VOLUME 1 • NUMBER 3

INTELLIGENCE BULLETIN

November 1942

MILITARY INTELLIGENCE SERVICE
WAR DEPARTMENT

DISTRIBUTION

Nondivisional units are being supplied with copies on a basis similar to the approved distribution for divisional commands, as follows:

INF DIV		CAV DIV		ARMD DIV	
Div Hq	8	Div Hq	8	Div Hq	11
Recn Tr	2	Ord Co	2	Recn Bn	7
Sig Co	2	Sig Tr	2	Engr Bn	7
Engr Bn	7	Recn Sq	7	Med Bn	7
Med Bn	7	Engr Sq	7	Maint Bn	7
QM Bn	7	Med Sq	7	Sup Bn	7
Hq Inf Regt, 6 each	18	QM Sq	7	Div Tn Hq	8
Inf Bn, 7 each	63	Hq Cav Brig, 3 each	6	Armd Regt, 25 each	50
Hq Div Arty	8	Cav Regt, 20 each	80	FA Bn, 7 each	21
FA Bn, 7 each	28	Hq Div Arty	3	Inf Regt	25
	150	FA Bn, 7 each	21		150
			150		

For a limited time, additional copies of this bulletin may be had upon request. Distribution to air units is being made by A–2 of Army Air Forces.

MILITARY INTELLIGENCE SERVICE
WAR DEPARTMENT
Washington, November 1942

INTELLIGENCE BULLETIN
No. 3
MIS 461

NOTICE

The *Intelligence Bulletin* is designed primarily for the use of junior officers and enlisted men. It is a vehicle for the dissemination to them of the latest information received from Military Intelligence sources. In order to secure the widest possible use of this bulletin, its contents are not classified. It is for the exclusive use of military personnel, however, and no part of it may be published without the consent of the Military Intelligence Service.

There is no little enemy.

—Benjamin Franklin.

TABLE OF CONTENTS

PART ONE: GERMANY

PART TWO: JAPAN

LIST OF ILLUSTRATIONS

PART ONE: GERMANY

Section I. THE INDIVIDUAL SOLDIER

1. WHAT HE IS LIKE

The German soldier is a grimly determined fighter who has scarcely known what it is like to live as an independent human being, and whose religion may be summed up in a single word: Nazism.

In his parent's home, in school, in the many subdivisions of the Hitler Youth Movement, in the shop, and in the Reich Labor Service, the army recruit has been bred as a National Socialist. The official point of view regarding national and international matters has been the only point of view he has ever known. All his newspapers, books, magazines, and every other source of information available to him have been "doctored." He knows what the Nazi Party permits him to know, and nothing more. Above everything in the world, he is aware of his allegiance to the National Socialist State and of his life work of being a German. It is his proudest belief that he belongs to "the German race," and that as a result he is something he calls an "Aryan."

488998°—42—Vol. 1, No. 3——2

Nothing is easier to explode than this theory, and the fact that the Germans cling to it shows how far state control has corrupted the common sense of a whole nation. Actually, the Germans are not a separate race. They are Caucasians (as are nearly all European peoples), and since Germany has been the melting pot of all the invading groups which have crossed that territory for the past 3,000 years, German blood is a mixture of many strains. It is heavily Polish, for example.

The truth about the word "Aryan" is that it does not pertain to physical characteristics, but to the science of words, and means a member of one of the peoples who speak what is called an "Indo-European" language; hence Portuguese, Armenians, Greeks, Italians, and dozens of other peoples are as Aryan as the Germans. Contrary to all modern science, however, the Nazis use the term in a racial sense, and identify the German people with it.

The German superiority myth is not an invention of the Nazis, who merely give great publicity to a theory that was popular back in the 19th century. The Kingdom of Prussia and her sympathizers, at that time struggling to combine numerous German states into a united nation, found the doctrine of racial superiority a powerful political weapon. It must be remembered that the German soldier is a product of 1,500 unhappy years of German history, and that the inability of his people to form a united and lasting state has given him a private sense of national inferiority. In "Aryanism," with the Nazi trimmings, the German people have hit upon a kind of national religion, and one which helps them to forget that as a nation

they have always been a political failure. In this religion the leaders are the state, and the state is god.

In teaching German superiority, the soldier's army training more or less picks up where the Youth Movement leaves off. His mind is filled with continuous propaganda which exalts war and makes it seem unavoidable, humane, and heroic. The present war is presented to him as a struggle for national existence forced on Germany by a degenerate, crafty, and ruthless enemy. The soldier is taught this kind of thing hand in hand with his really excellent training in purely military matters—not that he is receiving military training for the first time. It must be remembered that in the activities of Youth Movement societies he learned rifle marksmanship, close-order drill, combat scouting, and many other aspects of warfare. All along the way, these societies were preparing him for a soldier's life.

As soon as he is called up for service, he is tested for his special abilities and qualifications so that the Army can decide in which branch he is to be trained. He is then sent to a training center, where he remains for about six months, unless the need for troops in the field is so great that his training period must be shortened. At the present time, German training centers take advantage of as many short cuts as possible. Normally, during the soldier's first 4 months at the training center, emphasis is placed on his development as an individual fighter. During the fifth month he works on platoon and company problems, and during the sixth month he takes part in battalion and regimental exercises. After the sixth month

his class ordinarily would join in divisional maneuvers, but in wartime such large-scale maneuvers often are omitted. If the recruit displays marked ability while at the training center, he may be allowed to attend a specialists school—for example, a Communications School.

The German soldier's recreation is designed to build up his sense of mental and physical superiority. German sports have been geared to assist the nation-wide program of military training. Their chief function is to toughen the body and encourage combativeness. In most games, as in military training, the emphasis is on the importance of winning—not on sports for their own sake.

Plenty of books and motion pictures are made available to the troops, but, as is so often the case with Nazi generosity, there is a catch. The books are selected, and the films designed, with one fundamental purpose in mind: propaganda. Even when the soldier is relaxing, the doctrine of German superiority is being drummed into him.

The German Army pay scale is lower than ours. A German private receives $6 a month; a lance corporal, $30.80; a corporal, $47.48; a sergeant, $67.20; a first sergeant, $74.72. A lieutenant may receive from $960 to $1,680 annually; a first lieutenant, from $1,360 to $1,680. A private at the front gets an extra 40 cents a day, or 80 cents a day if he is sent to Africa. Officers and noncommissioned officers receive double this amount. Only soldier's dependents who can show evidence that they need assistance are granted financial aid, and even then the matter is in the hands of a district administrative

authority. When the families of officers or noncommissioned officers include children, the following monthly allowances are made: $4 when there is one child, $8 if there are two, $10 if there are three or four. Unfortunately for the soldier's family, this does not insure a decent living standard, partly because such basic necessities as food, clothing, and fuel are not only very expensive in the Reich, but dangerously scarce.

Despite the internal conditions in Germany, the average German soldier seldom feels that he is being pushed around by his leaders. His morale is good. He takes pride in the unit to which he belongs, and fights without a word of question or reproach. On the whole, he is convinced that although World War II is unfortunate, it is necessary if his people, the master race, are to rule the world.

2. HOW TO IDENTIFY HIM

a. Standard Field Service Uniform (see fig. 1b)

Privates and noncommissioned officers in the field wear a steel helmet painted with a gray, rust-resistant paint, or a field service cap made of greenish-gray cloth. This cap may be worn under the helmet. The blouse is also greenish-gray; it has a standing collar of a darker shade. The waist belt is of soft black leather and has a dull white metal buckle. Cartridge pouches are attached to the belt. The gray cloth trousers are tucked into the top of black calf-length boots. The overcoat is gray, with a dark green collar, and is double-breasted. The

soldier carries a pack (haversack in the case of mounted troops), a shelter-half with ropes, a canteen, a gas mask and protective gas cape, an entrenching tool, and side arms. Officers' field uniforms are similar to those of line soldiers.

b. Field Uniforms of Special Units

(1) *Armored force troops.*—Tank and armored-car personnel wear a loose-fitting black uniform with a black field service cap or a steel helmet. Armored-car personnel may also wear a protective camouflage uniform of greenish cloth, cut like the black uniform. Medium armored troop-carrier personnel wear the black uniform with a black beret. The crews of medium self-propelled antitank guns wear a gray uniform, cut like the black uniform, and a gray field service cap or steel helmet.

(2) *Parachute troops*[1] (see fig. 1 a).—Parachutists wear a brimless steel helmet with chin and neck straps, loose-fitting gray-green coveralls with very short legs, gauntlet gloves, and ankle-length boots laced at the sides. Loose gray trousers (like extra-long knickers) and a gray blouse are worn under the coveralls. The leather belt is supported by two front straps fastened to a ring and a single strap at the back. To the belt are attached a revolver, two haversacks, a canteen, and a gas mask. A rolled bivouac cape may be hung from the shoulders down the back.

(3) *Mountain troops.*—These troops wear a special cap (similar to the field service cap, but with the addition of a

[1] Parachute troops are members of the Air Force.

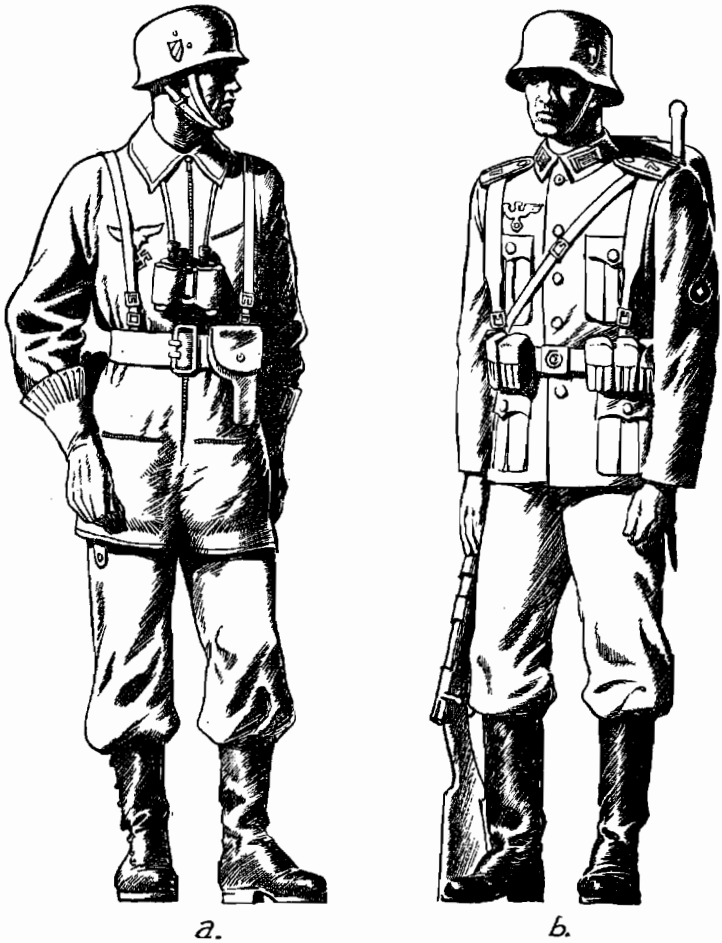

Figure 1.—(a) German Parachutist's uniform (standard); (b) German Field Service uniform (standard).

cloth visor), the ordinary type of service blouse, gray trousers fastened around the ankles by puttees, and ankle boots. They carry a loose knapsack (*rucksack*) and a large canteen. In snow, they may be equipped with snowshoes or skis, and white coveralls.

c. Insignia of Grade

Sergeants wear distinctive shoulder straps (no chevrons). The gray-green background of the strap is bordered by a silver strip, around which is a narrow braid in the distinctive color of the wearer's arm or service. Certain grades of sergeants also wear silver stars on their straps. Corporals', lance corporals', and privates' straps are gray-green, with a braid in the distinctive color. The regimental number may appear on the background of the strap; the strap button may show the number of the wearer's company or equivalent unit. Corporals and lance corporals wear chevrons on the sleeves of their blouses. Collar patches, showing the color of the arm or service, are worn by all grades.

d. Other Distinguishing Marks

(1) *Distinctive colors of arms and services.*—Each of the arms and services has a distinctive color. The more important are as follows:

Red	Artillery.
Black	Engineers.
Dark green	Officials.
Dark blue	Medical.
Light blue	Motor transport.

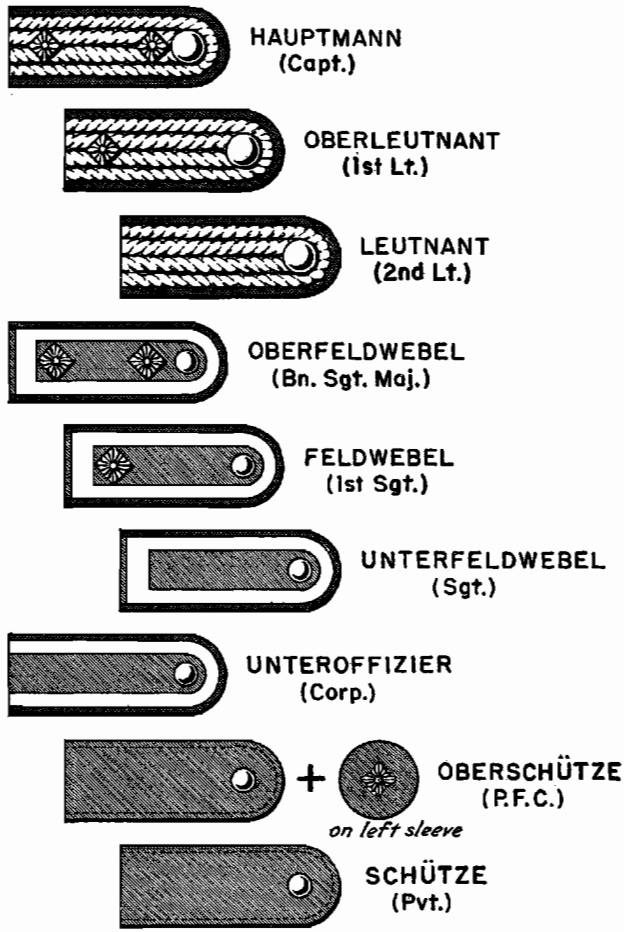

Figure 2.—German insignia: Shoulder straps. Numerals denoting company, battery, or troop may appear on the end buttons; numerals denoting regiment may appear on the center of the straps.

488998°—42—Vol. 1, No. 3——3

Crimson	General Staff officers.
Violet	Smoke troops.
Light yellow	Signal.
Deep yellow	Cavalry regiments, mounted or partly mounted. Cyclist battalions (+ letter R).
Pink	Tank regiments. Antitank battalions (+ letter P).
Grass green	Motorcycle battalions (+ letter K).
Copper brown	Reconnaissance units (+ letter A).
White	Infantry regiments (normal and motorized). Motorized machine-gun battalions (+ letter M).
Light green	Mountain rifle regiments. Rifle battalions.

On the field uniform, the appropriate color appears in the background or small braid of the shoulder strap and in the background of the collar patch.

(2) *Paybooks.*—Although paybooks are not supposed to be carried into battle, United Nations troops may capture them in the course of offensive operations. The paybook will show the unit in which the holder is serving, and in addition, the units of the field army in which he has served previously, the depot unit in which he was first trained (unless he was already serving in the army on mobilization in 1939), and the depot units which supply replacements for various field army units. All such entries should be noted.

(3) *National insignia.*—The national insignia (a spread eagle over a swastika) is worn above the right breast pocket of the field blouse, on the front of the cap and beret, and on the left side of the steel helmet.

(4) *National rosette.*—This is a small circular insignia in black, white, and red. It is worn below the national

insignia on all headdress except the steel helmet. On the black beret, and on all visored caps except the mountain cap, it is flanked by oak leaves.

(5) *National colors.*—The national colors—black, white, and red—are worn in the form of a shield painted on the right side of the steel helmet.

(6) *Identification tags.*—German identification tags seldom show the unit in which a man is currently serving (unless he has lost the original tag which was issued him when he was assigned to a depot unit, and his present unit has issued a replacement). However, these tags may record the existence of a previously unidentified unit, and a report should always be made of the information stamped on them.

Section II. RECONNAISSANCE UNITS

1. INTRODUCTION

That the German army—like our own—attaches great importance to thorough reconnaissance is borne out by a recently captured German manual dealing with reconnaissance units. For example, only exceptionally well qualified personnel is chosen for such duty, as revealed in the following quotation from the manual:

"Cunning, versatility, ability to grasp orders rapidly, skill at driving vehicles across any type of terrain, the offensive spirit, resourcefulness under all circumstances and especially at night, cold bloodedness, and the ability to act quickly and independently should be characteristics of men selected."

2. EXTRACTS FROM THE CAPTURED MANUAL

a. Tasks of Reconnaissance Units

By taking advantage of * * * mobility, the reconnaissance unit may even engage superior enemy forces successfully. Mobility often enables it to attack the flanks and rear of the enemy and achieve surprise, to deliver repeated attacks at different points, to concentrate its forces quickly, to destroy small, isolated

enemy detachments, and to employ part of its strength as a mobile reserve or for counterattacks in defense.

In the attack, a distinction must be drawn between an enemy defense area and an enemy defense line. Against the defense area, the aim of the reconnaissance unit is to use its speed to surround and destroy the enemy. Against a defense line, the aim is to concentrate all available forces and achieve a break-through at one point. It may not be wise to reconnoiter points suitable for a break-through, if this action is likely to give the enemy a hint regarding our plans. The reconnaissance unit generally will have to be reinforced if it is to achieve a break-through in a strongly held defensive line.

When an attack is in preparation, orders as a rule will be issued first to the heavy weapons, so that the attack will not be delayed while the heavy weapons are getting ready to come into action. Otherwise, the element of surprise may be lost. If an attack is held up, it may be a good idea to cancel the plans and strike at another point. Reconnaissance units are especially well suited to pursue an enemy who has been forced by our major units to withdraw. If pursuit from any of our flanks would mean loss of contact with the enemy because of the distance being too great, the enemy should be pursued directly through the break-through itself.

A reconnaissance unit may be forced by the task allotted to it, or by enemy action, to adopt the defensive temporarily. It can defend itself successfully only on ground which forces the enemy to attack on a narrow front; under any other circumstances, the unit's flanks must be protected by other troops. It is usually best to keep a mobile reserve to forestall enemy outflanking movements or for counterattacks.

The reconnaissance unit is better suited for delaying action than for lengthy defense.

b. Motorized Reconnaissance Units

The reconnaissance unit commander must make his own decisions about sending out patrols. It is required, however, that each patrol consist of at least two cars (including the radio car).

Before the patrol commanders start out, they receive verbal information from the reconnaissance unit commander on the general situation—for example, where contact with the enemy may be expected, the strength and composition of enemy forces, the nature of the terrain allotted to the patrols, the results of air and other reconnaissances, the mission of the reconnaissance unit, and how it will seek to fulfill its mission.

The unit commander then issues verbal orders to the patrol commanders. Particular points about which reports are needed should be given out in the order of their importance, under the heading "I want to know." The patrol leaders will be told to report, by radio or messenger, on crossing a designated line—even if they have not been in contact with the enemy.

Usually a patrol should not be given more than one task. If demolitions are required, combat engineers should be assigned to the patrol and move with it.

Reconnaissance at night is mostly a question of watching roads and keeping the enemy under observation from such concealment as woods and farms. Reconnaissance units should be relieved before dawn.

Reconnaissance units and patrols must be able to effect river crossings rapidly. Attacks on bridges on main roads often are likely to fail. A feint attack may be made on such bridges, however, while preparations are being made to cross at other points which are undefended, or less strongly defended.

The commander of the reconnaissance unit decides whether to send the whole unit across or merely the patrols. In the latter case the friendly shore usually must be defended until the patrols return.

The engineers in a reconnaissance unit must be able to carry out the following work:

(1) Build a 5-ton bridge, 36 feet long.
(2) Build and man two 2-ton rafts or one 4-ton raft.
(3) Build a footbridge for bicyclists.[1]

c. Partly Motorized Reconnaissance Units

The partly motorized reconnaissance unit carries out tactical reconnaissance for an infantry division.

In country where immediate contact with the enemy is to be expected, the reconnaissance unit commander will designate the area to be reconnoitered. The patrol will be told by which route the reconnaissance unit will advance. As a rule, the bounds for the mounted and bicycle patrols should be not more than 10 miles ahead of the main body of the reconnaissance unit (unless radio communication facilities are available).

Mounted patrols do not depend on roads, and can swim their horses across stream. They can search a sector independently. Ground, weather, and the matter of supplies do not affect them seriously. However, their rate of march and extent of performance are limited.

In districts with good road systems, and in favorable weather, bicycle patrols can get around better than mounted patrols. However, their rate of march is reduced on paths, especially in bad weather. Across country, their rate of advance may often be less than that of a man on foot. At night, if there is a good road system, bicycle patrols are excellent because they make little noise.

The armored-car patrol has a high rate of advance and performance. Since it is allotted a radio car, it can pass information back more quickly than other patrols. It is suitable for use on roads and to cover great distances. It can carry out a task quickly, and be available shortly afterwards to undertake another.

[1] Against a major opponent, German reconnaissance units seldom use bicycles unless the terrain makes this absolutely necessary.

d. Conclusion

The strength of patrols of all types depends on their tasks, the ground, enemy dispositions, and the attitude of the civilian population. The strength of a mounted patrol varies from a platoon to a company. As a rule, bicycle patrols should be of company strength, since they are mainly confined to roads and are therefore required to fight more often than mounted patrols. The strength of an armored-car patrol, even if the reconnaissance unit is only partly motorized, must consist of at least two cars (including a radio car), just as in the case of the fully motorized units. Also, portable radio communication sets may be allotted to the patrols. It must be remembered, however, that the less radio communication is used, the more difficult it will be for the enemy listening posts to discover the presence and movements of the reconnaissance unit.

In most cases patrols can work only by day. At night their activities will generally be limited to gaining and maintaining contact with the enemy and locating his outposts.

Section III. DEFENSE AGAINST AIRCRAFT

1. GENERAL

German antiaircraft units are an organic part of the Luftwaffe (air force), and aircraft, especially fighter planes, cooperate with the antiaircraft defenses. The Germans make a distinction between searchlight units, light and heavy antiaircraft artillery units, and barrage balloon units.

2. USE OF SEARCHLIGHTS

In addition to seeking out our planes so that antiaircraft fire can be placed on them, German searchlights recently have been producing "dazzle" and "glare" in efforts to blind and confuse our pilots, bombardiers, and gunners. These tactics are proving a big help to the Germans in protecting cities and strategic centers.

Dazzle is the blinding of persons in a plane caught in the direct light rays of one or more searchlights. Glare means obscuring the target from the plane crew by a light beam played between the plane and the target.

The extent of dazzle is determined by the height of the plane, the number of searchlights concentrated on it,

weather conditions, the direction of the light beams, and, to some degree, by the reactions of persons in the plane.

Dazzle is most effective when a plane is flying at a height between 2,000 and 4,000 feet. A single beam will not produce dazzle except at a fairly short range. At a given height, the dazzle increases in direct proportion to the number of beams centered on the plane. It also increases in proportion to the amount of haze, mist, rain, or dust in the air. Far more dazzle is produced if the plane is traveling in the general direction of the beam or beams. The British find that when a bomber pilot gets into one of these areas, he must keep his head down and fly by instruments, so as not to allow the light to blind and confuse him.

Dazzle or glare created by antiaircraft searchlights greatly lowers the ability of a person to adapt his eyes to seeing at night—in fact, looking at any fairly strong light will do this. Either dazzle or glare makes the location of targets difficult and lessens the accuracy of bombing. Also, keeping beams directly on a plane helps defending fighter craft to approach the plane unobserved and to attack it more effectively.

German searchlight crews are reported to have been dipping their light beams to indicate to their fighter planes the direction in which hostile bombers are flying.

Sound-locator apparatus are used by the searchlight units to determine the general direction and distance of our aircraft from the searchlight positions. Having obtained these data, the searchlight crews seek to place their lights on the planes. When searchlights are not present in an area, or are present but unable to function, sound-

locator apparatus often are employed in close cooperation with antiaircraft artillery in estimating firing data.

3. USE OF ANTIAIRCRAFT ARTILLERY

Antiaircraft guns are the backbone of the entire antiaircraft defense. The battery, usually consisting of four or six guns, is the fire unit. Experience has shown the Germans that it is best not to break up this unit, even when a need arises elsewhere for only one of the guns. It should be noted, incidentally, that the Germans often employ flashless propelling charges to avoid giving away the location of antiaircraft weapons.

a. Heavy Batteries

The heavy battery is responsible for the antiaircraft defense of the combat zone. The heavy antiaircraft guns (usually 88-mm) have the mission of protecting German ground forces at all times against air reconnaissance and high-altitude attacks.

These weapons are moved by mechanized transport. Their average marching speed is from 5 to 20 miles per hour. Horse-drawn antiaircraft cannon are employed only by commands which must cope with fuel shortages and unsatisfactory roads. Antiaircraft units provided with mechanical transport have the following characteristics: ability to open fire quickly, great mobility, and capabilities for employment within the effective range of hostile artillery.

The heavy batteries are employed against hostile planes, especially attack units, flying at altitudes up to

about 27,000 feet. Heavy antiaircraft artillery cannot be used against planes flying at altitudes of less than 1,200 feet directly over the battery. Requiring special fire-control equipment and special ammunition, these weapons are used against ground targets only in the event of close-in tank attacks. Each heavy battery is protected by two 20-mm cannon, which are an organic part of the battery itself.

b. Light Cannon

Light antiaircraft cannon are especially suited for defense against planes flying at short ranges and at low altitudes. The mission of the light antiaircraft battery is to protect installations and troops against ground-strafing and dive-bombing attacks. The cannon (usually 20-mm) are moved either on trucks or on self-propelled mounts. These weapons are characterized by their great mobility and by their success in tracking air targets which have a high angular rate of travel and which demand change of ranges. Tracers are used to make this tracking easier. The average marching speed of units equipped with these weapons is from 15 to 25 miles per hour.

c. Machine Guns

In heavily populated areas, especially the strategic manufacturing centers, machine guns often are mounted on the roofs of buildings to operate against aircraft flying at relatively low altitudes. It is known that in many instances machine guns are manned by well-trained factory personnel.

4. USE OF BARRAGE BALLOONS

The Germans make considerable use of captive balloon barrages around strategic manufacturing centers and other areas containing important installations. The barrage usually forms an irregular belt about ⅝ of a mile wide and about 1¾ miles from the outer edge of the strategic area. The plan for a barrage is coordinated with light- and medium-caliber antiaircraft gun defense, which protects the larger gaps in the belt.

The balloons, resembling the fan-tailed goldfish sometimes seen in a home aquarium, have fan-like tails as long as the balloons themselves. They are reported to be moored at altitudes ranging as high as 15,000 feet, and at an average altitude of 4,500 feet. A well-planned barrage, with its dangling net of steel cables, can prevent precision bombing, and can keep hostile aircraft at an altitude favorable for the use of antiaircraft artillery and fighter planes. Also, a barrage reduces the efficiency of hostile combat aviation by forcing it to operate at unfavorable altitudes.

On the other hand, the Germans have learned from experience that balloon barrages are not well suited to protect small, isolated targets. They have also found that such a barrage is vulnerable to hostile fighter planes, and serves its purpose only in areas where it can be protected by antiaircraft guns and friendly fighters.

Section IV. FIFTH COLUMN

1. HISTORICAL BACKGROUND

Fifth Columnists have taken part in nearly every war in history, but the term "Fifth Column" originated in 1936 during the Spanish Civil War. The Rebel forces were converging at Madrid when General Mola, one of their leaders, remarked: "We have four columns here, but more important than any of these is our fifth column, which is in the city itself."

Although Germany and Italy had Fifth Columnists at work in probably every European country prior to the Spanish Civil War, it was during this conflict that the two nations used them for the first time on a major scale.

The Axis not only tested Fifth Column procedures during the Spanish war but also tested new ground and air force tactics. It is generally believed that Hitler and Mussolini purposely allowed the war to drag along for three years so that they could complete their tests.

The term "Fifth Column" has been defined to include all the forces, in a given country, acting on behalf of the enemy and waiting to cooperate with an armed invading force in conquering that country. Fifth Columnists aid

the enemy's cause by every practical means. To this end, they employ all forms of corruption, treachery, and propaganda, as well as military weapons. Their organization usually is not a haphazard one but functions as part of a well-ordered military plan.

2. TACTICS USED

Intelligence Bulletin No. 1 carried a list of Fifth Columnist practices in behalf of the Japanese. The list below consists of additional Fifth Columnist tactics in behalf of all Axis powers. The agents engaged in—

a. Direct Aid to Enemy Operations

(1) Lied to the British about the proper trails to follow in the Malayan jungles;

(2) Prevented destruction of bridges in Holland by tampering with demolition charges;

(3) Neutralized electric mines in the Oslo (Norway) Sound by cutting wires or removing fuses—thus allowing German transports easy access to the harbor;

(4) Posed as the Norwegian Defense Minister and ordered three Norwegian warships not to fight the Germans;

(5) Caused the commander of Fort Horten, Norway, to surrender, although nearly all invading German ships had been stopped before reaching the area;

(6) Purchased homes and farms—with German money—on both sides of boundary lines separating Germany from Denmark, Holland, and Belgium in order to aid movement across the frontiers of spies, other Fifth Columnists, matériel, and finally troops;

(7) Started street riots in Rotterdam and The Hague to confuse the Dutch when the Germans crossed into Holland;

(8) Laid mines under Dutch military establishments when that country was invaded;

(9) Stole cars to assist Germans when they invaded Holland;

(10) Posed as French refugees during the battle for France in 1940;

(11) Made chalk or paint marks in front of their homes in Holland so that parachutists could recognize them:

(12) Dressed as French, British, and Belgian officers and gave faked orders to United Nations forces;

(13) Spread rumors during the Western Front Campaign of 1940 that German parachutists were landing or about to land at different places;

(14) Posed as tourists in Spain, and in Spanish and French possessions in Africa, so they could work to help the Axis powers;

(15) Carried food and water from the Liberian coast (West Africa) to German submarines anchored off the coast;

(16) Gave out false reports that German parachutists were dropping behind the lines in France, disguising themselves as nuns;

(17) Caused riots by German minorities in Poland and Czechoslovakia and killed army officers in those countries;

(18) Guided airborne troops to landing fields in Poland;

(19) Used radio or signals from behind Polish lines to give German forces the exact locations of Polish positions and installations;

(20) Shot sentries in Belgium when the Germans invaded the country;

(21) Concealed orders and directions for German troops on advertising billboards in Norway;

b. Furnishing Information to the Enemy

(1) Removed tiles from a roof in order to flash concealed light signals to Axis fliers;

(2) Sent information to Axis air forces on the exact location of dispersed and concealed planes at several airdromes;

(3) Used identity papers of prisoners in order to get behind United Nations lines;

(4) Peered through windows with field glasses to study United Nations equipment as troops marched by;

(5) Collected and sent to Axis forces accurate data for military maps;

(6) Entered the Norwegian Army in order to cause disturbances in the ranks and to collect intelligence information;

c. Sabotage

(1) Placed open cans of gasoline under parked trucks and attached slow fuses to explode the fuel;

(2) Mixed sand with grease in the journal-box of freight cars in order to create "hot boxes" by friction of the sand in the axle mechanism;

(3) Sabotaged railway engines in Iraq;

(4) Removed the steel plates, and nuts and bolts, which fasten railroad rails together;

(5) Laid bombs under rails to explode when the locomotive passed over them;

(6) Sabotaged a large quantity of gasoline by adding soap flakes to it;

(7) Placed obstacles in gas tanks of vehicles to stop the gas line, or to dissolve in part and then block the carburetor;

(8) Cut wires leading to spark plugs in truck motors;

(9) Short-circuited electric power lines by throwing ropes over two or more lines and pulling them together;

(10) Cut and sometimes removed large sections of telephone and telegraph lines;

(11) Derailed ammunition train at Alexandria, Egypt;

(12) Cut vital parts of life belts to render them useless;

d. Subversive Activities

(1) Spread rumors of big ship losses and other battle disasters;

(2) Spread rumors that General Wavell had died in India early in 1942;

(3) Reported false scarcities of food supplies;

(4) Tried to produce quarrels among various religious groups;

(5) Spread false stories of disorderly conduct of soldiers, including tales of rape, murder, and drunkenness—all of which were designed to cause unrest among the civilian population;

(6) Distributed phonograph records critical of the British in South Africa;

(7) Printed and distributed propaganda newspapers and pamphlets with money obtained from the Axis governments;

(8) Spread reports that British soldiers were stealing household goods from French homes as they retreated on the Western Front;

(9) Placed a bomb in a public gathering place used by American soldiers in Ireland—the bomb was found before it exploded;

(10) Helped to conceal German parachutists in Ireland;

(11) Stole arms and ammunition from military stores in Ireland;

(12) Attempted to blow up a war memorial in Cork, Ireland;

(13) Caused an epidemic of fires in Ireland;

(14) Promoted pacifism in France before start of the war and encouraged quarrels between political groups.

Section V. GERMAN SUB-STRATOSPHERE PLANES

The German Air Force has devoted considerable attention to specialized high-altitude aircraft. Several years ago a two-engined monoplane built by Junkers broke the world's altitude record. Since then the Junkers people have continued their experiments, taking out a number of patents on devices in connection with sub-stratospheric flying.

Development of the German high-altitude plane is exemplified by the Ju 86, P1 and P2 types. Both planes, the former a bomber and the latter a reconnaissance plane, follow the proved Junkers, Ju 86, design. They are two-engined, low-wing, all-metal monoplanes fitted with the typical "double wing" flaps and ailerons, but having twin fins and rudders.

Both types have a transparent, short-nosed cabin. In appearance they are somewhat similar to the Ju 88, and at high altitudes have been mistaken for this plane.

The Ju 86 P types are powered with two Junkers Diesel Jumo 207 A/1 liquid-cooled engines of approximately 1,000 horsepower each. The structure of these planes is quite light, especially the wings. For this reason, pilots are

prohibited from stunting them or pulling quickly out of dives.

These planes are fitted with pressurized cabins housing the pilot and one observer or bomber. Within the heated and oxygen-equipped cabin, the air pressure is controlled automatically to maintain inside pressure conditions equivalent to those at an altitude range of 10,000 to 11,500 feet.

If, owing to leaks or other causes, the cabin pressure falls or rises beyond either of the above limits, the pilot is warned by means of a light signal and the sounding of a horn.

The pilot and his observer or bomber wear extra-heavy flying suits and gloves. For bailing out at high altitudes, parachutes are generally provided with oxygen-breathing apparatus. If, however, this equipment is lacking, the crew are instructed to make a "free fall" and not to open their parachutes until reaching an altitude of about 13,000 feet.

The maximum speed of the Ju 86 P types is estimated to be from 260 to 290 mph at 30,000 feet, and normal cruising speed at the same altitude is estimated at 230 to 250 mph. Ranges of 1,400 to 1,750 miles are believed possible.

While no definite ceiling has been established, it is thought that the Ju P1 is able to attain an altitude of approximately 39,300 feet with full bomb load, and that the Ju P2 can reach a considerably higher altitude. Very recently an aircraft believed to be a Ju 86 P2 was observed at approximately 43,000 feet.

PART TWO: JAPAN

Section I. THE BURMA CAMPAIGN

1. TACTICS

a. The Individual

The Japanese soldier and junior officer were excellently trained for their tasks. Assisted by native Burmese, they showed great initiative and ability to move fast, even over difficult terrain.

The Japanese soldier believes that it would be a disgrace to his family for him to be captured in battle. His religion—which is based on ancestor worship—teaches that it is a high honor and privilege for him to die for his emperor. These beliefs were vividly demonstrated during the Burma Campaign. Japanese, wounded to the point where they could not offer effective resistance, dropped to the ground to be killed rather than surrender—often they begged to be killed. Wounded men were sometimes killed by their comrades in order to escape capture.

The Japanese were unusually fearful of mortar and artillery shells. Although the Japanese 4-inch mortar had a greater range than the British 3-inch mortar, the

Japanese mortar crews time and again fled or sought new positions when fired at by the British.

b. Shock Troops

These troops are carefully selected and usually are noticeably superior to the troops which follow them. The Japanese soldiers selected to infiltrate around the British flanks and to the rear were drawn from the ranks of the shock troops, and, in actuality, performed shock-troop missions. They were well educated, many being able to speak foreign languages.

The equipment of the shock troops included light machine guns, 2-inch mortars, grenades, compasses, and maps.

These troops used tracer bullets to indicate British positions, especially mortars and machine guns, to the heavier Japanese supporting arms. They were very successful in infiltrating into villages and quickly losing themselves in the mass of cover available. These Japs often knocked small holes in the roofs of houses, and—supporting themselves on the rafters of the roofs—shot at opposing troops. They also fired from slit trenches under houses, as well as from culverts, bridges, bamboo clumps, rice dumps, and other hiding places.

c. Use of Weapons

(1) *Machine guns.*—Medium machine guns were used in pairs, with only one gun firing at a time. The second gun took up the firing while the first was replacing its cartridge strip, thus maintaining continuous fire.

(2) *Mortars.*—Besides the 2-inch mortar carried by shock troops, the Japanese used a 4-inch mortar effectively. This weapon was quickly brought up to the firing line after first contacts were made, and its accurate fire caused major casualties in several instances to the opposing troops. The Japanese avoided placing the mortar on the edge of woods or jungle, but put it some distance into these areas—sometimes as far as 600 yards. The observation post for the mortar was usually well forward. The fire probably was controlled by radio or telephone.

(3) *Artillery.*—Japanese artillery was not very efficient in searching out new positions of defending troops. Gunners were usually content to shell old and empty positions, not bothering to search for alternative ones.

d. Observation

Japanese observation posts were able to spot movements of opposing infantry at distances of 4 to 6 miles. This suggests that they are equipped with the scissors-type rangefinder, which is considered superior, when used as field glasses, to the rangefinder employed by defending troops in Burma.

Japanese planes usually were not in the air after 1700 hours (5 p. m.); therefore British forces were able to move about without detection from the air until about 0700 hours (7 a. m. the next day).

e. Road Blocks

The Japanese always located their road blocks at points where the roads pass through dense jungle or embank-

ments. The actual blocks or barricades were almost always placed in bends of the roads and thus concealed from frontal observation except for short distances. These positions were strongly covered by well-placed mortars, antitank guns, and machine guns. Sometimes the positions were multiple affairs—at Shwedaung, five barricades blocked one road. In country made difficult by jungle, the areas defended on either side of the road blocks usually did not extend very far back from the roads.

f. Night Operations

Japanese night attacks generally were started at about 1900 hours (just before or after dark). They used very few scouts in their night movements, and they were careless with motor transports—for instance, the normal headlights of trucks were on as they moved.

During the latter stages of the campaign, the Japanese moved almost entirely at night and rested during the day. During these rest periods their local protection was poor, and they were easily surprised.

g. Fifth Column

Fifth Columnists probably were more numerous and active in Burma than in any other country involved in the present war. They sometimes were used by the Japanese as a screen for advancing troops, sending back information on defending forces as they moved from place to place. Any ambush set to trap the Japanese usually was given away by these Fifth Columnists.

2. COMMENTS BY AMERICAN OBSERVERS

a. General

The Japanese in most instances had a larger number of troops than the British. With the exception of tanks, they also usually had more equipment.

b. Specific

(1) *Patrols.*—Lack of cavalry forced the British to use infantry troops almost exclusively for reconnaissance and security. Sometimes these troops had to go as far as 15 miles ahead of the main forces. As a result, they often were too exhausted to fight effectively, and their loss greatly lowered the capabilities of the infantry combat units.

(2) *Cavalry.*—Most of the terrain in Burma is ideally suited for the use of mounted cavalry. Small local ponies are better than our American cavalry horses. The cavalry equipment should include a high proportion of light machine guns and Tommy guns.

(3) *Transportation.*—The British had severe transport problems, particularly because of a shortage of ferry boats and railroad personnel (nearly all native railroad personnel fled from their jobs when the Japanese entered Burma).

The American jeeps proved ideal vehicles for commanders, liaison officers, and persons carrying orders, and for transporting machine guns and mortars.

Destruction of abandoned vehicles by the defending forces was not carried out on a thorough scale.

488998°—42—Vol. I, No. 3——6

(4) *Artillery.*—Some British units found that four guns to a battery were better than six because they are easier handled.

(5) *Slit trenches.*—These proved very effective except for direct hits or when bombs hit tree tops near the trenches.

Section II. THE SOLOMON ISLANDS CAMPAIGN

1. INTRODUCTION

The information in this section includes reports given by Marine Corps personnel who took part in the Solomon Islands fighting. A study of the tactics and matériel used by the Japanese should benefit our troops who may face them in the future.

2. THE JAPANESE SOLDIER

Individually, the Japanese soldier proved to be a tough and excellent fighter in the Solomon Islands operations. "They very, very seldom give up, but will fight until killed, even after being badly wounded," according to a Marine officer. "Of a force of well over 700 that we wiped out, we were able to take only 34 prisoners, and 33 of these were so badly wounded that they couldn't do anything." Each of the prisoners said he had expected to be killed by the Americans after capture—however, each said he had not been so warned by his superiors. All insisted that they would never be able to return to Japan, because they would be disgraced for surrendering.

Upwards of 300 Japanese trapped along a beach chose to swim out to sea rather than surrender. Marine gunfire "picked them off like rabbits," according to the officer previously quoted. "After it was all over, we saw a single Jap swimming well out at sea so we sent a boat to get him. As the boat came alongside, he made a dive and never came up. In other words, they kill or get killed. Within 3 days over 200 bodies were washed ashore."

Apparently a great deal of propaganda has been spread among Japanese soldiers about horrible things that would happen to them if taken prisoner. Repeated chances were afforded Japs to surrender in the Solomons fighting but only two men attempted it. They threw down their rifles and ran toward our lines with their hands in the air. The Marines ceased fire but a Japanese machine gun shot down the would-be prisoners before they reached our lines.

One Japanese unit, carrying all of its heavy equipment, marched 40 miles in two nights, through jungle country part of the time. The distance was covered in less than 22 hours hiking time and with very little food on which to subsist.

3. SNIPING

Cleverly hidden Japanese snipers proved very troublesome to the U. S. Marines. A Marine sergeant reported that "our biggest problem was in locating and destroying snipers. They were well concealed in trees, bushes, and buildings. Time and again, our forces passed through an area and were shot at from the rear."

A second Marine officer said that the Japanese used a large number of snipers, well camouflaged. "They shot at us from the tops of coconut trees, slit trenches, garden hedgerows, from under buildings, from under their shelter halves, and from under fallen palm leaves," he explained. "One sniper, shot down from a tree, had coconuts strung around his neck to help conceal him. Another in a palm tree had protected himself with armor plate. Our Browning automatics proved to be excellent weapons for dealing with snipers hidden in trees."

The snipers sought especially to pick off officers and noncommissioned officers who wore insignia or markings indicating their rank.

The Japanese placed snipers on the flanks of their positions and weapon emplacements.

4. DECEPTION

The Japanese will do anything he can to deceive you. "Never underestimate the Jap in any respect, and never think you've got him whipped until you've killed him," says a Marine officer. "Wounded Japs have shot our men in the back after our men have passed them."

One night a Japanese soldier struck a match about 75 yards in front of our sentries to get them to shoot and thus reveal their positions.

5. CAMOUFLAGE

A large number of the Japanese wore green uniforms and painted their faces and hands green so they would be hard to see among the green vegetation on the islands.

They also wore camouflage nets with wood fiber strands and garnished with vegetation. Japs wearing these were hard to see, even at 50 yards, if they were still.

Camouflage was cleverly used over numerous pit traps, most of which were mined.

A radio transmitter located near a beach was extremely well camouflaged by palm trees.

Their concealment was made easier by the fact that no flash, smoke, or muzzle blast was visible from their weapons.

6. INFILTRATION

The Japanese tried out their old tricks of infiltrating around our flanks and through gaps in our lines, especially at nights. Alert Marine outpost troops, however, broke up the infiltrations. The Marines held their fire until they were sure of their targets—several Japs were killed while only 10 or 15 feet away from our posts.

7. NIGHT TACTICS

The Japanese offered comparatively little resistance during the day, often fleeing before the fire of our machine gunners and riflemen. Considerably greater resistance was offered at night. The Japs fired tracer ammunition in machine guns. The fire was not well aimed, and probably was intended to draw our fire and thus locate our positions.

8. DEFENSIVE TACTICS

The Japanese defenses included slit trenches, foxholes, dugouts, houses, sheds, hedgerows, heavy brush, caves, and cut-and-cover shelters. The cut-and-cover shelters were 20 feet long and 14 feet wide, and their tops were about 4 feet above the ground level. Each shelter had firing posts, which were well camouflaged. They consisted of rocks piled haphazardly on the ground surface at the edge of the shelter. Entrances to the shelters—located at each end—were protected by sandbag walls on the outside. The surplus dirt from the slit trenches had been carefully removed, leaving no protection above the surface of the ground. Machine guns were set up in some of the caves used by the Japanese. At one cave, the enemy made two unsuccessful bayonet and sword charges in an effort to drive our troops away. Reserve troops were kept in some of the caves and were used to replace casualties at guns nearby.

Dugouts were prepared close to the edge of the sea. They extended underground into the hills, and were protected on the front and flanks with sandbags and steel plates. The passageways into the dugouts curved sharply a short distance beyond the entrance, making it impossible to use hand grenades effectively. Each dugout housed about eight men. They fired from the entrance as the Marines approached, but retreated into the dugouts just before the latter got within grenade-throwing range.

9. WEAPONS

The Japanese were well equipped with mortars, 70-mm cannons (infantry battalion guns), light and heavy machine guns, rifles, pistols, and flame-throwers.

Section III. JUNGLE WARFARE

1. INTRODUCTION

In the first phases of the present war, the Japanese were highly successful in jungle fighting. A captured Japanese manual reveals the instructions given to Japanese troops prior to these attacks; some of the important passages are translated below.

2. THE MANUAL

a. Object

The main object is to crush the British and Chinese forces, especially the latter. A failure to achieve these ends may likely have a serious effect on the Great East Asia War.

Before a general engagement takes place, an effort must be made to destroy the British and Chinese in their respective areas. Held frontally, the main enemy forces are to be cut off and destroyed by a big encircling movement.

Friendliness of the inhabitants, absence of roads, and the difficult nature of the country outside the areas chosen for encirclement are an advantage for us.

b. Plans (concealment)

Carefully chosen troops are to be used for infiltration and encirclement before the main general encircling offensive starts.

To avoid enemy air or ground observation, they should choose terrain where there is natural concealment and also utilize periods of darkness. When the enemy is met, he should be denied information of our plans, encircled, and attacked immediately.

c. Mobility

It is essential that encircling units have extreme mobility. They must be capable of overcoming all difficulties and reach their objectives at a given time. If necessary, all local means of transport must be used. Transport should be arranged in advance so that the troops can be moved at short notice. When these troops are moving to an objective they should keep contact with troops in the rear. (Editor's note: This was not done in many cases.)

The enemy usually constructs strong points on roads but neglects his flanks.

British and Indian troops do not destroy roads, so a motorized thrust is of value. Even the Chinese do not destroy roads properly in Burma because the local inhabitants—whose help is needed—are hostile to them.

Encircling troops must consolidate the positions they occupy—strong points and antitank obstacles are to be built.

In mopping up, every encircled enemy is to be killed.

Complete cooperation must exist for all units, both in the air and on the ground.

Encirclement may extend several hundred kilometers (1 kilometer equals about ⅝ mile) so close cooperation with air is necessary in mopping up. Prearranged signals should always be given to the planes.

d. Administrative

Waiting for supplies from the rear impairs mobility; therefore troops must be prepared to live off the country, and guard and conserve their ammunition.

e. Local Inhabitants

The attitude of the local inhabitants affects the outcome of the campaign; therefore always be nice to them. Respect and protect all Burmese temples so that the monks may be of assistance.

Section IV. NIGHT OPERATIONS

1. INTRODUCTION

Japanese military leaders consider night attacks one of their specialties. In these they were very successful in the Russo-Japanese war, the Manchuria "Incident," the China "Incident," and during the present war in Malaya, Borneo, and the Philippines. They have experimented extensively with various night tactics, over a period of many years, and have adopted certain specific techniques—with which this section is primarily concerned.

As a rule, the Japanese have only limited objectives at night and do not attack very deeply. Once these objectives have been accomplished, the Japs usually effect a slight withdrawal, and reorganize for rest during the next day (except for reconnaissance or infiltration activities).

Although the Japanese admit that night operations result in more confusion and less control, they feel these disadvantages are more than offset by the advantages of greater mobility, secrecy of movement, and therefore greater surprise.

A Dutch officer who escaped from Japanese confinement in Borneo attributed the following statement to a Japanese officer:

"You Europeans march all day, prepare all night, and at dawn launch an attack with tired troops. We Japanese allow our troops to rest all day while we reconnoiter your positions exactly. Then that night we attack with fresh troops."

The information which follows in this section is based on Japanese manuals captured in the South Pacific theater:

2. METHODS OF PROCEDURE

a. Objectives

The objectives of Japanese night attacks usually are to locate and attack the front lines of the opposition with only limited or shallow objectives. "However, there will be times when it is necessary to attack the enemy's position in considerable depth," their manual explains.

Before the attack each subordinate unit is given a clearly defined terrain objective. Objectives can be clearly defined only by thorough daytime reconnaissance, or by drawing hostile fire. Villages are avoided because they are difficult to attack at night.

b. Reconnaissance

Japanese regulations emphasize the importance of thoroughly reconnoitering terrain over which night operations are to take place, and of obtaining detailed information as to the location of opposing centers of resistance, machine-

gun positions, obstacles, and searchlights. The reconnaissances are made in daytime. Japanese patrols, frequently moving for long distances on their stomachs at a snail-like pace, get as close as possible to opposition positions without being observed. If they are unable to locate these positions exactly, they sometimes deliberately expose men to draw fire from the opposing forces so the latter will give their locations away.

The patrols also select the points where the opposition's wires will be cut.

Sometimes the Japanese make a second reconnaissance just before dark to satisfy themselves as to opposition positions, or to determine whether new positions have been occupied.

c. Formation of Plans

Japanese military leaders go into great detail in mapping plans for attack. This is doubly true for night operations. Particularly emphasized are march directions, methods of identifying friendly troops, liaison with adjacent units, the necessity for silence in order to achieve surprise, and flank protection.

Obstacles which would interfere with the attacks are removed by destruction squads—usually engineers—about an hour beforehand. This phase includes the cutting of lanes through barbed wire.

d. Approach Movements

In approaching, the Japanese select routes over which the troops will make the least noise. They generally

move by column rather than in a line in order to maintain as much control as possible up to the point of assault.

To maintain direction, the Japanese may use any or all of the following: Compass, flares, rear lights—which give direction by alignments; searchlights or disappearing lanterns; markers, white stakes, strips of paper; lines of chalk, flour, or tape; and artillery shells fired for direction.

e. The Assault

Japanese techniques in the assault are quoted from their own manual, as follows:

"(1) *With limited objectives.*—When the attacking unit gets close to the enemy's position (the assault position), the commander orders a front-line group to assault. The remainder of the troops will quickly observe the general situation. For instance, if it is necessary to strengthen the front line with reserves, these should either attack the flank of the enemy, or enemy counterattacking troops. The commander watches for these opportunities, and leads the battle with firm determination. Placing reserves in the front lines thoughtlessly and unnecessarily will bring about confusion. This must be avoided.[1]

"At the start of combat, the commander of the reserves will send out liaison men to inform him regarding the movements of our assault echelons and the enemy situation, to connect the reserves with the front-line unit, and to secure our flanks, rear, and front.

[1] Although the Japanese manual emphasizes the importance of holding troops in reserve during night attacks, in the present war the Japs have often thrown their full strength into the battle at the beginning.

"When the assault has captured the enemy position, quickly organize your attacking forces. For example, the machine-gun and infantry-gun units take up their firing positions, security measures are taken, order is quickly restored, and preparations are made to repel any enemy attack to recover the position just lost. The reserve commander will send out patrols as quickly as possible to the rear, flank, and front to determine the condition of the enemy, and he will be prepared for action with the remainder of his troops.

"The machine gun takes part in the night attack by occupying a secure position. Thus, it ordinarily cooperates with reserve troops in action, and may at times participate in the direct night attack, according to the opportunities for firing.

"When attacking by sheer strength, the machine gun is used to cut off enemy communication with other adjacent areas. Furthermore, it opposes the counter-attack from other areas, concentrating its fire at the proper time. For this reason, the machine-gun plan must consider the cooperating fire plan of the artillery. The use of fire arms will expose our plans, and it may bring hostile fire on our troops. There is also the danger of hitting friendly troops. Therefore, make thorough arrangements beforehand.

"(2) *Attack in depth.*—When attacking deeply in depth with two assault echelons, the front-line unit will capture the predetermined hostile position and take security and reconnaissance measures, restore order, and make arrangements for the enemy's return attack. It must quickly

prepare to be leap-frogged by the second echelon of attack and must always make local conditions clear to this unit. If the first-line unit receives a counterattack by the enemy, do not fire, because it would endanger the leap-frogging unit.

"The second attack echelon takes up the attack formation at the beginning, as a security measure. Before leap-frogging it will put out security reconnaissance. Maintenance of direction will be considered after leap-frogging. In order not to get intermingled with the first-echelon unit at the time of leap-frogging, the distance and intervals before and during the attack are controlled accordingly.

"The second assault unit of attack must definitely keep in contact with the first-line unit, and keep itself informed of the enemy situation and the progress of the first echelon. It will be prepared to advance by leap-frogging as soon as the order arrives. At this point, do not come too close to the first-line unit because of the danger of getting into the lines of fire.

"The commander will determine the time when the second echelon must first advance to the attack from the place of departure. The time of advance will depend upon when the first echelon, leading out, has passed the second-line unit * * *

"When the second assault unit captures the designated hostile position, the commander must quickly get control of the unit and then have the first assault unit advance to secure completely the occupied position. The remainder (the reserve) prepare for action."

f. Pursuit

The Japanese nearly always seek to capitalize to the fullest on pursuit. Even before combat begins, they have detailed plans for maintaining close contact with retiring forces. The following data on pursuit is quoted from their manual:

"The enemy will take advantage of darkness to conceal his retreat. It is important to gain early knowledge of this retreat by keeping a close contact with him. The battalion commander must make close reconnaissance, observe various signs, and always be careful not to lose the enemy. In order to clear up the possibility of an enemy retreat, do not hesitate to make a night attack with any necessary part of your strength.

"If the enemy's retreat is found out, the battalion commander quickly sends out a part of his strength for quick pursuit—the main force follows soon thereafter * * * "

g. Machine Guns In Defense

"Because the development of battle during the night is very quick, it is necessary to put machine guns in positions where they will be able to concentrate their fire power on important areas to the front of the battalion's positions. The guns should be sited to have enfilade fire against the line of advance of the enemy, or in such a way as to be able to fire on a small, specific sector through which the enemy must pass. To obtain the most effective fire, machine guns are sometimes placed in the front line. Avoid placing guns separately at night * * *.

"Depending on the amount of natural light available, machine guns vary the firing method, using night firing lights when necessary * * *."

h. Retirement

"When you are retreating during the night, hinder the enemy's reconnaissance, and do not make any movements before darkness. According to the situation, make night attacks with small units, or have patrols to move about. These will help to deceive the enemy as to the true action you intend to take.

"Make full use of the road as quickly as possible with the main force, concentrating your strength as close behind the battle as possible. Make sure that control will be well in hand by retreating in a column without confusion * * *"

Section V. MISCELLANEOUS

1. PROTECTION AGAINST GAS

a. Introduction

The latest type of Japanese gas mask tested in the United States was described in *Intelligence Bulletin* No. 2. In the present issue, various other Japanese methods dealing with gas are considered.

b. Antigas Clothing

This includes a two-piece rubber suit and rubber antigas boots and gloves. The suit will resist liquid mustard gas for 30 minutes.

c. Antigas Preparations

All personnel in the Japanese Army carry a box of antigas powder (bleaching powder) and a container of antisneezing liquid. The liquid in each container consists of the following: alcohol (40 percent), chloroform (20 percent), ether (20 precent), ammonia (50 drops), and inert ingredients.

d. Neutralizing Gassed Areas

To allow immediate passage of troops, the Japanese cover the gassed areas with dirt, twigs, or wooden boards. Sometimes used are mats soaked with linseed oil and glycerine, or glycerine and peanut or soybean oil.

After use of these temporary neutralizing measures, bleaching powder is applied. It is transported in trucks or push-carts. The trucks, designed especially for the job, have a 1,100-pound capacity. The vehicles cover a 6-yard-wide strip of ground when the powder is applied.

e. Rescuing Victims

The victim is rescued by personnel wearing rubber suits, gloves, and boots, and he is placed in an antigas bath-truck, which is said to be similar to the type used by our forces.

2. FESTIVALS AND HOLIDAYS

Frequently Japanese military leaders choose festival or holiday dates to launch important attacks. For this reason, the more significant of these dates are listed below:

January 1—A special date for ancestor worship (the holiday in reality lasts for 3 days and means as much to the Japanese as Christmas does to us); also observed as the anniversary of the fall of Port Arthur (Russo-Japanese War);

February 11—Empire Day, anniversary of the date when the first emperor, Jimmu Tenno, assumed power (the nation's greatest observance); it is also observed as Constitution Day;

March 10—Army Day (in celebration of the capture of 203-Meter Hill, surrender of Mukden in Russo-Japanese War, 1905);

March 21—The Vernal Equinox Festival for the Imperial Ancestors;

April 3—Anniversary of the death of Emperor Jimmu Tenno;

April 29—The Emperor's birthday;

April 30—Memorial Day, for soldiers and sailors;

May 27—Navy Day (in celebration of the battle of the Sea of Japan);

September 18—Anniversary of Manchuria "Incident";

September 20—Aviation Day;

September 23—Autumnal Equinox Festival for the Imperial Ancestors;

November 3—Birthday of Emperor Meiji Tenno (considered Japan's greatest ruler);

November 23—Japanese Thanksgiving Day.

PART THREE: ITALY

Section I. WEAPONS MOST FREQUENTLY USED

1. BY THE INFANTRY

a. Pistols

Standard weapons in the Italian infantry include a revolver and two self-loading pistols. Certain noncommissioned officers, such as members of machine-gun detachments, are armed with the revolver, while officers and warrant officers carry one of the two self-loading pistols.

(1) *Revolver.*—Bodeo, model 89: caliber, 10.35 mm (.41 in); cylinder capacity, 6 rounds.

(2) *Automatic pistol.*—Glisenti, model 1910: caliber, 9 mm (.35 in); feed, 7-round magazine in butt.

(3) *Automatic pistol.*—Beretta, model 34: caliber, 9 mm; feed, removable 7-round magazine in butt.

b. Rifles and Carbines

Shortly before the present war, the Italians decided to increase the caliber of their rifles and light machine guns

from 6.5 mm (.256 in) to 7.35 mm (.289 in), and a new rifle and carbine of this caliber actually were introduced. See (2) and (5) below. However, the change-over does not seem to have progressed very far, and may even have been postponed, since rifles of the 1938 pattern fitted with a 6.5-mm barrel have been found.

(1) *Rifle.*—Mannlicker-Carcano, model 91, with bayonet: caliber, 6.5 mm; feed, vertical box magazine holding one 6-round clip.

(2) *Rifle.*—model 38: caliber, 7.35 mm. This is similar to the model 91 rifle. The main differences are that the model 38 has a larger caliber, is shorter, weighs less, and has a light folding bayonet which normally is attached to the barrel, but which can be removed and used as a dagger.

(3) *Automatic rifle.*—Revelli: caliber, 6.5 mm; maximum rate of fire, 120 rpm (rounds per minute); effective rate of fire, 40 rpm.

(4) *Carbine.*—Moschetto, model 91: caliber, 6.5 mm. This is similar to the model 91 rifle, but has a shorter barrel, a bent-down bolt lever, and a folding bayonet.

(5) *Carbine.*—Moschetto, model 38: caliber, 7.35. This compares with the model 91 carbine much as the model 38 rifle compares with the model 91 rifle.

c. Light Machine Guns

Three different models of the same light machine gun are in service.

(1) *Light machine gun.*—Breda, model 30 and Breda, model C. These are basically the same weapon. Caliber,

6.5 mm; feed, permanent box magazine (charger-loaded), holding 20 rounds; weight (with magazine and bipod), 25½ lbs; maximum rate of fire, 450–500 rpm; practical rate of fire, 150 rpm.

(2) *Light machine gun.*—Breda, model 38. This differs from the others only in its caliber, which is 7.35 mm.

d. Medium Machine Guns

(1) *Medium machine gun.*—Fiat, model 35: caliber, 8 mm; feed, nondisintegrating metal belt which normally holds 50 rounds but which can be assembled in various lengths; maximum rate of fire, 600 rpm.

(2) *Medium machine gun.*—Breda, model 37: caliber, 8 mm; feed, 20-round plate charger; maximum rate of fire, 450 rpm. This gun fires the same ammunition as the Fiat model 35.

(3) *Medium machine gun.*—Breda, model 38: caliber, 8 mm; feed, 24-round vertical box magazine; maximum rate of fire, 600 rpm. The Italians use this gun both as an infantry machine gun and as a tank weapon. It is standard in the following tanks: the 6½-ton Light (1940), the 11-ton Medium (1939), and the 13-ton Medium (1940).

e. Machine Carbine

The principal Italian machine carbine, which operates like the American Thompson submachine gun and fires pistol ammunition, is the Beretta, model 38: caliber, 9 mm; feed, box magazine fitted underneath the body. There are 3 different sizes of magazine, holding 10, 20,

and 40 rounds, respectively. Maximum rate of fire, 570 rpm.

f. Antitank Rifle

A widely used Italian antitank rifle is the Swiss Solothurn: caliber, 20 mm (0.79 in); feed, magazine capacity of 10 rounds, but normally loaded with 8 rounds only. The entire magazine is ejected automatically when the last round has been fired.

g. Mortars

(1) *Light mortar.*—Brixia, model 35: caliber, 45 mm (1.77 in); weight (with mounting), 34 lbs; magazine capacity, 10 cartridges; maximum range (with ports closed), 586 yds; maximum range (with ports open), 352 yds; rate of fire (without re-aiming between rounds), 25–30 rpm.

(2) *Mortar.*—Model 35: caliber, 81 mm (3 in); total weight, 129 lbs; weight of light bomb, 7¼ lbs; weight of heavy bomb, 15 lbs; number of charges (light bomb), 7; number of charges (heavy bomb), 5; maximum range (light bomb), 4,429 yds; maximum range (heavy bomb), 1,640 yds.

h. Hand Grenades

(1) *Hand grenade.*—S. R. C. M., model 35: weight, 7 oz; weight of explosive, 1.5 oz.

(2) *Hand grenade.*—Breda, model 35: weight, 7 oz; weight of explosive, 2.1 oz.

(3) *Hand grenade.*—O. T. O., model 35: weight, 7.4 oz; weight of explosive, 2.5 oz.

2. BY THE ARTILLERY

a. Antiaircraft Gun

The 20-mm Scotti is the Italian Army's standard light antiaircraft gun. Muzzle velocity, 2,720 fs (feet per second); maximum horizontal range, 5,900 yds; maximum effective ceiling, 7,000 ft; theoretical rate of fire, 250 rpm; practical rate of fire, 120 rpm.

b. Antiaircraft-Antitank Gun

The 20-mm Breda gun is used as a dual-purpose antiaircraft and antitank weapon. Muzzle velocity, 2,750 fs; maximum range, 6,000 yds; maximum effective ceiling, 8,200 ft; practical rate of fire, 120 rpm.

c. Antitank Gun

The Italian Army has a 47-mm antitank gun which it also uses as an infantry-support gun. Muzzle velocity, 2,050 fs; maximum range, 7,000 yds; rate of fire, 12–14 rpm.

d. Field Gun

The 75-mm field gun—manufactured in models 06, 11, and 12—is the standard light field piece. The British, who have captured and used many of these weapons, report that they stand up very well under constant use.

	Model 06	*Models 11 and 12*
Muzzle velocity	1,730 fs.	1,675 fs.
Maximum range	11,200 yds.	9,075 yds.
Rate of fire (theoretical)	8 rpm.	8 rpm.
Rate of fire (practical)	4 rpm.	4 rpm.

e. Gun-howitzer

In Libya the Italians have been making considerable use of a new 75-mm self-propelled gun-howitzer, which has a muzzle velocity of 1,430 fs and a maximum range of 10,300 yds.

Section II. RADIO TRANSMISSION

A captured Italian Intelligence Report states that in communications during field operations the British have made "abundant use of abbreviations, conventional words, names, and agreed phrases." The Italians admit that these methods have proved effective. "In particular," the report says, "key words for deciphering messages giving fresh positions have been well thought out. It has been observed that, by way of a change from past practice, two different codes have been used in a single message, one code in numbers and the other in words. For example, 'Position of Pura is Jsy. A5N.' Such messages take our cipher expert so long to unravel that the information they contain is useless to us."

This is good news—for our side. Nevertheless, from the same source the American soldier can pick up a few tips about how *not* to send radio messages in the field. The British used to rely heavily on frequent changes of names, frequencies, and key words or numbers. Instead of confusing Axis listeners, this kind of thing tended to make them more alert. The British soon learned that instead of changing codes frequently, it was better to

change them cleverly. For example, certain units, whose code names had been changed had been including references to earlier messages transmitted under their former names; these references specifically mentioned the old names and dates. In these cases identification of the unit by the Axis was a simple matter. Also, apparently unimportant messages helped in identifying certain infantry battalions about which the Axis had very little information.

It is interesting and useful to know what communication methods make field operations easier for the enemy and what methods make them more difficult. The captured Italian report reveals that the British often have puzzled the enemy by using cockeyed slang and double-talk. It must be stressed, however, that this method does not guarantee safety. For example, the American expression "Keep your shirt on" might mean nothing to the enemy, but on the other hand it might mean a great deal—because the Axis armies include many men who have lived in the United States.

PART FOUR: UNITED NATIONS

Section I. CAMOUFLAGE

1. INTRODUCTION

The *Intelligence Bulletin* for October discussed various types of terrain patterns as an air observer sees them. Methods of camouflaging men and matériel so that they will fit into these patterns and thus escape detection by enemy air reconnaissance are dealt with in this issue.

2. HOW CAN A UNIT MATCH AN EXISTING PATTERN?

When a military unit moves into an area, it is adding itself to an established terrain pattern with which enemy air observers may already be familiar. In its effort to gain as much concealment as possible, the unit must decide what kind of pattern the terrain has presented to air observers in the past, and then work out its camouflage plan accordingly. As was demonstrated in the October *Bulletin*, the airman flying at some thousands of feet is more conscious of the lightness or darkness of objects than he is of their color; therefore the terrain's shadow-casting capabilities will suggest the specific type of pattern which should be matched.

a. Desert Pattern

Any black mark is highly conspicuous on a plain light background. For that matter, all strong contrasts of light against dark, or dark against light, are conspicuous. A natural shadow is just about the blackest thing on earth. Almost anything we add to a light, smooth desert pattern will cast a shadow. For example, when we add vehicles to a desert pattern, it is not so much the vehicles themselves but the inky blackness of their shadows which attracts the air observer's attention.

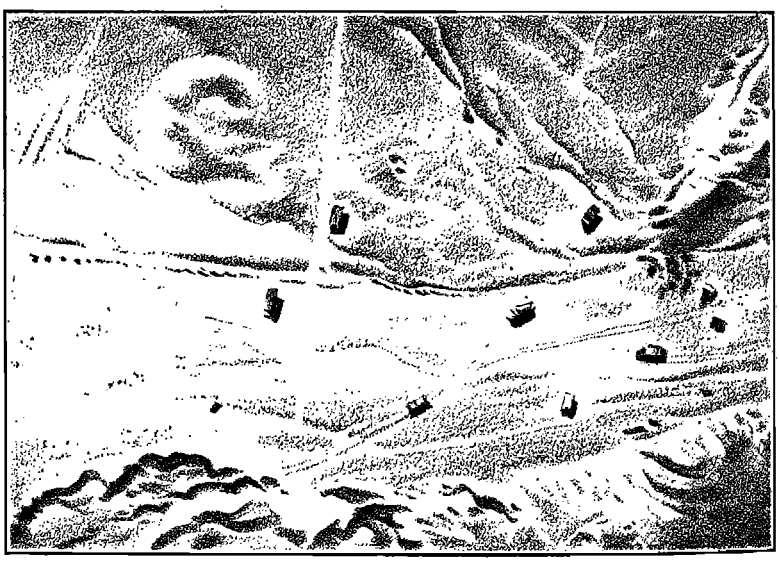

Figure 3.

This shows the exact nature of the problem we face when we want to camouflage or conceal anything in a bare desert pattern. First, vehicles should be dispersed

to lessen the effect of any bombing. The biggest task is to kill the shadows. Properly garnished nets intelligently used will do this effectively, as we shall see later. Incidentally, if tents are well dug in, and are pitched with the long sides facing north and south, the shadow problem will be reduced.

b. Rougher Desert Pattern

In those parts of a desert which contain sandhills there will be both shadowed and sunlit ground. To the air observer the shadows of vehicles parked in the smooth, sunlit areas near the hills are bold black dots. Since they do not belong there, they catch his eye at once. If these same black dots occur at the foot of the hills, where the ground is somewhat broken, or along the dividing line between shadowed and sunlit ground, the enemy air observer will have trouble locating them and may miss some of them altogether.

The point to remember is that objects placed on, or close beside, strongly marked features of any terrain pattern attract the eye less than the same objects farther removed from these features.

c. Woolen, or Carpet, Pattern

The pieces of a broken dish lying on a household carpet are conspicuous—first, because they do not belong there, and second, because the smooth surface of china contrasts with the rough texture of carpeting. Similarly, the smooth and often glossy surfaces of military huts, vehicles, and other equipment are conspicuous on ground

carpeted with low, scrubby vegetation. From the air, such vegetation looks like coarsely woven cloth, or homespun wool. In terrain of this type, shadows are still important, of course, but the regular shapes and shiny surfaces are the important things to remedy if we want to avoid attention.

What can be done? A well-garnished net, cleverly spread, will break up the shape and kill the shine, thereby losing an object in its surroundings. So will local vegetation, plucked and placed to advantage. Whatever is used should be made to kill the shadows as well as the shine. If nets are wrapped close around the object they are supposed to hide, they lose half their effect.

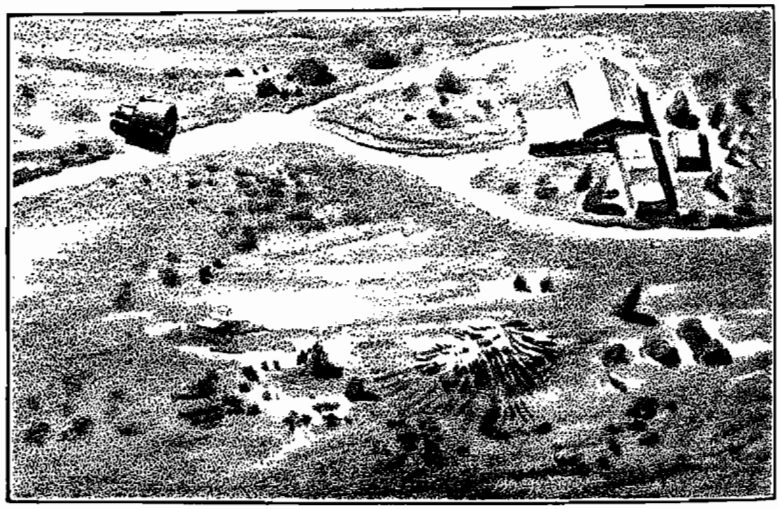

Figure 4.

Figure 4 illustrates how, even in circumstances that look unpromising and lacking in natural concealment, a properly garnished net can render a fairly large piece of military equipment much less conspicuous to enemy airmen.

d. Polka-Dot Pattern

Terrain with scattered trees or clumps of bushes looks like an immense polka-dotted cloth to an air observer. It is easy to camouflage matériel and personnel so that they will fit in with this pattern. Get under the trees if they are tall enough; in any case, keep on the shadowed side. If they are not tall, get close alongside. Use nets, where practicable, to make what you are hiding look as much as possible like the other dots.

e. Patchwork-Quilt Pattern

Fields in farming country are necessarily much used by military units. From the air, the pattern of a field most frequently appears to be a smooth area bounded by a distinct, dark line. This line may be caused by a ditch, a hedge, a combination of fence and wild vegetation, or a natural dividing line between different kinds of crops.

Suppose you have to put eight vehicles into a small field. You can either disperse them all over the field, or you can park them close to the boundary (see fig. 5).

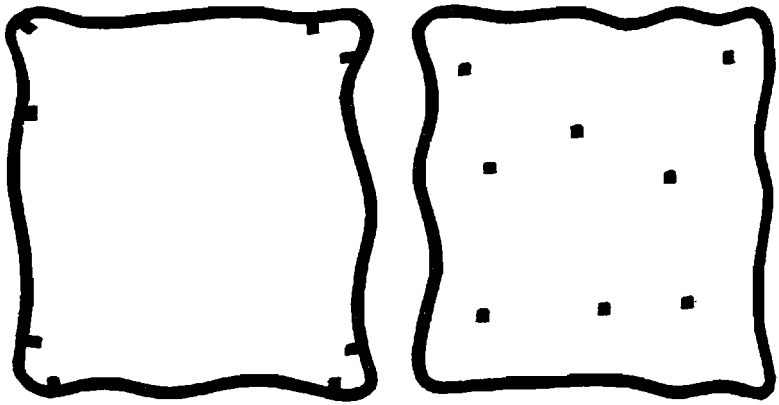

Figure 5.

If you disperse, you will most certainly be seen by the enemy, but you may gain a certain immunity from the effect of bomb bursts. On the other hand, if you distribute your vehicles close alongside the boundary, you may be slightly more vulnerable, but what outweighs this is the good chance that you will not be seen at all.

f. Geometric Pattern (a)

Wherever there are groups of houses, whether in the country or in a town, they almost always present a geometrical pattern to the airman—a pattern of rectangles and

straight lines. Suppose there are a few circular shapes among the rectangles? Their rarity makes them conspicuous and significant.

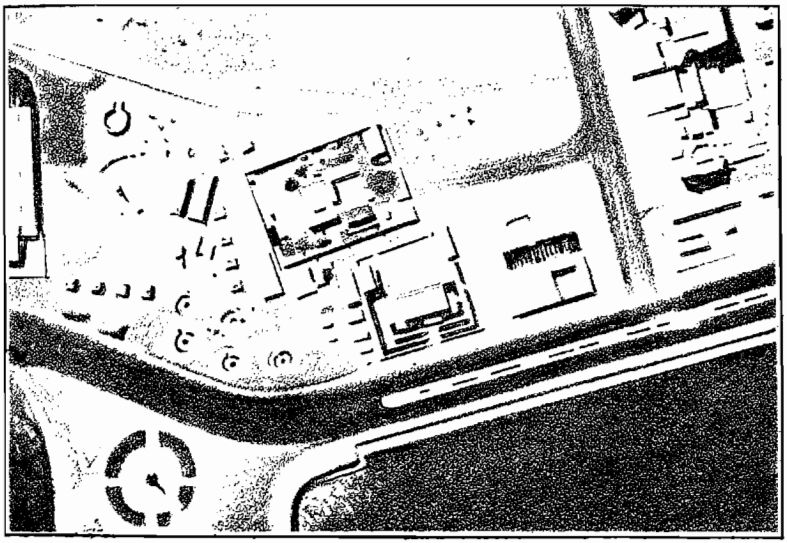

Figure 6.

What does figure 6 prove? That an enemy air observer can easily pick out the antiaircraft and similar positions because of their roundness among the many rectangular shapes. In other words, it is poor camouflage to build round emplacements when everything else in the neighborhood is rectangular. Likewise, it would be against common sense to permit rectangular installations if everything else in sight were round.

g. Geometric Pattern (b)

The collection of civilian buildings at the top of figure 7 is arranged in a neat, orderly formation.

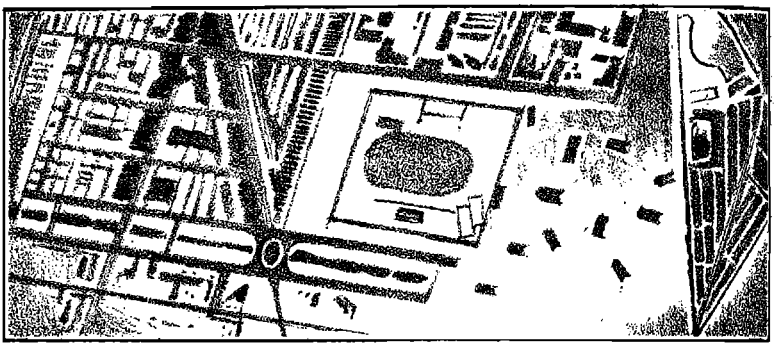

Figure 7.

As you look at the picture, what catches your eye? The military huts that are dotted about, evidently for purposes of dispersal. An enemy pilot sent to bomb them would have no trouble recognizing his objective. From the concealment point of view, it would have been better, in siting the huts, to imitate the orderly arrangement of the other buildings, and even to make neat paths up to the doors. In this way the huts could have been made an inconspicuous extension of the original geometrical pattern.

h. Tracks across Fields

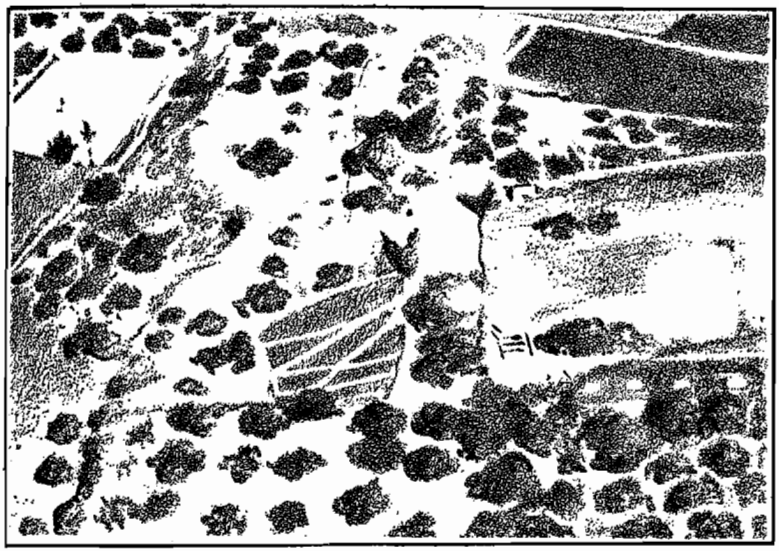

Figure 8.

Tracks across fields are conspicuous and dangerous. Figure 8 illustrates how tracks across the middle of a field can give away a story of military movement.

Never cut the corner of a field with a vehicle or foot tracks. Keep to existing tracks. If there are none, keep close to any existing line, such as a belt of trees, a wall, or a ditch.

3. WHY DO TRACKS SHOW CLEARLY ON GRASS?

Standing grass or other low vegetation looks dark to the airman because he sees millions of shadows, each cast by

a separate blade. When some of these blades are flattened by the foot of man, by rolling wheels, or by any other cause, they cease to throw shadows and become smooth reflecting surfaces facing the sky. Thus they look and photograph light.

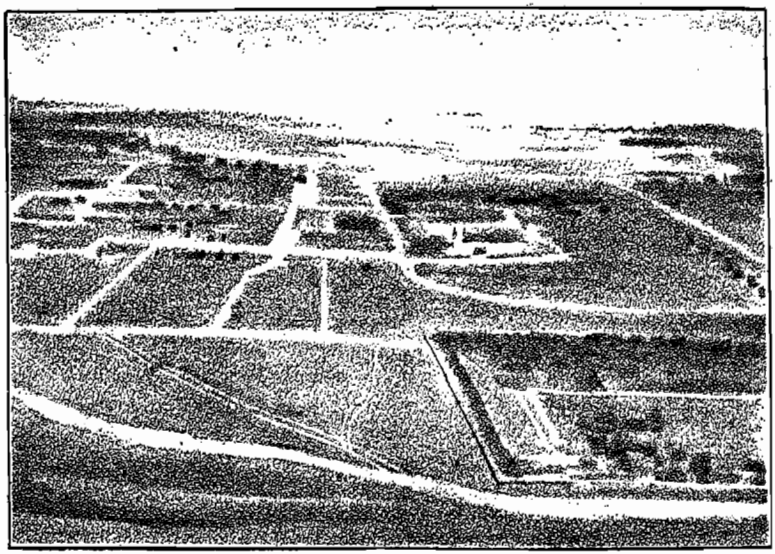

Figure 9.

Some people believe that one or two journeys across grass on foot or with a truck will not make much difference. Toward the center of figure 9 a distinct double-track can be seen, curving off the broad road in the foreground and running up to join another track. This represents a mark made by a single vehicle driving only once over grass about 6 inches tall.

4. WHAT ABOUT TRACKS IN THE DESERT?

In bare desert—sandy or rocky and with little vegetation—the track left by the ordinary vehicle is so slight that the airman hardly notices it at 1,500 feet. But where the surface is a mixture of pebbles and light sand, motor transport vehicles push the pebbles down out of sight and leave two ribbons of light sand exposed. The heavier the vehicle, the more conspicuous the track. But so long as these tracks are dispersed and seem to wander in all directions, they will not give away the sites of important installations. When several vehicles follow the same track, danger arises.

5. WHY ARE TRENCHES CONSPICUOUS?

When we dig a trench in ground that is covered with grass or any growth of a singular texture, the enemy air observer sees a bold black band sandwiched between two light bands (see fig. 10).

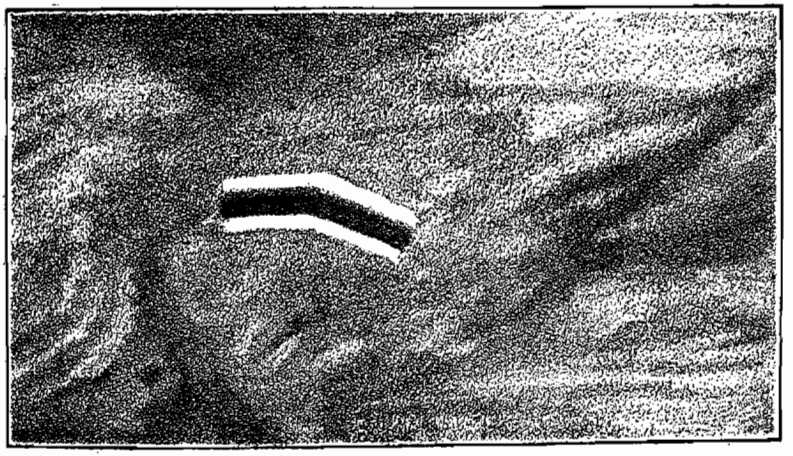

Figure 10.

Since the front mound (parapet) and the rear mound (parados) of a trench are of earth which has lost its shadow-producing vegetation, they seem very light. Between them is the internal shadow of the trench itself—the blackest mark that can be made.

What can be done about trenches? The ideal procedure is to restore the original surface of the "spoil," or disturbed earth—sloping it off gradually so that it throws no shadow—and to cover the excavation itself with a garnished net. However, since it generally is very hard to restore the original texture of the spoil, the next best move is to fake it by whatever means are available.

Slit trenches usually are easier to conceal, since their siting is not so much of a tactical problem, and since a good deal can be done to fit them in naturally with the terrain pattern.

6. HOW CAN WE DISTORT SHADOWS?

Shadows can be distorted, so that they are confusing and hard to identify, if they are thrown against rock piles, broken ground, clusters of bushes, or any other uneven formation.

Remember that as the sun moves around, your shadow will, too. Also, the deeper an object is sunk below the level of the ground, the smaller its shadow will be.

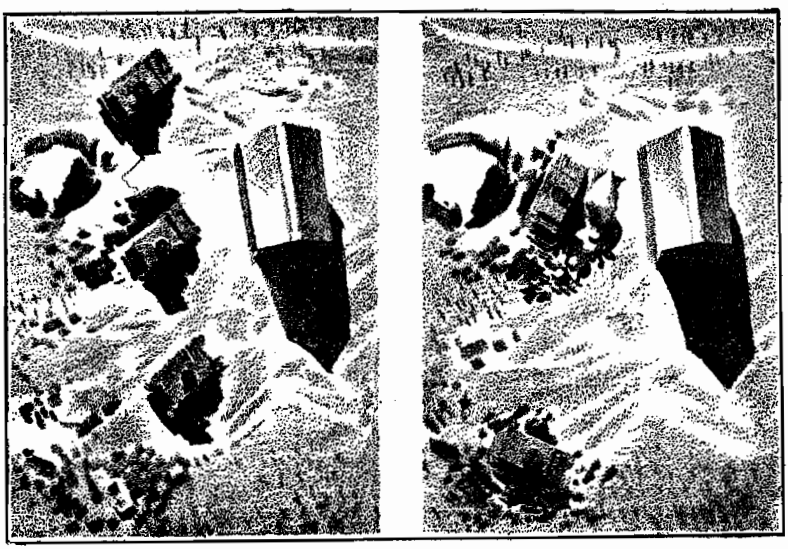

Figure 11.

Figure 11 illustrates how three vehicles might be parked before and after use is made of opportunities to distort their shadows. The effect will be more apparent if the drawing is held at arm's length. It will be noted that one vehicle has been able to secure complete concealment in a large existing shadow.

7. IS A LARGE MESH NET EFFECTIVE BY ITSELF?

A large mesh net is merely a framework on which to weave strips of burlap, rags, twigs, branches, or clumps of vegetation. It is the garnish, not the net, that conceals. This holds true whether one is netting a vehicle, a trench, or anything else.

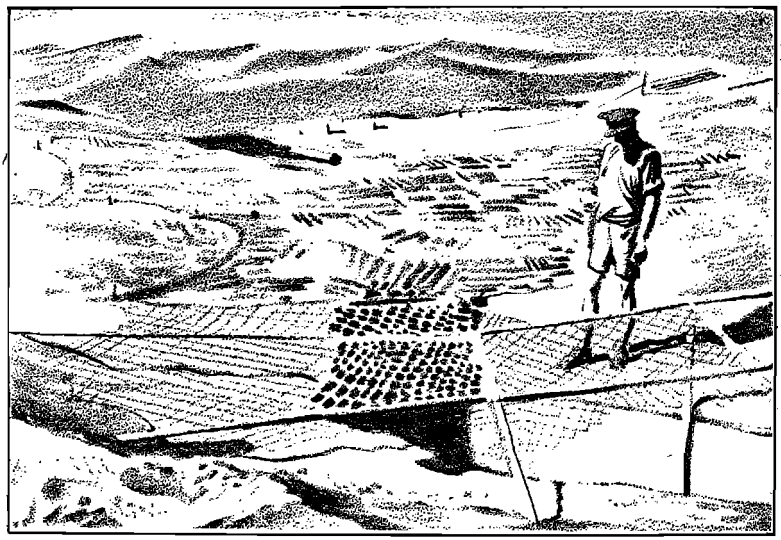

Figure 12.

Figure 12 shows how much garnish is needed to kill the shadow of a trench. Note that the large-mesh net alone affords practically no camouflage.

On the other hand, small-mesh nets without garnish afford a certain amount of concealment, but even these benefit by the addition of local vegetation and other available material.

8. IS THERE ANY MAGIC IN DAZZLE-PAINTING AS SUCH?

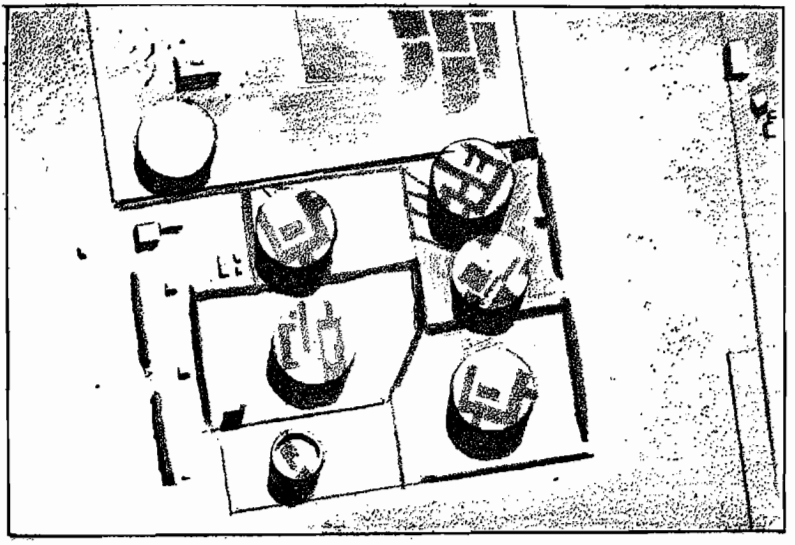

Figure 13.

Dazzle-painting does not in itself assure concealment. The designs painted on the fuel tanks in figure 13 may be good camouflage at ground level. They may merge the tanks into a background not readily apparent from the air. But in this particular setting, they certainly are not good camouflage against air operations.

Does this mean that this kind of painting is always bad? By no means. In certain settings it may be excellent. It is wise to consult specialists before deciding on important paint schemes.

9. HOW IMPORTANT IS PAINT?

In static camouflage, paint is very important indeed. In field camouflage the importance of paint is usually overrated. As this study already has demonstrated, texture is the chief point to keep in mind.

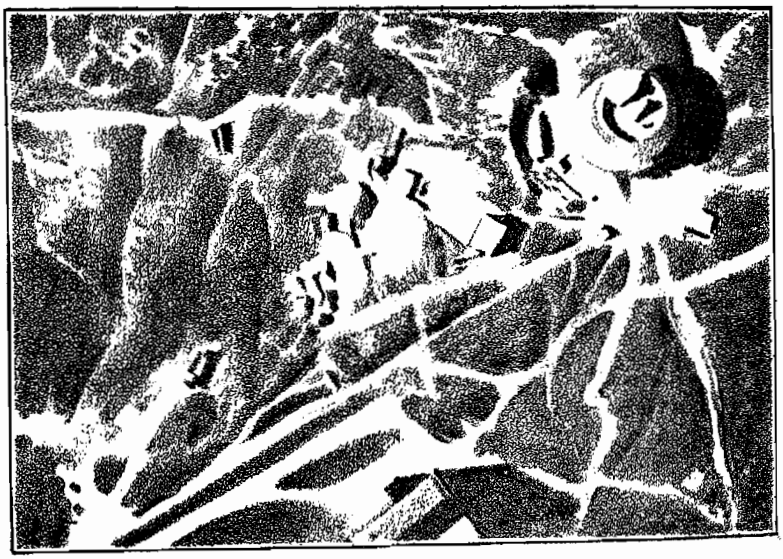

Figure 14.

Figure 14 demonstrates how easy it is to exaggerate the importance of paint in seeking concealment. Here a gun has been camouflaged with paint. But the size and significance of the gun are nothing compared with the trampled and disturbed earth, the cable and searchlight trenches, the huts, the tracks, the ammunition pits and dumps, and all the other signs of military work. Before the gun was installed, the general texture of the ground

was as you see it outside the disturbed area. This texture should have been preserved, or else imitations provided, during all activity on the site.

On the other hand, if a unit intends to make a dummy site, just the opposite is true. It is not enough merely to install the weapon or equipment by itself. Convincing signs of military activity must be faked—disturbed ground, scattered buildings, dumps, latrines, tracks—in fact, all the mess that is so clearly indicated in figure 14.

10. CONCLUSION

a. Remember that even if you halt for only a very short time, it is worth-while taking all possible measures for concealment.

b. An advance party can be of the greatest value in planning measures for concealment. In preparing to take up a position, here is the ideal order of events:

(1) Reconnoiter the site and decide how best you may use any existing pattern to assist concealment.

(2) Plan the tracks by which you will reach those positions, without leaving clues for the enemy to follow.

(3) Plan how to reduce to a minimum the mess caused by digging, building, and so on, and plan how to hide whatever mess is unavoidable.

(4) Hide or disguise the shadows. Cover the shiny surfaces. Make colors match the surroundings as well as you can. But remember that it is much more important to have the correct texture than the correct color.

(5) Remember that the lower an object, the smaller its shadow.

(6) See that your camouflage plan is understood and followed by all in the unit.

(7) Remember that unless you keep strict discipline with regard to making tracks, and maintain your camouflage properly, your position will soon become conspicuous again.

c. If a camouflage idea prevents the effective tactical use of a weapon or a position, change the idea.

d. If an effective camouflage idea interferes with an administrational lay-out, change the lay-out.

e. If you can follow the principles contained in this study, the positions you occupy will look less like ground occupied by the army. They will therefore look less important to the enemy—less worth photographing, less worth attacking. Finally, remember that concealment is not hiding for hiding's sake. It is hiding so as to attack the enemy with deadly effect. This is the beginning and the end of camouflage of armies in the field.

Section II. RUSSIAN USE OF THE ANTITANK RIFLE

In destroying German tanks, Russian antitank riflemen follow a set of directions, which are given here in condensed form as a matter of information:

"1. Show daring. Let the enemy tanks come within 200 yards or closer. The best range is 100 to 200 yards. Don't let the enemy fire lead you to open your own fire too soon.

"2. The antitank rifle can fire 8 to 10 rounds per minute, if the gunner and his assistant use teamwork. The gunner opens and closes the breech, aims, and fires; the assistant, lying on his right, cleans and oils the shell and places it in the chamber.

"3. Remember that for a distance of as much as 400 yards, the effect of the wind need not be considered.

"4. Remember the deflection correction for the movement of the tank. At a speed of 22.5 miles per hour, a lead of 1 yard is required for every 100 yards of range.

"5. Aim for the rear of the turret—the gunner and ammunition are there. If you hit the ammunition, you can blow up the tank.

"6. Fire at the center of the rear half of the tank—the motor and the fuel containers are there. If you hit either one, you will put the tank out of action.

"7. A well-camouflaged gun crew can put any tank out of action with well-aimed shots, and can block a road to a whole column of tanks."

It isn't the size of the dog in the fight that counts; it's the size of the fight in the dog.

U. S. GOVERNMENT PRINTING OFFICE: 1942

VOLUME 1 • NUMBER 4

INTELLIGENCE BULLETIN

December 1942

MILITARY INTELLIGENCE SERVICE
WAR DEPARTMENT

DISTRIBUTION

Nondivisional units are being supplied with copies on a basis similar to the approved distribution for divisional commands, as follows:

INF DIV		CAV DIV		ARMD DIV	
Div Hq	8	Div Hq	8	Div Hq	11
Ren Tr	2	Ord Co	2	Ren Bn	7
Sig Co	2	Sig Tr	2	Engr Bn	7
Engr Bn	7	Ren Sq	7	Med Bn	7
Med Bn	7	Engr Sq	7	Maint Bn	7
QM Bn	7	Med Sq	7	Sup Bn	7
Hq Inf Regt, 6 each	18	QM Sq	7	Div Tn Hq	8
Inf Bn, 7 each	63	Hq Cav Brig, 3 each	6	Armd Regt, 25 each	50
Hq Div Arty	8	Cav Regt, 20 each	80	FA Bn, 7 each	21
FA Bn, 7 each	28	Hq Div Arty	3	Inf Regt	25
	150	FA Bn, 7 each	21		150
			150		

For a limited time, additional copies of this bulletin may be had upon request. Distribution to air units is being made by A–2 of Army Air Forces.

MILITARY INTELLIGENCE SERVICE
WAR DEPARTMENT
Washington, December 1942

INTELLIGENCE BULLETIN
No. 4
MIS 461

NOTICE

The *Intelligence Bulletin* is designed primarily for the use of junior officers and enlisted men. It is a vehicle for the dissemination to them of the latest information received from Military Intelligence sources. In order to secure the widest possible use of this bulletin, its contents are not classified. It is for the exclusive use of military personnel, however, and no part of it may be republished without the consent of the Military Intelligence Service.

"British prisoners have been praised, even by their enemies, for refusing to talk after capture."

TABLE OF CONTENTS

PART ONE: JAPAN

PART TWO: GERMANY

List of Illustrations

PART ONE: JAPAN

Section I. FIGHTING IN THE SOLOMON ISLANDS

1. INTRODUCTION

The *Intelligence Bulletin* for November included a section on the early fighting in the Solomon Islands. Since that time additional reports have been received, giving much more information about Japanese tactics and weapons. All the reports are from officers and enlisted men who took part in the operations. In presenting the new information, duplication of data given a month ago is avoided as far as possible.

Our observers are placing renewed emphasis on the extreme cunning, treachery, fanaticism, and brutality practiced by the Japanese. Several instances of these practices are given in this section. It is the belief of our observers that our troops must take nothing for granted in dealing with the Japanese and must ever be alert for any possibility.

2. TACTICS

a. Reconnaissance

The Japanese are firm believers in securing detailed intelligence about their opponents, and have been very successful to date in this aspect of operations. They have prepared maps of great detail, even of jungle areas. They have had considerable success in radio interception, taking good advantage of the information obtained.

One Marine patrol came upon a 25-man Jap patrol in the Solomons and accounted for at least 18 of the enemy. The Marines reported that the Japanese were exceedingly well equipped. They carried portable radio transmitters and mapping and sketching equipment. Our interpreter read captured messages indicating the presence of a landing force and including other valuable information, which was used by our troops in dealing successfully with the Jap force.

b. Infiltration

Our observers continue to stress the infiltration tactics of the Japanese in jungle warfare. Individual Jap soldiers, with light but very effective equipment for independent combat, crawl through jungles so thick that it would appear impossible for a human being to penetrate. Yet for miles they wriggle their way through on hands and knees, or on their stomachs—taking several days, if necessary. Once behind our lines or on our flanks, they often get together and form large and

effective patrols, which cut off or wipe out our outposts. They seek to weaken our main positions and make us vulnerable to an attack in force. Often these infiltrating groups, which include snipers, are assisted by covering fire from heavy machine guns, automatic rifles, and mortars.

At night, the infiltration tactics apparently are aimed at creating confusion in our ranks and destroying our automatic weapons. (This bears out the importance of our training doctrine which calls for riflemen to protect our automatics from the front, flanks, and rear.) At times Jap groups tried to stampede our troops, shouting "American Marines, you die!"—which apparently is a battle cry. Sometimes these groups were so small that their members must have realized that they were attempting a suicide venture. On one occasion, a Japanese lieutenant and two privates charged a Marine battalion headquarters, shouting their battle cry. One of them bayoneted a Marine sergeant as he sat on a stump. The three were immediately overpowered and killed—they must have known in advance that the charge would lead to their death.

c. Sniping

In many respects snipers caused the Marines more trouble than any other single factor. Sniping is tied up very closely with offensive infiltration attacks, and also with nearly all the defensive efforts of the Japanese. Normally, the snipers tied themselves in the tops of trees, where they were well camouflaged. Often, how-

ever, they were found in nearly every place where they could hide—such as behind logs and in bushes, caves, or ravines. At night, several Japs leapt into foxholes occupied by Marines and were killed because they could not give the password.

Usually the snipers waited until their target had passed and then shot him in the back. They seldom fire on individuals in movement. This is why our troops now take cover at once when they halt.

The main function of the snipers apparently is to harass and confuse our forces, distracting them from their main effort. "Our troops found it most undesirable to allow the assault echelon to become involved with snipers on the flanks and rear," said one observer. "In a number of instances, it was found practicable to bypass the snipers with the assault echelon and let small follow-up patrols clean them out later."

After shooting snipers who had tied themselves in trees, our troops had trouble in getting the bodies down. The problem was solved by having a tank knock the tree down, or by placing a ring of dynamite around the base of the tree and blowing it up.

Japanese prisoners said that normally each of their infantry squads included two snipers, who ordinarily tied themselves to tree tops in the area occupied by the squad.

Nearly all conceivable types of camouflage have been used by these snipers. Some in the Solomons wore fiber cloaks, which blended perfectly with the coconut tree trunks.

The snipers, as well as other Jap troops, have unbelievable patience and endurance. The Marines had numerous cases where their enemies crouched or lay in one position, highly camouflaged, for as long as 3 days just to fire one shot—undoubtedly realizing that they would be killed immediately afterwards. As an illustration, one of our men at Milne Bay (New Guinea) relates the following:

"A Jap, camouflaged as a tropical bush, crouched for 2 days without moving, on the edge of an Australian jungle outpost, to learn the names and nicknames of members of their detachment and their particular habits. One day, in a perfect Australian accent, he called out, 'Say, Bill, where are you? This is Alf.' When Bill shouted in reply, the tropical bush suddenly arose and shot him dead. The bush immediately dropped back into the foliage. The sniper was wounded only after the area had been completely raked by machine-gun fire. The Jap, wounded severely, told his story. He had fully expected to die after the shooting."

d. Communication

The Japs have been using for communication a large number of very efficient, light-weight, and portable radio transmitters and receivers, as well as flares, Rising Sun flags, and bird calls.

Red and white flares, as a rule, have been used to outline their front line and also to signal the arrival of a unit on our flanks. The flares have been extremely

useful to our forces, who have successfully raked the areas with artillery fire.

Rising Sun flags have been tied to trees to inform Jap aviators of the front-line positions of their troops. The flags also proved to be valuable aids to our aviators, who bombed the indicated areas with excellent results.

The bird calls apparently were used as a night signal to inform commanders as to the whereabouts of their various sub-units. Sometimes the calls also may have been used to confuse our troops.

e. Antitank

Antitank weapons used by the Japanese include what is believed to be a 47-mm gun, grenades, and gasoline. At times, when our infantry was not within supporting distance of our tanks, gasoline was thrown on the latter and set on fire. In at least one case, the Japs jammed a driving sprocket before throwing on the gasoline.

Grenades apparently are thrown at the tanks to set them on fire after gasoline has been thrown on them, and to hit openings through which the crews can be injured.

It is known that the Japanese have been trained to throw shelter halves over the slits of tanks in close country and then attack them with magnetic bombs or other hand weapons.

The antitank gun made a hole slightly larger than our 37-mm shell, and observers are reasonably sure that the weapon is a 47-mm gun. This is entirely probable since the Germans have a 47-mm antitank weapon. One

shell, apparently fired from a distance of 100 yards, penetrated the right forward side of an M-3 turret and hit the opposite turret wall, where it exploded. Filling from the shell ran down the wall and began to burn with a yellow flame and bluish smoke. The driver stated that fumes from the substance were sharp and stifling, and caused his mouth to dry and pucker. The flame was difficult to extinguish. Reports do not indicate whether the tank hit was a light or medium M-3; but at a range of 100 yards the turret of a light M-3 could be penetrated and it is possible that a medium tank turret could be penetrated at this range.

To date, there has been no evidence that the Japanese actually have used magnetic tank grenades in the Solomons, although some of these grenades have been captured on Guadalcanal.

f. Deception

The Japanese go to extremes in the employment of deception. Many of these illustrate their treachery and lack of scruples. The following is a partial list of the deceptions used in the Solomons:

(1) While an American doctor was dressing the wounded leg of a Japanese, the Jap pulled a knife and stabbed him.

(2) Several Japanese nurses walked up to our wounded with their arms raised, and, when close at hand, they threw hand grenades among the soldiers.

(3) Two or three days after the Marines landed in the Solomons, a Japanese captain of a labor battalion

walked into a division headquarters and surrendered. He said his entire battalion would surrender and could be brought in if a detail were sent out to their position, which was some distance down the beach. A colonel and a detachment of 20 Marines were sent in a landing boat to the specified position. As he and the detachment stepped ashore, they all were killed except a sergeant, who was wounded. He returned to headquarters. A Marine force rounded up the Japs shortly afterwards by attacking from the rear. Instead of being a labor battalion, the Japanese turned out to be a special-weapons detachment, 200 strong.

(4) Japanese-employed natives often informed our headquarters they had groups of wounded Marines, and offered to guide our rescue forces to the men. We learned from bitter experience that these were Japanese ambushes.

(5) The Japs learned the names of some of our officers, and, during darkness, would call out to them in excellent English in order to locate them, or to issue withdrawal orders to them in English.

(6) They also used the old trick of setting off firecrackers to distract our troops, and to give the impression they were being attacked by large forces.

(7) Among their tricks, the Japanese painted with red crosses all the buildings they occupied, believing that our forces would not bomb the marked buildings because of our high ethics. One such building, when bombed, turned out to be an ammunition dump.

(8) On one of the small islands taken in the Solomons, the Marines ran into some tough fortified opposition and called for 1,000-pound demolition bombs. The group air commander of an aircraft carrier was directed to bomb the island, and, on his way to the island, he received a counter-order stating that the Marines had now gained possession of the island and that he was not to drop any bombs. "Authenticators" (pass words) had been worked out among the pilots the night before, using the pilot's nickname. The voice countermanding the order was unable to furnish the correct authenticator and the bombing was carried out. The commander discovered that the voice on the radio was that of a Jap, who was speaking English and using a perfect American accent.

g. Camouflage

Instead of using sandbags as part of their defensive setups, the Japanese used bags made from rice straw and filled with dirt. Apparently, unhulled rice seeds or seeds of a similar plant were planted on the top portion of the sacks, because they were covered with a green growth. This blended the defensive positions with their background.

The Marines found from experience that our grenades and mortar shells should be painted green. When they are painted a light color, they can be seen easily at night. In several instances, the Japanese were able to pick up the grenades in the darkness and throw them back before they exploded. Our troops are finding it

494445°—42——2

best to remember that the time delay of our grenades is between 4 and 5 seconds, and that the length of time the grenade is held by the thrower should be governed by the distance between him and the enemy. It should never be held more than 2 seconds.

h. Night Operations

Japanese troops are particularly well trained in night operations, and they prefer night attacks to those during daylight. Invariably, they try to work small groups to our flanks and rear in an attempt to cause panic and destroy automatic weapons.

In making night attacks, the Japanese select clearly defined terrain features, such as ridges and streams, for successive objectives. The attacks generally are delivered on a narrow front and uphill whenever possible. By attacking from low ground, the Japs try to conceal their forces and at the same time silhouette ours against the sky line.

A series of red flares (similar to our Roman candles) have been used by the Japanese platoon leaders to indicate the direction of advance. The signal for the assault has been a flare fired to hang over their objective.

In several instances, they placed smoke on Marine positions and then charged forward, shouting "Gas!" in English. Some Japs who had infiltrated to our flanks and rear shouted "Withdraw!" when the frontal attack began to develop in force. The groups that were to make the main assault talked and sang during their approach, to distract our attention and facilitate and

cover the movement into position of the infiltration groups.

The Japanese used their automatic weapons extensively at night, but did very little firing with rifles. In attacking, their fire usually was high, apparently to avoid hitting Japs who approached our lines to lay down grenade barrages. An assault generally followed each barrage.

Our automatic weapons, mortars, and artillery were excellent in breaking up night attacks.

i. Defense

Against our landings on the various islands, the Japanese used mostly rifle and machine-gun fire from dugouts and other prepared emplacements, supported by the inevitable snipers. Our preparatory bombing and shell fire had caused few casualties, because the dugouts, shelters, and trenches afforded the Japs excellent cover. The preparatory fire kept the enemy under cover while our first and second waves landed. The fighting developed into a series of attacks on dugouts and the destruction of snipers in trees. Use of improvised flame throwers and dynamite at dugout entrances proved the most effective way of dealing with the defenders.

j. Air

(1) *Fighter planes.*—Japanese fighters come in from all angles when attacking our bombers. The Japs press their attacks furiously when our bomb-bay doors are

opened for a bombing run, approaching individually from many angles but attacking at the same time.

(2) *Bomber planes.*—The bombers used by the Japs are of a twin-engined type similar to our B–26. They usually bomb from about 25,000 feet.

(3) *Antiaircraft fire.*—Antiaircraft fire from Japanese ships is usually inaccurate except from battleships and heavy cruisers. All ships fire a barrage overhead when our bombers are making runs over them.

(4) *Direction Finders.*—The Japanese are now using radio direction-finding equipment in the Solomons to detect the approach of aircraft. Their equipment has not been very effective to date. Antiaircraft guns sometimes do not fire until our bombers have made their first run, and sometimes our bombers arrive over the target before the Jap fighters are able to take off.

(5) *Identifications.*—Observers feel that training in the identification of aircraft (and also of ships) cannot be overemphasized. They believe that actual service in the combat area is necessary to perfect this training.

k. Prisoners

The Japs seldom retreat or surrender. All those captured invariably ask, "When are we going to be killed?" Upon learning that they are not going to be killed, they beg never to be exchanged and sent back to Japan. They believe that it is a national disgrace for them to surrender, and that they and their families would be shunned for the rest of their lives in Japan.

The Japanese attitude toward surrender was illus-

trated in an incident that occurred during the first day of the operations in the Solomons. Five crewmen of a Jap bomber, shot down over Tulagi harbor, got into the plane's rubber boat but refused to be rescued. A U. S. destroyer approached, but one of the boat crew with a gun held off the rescuers. When it was apparent that the Japs were going to be captured by force, the man with the gun killed his companions and was turning the gun on himself when he was killed by machine-gun fire from the destroyer.

l. Food

Even in swamps and jungles, the Japs have learned to live off the land. Usually they are sent on missions with an emergency ration which includes rice and compressed and condensed foods, such as dried fish and vitamin tablets. They supplement this with jungle food that our forces generally would not consider eating. They are experts at knowing what is good for them, and what is poisonous or not good to eat.

m. Medical Care

The Japanese appear to have thorough knowledge of tropical diseases. They also know what poisonous bites to expect, and how to treat them. They seem to have some antitoxins, against jungle diseases, that we have not developed.

Most of the wounds our forces received in the Solomons were not serious. Unless a vital spot is hit, the Japanese 25-caliber weapons do not inflict bad wounds.

3. WEAPONS

a. Rifles

The Japanese have used two types of rifles, one of 6.5-mm caliber and the other of 7.7-mm caliber. The 6.5-mm rifle apparently has no telescopic sight; however, the sight has an attachment for leading planes during antiaircraft fire. The attachment can be adjusted to the speed of the plane.

b. Grenades

Japanese grenades are smaller than ours, and their effective bursting radius is much smaller. The Japs apparently realize the ineffectiveness of their grenades, because they throw them at their opponents and promptly charge with bayonets.

c. Mortars

The Japanese are using two or three types of mortars, one of which is reputed to be fired from the thigh of the gunner when he has assumed a squatting position. Later reports, however, indicate that the weapon is fired only while resting on the ground in front of the gunner.

d. Guns

These include a 47-mm antitank gun and a 77-mm gun. The latter is believed to have been captured from the British on Singapore Island. It is not known to be an organic part of Japanese artillery. (This 77-mm gun undoubtedly is either a 75-mm or a British 3-inch gun.)

Section II. OBSTACLES

1. INTRODUCTION

In addition to being well trained militarily, the Japanese are deceptive and cunning. They have used obstacles only on a limited scale thus far in this war because they have been mostly on the offensive in the land fighting. As they go more and more on the defensive in the coming months, the Japs are expected to use a wide variety of obstacles to block our advances. Our forces in the Solomon Islands, taking the offensive on a large scale, had to deal with numerous pit traps, most of which were mined and cleverly camouflaged.

Most of the information in this section, with the exception of that concerning road blocks, was taken from a captured Japanese manual on field fortifications. The manual does not go into elaborate details about obstacles, but all the pertinent data available is presented.

2. ROAD BLOCKS

In the Malaya and Burma campaigns, the Japanese frequently used road blocks to great advantage. Their

success was largely due to these factors: the jungle or swampy nature of the terrain, the scarcity of roads, the necessity of the British using the few roads available because their forces were largely motorized, and the fact that the Japanese usually outnumbered their opponents.

The blocks, as a general rule, were hastily prepared and were not very strong. Most of them could be broken easily by a powerful frontal assault, led or supported by tanks. Breaking through one barricade, however, was usually not enough, because the Japanese used them in series—at Shwedaung, Burma, five barricades had to be broken on one road before the British could continue their march. The Japanese also made a practice of closing in on the roads behind the British, thus blocking them off from units farther back.

The siting of the Jap road blocks was invariably good. They were located at points where the road passed through dense jungle or other enclosed country, such as rice fields or swamps. The actual blocks or barricades were always concealed from frontal observation except at a very short distance. They were strongly covered by well-sited mortars, light machine guns, and antitank guns. These weapons were placed in defiles—behind ridges or in hastily constructed holes or trenches. The frontage held on each side of the road was comparatively short, partly owing to the nature of the country.

To destroy these road blocks and allow uninterrupted movement of vehicles, matériel, and personnel, the Brit-

ish in Burma found the following tactics to be the most feasible:

Because of the jungle nature of the area on both sides of the road, only strong frontal attacks on a comparatively narrow front should be attempted. The attack must be carefully prepared and supported by every ounce of firepower available. It should be supported by barrage fire from all available artillery and mortars. Some of these weapons should be available for searching fire against enemy mortars in case the latter are used. The infantry should attack in waves with strictly limited objectives, each wave halting on its objective and taking up an all-around defensive position to be held until the whole column has passed. If tanks are available, they should precede each successive leading wave of infantry at infantry pace. Each leading wave of infantry must, in its turn, employ shock tactics, combining grenades with the fire of submachine guns, machine carbines, and Bren guns, and with the use of bayonets. It is necessary to capture and hold both sides of the road throughout the area so that the enemy cannot return to his positions dominating the route. But because of the jungle terrain, it is not necessary to hold a wide area on both sides of the road—strips wide enough to keep the enemy from observing the road are sufficient.

3. ANTITANK

The Jap manual describes two types of tank traps, one a triangular trench and the other a round one. The round trap, designed to allow the entire tank to fall into it, requires more effort to construct than the triangular trench.

"Antitank obstacles are designed to lift up the front end of the tank and check its advance," the manual says. "Double-row obstacles may be constructed on

gentle slopes, while single-row obstacles are sufficient on relatively steeper ground. Tank traps are more easily discovered on sloping ground if not camouflaged, and they are more easily destroyed when located."

4. ELECTRIC

Electric obstacles are used mainly to kill or wound personnel and horses, and to help slow or stop an enemy offensive.

The obstacles are constructed by technical troops. The wire usually is strung on dry, barkless poles, or on poles with all buried parts insulated with asphalt or coal tar. The wire is connected to a high-tension power source, which generates 1,000 to 2,000 volts (alternating current). Transmission wires are sometimes strung along the ground, or under the ground.

The obstacles are electrified when opposing forces launch surprise attacks. Ordinarily, the electricity is off when the opposition is reconnoitering. Occasionally, in order to deceive, the Japanese turn the current on during reconnaissances. In an actual attack following such practices, the Japs turn the current on in one sector and off in another.

In searching for electrical obstacles put up by the opposition, the Japs use a detector and make personal reconnaissances with as much secrecy as possible. According to their manual, they seek to determine the voltage used, the location of the electric source, and the nature of the obstacles.

The Japanese manual says the best way to destroy

electrical obstacles is by the use of explosives, such as bangalore torpedoes. Other methods include cutting the wires and shooting them apart with tank fire. "All broken ends of the wire must be wound around posts or thrust into the ground so as to cut off the current," the manual states. "The demolition squads must be provided with rubber insulating gloves when carrying out demolitions. In addition, they must use nets, rubber boots, and other insulating devices in dealing with urgent demolitions."

Section III. REPORT BY BRITISH PRISONERS

The information in this section was obtained by 3 officers and 20 enlisted men of the British Army who escaped from the Japanese after having been held prisoners for 36 hours. They were part of a group of 80 captured when the Japs posed as Chinese troops and gave a friendly signal.

From this incident, it is clear that the Japanese in the future will try to take advantage of the difficulties experienced by United Nations forces in identifying troops as Chinese or Japanese. The Japs undoubtedly had learned—probably from Fifth Columnists—the signal used by the British and Chinese for means of identification.

The Japanese who deceived and captured the British group did not wear the five-pointed yellow star (denoting Jap army) on their caps. Their uniforms and physical features also resembled those of the Chinese. As pointed out in *Intelligence Bulletin* No. 2, a large percentage of Japanese soldiers have physical features similar to the North Chinese soldiers; therefore, ex-

treme caution should be exercised in making identifications.

At first the Japanese were very friendly to the British, and passed around cigarettes. Some of the Japs spoke good English. Shortly afterward, however, each of the British soldiers suddenly was seized from behind and relieved of his weapons. After the capture, 4 officers and 70 enlisted men were photographed by a movie camera, the operator of which was well trained and had plenty of modern equipment.

Some of the prisoners were fed concentrated food. The quantity was about two-thirds the size of a penny match box. The food was sweet and very nourishing.

One British officer noticed that the oil on a Japanese rifle appeared to collect neither dust nor sand.

Some of the prisoners reported that the Japanese were using a type of fire bomb which resembled small smoke candles about the size of a 1-pound jam jar. On striking a substance, the bomb would stick to the surface and then explode immediately. It would burn intensely with a blue flame and give off a little smoke for about 2 minutes. If the bomb stuck to an inflammable object, the area around the spot where it stuck would burn fiercely after the flame had died down. The bomb has no fuse to be lighted before it is thrown—by hand. The weapon proved very useful in driving troops from wooden houses.

Section IV. TANKETTE (LIGHT TANK)

This tank has been used by the Japanese more than any other type in the present war. The line drawings on the opposite page point out the areas vulnerable to fire from various types of British guns. The drawings were made by the British, who tested the armor. The .55 and .59-caliber weapons are slightly larger than our .50-caliber machine gun, while the 2-pounder is a 40-mm gun, with approximately the same characteristics as our 37-mm. Three different views of the tank are shown—top, side, and front.

Some of the outstanding characteristics of the tankette are as follows:

Weight	3 tons
Length	10 feet
Width	5 feet 9 inches
Height	5 feet 4 inches
Speed	20 miles per hour
Crew	2
Armament	1 or 2 light machine guns.

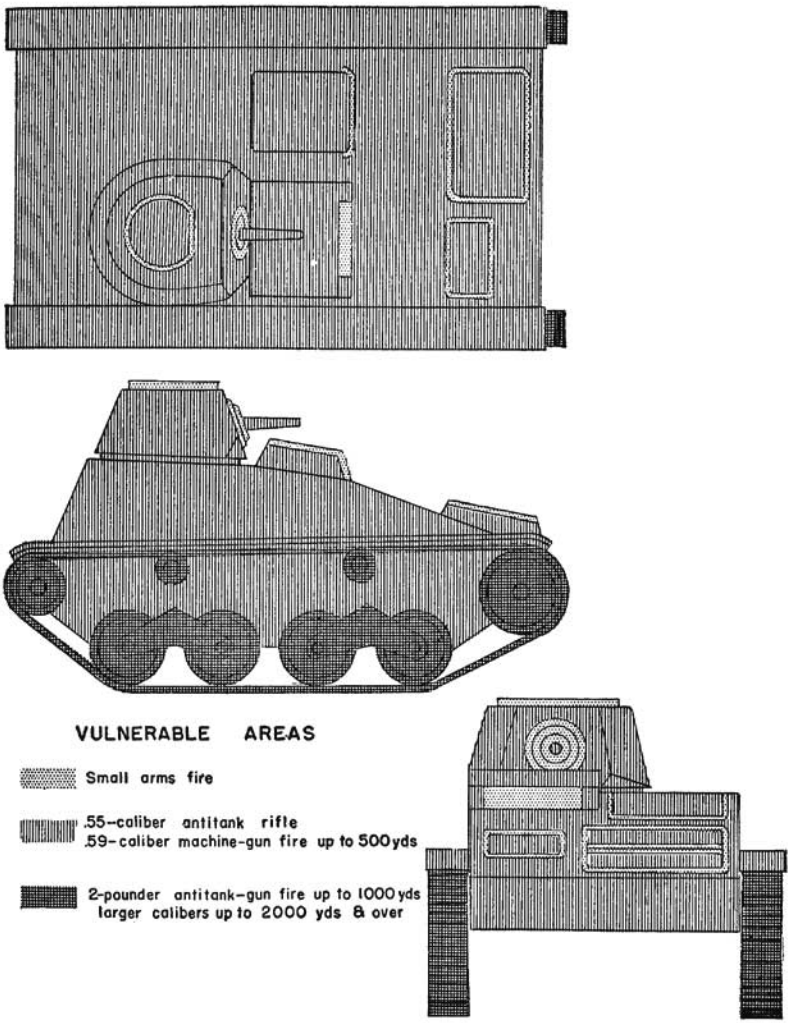

FIGURE 1.—Japanese Tankette.

Section I. HINTS FOR SOLDIERS IN LIBYA

1. INTRODUCTION

This section is translated from a captured German handbooks for troops, titled *The Soldier in Libya.* It deals with health problems, clothing and shelter, relations with natives, and suggestions to motor vehicle drivers.

2. HEALTH

The climate of the country (Libya) is entirely different from that of Germany. The German soldier must first get accustomed to the peculiarities of the climate.

There are diseases which we do not have in Germany, and every German soldier must, for this reason, know the dangers which these climatic peculiarities represent for him.

He must pay special attention to the following:

a. Water

The water of the country may contain many things that cause disease; therefore, never drink water that has not been boiled.

Don't even wash out your mouth with unboiled water until the commanders declare it to be fit for use.

Drink tea or coffee, and use your portable filter apparatus, which renders all kinds of water suitable for drinking.

Don't drink any kind of mineral water or any kind of lemonade until the commanders have expressly declared them to be harmless. Sherbets and ice creams sold on the street are injurious to health; avoid them, even though you are very thirsty!

Don't bathe in bad water and don't bathe in rivers, lakes, ponds, or pools. It is permissible to bathe in the sea. Don't bathe when you are overheated.

b. Food

The best food is that which you get from your unit. Don't eat any raw meat. Don't drink any unboiled milk, and under no circumstances drink goat milk. Wash all fruit in suitable water or peel it before eating it. Don't buy melon offered for sale in slices by street vendors.

Don't store away food, especially in the case of meat, fish, and sausage. In the heat they spoil quickly and cause serious cases of poisoning. Protect your food from the flies, because they carry disease.

c. Vermin

In this country there are fleas, lice, ticks, mosquitoes, poisonous snakes, and scorpions. Use insect powder against the insects. Mosquitoes are carriers of malaria. Catch the mosquitoes in the morning and evening, in your shelter. If you allow a light to burn in your shelter, close the openings, because mosquitoes are attracted by lights.

While asleep, use a mosquito net. But when you get under the net, make sure that there are no mosquitoes under it and that there are no openings through which they can come in.

If you have lice or crabs, report the fact at once. Lice and ticks are carriers of spotted fever, a very serious disease.

494445°—42——3

The snakes in the country are very poisonous and crawl in the sand; so never walk barefoot in the sand.

If you are bitten by a snake or scorpion, bind the member that has been bitten, between the bite and the heart, so that it will not swell or become blue; then with a razor blade that you have disinfected with a flame, make a large cross-cut. Sucking the incision, a procedure often recommended, should not be done if you have a mouth sore or a decaying tooth. If possible, go at once to the surgeon of the unit or the medical officer. Always shake your shoes well before putting them on; they are a favorite hiding place for scorpions. When you see a rat, kill it.

d. Holding Animals

Dogs and cats are frequently carriers of serious diseases—for example, rabies and serious worm and blood diseases. Don't hold any dog, cat, or monkey.

e. Inoculations

Don't shun inoculations. They will protect you from serious diseases. The person who is not inoculated not only exposes himself, but endangers his comrades.

f. Avoiding Malaria

If tablets must be taken to guard against malaria, don't try to avoid them. Here, again, you would expose not only yourself, but your comrades as well.

g. Prickly Heat ("Red Dog")

Prickly heat is an annoying skin irritation which develops as a result of sultry heat and excessive perspiration. Frequent washing with warm water and lathering with "Afridol" soap (when you have it) is the best protection. Let the foam stay on for 15 minutes and then dry yourself by dabbing (don't rub yourself dry). Dry particularly in the folds of the skin and between the toes.

h. Shelter

In principle, avoid the houses of the natives. Give houses or barracks a good cleaning before using them as quarters.

In setting up tents, remember that the spot selected for the tent should be protected from snakes and scorpions; to do this, clean or burn off the ground.

i. Clothing

At night wear a waistband (girdle), and also wear one when you are making a long trip in an open vehicle, such as a truck. In this way you protect yourself from getting chilled. Never wear a waistband in the daytime, because you soften yourself in this way. From 0800 until 1600 hours, wear your tropical helmet when you are outdoors. You must also wear it in the tent, unless the tent is in the shade of a tree.

3. RELATIONS WITH NATIVES

The German soldiers in Libya are the representatives of a people who are on a high racial and cultural plane. Be a worthy representative of your people.

Don't treat the natives as your equals, and in particular do not meddle in their affairs. Don't show them that you are above them, but behave in such a way that the natives themselves will see and recognize your superiority. The natives do not think or feel as you do. Be reserved in dealing with them and don't wound their feelings. Take into account the manners and customs of the natives.

Respect their religious customs. Don't make fun of them for praying in the streets. When you go into mosques (Moslem churches), don't violate the native practices.

Keep away from the native women. You are a German. Respect the family customs of the natives.

Be moderate in the use of alcohol. Never lose control of yourself.

Always keep a strict military bearing and be exemplary in your appearance. This is more necessary in Africa than in Europe. Behave as a master without being dominating or arrogant.

Always be tactful, even in your dealings with natives. They are generally willing and dependable if handled properly.

In dealing with native tradesmen, one should always determine whether or not the price asked is excessive. As a rule, a native will lower his asking price, because he is accustomed to having people haggle with him (up to 50 percent). In cases of doubt, ask police authorities or Italians who are acquainted with the country.

4. SUGGESTIONS FOR DRIVERS

Driving in the hot climate of Libya, and on highways which are in part very difficult, requires much greater engine and vehicle performance as well as greater endurance and skill on the part of the driver. The temperature of the engine will not be under 80° Centigrade (176° Fahrenheit), and often it will reach the boiling point of water used to cool the engine. For this reason, much more water will be used (from 5 to 6 gallons daily per motor vehicle). Since you will find no water during trips, it will be necessary to take a supply in tin containers.

Because of the high temperature of the surrounding air and the high engine temperature, part of your fuel will evaporate. In addition, more fuel will be used on all the roads, with the exception of the good coastal highways and a few other tarred routes, because the roads are merely trails. The fuel consumption is increased by about one-fourth of the usual amount, and you must take along some reserve cans.

For fuel we generally use gasoline with an octane content of 76. In this hot region the gasoline which we now use with an octane content of 74 will cause the engine to knock. If in exceptional cases we are given gasoline with an octane content that is

lower than 76, we should mix with it some motor oil so as to increase its knock-resistance (to 10 quarts of fuel with an octane content of 74 and below, add about 1 quart of motor oil).

A special motor oil, the lubricating power and viscosity of which are suitable for tropical temperatures, is issued. If in special cases another oil must be put in, the driver first must see whether or not the new oil will mix with the kind he is already using. Many oils cannot be mixed and lead to saponification (changing into soap), thus destroying the lubricating power. If the oils will not mix, we must let out all the oil we have, wash out the motor housing with 1 or 2 quarts of oil, empty it again, and then fill it with new oil. Continuing the trip, we must observe the oil-pressure gauge carefully. If the pressure drops below one atmosphere, we should stop. The engine must cool off for a time. If the driver continues with an oil pressure below one atmosphere in spite of this condition, there is danger of wearing out the bearings.

Openings for oil, air exhausts, and air filters should be provided with special filters (wet filters) to prevent entrance of the fine desert sand which is blowing continually. When we fill up with water, fuel, and oil, and when we grease the vehicle, we must clean the openings and the lubricating places carefully and remove all sand. We should pay special attention to the care of the filter. Each time we tank up, we should take out the wet filter, wash it with gasoline or kerosene, and then soak it again with motor oil; in the case of other types, we should set the filter in the oil bath that is provided. When we take out the filter, we should cover the open filter housing with a rag so that no sand may get in it while it is open; otherwise, this fine, sharp-grained sand will destroy the vehicle in a short time. Because of all of the moving parts, the sand acts like fine sandpaper. The temperature range from day to night is often over 30°. If a vehicle has been running in the daytime and is allowed to stand and cool at night, dew may gather on it, and, in addition to the rust danger, this may also lead to serious and time-robbing ignition

disturbances. In the morning, if the engine does not start at once, further attempts to start it are useless (the batteries may be run down). We must see whether a spark passes on the spark plugs. If not, we should search all the cable connections of the ignition, the ignition distributors, and other movable parts of the ignition for a ground due to water. We should not try to start until we have dried all the wet parts.

A vital part of the vehicle is the battery; we should not fail to take care of it. Because of the hot climate of this region, and the heat that is radiated from the engine, the distilled water of a battery is evaporated very quickly. Examine the battery every day to see whether or not the liquid stands about ½ inch above the plates. If the water is too low, pour in distilled water. In case of emergency, we may also use boiled water.

Apart from the first-class highways of Libya, many roads and trails have a relatively hard, thin surface. Under this is loose sand. In order to lessen sinking in as much as possible, we should use the following methods:

The pressure in the tires, insofar as the load of the vehicle will permit, should be decreased so that the tires will have a maximum bearing surface.

Don't make any sharp movements of the wheel, don't throw on the brakes violently, and don't run backward. In doing these things, we can easily break through the surface layer and cause the vehicle to sink in. If, beforehand, we recognize a place as a soft stretch of sand, we cross it on a rope ladder or on a wire net if we cannot go around it.

If the vehicle has sunk in, don't try to go either backwards or forwards by giving gas, because we will accomplish nothing in this way; we should stop the engine, lift the vehicle with the jack and put under the sunken wheel the planks that we have brought along with us. After we have lifted the vehicle, we should put sand in the hole caused by the sinking in of the wheel so that the plank will have a good surface to rest on. Of course we should also put a board under the jack; otherwise, the vehicle

will not be lifted and the jack will sink in the soft sand. After we have put the wheel on the plank, we should then start the motor and drive out with as little gas and as little turning of the wheel as possible (don't forget to pick up the tools).

Section II. NOTES FROM THE NORTH AFRICAN THEATER

1. ARMORED-CAR TACTICS

Questioning of German reconnaissance-unit prisoners reveals the following information about armored-car tactics:

Antitank guns moving on self-propelled mounts have advanced at times with the armored cars.

When attacked by low-flying aircraft, only the 4-wheeled vehicles engage with fire from their open turrets; 8-wheel cars, lacking open turrets, cannot fire.

The commander of an armored-car reconnaissance patrol always moves in the leading armored car.

2. AMMUNITION SUPPLY FOR TANKS

It is reported that trucks no longer go well forward to supply tanks with ammunition. Trucks now unload out of range of enemy artillery and establish small dumps, which can be cleared in a day. Drivers unload their own vehicles, no extra personnel being allotted for this purpose. Wherever possible, these dumps are

located under cover of rising ground, and the tanks come back to the dumps for fresh supplies of ammunition.

3. TANK TACTICS

German tank tactics are very flexible. Often a local commander can vary them, according to his own ideas and local circumstances. No tank opens fire until it is definitely sure of the identity of the target. German tanks advance on the enemy at full speed until they are within 200 to 300 yards; at this point they halt temporarily and fire. The operation demands a high degree of self-control, but the compensating factor is that a much larger percentage of hits can be scored from a stationary tank than from a moving tank.

4. TANK REPAIRS

Each tank battalion carries seven fully qualified tank mechanics. The regiment has a small repair shop, with adequate spares, which follows very closely behind the fighting units. Eighty percent of all tank repairs are made on the battlefield, but if a tank has to go back to its base, it is usually taken on a recovery vehicle.

5. ARMAMENT

The total number of shells carried by a Mark III tank is 80. Previous information indicated that 100 rounds were carried.

6. RADIO COMMUNICATION

Intercommunication between units ranging in size from the battalion to the regiment is on medium wave lengths. Intercommunication between units lower than the battalion is on short wave lengths. All wave lengths are allotted by the division, and are changed frequently.

7. LATEST INTERROGATION PROCEDURE

No formal questioning of prisoners regarding tactics is carried out by leading combat elements. As soon as prisoners have been captured, they are searched and then dispatched to division headquarters for tactical interrogation by division intelligence officers. The officer or noncom in charge of the front-line troops who have taken the prisoners goes alone to the rear, ahead of the captured men. He takes with him all captured documents, and informs division intelligence officers as to the local tactical situation so that they will be well equipped to examine the prisoners. If possible, he also attends the interrogation.

Section III. OPERATING THE MARK IV TANK

A captured German training pamphlet contains the following information regarding the duties of the crew of a Mark IV tank, and the means of intercommunication:

1. DUTIES OF THE CREW

The crew consists of five men—a commander, a gunner, a loader, a driver, and a radio operator who is also the hull machine-gunner.

The tank commander, who is an officer or senior noncom, is responsible for the vehicle and the crew. He indicates targets to the gunner, gives fire orders, and observes the fall of shots. He keeps a constant lookout for the enemy, observes the zone for which he is responsible, and watches for any orders from the commander's vehicle. In action, he gives his orders to the driver and radio operator by intercommunication telephone, and to the gunner and loader by touch signals or through a speaking tube. He receives orders by radio or flag, and reports to his commander by radio, signal pistol, or flag.

The gunner is second in command. He fires the turret gun, the turret machine gun, or the machine carbine, as ordered by the tank commander. He assists the tank commander in observation.

The loader loads and maintains the turret armament under the orders of the gunner. He is also responsible for care of ammunition, and—when the cupola is closed—gives any flag signals required. He replaces the radio operator if the latter becomes a casualty.

The driver operates the vehicle under the orders of the tank commander, or in accordance with orders received by radio from the commander's vehicle. So far as possible, he assists in observation, reporting over the intercommunication telephone the presence of the enemy or of any obstacles in the path of the tank. He watches the fuel consumption and is responsible to the tank commander for the care and maintenance of the vehicle.

The radio operator operates the radio set under the orders of the tank commander. In action, when not actually transmitting, he always keeps the radio set at "receive." He operates the intercommunication telephone and writes down any radio messages not sent or received by the tank commander. He fires the machine gun mounted in the front superstructure. He takes over the duties of the loader if the latter becomes a casualty.

2. INTERCOMMUNICATION

The following means of intercommunication are available:

External: Voice radio and key radio, flag signals, hand signals, signal pistol, and flashlight.

Internal: Intercommunication telephone, speaking tube, and touch signals.

The maximum distance for satisfactory voice radio communication between two moving vehicles is about 3¾ miles, and for satisfactory key radio communication about 6¼ miles.

Flag signals are used for short-distance communications only, and a flashlight is used at night. The signal pistol is used for prearranged signals—chiefly to other arms, such as the infantry.

The radio set, in conjunction with the intercommunication telephone, provides the tank commander, radio operator, and driver

with a means for external and internal voice communication. The same microphones and telephone receiver headsets are used in both cases.

When the control switch on the radio is set at *Empfang* (receive), and that on the junction box of the intercommunication telephone at *Bord und Funk* (internal and radio—that is, intercommunication telephone and external voice or key radio), the commander, radio operator, and driver hear all incoming voice radio signals. Any of these men can also speak to the other two after switching his microphone into the circuit by means of the switch on his chest.

For voice radio transmission, the switch on the radio set is adjusted to *Telephonie* (telephone). The telephone switch may be left at *Bord und Funk*. Either the tank commander or the radio operator can then transmit, and both they and the driver will hear the messages transmitted. Internal communication is also possible at the same time, but the conversation will be transmitted.

If the radio set is disconnected or out of order, the telephone switch may be adjusted to *Bord* (internal). The tank commander and driver can then speak to one another, and the radio operator can speak to them, but cannot hear what they say. This also applies when a radio receiver is available, but no transmitter, with the difference that incoming voice radio signals can then be heard by the radio operator.

The signal flags are normally carried in holders on the left of the driver's seat. When the cupola is open, flag signals are given by the tank commander; when it is closed, the loader raises the circular flap in the left of the turret roof and signals with the appropriate flag through the port thus opened. Flag signals are given in accordance with a definite code, the meaning of any signal depending on the color of the flag used and whether the flag is held still or moved in a particular way.

Pistol signals are given through the signal port in the turret roof, through the cupola, or through one of the vision openings in

the turret wall. The signal pistol must not be cocked until the barrel is already projecting outside the tank. It is normally used only when the tank is at the halt. The main function of this means of communication is the giving of prearranged signals to the infantry or other troops.

When the tank is traveling at night, with lights dimmed or switched off altogether, driving signals are given with the aid of a dimmed flashlight. The same method is also employed when tanks are in a position of readiness and when leaguered (in bivouac).

Orders are transmitted from the tank commander to the gunner by means of speaking-tube and touch signals. The latter are also used for messages from the commander to the loader, and between the gunner and loader.

Section IV. THE JUNKERS (Ju) 88

The name Junkers (Ju) 88 denotes one of the most widely used types of aircraft in the German Air Force, and should be thought of as applying to a whole family of airplanes. Each model is adapted for a specific purpose.

The Ju 88 is a cantilever low-wing, twin-engine monoplane, which was primarily designed as a bomber. For its size and wing load, the plane is regarded as highly maneuverable. Its controls are light and positive, and it can take quite violent action, even at the end of a dive. Except for the use of short or long wing-spans, the basic construction of the Ju 88 has not been changed since it first came out. Succeeding types, designated by series and numbers (for example, A1, A2, B1, and so on) now total 28 or more improved, specialized models.

The "A" series alone comprises 13 or more types, of which 9 are used primarily for bombing. Three types in this series are equipped with balloon-destroying apparatus. There are two trainer types, one with a short wing-span and the other with a long wing-span.

Two tropical bombers and a plane which may be equipped with skis also belong to this series.

The planes of the "B" and "C" series are essentially fighters, while the "D" series aircraft are used

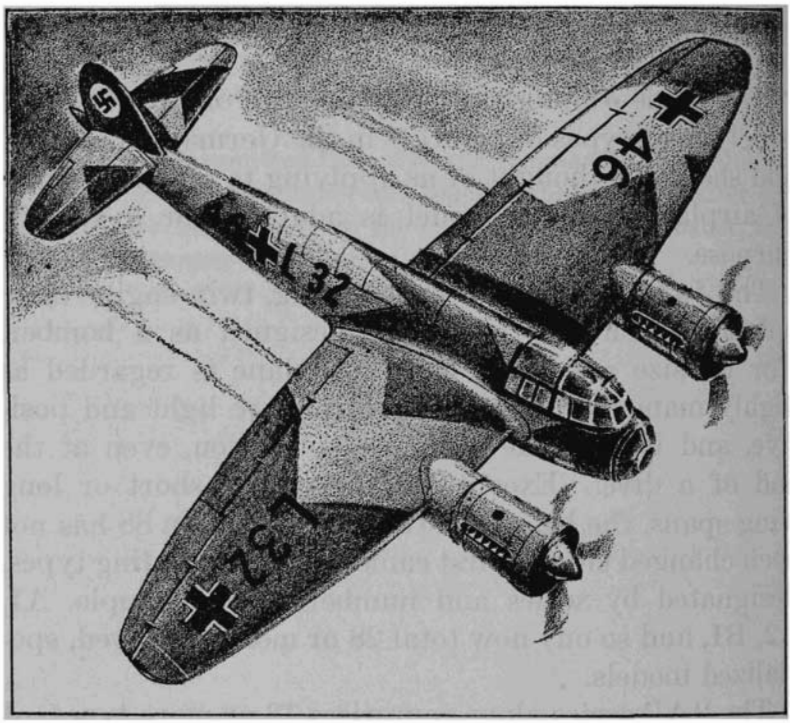

FIGURE 2.—Junkers (Ju) 88.

principally for reconnaissance and photographic missions at high altitudes. Some planes of these groups are equipped with mechanisms for rocket-assisted take-off. Bombers and reconnaissance types may be

adapted for long ranges by the addition of detachable or auxiliary fuel tanks.

Apparently there is no standard practice as to the number, type, or placement of armament, since each type has different requirements. All aircraft have armor protection, but the low-level attack planes are especially protected from ground fire.

Machine guns are usually found in the nose, on top, and at the beam positions, but may also be found in the belly of the plane. Most machine guns are of the 7.9-mm (approximately .31 caliber) flexible type, but heavier guns, both fixed and flexible, and 20-mm cannons have also been used.

While the normal bomb load is believed to be more than 2,200 pounds, over 6,000 pounds may be carried by sacrificing fuel reserves or other weight. Torpedoes and mines have also been used instead of bombs.

The average crew of a Ju 88 consists of three or four men; however, only two men usually serve on the fighter type.

The Ju 88 bomber is encountered in every theater of operation and under all climatic conditions. These planes often constitute the backbone of German bombing assaults, as was particularly the case in the intense and prolonged attack on Malta early this year.

494445°—42——4

Section V. PRISONERS OF WAR

1. INTRODUCTION

All the powers engaged in the present war try to get as much information as possible from prisoners; they use various methods in questioning those captured, and sometimes resort to tricks and threats. Invariably, the soldier who continues to be a soldier after being captured fares better at the hands of his captors. A soldier is still a soldier for his country if he keeps his mouth shut after capture, except to give his name, rank, and serial number. Absolutely no other questions should be answered, according to the instructions given by both the Axis and United Nations—under international law, no other information is required.

British prisoners have been praised, even by their enemies, for refusing to talk after capture. The following statement about the British, made by Italian General Navarrini, was taken from a captured Order of the Day:

"When subjected to questioning by our Intelligence Branch, all enemy prisoners refused firmly and categorically to give any mili-

tary information whatsoever. They confined themselves to providing personal particulars and army numbers.

"More energetic demands and indirect questions intended to obtain certain details had no better success. The prisoners remained firm in their dutiful decision to obey the order not to talk, conscious of the fact that any other line of conduct would amount to treachery.

"I wish these facts to be brought to the notice of all (Italian) units. . . . Military honor demands that the spirit of dignity and pride of race should always be alive and present in the minds of our troops."

On the other hand, German and other Axis prisoners have given the United Nations forces valuable information, as can be noted from the following captured document, signed by Field Marshal Rommel, commander of Axis forces in North Africa:

"From the attached translation of three enemy news sheets of the 2d South African Division, it regrettably appears that German prisoners of war have talked inexcusably.

"On receipt of these examples, the troops will be instructed in detail how a soldier who is unfortunately taken prisoner of war is to behave. When questioned, give name, date of birth, birthplace, and rank. *No further information may be given.* As response to further questioning, the following will be the reply: 'I cannot answer any further questions.'

"In conversation with German prisoners of war who are not known, the greatest reserve will be exercised, as the English use agents in German uniforms to listen to prisoners.

"Furthermore, under no circumstances may soldiers who are taken prisoners of war—after the usual destruction of all service papers—allow diaries and letters from home to fall into enemy hands. Conclusions could be drawn from these as to food worries, air raid damage, and the like.

"The German soldier who is taken prisoner must prove that even in this disagreeable situation he does not lose his proud, superior bearing."

2. TRICKS USED BY GERMANS

Some of the tricks used by the Germans in trying to get prisoners to talk are as follows:

a. "Stool Pigeons"

In a building prepared for the occasion, prisoners are questioned in a half-hearted manner and are then transferred to another room where they find three or four other "prisoners." These "prisoners" are Italians or Germans who speak perfect English. To avoid detection, they are often dressed in a uniform of a service other than that to which the real prisoner belongs. (For example, RAF when the prisoner is in the army, American when the prisoner is English.) They are "stool pigeons," and are highly trained to get the information the questioners have failed to obtain.

b. Man-to-Man

"England and Germany should be fighting together. We don't hate one another." This is what the smiling Nazi says in an attempt to appear as a friend and make his British prisoners forget the atrocities he is committing all over the world.

c. Delayed Action

The prisoner is not questioned for several days—perhaps weeks. If he is in a hospital, they send along a

"wounded" German or Italian who has been in England and speaks a bit of English. He has all the charm of a vacuum-cleaner salesman, and gradually lets it leak out that he is anti-Nazi and perhaps has had a row with a fellow Nazi. He takes his time and gradually the conversation veers around to the war.

d. "Know-All"

"We know so much there is nothing you can tell us," says the Hun. He flips over a lot of important looking papers—"See what I have?" He is rude and attempts to provoke the prisoner into proving that he is not the ignoramus the interrogator thinks he is.

e. Third Degree

The prisoner is marched into a tent lit by one flickering lantern. There is a good deal of side play. The interrogator snaps out the routine questions: "Name—rank—number?" When the next question is greeted with silence, the sentry is ordered to leave the tent. The interrogator fingers his revolver. "I don't want to resort to methods we dislike," he says, and hopes the prisoner will believe the opposite. He may be taken into a confined space, such as an armored car. The interrogator talks in a low voice. He explains that he wants some important information and that he is determined to get it. He is candid. "You are alone; you have a family. You want to live. It is nice to be a hero when someone is looking, *but you are alone.*"

The note of death is constantly repeated in an attempt

to break down morale. The interrogator, however, is not going to kill the goose which may lay the golden egg. Besides, we have thousands of enemy prisoners, and news of what happens in German prison camps travels fast.

f. Try Again

Breaking down resistance and morale is the first object of the enemy interrogation officer. To do this, physical fatigue is often provoked by forced marches, light rations, and inadequate shelter. Another trick is the spreading of fantastic tales about Russian reverses, Japanese successes, and British and American losses. Then there is the time-worn trap: "Your comrades have told us everything, so why don't you?"

g. Listening Walls

In a Nazi or Fascist state, everyone is a suspect of the secret police. They are well trained in eavesdropping. Their experience is used in war time. After failing to obtain information by other methods, prisoners are put together in the most innocent-seeming circumstances. A hidden microphone reveals to a listening enemy any matters of military interest that are talked about.

3. HOW TO RESIST THE GERMANS

The answer to these tricks—and there are others—is the maintenance of a cast-iron security in the event of capture.

Direct questioning is a war of endurance between prisoner and interrogator, and the battle is lost by the one who tires first. If it is the questioner, the prisoner is passed on as "no good" to join his countrymen in a prisoner-of-war camp. If, however, he tries to bluff the interrogator by giving him false information, or to appease by giving half-truths; if any chink is found in his armor of security, he will often remain for weeks and weeks under a process of questioning, much to his own personal discomfort. The tough prisoner is not only admired by the enemy, but, if he wins out, has a far better time in the end.

Thus, strict observance of the rule of giving "Name, rank, and serial number only" does more than help one's comrades; it is in the best interests of the individual.

Conversations about military matters must always be avoided resolutely. Plans to escape should be discussed only in the open, away from persons you are not sure you can trust. Attempts by the enemy to persuade a prisoner into broadcasting must be resisted. It is only offered to serve a purpose.

Lastly, personal papers should never be carried into battle. Most insignificant pieces of evidence, such as personal letters, hotel bills, and street-car tickets give clues to a competent interrogator.

4. INTELLIGENCE FROM GERMAN PRISONERS

The *Intelligence Bulletin* for September published extracts from a captured German manual instructing

German soldiers how to behave in case of capture. American troops, who also receive careful instruction along this line, will be interested to know how the advice set forth in the manual tallies with the actual behavior of German prisoners of war.

No matter how painstakingly the German soldier has been drilled in the art of keeping his mouth shut—apart from telling his captors his name, rank, and number—German prisoners of war still reveal, without intending to do so, information of great value to the United Nations. A British Intelligence officer stationed in North Africa writes in a personal letter that the German prisoners he has questioned in his official capacity "nearly always respond (a) to someone who shouts at them, and (b) to show off knowledge. Many of them are comparatively silent about tactical information, but most of them will at least admit their units."

According to this officer, the "show of knowledge method" worked especially well with one German engineer, who, unlike most of his countrymen, had no pay-book and no identification tag. When he refused to give his unit, he was asked, "Don't you suppose we know what German engineer units are in Libya?" He said he didn't believe that the British knew anything of the sort. As soon as the list of engineer units was reeled off to him, he gave the name of his own unit without hesitation.

"Other points which I have had a chance of verifying or discovering," the British officer continues, "are (a) Never ask a leading question. (b) Don't ask too many questions, one on top

of the other. (c) If the prisoner of war doesn't answer a question immediately, always leave a longer pause than you think necessary; he usually says something in the end which will help the interrogation even if it doesn't give you any information. (d) Don't expect too much from interrogation. Training courses inevitably present interrogation as something a little spectacular. If a chap does produce a spectacular piece of information, go to great pains to check it; for this purpose it sometimes helps to deny what he says, so that he is obliged to give the reason why he knows. (e) Out here, at any rate, it is practically useless to show a prisoner a map. The Germans apparently make little use of them; a corporal never has anything to do with one. If a prisoner of war starts to point out a route or a position on a map, he nearly always gets the scale wrong. It is best for the interrogator to have the map or the air photograph and to take some well-known reference point and then say 'You are standing here with your back to so-and-so. Now what do you see?' It is most important to cross-check any estimate of distance that a prisoner of war gives.

"I have held two parades of German prisoners of war, one of 16 men and the other of 95. The words of command taught at X (a training school in England) worked very well and so did the idea of calling out the senior NCO and making him do the work. Here, again, a show of knowledge and authority help a great deal. It was a good scheme to line them up, tell them to place all their belongings on the ground in front of them, and hold ready their paybooks and identification tags. On the first occasion the old trick worked of saying 'Everybody in the 104 Motorized Inf. Regt. fall in over there.' On the other, after the fall of Bardia, I told the senior NCO . . . to fall in the 95 other chaps according to units and, to my great surprise, he did it.

"The paybook was on the familiar pattern. Very occasionally a prisoner said he had handed it to the company office, and sometimes pages 3 and 4 were torn out. Practically always it

gave the necessary information. All officers carried paybooks.

"During the operations at Bardia, Salum, and Halfaya, many prisoners did not carry paybooks. These had been . . . kept . . . at the company office, where, in many cases, they were duly found later on. Instead of a paybook, prisoners carried a temporary certificate of identity giving the following particulars:

Rank, Christian name, surname,
Date and place of birth,
Home address,
Date of arrival in Africa.

"The certificate was signed by the company commander and was stamped with the field post number. Identification was therefore possible in most cases.

". . . Documents were almost fantastic in their quantity and value to us. . . . Minor examples are legion: war diaries, code names, photographs showing new weapons, training pamphlets, intelligence summaries, personal diaries, casualty returns, and so on. Two things stand out from the Intelligence officer's point of view: he must be able to read German script as well as possible, and he should have a very good knowledge of German conventional signs. The Germans use them for marked maps, orders of battle, operation orders, and vehicle markings—in fact, wherever possible. If an intelligence officer knows them by heart, he will save himself an immense amount of time."

Section VI. MISCELLANEOUS

I. USE OF TANKS

A captured German manual gives the following information about the use of tanks and the support given them by other forces:

a. Tank Objectives

Tanks set out to attack the enemy's infantry and infantry heavy weapons, artillery, command posts, reserves, and rear communications. But before they can get through to these targets, they must destroy their most dangerous enemy, the antitank defenses. For this reason the heaviest and most powerful tanks must lead the attack, and they must be supported by the other troops, infantry and artillery, both before and during the attack. The heaviest tanks should be directed to attack the points that are deepest within the enemy positions, such as artillery, reserves, and command posts. The lighter tanks attack the infantry. Each wave of tanks should be given a specific objective.

Tanks are also able to seize important points, such as river crossings, and to hold them until the infantry comes up.

The tanks can go to the attack more quickly if there are several roads leading to the front, and if crossings have been built over railroads, highways, and rivers.

b. Support by Other Troops

(1) *Infantry.*—The infantry must direct its heavy machine guns against the enemy's antitank defenses. The other heavy weapons must fire at targets outside the area of the tank action so that they will not disable their own tanks. Signals (such as tracers, flags, and radio) must be arranged in advance so that all units will work together.

(2) *Artillery.*—The artillery fires upon targets in front and to the flanks of the area of the tank action. It fires both high explosive and smoke. Adjustment can be attained through the radio or the artillery liaison detail, which can accompany the tanks.

(3) *Engineers.*—Engineers assist the tanks by strengthening bridges, building temporary crossings, and removing obstacles and mines.

(4) *Antitank Units.*—Antitank guns must follow the tanks as closely as possible so as to be able to enter the fight immediately if enemy tanks are met.

(5) *Aviation.*—Aviation has two duties: it should serve as reconnaissance before and during the time the tanks are in action, and it should attack the enemy's reserves, especially tanks and antitank defenses, before they can come into action.

As soon as the tanks reach their objectives, they at once prepare themselves for a new mission. They send reconnaissance forces to the front and find out how far the infantry has advanced. Their next movements are decided on the basis of these findings.

After the battle the tank force is withdrawn behind the lines and reorganized. The longer it has been in action, the longer the rest period should be.

2. TREATMENT FOR BLISTER GAS

For the treatment of gases that cause blisters, each German soldier carries 40 small tablets known as

"Losantin." The tablets are kept in four small plastic boxes, each of which holds 10 tablets. Each box is labeled *Hautentgiftungsmittel,* which means "skin decontaminating agent." A chemical analysis showed that the tablets are a dry bleach, which contains 39.8 percent chlorine.

To treat blister-gas wounds, the German soldier mixes one or more tablets with water or saliva to form a paste, which is applied to the affected parts of the body. The application is washed or wiped off after 10 minutes.

A fresh supply of the tablets is issued each soldier about every 6 months.

The plastic boxes have a tendency to tighten after being closed for some time and are hard to open. Also, the tablets sometimes stick together or crumble into powder.

A United Nations soldier, who captured some Losantin tablets, thought they were food tablets. He ate several, with serious results.

Section I. THE INDIVIDUAL SOLDIER

1. WHAT HE IS LIKE

One of the first things to remember about the Italian soldier is that he entered this war without any strong personal conviction that it was necessary. Italy had no Pearl Harbor to unite her people and fill them with a relentless determination to win. A private belief of this kind can go a long way toward helping men to withstand the heavy psychological strain of combat. The American soldier has it; the Italian does not. As a result, a question commonly asked by American troops—"Is the Italian a good or bad fighter?"—cannot be answered in a single word. The Italian knows how to fight well. What offsets this is the fact that his moods are anything but predictable. Sometimes, when a flood of propaganda temporarily convinces him that the battle is above all for the sake of his homeland, and that there is a fair opportunity for success, he fights with great courage, skill, and imagination. On the other hand, military reverses often have a decided effect

on his morale, and can change his attitude from one of bright optimism to one of complete pessimism. It should never be said that his reactions will always be thus-and-so; only tendencies can be pointed out. It is certainly true that as the failure of Fascism becomes increasingly clear in spite of the propaganda, and as events indicate the manner in which Italy is being handed over to Hitler, the Italian soldier shows a tendency to put up a halfhearted fight and then surrender.

The Italian soldier has good reason to be dissatisfied. Italy has been in a practically continuous state of war since 1935—a strange circumstance for an unaggressive and naturally happy people who long had been accustomed to a simple, easygoing existence. Moreover, the Italian soldier is an individualist. Even though he may be excitable and quick to show anger—an anger that usually fades rapidly—he is generally a peace-loving man, a little lazy, and not especially qualified for undertakings that require tedious, thorough preparations and great attention to dull detail. The precision of German military science, to which he has had a first-hand introduction under Rommel's command in North Africa, is not up his street; in fact, the whole increase in German domination is a bad dream, steadily growing worse, from which he would like to awaken.

For all of this, there is no typical Italian soldier. Differences of character, customs, and language are explained by the differences between the various Ital-

ian provinces. For example, traces of an old German invasion still characterize the blood of some of the people in the northern part of the country, and in the extreme south a wild mingling of Mediterranean stocks has produced a strangely assorted population. A union of all the Italian states did not take place until as late as 1870. The Italians found it hard to live and work as a federated nation. In 1922, when the Fascist dictatorship was born out of poverty and political unrest, Italy lost her constitutional form of government without ever having settled down to make intelligent use of it.

From childhood the Italian soldier has submitted to the leadership of the Fascist Party, which has steeped him in a militant nationalism and has tried hard to make him a skilled fighter. Fascism, like Nazism, calls for unquestioning obedience to "the next man above." Heading the Fascist system is the Leader, Benito Mussolini, whose ambition has been to make Italy the ruler of all lands bordering the Mediterranean and to recapture for her the magnificence and authority of ancient Rome. The prospect of future greatness is dangled endlessly before the Italians. Since nearly everything in the country is state-controlled, an Italian is drenched with Fascist propaganda not only while he works but during his occasional hours of leisure. The *Dopolavoro* (literally, "after work"), a huge state-managed federation of clubs, sees to it that he does not stray from the Fascist fold at any time. In his radio programs, his

movies, his sports, his government-planned holiday trips—everything—emphasis is placed on the glory of the past and the glory of the future. Less is said about the present.

At the age of 6, a boy must join a society known as the "Sons of the Wolf." This can best be described as a Fascist incubator, in which a child is prepared for membership in the *Balilla* (between the ages of 8 and 13), the *Avanguardisti* (between the ages of 14 and 17), and the Fascist Youth (between the ages of 18 and 21). Part-time basic and specialist military training is given continuously to all boys from the ages of 8 to 21, when they begin 18 months of compulsory service in the Army. In wartime this service term is of course prolonged indefinitely. While the boy is in the *Balilla* and the *Avanguardisti,* his training is directed by the Fascist Youth organization, which indoctrinates him with Party propaganda besides giving him preliminary military instruction. The Fascist Youth organization is taught, in turn, by the Black Shirt Militia under the direct supervision of the Ministry of War, other interested ministries, and the territorial military authorities.

A young man's only alternative to fulfilling the draft service requirement is to enlist for a minimum of 2 years in an armed force of his own choice.[1] For example, he may choose the Air Force, the Forestry Militia,

[1] All conscripts are enrolled on the draft rolls of the Army, except certain specially qualified men who are placed on the draft rolls of the Navy. Distribution of personnel to the various arms and services is made by the Army on the basis of each individual's qualifications.

the Finance Guards, the Public Security Police, or one of several other organizations.

A soldier's regular draft term is served with a tactical combat unit. Training is given by the professional cadre of the unit to which he is assigned, and to which he reports in April. The preceding class, which has had 1 full year of training, is still with the unit, and helps to absorb the new men into the organization and whip them into shape for the fall maneuvers. In peacetime the older class is then furloughed to the reserve, while the new class starts its winter course of garrison training, largely in specialist subjects.

Now, more than ever, the Italian soldier respects the famed standard of living in America, which has traditionally been his idea of a successful country, and to whose shores so many of his relatives have immigrated. And he marvels at his government's choice of Germany as an ally—for, again traditionally, he has always regarded Germany as a cruel and dishonorable neighbor.

The Italian Army pay scale is amazingly low. An Italian private receives $1.51 a month, and a rank comparable to our private first class, $1.60. Other comparable ranks receive monthly pay as follows: corporal, $1.85 to $2.21; staff sergeant, $18.98 to $25.71; technical sergeant or first sergeant, $25.57 to $29.60; master sergeant, $27.99 to $29.51. A monthly allowance of $12.80 is made for the wife of an enlisted man, to which $4.80 is added for each child. The maximum pay of a second lieutenant, including all possible allow-

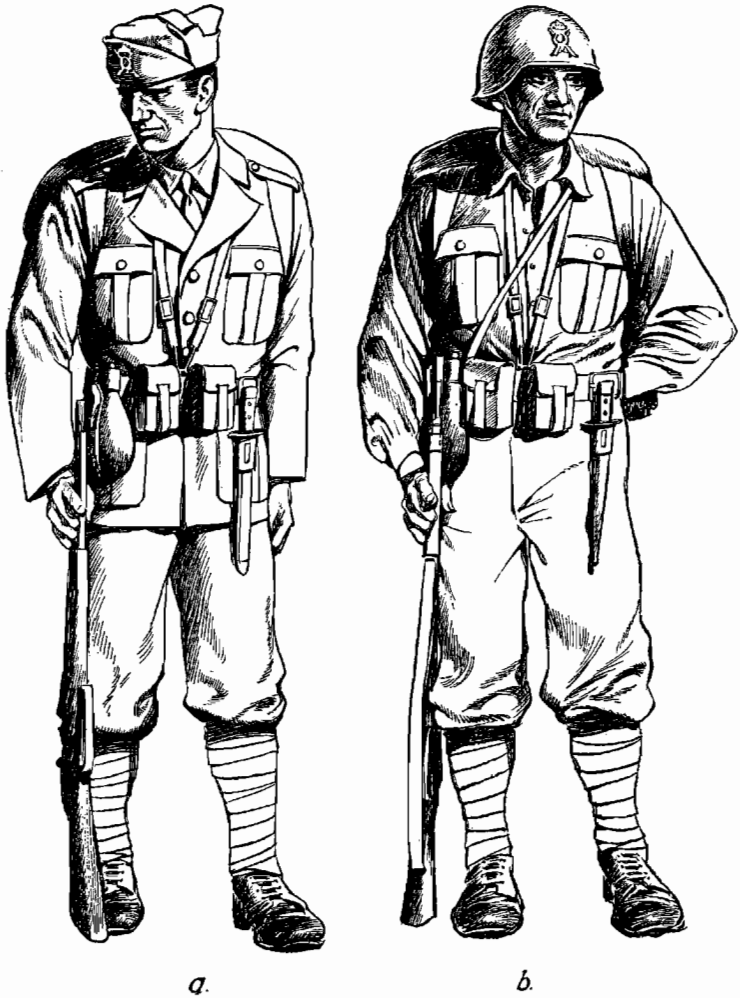

FIGURE 3.—(a) Italian field service uniform (standard); (b) Italian field service uniform (tropical).

ances for quarters, maintenance, and family, is $845 a year. A first lieutenant's maximum pay is $1,027 and a captain's, $1,232.

The recreational facilities provided for a soldier in the field are sketchy. Although sports are encouraged, equipment is likely to be scarce. Occasionally an entertainment truck rolls up, and propaganda movies are shown. This escape from reality is welcome. In the movies, at least, no one is tired or ragged, there is plenty to eat and drink, and if the picture happens to be about the present war, the Italians are winning.

2. HOW TO IDENTIFY HIM

a. Standard Field Service Uniform (See Fig. 3a)

All ranks, including officers, wear the same type of field uniform. This consists of a garrison ("overseas") cap,[2] a shirt and tie, a coat, knickerbockers, and puttees[3]—all of gray-green cloth—and black leather shoes. A steel helmet is worn under orders in place of the garrison cap. Formerly, more elaborate field uniforms were worn. Some of these still may be encountered from time to time.

b. Tropical Field Service Uniform (see fig. 3b)

In hot climates officers and men wear a khaki shirt, sometimes substituting a shirt-coat, with a turned-

[2] Alpine troops, Blackshirt militiamen, pack artillery personnel, and customs guards wear a gray-green "Swiss yodeler" hat with a single upright feather; Bersaglieri wear a gray-green oval hat or a steel helmet, both with a dark green plume.

[3] Cavalry, tank, motor transport, and some artillery personnel wear black leggings.

down collar, which can be worn open or buttoned up to the neck; khaki knickerbockers or breeches with puttees, leggings, or stockings—less often, khaki shorts or khaki trousers which fit tightly above the ankles; a steel helmet or a khaki sun helmet; and black leather shoes.

In North Africa a combination of a dark green coat and silver-gray breeches is occasionally seen. The Italian textile situation is so disorganized that departure from regulation dress is widely practiced and permitted in the field.

c. Insignia of Grade (see fig. 4)

(1) *Officers.*—On the gray-green field uniforms, patches with insignia of rank are worn on the sleeves of officers' coats and overcoats, just above the cuff. On the tropical uniform, a system of stars is worn on the shoulder straps—for example, three stars for a *capitano,* two for a *tenente,* one for a *sottotenente.* The addition of embroidery or braid to the stars denotes higher ranks.

(2) *Warrant officers.*—Warrant officers wear shoulder straps, as illustrated. Similar designs appear on the garrison cap.

(3) *Noncoms.*—On all coats and overcoats, noncoms wear chevrons, the wings of which point upward when the chevrons are worn just above the cuff, or point downward when the chevrons are worn on the upper arm.

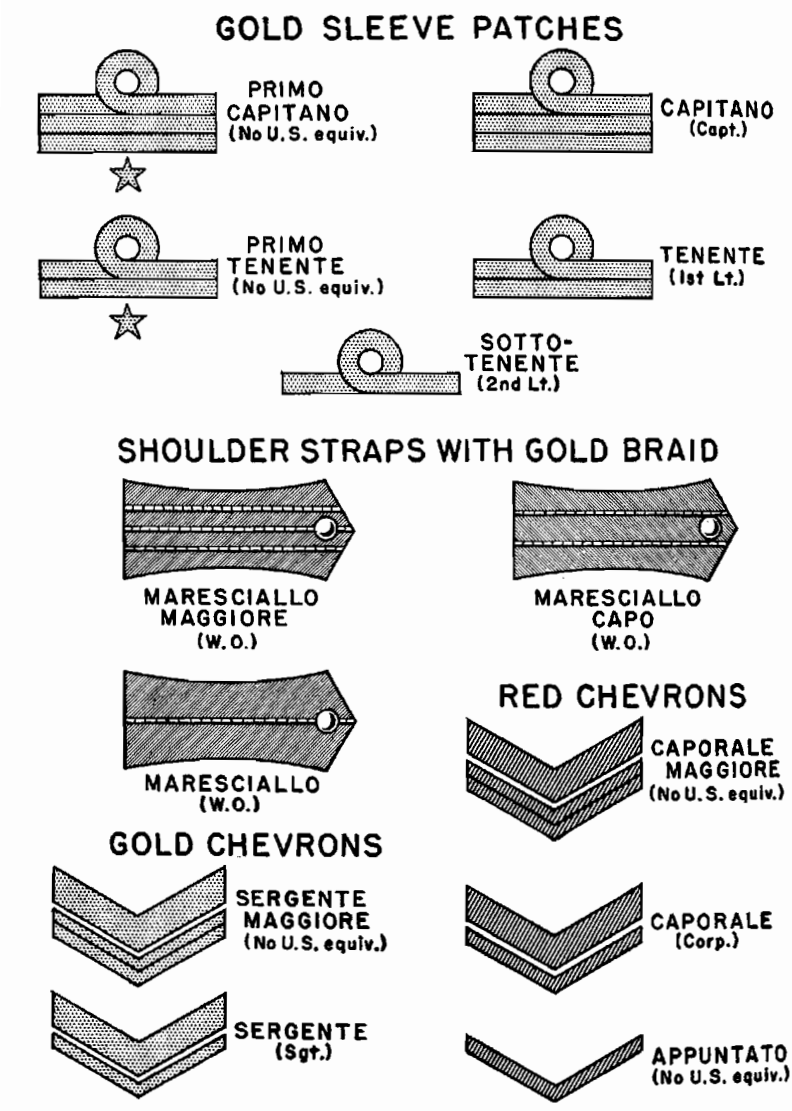

FIGURE 4.—Italian insignia.

d. Other Distinguishing Marks

(1) *Arms and services.*—Unlike the German Army, the Italian Army does not designate each arm and service by means of a single distinctive color. Instead, a wide variety of metal badges of elaborate design are used. These appear on the front of all types of headgear (stenciled in the case of steel helmets). Embroidered gold and black badges with the same designs were worn before the war, and still can be found on the shoulder straps of officers' tropical uniforms. Regimental numbers often appear in the center of this badge. In addition, all infantry regiments of the line wear brightly colored rectangular patches (*mostrine*) on each side of the coat collar, while other arms and services substitute their own devices (*mostreggiature*) in widely varying designs and colors. These patches and devices do not appear regularly on the tropical uniform.

(2) *Personal papers.*—Italian noncoms and privates carry a booklet known as a *libretto personale,* which lists the holder's age, name, rank, number, and unit (down to company or equivalent level). It also contains many useful particulars about the holder's civil and military history, together with details about the arms, equipment, and clothing on issue to him. It does not serve as a "pay book." One libretto only is issued to cover the whole of a soldier-citizen's military career.

The book carried by officers and warrant officers is

almost exclusively a pay book and is renewed each year. Much less information is obtained from it, but age, name, rank, and unit are recorded.

(3) *Identification tag.*—Italian military personnel wear an identification tag (*piastrina di riconoscimento*) on a chain around the neck. The tag is made of cheap metal, and records—not always in the following order—the holder's conscript class (that is, year of birth), number, code number of military district, religion, surname, Christian name, father's Christian name, mother's maiden name, mother's Christian name, and home town and province.

A tag can be split lengthwise into two identical plates.

Section II. FLAME THROWERS

1. INTRODUCTION

The Italians have developed two types of flame thrower, but neither of them has been used to any considerable extent except in certain phases of the Russian campaign. Like flame throwers developed by other powers, the Italian weapons have a very limited use on the battlefield. Their practical value is confined to close combat, such as assaults on pillboxes, trenches, boulder areas, caves, or other enclosed spaces. Even under these conditions, the crew operating a flame thrower is very vulnerable to many types of fire and grenades. Flame throwers used in tanks have much greater protection than those carried by hand. The Italians have a portable type and one which is mounted in a tank.

2. PORTABLE FLAME THROWER

This weapon, known as Model 35, has been used in several instances by the Italian infantry as a supporting weapon in Russia. Very little use of it has been made in the North African operations.

The flame thrower is capable of throwing a flame about 22 yards and making untenable a zone 38 yards long and 17 yards wide. Fuel for only 20 seconds of continuous flame is carried in the fuel container. The operator is taught not to maintain the flame continuously but to produce 10 jets of flame, each of which should last for about 2 seconds. Approximately 20 minutes is required to refuel and recharge the weapon so that it can operate again.

Two men, comprising a team, are required for each flame thrower. No. 1 carries the weapon on his back and operates it, and No. 2 carries on his back all the necessary supplies. No. 1 wears noninflammable clothing and a respirator.

It is not considered good tactics to use flame throwers in units smaller than a group. The latter consists of one leader, an assistant leader, and six squads. Each squad has two of the weapons—two teams.

The flame thrower consists of two cylinders, a length of reinforced and flexible tubing, and a jet or flame tube, to which is attached the trigger and the ignition arrangement. The cylinders are identical, and each contains the same type and amount of fuel. The fuel usually is ignited at the base of the jet, by a coil and spark gap—with a wick at the gap. The electrical current is produced by a dry-cell battery. Some are said to be ignited by means of a friction tube and a wick, which burns for 2 minutes.

Each of the cylinders contains nitrogen under pres-

sure and fuel oil. The oil ordinarily used is believed to be a mixture of benzine and light motor oil. Some of the fuel captured was a mixture of kerosene and lubricating oil, or fuel oil.

3. FLAME-THROWER TANK

The flame-thrower tank, technically known as L3.33 L. F., is a light tank which weighs 3½ tons. One was captured in the North Africa operations and has been examined in the British Isles.

The flame-thrower projector is mounted at the front of the tank, replacing one of the two 8-mm machine guns in the turret. It throws a flame 40 to 45 yards. At a continuous rate, the flame will burn for 2 minutes and 15 seconds. It can be cut off and on at will, and generally is operated only a few seconds at a time.

The tank has a fuel trailer, which consists of a two-wheeled chassis with a tow bar connecting with the tank. Fitted to the bar is an armor-plated shell which houses a rectangular light steel fuel tank. At the rear end of the tank, under a hinged cover, is mounted a semirotary hand pump with necessary connections for refueling, defueling, and mixing the substances which form the fuel.

A second and larger pump, to force the fuel from the trailer to the flame projector, is located in the rear part of the tank, immediately behind the engine fan. The pump, operated by power from the engine, is connected to the projector by two pipes—one to deliver fuel and the other to return any not used.

An electric ignition system is used to start and stop the functioning of the flame thrower. The current is generated by power from the tank engine.

Section I. MAINTAINING DIRECTION

1. INTRODUCTION

The experience of United Nations troops in the present war has proved the necessity of every soldier's being able to find his way over all types of terrain. The chances of individuals or small groups becoming separated from their units are much greater than in past wars because the use of modern weapons forces a wide dispersal of troops on the battlefield. Small groups also must be sent out on reconnaissance and security missions, and the safety or success of our forces depends on the ability of these groups to find their way back to their units—without much delay.

If you get lost, the worst thing you could do would be to lose your head and get into a state of panic.

Sit down and think the situation over calmly. Where could you have mistaken the way? Were your compass calculations correct? Where could you get back on your route? Nine times out of ten you can discover where you have gone wrong, and find your way back.

This section deals with various ways and means of maintaining direction. Most of the information is based on a lecture given at the British Commando School by Maj. Lord Lovat, the British officer who led the Commando raid against the Norwegian island of Vaagso.[1]

2. WAYS AND MEANS

a. For Day or Night

Most of the practical ways and means to help in maintaining direction may be used at night as well as during the day, provided some form of light is available (and no patrol should ever go out without some form of light).

(1) *Compass.*—The compass is the most valuable aid in keeping direction, although experience shows that it is usually impossible to use it when under enemy fire. It also is unreliable in areas where there are lodestone deposits, as in northern Norway. The compass needle may also be deflected by such local objects as cap ornaments, gas masks held in the ready position, and so on.

An oil compass which is remarkably accurate under all conditions has been developed recently. It can be reset on successive bearings at night without the aid of a light—a great advantage over other compasses.

---

[1] For details on how to use compasses and maps, see chapter 12 of the *Soldier's Handbook.* Another excellent source for additional information on how to maintain direction is a small book entitled *Field Navigation, Part I, Dead Reckoning,* published by the Army Map Service, Washington, D. C.

At night, during bad weather, among mountains, or when under enemy observation, it is usually impossible to unfold and examine a map. It is therefore better to prepare a traverse card giving the distance and compass bearings from point to point along the route. The bearings should be taken off the map with a transparent protractor and then converted. The distances should be measured off the map in yards. By day and by night every man should compare his paces against a measured distance, up and down hill and along the level. Distance can also be checked by estimation of time—for instance, a man may know from experience that he travels at 4 miles per hour on a level road and 2¼ over rough country.

In thick mist, the party, if small, travels in single file so that each man keeps in sight of the man in front of him. The last man takes a bearing and sees that the leader sets off in the right direction (the leader marches on a definite point, or line of points, if visibility allows). The man with the compass frequently checks the distance and, after getting the attention of the leader, signals him to the right or left by pointing. When the leader is on line again, the man with the compass holds his arm above his head. In this manner, a surprising degree of accuracy can be attained, especially if each leg of the traverse ends at some easily recognized place, such as the top of a hill, a small lake or pond, or the junction of two streams. An error of 50° often throws one off only 150 yards to a mile.

(2) *Maps.*—From a map a soldier can memorize a

route by noting the outstanding features, such as ridges and water courses. Much practice is needed in using maps. It is very helpful to work out the easiest route between two places over rough country, and then to follow it exactly to see if it really is the best way. A good map reader can actually visualize the country by examining a map of it. He knows from the direction of a slope what vegetation to expect, and whether a certain route will be dry or wet underfoot.

(3) *Trees.*—The branches of trees grow away from the direction of prevailing winds in exposed countries and their roots are much more prominent on the windward side. Therefore, by knowing the direction from which these winds come, it is easy to determine the approximate position of north, south, east, west, and intermediate points.

In many countries moss and lichen grow only on the north (sunless) side of trees and rocks, and the bark of trees usually is thicker on the north side.

(4) *Wind.*—The wind usually is fairly constant at certain times of the day and year in most localities. One of the best ways to find the exact direction of the wind is to toss up a handful of dried grass or a few loose strands pulled from a woolen garment and allow them to float down. If clouds are used to indicate the direction of wind, only those directly overhead show the true direction. Even then, the wind may be different higher in the sky. In country covered with snow or sand, the angle of the drifts shows the direction of the prevailing and subsidiary

winds. (Always move upwind if possible, because you can hear the enemy better and he has greater difficulty in hearing you. You can also detect suspicious smells better.)

(5) *Marks.*—Following streams or ridges until you reach an area in which you know your way is one method to use if you are lost. If you are searching for your camp, which you know lies on a river or trail in a certain direction that you know roughly, do not try to go directly toward it, but go definitely to one side, so that when you reach the river or trail you will know which way to turn for your camp.

A knowledge of tracking is a valuable asset and provides much pleasure. A good tracker, on suitable ground, can tell exactly what has occurred out of the ordinary. He knows the number and formation of the enemy, the speed of his movement, and many other details that the average person would not be able to determine. If you are following enemy tracks, be careful that they do not lead you into an ambush.

At night there are various points to remember. When a bearing has been taken, it is helpful to hold a whitened (chalked) stick at about 45° as a prolongation of the axis of the compass needle. The stick will cut the horizon at a spot which can then be used to march on. The compass reader then sends out an assistant on the line until he is barely visible. Say, for instance, he stops 160 yards out. The man with the compass checks to see whether his assistant actually is on line, and then proceeds to the new point.

494445°—42——6

From this spot another point on the horizon is selected, and the assistant is directed to go 150 yards in that direction and stop without any signal. The compass reader repeats the same procedure as before, and the group keeps on its bearing—advancing 150 yards at a time. To check the hundreds when counting paces, it is a good idea to carry 10 pebbles or matches in one pocket and transfer one to another at the end of each hundred.

(6) *Altimeter.*—This instrument is useful as a check as long as it is set at a known height. For example, if a man is lost and finds himself at the top of a mountain, at a crossroad, or some other spot which would be shown on the map, a knowledge of the height of the mountain or crossroad would help to identify it on the map.

b. For Day Only

(1) *The Sun.*—The sun, in the Northern Hemisphere, is due south at midday.. Since it moves 360° in 24 hours (15° per hour), the south point can be found if the time is known.

A more accurate method is as follows: Stand a pencil upright. (This can be done by sticking its base onto a penny with sealing wax or wax from a candle.) Draw a circle around it with a radius about as long as the pencil. The shadow of the pencil will fall outside the circle in the morning, will shorten as the sun rises higher, will fall well within the circle at midday, and will lengthen during the afternoon until it cuts the

circle a second time and again falls outside it. Mark the point at which it cuts the circle (this will occur at about 1000 hours and 1400 hours), bisect the line joining these two points, and the true north line will run from the base of the pencil through the center of this line. This method is accurate within a few degrees.

(2) *Sun compass.*—The sun compass is essentially a shadow compass, and must be reset at frequent intervals as the sun's declination changes. It has immense advantages over the magnetic compass for land navigation. Entirely unaffected by its surroundings, it can be made as accurate and precise as the operator desires. It gives true bearings, is easy to read, and is more sturdy. On the other hand, this compass can only be used when the sun is shining and when so mounted that the sun can fall on it unobstructed. Hence the compass is the complement of, and not a substitute for, the magnetic compass. Both must be available for the navigator, who uses the sun compass whenever possible, reserving the magnetic compass for sunless periods.

All types of sun compasses consist essentially of a vertical needle set at the center of a horizontal plate upon which the needle's shadow falls. The sun compass has no deviation, but the direction of the shadow (which corresponds to the variation in the magnetic compass) changes widely, though in a definite way, throughout the day, and at the same time of day from week to week and from one latitude to another. The sun compass, being liable to no errors, has long been used at sea for checking the deviation of the ship's

magnetic compass. The sun's azimuth throughout the day for all latitudes and declinations are given in azimuth tables.[2] The original setting and the corrections on the sun compass are obtained from an almanac.

(3) *Watch.*—If you have a watch, point the hour hand at the sun and bisect the angle between the hour hand and 1200 hours. This will give you true south. (After 1600 hours this angle must be measured in the direction that the hour hand has already traveled.

(4) *Study of Terrain.*—Any group to be sent out over terrain unfamiliar to them should make a careful study on the map of the areas it may cover, fixing in mind the general and prominent features and taking notes on these for study en route. Members of the group should observe the terrain carefully as they go out, in order to become familiar with landmarks or any other prominent features.

c. For Night Only

At night the sense of sound largely takes the place of sight, and the sense of smell may also prove valuable—especially with practice—in identifying the presence of animals, or certain kinds of vegetation, or the vicinity of water. At night, observe and remember the shape of skylines.

Stars are an excellent aid in maintaining direction—the greatest, in fact—and an intimate knowledge of

[2] Azimuth: an arc of the horizon measured clockwise between a fixed point (in navigation, usually the north point) and the vertical circle passing through the center of an object.

them relieves the loneliness and strangeness of solitary work at night. A specialist's knowledge is needed to find direction by the moon and planets.

The pole star is never more than 20 degrees away from True North (the error is at its maximum when a line joining the pole star to a point midway between the two end stars of the handle of the plough, is vertically above, or vertically below, the pole star). The pole star can be seen from the pointers, from Cassiopeia, or—if the north stars are all hidden—from Orion, although Orion is out of sight from May 20 to July 20.

If stars are being used in a compass march, take one at about 30 degrees altitude. If it is low, it may be lost in mist and will disappear if you descend into a valley; and if it is higher, you will get a crick in the neck by constantly observing it. Do not forget that a star is liable to swing in a counter-clockwise direction as much as 15 degrees per hour.

d. In the Desert

One of the most striking resemblances of desert warfare to naval warfare is in the widespread use of navigation. Landmarks are few, and at night even these few are practically impossible to see. Desert navigation consists essentially of setting a course by compass and following it by dead reckoning—that is, by traveling a measured distance. Before commencing a march, the destination is selected on the map, its compass bearing is measured with a protractor, and its dis-

tance is scaled off. The compass bearing is then set on a sun compass, which is mounted on each vehicle.

Distance is measured on the odometer (a mileage indicator), which must be carefully calibrated and kept in adjustment. The odometer is geared for a tire of a particular size. The navigator must therefore check his mileage indicator against a measured distance along a road with mile or kilometer marks, especially when using oversize "sand" tires. He then obtains a correction factor to be applied to all indicated distances. For ordinary work this factor may be small enough to be disregarded. In addition to the above constant-distance error, the mileage indicated by the same vehicle may vary by as much as 2 percent, according to the terrain, the speed, and the load. A good navigator tries to know his vehicle as quickly as possible.

Foot troops measure the distance marched by counting paces or using a pedometer. If a dismounted guide is used, several pace counters are employed. For night travel, a unit can guide on a star, provided the officers and men are trained to identify the stars and planets, and know how they change their positions in the heavens. A pocket chart is useful.

The marking of routes for night marches is accomplished as follows: The route is reconnoitered, during daylight hours if possible, and is marked. Each marker consists of an oil can, set on top of a stake, with a light inside the can. A small slit in one side of the can serves as a marker; the dot of light can be seen for miles to the rear.

Section II. SMALL ARMS ANTIAIRCRAFT FIRE

1. INTRODUCTION

Low-flying air attacks usually have three objectives: to destroy or damage matériel, to cause casualties to personnel, and to create confusion and otherwise affect morale. Whether such attacks are easily accomplished, or difficult and dangerous, depends on the volume and the effectiveness of antiaircraft fire directed against the attackers. Pilots on both sides in this war agree that one of the most difficult missions is to strafe or bomb troops who steady themselves and let go with every type of gun that will point upwards at the attackers. Extremely distasteful to attacking pilots is a stream of tracer bullets just ahead, in the path of their planes. Experience has shown that a good many pilots will turn rather than go through such a stream, while only a few can face it with sufficient coolness for accurate strafing or bombing.

2. TACTICS USED BY THE BRITISH

British small-arms or light antiaircraft fire has five main objectives, as follows:

a. To inflict casualties on enemy aircraft;

b. To maintain the morale of their troops;

c. To protect vital points in the areas they occupy and their communications facilities;

d. To prevent or reduce the effects of low-flying and dive-bombing attacks; and

e. To protect columns of troops and matériel, or entrucking and detrucking areas.

Motor trucks in columns are usually the most vulnerable targets to low-flying air attacks. Realizing this, the British maintain a wide interval between trucks while in movement and a wide dispersion of them while at a halt. Off roads and in open country, their trucks move in several columns, more or less abreast.

Constant observation for enemy planes is maintained by all units. Since the planes attack at a high rate of speed, only a few seconds are available to get set for counter fire. Generally, the number of air observers used depends upon the tactical situation. In a moving column, each vehicle is required to have an observer. These observers should be well trained. It is extremely difficult to determine whether planes are our own or enemy aircraft. Hostile markings are a sure guide, but these are visible only when a plane is passing fairly well overhead. Careful studies should be made of silhouettes, because they probably are the most dependable means of quick identification.

As a precaution while at a halt, the British always mount two antiaircraft light machine guns in each

sub unit and in each unit headquarters. Crews stand by in readiness for action.

Repeated short blasts of a whistle denote an air attack.

If attacked while in movement, all vehicles are halted—unless orders to the contrary have been issued. If the column is under orders to keep moving, all light machine guns open fire. Otherwise, all personnel get out of the halted vehicles, disperse, and open controlled fire at the hostile aircraft. If time permits, it is always a good idea to dig slit trenches for personnel while at a halt. All small-arms weapons are used when the planes come within range. The fire is controlled by platoon commanders—in some cases, owing to wide deployment, the control is under section leaders. In no case are troops allowed to take cover without resisting the attackers.

Experience has taught the British that small-arms fire is most effective against dive-bombers when they are diving towards the weapons or pulling out of a dive. At these times the pilot is unprotected by armor. During this period only 3 or 4 seconds elapse, so speed in opening fire is a major essential in successfully combatting the attackers.

3. TACTICS USED BY THE GERMANS

German ground forces attack hostile low-flying planes with every weapon which they can point at them. This combined fire of many types of guns is very intense. Use of tracer bullets by some of the machine guns is

calculated to increase greatly the effect of the firing upon the morale of the attacking pilots.

Besides taking the usual safety measures involving dispersal, cover, and camouflage, the Germans have an elaborate air observation system.

4. TACTICS USED BY THE RUSSIANS

A captured German order describes the effectiveness of the Russian light antiaircraft defenses. Extracts from the order are quoted, as follows:

"During the past 2 months (January and February, 1942), it has been found that our loss of planes from small-arms ground fire has been exceptionally high. In one of our air units which supported a ground attack, the loss from enemy small-arms ground fire was 50 percent. The reason for this lies in the well-organized Soviet antiaircraft fire. Our aviation units have made the following observations:

"a. Every Soviet ground unit attacked by our aviation opens fire on our planes with rifles and other infantry weapons. The probability of hits on a small target by widely distributed ground fire is very great.

"b. As sonn as Soviet cavalrymen are attacked, they dismount and fire from a standing position with their rifles placed on the saddles. The infantrymen lie on their backs and fire.

"c. Mortar fire is also used. I do not point this out as an example to be followed but to explain that the Soviets fire on aircraft with all weapons used by ground troops.

"d. The Soviets place light and medium antiaircraft artillery, transported on sleds, at the head of the column."

5. EFFECTIVENESS OF FIRE

Carefully aimed small-arms fire at the proper time against low-flying planes almost always damages the aircraft, and frequently it causes casualties to the flying personnel. The results usually are not apparent to those conducting the fire on the ground because of the speed of the planes. Even if a plane remains in the air only 30 seconds after being hit, it will fly 2 or 3 miles before falling. Therefore, the ground forces should not be disappointed if planes fly away apparently unhit. Few planes vigorously attacked are able to escape at least minor damage. Every attacking plane not shot down has to be checked thoroughly after reaching its base. Not only must all serious damage be repaired but every bullet-hole must be patched and a search made for any hidden damage. Frequently parts must be replaced and sometimes new motors must be installed. All this takes time and requires labor. In the meantime, these planes are grounded and are not available for combat.

Section III. DUST

1. GENERAL

Military units operating in desert country or in regions which lack moisture in certain seasons soon find that dust is an aggressive enemy of men, vehicles, and weapons. Opposing forces engaged on such terrain discover that each faces an additional foe. Since in this global war it has been impossible to avoid operations in dust-ridden areas, and since the conflict may move to new theaters, equally dust-ridden, it is to a soldier's advantage to know as much as possible about the "capabilities" of this natural enemy.

2. EFFECTS ON MAN

When finely powdered dust is inhaled, it is likely to stick to the sensitive mucous membranes, drying up the natural moisture and forming hard crusts. Similarly, when dust enters the air passages of the throat and lungs, it serves as a sharp irritant, causing mucous accumulations and coughing. If the dust happens to contain such dangerous micro-organisms as the colon

bacillus, various cocci, or tetanus, infection may be expected to result.

3. EFFECTS ON MOTORS

a. External

The erosive action of dust and sand on tires and rubber parts shortens the effective life of these articles from one-half to four-fifths.

Marked injury to vehicles can result when dust sticks to oiled bearing surfaces, such as springs and shackle, axles, bushings, and so on. United Nations troops have learned to guard constantly against this in such regions as North Africa and parts of India, and to take thorough counter-measures—especially in the case of vehicle parts which, by their constant close fit, insure long life, safety, or precision.

b. Internal

Even the most modern air filters fitted to automotive vehicles do not eliminate entirely the dust and grit particles in the intake air. The modern air-cleansing devices capable of delivering absolutely dust-free air to the engine would take up more space than is available under the average automobile hood.

Road dust has an abrasive action which causes serious and rapid wear on the pistons, rings, cylinder walls, and valve mechanism, resulting in excessive oil and gasoline consumption.

United Nations personnel have found the following countermeasures effective when motor vehicles are operated in heavy dust:

(1) Frequent cleaning and flushing of air-filter elements;

(2) Elimination of dust, sand, and grit particles accumulated in the crankcase system by more frequent oil changes, accompanied by thorough flushing of the engine with a light-bodied oil;

(3) In the case of gasoline engines, the addition of an upper-cylinder lubricant to the gasoline;

(4) For chassis lubrication, the use of a substantial-bodied, stringy grease, with a high melting point, which will stay put even under very high temperatures.

4. EFFECTS ON OTHER EQUIPMENT

In dusty country, arms and weapons of all sorts, from the pistol to the artillery piece, wear out faster than elsewhere unless continually maintained. Cloth and leather are worn out by abrasion in one-tenth to one-fourth of the normal time.

5. EFFECTS ON OPERATIONS

Operations by mechanized units in heavy dust and sand storms may be compared with night operations. Direction-finding and identification are made difficult, but withdrawals are made easy. Artillery fire by direct laying is restricted because of the muzzle blast. The location of artillery observation posts requires extra consideration. Strategic moves often are made with-

out disclosure, but close-in attacks by tank are generally considered unprofitable. Although infiltration by various types of units is possible, surprise can be double-edged, since the enemy may choose to follow similar tactics.

In heavy dust areas each vehicle moves in its own small dust storm. Surprise is impossible and offensive maneuver difficult. The artillery is hampered, especially in direct firing, and all vehicles generally move at increased distances apart and down wind from occupied points.

In any case, operations are slowed down considerably, not only because of low and intermittent visibility, but because of the time-out required for the maintenance, recovery, and repair of vehicles.

"If we know a thing, we know it; but very often we are not wise to the fact that we are wise."

—O. Henry

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1942