be applied to any one of several models of the Junkers 87. The 87's are low-wing, two-seater monoplanes, equipped with diving brakes to limit their speed. The wings are crank-shaped. The armament consists of two fixed machine guns in the wings, and one machine gun flexibly mounted in the rear cockpit. The plane has wing racks for four 110-pound bombs or two 220-pound bombs, and a carrier, underneath the fuselage and between the landing gear struts, which will carry a 550-, a 1100-, or a 2,200-pound bomb. When the 1100- or 2,200-pound bombs are carried, the wing bombs are omitted.

3. TACTICS

An average of 30 to 40 German dive-bombers take part in an attack. These planes ordinarily fly at an altitude of 14,000 to 17,000 feet, with escort fighters about 1,000 to 2,000 feet above them.

When the objective is sighted, the entire unit either attacks a single target or divides into smaller formations, which seek out individual targets previously as-

signed to them or attack the single target from different directions.

The dives are generally made upwind, since this permits greater bombing accuracy. The flight commander usually dives first. At the order to prepare to dive, the pilot sets his diving brakes, closes the oil cooler and cylinder radiator a little more than halfway (to keep from cooling his engine too much), switches on the reflecting sight, and adjusts the bomb-release. He then lets the plane slide off on the left wing, and, sighting his target through the bombsight, goes to town.

The rate of dive, varying with different types of dive-bombers, is regulated by the throttle and is maintained throughout the pull-out up to the moment of climb. Single- and twin-engine bombers use automatic bomb-releasing mechanisms which compute the height of release and angle of dive; otherwise this must be estimated by the pilot.

After the pull-out, the planes swoop down to about 100 feet from the ground in order to escape antiaircraft fire, and, while low, they machine-gun any target in sight. When the planes have reassembled, they seek cover in clouds or climb up through them to a high altitude and head homeward in close formation.

4. EFFECTIVENESS

The success of German dive-bombing operations has invariably been made possible by the absence of any real fighter opposition. In France, dive-bombing was used

successfully as a barrage to precede the advance of mechanized troops—it was not employed during the first phase of the advance into Belgium. During this Belgian phase, heavy attacks on United Nations airdromes were made by high-altitude bombers and fighter planes. Only after United Nations air strength had been considerably reduced did the dive-bombers put in an appearance.

In Crete, dive-bombers attacked airdromes prior to landings by parachute troops. Fighter planes strafed anti-aircraft and other ground defenses. Here, as in Poland, the Germans had no air opposition.

Dive-bombing is expensive. When opposed by first-class fighter planes, the enemy has frequently suffered losses as high as 50 percent. Anti-aircraft barrages often have caused dive-bombers to release their bombs at an altitude of 3,000 to 4,000 feet with a consequent loss of accuracy. Dive-bomber pilots in many cases have been seen swerving sideways near the end of their dive in an effort to avoid the barrage, dropping their bombs hundreds of yards wide of the target.

Unopposed, and in conjunction with ground troops, the dive-bomber has proved effective, but it is by no means the most potent weapon of the war, nor can it claim to have replaced artillery fire.

Section IV. DEVELOPMENTS IN DESERT WARFARE

1. TANK AND ARTILLERY TACTICS

The Germans have developed a new method of combining tanks with 88-mm and 50-mm guns for an attack. The procedure is for a wave of tanks to charge in close to a United Nations position and then crisscross until a dense cloud of dust rises. After this, a second wave of tanks comes up in the dust, accompanied by the 88-mms and the 50-mms, which entrench themselves in wadis¹ or, wherever possible, behind abandoned vehicles. While the dust is settling, the guns open fire from these close ranges with considerable effect. The Germans rarely ever fire directly at the front of opposing tanks; they wait for angle shots and try to hit the tanks on the side.

¹ A wadi is a gully which wind and water have cut out of the rocky, sandy soil of the desert.

2. BREAKING TRAILS THROUGH MINEFIELDS

The Germans have two methods for going through minefields:

(a) They lay a smoke screen and send in engineers to plot a trail through the minefield, locate mines in the passageway with mine detectors, and detonate the charges.

(b) Or, behind an artillery barrage, they send a tank over the trail selected. The tank goes ahead until its tracks are blown off by exploding mines. A second tank then tows the first one out, and resumes the forward drive until its own tracks, in turn, are damaged. A third then comes to tow the second, and the process is repeated until a trail through the minefield has been established. The Germans usually get through at a cost of three or four tanks. Since the only damage these suffer is the loss of their tracks—which the German recovery system can repair in three or four hours—the Germans do not regard minefields as serious obstacles in the desert. It should be noted that the Germans use anything and everything to pull tanks off the field. The recovery and maintenance system operating in Libya has been so well developed that it can repair 10 tanks a day.

3. AIR-GROUND RECOGNITION

The Germans usually have accurate air-ground recognition. First, ground troops release a chemical

smoke, often pink, which can be seen at 10,000 feet. Artillery then fires on the target. Planes observe the fire and bomb the area where the shells are falling.

4. SLIT TRENCHES

It has been found that slit trenches are an absolute necessity in case of bombing or artillery fire. Personnel in them are in very little danger from bombers unless they score a direct hit on the trench.

5. TRANSPORTATION

There are few long marches in the desert; nearly everything is now on wheels. On or near the front there are some foot movements, but even these are not practical over long periods. Thousands of trucks must be used, creating special problems.

Vehicles behind the lines are not dug in, but scattered at least 200 yards apart. Thus arranged, they make poor targets for aircraft since it is impossible to damage two trucks with a single bomb—and bombs are too expensive to use one per vehicle.

Excepting a small section for the driver to see through, the windshields of trucks are often greased lightly so that the dust will blow against them and stick. Sometimes they are painted. This prevents the windshield from reflecting light. The windshields are necessary to protect personnel from wind and dust.

In the daytime most trucks are kept out of artillery range.

6. SUPPLY

The Germans advance with supplies for 5 days in their trucks. On the fifth day the emptied trucks turn back, and a freshly loaded group replaces them.

7. EFFECT OF WEATHER

Most German soldiers are accustomed to temperate weather, and have to adapt themselves to the dry desert heat. To United States soldiers from Texas, Arizona, New Mexico, and the California valleys, dry heat is no novelty. Military observers agree that the heat of the African desert, although not the last word in comfort, has been exaggerated by newspaper correspondents.

Section V. BALANCED ANTITANK PROTECTION

In view of all the comment about the German 88-mm dual-purpose antiaircraft and antitank gun, some of us may forget that use of this weapon is only one aspect of German antitank methods.

In line with German Army principles, each combat unit, from the smallest to the largest, is so organized, armed, and equipped as to be tactically self-sufficient. Antitank protection is vital to the successful accomplishment of a combat mission; therefore, suitable anti-tank weapons are provided for each unit. These weapons are used in accordance with the German doctrine of antitank defense, which may be summed up as follows:

Staffs, troops, and supply echelons must constantly be on guard against tank attacks. Careful ground and air reconnaissance and map study help to indicate the avenues of approach over which hostile tanks will attack. Certain terrain features are natural obstacles to tanks, and must be used to full advantage. The

favorable avenues of approach must be protected by antitank guns, artillery, mines, and tanks.

Early information regarding hostile tanks permits timely and well-planned defensive measures. All reconnaissance agencies are required to report tank information to the commander immediately, as well as to the troops specifically threatened.

The antitank units which are organic parts of infantry regiments, battalions, or companies contribute their fire power to the support and protection of their own organizations. Those antitank units which are organic parts of corps and divisions constitute a reserve force which, because of their mobility, can be rushed to decisive areas as determined by the general situation.

Each infantry company is protected by a section of three antitank rifles.¹ Each regiment, in addition to these company antitank rifles (total 27), is protected by an antitank company of three platoons (each with four 37-mm antitank guns), and one platoon of four 20-mm rapid-fire antiaircraft-antitank guns.

A trend toward substitution of the 50-mm antitank gun for the 37-mm guns is progressing rapidly.

The antitank protection given to large units, such as the armored, motorized, and infantry divisions, need not be discussed here. But it is worth noting that the amount of antitank protection is steadily being increased for both large and small units.

¹ In Africa, each company of one light division was reported to be equipped with two 76.2-mm captured Russian field guns for antitank use.

Section VI. MISCELLANEOUS

1. USE OF DOGS

a. General

Germany used dogs for military purposes during World War I and also is using them in the present conflict. Some are trained to carry messages, some to help locate opposing forces during reconnaissances, some to do guard duty, some to help locate injured persons on the battlefield, and others to pull or carry supplies over difficult terrain.

b. Breeds Selected

Several breeds of dogs are used for the military work. All dogs selected must be fairly large and strong, and capable of being trained. The German shepherd (police) dog generally is favored over other breeds, and numbers about half of all the dogs used by the Germans. The Doberman pinscher breed also is highly satisfactory and is widely used.

c. Training

Training of dogs for military service begins when they are only a few weeks old. At the age of 6 months they usually are given an examination to weed out those which prove unfit for additional training. Dogs which show any signs of nervousness are eliminated immediately. The others, to qualify for the additional training, must follow their masters over very rough terrain, both by night and by day, and they must show ability to get across ditches, streams, and other obstacles. And they also must not be afraid of battle-field noises.

d. Duties After Training

(1) *Tracking dogs.*—After the training period, the dog and its trainer are assigned to a company. The trainer remains with the company for about 3 weeks, or until the dog has become familiar with the new master, who is chosen from volunteers who are dog lovers. During this same period, the dog also becomes familiar with all the men of the company's reconnaissance party, with whom it will work later.

After the period of adoption, the dog must obey its master at all times. If well trained to work with the reconnaissance party, it can precede the patrol by 30 to 40 yards (without losing touch) and on scenting the presence of any stranger, warn the patrol by returning silently to its master. Some of the dogs are

said to have been trained to signal the presence of strangers by pointing—much like a bird dog which has spotted a covey of quail. The dogs must not bark or whine. At the end of every reconnaissance, the dog immediately returns with its trainer to company headquarters. It must never stay in the front line.

(2) *Messenger dogs*.—The smartest dogs are used as messengers. The message containers are strapped to their backs or collars. They either find their way by memory or follow a scented trail. The scent is a mixture of 10 parts of water to 1 part of a substance which, when dissolved, looks like molasses and smells like root beer. The mixture is placed on the message trail by means of a container which allows about five drops per yard when it is carried at a normal walk.

(3) *First-aid dogs*.—These are trained to seek wounded or dead soldiers on the battlefield. The dogs have a short stick (*bringsel*) tied to their collars. When they find a soldier lying down, they take the stick in their mouths, return to their masters, who are ambulance operators, and guide them to the wounded. The dogs pay no attention to soldiers standing up.

First-aid dogs were credited with saving thousands of lives in World War I.

(4) *Guard dogs*.—These are trained to attack strangers or to give warning of their presence.

(5) *Draft dogs*.—These pull sleds or other small vehicles, usually in mountainous areas. Light loads sometimes are harnessed to the dogs' backs.

2. SPEED OF VEHICLES

According to a captured German manual, the speed at which various German motor transports and armored-force vehicles travel while alone or in convoy is as follows:

	<i>Alone</i> (m. p. h.)	<i>In convoy</i> (m. p. h.)
Motoreycles and cars-----	38	22
Trucks -----	25	22
Trucks with trailers-----	20	15
Mark IG and Mark II tanks----	15	11
Mark III and Mark IV tanks----	15	11

3. GERMAN-ITALIAN RELATIONS

Is there a spoke or two broken in the Axis?

There have been many reports for a long time that German and Italian soldiers do not get along well together. The Italians are said to hate the Germans, and the Germans, in turn, make sly remarks about the fighting abilities of the Italians. Some of these reports have come from official sources. The following extract from a German publication captured in Libya seems to bear out these reports:

“ITALIAN WAR COMMUNIQUE

“On the Tobruk front a large force of Italians attacked an enemy cyclist, causing him to dismount. After heavy and prolonged fighting they were able to

puncture his tires. The front wheel was destroyed, and the loss of the rear wheel must also be considered possible. The handlebars are in our hands, but possession of the frame is still being bitterly contested.

“H. Q. Royal Italian Army”

The Japanese are said to make similar jokes about their Siamese (Thailand) allies.

PART TWO: JAPAN

Section I. CHARACTERISTICS OF THE JAPANESE

1. RACIAL ORIGINS

Physical uniformity among the Japanese is probably more apparent than among Americans. However, it is impossible to establish rules for identifying every Japanese type. In spite of the Japanese belief in the divine origin¹ and purity of their race, the modern Japanese are a mixture of at least four basic peoples: the Malayan, from Malaya; the Mongolian, from North China; the Manchu-Korean, from Korea, and native tribes of the Japanese islands, such as the Ainu. Theoretically, the nation shows characteristics, in varying proportions, of all four. Its most distinctive racial marks are those of the Mongolian type—from families

¹The Japanese people believe that their emperor is a "son of heaven," a direct descendant of a sun goddess. They believe that the emperors are the fathers of their race, and that they, therefore, are also of divine origin.

of the ancient ruling class or aristocracy—and those of a coarse peasant stock from the Malayan strain, with some mixture of the Ainu. The Mongolian type is something like the typical North Chinese, physically; the peasant stock is often similar in appearance to the South Chinese. Descendants of the Mongolian type in Japan are not numerous. They are frequently tall and slender and of a lighter skin tone when compared with the stocky, square, rather dark peasant. (See columns 3 and 4 of the table listing physical characteristics, in paragraph 2.)

The Japanese Army is conscripted from every class, but the average private with whom American forces have to deal is the short stocky farmer or fisherman. The strongest influence in the development of this type was an early migration from Malaya. Frequently, because of the common racial background between Japan and parts of China, differences between the peasant Japanese and the South Chinese, also of Malayan origin, are extremely slight. In the same manner, there is a close similarity between the Mongolian type of North China and groups of the same strain in Japan. Thus, in the table which follows in the next paragraph, the peasant Japanese and the North Chinese are presented as opposites. Differences in appearance between intermediate types must be determined by means other than physical characteristics. It is often true that separate environments have produced certain cultural differences which will be apparent under close study.

2. PHYSICAL DIFFERENCES FROM CHINESE

The table presented in figure 1 is an index to certain racial features in which differences appear between Chinese and Japanese. The two outer columns list opposites which represent the widest possible differences. The inner columns list intermediate overlapping characteristics where distinction between the two races is not always clear. Identification of types according to these measurements will be a fairly easy task when the Japanese peasant and the North Chinese are compared. (See fig. 2). In cases where there may be considerable doubt, suggestions for recognition appearing under paragraph 3 may be useful.

Chinese			Japanese	
North Chinese	South Chinese		Aristocratic upper class	Peasants (usually enlisted men)
Tallest.....	Intermediate....	<i>Stature</i>	Intermediate....	Shortest.
Heaviest.....	Lightest.....	<i>Weight</i>	Intermediate....	Intermediate.
Slenderest.....	Intermediate....	<i>Body build</i>	Intermediate....	Stockiest.
Shortest.....	Intermediate....	<i>Torso</i> ²	Intermediate....	Longest.
Long and slender.	Intermediate....	<i>Arms and legs</i>	Intermediate....	Short and thick.
Straight.....	Straight.....	<i>Hair form</i>	Straight.....	Some wave. ³
Smooth.....		<i>Muscles</i>		Knotty.
Lightest.....	Darkest.....	<i>Skin color</i>	Intermediate....	Intermediate.
Intermediate....	Lightest.....	<i>Beard</i>	Intermediate....	Heaviest. ⁴
Higher bridge....	Intermediate....	<i>Nose</i>	Intermediate....	Flat.
Longest.....	Intermediate....	<i>Face</i>	Intermediate....	Shortest.
Deep, "Lantern"	Intermediate....	<i>Jaw</i>	Intermediate....	Square.
Less common....	Less common....	<i>Buck teeth</i>	More common....	More common.
Narrow.....	Round, flaring.	<i>Nostrils</i>	Intermediate....	Round, flaring.
More common....	More common....	<i>Mongolian fold of eye</i> .	Less common....	Less common.
Less common....	Less common....	<i>Myopia</i> ⁵	More common....	More common.

² The trunk, or body without the head, arms, and legs.

³ A rare characteristic. Straight hair is common to both Chinese and Japanese.

⁴ The heavy beard and body hair of the Japanese peasant will distinguish him almost at once from the particularly hairless South Chinese.

⁵ Nearsightedness. Although fairly common among the Japanese, a majority of them have glasses which correct the weakness.

Figure 1.—Comparisons between Chinese and Japanese

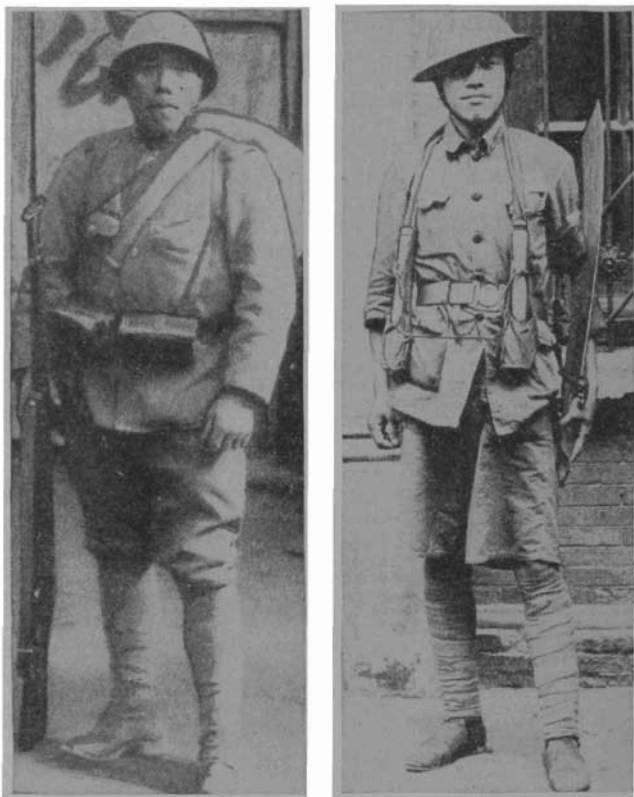


Figure 2.—Left: Japanese soldier, peasant class; right: North Chinese soldier. Note the differences in features.



Figure 3.—A group of Japanese troops in China. Note the equipment carried.

3. ADDITIONAL WAYS TO IDENTIFY JAPANESE

Besides the physical characteristics which have been listed, there are certain cultural peculiarities and mannerisms of the Japanese which will be helpful in identification. They are:

a. Speech

Among soldiers who have had the equivalent of an American high-school education, one may expect to find some knowledge of English. The Japanese language contains nothing like the English "l"; Japanese students usually have great difficulty with this sound, and replace it with the English "r." On the other hand, the Chinese usually render "r" as "l." Any simple speech test in English will be useful in identification. For example, speaking the sentence, "Robins fly," the Japanese with little practice in English will say, "Robins fry"; the Chinese will read these sounds in the opposite manner: "Lobins fly."

b. Gait

In walking, the Japanese frequently shows poor posture and is inclined to shuffle. At home he is accustomed to wearing wooden clogs (*geta*), held to the feet by leather thongs between the great and second toes. This clog is a small platform on short supports which is not lifted completely from the ground in walking. The manner of wearing *geta* often produces a slovenly step in marching. The feet of the Japanese soldier some-

times have an abnormal space between the great and second toes. On the side of the larger toe a callus frequently develops due to pressure from the thong of the *geta*.

c. Teeth

The Japanese usually have poor teeth. Because of this characteristic, extensive dental repair is rather noticeable among the people. Protruding (“buck”) teeth are common. The Chinese possess better teeth, which are straighter and less marked by dentistry.

d. Personal cleanliness

Whenever it is possible to do so, the Japanese bathe once a day. Instances where cleanliness is neglected are extremely rare. Soldiers improvise apparatus for heating water when bathing facilities are not present.

e. Underclothing

A very large number of Japanese soldiers may be identified by two articles of underclothing:

(1) *Waist band*.—A thick, knit-ribbed woolen band (*domaki*) is frequently worn about the waist—both in summer and in winter—particularly by farmers and laborers. The Japanese believe that the warmth of this girdle assures greater physical strength. In addition, the soldier may wear a band of yellow cloth, with numerous red stitches on it, as a token of “protection” in battle. These symbols of luck are pre-

pared by women of the soldier's home community as farewell gifts.

(2) *Loin cloth*.—Men in uniform usually wear a loin cloth (*fundoshi*) in place of foreign-style underclothing. This article is made of a light-weight cotton material, supported by a narrow band about the waist. The undersash is loosely folded. It has been reported that this material is lined with pockets to conceal weapons or explosives. Although a small knife might be carried in the cloth, the soldier will not ordinarily hide small firearms in this way.

4. AVERAGE HEIGHT AND WEIGHT OF JAPANESE SOLDIER

The average American soldier is both taller and heavier than the Japanese. His height is approximately 5 feet 8 inches and his weight 150 to 155 pounds. The average height of Japanese recruits is 5 feet 3½ inches; their average weight is 116 to 120 pounds. Thus American forces are physically superior to the extent of about 4½ inches in height and 30 to 35 pounds in weight.

In the preceding table the arms and legs of the Japanese peasant are described as short and thick. The limb measurements of the American soldier normally exceed these specifications. Although these characteristics of the Japanese physique often denote great muscular power and endurance, in agility they are probably excelled by the American soldier. It is com-

monly supposed that all Japanese are trained in *judo* (ju-jitsu), the art of self-defense, and that they possess unusual ability in hand-to-hand combat. Undoubtedly a large number of soldiers have acquired skill in this exercise through training in school. But the value of *judo* frequently is overrated by foreigners. Furthermore, the average peasant type of soldier, even with thorough muscular training, usually remains rather awkward in movements of the body.

Section II. GROUND FORCES¹

1. IN THE PHILIPPINES

a. Tactics

(1) *Infantry*.—As a rule, Japanese infantry in the Philippines started their attacks just before darkness or at night. In nearly every case, the attacks were flanking movements carried out by forces ranging from individual snipers to fairly large groups of soldiers. These groups worked separately, not worrying about the men on their right or left. They sneaked around the flanks or through gaps, and then imitated bird calls so that they could detect each other's whereabouts and meet. Regardless of the opposition encountered, these men maintained an aggressive effort to accomplish their mission. They tried to clear out certain designated areas during the night and have them completely occupied by dawn. Usually the attacks were made on

¹ Practically all the information given in this section was obtained from United States military observers who were on the battlefronts involved.

small fronts of about 1,000 yards. Sometimes the infiltrating groups, behind or to the flanks of our lines, would remain quiet for 2 days or more while other groups infiltrated through to strengthen their positions for attack. These tactics were successful mainly because of the jungle country, and because the Japanese had the most troops and complete air superiority.

The Japanese made good use of a .25-caliber light machine gun, which was easy to handle in the jungle. The gun often was carried strapped to the back of one man, who acted as the bipod when the gun was fired, while another man with him acted as gunner. When a target was observed, the first man flopped to the ground, with the gun on his back, and the gunner flopped behind him and fired the gun. As soon as a clip of ammunition was fired, they would roll over, 10 yards or more, and open again on the same target. By repeating this several times, the Japanese tried to lead our troops to believe that two or more machine guns were operating against them. At first, some of our troops believed that this .25-caliber was a Tommy gun.

The Japanese sniper wore a split-toe, rubber-sole ankle-shoe, which had a cheap cloth top. He wore a headnet cover over a steel helmet and a loose shirt or smock, which had several patterns of green and white colors in wavy lines.

One apparent weakness of the Japanese in jungle tactics was their practice of throwing their full strength

into the battle at the beginning. This method worked all right when it succeeded in driving back our forces. Such tactics would be dangerous if the opposition were to hold and counterattack strongly.

(2) *Artillery*.—The Japanese handled artillery very well, except that at the beginning they showed they were not used to combatting opposing artillery. They did not conceal their guns, and they moved forward with truck columns under artillery fire or tried to occupy a town within U. S. artillery range. However, the Japanese learned quickly from experience, although only after suffering heavy casualties.² Although their fire generally was effective, it never was very heavy except just before the fall of Corregidor. The Japanese concentrated artillery on Bataan after it fell, and plastered Corregidor heavily with the aid of an observation plane and observation balloon. Their 150- and 105-mm guns were the most effective weapons in the bombardment, although a few 240-mm guns were used.

The Japanese battery included a fifth gun. While four guns were firing on a target, this fifth gun would fire on a new target to get the range and make other firing adjustments. So, when the battery had completed fire on a given target, it had all the fire data on a new one and could begin heavy firing at once.

² Our artillery killed as many, if not more, Japanese than did all the rest of our weapons. The total Japanese casualties were much higher than ours, but ours were comparatively low. Most of our casualties were from small-arms fire.

(3) *Chemicals*.—The Japanese used no smoke or poisonous gas. They attempted to burn the woods on Bataan without success.

(4) *Refugees*.—The Japanese destroyed considerable civilian property at the beginning of the war to force refugees into our lines. Between 10,000 and 30,000 refugees flooded Bataan, adding greatly to our supply problems.

b. Equipment

(1) *Rifle*.—The .25-caliber rifle was the only one used by the Japanese. Much lighter than our Garand, it was ideal for jungle fighting. In contrast to our rifle, the Japanese weapon gave no flash and did not make a loud noise. Use of smokeless powder by the Japanese in their rifles—as well as in their machine guns—gave them another advantage over us. Our Garand proved 100 percent effective, although a little heavy for jungle use.

(2) *Machine guns*.—These were of three types—calibers .25, .30, and .50. Their .30-caliber gun is heavier than ours and was not particularly suited for jungle warfare.

(3) *Grenades*.—Two types of grenades were used, a small and a larger size. Some of these were fired from small mortars which weighed from 5 to 10 pounds.

(4) *Mines and traps*.—The Japanese were cunning in the use of antitank mines on trails. They had plenty of mines and used them on all probable tank approaches.

They also resorted to the old jungle trick of fixing grenades on twigs and branches over trails. "Doped" food and cigarettes were dropped in places where our troops would be expected to find them.

(5) *Tanks*.—The Japanese had a large number of small tanks in the Philippines, but they used them extensively only at the beginning of the war and near the end of the campaign. The tanks had a "V" front, and this sloping armor made them a hard target to hit solidly from the front. A good place to hit them is on a flat surface just below the "V" front. The tanks were well constructed.

(6) *Artillery*.—The Japanese used 47-mm antitank guns, some 75's, 105-mm guns, 150-mm guns, and a few 240-mm siege guns. The 47's stood up better than our 37's, and the 105's and 150's proved to be excellent weapons.

(7) *Personal*.—Leather equipment rots rapidly in the jungle because of the moisture, while webbed articles stand up well. Raincoats are greatly needed. All articles, such as mosquito nets and towels, should be green or brown.

2. IN CHINA

The Japanese have been playing "straight football" in China, leaving off the trick devices used in Malaya and the Philippines. Usually they throw almost everything into the front lines to start a battle and withhold

very few reserves. Pursuit is their specialty, and they prepare pursuit columns at the time of the attack. On the front they organize a holding battle and later place their main efforts on one or both flanks. Then the pursuit column goes into action, usually with tanks and other motorized vehicles. These columns generally push far ahead of the main body.

Smoke has been used freely by the Japanese in China, and some poisonous gases have been employed on a small scale.

Japanese rifle fire, .25-caliber, has not been very accurate when judged by our standards, and their pistol marksmanship is considered "lousy."

Very few tanks are used because gasoline has been hard to obtain.

As in Malaya and the Philippines, the Japanese use mortars and grenades to great advantage.

Considerable attention is devoted to camouflage. Every man has helmet and body nets, and all artillery units have nets for their pieces.

Section III. PARACHUTE FORCES

1. INTRODUCTION

Since the war began, the Japanese have used parachute troops only twice on a large scale—at Palembang, Dutch Sumatra, and on the Island of Timor, near Java. In September 1941, reliable reports indicated that they had three battalions and two companies. Each battalion consisted of a headquarters staff and supply section (not air-borne) and three companies. The total strength of a battalion is 670 to 700 men. Enlisted men, as well as officers, attend special courses in foreign languages and in map reading. All officers are drawn from the air force and must not be over 28, except the battalion commander, who must not be over 35. The age limit for enlisted men is 25.

2. OPERATIONS ON TIMOR

a. Landings

A battalion of about 700 parachutists were dropped to support a Japanese landing operation on Timor. About 350 were dropped one day and the same number the next. They jumped from transport planes, each of

which carried 15 to 24 men, at heights of 300 feet. Section leaders came down in blue parachutes and platoon leaders in red ones.

The landings were made about 0830 (8:30 a. m.) in bright sunlight with no wind. The principal landings each day were about 5 miles from our fixed defensive areas and on our lines of communication. Bomber and fighter planes protected the troops while the latter were landing, by bombing and machine-gunning the nearby areas. The terrain on which the landings were made is mostly flat country, covered by trees varying between thick undergrowth and high palm trees 15 to 20 feet apart.

b. Results Obtained

The operations as a whole were very successful, partly because our forces had no fighter planes to oppose the landings and to prevent the Japanese bombers and fighters from bombing and strafing the defenders. In one instance the paratroopers landed within $1\frac{1}{2}$ miles of one of our company positions, and in another instance they surrounded one of our battalions and prevented it from breaking through to safety.

c. Equipment and Supplies

The parachutists wore green uniforms buttoned at the neck and rubber boots. They carried wrist compasses and were armed with Tommy guns,¹ which they

¹ These may have been light machine guns, which the Japanese are known to have used in the earlier Palembang operation.

fired while dropping to the ground. Other equipment included small mortars and a large number of battery-operated radio sets. Each parachutist carried rice and compressed fish as emergency rations, wrapped in cellulose.

3. OPERATIONS AT PALEMBANG²

Approximately the same number of paratroops (700) were dropped at Palembang as on Timor. They jumped from about 70 transport planes, some of which had British markings on them. Their mission was to capture the airport and hold it until Japanese sea-borne troops arrived via the Moesi river, and also to capture two large oil refineries to prevent the Dutch from destroying them. A total of about 300 attacked defending troops at the airdrome, and about 400 sought to capture the refineries.

Nearly all the parachutists were killed or captured, except a group which managed to hold one of the refineries and prevent it from being destroyed. The other refinery was demolished by the Dutch. On the whole, the attack was a failure. It is believed that the Japanese underestimated the strength of the Palembang defenders. The parachutists had no assistance until the following day, when Japanese ground troops came up the river in transports.

² Fuller details on the Palembang operations were given in Information Bulletin No. 16, Japanese Warfare: A Summary. M. I. S.

Section IV. NEW GAS MASK

1. AS A WHOLE

The latest type of Japanese gas mask tested by our Chemical Warfare Service does not give the all-around protection that our service mask does. The Japanese mask also will not stand the "wear and tear" that ours will although it is very well constructed. It compares very favorably with the United States mask from the standpoint of gas-tightness and effective vision. The mask is lighter than ours, weighing 3.4 pounds. Almost all the parts are made of metal except the angletube which is made of brass.

2. FACEPIECE

The facepiece and the breathing tube are made of rubber with a covering of elastic-knitted textile fabric. The tube is made with folds or furrows, much like our own. The eyepieces are made of shatterproof glass. The brass angletube contains the air inlet and outlet valves—the outlet valve is hinge-covered. There is a clamp at the junction of the breathing tube and the can-

ister to keep out water in case the mask should be submerged. There also is a plug in the canister inlet at the bottom. The facepiece permits an interchange of optical and service lenses, and it appears to have no essential weaknesses.

3. CANISTERS

Two types of canisters are used, both oval in shape. One is 5 inches broad, 6 inches high, and $2\frac{3}{4}$ inches deep and the other is 5 inches broad, $4\frac{1}{2}$ inches high, and $2\frac{3}{4}$ inches deep. Each canister contains about 80 percent activated charcoal and 20 percent soda lime with a cotton filter. It differs from our canister in that the toxic fumes first pass through the filter, thus making it vulnerable to tear gas. This construction is one of the mask's major weaknesses. The canisters are good against nearly all other smoke gases and afford excellent protection against phosgene gas, a lung irritant, and chloropicrin, sometimes called "vomiting gas." However, the larger canister gives only fair protection against cyanogen chloride gas and the smaller one only negligible protection.

4. CARRIER

The carrier is a square pouch of light-weight olive drab duck—in fact, all the equipment carried in it is of this color. The equipment, which is kept in pockets, consists of a can of bleaching powder for decontamination purposes, a set of antifog plastic inserts for the lenses, and a bottle of nondimming fluid for the lenses.

PART THREE: UNITED NATIONS

Section I. CAMOUFLAGE

1. WHAT IS IT?

Camouflage is any and every means of hiding or disguising yourself from your enemy—misleading him as to your position, strength, and intentions—confusing him so that he wastes his blows and falls into your ambush.

2. POSITION IS ALL-IMPORTANT

The concealment of armies in the field is governed by principles as simple and logical as those illustrated in figure 4. Notice how much easier it is to see the soldier in the open than the one partly concealed in the grass. The shadow of the soldier in the open could easily be seen from the air, but the shadow of the man in the grass is hardly visible. If military installations and equipment can be sited in places where they are naturally harder to see, they will be correspondingly easier

to conceal. It is therefore important to discover what kind of siting is naturally noticeable and which is hard to see, and why. Like any other serious problem, concealment of armies in the field cannot be solved by guesswork. All such problems yield only to clear thinking and careful analysis.



Figure 4.

3. WHAT IS THERE TO HIDE?

Every human activity, from hoeing potatoes to building a blast furnace, leaves a visible mark upon the face of the earth. The marks made by an army differ from those made by a civilian population. If this were not

so, no camouflage problem would exist. Armies live differently, move differently, and work differently from civilian populations; so the marks they make are distinctive and easily identified.

The marks made by tank, motor transport, and artillery movement, trench-digging, and all other army activities differ greatly. If these marks are allowed to be obvious, the enemy will read them easily. Study of these marks will give him an idea of our strength and intention, and he will be able to lay his plan of action accordingly. Remember that these marks are not the work of "some person or persons unknown." They are made every time a soldier drives a truck or walks across a field of grass or digs a hole in the ground.

So long as our forces do not understand what kind of marks they are making in the ordinary course of our army work, and what makes such marks stand out, the efforts of a few camouflage specialists will be in vain. While they are trying to rub out one set of marks, thousands more are being made in other areas.

Our aim, then, is to hide the marks we make, or to find a way of making them less noticeable, or to disguise them so that they will not disclose valuable information to the enemy.

4. WHO IS OUR CHIEF ENEMY?

There are two enemies: the ground observer and the air observer. This study is concerned mainly with the air observer. Why? Because we are all familiar with

how things look at ground level. Concealment at ground level is primarily individual concealment or, at the most, concealment of relatively small bodies of men and materials.

With the air observer we are very much concerned, because most of us are not familiar with the airman's point of view. Hills, valleys, and other terrain features that hide opposing forces from each other at ground level mean little or nothing to the airman. Everything is spread out, as upon a plate, for him to view. Therefore, our problem is mass concealment. No part of a country can easily be made safe from the enemy's eyes, his cameras, or his bombs.

Unless our forces know how they appear to the enemy airman, they can hardly expect to deceive him. He sees them, and the marks they make, in all lights and at all angles. He can photograph them, and his photographs can be studied calmly and with instruments so exact that, for instance, a stereoscope reading of a good pair of vertical photographs will betray the presence of an artificial overhead cover that would easily escape the naked eye.

5. WHY DOES CAMOUFLAGE HELP?

Suppose a carefully camouflaged position has been photographed and detected, what can the enemy do about it?

If the position is within artillery range, he can train guns on it or he can mark it down on his map for future

attention. This is bad, but not necessarily decisive. The identification of forward positions and the shelling of them is to be expected. With defense in depth, not all important positions are within artillery range. Artillery fire is often directed by aircraft. Good camouflage of a position, even if the place is accurately pinpointed, makes it harder for the artillery observer to be sure that his battery is dead on the target.

If the position is beyond artillery range, it can for the time being be attacked only by aircraft. Admittedly, the airman will be given a pin-point map reference and possibly a copy of the air photograph. Nevertheless, he still must come over and spot his target before he can even start his preparations for attack. Let us examine what this means in the case of an airplane at 10,000 feet, flying at 250 miles per hour.

A number of seconds must elapse from the moment the airman thinks he has identified his target to the moment when he is certain he has identified it. From the moment he is certain of his target to the moment when he has made various calculations, set a course, aligned his bomb sights, and pressed a button to drop a bomb, a few more seconds must elapse. Finally, the bomb in its travel to earth moves forward an appreciable distance in hundreds of yards (fig. 5.) All this time the airman has been moving at 250 miles per hour. What it boils down to is this: to be sure of landing his bombs on or around his target on the "first run," the airman must correctly identify the target while he is

still anywhere from $3\frac{1}{2}$ to 5 miles away from it. Even the dive-bomber is faced with a similar problem in a smaller degree—and he is usually more vulnerable.

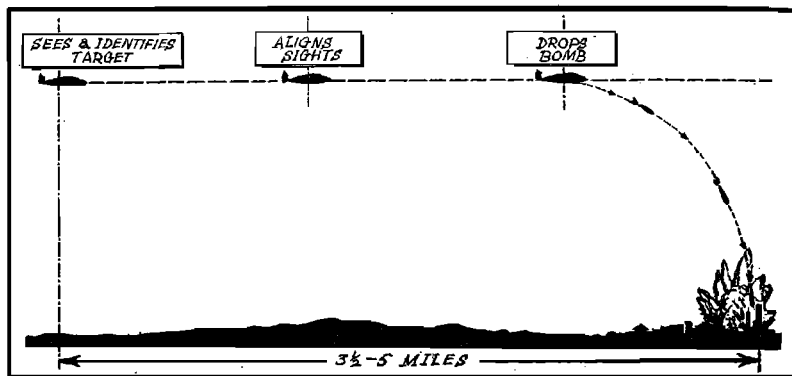


Figure 5.

Camouflage will not prevent the bombing of an area in which the enemy knows there are targets, but it lessens the danger of precision bombing. This may be decisive in keeping an important defense work in action.

It must also be remembered that a well-concealed position is less likely to get photographed in the first place. Air observers find it difficult to concentrate keenly for long periods. In the long run, they tend to see those things that are easy to see and to miss those that require sustained observation.

6. WHY ARE SHADOWS DANGEROUS?

The weapons of the enemy air observer are his eyes and the lenses of his camera.

The eye sees things in color and also in terms of light or dark. The camera sees things only as light or dark.

Artificial camouflage should blend with the color of its surroundings as perfectly as possible in order to deceive both the ground and the air observer. But for various reasons, the airman flying at some thousands of feet is far more conscious of the lightness or darkness of objects on the ground than he is of their color.

7. WHAT MAKES THINGS LOOK LIGHT OR DARK?

All other things being equal, a dark brown field will look and photograph darker than a pale green one. But even with surfaces of the same color, the thing that determines how light or how dark they look is texture. By texture is meant the degree of smoothness or roughness of a surface and its ability to cast a shadow.

Take a smooth and level surface in any given color—say green. (See fig. 6.) Rays of light strike it and are reflected in parallel rays, much as tennis balls bounce off from a smooth court. A high proportion of the rays enters the eye or camera, and an effect of lightness is produced.

Take another surface of the same color, lit the same way, but uneven or rough. The rays are reflected at all angles, just as tennis balls would bounce off a sheet of corrugated iron. A lower proportion of rays reaches the eye or lens. An effect of relative darkness is produced.

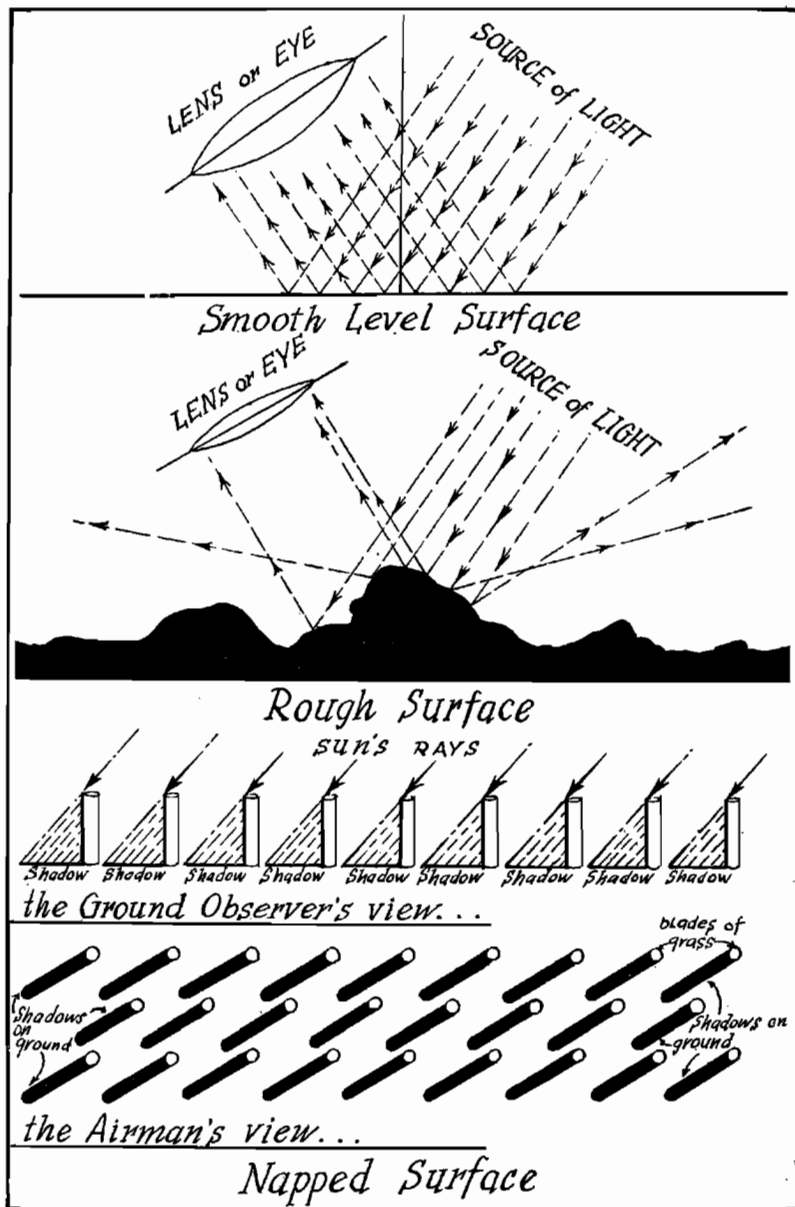


Figure 6.

Take a third surface of the same color, lit the same, but with a "nap," or texture—like grass or strands of wool, with each strand capable of throwing a shadow. Looking straight down, the airman sees all the shadows, whereas the man on the ground may not. The surface may look light at ground level but to the airman the "napped," or textured, surface produces an effect of relatively great darkness. Water is an exception to this rule. For a variety of reasons depending upon local conditions, water may look and photograph blinding white or inky black. Seen from the air in full sunshine, a natural shadow is almost always the blackest thing on earth.

It is possible in certain angles and conditions of light to produce, with black paint, a dummy shadow as dark or even darker than a real shadow. These conditions are rare. It is a good working rule to say that whereas black paint will often photograph and look surprisingly light in tone, a real shadow always looks almost black.

This rule about light surfaces and dark surfaces is worth re-stating. A clear understanding of it is indispensable to successful concealment in the field.

Of a variety of surfaces all having the same color and all lit in the same way and viewed from the same point, the smoothest and most level surfaces are the lightest; the rougher and more uneven they are, the darker they tend to become, and the surfaces with the heaviest "nap," or texture, look the darkest.

8. WHAT DOES THIS PROVE?

In trying to conceal any military work or equipment in grass or other substances with a similar sort of "nap," concentrate on getting the right texture. Paint alone will never give it to you.

Wherever grass or other vegetation has been trodden flat or scraped away and its place taken by bare earth or concrete or smooth wood, it is bound to show up lighter than the surroundings because the texture that throws the shadows and makes the surroundings look dark to the airman has been destroyed. You may correct this to some degree by painting or otherwise coloring the damaged or changed surfaces with a much darker color than the surroundings. But the quality of the painted patches will still be different and noticeable.

There are many ways of trying to restore the original nap: returfing the soil; sowing grass or other seed; planting quick-growing weeds; sprinkling with coarse ashes or stones mixed with the right coloring agent; or applying a tar coating, topdressing this with heather, seaweed, frayed rope-ends, scraps of burlap or old sandbags, and then spraying a suitable color over the surface.

How does this theory of light and dark work out in nature? The things that look light to the airman are the smooth and level surfaces—roads, sunlit roofs, concrete surfaces, painted surfaces, close-cut lawns,

smoothly raked dirt, bare patches in grass fields, and places where grass has been flattened.

The things that look darker are uneven ground, plowed land, surfaces covered with marsh grass clumps, reeds, or similar growth.

The things that look darkest are shadows, and the deeply "napped," or textured, objects such as uncut crops, very thick scrub growth, hedges, and trees.

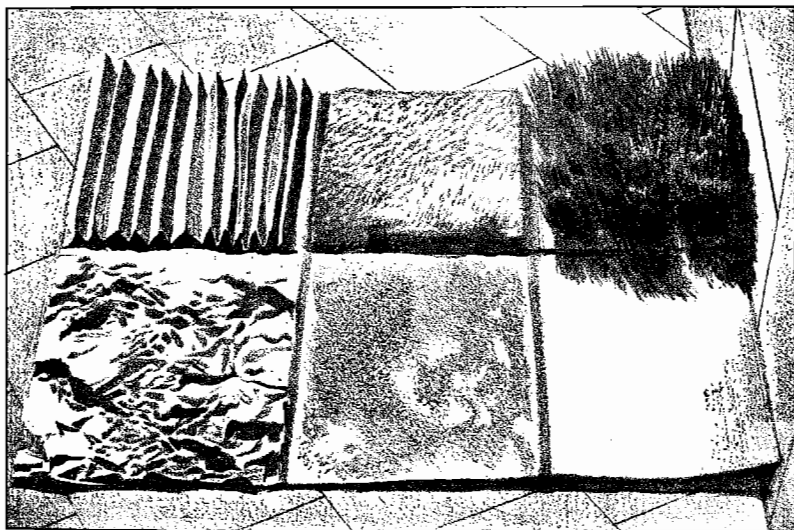


Figure 7.

9. WHAT SORT OF PICTURE DOES THE AIR OBSERVER SEE?

Just as persons on the ground are accustomed to group landscapes into different classes of scenery—

seaside, lake, mountain, city, and suburban—the airman naturally enough sees the world below him as a series of different sorts of scenery according to where he is flying.

a. Desert pattern with sandhills

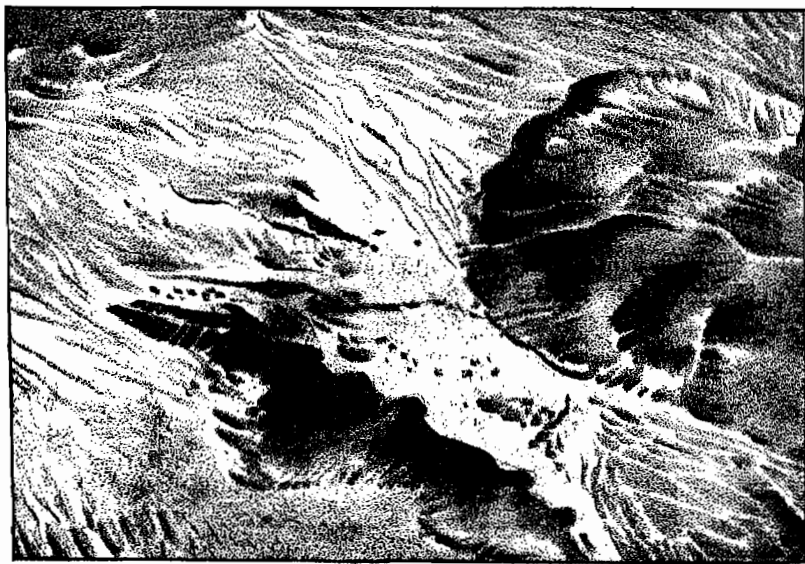


Figure 8.

Figure 8 is an air view of desert land with some sandhills and a little broken ground. The unevenness and the tendency of the hills to cast shadows should be noted. Dark lines and areas on a light background are especially conspicuous.

b. Another desert pattern

Notice the streak of dots caused by scattered clumps of camel grass and scrub. A few more spots of the same shape or size would not be noticeable among or beside these.

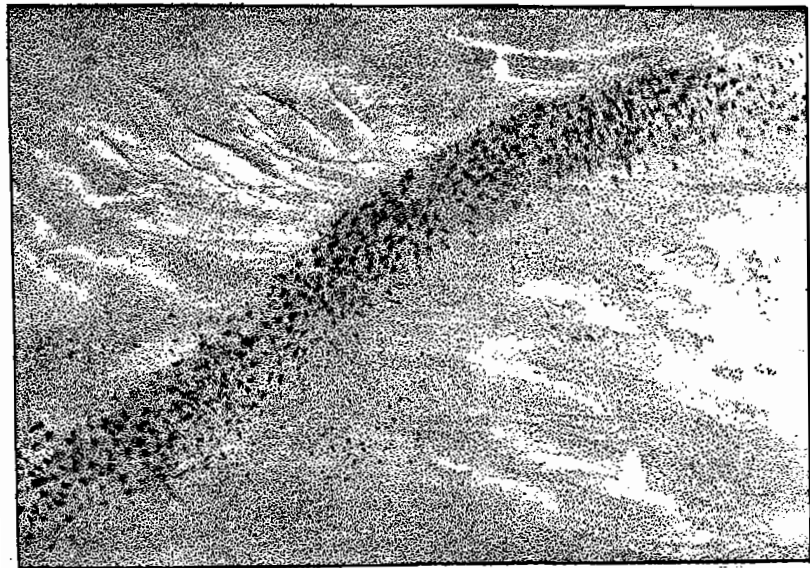


Figure 9.

c. Wadi ¹ pattern

This is how typical wadi desert country looks—the airman's view of the sort of country found near Bardia or Tobruk in Libya.



Figure 10.

¹ See footnote on page 15.

d. Polka dot pattern

This is how the scattered thorn-tree bush, as found in many parts of Sudan, Africa, looks to the airman. Any country with scattered trees on a fairly level or rolling plain will look something like this.

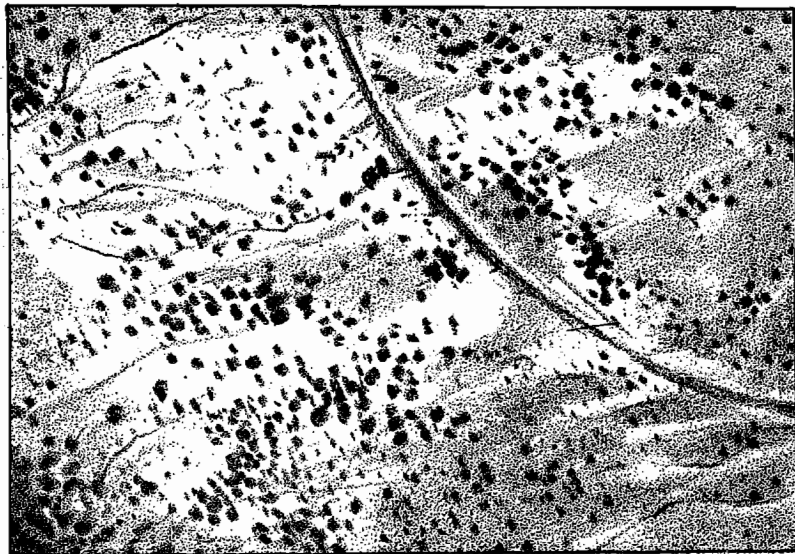


Figure 11.

e. Woolen, or carpet, pattern

Any place where the ground is more or less covered with a carpet of low scrubby vegetation such as heather, very tufty grass, or reeds, will look like a rough home-spun material, tweed, or coarse woolen fabric of a somewhat patchy or blotchy character.



Figure 12.

f. Crumpled, or beaten metal, pattern

Rugged mountain country looks like beaten metal in deep relief or like a heavy material that has been bunched up together.



Figure 13.

g. Patchwork-quilt pattern

All farming country has the same general characteristics. This is logical. Farmers everywhere live and work in much the same way; therefore they are bound to make much the same sort of marks on the ground.

The marks they make always look like a patchwork quilt—sometimes the patches are more regular than at others, but the general effect is always the same. The picture shows typical farming country in Northern Ireland.

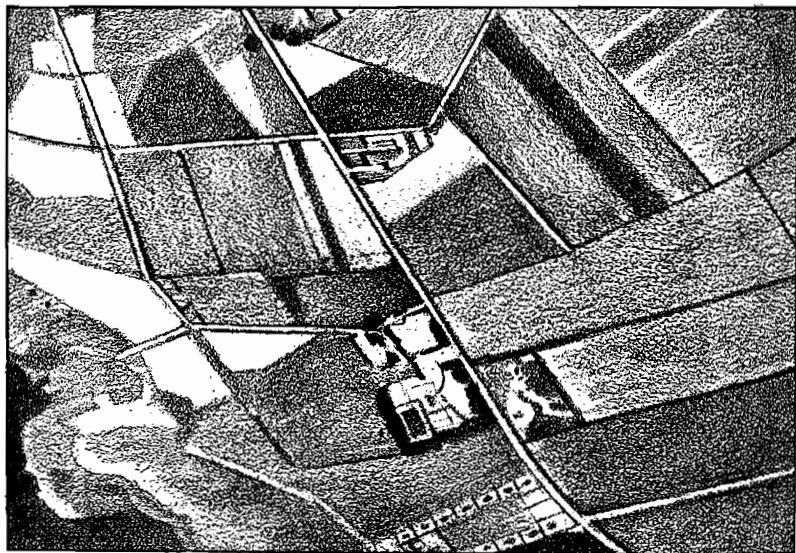


Figure 14.

h. Geometrical pattern

All cities present much the same general appearance. Most of them have been laid out on regular surveyed lines; their intersecting streets and avenues, their squares and crescents, parks, gardens, and other civic improvements give the impression of a formal pattern printed on a piece of cloth. Opportunities for camouflage matching the existing pattern of a city are almost unlimited.

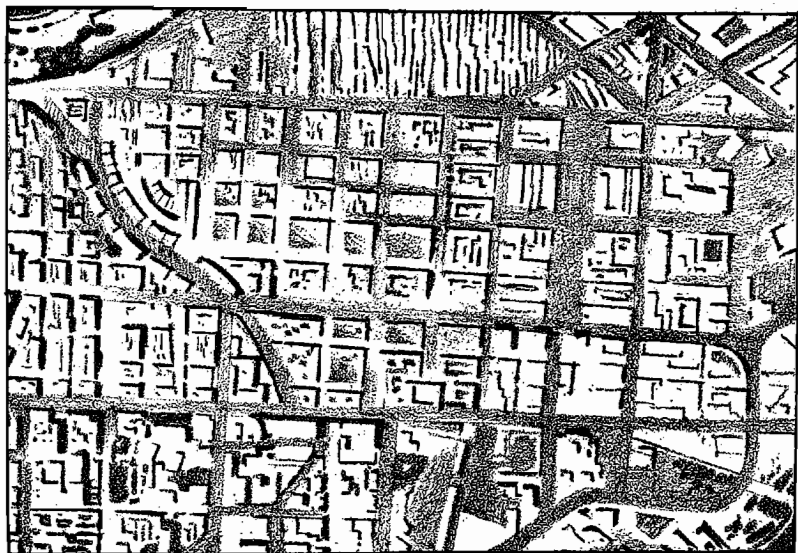


Figure 15.

i. Conclusion

Any intelligent person, having seen these examples, ought to be able to form a fairly accurate opinion of the pattern of any particular area in which he finds himself. He should be able to guess with reasonable accuracy what pattern it presents to the airman some thousands of feet overhead.

From this beginning, it should be possible, with a little imagination, to decide how men and matériel may best be fitted in with this pattern so as to gain as much concealment as possible.

NOTE.—This study of camouflage will be concluded in the November issue of the INTELLIGENCE BULLETIN.

Section II. NIGHT COMBAT BY RUSSIAN CAVALRY

1. GENERAL

The Russians have proved that there is a definite place for horse cavalry in battle, despite the wide use of mechanized forces and airplanes in modern warfare. By operating at night, cavalry avoids attack by aircraft, and moves, dismounts, and strikes with much more surprise than during daylight hours.

2. METHODS OF ATTACK

The success of a night attack depends largely upon careful reconnaissance of the enemy positions. A commander's reconnaissance includes the approaches to the enemy's positions and the location of his firing points and outposts. Before nightfall, all steps have been taken to provide absolute secrecy of movement. The plan of every assault group is worked out in detail. Units are designated to seize outposts and guards, and to deal with the automatic riflemen, the machine-gun

crews, and the tank crews when they come out of bivouac.

In moving to the point from which the attack is to be made, the Russians do not fire a shot, unless the Germans open fire. In this case all Russian fire power is put into action.

Experience has taught the Russians that it is difficult for cavalry to use artillery in night operations, except while on the defensive. Normally, the cavalry regiments and squadrons take along their heavy machine guns in carts. The machine guns are capable of accomplishing the mission usually assigned to artillery. Antitank units are equipped with antitank weapons, grenades, and bottles of gasoline ("Molotov cocktails").

All equipment is carefully inspected before the cavalry leaves for the attack. Stirrups are wrapped with felt or straw. At a point about 3 to 5 miles from the enemy positions, the machine-gun carts are left in the open and the guns and mortars are carried in pack. The troops dismount again in open areas near the enemy outposts, and the horse-holders hide the horses.

If the mission is to seize a particular point, machine guns and mortars support the action without a let-up until the point is taken. If the mission is to destroy an enemy unit, the troops return when the mission has been accomplished. In this case the machine guns and mortars are placed in positions where they can also provide fire for the withdrawal of the units, in addition to supporting the attack.

These night attacks are planned so as to be completed 2 or 3 hours before daybreak. The Russians need this time interval in order to return to their original positions without being exposed to air attacks.

3. EXAMPLE OF TYPICAL ATTACK

The following is quoted from a Russian report as an example of typical cavalry night operations against a village:

“Two days were required to prepare this attack. The village was 22 kilometers (about 14 miles) from our division position. A troop had been sent out on reconnaissance. It went out on the highway, concealed itself in the forest, and observed road movements; it determined the enemy strength, location of outposts, and location both of tank parks and night bivouacs, as well as the headquarters and rear elements.

“The approaches to the town were important. West and south were two ravines too rough for tanks. The decision was to attack from the north and east. These directions would permit cutting off any attempt of the Germans to withdraw along the highway which ran north of the city. They would catch the enemy under crossfires and at the same time avoid danger of firing on our own troops. Since one regiment attacked from north and the other from east to west, this danger was averted.

“The division moved out in two columns at 1900; at 2400 it assembled 3 kilometers (about 2 miles) from the

town, dismounted at once, and went into action. To insure surprise, the attack was made without the use of signals. The outguards were jumped without noise, and the units advanced on the bridge in the town. Here three German guards opened fire, but it was too late. Our troops threw grenades into the houses used as quarters, the assault groups attacked the firing positions, and 15 tanks were put out of action. The remaining tanks moved to the highway, but our engineer units had blown up the bridge. The fight ended at 0500, and from then until daylight (in December, about 0800) the troops returned to their position unnoticed by enemy aircraft.

“Our missions are usually for the purpose of opening the way for the infantry.

“As a result of these attacks, the Germans are now posting strong outguards, and even more careful reconnaissance is required.

“During such night attacks the Germans try to capture our horse-holders.”

Section III. "DO'S" AND "DON'TS" FOR BRITISH ARMORED UNITS

1. INTRODUCTION

British armored forces have gained considerable experience in desert warfare while fighting the Germans and Italians in North Africa. The British, out of their first-hand knowledge of armored warfare, have compiled a list of "Do's" and "Don'ts" for armored units.¹ The list, which the British do not intend as a complete study of the subject, is presented here in part for the information of our troops.

2. THE LIST

a. Radio

(1) Never use radio if you can communicate by any other means without loss of efficiency.

(2) No station lower than company commander will acknowledge orders by radio.

¹United States military doctrine on this subject may be found in FM 17-10, Armored Force Field Manual: *Tactics and Technique*.

(3) When receiving a radio order, keep hand on switch in readiness to acknowledge instantly in correct sequence. Do not hesitate to "break in" if previous station has not acknowledged after the prescribed wait.

(4) If your immediate superior has not acknowledged a radio order after it has been repeated once, acknowledge and act on his behalf.

(5) Think before you switch to "send" and know exactly what you are going to say.

(6) Make your messages and orders brief and simple, containing the barest essentials.

b. Tactical

(1) Learn to fire on the move in case the terrain and hostile fire do not permit you to halt.

(2) When you come under hostile fire, run into a position giving defilade to the tank hull if possible. If there is no "hull-down" position, keep moving. When taking up a hull-down position, the gunner must give the order to halt, just as his sights break the crest. This saves unnecessary exposure.

(3) In open terrain, do not stay in position when being engaged by tanks heavier than your own or by anti-tank guns firing at effective ranges. Under these conditions, the aim must be to advance diagonally at a good speed into effective range, fire a number of rapid and accurate rounds, and break off action diagonally at a good speed. The latter maneuver can be covered by smoke.

(4) Do not waste ammunition by firing at ineffective ranges, even if you are being shot at.

(5) Do not engage in a slugging match with heavier opponents. Engage them by short and rapid bursts of fire and frequently changed positions, whether you are in a hull-down position or not.

(6) Your primary aim must be to gain surprise. Use trickery. Attract attention in one direction, and hit from another.

(7) If you are suddenly engaged in the open by concealed antitank guns, an attack carried out at high speed is not only the most effective, but the safest course. Often there is no time to make a plan and one cannot halt. Tank commanders and drivers must use their initiative and adopt a bold course. For example, swing right or left, go fast for the enemy's flank, and charge right in.

(8) Never abandon a tank or crew under fire if there is a reasonable chance of getting them away.

(9) Remember that enemy tanks are normally supported closely by antitank guns; therefore always be wary of attempting to attack enemy tanks in rear. Keep a weather eye in that direction.

(10) Remember that tanks must never be used as stationary pillboxes to hold a position exposed to enemy fire. They may take up a position of observation from which they will be ready to attack the enemy. This may be by fire from a hull-down position or by fire and movement.

(11) Whenever possible, fight with the sun behind you. Whenever possible, fight into the wind.

c. Drivers

(1) Keep changing direction. For example, if your gunner is firing, pull up one steering lever after every shot fired. Do not keep jerking the lever back and forth. Make bold changes.

(2) Do not be afraid to "step on the gas" when in action. The faster you go, the higher your morale will be, and the fewer your chances of being hit.

(3) Never reverse in order to turn, unless you are on dead ground or in a hull-down position.

(4) Supply units must be given plenty of night driving, and all stop lights, horns, and so on must be disconnected.

(5) At halts, vehicles must pull to the right and get off the roads.

(6) In daylight, distances between vehicles must not be reduced under any circumstances. The unit which moves at close distances invites unwelcome attention from enemy aircraft.

(7) Tanks must not "track" each other. Vehicles in a straight line make an excellent target for enemy strafing; they raise more dust, which gives away their position.

(8) When halted, units should arrange themselves so that not more than three vehicles are in a straight line.

(9) Tracks in flat, sandy terrain are numerous and varied. It is never safe to imagine that because a track is wide and much used, it is the one marked on the map.

(10) If the tactical situation permits, always halt with your radiator into the wind.

(11) In soft sand, never follow the tracks of the vehicle in front.

(12) In soft sand, do not attempt to turn sharply.

(13) Select the gear you think best before you reach a soft area, and do not wait till you are in the area before shifting.

(14) Go for a soft area as fast as you can, with safety, and hope that momentum will carry you over.

(15) Do not follow the vehicle in front too closely.

(16) Use your clutch with care.

(17) In soft sand, never use your brakes. Allow yourself to roll to a halt.

(18) Whenever possible, stop on a downhill slope, no matter how slight.

(19) If you have to lower tire pressure for a long soft stretch:

- i. Do not lower it more than one-fifth;
- ii. Pump up as soon as possible;
- iii. Do not let the tires get too hot to touch with hand;
- iv. Mark the position of the cover on the rim to check up on creeping.

(20) When you get stuck do not use your engine in useless attempts to get out. Dismount (except driver)

and try to get out by pushing. If this is no good, use sand mats on your metal troughs or, as a last resort, wait for a tow.

(21) If you break down or get lost, stay by your vehicle, ration your food and water at once, and by flashing a mirror, waving a flag, etc., help those who are looking for you.

(22) If you see a vehicle stuck, do not drive straight up to it or you, too, will probably get stuck.

d. Protection

(1) Windshields of trucks should be painted with a mixture of sand and oil to prevent flashing in the sunlight.

(2) When at a halt, dig a trench big enough to house and protect the crew, but small enough so that you can drive the tank over the trench.

(3) Park vehicles so that they won't make obvious targets. Don't forget to make use of natural camouflage.

e. Navigation

(1) Always trust your direction-finding instruments before your instinct.

(2) The navigator is not necessarily right. The commander or second navigator should always check up on him. If necessary, a halt should be called for a moment to check up. It is better to do this than to go miles off a course.

(3) Be sure that speedometers on the navigator's vehicles are working and in order.

f. Maintenance

(1) Stick as closely as possible, within operational limits, to the rules laid down for cleaning oil-bath air filters.

(2) Check tire pressures frequently. Correct pressures are most important.

(3) Wipe the top of the gasoline cans before you fill the vehicle tank. The dust and dirt which get into the carburetor and engine, when this task has been neglected, have caused many breakdowns at critical times.

(4) Washing water may be strained and used in radiators in the event of shortage.

Section IV. HOW THE BRITISH SAY IT

1. GENERAL

Basically, there are not many differences in the language spoken by us and that spoken by the British. However, we use quite a few words and expressions which do not mean the same thing to them. A list of the most widely used of these words and expressions and what they mean to the British is given below:

2. GROUND FORCE TERMS

<i>American</i>	<i>British</i>
Advance party.	Van guard.
Airdrome.	Aerodrome.
Air defense command.	Fighter command.
Ambulance loading post.	Car post (CP).
Ammunition distributing point.	Ammunition point (AP).
Antitank fire.	Pak.
Assault fire.	Fire on the move.
Attacking echelon.	Leading troops (Leading tps).
Bivouac for armored formations or units.	Harbour.

American

Canteen.
 Cantonment.
 Cargo truck.
 Casualty agent (chemical).
 Classified documents.
 Collecting station.
 Combat aviation.
 Combat echelon.
 Combat zone.
 Command post.
 Company train.
 Company transport.
 Conduct of fire.

 Daily telegram.
 Danger space.
 Dead space.
 Defensive zone or defense area.
 Distributing point.
 Dump truck.

 Encircling force.
 English soldier.
 Engineer.
 Enlisted men.
 Entrucking (point).
 Estimate of the situation.

 Field order.
 Field train.

 Fixed fire.
 Fox hole.
 Fragmentation bomb.

British

Water bottle.
 Hutment.
 Load-carrying lorry.
 Poisonous gas.
 Protected papers.
 Advanced dressing station.
 Operational squadrons.
 Fighting group (echelon).
 Forward area.
 Advance Hq.
 Company transport.
 A1 and A2 echelons.
 Fire control.

 Daily ration strength state.
 Danger area.
 Dead ground.
 Defended locality.
 Delivery points.
 Tipping lorry.

 Enveloping force.
 Tommy (Atkins).
 Sapper.
 Rank and file.
 Embussing (Point).
 Appreciation of the situation.

 Operation order (OO).
 "B" Echelon transport.
 (B Ech tpt).
 Fire on fixed line.
 Weapon pit.
 Anti-personnel bomb.

*American**British*

"H" hour.	Zero hour.
Hollow square formation of vehicles.	Leaguer (Laager).
Identification panels.	Ground strips.
Identifications.	Divisional signs and unit flashes.
Interdiction fire (complete).	Concentration fire.
Interdiction fire (partial).	Harassing fire.
Irritant smoke.	Toxic smoke.
Journal.	War diary.
Kitchen police.	Cookhouse fatigue.
Limiting points.	Junction points.
Line of departure.	Start line.
Long ton.	Ton.
Low gear.	Bottom gear.
Main line of resistance	Forward defended localities.
Main supply road.	Main artery of supply.
Maintenance, first echelon.	Daily maintenance by driver.
Meeting engagement.	Encounter battle.
Member of Australian or New Zealand Army Corps.	Anzac.
Message center.	Signal office.
Messenger.	Despatch rider (DR).
Meteorological message.	Meteor report.
Military blouse.	Tunic.
Military police.	"Red caps" (Corps of Military police).
Mine planter.	Mine layer.

<i>American</i>	<i>British</i>
Observation aviation.	Reconnaissance aircraft.
Oral order.	Verbal order.
Outpost area.	Line of outposts.
Overlay.	Trace.
Ponton.	Pontoon.
Prime mover.	Dragon.
Protective fire.	Covering fire.
Quartering party.	Harbouring party.
Radio.	Wireless.
Rain coat, trench coat.	Mackintosh.
Reconnaissance patrol.	Sortie.
Regiment (infantry or arm- ored)	Brigade.
Replacement center.	Training or holding depot.
Retirement <i>or</i> retreat.	Withdrawal.
Rolling barrage.	Moving barrage.
Roof-top watcher for aerial bombers.	Jim Crow.
Rotating band (projectile).	Driving band.
Royal Navy enlisted men.	Ratings.
Sector of fire.	Arc of fire.
Security.	Protection.
Security detachment.	Covering detachment.
Sentry squad.	Sentry post.
Service train.	Supply units.
Shelter.	Cover.
Signal Corps.	Royal Corps of Signals.
Support trench.	Second-line trench.

American

Table of Basic Allowances.
 Tables of Organization.
 Taps.
 Task force.
 Time interval.
 Transmission.
 Transport aviation.

 Troop movement by motor.
 Urgent message.

 War Department intelligence.

 Wrecker.

 Zone defense.
 Zone of action.

British

Mobilization Store Table.
 War establishments.
 Last Post.
 Special force.
 Time allowance.
 Gearbox.
 Personnel or troop-carrying
 aircraft.
 Embussed movement.
 Immediate message.

 War Office intelligence summaries.

 Recovery vehicle.

 Defence in depth.
 Boundaries.

3. AIR FORCE TERMS*American*

A bomber pilot.
 Antiaircraft fire.

 Executed a power dive.

 Propeller.

 Storage batteries.

 To break formation to engage
 enemy.
 To get a medal.
 To get going.

British

Bus driver (slang).
 Flak.

 Screamed downhill (slang).

 Airscrew.

 Accumulators.

 Peel off, to.

 Gong, to collect a (slang).
 Get cracking, to (slang).

4. CIVILIAN TERMS

<i>American</i>	<i>British</i>
Air-raid siren.	Banshee.
(American) citizen.	(British) subject.
Apartment. ¹	Flat.
Apartment house ("Apartments for Rent")	Block of flats ("Flats to Let").
Apple pie.	Apple tart.
Baggage.	Luggage.
Baggage car.	Luggage van.
Bar, saloon.	Public-house, pub.
Beard.	Beaver.
Beets.	Beetroot.
Bell hop.	Page boy.
Bill (currency).	Banknote.
Billboard.	Hoarding.
Biscuits.	Hot breads.
Boots.	High boots, Wellingtons.
Bowl of milk.	Basin of milk.
Bumper.	Fender.
Candy.	Sweets.
Canned goods.	Tinned goods.
Checked baggage.	Registered baggage.
Chief of Police.	Chief constable.
Coal miner, coal ship.	Collier.
C. O. D.	Carriage forward.
Conductor (railroad).	Guard.
Cop.	Bobby (slang).
Construction crew.	Gang of navvies.
Corn.	Maize, Indian corn.

¹An "apartment" in Great Britain is always a single room.

<i>American</i>	<i>British</i>
Crackers, cookies.	Biscuits.
Cross-ties.	Sleepers.
Dessert.	Sweet.
Dime novel.	Penny-dreadful.
Dirt.	Always means "filth" in Eng- land, not "soil".
Dish of rice, fish, and eggs, boiled together.	Kedgerree.
District Attorney.	Public prosecutor.
Druggist.	Chemist, apothecary.
Drug store.	Chemist's shop.
Drug-store clerk.	Chemist's assistant.
Dry goods store.	Draper's shop.
Elevator.	Lift.
Excursion bus.	Charabanc.
Fender.	Mud-wing.
Fish dealer.	Fishmonger.
Freight train.	Goods train.
French-fried potatoes.	Chips.
Game of checkers.	Game of draughts.
Gas, gasoline.	Petrol, motor spirit.
Grain (cereals).	Corn.
Hill, rocky peak.	Tor.
Hood.	Bonnet.
Intersection, street corner.	Crossing.
Jail, The English word is pro- nounced exactly as we pro- nounce "jail".	Gaol.

<i>American</i>	<i>British</i>
Laborer.	Navy.
Lima beans.	Broad beans.
Local train.	Slow train.
Long-distance call.	Trunk call.
Mail.	Post, letters.
Mail a letter.	Post a letter.
Mail box.	Post box, pillar box.
Mechanic.	Fitter.
Molasses.	Treacle.
Monkey wrench.	Spanner.
Movie.	Cinema.
Movies.	Pictures, flicks, films.
Movie theater.	Picture palace, cinema.
Muffler.	Silencer.
Napkin.	Serviette.
Navy Department.	The Admiralty.
Newsstand.	Bookstall.
Oatmeal.	Porridge.
Overcoat.	Greatcoat.
Paved.	Metalled.
Pay day.	Wage day.
Peanuts.	Monkey-nuts.
Pep.	Bounce.
Phonograph.	Gramophone.
Pickled or canned beef.	Bully beef.
Pitcher.	Jug.
Policeman.	Constable.
Quotation mark.	Inverted comma.

American

Radio tube.
 Raincoat.
 Roll of film.
 Round trip ticket.
 Rumble seat.
 Running board.

Salespeople, clerks.
 Schedule (sports).
 Scrambled eggs.
 Second floor (in England the numbering of the floors begins on the floor above the ground floor).
 Shoes.
 Shoestrings.
 Sidewalk.
 Soft drinks.
 Spark plug.
 State Department.
 Store.
 String beans.
 Storekeeper.
 Street car, trolley, electric car.
 Subway.
 Swamp.

Taxi stand.
 Terminal.
 Ticket office.
 Tire.
 Tobacco (of inferior quality).

British

Valve.
 Waterproof.
 Spool of film.
 Return ticket.
 Dickey.
 Footboard.

Shop-assistants.
 Fixture card.
 Buttered eggs.
 First floor.

Boots.
 Boot-laces.
 Pavement, footpath.
 Minerals.
 Sparking-plug.
 Foreign Office.
 Shop.
 French beans.
 Shopkeeper.
 Tram.
 The Underground, the Tube.
 Fen.

Cab rank.
 Terminus.
 Booking office.
 Tyre, outer cover.
 Shag.

<i>American</i>	<i>British</i>
Track.	Platform.
Transmission.	Gear-box.
Truck.	Lorry.
Trunk.	Box.
Underpass.	Subway.
Undershirt.	Vest.
Vaudeville act.	Variety turn.
Vaudeville theater.	Music hall.
Vest.	Waistcoat.
Watch crystal.	Watch-glass.

5. SELECTED LIST OF BRITISH ABBREVIATIONS

A. D. S.-----	Advanced Dressing Station.
A. F. V.-----	Armoured Fighting Vehicle.
A. O. C.-----	Air Officer Commanding.
A. R. P.-----	Air Raid Precautions <i>or</i> Ammunition Refilling Point.
Bde.-----	Brigade.
B. M.-----	Brigade Major.
C. C. S.-----	Casualty Clearing Station.
C. G. S.-----	Chief of the General Staff (in the Field).
C. in C.-----	Commander-in-Chief.
Coy.-----	Company.
Cwt.-----	Hundredweight. In England—112 pounds; in America—100 pounds.
D. C. M.-----	Distinguished Conduct Medal.
D. P.-----	Delivery Point.
D. S. O.-----	Distinguished Service Order.
F. A. A.-----	Fleet Air Arm.
F. A. P.-----	First Aid Party (<i>or</i> Post).
F. D. L.-----	Forward (<i>or</i> Foremost) Defended Locality.

Flt. Lt.-----	Flight Lieutenant.
H. M. A. S.-----	His Majesty's Australian Ship.
H. M. S.-----	His Majesty's Ship.
I. R. A.-----	Irish Republican Army.
M. C.-----	Military Cross.
M. D. S.-----	Main Dressing Station.
M. T. B.-----	Motor Torpedo Boat.
O. T. C.-----	Officers' Training Corps.
Pte-----	Private.
R. A.-----	Corps of Royal Artillery.
R. A. C.-----	Royal Armoured Corps <i>or</i> Royal Automobile Club.
R. A. M. C.-----	Royal Army Medical Corps.
R. A. O. C.-----	Royal Army Ordnance Corps.
R. A. P.-----	Regimental Aid Post.
R. A. P. C.-----	Royal Army Pay Corps.
R. A. S. C.-----	Royal Army Service Corps.
R. A. V. C.-----	Royal Army Veterinary Corps.
R. E.-----	Corps of Royal Engineers.
R. E. M. E.-----	Royal Electrical and Mechanical Engineers.
R. F. A.-----	Royal Field Artillery.
R. G. A.-----	Royal Garrison Artillery.
R. H. A.-----	Royal Horse Artillery.
R. H. G.-----	Royal Horse Guards.
R. M.-----	Royal Marines.
R. M. A.-----	Royal Marine Artillery.
R. Tanks.-----	Royal Tank Regiment.
T. O.-----	Transport Officer.
V. A. D.-----	Voluntary Aid Detachment.
V. C.-----	Victoria Cross.
W. O.-----	War Office.
W. W. C. P.-----	Walking Wounded Collecting Post.

WHO THEY ARE

FIELD MARSHAL ERWIN ROMMEL (born in 1891) is a native of Wurttemberg. Apart from an attachment to a field artillery regiment early in 1914, his regimental experience has been exclusively infantry; he won a captaincy in World War I and was decorated with the Pour le Merite order. Early in the 1920's he met Hitler, became a Nazi party organizer, and later headed Hitler's personal police, the Elite Guard.

By the time Hitler took office, Rommel was a strong believer in mechanized warfare. Several years before the outbreak of World War II, he toured North Africa for his "health," and returned to Germany to plan what later was to become the *Afrika Korps* (Africa Corps). In the first year of the war, he became famous as the commander of the 7th Armored Division, whose sudden and decisive appearances during the campaign in the West earned it the title of the "Ghost Division."

He is resourceful, makes decisions quickly, thrives on action, and gets the utmost out of his men. A captured German officer said recently, "The important thing about Rommel is that he even can teach the Royal Italian Army how to fight."

One of his contributions to blitzkrieg is his method of changing tactics on a large scale, often for no other reason than to confuse the opposition. He is always prepared for a lightning-like switch from defense to offense.

FIELD MARSHAL SEMYON TIMOSHENKO (born in 1895) was hardly known to the Soviet people outside army circles, until May 8, 1940, when Stalin appointed him People's Commissar for Defense.

Back in 1915, Timoshenko, a Ukrainian peasant, was drafted into the Imperial Russian Army. During the Revolution he joined a guerrilla detachment in the Crimea and the Caucasus. His rise in the Red Army was slow until Stalin began to retire a number of generals. Since then, Timoshenko has risen rapidly. His first great military success was in the cracking of the Mannerheim Line in Finland. After this, he was allowed to put into effect his "Disciplinary Code of the Red Army," to reorganize the army almost single-handed, and to supervise future training.



**A battle sometimes decides everything;
and sometimes the most trifling thing decides
the fate of a battle.**

—Napoleon I