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FMFRP 12-9

Jungle Warfare



U.S. Marine Corps

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DEPARTMENT OF THE NAVY
Headquarters United States Marine Corps
Washington, DC 20380-0001

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FOREWORD

1. PURPOSE

Fleet Marine Force Reference Publication (FMFRP) 12-9, *Jungle Warfare*, is published to ensure the retention and dissemination of useful information which is not intended to become doctrine or to be published in Fleet Marine Force manuals. FMFRPs in the 12 Series are a special category of publications: reprints of historical works which are not available elsewhere.

2. SCOPE

This reference publication was compiled by veterans of combat in the Pacific jungles in World War II as a training manual. It will help the reader to understand the effects of jungle terrain on military operations.

3. CERTIFICATION

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS



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MARINE CORPS SCHOOLS
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“Jungle Warfare” is herewith issued for use in The Marine Corps Schools.

Comments and criticism are invited for inclusion in subsequent editions.

C. B. CATES,
Brigadier General, USMC,
Commandant, Marine Corps Schools.

PREFACE

“Fools say they learn from experience; I prefer to learn from the experience of others.”—Bismarck.

The contents of this pamphlet are based on the experiences of many Marines of all ranks who have fought in the jungles of the Philippines, Guadalcanal, New Georgia, Bougainville, Choiseul, and New Britain.

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JUNGLE WARFARE

CHAPTER I

TERRAIN, VEGETATION AND WEATHER

The jungle fighting in which we have participated in this war has for the most part taken place in the coastal areas of the South Pacific Islands. Our objectives have been the seizure of air fields or of sites suitable for development as bases for further operations of our ground forces and our air and naval craft.

During the first two years of war New Guinea has been the only area in which we have fought in the mountain jungles. However, the terrain difficulties and the character of vegetation place similar restrictions on military operations regardless of whether they are carried out in the coastal jungles or in hilly, rolling or mountainous country.

While operating in coastal regions of a tropical island, several sorts of terrain and vegetation will be encountered. There are cultivated areas largely given over to coconut plantations. These generally have a few fair coral tracks running through them. The tracks are of crushed coral and are from six to eight feet wide. Movement and visibility in the plantations are normal. The fronds of the trees give partial concealment from air observers. Air fields are easy to construct on the site of coconut groves for the ground is quite flat. (Henderson and several other fields on Guadalcanal as well as Munda on New Georgia were formerly small parts of large coconut plantations).

The coastal shores, the lagoons, and the inlets are often fringed to varying depths inland with dense mangrove, the roots of which are covered at high tide. The twisting roots, the mud, the coral outcroppings and the maze of low branches make such areas very difficult and dangerous to traverse. Landing against a mangrove shore with personnel boats is not a feasible undertaking for large forces. Even if it were, it would be most difficult for units to get through the mangrove and still retain any semblance of order or the ability to fight as organizations.

Inland from the mangrove swamps, the coconut groves and the stretches of jungle that fringe the coast line, there are often found, before the foothills are reached, relatively level meadows of kunai grass. This is a strong, coarse, thick grass that may be anywhere from three to nine feet in height. While crossing a patch of kunai grass progress is slow and laborious and movements of the grass betray one's presence to enemy air observers or to enemy observers perched in trees at the edge of the jungle surrounding the grassy areas. Passage across kunai fields in the daylight is always to be avoided.

As one progresses still further inland he finds precipitous razor-backed coral or volcanic ridges, sparsely covered with vegetation, rising toward the mountains. Because of the precarious footing these ridges are difficult to negotiate. They offer neither cover nor concealment.

The three types of growth mentioned cover the smaller part of a jungle island. The remainder of the island will usually be covered with a very heavy jungle growth in which there will be found vegetation of all types and trees of all sizes. When the growth permits light to get through, the tangle of bush will be impenetrable and cutting will be necessary off trails or tracks. The growth is particularly heavy in valleys and tends to thin out as the elevation increases. This is uncut, virgin or primary jungle. In some places, the trees may reach heights of eighty, ninety or one hundred feet or more and a complete leaf canopy prevents the sun from striking the ground. This is "rain forest." The undergrowth is thin and an ordinary hunting knife will suffice to cut the occasional vines and creepers that may be in the way.

Frequently in the jungle there are large swampy areas, and the low lying ground is always muddy. The swamps may be from ankle to thigh deep. Usually they are about knee deep and the mud is very heavy and thick.

If a patrol were to cover a march through the types of terrain that have been described, it might start with an hour of easy going along a smooth coral track that runs through a coconut grove. After passing through the coconut grove, the patrol might be required to go inland for some distance. Perhaps for half an hour the patrol forces its way through kunai grass that is over the heads of the men; it then climbs one or two precipitous and slippery coral ridges that lie across its route; next, it descends into a jungle—a solid wall of undergrowth, vines and creepers. (All jungle vines have one attribute in common—nature has equipped them with thorns that tear the skin and rip the clothes). Perhaps it takes an hour to cut through three hundred yards of this. Next the patrol comes to a swamp about five hundred yards in width and from calf to knee deep; after negotiating this muck comes a short tour of about half a mile through the mangroves that border the lagoon which is the patrol's destination. The patrol may cover three and one-half miles in five hours. The first two and one-half miles of the distance were probably done in about an hour over the coral track. Consequently, for the last four hours of its trip the patrol has averaged no better than a quarter of a mile an hour.

During its march the patrol has not been moving through atmosphere that is air conditioned. It may have started out in the morning under a hot sun blazing in a perfectly clear sky but it will in all likelihood march the last half hour towards its destination in a torrential downpour.

It should be obvious from this brief description that terrain and weather are determining factors in jungle warfare. They combine to limit the movement of foot troops and to make the movement of tracked and wheeled vehicles impossible except on roads and tracks.

The effects of the heat, the perennial dampness and the rain on the health of the individual must be taken into account. Malarial mosquitoes, dysentery and tropical ulcers are ever-present dangers. Heat prostrations and cases of sheer physical exhaustion are common. Loss of weight due to unusual exertion and dietary deficiencies must be expected.

CHAPTER II

THE EFFECT OF THE JUNGLE ON OPERATIONS

1. **The Jungle Limits Movement.**—a. All movement in the jungle is calculated in terms of time rather than distance. The problem is how long it will take to get from A to B rather than how many miles it is between those places. Mileage is purely an academic consideration.

b. Because of poor trails or the complete lack of them, difficult terrain and mud, the movement of troops on foot is slow. Generally there can be no movement of tracked or wheeled vehicles larger than the one quarter ton truck until the engineers have improved tracks and trails.

c. Flank security elements can not be expected to maintain a normal rate of march when operating off trails in thick jungle. They will be required to cut and will not be able to keep pace with elements moving on a trail. When flank security is essential (as it is when contact is probable) the security groups will have to cut continuously. They can expect an average progress of about a quarter of a mile an hour. The position and rate of advance of flank groups can be determined by the noise of their cutting or by periodically sending out small patrols to contact them. The necessity for frequent relief of flank security detachments will occasion frequent halts.

d. Supporting weapons and their ammunition can not be moved over jungle trails at the same speed as that at which ground troops move. If artillery is required to move over trails to support jungle operations the speed of troop movement must conform to the speed at which artillery can be man-handled or packed, otherwise the foot columns will soon leave this supporting weapon far to the rear.

e. The movement of tanks is seldom possible in heavy jungle unless they can move over prepared routes. They may be used to advantage where terrain permits their free movement. Normally they are restricted to coconut groves, beaches, grass covered fields, tracks or improved trails. When operating under these conditions they are vulnerable targets for well organized antitank defenses. When tanks are used they must be closely supported by foot troops to protect them from enemy tank destroyer parties.

f. Primary sources of supply may be by air drop; by native or Marine carrying parties, or by boat or canoe. These means may also have to be used in the evacuation of our wounded. All of them have been used in the past very satisfactorily.

2. **The Jungle Limits Observation.**—a. The efficiency of the air arm in direct support of ground troops is strictly curtailed. The complete leaf canopy prevents pilots from seeing

troops on the ground; the troops are often unable to catch more than fleeting glimpses of the planes. Pilots can not see panels laid out on the ground; it is often impossible for them to see panels or strips displayed in the tops of trees. Colored smoke pots placed on the ground have been used to indicate the position of ground troops but the rapid diffusion of the smoke renders them impractical. Smoke pots or smoke grenades to which lines are attached may be thrown into trees. There is now available a "tree top" smoke grenade which is believed to be satisfactory.

b. Artillery in support of ground troops is seriously handicapped by lack of observation. In the jungle the artillery habitually uses forward observers to control supporting fires. The forward observer teams conduct fire from most advanced positions. They may be in trees or prone on the ground. They sometimes are unable to see the bursts. In such a situation they control the fire by sound spotting or sensing; that is, they bring the impact area to the target area by sound. Sound sensing is an expedient. When registration by high burst, W.P., or other visual means is possible, these means are preferable. Artillery can and does fire unobserved fires from maps or air photos. Artillery, firing unobserved fires, the data for which was based on maps or photo maps rendered effective support on several occasions on Guadalcanal.

c. The fire of heavy mortars is controlled in a manner similar to that described for the artillery.

d. Light mortars will always be used provided there is a gap in the canopy overhead. If there is no gap and one cannot be cut, it may have to be created by firing into the canopy using super quick fuze. This is exceedingly dangerous to our own personnel, but it has been done in cases of emergency.

3. Jungle Conditions Result in Loss of Control.—Difficult terrain, the almost complete lack of roads, trails and bridges, restricted visibility, and bad weather all directly effect the control that can be exercised by a leader over his units.

Parallel movement of the various elements of a command in thick jungle is most difficult. Parallel trails with occasional lateral connecting trails do not exist.

A jungle march from point to point will in almost every instance be made over a single trail in a column of files. In concrete terms, if a battalion of 800 men moves with three yards of distance between men, it will take up almost a mile and a half of trail space. Wire has been strung on the march, units clipping in with a telephone at each halt. The necessity for radio silence bans the use of radios. Even if radio silence has been lifted the dense foliage and the irregularity of the terrain make communication by ultra-portable radio unsatisfactory. The same conditions make control by semaphore impractical. Exercise of control by passing "the word" is slow and even in small and well trained commands

is subject to error. Runners are the most practical means of communication but it is a real task for a runner to get from the middle of a moving column to its head.

It is no particular problem for a runner to move two hundred yards over the type of ground and through the type of vegetation that we have in this country, or that is generally found in Europe, North Africa, or China. It might easily take the runner a quarter of an hour to cover this distance over a slippery, narrow trail in the jungle.

Squad and platoon leaders are faced with problems of communication and control on a smaller scale. When a squad on a jungle trail covers thirty to fifty yards and a platoon from one hundred and fifty to two hundred loss of control is unavoidable. The only way this can be rectified is to make formations more compact, to decrease distances, and to have platoons and companies move as units. When any part of a unit moves off the trail and the leader loses sight contact, he has lost a great measure of control.

4. The Jungle Limits Opportunities for Reconnaissance.—Map reconnaissance should precede a movement in a jungle area—if maps are available. In the Solomons no accurate detailed maps were available. We may hope for fairly accurate maps in the future when we operate in other areas. To state that a map reconnaissance precedes a jungle operation is misleading when no accurate maps are to be had.

Reconnaissance by air photos including mosaics and strips is valuable in that such natural features as rivers, lagoons, inlets, off-shore coral formations, and such works of man as coconut plantations, native gardens and villages are clearly delineated on them. Vertical photos, however, will not reveal terrain details hidden by a solid jungle canopy. Obliques will reveal the contours of the ground though not to scale and with considerable distortion. The most indispensable types of air photos are stereo-pairs and vectographs and valuable information of the terrain and ground forms can be gained from a study of them. Engineers are now equipped to make vectographs.

Ground reconnaissance should, when possible, precede an attack in the jungle. If scouts are properly trained this is feasible. The extent of the enemy position must be determined before an attack can be launched against it.

It will not always (in fact, it will rarely) be possible to determine the nature of his defenses, that is, the state of their development, but the extent of his defensive area can usually be determined. This requires constant, alert, intelligent, and aggressive patrolling. Patrolling must be continuous, for the enemy is quite as capable of making daily changes in his dispositions as we are. In most cases, his day and night positions are not identical, except where defenses are highly developed as at Buna or Munda.

5. **The Jungle Provides Concealment.**—The jungle afford concealment for offensive movements and for defensive positions. It affords the same degree of concealment to the enemy as to us. For this reason surprise is always possible in the jungle.

The undergrowth and the dim light of the jungle favor stealthy movement of attacking forces without detection to assault positions.

The exact "fixing" of enemy defensive installations is a most difficult task.

6. **The Jungle Limits Fields of Fire.**—Because of the undergrowth and the rugged terrain, it will never be possible to realize maximum potential fields of fire for weapons and it will be a waste of time to try to find ideal positions, for none such exist. Practically, a field of fire about 100 yards in length will be the maximum that can be expected for machine guns and automatic rifles; a field of fire of fifty yards will be average. Fields of fire for individual riflemen are strictly limited.

CHAPTER III

THE NATURE OF JUNGLE WARFARE

There are no "Blitz" campaigns in the jungle. The conditions that limit the operation of self propelled artillery, tank destroyers, weapons and troop carriers, and the tracked and wheeled vehicles that have played such an important part in other theaters of war are apparent.

The pattern of jungle fighting is one of many small combats in which groups, squads, parts of squads, automatic weapons teams, and platoons strive to eject the enemy from his positions. The small units are armed with rifles, bayonets, carbines, hand grenades, flame throwers, automatic rifles, light machine guns, light mortars, antitank grenades, "bazookas", pistols, shot guns, knives, sub-machine guns, and demolitions. These are all weapons carried on the backs of the men who fight with them.

Battalion, regimental, and division commanders, because of lack of observation, difficulty of movement and far from perfect communications, can not retain close control of an action.

Jungle warfare demands the highest qualities of leadership of all officers and noncommissioned officers. Leaders must be aggressive and resourceful. The quality of initiative is at its highest premium in the jungle. This is particularly applicable to the leaders of small units, of platoons, of squads, and of groups within squads.

Except when units are acting independently, supporting artillery with forward observer parties to control fire, will assist in the attack, as will heavy mortars. It may be necessary to hold up an attack until artillery and heavy mortars can be registered. This will be done when artillery support is essential as in the reduction of a system of enemy bunkers or pill boxes, with which small infantry units can not cope with their organic weapons. Artillery and mortars are "man savers", but in order to profit from the effect of their fires troops must be trained to close with the enemy immediately after barrages have lifted. If there is a delay in the assault the enemy will have time to recover from the shock of the high explosive bombardment and will be able to man his automatic weapons effectively.

Opportunities to use tanks in jungle country will be comparatively rare. In one jungle operation the type and organization of the enemy defensive system was such that tanks proved to be the only effective means of getting at the pill boxes to destroy them. Roads were cut and corduroyed by engineers protected by ground troops and tanks were moved up as closely as possible to the front lines before the attack. When the time factor permits preparation of roads by the engineers,

tanks can be used. Flame throwing tanks have been used with success. No matter how or when used they must be supported closely by foot troops. The necessity for close support must be constantly stressed. The Japanese state of our tanks: "They operate independently and there are many chances to take advantage of this tendency."

Since pilots are unable to see through a jungle canopy, aircraft are unable to realize their full potential in close support of attacking ground troops in the jungle. Aircraft can and do carry out preparatory bombing and strafing missions but because it is difficult to indicate a spot jungle target to the pilot by signal or to describe it to him by radio, he can do no better in most cases than to bomb an area. Area bombing can be controlled and the safety of our own troops assured by the establishment of daily bomb lines. This type of bombing is effective provided the area is not too large and the concentration of high explosive can be made heavy. Located ground targets can be pointed out to aircraft by the use of smoke shells fired by the artillery or by mortars.

It is not often that the 37mm gun (a direct fire weapon) can be used to assist the attack. To manhandle this gun into a position from which it can fire effectively on enemy bunkers or pill boxes requires in almost every instance the exposure of the gun and the crew. The gun is not sufficiently mobile for the infantry to move it along with them. For these reasons its use is limited in attack situations. In the defense, firing canister ammunition, it is indispensable. (See "Defensive Combat").

The jungle affords opportunities for surprise both in the attack and the defense. It may often be possible to get at the enemy before he knows of your presence. On the other hand our forces may be very close to him before we realize that fact. This should never happen if our security is functioning properly.

Jungle combat consists essentially of the coordinated action of small groups of infantry armed with the weapons they are able to carry on their backs. Once they engage in close combat, conditions will not permit them to receive much help from heavy supporting weapons.

Before the infantry men can overcome the enemy they must overcome the jungle.

CHAPTER IV

THE JAPANESE ENEMY

7. Some Characteristics of the Japanese.—a. Before entering jungle combat, troops must be told something about the enemy they are to face, his background, his tactical methods, the weapons with which he is equipped and the way he employs them.

b. The Japanese is fanatical and well disciplined, but he is by no means a superior soldier. We have already proved that we are better. Our men are no less courageous, and they are far superior to the Japanese in initiative, ingenuity and the ability to think and act quickly.

c. The most effective light weapon the Japanese have is the Nambu or similar type light machine gun. Their latest light machine gun is caliber .303, but this model does not differ in any essential respect from the earlier Nambu caliber .256. The weapon is mobile and reliable. Present organization provides the equivalent of one to three per squad. The Japanese move their light machine guns frequently. A light machine gun will not fire repeatedly from the same position. Often the light guns are worked around flanks where the gunners take positions in trees. Light machine guns in trees are difficult to locate, for the Japanese is adept at the art of personal camouflage, and the gun has but little muzzle blast.

d. Japanese machine gunners have not been thoroughly trained in the advantages of manipulating their weapons in traverse. As a consequence their light machine gun fire is usually fixed. They are inclined to fire high, the trajectories often being from two to four feet off the ground.

e. In the defense, in addition to other missions assigned light guns, the enemy will use them to protect his heavy machine guns. When a heavy machine gun is definitely located it is reasonable to assume that there are one or more lights nearby, even if they have not yet disclosed themselves. They will not disclose their positions until the target is at close range and they can take full advantage of surprise fire.

f. LMG's will be located on the flanks of a heavy gun so as to fire diagonally across its front. One or more of the light guns may be in trees. See Fig. 1.

g. Japanese training manuals stress the necessity for flanking action, and the enemy will almost always try to flank. In a meeting engagement, it is a question of beating him to the punch. All leaders must be prepared to act decisively and speedily in a meeting engagement.

h. When the Japanese is surprised he becomes jittery and disorganized. The advantage gained by surprising him must be followed up immediately. If the Japanese is allowed

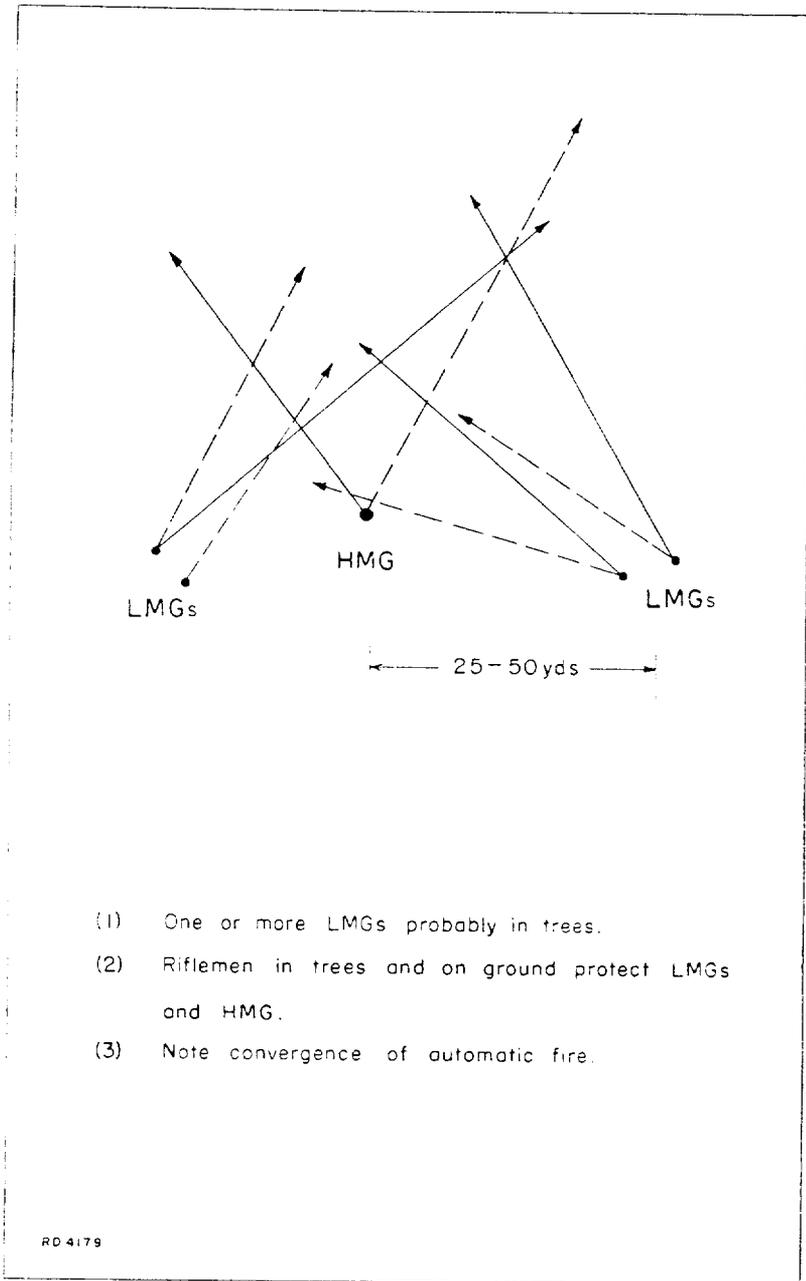


FIGURE I — Automatic Weapons Pattern, Hasty Defense

respite for reorganization, he will prepare a second hasty position. He will cover his reorganization with mortar fire which is generally quite accurate. Accordingly, when the Japanese has been driven from one hasty position, he must not be given time to reorganize and to dig a second one. If he is, it will prove to be as difficult and costly to move him out of the new position as it was to eject him from the first. The Jap is a very fast man with his shovel.

i. Japanese are careless in regard to their security, particularly during movement over trails. They tend to bunch up and to jabber. Their trail discipline is poor. If our patrols are alert and vigorous, they will have opportunity to ambush Japanese patrols and supply parties.

j. Many Japanese speak enough English to call out such questions as "Where are you?", "Where is the Captain?", or to use a password they have overheard. They have been known to call out "Gas" in an attempt to frighten our troops. They have answered "friendly troops" in reply to challenges of sentries. Men must be alert not to compromise their positions by replying to questions unless they recognize the voice of the speaker.

8. Japanese Attacks.—a. Coordinated attacks by the Japanese during the hours of daylight are rare, but he will always launch local counterattacks to escape from a trap or to regain a lost position.

b. The main effort in night attacks will be directed at easily identifiable terrain features.

c. Diversionary attacks by small groups can be expected anywhere.

d. In preparation for an attack, the Japanese will use grenade dischargers, mortars, flares, and artillery if available. During this period, our troops should maintain absolute silence and observe strict fire discipline. Our artillery and heavy mortars should fire concentrations on likely assembly areas previously plotted.

e. Small enemy parties will attempt to breach our wire, either under the cover of the preparatory fires or immediately after they lift. In the latter case the enemy in rear of the wire cutting parties will attempt to distract our attention by screaming, random firing, crashing about in the jungle and firing off flares. Our troops must be vigilant to discover small wire cutting groups. They should be taken under fire by riflemen and mortars.

f. The assault will be characterized by a great deal of jabbering and screaming. The enemy will use mass formations to maintain control and bolster morale. As soon as the enemy launches the assault (or prior to it if his movement toward our positions is discovered) the target area should be illuminated.

g. All available weapons open on the enemy when he assaults. As soon as the attack has been **stopped** counterattacks will be launched. Local counterattacks will inflict heavy casualties on him if he is hit before he has a chance to reorganize.

h. The following quotation represents Japanese teaching in connection with launching assaults:

“Consider the following possibilities in connection with launching assaults:

(1) Attract the attention of hostile forces from the front by the use of smoke, by firing, or by shouting; then assault from another direction.

(2) Wait until darkness to assault, particularly if nightfall is only 20 to 30 minutes off.

(3) Make use of rain or fog, and assault when the enemy is off guard.

(4) Assault when the enemy's attention is diverted by our bombing operations.

(5) Assault suddenly over terrain which the enemy believes to be impassable, such as cliffs, rivers, streams steep inclines, and jungles.

“During assaults, be especially careful not to group together at vital points, such as hilltops, villages and bridges. These are excellent targets for hostile machine guns, artillery and bombing.”

CHAPTER V

TRAINING FOR JUNGLE COMBAT

9. **General.**—To be prepared for jungle fighting, the Marine must be trained technically, tactically and mentally. His nervous system must be prepared for the shocks it will receive in the jungle. This preparation might be called psychological training. Essentially, training for jungle combat does not differ from the type of training necessary to prepare the Marine for combat in any area.

All Marines must receive basic jungle training. This applies to service troops, ground aviation personnel, aviation engineers, pioneers and others.

10. **Technical Training.**—The Marine must be trained in the use of all arms organic to the infantry company. He must receive thorough basic instruction and continuous practice in the following weapons: rifle, automatic rifle, carbine, hand grenades and antitank grenades. He must receive comprehensive indoctrination (which should include both instructional and field firing) in the light machine gun, the 60mm mortar and the "bazooka". He must know how to field strip and assemble the weapons that have been mentioned, and how to recognize and reduce stoppages. He must understand the functioning of these weapons. He must be familiar with their capabilities and limitations as to range, rate of fire, accuracy and destructive effect. He must know what spare parts and accessories are necessary to keep these basic weapons in operation, and how to use the accessories. He must know how to clean and how to care for the basic weapons.

It is essential that he know how to fuse and cap high explosive charges and how to apply them.

Instruction must be given in the use of fragmentation, smoke, and thermite grenades. All personnel must be trained to throw hand grenades **accurately**. After initial instruction, all throwing practice must be carried out in uneven and wooded terrain with men throwing from behind logs and stumps and from fox holes and trenches. The essential requirement is accuracy; distance is secondary.

The necessity for conservation of ammunition in battle must be stressed in training. It becomes second nature to a man to use ammunition wisely. Fire team and squad leaders must constantly be alert and control fires during training exercises. The exercise of rigid fire discipline will be essential in action and must be emphasized in training.

A minimum of three men per squad (one per team) should be qualified flame thrower operators.

Jungle combat often requires quick shooting, as targets will normally be visible for only a second or two at the most. Men must have training in getting their pieces to the shoulder

rapidly to fire from an off-hand, kneeling or prone position. If ammunition allowances permit, all personnel should be trained to fire from the hip.

The Marine must be taught to study the ground so that he will realize what protection it can offer him and how to utilize it to his advantage and to the disadvantage of his enemy. He must understand the technique of concealing himself by use of both natural and artificial methods.

He must know:

How to dig fox holes, entrenchments, and emplacements, and above all how to camouflage them.

How to advance by crawling and by creeping.

How to pass under and over wire.

How to use a compass.

How to read a map.

How to swim.

He must be given a thorough course in field sanitation and personal hygiene, and he must be disciplined if he violates the requirements of either.

He must be taught elementary first aid.

The basic technical training of a Marine in a rifle company is not complete until he is capable of instructing other Marines in any of the subjects that have been mentioned.

All troops must be trained to use enemy rifles, light machine guns, heavy machine guns, light mortars and hand grenades. It is particularly important that men hear both the light and heavy machine guns fired. These two guns (particularly the light) are the framework of Japanese defensive positions. If the men can hear these guns fired they will learn to recognize them by their sounds and their cyclic rates and to distinguish them from our own.

Enemy antitank and antipersonnel mines and common booby traps should be shown and demonstrated.

11. Tactical Training.—The Marine must be trained in the tactical use of his weapons. In the jungle, fields of fire are limited and men must learn where to emplace automatic weapons to get the most from them. Machine guns and automatic rifles, whenever possible, should be positioned to fire through gaps between attacking units and from the flanks as long as they can do so without endangering the advancing troops. Jungle conditions rarely permit overhead fire.

Automatic riflemen and machine gunners must realize that in attack they may have concealment, but will have little cover. Therefore, they can not hope to remain in the same position to fire more than two or three bursts. Machine gun crews must learn to move their weapon to an alternate position in a matter of a few seconds. Automatic riflemen must learn how to move quickly, from one position to another.

In the defense, the weapons must be placed so as to lay down bands of fire across the front of units to the right or left. Generally, machine guns and automatic rifles should be placed low to cover most likely avenues of approach, but some automatic rifles should be placed in trees.

Men must learn how to conduct themselves on the trail and how to move quietly. They must become imbued with the realization that violations of trail discipline often mean the difference between success and disaster.

Tactics of the squad and platoon, with particular emphasis on the squad and groups within the squad, must be repeatedly explained, demonstrated and applied in both day and night training.

While the foregoing is applicable to training for war in any theater, in jungle warfare the individual and the small group are such important factors that their training must be emphasized if necessary at the expense of that of the unit training of higher echelons such as battalions, regiments and divisions. If the squads are good, the regiments and divisions will be good.

12. **Physical Conditioning.**—Men who are not in the best of physical condition can not hope to last in the jungle. Continuous emphasis must be placed on physical conditioning. Officers and men must follow a strict régime designed to increase stamina. In the final periods of training, all work should be in the field. Swimming has proved one of the best of all around exercises, and in most training and staging areas, facilities exist for swimming. Obstacle courses can be constructed of materials locally available.

13. **Mental Training.**—a. This proceeds hand in hand with tactical and technical training. The Marine must be taught to understand the meaning of the word "discipline" in its many applications, such as "malaria discipline", "trail discipline", and "fire discipline". He must understand what is called "administrative discipline", which is care of his clothing, equipment, weapons, ammunition and the spare parts and accessories for the weapons. The necessity for conserving food, for taking atabrine, for using the mosquito net, for keeping himself clean, for not keeping a diary, for strictly carrying out all field sanitation requirements, for immediately turning in all documents and papers, for camouflaging his fox hole, and for scores of other measures must be explained to him, and he must understand that the requirements of discipline in these cases will be rigidly enforced.

b. Under most circumstances souvenir hunting is a serious violation of military discipline. Under all circumstances it is an extremely dangerous pastime. A man who is injured by the explosion of an enemy mine or booby trap while searching for souvenirs has endangered his own life and that of his comrades.

c. Men must be trained to be alert, to think, to act. They must have it constantly drummed into them that when they are confronted with a battle field situation there is nothing worse than to do nothing. The Jap has demonstrated repeatedly that he is at a serious disadvantage when confronted by an opponent who thinks and acts quickly.

d. Cultivation of the senses of sight and hearing is a part of mental training. In all training, the cultivation of perception must be stressed. Because visibility in the jungle is low, a man must often primarily depend on his senses of hearing and smell rather than on his eyes.

e. Marines must be taught the necessity for silence. Many, many Marines are dead today because they talked when they should have been listening.

f. Instruction must be given about the Japanese so that the men will know something of the people they are fighting, the weapons they will encounter and the tactics and ruses that will be used against them both in the attack and in the defense. (See Chapter IV, "The Japanese Enemy.")

14. **Psychological Preparation.**—This is a phase of training that is extremely important and is often overlooked. Training problems must involve the use of plenty of live ammunition. During night training exercises, flares, fire crackers, blanks and explosive charges must be used. This will assist in adjustment of the nervous system to battle conditions.

The jungle (without the added complication of an enemy who is there for the particular purpose of killing Americans and our Allies) is forbidding to those whose acquaintance with it has been restricted to public parks. A night spent in the woods in a fox hole under conditions of complete black-out is a new experience to most men. Psychological preparation for the jungle should include training under such conditions in thick or wooded country. If no jungle training areas are available, the jungle must be described. Motion pictures depicting jungle action are available and should be shown. This will help prepare men for the jungle, and it will not be entirely strange to them when they first see it.

Japanese snipers are dangerous but overemphasis of them must be discouraged. The average Japanese soldier is a poor shot. The men selected as snipers are better, but they do not approach our standards of marksmanship. They must be hunted down and destroyed by sniper stalkers working in teams. Sniper stalkers work independently of a column movement.

During field training, men should be required to carry their arms with them at all times; while they are in the chow lines, while they are attending sick call and when they are called before the commanding officer. This helps develop the idea that the weapon is part of the man and belongs to him as much as his arms or legs do.

The quality of patience must be developed. This is not a characteristic with which Americans are endowed. On the contrary, most Americans are too impetuous. However, it is a quality that is necessary in jungle warfare, and men can be trained to be patient. This quality should distinguish scouts, snipers, sniper-stalkers, and personnel assigned to intelligence duties. These people will often find themselves in positions where if they are patient they will be richly rewarded but where, if they become fretful and impetuous, they may forfeit their own lives as well as those of many of their comrades.

A course in patience training can be made part of sniper training. Dummies can be manipulated to expose parts of their "bodies" momentarily. Only on the third or fourth exposure, after perhaps ten minutes have elapsed, does the operator offer lucrative targets. If the sniper under training has in the meanwhile, fidgeted, cursed, changed his position, fired at the dummy's arm or dropped his canteen, he is declared dead, and the dummy the winner.

15. Group Training.—As the small group is the basic tactical element in the jungle, the training of squads and of groups within squads must receive the most emphasis. The training should be contrived to develop alertness, initiative and leadership, particularly in noncommissioned officers. Initiative might be defined as immediate intelligent reaction to situations. There is no place in the jungle for those who are not alert and who do not react promptly.

If jungle terrain is not available, squad problems in woods by day or night will serve to develop the qualities that are necessary.

In every case, situations should require execution. Squad leaders should not be permitted merely to indicate how they would cope with a situation. They must be required to cope with it.

Proper use of the automatic weapons in the teams within the squad must be stressed.

The conception that he is a member of a team must be developed in every member of the squad.

The squad should be instructed how to act in the advance guard, in the rear guard, as a combat patrol, as a flank patrol, and as a reconnaissance patrol. It should be taught how to set an ambush and what to do if it is caught in an ambush.

Defensive groupings must be explained, the various possible patterns pointed out and the squad required to assume the defensive by day and night. The value of active defense in jungle combat must be emphasized.

Execution must follow such instructions, for, while men remember very little of what they have been told, and not much more of what they have seen, they are not likely to forget what they have actually done.

During the preparatory period, the men of a squad should eat together, sleep together, and have liberty and privileges at the same time. They should have working party assignments as a group. The platoon leader should never take three men from each squad to make up a nine hand working party. Rather, he should take one entire squad. Constant stress on group cohesion and unity will nurture the attitude in the men that they are members of a single team.

16. Automatic Battle Action.—The purpose of automatic battle action is to train men to cope quickly with a situation. In the jungle the initiative must be seized and retained. As applied to a squad which is attacked while in a column of files on the trail, "Automatic Battle Action" would consist of the execution, on order of the leader, of one of a number of previously rehearsed plays. The leader may give his order for the play verbally or by whistle. (Hand and arm signals, while they may be used on the trail, are unsatisfactory in action in the jungle. No one ever sees them). An example of such an order given by a squad leader might be : "Able O.K; Baker, Charlie with me. Number one. Repeat. Number one. Have you got it?" To all squad members the order means: "Team number one stay where you are, continue the fire fight. Teams two and three execute prearranged play number one. I will lead you. Is this understood?" Team leaders should reply "Roger Able." "Roger Baker." Roger Charlie."

Automatic battle action should be practiced by squads and platoons until they have developed speed, precision and silent execution.

17. Training for Night Operations.—Individuals and units can not be expected to conduct themselves properly in the jungle at night unless they have been trained at night.

In thick jungle, it is impossible to move for any distance at night unless the movement is over a trail or a marked route. It is extremely doubtful if even the natives could move through thick jungle at night, and reports that the Japanese are able to do so are not true. Japanese training doctrines, while they stress the importance of night attacks, recognize that movement of large bodies of men through the jungle at night is not possible. The Japanese have been able to move at night because they have done so over trails and routes which have been reconnoitered and marked in the day time.

Movement along trails or tracks at night is possible although progress will be slow. If the movement is to be over a relatively short distance, ropes or vines can be used to mark the edges of the trail. There is much phosphorescent wood in the jungle, and this can be used to mark trails. A handkerchief or white cloth pinned on one's back will help the man behind keep contact with the man in front of him. Men may have to hold to one another's pack or belts. When any movement is undertaken at night, it must be slow; the formation must

be kept closed up so that contact will not be lost and all communication must be by whisper.

In training for night operations, troops must be required to move over trails through woods or forests, to bivouac in woods or forests and to dig in. Conduct of the defense should be stressed.

Troops must be habituated to the noises that occur in the woods at night, and they must learn how to identify sounds such as those made by a person coughing; a rifle bolt being pushed home; a safety being unlocked; a machine gun being loaded; the sounds made by chopping brush, and so on. At night, in the jungle, these noises carry for some distance.

The operation of crew served weapons must be practiced at night until personnel develop the ability to handle their weapons and ammunition with ease in darkness.

CHAPTER VI

MARCHES, HALTS, BIVOUACS, SECURITY

18. **Marches.**—a. It is important to realize that distance in the jungle does not necessarily bear any relationship to time. In temperate zones on decent roads, troops can be expected to maintain a rate of two to three miles an hour. In the jungle, the rate will rarely exceed one mile per hour. In the case of a battalion moving over a poor trail, the rate may be reduced to one-half mile per hour.

b. Jungle trails will usually restrict the formation to a column of files. Advance and rear guards are detailed. To facilitate control, to improve security measures and as an aid to more rapid movement into battle, elements in the column move as units, as compactly as possible. Connecting files maintain liaison between the elements of the column and between the main body of the column and the advance and rear guards. It is not the duty of the advance and rear guards to send connecting files to the main body. The main body sends these files out. Advance and rear guards should be changed daily. Within them there should be rotation of assignment. The same squad should not be kept in the point for more than two hours, for point duty is very demanding.

c. Flank patrols **must** be sent out when the situation dictates it and when the terrain permits. When a rapid movement is being made in an effort to gain surprise, it would not be advisable to send out flank patrols if they have to cut. The pace of the column would be slowed and the noise made by cutting would alert the enemy.

d. All lateral trails must be investigated for several hundred yards and covered by combat patrols until the column has cleared them. These combat patrols are sent out from the advance guard. After the column has cleared the lateral trails, the combat patrols rejoin the column, falling in at the rear. They rejoin the advance guard at the next hourly or periodic halt.

e. Distance between men on the trail varies from one to three yards.

f. The column commander may march in any position. He generally marches with the advance guard or at the head of the main body. In either of these spots, he is situated to deal quickly with any situation. He should always have with him his operations officer and one runner from each element of the column in addition to several runners from the headquarters group.

g. Radio communication within the column may or may not be permitted. Usually it will not be. Until ultra portables with dependable performance characteristics have been combat

tested, runners must be considered the primary means of communication.

h. It is the duty of all to observe strict trail discipline. No talking can be permitted except in whispers. The commands to halt the column will in all cases be given by an officer.

i. Trail discipline is always essential. In the jungle, this is particularly so, for there the enemy is afforded opportunities for ambush that do not exist under normal conditions of combat. Trail discipline might be defined as alert, orderly conduct on the trail. The following points are particularly important:

(1) Prescribed distances must be maintained on a jungle trail. The distance between men and between elements of a column will be less than under normal conditions. Jungle trails are narrow, are often confined by walls of brush on both sides and are tortuous. Therefore, if contact is to be maintained, all members of the column must be alert to prevent "accordinating."

(2) Loud talking is strictly prohibited.

(3) Men leave the trail and stand motionless on the approach of aircraft.

(4) At halts, men may relax physically. They can never afford to relax mentally.

(5) If men fall out, they must be left behind. Similarly, men who can not keep up must be left behind.

j. The speed of the column will be dictated by the terrain, the heat, humidity, the condition of the trail, and must be adjusted to the speed that can be made by the men of the weapons platoon who are carrying machine guns, mortars and heavy ammunition loads. If this procedure is followed, there will be few if any stragglers.

k. On some terrain, the column may be able to march about forty or forty-five minutes and to rest for the balance of the hour. Under more trying conditions, the column may march for fifteen minutes and then halt to rest for ten minutes.

l. All hands should be provided with salt tablets or ordinary table salt before the march starts. Personnel will be instructed by doctors and corpsmen how often salt is to be taken. Halezone tablets or individual CDC units for the purification of water are also distributed every time troops water.

m. All weapons must be thoroughly cleaned and oiled liberally, and all ammunition inspected before the march starts. Oil soaked rags, dark in color, that can be removed with a quick jerk should be wrapped around all operating mechanisms to protect against humidity and the mud that will clog mechanisms if the men fall as they frequently do. All rifles and carbines are carried loaded and locked. BAR's and sub-machine guns are carried with magazines in, bolts forward.

In the advance and rear guard, weapons are carried ready for instant use. In the main body they may be slung. Except in the point, bayonets are not fixed during the march as they catch in vines and bushes.

n. During a jungle march, two meals are eaten daily, morning and evening. No noon meal is eaten, though a rest period of about forty-five minutes may profitably be ordered at about halfway mark. During this period, men should be encouraged to drink chocolate, lemonade or bouillion prepared from powder in the "K" or "J" ration. All these drinks are swiftly assimilated by the body and are palatable and refreshing.

o. Duties of the squad leader on the march.—While the squad is on the march as part of a column, the squad leader is responsible for the enforcement of trail discipline. He will insure that his squad is closed up, that proper distances are maintained and that contact is not lost. He will not permit straggling, falling out or talking. He will verify and pass on correctly all "words" and instructions relayed through his squad by word of mouth.

19. Halts.—a. Columns on the march are halted only by the order of an officer. The use of the phrase "hold it up" must not be permitted. The identification number, initial or code name of the officer should be passed with the command to halt the column. Thus: "Soup Bone says Red light for five minutes." Or; "H.B. says Red light the column, message on the way."

b. When the column makes any halt, all hands immediately leave the trail and move into the bush on alternate sides, facing out in positions of readiness. If the halt is a periodic one of ten to twenty minutes duration, security must be pushed out on either side of the trail. The remainder of the men may relax and should be encouraged to do so, and for those not on security, permission should be given to lie down or to rest against logs and stumps. During rest periods men must keep one hand on their weapons at all times. Periodic halts should be called when it is the approximate time for such halts and when the larger portion of the column is on defensible ground.

20. Bivouacs.—a. A bivouac site must first be defensible and second be near fresh water. In the jungle, neither requirement will be hard to satisfy. High ground is desirable for a bivouac, not only because it is defensible but because it is freer from flies, mosquitoes and other insects than is low ground. Also, it is better drained and cooler.

b. A native village should never be selected as a bivouac site. This precaution must be taken not only because the enemy may have the village spotted but because there may be unfriendly villagers present. Also, the ground in the vicinity

of native villages is often fouled, and our troops may contract dysentery or other diseases if a night is spent under such conditions.

c. The halt for the night must be made in time to permit the following:

(1) A brief reconnaissance of the bivouac area and assignment of units to sectors for all around defense.

(2) Movement of the troops into the assigned sectors.

(3) Clearing of limited field of fire for automatic weapons.

(4) Preparation of hasty all around defense. Digging of fox holes, siting of machine guns and automatic weapons and preparation of shallow emplacements.

(5) Excavation of straddle trenches.

(6) Preparation and consumption of a meal.

(7) Completion of arrangements for sleeping.

d. One-third of the men should prepare their food while another third is busy in preparation of their positions, and the remaining third is on security. On completion of tasks, details are rotated within squads.

e. It has been found that a battalion will require approximately three hours to make these arrangements. Accordingly, the halt for the night will have to be made sometime between 1430 and 1600.

f. After the area of the bivouac has been selected and the troops moved in to assigned sectors, the column commander will usually hold a conference, at which time the pass word for the night and the plans and orders of march for the following day are issued. In the meantime platoon leaders check their security, the progress of the fox holes and emplacements, and the progress being made in the cooking.

g. Each platoon must have a designated straddle trench. It may be desirable for each squad to have one. To the extent humanly possible all calls of nature must be attended to before darkness. If a man is required to answer a call of nature after dark he should dig a small hole by his fox hole.

h. The smoking lamp is out and all fires are extinguished at sunset. Cooking is done with heat tabs, Sterno or similar smokeless preparations.

i. Mortars must be set up within the bivouac area so that they can fire barrages in support of the defense. Mortar crews maintain the same watch schedule as is prescribed for other troops; that is, one third of the crew of each mortar must be awake during hours of darkness and all crew members must be alerted at sunset and again prior to dawn.

j. After movement into the bivouac area, doctors and corpsmen examine and treat those who have foot complaints,

coral cuts, or who have been slashed by vines. At this time the daily atabrine is issued and halezone or CDC and salt tablets for the following day's march distributed to squad leaders. Medical reports indicate that salt should be taken at night.

k. Weapons must be cleaned and oiled and ammunition cleaned and inspected.

l. The pass word for the night is relayed to all hands. There is an unlimited variety of such phrases as "lovely lilly" and "lulu belle" and they should be chosen, for the Japanese have difficulty with our letters "L" and "V".

m. During the night one-third of the command must stay awake. The platoon commander, the platoon sergeant and the platoon guide is each awake and alert for about four hours.

n. During the night, strict fire discipline must be maintained. There will be no firing, even at occasional snipers. Firing is only justified when an actual attack is being made on the position.

o. All hands are alerted for a period of about one hour from sunset to darkness, and again for about an hour preceding dawn.

p. Approximately one hour of daylight will be needed to get moving in the morning. Men prepare and eat breakfast, check the adjustment of their equipment and move off on order. Security detachments are the last to move out of the area.

q. Duties of squad leader in the bivouac area.—When the column halts and the area his squad is to occupy has been indicated, the squad leader moves the squad in. He posts a security group of two to four men forward of the position the squad is to occupy. He makes a reconnaissance of the position and:

(1) Posts the automatic riflemen and indicates to each of them the sector for which he is responsible.

(2) Posts the riflemen and indicates to each the sector for which he is responsible.

(3) Supervises clearance of limited fields of fire.

(4) Supervises excavation of fox holes.

(5) Ascertaines location of platoon straddle trench and informs squad.

(6) Ascertaines location of platoon CP and informs squad.

(7) Ascertaines location and fire missions of adjacent squads.

(8) Checks on preparation of the evening meal.

(9) Inspects weapons and ammunition.

(10) Inspects feet.

(11) Checks on progress of work and eating and insures rotation of groups.

(12) Personally sees that each man takes prescribed dosage of atabrine.

(13) After securing orders from the platoon leader, he issues the pass word and his orders for the night. Informs squad of time of resumption of march.

(14) Informs squad of the situation, the location of his fox hole and that of the assistant squad leader.

(15) Sees that squad is alerted at sunset until one-half hour after darkness and that it is again alerted at first light, prior to dawn.

(16) Before resumption of march, checks on area for forgotten or mislaid equipment.

r. With a unit the size of a company it has been found a good plan to halt at about 1500, feed, clean weapons, answer calls of nature, change socks and so forth in one area and then, about forty-five minutes before dusk to drop back to a night bivouac area previously selected and reconnoitered. This bivouac area need be only at a short distance from the area where the "administrative" halt was made. Movement to the night bivouac area must be made in time to allow siting of automatic weapons and excavation of fox holes.

21. Security.—a. Security in jungle warfare is continuous. It never lapses. In jungle warfare, there is no "front". It must always be considered that contact is imminent and that the enemy may appear from any direction.

b. Security on the march is provided by advance and rear guards. Flank patrols are sent out when the growth permits movement to the flanks of the trail. If contact is imminent, flank patrols must be used even if they have to cut through thick growth. Under these circumstances, the column must accommodate its speed to that of the flank patrols.

c. When planes approach the vicinity of the column, all hands halt, step to the side of the trail and stand motionless in the shadows. No one looks up. If these precautions are observed, it will be impossible for air observers to see the column regardless of the altitude or speed at which they are flying.

d. Security in the bivouac area is assured by a number of listening posts established outside of the defensive set-up. The men on these posts should remove their helmets. They may occupy two or three men fox holes. Either the two or three men fox-hole is preferable to a one man fox hole. Men may sleep in, or immediately adjacent to fox holes. No patrolling is carried on at night between these posts.

CHAPTER VII

OFFENSIVE COMBAT IN THE JUNGLE

22. **General**—a. Offensive combat in the jungle does not differ from offensive combat in temperate areas in purpose. In the method of application of the military tools there are many differences.

b. Forms of the attack in the jungle do not differ from the normal. Penetrations, infiltrations, close and deep envelopments and encircling or turning movements are applied in the jungle as they are in other places.

c. In the jungle, as in all combat, every effort is made to gain surprise. To this end, any measures that will increase mobility are adopted.

d. Because of difficulty of maintaining control, it is essential that the mission and the plan of attack are understood by all personnel.

e. The Japanese will react almost immediately when he has been driven from a position. This reaction often takes the form of a series of desperate, uncoordinated counter-attacks carried out by infantry unsupported by other weapons. These "do or die" charges are led by officers or NCO's. In every case, fire should be held until the enemy has closed to such a range that the automatic weapons can annihilate him.

f. The attack against the jungle enemy may result from a meeting engagement. It may be a coordinated attack against a hastily organized position, or a coordinated attack against prepared positions of great strength. These will be dealt with in turn.

23. **Meeting Engagements**.—a. The leader who with the greatest rapidity estimates the situation, arrives at his decision, issues his orders, and executes his plan, will be successful. By rapidity of action, he seizes the initiative and gains surprise.

b. If the column has emplaced artillery supporting it, or if artillery is attached, it should be used as soon as possible if the enemy seems to be in strength. Supporting artillery fires are controlled by forward observer teams of artillery personnel who talk directly by phone or radio to the battery or batteries they are shooting.

c. Light mortars should bring short range fire to bear as quickly as possible. Control of 60mm mortars usually is by voice, although telephones frequently are used.

d. As soon as heavy mortars are emplaced, they are assigned targets. Their fire is controlled by forward observers, who use either field phones or sound powered phones.

e. In the initial stages of a meeting engagement, it will probably not be feasible to employ aircraft because the situation will be fluid.

f. It is not always possible for the commander to make a reconnaissance. When there is opportunity for a limited reconnaissance, it must be made. Scouts and patrols investigate the extent of the enemy position and try to determine his approximate strength. The nature of the engagement may require the commander to make his estimate and decision and to issue his orders almost completely "in the dark."

g. Should the commander decide on an envelopment, the enveloping force must move out rapidly. Orders are always verbal. The commander indicates his desires as briefly as possible with the aid of air photographs, hasty sketches, or diagrams traced in the dirt.

h. A writer should record the gist of paragraphs (2) and (3) so that when the leader of the enveloping party repeats his orders to the commander the latter may check them to assure himself that his intentions are understood.

i. The enveloping force must always indicate by prearranged signal when it is in position and ready for immediate jump off. If assault wire teams can keep up with the enveloping force, the "ready" signal will be transmitted by wire and radio. Signals can be transmitted in the clear once battle is joined. If no wire can be laid, a series of flares of prearranged colors can be fired. Flare signals should be repeated. These signals are necessary in order that friendly fires can be lifted before the enveloping attack goes in. The principal objection to signalling by flares or by the firing of weapons is that both methods give away the position of the enveloping force and the psychological factor of total surprise, which can often be achieved in the jungle, is lost.

j. The following features common to meeting engagements should be noted:

(1) There is no stage of development of the column. The troops move from route column to departure positions.

(2) Artillery and mortar fire is brought down on the enemy immediately upon contact if he is in any strength and he is held under as great a volume of accurate fire as is possible during movement of the enveloping force.

(3) The enveloping force must move rapidly. At the same time, the men must arrive at the departure position in physical condition to enter the fire fight. They may drop packs and gas masks (if the enemy is not using gas) before moving out. They should retain entrenching tools, including machetes.

(4) In a meeting engagement, it may not be possible to use supporting aircraft even if they are on call, for because of the pilots' inability to see, the commander will neither be able to indicate to them his own position and progress with precision, nor to pin point the enemy installations he wishes the planes to attack.

(5) If aircraft are to be used, the plans for their employment must be made known to the leader of the enveloping force, and the aircraft must be carefully instructed as to the areas, times, and in what direction they are to make bombing and strafing runs.

(6) If supporting fires are laid down, the officer commanding the enveloping force must give the signal for lifting.

24. Coordinated Attacks Against Hastily Organized Positions.—a. These do not differ in execution from the attack just described. Single or double envelopments or circling movements are used when possible. These points should be noted:

b. Reconnaissance can determine the location of automatic weapons and the lateral extent and depth of the enemy position may be ascertained with a fair degree of accuracy by small ground patrols.

c. When observation permits, artillery may be registered and all fires massed for as much preliminary bombardment as deemed necessary.

d. Since time is available to locate and describe the enemy position, supporting aircraft may be employed on dive bombing and strafing mission prior to H hour. Air liaison officers are usually present in regiments and often attached to battalions. The liaison officer should visit the front. If there are advanced airfields, he may return and lead the attacking planes into the target area. This was done successfully on Guadalcanal. Located or suspected targets for air attack should be marked in numbered or lettered squares or circles on air photos or photo maps in a manner similar to that used by the artillery to indicate concentrations. Copies of these maps are given to the air liaison officer for distribution to supporting aircraft, and copies must be in the hands of all officers in the attacking force.

e. Time may be available to get up heavy equipment desirable but not organic to the attacking force such as 37mm guns, etc.

f. The attack must be conducted from objective to objective in order for subordinate leaders and commanders to regain control frequently and to reorganize for further advance. For a unit as small as a platoon, the distance between objectives would not exceed 75 to 100 yards, and will often be less. Visibility is the governing factor.

25. Coordinated Attacks Against Elaborate Defenses.—a. Buna and Munda were the first elaborately organized positions our forces encountered. The methods of reducing such positions require the application of all possible fire power. The attackers are called upon to reduce a system of defended localities. They may expect to run into heavy bunkers, barbed wire, antitank and antipersonnel mines.

b. Movement alone will not suffice to force the enemy from bunkers or pill boxes. He must be forced to surrender or be burned or blasted out of them. (See paragraph 4 "Assault of Bunkers and Pill Boxes in the Jungle."). In attacks against positions of this type, the frontages must be narrow to insure the greatest possible concentration of fires. As in all jungle attacks, limited objectives must be established.

c. The preparatory phases of such an attack will involve construction and improvement of roads and trails behind our own lines, the movement of supplies and ammunition, and the coordination of all arms and weapons that are to prepare for and to support the attack.

d. If naval gunfire can be used to advantage, as often happens, it should be requested and a schedule of the fires desired should be worked out. The presence of a staff officer from the ground attacking force aboard ship to assist in directing the gunfire will be found most helpful. Direct radio communication should be provided.

e. Arrangements for maximum artillery preparation and continuing support by all available artillery according to a time schedule, or as called for, will be made. The artillery may require several days for regrouping, displacement to new and better positions, and for registration.

f. Air liaison officers will make ground reconnaissance and every possible means will be employed to accurately pinpoint the targets for preparatory dive bombing and strafing attacks.

g. Continuous reconnaissance by air photo will be made and stereo pairs and vectographs studied daily to gather what information is possible from them.

h. Every attempt should be made to capture prisoners prior to the attack. This will be difficult, for the Jap does not surrender easily, but small patrols can ambush trails and possibly get one or two prisoners by shooting them in the legs. This method has been tried on several occasions, and if the patrol is properly handled, it should be successful. These patrols should consist of not more than three or four men, all of whom must be experienced jungle fighters and good shots.

i. Patrolling must be constant. The aggressive attitude must be maintained. Patrols will secure information, will keep the enemy on the defensive, will inflict casualties on him, and will prevent him from actively patrolling.

j. Prior to the jump off, artillery and naval gunfire attack assigned targets. They concentrate their fires on the first infantry objective. If there is large caliber division or corps artillery, its fires will probe more deeply into the enemy position. Fires may be lifted at a prearranged time or on signal passed over all communication channels and by flares. When

the fires of the heavier guns are lifted, the mortars in close support of the infantry should lay down their barrages. As soon as fire lifts, the troops must assault.

k. The capture of the first objective must immediately be announced by pyrotechnics or over all wire and radio circuits so that previously planned protective fires may be brought down around it in case of enemy counter attack.

l. The second objective must not be too distant from the first. Some time will elapse between the capture of the first objective and the jump off for assault on the second. It is during this period that reorganization of the assault elements takes place. A commander must expect delays during the progress of a jungle attack.

m. Complete latitude in the execution of orders must be allowed subordinate commanders and leaders. It is impossible for a regimental or battalion commander to control the actions of his assault units once they have been committed. He can support them by all means at his disposal, but he cannot "fight" them.

26. Assault of Bunkers and Pill Boxes in the Jungle.—a. In nearly every action in the Pacific our forces have had to reduce bunker or pill box defenses.

b. The Buna-Gona campaign was the first in which our forces encountered this type of fixed defense in the jungle. Since, these defenses have been encountered in the Solomons and New Britain. As our advance progresses we will be called upon to attack and reduce this type of installations with increasing frequency.

c. The assault of bunkers and pill boxes in the jungle differs somewhat from the assault of fixed defenses in the open, for in the former case a thorough preliminary reconnaissance can "fix" the position to be assaulted. In the jungle the same degree of reconnaissance is not possible.

d. The rifle platoon is the basic assault element in the jungle and it is the rifle platoon which will be called upon to attack enemy bunkers and pill boxes. The organization and equipment of the platoon are such that it can accomplish this task.

e. The fighting for possession of a key point defended by bunkers will nearly always resolve itself into small engagements aimed at the capture or destruction of individual bunkers. This fighting will be hard and costly because bunkers will be arranged in depth and will be mutually supporting.

f. The first phase in reduction of a bunker or pill box is to locate it. In the jungle normal reconnaissance methods may be of little value because of the concealment afforded by foliage and the overhead canopy. It will be difficult to pick up the installation from air photos. Even small reconnaissance

patrols may not be able to operate without severe losses. Perhaps the only practical way to locate bunkers or pill box precisely will be to make a combat reconnaissance or to assault the general area in which these installations are believed to be.

g. The second phase is to force the enemy—the snipers, the light machine gun crews and the riflemen—outside the bunkers in fox holes, trenches and trees, to get inside the bunkers. Enough fire must be placed on the enemy to force him to move or seek cover. Preparatory artillery fires and air bombings accomplish the desired result providing there is prior knowledge of extent of the bunker area and the concentration of high explosive can be made sufficiently heavy. In addition to driving the personnel inside this bombardment will strip the foliage from the trees and destroy artificial camouflage.

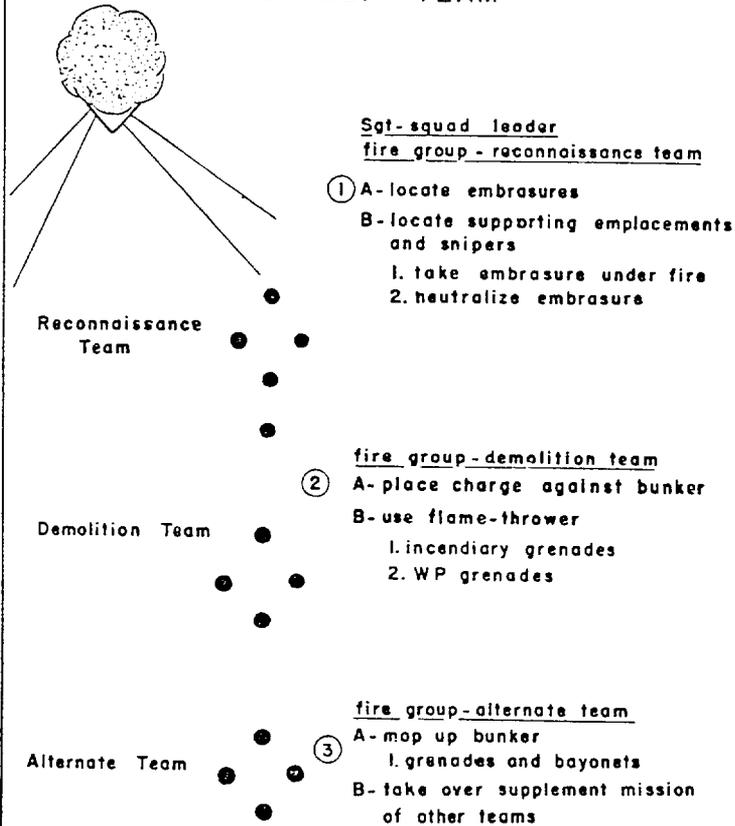
h. If the assaulting troops find themselves in a position where there are bunkers and pill boxes and there has been no effective high explosive preparation, some other means has to be devised to force the enemy inside. Machine gun and automatic weapon fire will be necessary to search out the trees. Canister fired from 37mm antitank guns is effective against personnel. The canister covers a wide area and will force the enemy from the open to covered positions. As the mobility of the gun is limited it will necessarily have to be kept near a track or road. The crew is vulnerable to small arms fire. 81mm mortars firing in battery will force personnel from open to closed positions. A high rate of concentrated fire is required. This will not destroy the bunkers as the penetration of the 81mm projectile is not sufficient.

i. The third phase is to render the personnel in the bunker ineffective in combatting the assault. The bunker must be “buttoned up” that is, certain of the embrasures must be either closed or neutralized in some way. The ideal situation is to neutralize an embrasure and not completely close it because the embrasure is a means of introducing a personnel destroying charge. Embrasures can be neutralized with flame throwers, rockets and grenades, and blinded by smoke grenades.

j. Next, a demolition group moves forward and places one or more charges. A suitable charge can be prepared from the infantry demolition kit. Twenty half-pound blocks of TNT or six pounds of composition C can be made up into a satchel charge, placed against the bunker structure and tamped. The M-2 kit may be used as a satchel charge. Charges are always double primed.

k. The placement of the charge can sometimes be accomplished by using a pole (hence the term “pole charge”). The charge has to be placed against a critical point in the structure of the bunker and the free end of the pole anchored by forcing into the ground. This will hold the charge tightly up against the structure.

RIFLE SQUAD AS ASSAULT TEAM



RD 4179

FIGURE 2 — Attack of Pill Box by Infantry

l. Personnel destroying charges should be introduced into one or more embrasures, but if this is not possible it will be necessary to reduce the bunker further by the use of pole charges.

m. Platoon organization provides the personnel and equipment to search out the bunkers, to neutralize the embrasures, to cover the advance to the bunker and to mop up after the assault. Each one of the three squads can be equipped to cope with the bunker type of fortification.

n. Figure 2 shows one of the rifle squads as an assault squad. Fire teams are assigned the missions indicated.

o. This formation for the assault will give the leader control and enable him to direct convergence of his team to the target. The fire of the other squads on the flanks will be directed on supporting emplacements or personnel in the open. The success of the assault will depend upon the intensity and accuracy of the fire on supporting positions. The alternate team (in the support) will be in a position to take over or supplement the missions of either the reconnaissance or demolition team.

p. The fire team with the reconnaissance mission (to seek out the embrasure) and the fire mission (to neutralize the embrasure), will rarely be able to carry out the latter without additional weapons as this fire team has only one BAR and grenades as effective weapons to use against the embrasure. Rocket teams, flame throwers, personnel equipped with incendiary grenades and other weapons may assist in neutralizing the embrasure.

q. When the fire of the leading team, supplemented by the fires of the other two squads on the flanks and any supporting weapons (see fig. 3) is such that the assault squad can approach the bunker, the demolition team moves forward quickly and places the charge or charges against the critical areas of the bunker. Its advance should be screened by the fire of supporting weapons and by local use of smoke. An incendiary or WP grenade placed inside the embrasure will give a momentary advantage to the assault team in that the defenders cannot see out of the embrasure due to the intense light, heat or smoke. The defender will in most cases have sand or other means available to extinguish the grenade, so the assault will have to be swift.

r. When the flame-thrower is available it will be used in screening the approach of the demolition team and to neutralize the embrasure. It is extremely effective as a neutralizing and casualty producing agent.

s. The use of the weapons listed in Figure 3 will not necessarily change the method of the assault. Such weapons as the bazooka, 37mm antitank gun, tank or 75mm half track will often be brought forward, and their fire brought to bear

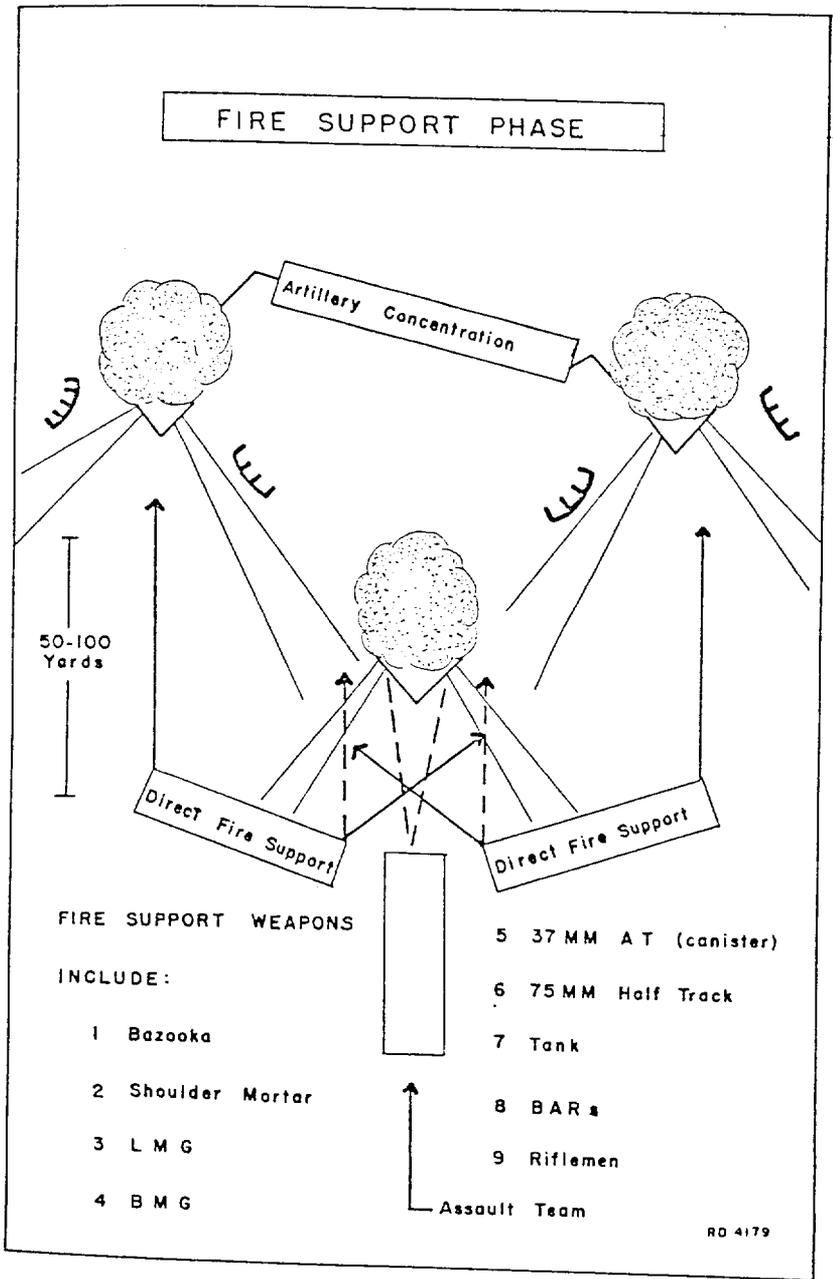


FIGURE 3 — Attack of Pill Box by Infantry

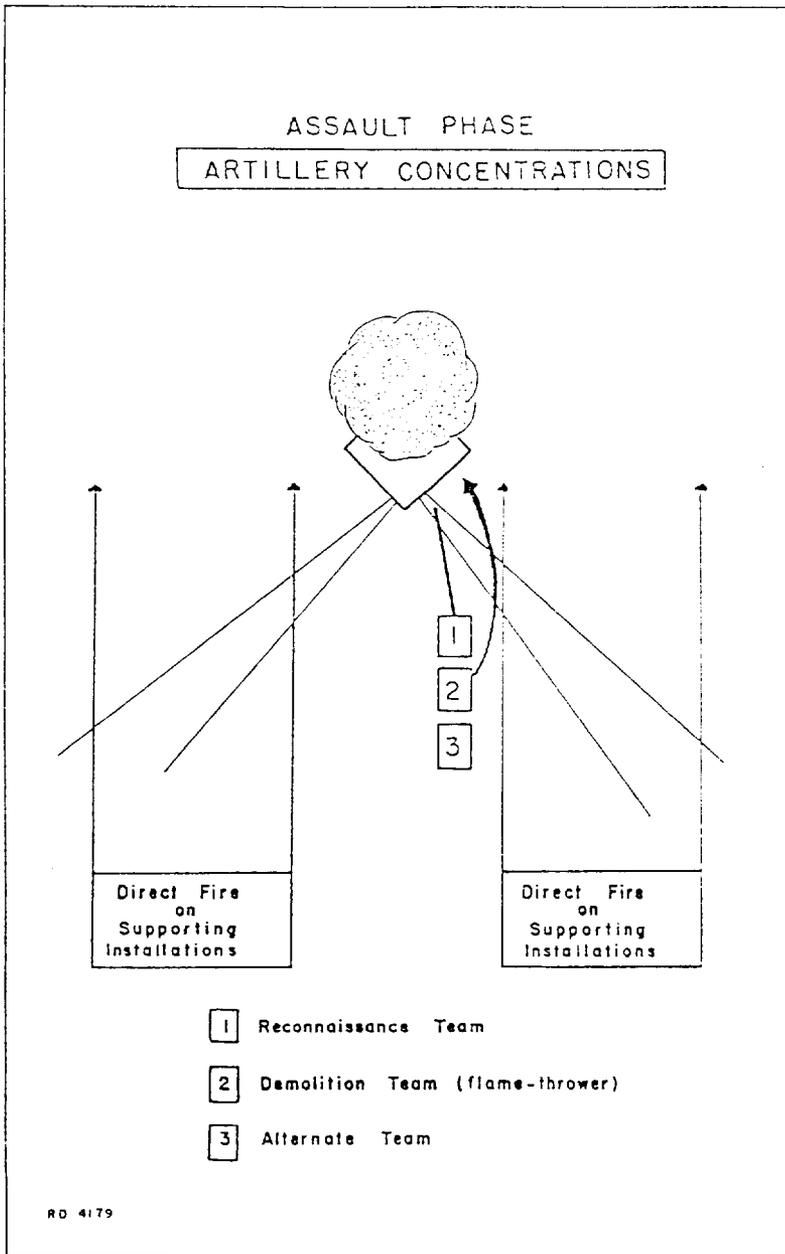


FIGURE 4 — Attack of Pill Box by Infantry

on the target and supporting installations. These weapons take the bunker under fire and provide area fire to search out hidden targets. The foliage will probably be so dense that the embrasure cannot be seen even 10 feet away. Fires of heavy weapons will destroy the foliage so that the embrasure can be seen. This heavy fire when placed in the vicinity of the target will also destroy personnel in the open and force those not destroyed to seek cover. Canister is particularly effective in this way. High explosive fired into the embrasure will be effective in neutralizing it. In some instances in New Guinea the Australians used the "25 pounder" to blast down the front of the bunkers. It is impractical in most jungle terrain to count on having heavy weapons in the initial attack. Later, the number of supporting weapons available will be increased.

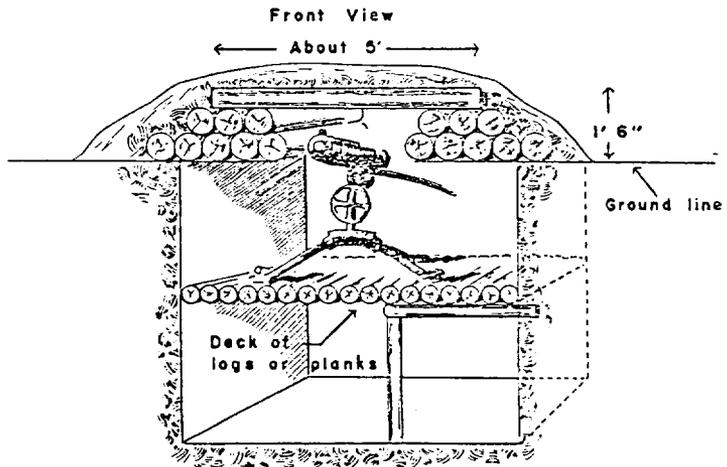
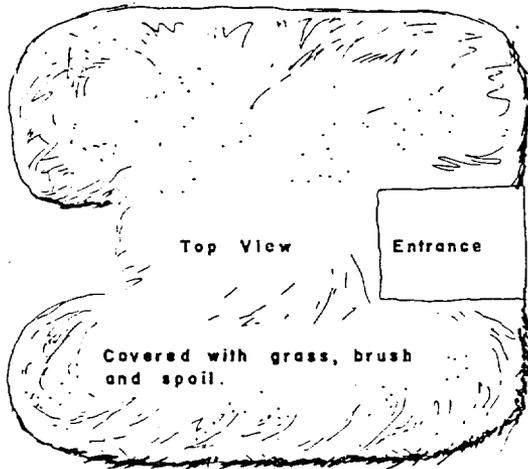
t. If attacks on a definitely located bunker have been unsuccessful artillery will be carefully registered. Artillery concentrations will not be effective in destroying bunkers but will destroy the foliage and camouflage so that the embrasures may be seen and taken under fire. The direct fire weapons can be fired into the bunker position.

u. As our leading elements penetrate the bunker position, artillery concentrations will have to be lifted. The artillery can then take under fire and uncover supporting installations. The process of uncovering the first bunker will then have to be accomplished by direct fire weapons. In this case deep supporting artillery fires will hinder the organization of effective counterattacks. 75mm or 105mm artillery can be adjusted to within 75 yards of forward elements if their positions are known.

v. To sum up: The following are the phases in the assault and reduction of a bunker or pill box by a rifle platoon:

- Phase 1. (a) The bunker must be located.
(b) A plan must be made to assault it.
(c) Orders must be issued to the assault team.
- Phase 2. Personnel outside the bunker must be forced inside.
- Phase 3. The personnel inside must be rendered ineffective.
- Phase 4. The bunker must be attacked with high explosive charges to breach it.
- Phase 5. The personnel inside the bunker must be destroyed.

DIMENSIONS APPROXIMATE



RD 4179

FIGURE 5 — Japanese Pill Box (New Britain)

CHAPTER VIII

DEFENSIVE COMBAT IN THE JUNGLE

27. General.—a. Defensive combat in the jungle does not differ in principle from defensive combat in any other theater. The defensive is assumed as a temporary measure during the preparatory period that precedes the resumption of offensive action. After capture of air field sites, harbors or other strategic areas or installations of value, we may be forced into a defensive attitude by vigorous enemy reaction or by strategic or tactical considerations which preclude our receiving the necessary strength and supplies to resume immediate offensive action. Regardless of the length of time we may be on the defensive, this attitude should never be considered other than as a temporary one.

b. There is even less of a "front" in jungle warfare than in the mobile war being conducted in other theaters. Small groups of the enemy that have infiltrated may appear any place. On Guadalcanal a three-man enemy patrol attacked the 1st Marine Division CP.

c. The extent to which a defensive position is developed is dependent upon the length of time for which the position is occupied and the material, equipment and troops available. Defensive installations are constantly improved while a position is occupied.

d. Flanks must be always refused; that is, an all around pattern must be established. When possible, one or both flanks should rest on a natural obstacle such as a lagoon, a river or the sea. While bodies of water, jungle swamps and precipitous cliffs may rightly be considered barriers in the path of the enemy, none of them can be relied upon to stop the enemy. All terrain is passable. There are no impenetrable jungles, impassable swamps, unfordable rivers or unscaleable cliffs. He who in the jungle relies chiefly on natural obstacles to stop the enemy is courting disaster. In this war, countless experiences of the Allies (and more latterly of our enemies) have proved that no terrain is impassable to troops who are determined to make their way over it.

e. The nature of the terrain, the enemy situation and our strength are all factors that must be considered in determining the type of defense to be adopted. Mutually supporting defensive "islands" are established when possible. In the jungle, with observation and fields of fire so limited, it may not be possible to establish this pattern. A perimeter "shoulder to shoulder" defense will then be adopted. It effectively counters Japanese infiltration tactics. The Japanese state: "There are numerous gaps in their defenses, making infiltration easy."

f. The first step in organization of the ground is the excavation of fox holes and shallow emplacements and preliminary clearance of fields of fire. The spoil from excavations must be spread thinly and covered with vegetation. These works will be improved constantly and crawl trenches will be developed to connect them. Alternate and supplementary positions are constructed. Splinter proof overhead cover should be undertaken as soon as possible, particularly for weapons emplacements. If chicken wire is available it should be placed to prevent grenades from being thrown into firing ports of automatic weapons emplacements.

g. Camouflage must be continuous and camouflage discipline strictly observed. Even the Japanese have said that we are very careless in this respect!

h. The concealment afforded by the jungle permits the enemy to move close to the defensive position before he assaults it. Therefore, an outpost position must always be established in front of the main battle position. This outpost position should be made strong enough to fight for a limited specified period. At dusk it may be desirable to withdraw the outposts to the main battle position, and post them again at first light. Sniper teams must be posted in the outpost position during daylight.

i. Companies responsible for defense sectors will send out dawn and dusk patrols to investigate areas forward of their positions. These patrols should clear the defensive position prior to dawn and return about an hour later. In the evening the patrols should clear shortly before sunset and return at dusk.

j. Support and reserve positions are established when the size of the command makes it appropriate to do so. Regardless of the size of the unit a proportion must be held out as a counterattack force.

k. In organizing a position the natural camouflage must be disturbed as little as possible. Artificial camouflage must be used to the maximum and camouflage discipline strictly enforced.

l. The enemy is always particularly interested in the whereabouts of automatic weapons and he will do anything he can think of to discover their location or to make us give their location away. These weapons must be moved frequently from primary to alternate positions and both positions constantly strengthened and their camouflage improved.

m. Machine guns must be protected by riflemen. If machine gun crews are so depleted that they can not furnish this close-in protection, the adjacent rifle units will furnish it.

n. The doctrine that requires employment of machine guns in pairs (by section) will at times have to be modified,

and guns employed singly. The manner of employment depends on the terrain, the extent of the sectors to be covered, the number of likely approaches to the position and the number of guns available.

o. Barbed wire should be put in generally from thirty to fifty yards outside the battle position and the undergrowth between the wire and the position carefully thinned. When available, concertinas should be tied together and firmly anchored to the ground, to roots and to trees. This barrier of triple concertina should be supported and anchored down its center line by a four strand high wire fence. Plenty of tin cans with a few pebbles in them must be hung on the wire. Double apron fence is not entirely satisfactory in the jungle because its pattern is too regular and too much clearing is required before the fence can be put in. The Japanese are used to our double apron fences by this time. Antipersonnel mines and booby traps should be placed both within and outside the wire.

p. If time permits, bangalore torpedoes rigged to be fired electrically may be installed outside the wire and between the wire and our forward positions.

q. Cutting of vegetation is held to a minimum. Cutting should be carefully planned and controlled by leaders. This responsibility will devolve on platoon and squad leaders. For automatic weapons, fire "tunnels" three or four yards in width should be cut rather than fields of fire "cleared." Many Marines interpret this expression too literally, and destroy all the jungle growth. This growth should never be destroyed completely. It should be thinned out to a height of about four feet above the ground. The standard "fire lane" indicates the automatic weapon positions. "Fire tunnels" are hard for the attackers to locate and offer the defender the same type of grazing fire as he has when he literally cleans up acres of underbrush.

r. As soon as the position is occupied, artillery and mortars should register and protective concentrations be plotted. Arrangements must be made for massing all fires on any selected point. The fires of artillery and heavy mortars in the defense are controlled by artillery and mortar observer teams when available. When artillery observers are not available the fire will be controlled by any officer in a position to observe it, who has a map showing the plotted concentrations, and who has radio or telephone connection with the firing batteries. Maps or overlays showing concentrations should be in the hands of all company commanders. The location of concentrations should be passed to all platoon leaders.

s. Light mortars of the weapons platoons of rifle companies will be emplaced for firing forward of the defensive sectors for which their companies are responsible.

t. The 37mm gun is a very effective weapon in the defense. It can fire either armor piercing ammunition at attacking tanks or canister against infantry. Canister produces heavy casualties at ranges of seventy-five yards or less. It is very effective against crew served weapons.

u. Because of the great dispersion canister can not be used in overhead fire or when our troops are forward of the gun.

v. Tank destroyers must be available to move against enemy tanks. They must be protected by the fires of infantry weapons when possible, as they are ponderous and vulnerable. In the jungle there will be only a few possible tank approaches. These must be mined and covered by antitank weapons.

w. The authority to call for final protective fires in battalion sectors may have to be delegated to company commanders. The degree of decentralization necessary will depend on the extent of the battalion position, the type of terrain and the visibility. When the position held by a certain company is attacked the company commander on the spot will be the best judge of the necessity for final protective fires. Companies whose sectors are not under attack or whose weapons or elements are not required to fire in support of the sectors under attack will exercise fire discipline.

x. Plans must be made and movements practiced for local counterattacks to restore company and battalion positions. Brief but intense artillery and mortar barrages should precede such local counterattacks. These counterattacks must be put in before the enemy has a chance to get oriented in the position he has just taken.

y. Japanese training doctrines stress the importance of night attacks but at the same time emphasize that they cannot be made without thorough preliminary reconnaissance by day. Constant and aggressive patrolling combined with vigilance on the part of observers and forward snipers will screen the approaches to our position and prevent the enemy from gathering vital information by day.

z. Telephone, radio, runners and pyrotechnics are used for communication.

aa. It is often necessary to make initial wire installations on the ground along trails. As soon as possible wire should be moved off the trails and either be tied to trees or buried. Where tied to trees there should be a liberal allowance of extra wire.

bb. Automatic weapons must not fire unless worthwhile targets are presented. Strict fire discipline, particularly as affecting automatic weapons, will be maintained at night. Tracer should not be used at night as it gives away our positions. Small enemy groups that may try to infiltrate should

be dealt with by riflemen with the bayonet when possible. The following precaution will improve fire discipline at night:

Rifles: loaded; locked.

BAR's: bolts forward; chambers empty; magazines in place.

MG's: half loaded.

cc. Bayonets should be fixed at night.

dd. Hand grenades should be carried on the person, either in pockets or in a bandoleer. Grenades should not be carelessly scattered about in fox holes.

CHAPTER IX

PATROLS IN THE JUNGLE

28. General.—a. The principles of scouting and patrolling as set forth in training manuals and bulletins are applicable to jungle patrols.

b. Patrolling is carried on to secure information, to deny information to the enemy and to attack and destroy enemy patrols, groups, isolated detachments, dumps and key installations.

c. Night patrolling is usually impracticable in the jungle unless the patrol stays on a defined or marked trail or track.

d. Patrols in the jungle must be assigned clearly defined sectors in which to operate. They will confine themselves to these sectors to avoid possibility of clashing with friendly patrols operating in adjacent sectors.

e. The urgency of the mission will indicate the route to be followed by a patrol. If speed is essential the patrol will have to operate on a trail or track. When so doing, the members must bear in mind that they are in constant danger of ambush. They must observe trail discipline and proceed alertly, ready for instant action. Small reconnaissance patrols should operate entirely off trails.

f. If a patrol is to be absent for a period of six or seven days or longer, it should establish a small hidden base from which it can operate. This base must be well removed from travelled trails. If the patrol is small no security would be left at the base. On return to base the patrol must use the utmost caution. If a large patrol operates it should leave a security detachment at the base. By establishment of a base the patrol is able to operate with a minimum of equipment, thus increasing its mobility.

g. Patrol leaders must plan to operate by stages, bounds or objectives.

h. All patrols should have several rendezvous points selected by the leader in advance. This is necessary in case the patrol runs into trouble and is forced to disperse. At the rendezvous points, the patrol leader can rally his patrol and give fresh instructions for accomplishment of the mission.

All patrols regardless of their size should have a planned scheme of automatic battle action. Each member of the patrol must be fully acquainted with the part assigned him in automatic action.

i. The units through which a patrol will pass will be notified of the exact times and places the patrol is expected to clear the lines and to return through them.

j.- Patrols will be suitably armed and equipped for the missions assigned. Gas masks may be dispensed with. Packs are left behind if the mission is not to exceed forty-eight hours in duration. In small reconnaissance patrols, fatigue hats will be more suitable than steel helmets. If the patrol is to spend a night in the field, head nets should be taken. The patrol should take plenty of machetes or jungle knives. If it is to be out for more than one day, it must take atabrine tablets. Both salt and halezone or CDC will be taken regardless of the length of time the patrol is to be absent.

k. No written or printed matter, such as letters, identification cards, etc., is permitted to be carried by any member of the patrol.

l. The patrol must be furnished with ungridded maps or photo maps and there must be no information shown on them that could be of possible value to the enemy.

m. Anything that rattles or makes noise must be muffled or left behind. Identification tags should be taped over with black friction tape so they will not clink together. An issue sock pulled over the canteen and then liberally wet down will prevent the canteen from rattling in the cup, as well as help keep the water cool. If the patrol is to be of short duration, the cup can be left behind.

n. If a radio set is to be taken by the patrol, operating schedules and frequencies must be arranged prior to departure. In order to assure maximum mobility, and to replace possible casualties, two radio teams should be taken. If this is not possible, at least one extra qualified operator should be included.

o. If the patrol is to be picked up at some point by boat, the boat officer and patrol leader must have a conference at which pick-up point, alternate pick-up point, time and alternate time, and identification signals must be arranged. When a boat pick-up is planned, a visual signalman should accompany the patrol.

p. If guides are to be used, they must be contacted in good time to enable the patrol leader to interview and question them. The patrol leader must never wait until the last minute to get his guide.

q. The second in command must be present while all preliminary arrangements, such as those described above, are being made.

29. Combat Patrols.—a. The size, armament and equipment of the combat patrol will depend on the mission assigned it and the available enemy information. A combat patrol will usually have to fight to accomplish its assigned mission. It is not ordered out primarily to gain information, though it will gather all information it possibly can. No figures can be laid down governing the numerical strength and armament of a

combat patrol. In size the patrol may vary from three or four men to a platoon or more.

b. It will often be desirable to increase the proportion of automatic weapons; under other circumstances the issue of three sub-machine guns per squad might be indicated in place of the carbine. Normal allowances of grenades might have to be increased.

c. If a demolition mission is assigned, an officer trained in demolition work should go in charge of the demolition group. Thermite grenades should be carried. Under such circumstances, the mission of the patrol will be to protect this group and to assist as necessary in the arrangement and execution of the demolition projects.

d. Before setting out, all members of the patrol must be acquainted with the enemy situation as it may affect the patrol, with the mission and the plans of the leader for accomplishing the mission. The leader must indicate the route to be followed and the march formation desired.

e. The leader causes the patrol to fall in before its scheduled time for departure and checks equipment, weapons, ammunition, and rations.

f. Competent hospital corpsmen should accompany a combat patrol. If the patrol is a large one and is to be gone three or four days, the advisability of sending a commissioned medical officer should be seriously considered.

30. Reconnaissance Patrols.—a. A reconnaissance patrol is sent out for the specific purpose of gaining information of the enemy or of the terrain. It can only gain information if it operates without disclosing its presence to the enemy. If the enemy discovers a small patrol, he will do his best to drive it away, to capture it, or to annihilate it. Reconnaissance patrols are small so that they can move rapidly and secretly. A three or four man patrol is generally most effective. Reconnaissance patrols should move rapidly when possible, but concealment and positions from which enemy activity can be observed are the determining factors in their conduct.

b. Special patrols consisting of several officers may be sent out on particular missions of great importance.

c. Regimental and Battalion intelligence sections will send out small patrols to secure information that immediately affects them.

d. All members of a reconnaissance patrol must be accomplished woodsmen fully acquainted with the principles of scouting.

e. All members of the patrol should have a complete knowledge of how to read maps and air photos. All must be equipped with, and know how to use, the compass. All should

have machetes. Carbines are preferable to rifles. In some cases the patrol might be armed with pistols only. This would be so when it was to work very close to the enemy. Automatic weapons are not desirable.

f. Steel helmets, gas masks, and entrenching tools are not necessary or desirable equipment for reconnaissance patrols. A fatigue hat or cap may be worn. For short distance reconnaissance patrols requiring great stealth, sneakers or the Army jungle shoe would be desirable if available.

g. If possible, there should be one member of the patrol who can understand and speak the enemy language or who knows a few words of it.

h. Watches, field glasses, pencils, and message books are essential equipment. All men should carry message blanks and pencils. There should be at least two watches and two pairs of field glasses taken. All members of the patrol must be cognizant of the mission. They must know in detail just what information is to be secured and the leader's plan for securing it. They must know what route the leader has planned for the trip out and the trip back.

31. Duties of Patrol Leader.—a. Before departure.—After receiving his orders, the patrol leader assembles the senior NCO's (or, if the patrol is a small one of only three or four men, the entire group) and goes over the orders for the patrol in detail. He uses air photos, sketches, and such maps as are available. The guide (if one is furnished) should be present at this conference, as he will be of greater value if he has a complete picture of the projected operation. At the conference the patrol leader gives his orders affecting:

- (1) Organization and composition of the patrol. Arms, ammunition, clothing, equipment, ration. Prospective duration. Second in command.
- (2) Enemy situation. MISSION.
- (3) Routes to be followed, and bounds.
- (4) Rendezvous points.
- (5) Time of formation for departure.

b. Before the patrol departs, the leader inspects the members. He then explains to the patrol the enemy situation, their mission and his detailed plan for its accomplishment. He designates to the patrol the second in command. He orders the formation. By questioning he assures himself that all hands understand the mission and the plans for accomplishing it. He answers any questions.

32. Uniform, Equipment, Armament and Rations.—(A four man reconnaissance patrol. Anticipated duration—4 days.)

a. Uniform.—Camouflage suits, fatigue hats, field shoes, gloves, extra socks (3 pairs per man).

b. **Equipment.**—4 compasses; 4 watches; 2 pairs field glasses; 8 pencils; 4 message books; overlay paper; 2 copies of air photos or maps (unmarked); 2 machetes; 4 jungle first aid packets; 8 packages heat tabs; 4 collapsible cooking tripods; 8 packages matches in waterproof containers; atabrine; halezone or CDC; 1 cleaning rod; patches; 4 ponchos; 4 canteens; 4 canteen cups; 4 spoons; 4 hunting knives; 4 packs; 4 cans cleaning and preservative oil; mosquito repellent; foot powder; 4 head nets.

c. **Armament.**—4 carbines with 4 magazines each; 8 fragmentation grenades.

d. **Rations.**—(2 meals per day for 4 days).—16 "D" bars, 8 cans K ration meat component; 8 cans K ration cheese; 12 cans meat and beans; 8 cans meat and vegetable stew; 8 cans bread component; dried fruits; powdered coffee; candy from J ration. (This amount of food will be sufficient. More or less can be taken and the variety can be increased or changed as circumstances and the state of supply dictate).

33. **Example of Patrol Leader's Orders.**—(A four-man reconnaissance patrol, anticipated duration four days.)

a. **Platoon Sergeant, Patrol Leader talking:**

"You people all said you were well an hour ago when I looked at your feet, so gather round this air photo spread out here on the ground. (Patrol leader orients air photo). This air photo is oriented now. Here we are on it. (Points). The photo shows the area between the SILVER RIVER (points out on photo) over to the north, and the METOMBA RIVER (points out on photo) about a mile further to the north. The sea is over to the east. Here is a small river that flows into SILVER RIVER (traces course of small river on photo). That doesn't have a name—we'll call it SILVER CREEK.

"The best information is that there is about a regiment of Japs on the north side of the METOMBA RIVER. These blue marks show our positions. Here is the 1st Battalion; here is the 2d, and here is the 3d (points out). Do you all follow me so far?

"O.K. Our MISSION is to find out if the Japs are preparing to defend along the north banks of the METOMBA RIVER between the mouth of the river and this point here (indicates on photo). If they are digging in along the north bank, the Colonel (Regimental Commander) wants to know where they are going in, and what kind of emplacements they are putting in? Now that's the MISSION. We don't come back here without that dope. You all got the mission? Thompson, repeat what I just said. (Thompson repeats). O.K.

"We are going to operate in two teams. I'll take Smithers and Thompson'll take Harris. We'll start out together, cross the SILVER RIVER here, go on through this jungle until we get to the south bank of the METOMBA RIVER about here (points). We will march entirely by compass.

"After we split, Smithers and I will go on upstream and cross about here (points). We will investigate the north bank between here (points) and here (points).

"Thompson, you and Harris better cross here (points).

"After we get our dope we'll try to meet here where we split. We should meet not later than 1830 Monday, because we have to be back Tuesday afternoon at 1400. That gives us four days which should be plenty of time.

"We'll go out this way (points), passing through the 1st Battalion here and then striking off on a compass course. We'll come back in through the 3d Battalion about here Tuesday afternoon. They know a patrol is going out this afternoon and coming in Tuesday. There will be no other friendly patrols operating in this area until we get in.

"Thompson is second in command. He has a list of everything I want you to take.

"Report back here in two hours—that's at 1500. I'll inspect your uniforms, equipment, rations and ammunition then.

"Don't take any letters or photographs. Tape your dog tags.

"Are there any questions now?"

"O.K. At 1500 I'll go over everything briefly again, issue maps and tell you the signals we will use on the march. Sharpen your machetes, and be sure the watches you get actually run.

"In case any of you want me before 1500 to straighten anything out, I'll be right here by my shelter getting ready.

"If there aren't any questions, get going."

b. In the above example, the patrol leader first inspected the patrol as to physical condition, then gathered all the members and:

- (1) Oriented his photo map.
- (2) Located the patrol on the photo.
- (3) Pointed out prominent terrain features and landmarks.
- (4) Gave available information of the enemy.
- (5) Pointed out location of friendly troops.
- (6) Gave MISSION and explained it.
- (7) Explained how he planned to accomplish his task.
- (8) Carefully pointed out routes to be followed.
- (9) Pointed out limits in which each reconnaissance team would operate.
- (10) Named second in command.
- (11) Gave rendezvous point and time of rendezvous.
- (12) Told what friendly troops the patrol was to pass through both coming and going and anticipated times of passage through friendly lines.

(13) Informed patrol what uniform, equipment, arms, rations, medicines, and ammunition each member would wear and carry. (See paragraph 32).

(14) Told men not to take any letters or photographs.

(15) Asked if there were any questions and answered them if there were.

(16) Instructed men to tape dog tags to avoid clinking and glistening.

(17) Arranged to issue maps and signals.

(18) Told the men where he would be until the patrol formed for inspection prior to departure.

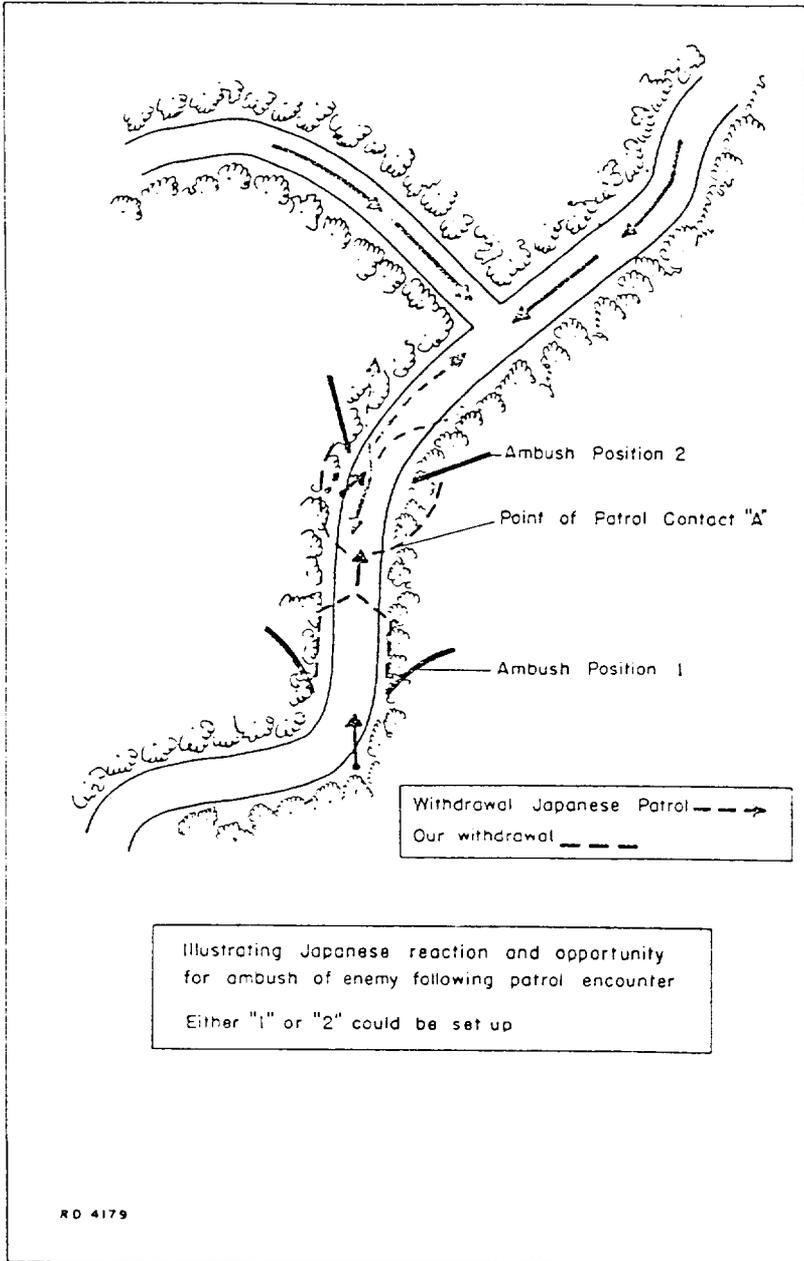


FIGURE 6 — Ambush

CHAPTER X

AMBUSHES

34. Own Ambushes.—a. The Japanese have often displayed certain characteristics that make them particularly susceptible to ambushes. Among these are:

- (1) They are trail bound.
- (2) Their security is not adequate.
- (3) They tend to bunch up.
- (4) Their "silence discipline" is poor; they jabber.

b. A most important fact to remember is that the Japanese react violently and quickly when struck hard or surprised. For example, if a Japanese outpost is struck and destroyed or dispersed at a point "A" there is a reasonable certainty that Japanese combat patrols from neighboring points "B" and "C" will start moving towards "A" as rapidly as possible. If our forces ambush the approaches to "A" it is about a three to one bet that the Japanese will run into the ambushes. (See Fig. 6.)

c. An ambush relies for its effect on the surprise delivery of a maximum volume of close range fire. This fire should come from at least two directions and should converge on the target.

d. Regardless of the size of the ambushing force the following points must be remembered:

(1) A reserve must be held out to exploit success, to counter the almost inevitable Japanese flanking attack on the position, and to attack and destroy Japanese mortars and their crews. The Japanese bring both light and heavy mortars into action rapidly and fire them accurately.

(2) Some snipers must be assigned the mission of picking off Japanese officers, noncommissioned officers and Nambu (light machine) gunners.

(3) Routes of withdrawal from the ambush position must be selected.

(4) Rally points or rendezvous points for the ambushing party must be designated so that on signal to withdraw our forces can assemble rapidly and without confusion.

(5) Fire will not be opened until the officer in charge of the ambushing party gives the signal to do so.

(6) If the object of the ambush is simply to inflict casualties on the Japanese the fire will cease and withdrawal will commence on a predetermined signal.

(7) Ambushes should be entered from the rear. If the trail on the enemy side of the ambush shows traces of our presence the Japanese will be alerted. If it is impossible to enter the ambush position from the rear, all traces of our passage over the trail must be obliterated.

e. When time and circumstances permit, antipersonnel mines should be concealed off the trail and adjacent to it. When the Japanese dive for cover some of them will inevitably become casualties from these sources.

The bodies of dead Japanese, or articles of their equipment such as helmets, rifles, or gas masks make excellent bait for an ambush. The Japanese are extremely curious and members of a small patrol will practically hold a convention on the trail if they stumble on an item of their equipment.

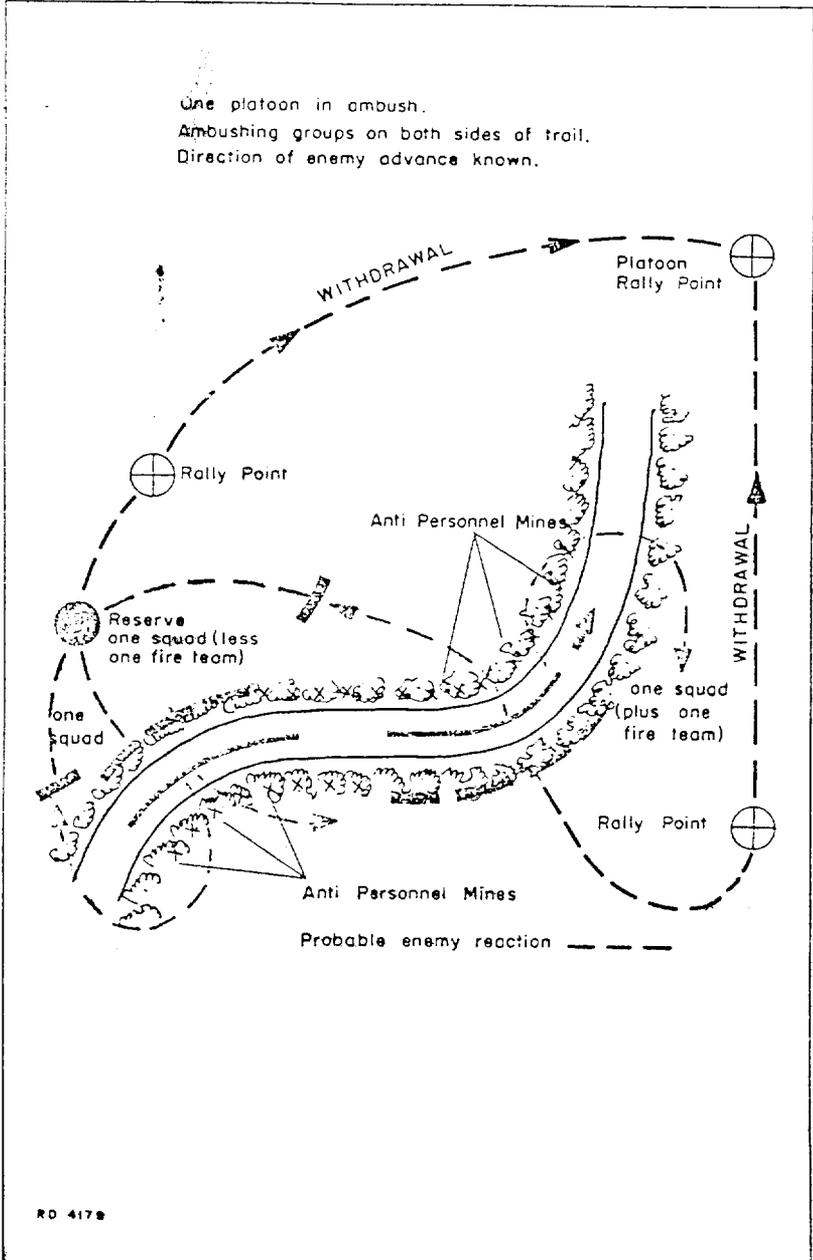
f. In order to achieve more complete surprise it might be necessary to select a position which is not considered tactically ideal. The sacrifice of observation and fields of fire will be justified if surprise can be achieved. Likely ambush positions might be investigated by enemy scouts and the ambush uncovered before we are ready to spring it.

g. When possible automatic weapons should be placed so that their fires converge at various points along the trail within the ambush.

h. If groups are sited on both sides of the trail they must be staggered so as not to fire into each other. (See Fig. 7.) In the situation shown in this figure the enemy has a choice between enveloping the group posted on one side or that posted on the other. In this case the position of the reserve or support element will be governed by the nature of the terrain adjacent to the trail. The value of antipersonnel mines (if time permits their installation) is apparent in the figure.

i. If groups are sited on one side of the trail only, limits of fire must be established.

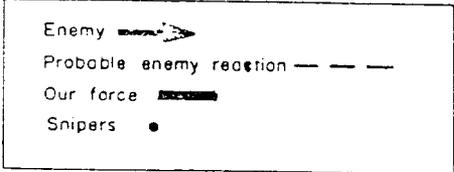
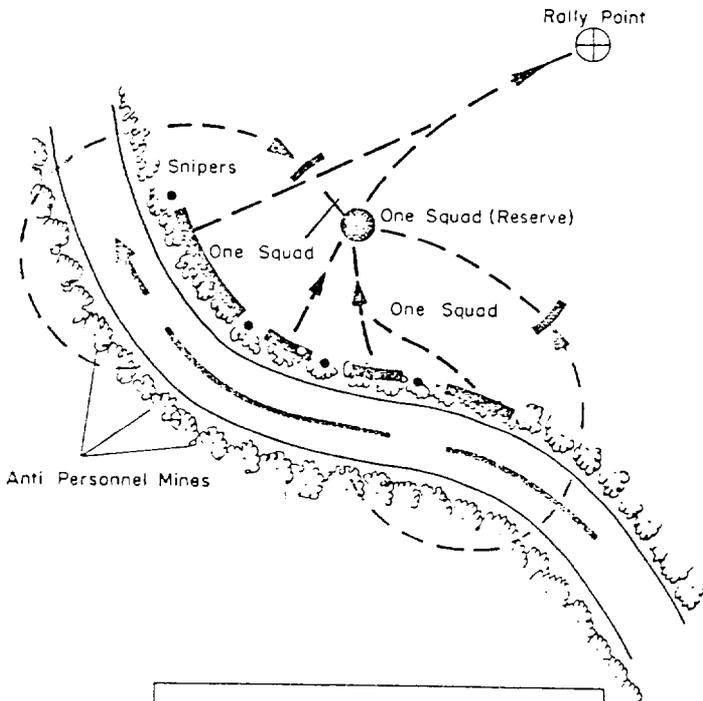
One platoon in ambush.
Ambushing groups on both sides of trail.
Direction of enemy advance known.



RD 4172

FIGURE 7—Ambush

One platoon in ambush.
 Ambushing groups on one side of trail.
 Direction of enemy advance known.



RD 4179

FIGURE 8 — Ambush

35. Enemy Ambushes.—a. One of the best means of rendering enemy ambushes ineffective is the observance of strict trail discipline.

b. Don'ts:

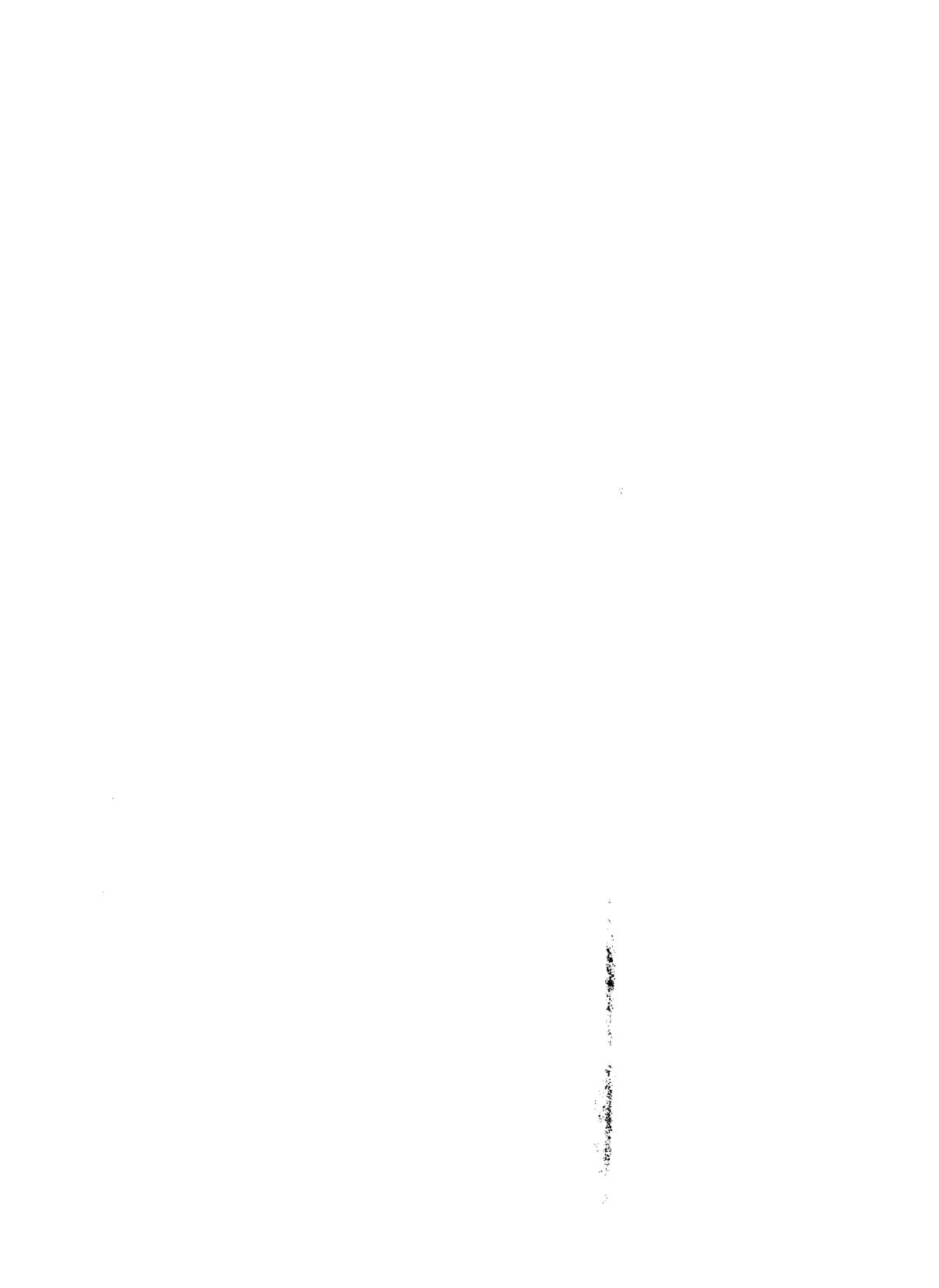
- (1) Don't bunch up.
- (2) Don't straggle.
- (3) Don't talk.
- (4) Don't lose contact.
- (5) Don't relax vigilance.

c. Japanese automatic weapons will converge their fires on the trail. This fire is often high, from two to four feet off the ground. It is usually fixed. By crawling or creeping our men can get clear of the fire.

d. Envelopment of the enemy position must commence immediately. Delay will result in casualties. Speed will upset the enemy and save lives.

e. The Japanese must be taken under fire immediately, but leaders must not permit automatic fire unless targets appear that justify such fire.

f. A prearranged plan for the employment of the elements of a patrol in event of ambush from any direction should be drawn up before the patrol departs from its base.



CHAPTER XI

NIGHT OPERATIONS

36. General.—a. In the jungle, night operations are extremely difficult and hence are infrequent. Japanese night attacks in the Solomons campaign proved abortive in most cases and cost them many casualties. This was due not only to an alert defense, but also to the fact that aggressive patrolling by day kept enemy reconnaissance at a distance. Hence the enemy has not been able to mark routes of approach and to prepare assembly areas into which troops must be moved for reorganization before a night attack is launched. Assembly areas for night assaults must be very close to the departure position, which must in turn be a short distance from the position to be assaulted.

b. Troops in assembly areas at night are particularly vulnerable to hostile artillery fire. When the Japanese on Guadalcanal were able to get into assembly areas they were not able to conceal their presence there, for in the darkness they were unable to avoid a certain amount of blundering about in the bush. On those occasions our artillery exacted a heavy toll; in several instances entire enemy battalions were almost completely destroyed by our artillery barrages brought down into known or conjectured enemy assembly areas forward of our defensive positions.

c. Whether or not a successful night attack in force can be made in the jungle remains a debatable subject. In a jungle characterized by heavy undergrowth they are not feasible. Night attacks can be made in coconut groves. If the terrain and vegetation permit consideration of a night attack the following are a "a priori" requirements:

(1) Thorough reconnaissance by day to determine the exact location of the defenses and the location and nature of obstacles. Close-in reconnaissance is difficult. It must be carried out by small patrols which do not exceed two or three men. These men must work their way stealthily into positions from which they can observe. Reports from New Guinea indicate that in close-in reconnaissance sound powered phones have proved valuable. When practical the enemy position must be kept under continuous ground observation.

(2) Vigorous combat patrolling to screen preliminary movements and prevent enemy patrols from operating. The very nature of the jungle makes it almost impossible to completely prevent enemy ground reconnaissance.

(3) Selection of a single definite objective easy to identify. On one occasion on Guadalcanal the Japanese debouched from the jungle and made a night attack on Edson's Ridge, a key terrain feature which was easy to identify and

could not be mistaken for any other feature. Although the jungle surrounded the ridge, the objective itself was not wooded, but was covered with grass about three feet high.

(4) Suitable assembly areas not too distant from the objective. If the assembly areas are too distant, units will become disorganized in the darkness before they can launch an assault. On the other hand, the assembly areas must be far enough away so that the enemy will not discover troop movement into them. Troop movement into assembly areas should be covered by the noises of aircraft, the fire of artillery, or diversionary actions in other sectors.

(5) Clearly defined trails leading into assembly areas. These trails must be prepared ahead of time. Extensive cutting can not be done, but there will be some thinning necessary and the trails will have to be marked with vines, ropes or phosphorous marks on trees. These trails should not extend into the assembly areas but should stop short of them.

(6) Guides who are well acquainted with the trails over which the unit must move into position must be posted at intervals of not more than five yards. If luminous buttons are obtainable, the guides should wear them, otherwise small indicators may be prepared using luminous paint or natural phosphorous. Black out flashlights can be used.

CHAPTER XII

HEALTH, HYGIENE AND SANITATION

37. **General.**—The rigors of jungle campaigning, the heat, humidity, and dietary deficiencies all tend to cause loss of weight and to lower resistance progressively. These conditions affect the combat efficiency of a command, and are the reasons that periods of rehabilitation are necessary after several months of active operations in the jungle.

38. **Malaria.**—a. (1) Our most persistent enemy in the jungle is neither the climate nor the Japanese, but the malaria carrying mosquitoes known as anopheles. Malaria has inflicted on our troops several times the number of casualties that have been inflicted by the bullets or bombs of the Japanese.

(2) The incidence of malaria can be decreased to a great extent if all personnel are indoctrinated in the subject of "Malaria discipline." This term can be defined as the use of repellents, of clothing and of head and cot nets in such a way as to decrease mosquito bites.

(3) Mosquitoes are most active at dusk, during the hours of darkness, and at dawn. While exposure during these hours cannot be entirely avoided, it should be held to an absolute minimum, and the individual protective measures described below should be applied:

(a) **Clothing.**—Unless sleeping under cot nets, individuals should be fully clothed. Jackets should be buttoned up and trousers tucked into socks.

(b) **Repellents.**—Issue or commercial repellents have proved helpful. These should be applied as directed to hands, wrists, face and neck. Two or three applications during the course of a night will be necessary.

(c) **Head nets.**—Personnel whose duties require them to be up during any part of the period from sunset to about 0700 (shortly after sunrise) should wear head nets.

(d) **Cot nets.**—All personnel will sleep under nets. These nets must be tucked in. Spray will be used both inside and outside the nets.

(e) Use of repellents in the daytime is advisable if troops are operating in heavy jungle country.

(4) Atabrine will be used as prescribed by existing orders. The important factors in the use of atabrine are:

(a) It must be taken by all hands.

(b) It must be taken regularly, daily. Atabrine should be issued by corpsmen after a meal at a formation of the unit, and officers and NCO's are responsible to see that the dose is actually taken in the mouth and swallowed.

(5) Empty tin cans cannot be tolerated as they collect water and are breeding places for mosquitoes. Abandoned foxholes and emplacements must be filled in.

(6) On withdrawal from malarial regions men will be taken off suppressive atabrine in accordance with existing instructions.

39. Gastro Intestinal Disorders.—a. Thousands of man days are lost in jungle campaigns due to gastro-enteritis, dysentery, and other stomach and bowel disorders. When gastro-enteritis sweeps through a unit, it puts every officer and man on his back. On one occasion, a company had one hundred men out of 140, or over 70% completely knocked out by gastro-enteritis for a period of five days. This disease is spread by man's carelessness. It is the direct result of failure to observe elementary sanitary requirements relating to disposal of human waste and garbage, sterilization of mess gear, and observance of the very common sense sanitary regulations covering the preparation and serving of food.

b. No food should be handled with the hands when eating implements are available. Mess gear should be sterilized both before and after using. After sterilization following a meal, mess gear should be hung up to dry in the sun and not crammed back inside a dirty pack. Obviously, it is impossible for troops who are engaged to comply with these regulations during actual combat, but troops in any combat theater never spend as much as 10% of the time in fighting, and during the remaining 90% of the time, they must comply with elementary sanitary requirements.

c. The most effective way to insure that sanitary regulations are observed is first, forcefully to impress upon all hands the absolute necessity for such observance, and, second, to discipline those who violate them immediately and severely.

40. Tropical Ulcers.—Tropical ulcers are common afflictions in jungle climates. They often start from small skin cuts made by coral or thorns. All such minor cuts must be immediately treated. Several applications of sulfanilamide powder may be necessary before the cut heals. These cuts should be covered to protect them from dirt. Small pieces of adhesive, or the commercial "Band Aid," are satisfactory for this. If such cuts are permitted to go unattended, they will usually become a focus of infection, the affected area will increase in size, and serious complications are likely to follow.

41. Trench Mouth.—Trench mouth is sometimes contracted in the jungle. If not promptly treated, it will result in loosening of the teeth and eventual loss of them. Any unusual soreness or tenderness of the gums should be reported to the medical personnel.

42. **Bathing and Washing.**—a. Men must bathe daily in the sea or in fresh water when possible. During combat they will have no chance to do this, but as soon as they have a chance, they must bathe thoroughly. It will be found a good idea to order sea bathing by platoons, for some men are so lazy and irresponsible that they consider it too much "trouble" to take frequent baths.

b. Clothes must be washed when possible. If there is a limited supply of fresh water and soap, men must be required to keep underclothes and socks clean. Of course, if they have the opportunity, they should wash their outer garments as well. Boiling clothes will kill all bugs and will diminish skin infections. If conditions permit, clothes should be boiled twice a week. This will be supervised by NCO's.

43. **Care of Feet.**—a. At the end of a day's march, after foxholes are dug, and the evening meal eaten, men should wash, dry and powder their feet and change their socks. Feet should be thoroughly dried because fungus infections are caused by dampness. They should wash the socks they have taken off. Each individual will have a small can of issue foot powder which is quite satisfactory. There are also many commercial brands available. Men must take care of their feet. Platoon leaders assisted by noncommissioned officers should inspect shoes, socks and feet frequently. The socks are as important as the shoes. Men should be required to wear woolen socks that fit. To prevent socks from working down into the shoes, they should be pulled up over the trousers and secured with string.

b. There are no troop carriers in the jungle except the two with which God has equipped everyone.

44. **Hair and Beards.**—Hair should be clipped short before going into a jungle operation. The growth of beards should be discouraged. It is true that a luxuriant beard lends an air of distinction to the wearer, but the simple fact is that in the jungle where they cannot receive care, beards are not hygienic. Added to this is the fact that beards complicate the problem of the surgeon enormously in case the wearer suffers a face wound.

45. **Purification of Water.**—All water is treated. On the march, halozone or CDC tablets are issued in the rate of one per canteen of water. It takes about twenty minutes for halozone or CDC to dissolve. In camp, all water is chlorinated and lyster bags used. Contaminated water is a primary source of dysentery and other intestinal disorders.

46. **Sleeping.**—Whenever possible, all personnel should sleep off the ground. This will not be possible when troops are engaged, but when in rear areas, it should be a standard rule. The army jungle hammock is an excellent piece of equipment,

will keep the sleeper off the ground, dry, and will protect him against mosquitoes. If no jungle hammocks are available, platforms should be built several inches above the ground. These can be covered with jungle ferns and leaves.

47. Responsibilities of Officers and NCO's.—Company commanders, platoon leaders and noncommissioned officers are directly responsible that Marines are indoctrinated in the necessity for observing the requirements of what might be called "Health and Hygiene Discipline." It is the duty of officers and noncommissioned officers to check daily on the conditions under which food is prepared and served, on the sterilization of mess gear, on the disposal of human waste and garbage, and on the enforcement of all phases of all malaria control measures.

CHAPTER XIII

COMMUNICATION

48. **General.**—Methods of communication that have been used in jungle warfare include radio, field phones, sound powered phones, runners, dogs, whistle, voice, pyrotechnics, flags and prearranged signals made by beating sticks together, tapping on rifle stocks, etc. Obviously some of these methods may be used under certain circumstances, and cannot or should not be used under others.

49. **Radio.**—a. Types similar to the TBX are suitable in attack or defense. These types cannot be used while on the march unless the column is halted for about fifteen minutes for them to be set up, the messages cleared, and the sets broken down again. Accordingly, it is important that radio teams receive special training in speedy installation and break down of these types. These types can be used by battalions or higher echelons in the following nets:

- (1) Regimental.
- (2) Shore to ship.
- (3) Ground to air.
- (4) Forward observers to supporting artillery (if specially designed artillery sets are not available).
- (5) Combat or other patrols to base.

b. Radios in the jungle are from thirty to sixty per cent less effective in range than when they are used in normal or even lightly wooded country. Battery life is less. An initial supply of batteries for jungle use should be twice the initial supply required in a temperate climate. Provision must be made for additional carriers for communication equipment, which will include the extra supply of batteries previously mentioned. If no native carriers are available, personnel must be detailed for this purpose. Radio personnel must have the determination to get the traffic through, with emphasis on reliability more than speed. They should be trained in the proper installation and siting of antennas to get the maximum output from their sets. Radio communication will be especially difficult at night, and thorough training and indoctrination of personnel will be necessary to keep breaks in communication during that period at a minimum.

c. The use of ultraportable radios in the jungle is restricted; their effectiveness depends to a great extent on their location. Dense undergrowth and precipitous slopes have a screening effect. Personnel must be trained where to set up radio sets to best avoid the screening effects of jungle terrain and vegetation.

d. Radio personnel must take part in all preliminary conditioning work. In addition they must receive a thorough indoctrination course in all weapons of the rifle company.

50. **Telephones.**—a. The field phone continues to provide the most satisfactory communication in the defense. In a fast moving attack, or a deep enveloping or circling movement, wire teams will generally not be able to keep up. If the attack is progressing, it should not be held up for the installation of wire; but wire teams must follow movements as rapidly as possible. In the defense all lines should be paralleled. Initially, wire will have to be laid on the ground; later, when time permits, it should be tied in the trees or buried. As a general rule, wire should never be laid or strung on trails. It should be laid or strung several feet to one side of the trail. Frequent rains and constant dampness have a considerable effect on the talking range of long lines using light assault wire. To be useful in all weather conditions, ground return circuits will be necessary on such lines. As conversations may be intercepted by the enemy, strict supervision of use of these lines is essential. Special voice talkers, or prearranged codes or ciphers should be used, and the ground return telephone circuits supervised in the same way as voice radio nets. Unless heavy wire can be laid, which is not likely in thick, rugged terrain, relay stations may be necessary in order to maintain suitable wire communication. It must be emphasized that a moving attack will, under no circumstances, be held up for the installation of wire. If wire is laid, it is the responsibility of communication personnel to lay it as rapidly as possible.

b. Sound powered phones are valuable. They are reliable, light and easy to handle. When used with assault wire, they can be employed for communication from assault companies to the rear. They are especially useful to connect observation posts with command posts and for use in controlling mortar fire. Reconnaissance patrols working forward of our lines have used sound powered phones satisfactorily. If sufficient of these phones are available, they will prove valuable for use within command posts at night. Their use will reduce movement within the command post to a minimum. In the defense, each front-line platoon should be provided with a sound powered phone.

51. **Runners.**—a. In battalions, companies and platoons, runners are the primary means of communication both within moving columns and in the attack. In the defense they supplement wire. The runners should be picked men; selected for their reliability, intelligence, stamina, courage and initiative. In addition to the regularly detailed runners, other personnel must be trained so that they can replace runners who are casualties or temporarily become non-effective because of exhaustion. There can be no compromise on the question of runners without inviting all kinds of trouble. There is no substitute for good runners.

b. All runners must be skilled scouts and good shots. They must be able to read maps and air photos, to make sketches and overlays. They must be alert and observant.

52. **Dogs.**—Dogs have been satisfactorily used in jungle operations both as scouts and as messengers. Trained dogs have proved themselves under conditions of actual combat. It is anticipated that dogs will be commonly used in the future. Undertrained dogs or dogs for whom no handlers are available should never be taken on a jungle operation.

53. **Whistle.**—Whistle signals may be used in the jungle. Most frequently they are used to indicate that unidentified or enemy planes are approaching or are overhead or that all is clear.

54. **Voice.**—Communication by calling is usually satisfactory in platoons and squads either in attack or defense. In large units voice communication during movement is unsatisfactory. During all training the necessity for "passing the word" correctly must be emphasized. It is remarkable to what extent a simple phrase can become distorted after passing through four or five men in a column. During a fire fight, platoon and squad leaders will have considerable competition in the form of battle noises and the jabbering of the Japanese. However, if they have strong vocal cords, they may generally be assured of communication.

55. **Pyrotechnics.**—There is an almost unlimited field for the application of pyrotechnics as a means of signal communication in battle. Pyrotechnic codes are set up in SOI and in orders for all operations. They may be used to call for fires; to announce the jump off of an attack or the seizure of an objective; to call boats in; to indicate general locations at which drops are to be made, or to indicate certain types of enemy movement or activity. Pyrotechnic signals must always be fired at least twice with a specified interval between the rounds.

56. **Semaphore.**—Semaphore, while of no use in the jungle, is valuable to signal along beaches or from shore to ship.

57. **Prearranged Signals.**—Small patrols always plan to use prearranged signals. Tapping on the rifle stock with a stick is a standard form of signalling. Prearranged signals will indicate such commands as "Halt," "Down," "Danger," "Forward," "All Clear," etc. Patrols should carefully rehearse such signals before their departure.

58. **Strings.**—Lengths of strings between adjacent foxholes may be used to effect reliefs at night, relay warnings, etc. This is done by a prearranged series of tugs on the string, each end of which is attached to an arm of the occupants of the foxholes.

CHAPTER XIV

SUPPLY AND EVACUATION

59. General.—Because of lack of trails and roads, supply and evacuation for jungle columns will often be by air, boat or carrying parties.

60. Air.—a. If advanced air fields have been established to support a jungle operation closely, all supplies may be flown in and casualties flown out. Our air force demonstrated in New Guinea and on Guadalcanal that it is capable of carrying any type of supplies or equipment that the ground troops need including bulldozers and 105mm howitzers.

b. If no fields are available, supplies will often have to be dropped. Drops may be restricted to food, clothing, shoes, medical supplies, ammunition, radio spare parts, batteries, etc. Rear echelon representatives of S-4 should supervise the packaging of drops and assure themselves that the service of supply fills all requisitions precisely as requested. If a request includes ninety pairs of shoes, for example, and lists by sizes the number of pairs desired, it must be filled exactly.

c. Parachutes and containers will always be salvaged for eventual return to aviation. In most cases the parachutes will have to be recovered from trees. Natives are adept at climbing the huge trees in the jungle. After recovery, parachutes should be spread out on bushes to dry before they are bundled up. If the column is to move the parachute and containers should be cached for collection at a later date.

d. Ground troops indicate their approximate position in the jungle to dropping aircraft by smoke signals or by coaching the planes in by voice radio. The SOI issued prior to the start of the operation will set forth frequencies on which dropping planes will operate with ground troops' radios. Colors of smoke and the types and colors of pyrotechnics to be used will also be indicated in the SOI. Short burning flares are not satisfactory for communication with dropping planes.

e. The pilot will have a good chance to see parachute flare signals if they are repeated.

f. Sea planes can often be used to bring in supplies or to take out casualties. If the use of sea planes is anticipated, radio frequencies on which troops will operate with them must be established in the SOI.

g. Long range sea planes suitable for supply and evacuation generally do not operate under control of the attack force commander.

61. By Boat.—Supply and evacuation by boat is often the only means available.

62. Carriers.—a. In the jungle one means of keeping supply up is by the use of carriers. If natives are available they should be used, otherwise Marines will have to be detailed. Carriers cannot be expected to pack more than forty pounds per individual over jungle trails. If carries are long and hard the weight must be reduced. Considerable experience indicates that a one way daily carry of thirty pounds is maximum load over jungle trails for periods in excess of a week. The Army has recently developed and issued a pack board.

b. Arrangements for native carriers, their rates of pay and their subsistence must be made with the colonial agent if available or with the head man of the village or districts from which the carriers come. The carriers will expect and should receive allowances of tea, rice and tobacco. They will eat our rations in preference to dying of starvation, but they will not eat them out of choice.

c. All dealings with carriers must be made directly with the agent or head man by the S-4 concerned. No person in our forces should be permitted to deal directly with individual carriers. Carriers do not mingle with our troops in bivouac areas or on the march. They bivouac separately and march separately. Troops served by the carriers must provide protection for the bivouac area and the carrier columns on the march.

d. It will improve the relationship between our forces and the natives if their head men explain to them that in assisting our forces, they are helping themselves and hastening a return to normal lives for themselves and families.

CHAPTER XV

MISCELLANEOUS

63. Care of Weapons and Equipment.—a. The humidity, the mud, and frequent shortage of oil and other materials necessary for cleaning weapons combine to make weapon maintenance in the jungle difficult.

b. Our weapons and equipment are the best and will not go to pieces unless we let them. All weapons and equipment must receive constant "Preventive Maintenance" (PM). The potential battle efficiency of a combat unit undergoing training can be determined almost precisely by the condition in which it maintains weapons and equipment. Equally this reflects the military qualities and character of its officers and NCO's.

c. One of the most important duties of subordinate leaders is frequently to carry out personal inspections to determine the state of maintenance of weapons, ammunition, magazines, spare parts and accessories. Time and circumstances will rarely permit a thorough inspection of all weapons in a platoon at one time. Frequent random inspections will be more satisfactory.

d. All personnel (including officers) of a unit operating in the jungle are required to carry individual four-ounce cans of cleaning and preservative oil. Extra gun oil must be carried by members of machine-gun squads.

e. Four cleaning rods per rifle squad is a reasonable initial allowance. One of these should be carried by each fire team and one by the squad leader. Patches should be carried by each person.

f. Breech mechanisms can be protected by the oil soaked cloth previously mentioned.

g. Accessories, spare parts and magazines will rust and deteriorate rapidly if not cared for diligently.

h. Optical equipment such as mortar sights, telescopes and field glasses should receive special care. Field glasses and compasses may be wrapped tightly in pieces of dark colored cloth. This cloth will keep the moisture from fogging and eventually ruining them.

i. All machetes must be sharpened and oiled before going into a jungle operation. If one man in the squad can carry a small commercial stone, it will be found helpful for sharpening machete blades which soon get badly dulled and nicked.

j. A tendency exists to throw dirty clothes away and to draw new outfits whenever possible. When the situation is

an active one, this is to be expected, as no time exists for washing clothes. When the situation is stabilized and time, soap and water are available, dirty clothes should be boiled and washed.

k. Immediate disciplinary action must be taken when men through carelessness waste or lose their equipment. Much will be lost and ruined legitimately incident to training and active operations and these losses are expected and can be condoned, but wastage due to carelessness is a serious military offense.

64. **Combat Intelligence.**—a. Combat intelligence is produced from information of the enemy that is secured on the battlefield. Information of the enemy units present, their strength, equipment, weapons, dispositions, morale, state of supply and general physical condition is vital to our operations.

b. All information of the enemy is important and continuing efforts must be made to collect it. Any scrap of information, regardless of how trivial it may seem, must be reported.

c. Some of the means of collecting the information upon which combat intelligence summaries are based are:

- (1) Patrols.
- (2) Native agents and scouts.
- (3) Direct observation from OP's.
- (4) Air observation.
- (5) Air photos.
- (6) Prisoners.
- (7) Captured documents, papers and maps.
- (8) Captured weapons and equipment.
- (9) Radio monitoring.

d. Intelligence officers of units engaged usually get their information from patrols, OP reports, and prisoners. Operation orders or the intelligence annex to such orders will prescribe how long prisoners may be held at battalion and regimental headquarters before being sent to division intelligence for interrogation. Ordinarily, battalions are allowed to retain a prisoner for about 15 minutes and regiments for about half an hour.

e. The production of combat intelligence from information derived from the other sources listed above is a function of echelons higher than regiments and battalions.

f. All information secured by whatever means is passed on to intelligence officers of the higher staffs. After correlation, checking, and evaluation of information, it is disseminated by division and corps intelligence officers to all units in the form of a daily summary.

g. No individual will retain in his possession any documents, maps, letters, cards, diaries, or booklets, or, in fact, any

written or printed material captured from the enemy. All this will be turned into unit intelligence officers for examination and forwarding to higher headquarters at the earliest possible moment.

h. As soon as possible all enemy dead will be searched and all identification tags, papers, rank straps and insignia will be removed and delivered to intelligence personnel. Japanese often wear on the left breast a small piece of white cloth on which characters are inscribed which indicate the name of the unit to which they belong. These patches must be ripped off shirts and jackets and delivered to intelligence officers.

i. All captured enemy weapons and equipment will be turned over intact as captured to intelligence for inspection, pending further disposition. (The necessity for this should be obvious because not only are we interested in enemy weapons and equipment from the point of view of combat intelligence but because our engineers and scientists study these items, and from them gain a great deal of extremely valuable information on the state of enemy war industry.)

j. All OP's are required to keep a record of what is heard and seen from them. Intelligence officers inspect these records several times daily or more frequently if necessary.

k. Although it does not result in the production of combat intelligence, information of the terrain is of vital importance for terrain is one of the determining factors in arriving at decisions and in formulation of plans.

65. Counter-intelligence Measures.—a. The enemy is as interested in us as we are in him, and he may be expected to employ all possible means to gather information vital to development of his own plans. We must do everything possible to prevent him from securing this information and to mislead him to such an extent that the information he does secure is not sound.

b. In a defensive situation, we attempt to screen our activities from the enemy by constant and aggressive patrolling. By this means, we prevent the enemy from getting close enough to observe our activities and the progress we are making in the development of our installations.

c. When time permits, dummy installations should be put in.

d. Concealment of installations is essentially a counter-intelligence measure.

e. Individuals who are serving in or attached to units actively engaged will not carry on their person any papers, documents, cards, or letters. Individuals may carry with them

pictures of their loved ones, providing these have been inspected and passed by an officer to assure that there is no writing on the back of them that is of more than sentimental importance to the owner.

f. Only such official maps and sketches as are necessary for the immediate operation will be carried. In no case will our own installations be indicated on maps that are carried forward of battalion command posts.

g. Written operation orders will never be taken forward of battalion command posts.

h. No letters from home may be carried as they might contain remarks on home front activity that could be distorted and used for propaganda purposes by the enemy, or otherwise aid him.

i. If captured, a Marine is required to give his name, rank and serial number when interrogated. He will give no other information.

j. No natives, unless vouched for by responsible colonial agents, or whose previous services stamp them as undeniably reliable, will be permitted in the vicinity of any command post.

k. The enemy will make every effort to get planes through for the purpose of taking air photos. Consequently, we must conceal our dispositions and activity by means of camouflage. On the approach of unidentified or enemy planes overhead, our forces will immediately conceal themselves.

l. Radio silence will be observed as called for in operation orders and radio traffic will be handled strictly in accordance with signal operation instructions. During battle some radio communication from battalions down will be over ultra-portables in the clear. Code names will be used.

m. Since most of our telephone lines are ground return, we must remember that the enemy can hear as well as we can. Therefore, front-line units should use special talkers or codes when carrying on telephone conversations.

66. Natives.—a. Unless the loyalty of a native has been established or he has been vouched for, he must be regarded with suspicion. However, since most of the natives of the jungle islands have been ruled benevolently for many years and their association with white men has been a pleasant one, they are generally friendly and reliable. Their treatment at the hands of the Japanese has served to strengthen their loyalty to the Allies. It would be dangerous, however, to proceed on the premise that all natives are friendly.

b. Already on many of the jungle islands, natives have given practical proofs of their feelings of friendship for us, their loyalty to our cause, and their hatred of the Japanese. Under these circumstances, it can only be considered a serious

breach of discipline and detrimental to the war effort if members of our armed forces are permitted to mistreat, brow-beat, or impose upon the natives with impunity.

c. If a native is under suspicion or his loyalty is in question, he should be arrested and taken before the proper authorities.

d. All official dealings with natives should be through the proper agency. Should there be no colonial agent or administrator available, all dealings must be through the head man of the district, and all agreements relative to the employment of natives should be made with him. All pay and rewards in the form of cash, tobacco, cloth and other media of exchange must be made through the agent or head man.

e. Individual Marines will not be permitted to trade or barter with natives unless the approval of the agent has been secured.

f. Natives are generous to a fault. Marines must not be permitted to impose upon this generosity, although when a native really wants to give a man something as a mark of respect or esteem, the man should be permitted to accept it.

g. Native women are strictly "tabu."

h. Natives have their own language, and, in addition, most of them can speak a corrupt English called Pidgin. The nature of Solomon Islands pidgin can be illustrated by rendering the sentence: "The assistant surgeon gave the man an enema," into pidgin. The sentence becomes: "Small doctor pump along him fella arse."

i. There is a common but completely erroneous belief that the louder one's voice and the more profane one's language, the easier it becomes for the native to understand. On the contrary, if one knows no pidgin, a sentence spoken clearly and slowly in a moderate key and with distinct enunciation will probably be comprehended.

j. A native should never be asked how far it is to a place. He should be asked how long it takes to get there in terms of hours or days. His answer will be based on his experience as an individual traveller, and due allowance must be made for the fact that it will take much longer to move a column of men than it took the native. A native should not be asked a question that requires "yes" or "no" for an answer. The question should be phrased so that he will be required to give a positive answer in the form of a statement that contains the information desired.

k. Intelligent natives can understand air photos much more readily than they can comprehend a map or a chart.

l. When dealing with native guides, it must not be forgotten that many natives do much of their travel by canoe and

that the nature of the hinterland may be only vaguely known to them. The natives who do know anything about the back country are provincial, and while they may be thoroughly conversant with their own neighborhood, they are quite at a loss when ten miles away from it. Accordingly, when moving from one district to another, arrangements must always be made for new guides.

m. Native information of the enemy, his arms, his disposition and his equipment cannot be accepted even if the native or natives who give it are reliable. It must be considered and verified, if possible, by our own scouts. This is not a matter of questioning the trustworthiness of a proven native. It is simply a fact that the ability of the native to estimate numbers and to distinguish between types of weapons he has observed leaves much to be desired. For example, on one occasion a Marine officer was told that there were three Japanese in an area. When the place was taken over some time later, it was found that there had been about five hundred Japanese there at the time the native made his report. What the native meant was that because he had approached none too close, he had seen only three.

67. Maps, Sketches, Charts.—a. Maps of South and Southwest Pacific jungle islands, while generally correct in delineation of the coastline, have, in most cases, been worthless insofar as representation of ground forms is concerned. Although the principal rivers may be shown, there are countless unnamed streams, inlets and lagoons which are not indicated. Except for coastal tracks, the trail net shown on the maps has been proved in most cases to be the product of some map maker's fertile imagination. Native towns and villages may or may not exist where they are indicated, and if they do exist, it is quite likely that the names they bear on the map bear no relation whatever to the name in current common use among the natives. Thus the large island north of New Georgia is shown on all maps as Kolombangara, and it may have been so called many years ago when the maps were made. Now, a mention of Kolombangara to a New Georgian native elicits a blank stare. The natives know the island as Nduki, pronounced "dookey." Similarly the "village" of Triri shown on maps of New Georgia is actually not a village at all but simply the designation of a place where large sea-bass can be caught. Further, the natives do not pronounce the name as "Triri" but as "deedee." The battle of the "Tenaru" was actually fought on the "Ilu." These are but several of countless scores of examples which illustrate how wary one must be in dealing with information found on most maps of the jungle islands, and when trying to correlate that information with information furnished by the natives.

b. Many an otherwise obscure missionary or island trader has had his name immortalized by calling rivers and peaks after himself and his friends. A river called the

Wharton River on a map is known to the natives, who labor under the handicap of never having heard of the eminent Mr. Wharton, as the Pundakona. Smith Island on the map may be Vela, as Florida in the Solomons is Ngela (pronounced Gayla) to the natives.

c. Maps must be corrected at every opportunity. This is the duty of all officers, who should send copies of corrected maps to higher headquarters where corrections will be consolidated, and new maps prepared.

d. Many natives are sufficiently well educated to produce accurate free hand sketches. The natives should always be asked to indicate on such sketches the distances from place to place in terms of hours of travel. It must be remembered that this figure represents the time required for an unladen individual.

e. Many of the charts of the jungle islands are old and some of the data may be incorrect. Information secured from old charts should be checked for accuracy with former traders, missionaries and those who carried on inter-island commerce or who have lived on the islands.

68. Air Photos.—a. Air photos are the most accurate source for preliminary study. Mosaics and strips are satisfactory for general study. Stereo pairs and vectographs provide a means of studying ground forms in some detail. The information of ground forms secured from the study of these types of air photos can easily be transferred to other maps.

b. Aerial photographic requirements must be anticipated and a complete schedule of requests presented to aviation well before the commencement of an operation.

c. Photo maps should receive wide distribution and those applicable should be placed in the hands of all concerned including platoon leaders and platoon sergeants.

69. Scale Models.—Scale models of the objective should always be constructed. The engineers are equipped to do this work. If no engineers are available, satisfactory scale models can be constructed using ordinary clay. All available sources of information are used to get accuracy of terrain detail.

70. Eating in the Jungle.—a. Troops who are actively engaged can not expect to eat hot meals. They must get along on "C", "D", "K", and "J" rations. The "D" ration is regarded as an emergency ration and is not under ordinary circumstances eaten. The ration creates thirst and if other rations are available, it should not be eaten except when there is plenty of water on hand. There may be circumstances when "J" ration components can be issued to supplement "C" and "K" rations. It may also be possible for small cans of fruit juice to be issued to supplement the basic rations. All basic

rations may be eaten cold, but they are more palatable and nourishing if they can be heated.

b. All soldiers should learn how to cook rice for after capture of Japanese dumps, it may be necessary for our troops to live on Japanese rations for a few days. If properly cooked, rice is very good. It should be prepared with a small quantity of water and steamed. The Japanese are fond of soy products which have high food value. Boiled rice, the meat and vegetable component of a "C" ration, and soy sauce make a good field meal.

c. In many of the islands of the South Pacific there are native fruits and vegetables such as coconuts, papayas and taro. Troops in rear or staging areas will be able to fish. The waters around the islands abound in fish.

d. Most cooking in the jungle is done by individuals or small groups of men who pool their resources and prepare food for themselves in one of two containers. Generally, the only cooking vessels available will be the helmet, empty "C" ration cans, the canteen cup or the top of the mess pan.

e. Men must be instructed never to eat with their hands. They must always use a utensil or they must fashion a spoon out of the top of a ration can, or a piece of cardboard from a ration container.

71. Engineers.—a. Engineers will be found most essential in jungle operations where they will be required to build new roads, to improve existing tracks and trails, to build bridges, to assist in camouflaging dumps and other installations from enemy air, and to assist with their advice and tools in the development of defensive positions. In the first phases of a jungle operation, engineers will be required to use such materials as are at hand for these projects. Heavy engineer equipment is not available initially.

b. The purification and distillation of water, the construction of water storage tanks, reservoirs, and the establishment of water points are engineer functions.

c. Engineers are used when available to clear enemy mine fields, to lay mine fields, and to execute demolitions. In jungle warfare, these are not their primary duties.

d. Engineers are so busy during the initial stages of an operation with road improvement, bridging and the establishment of water facilities that they have little time to devote to anything else.

72. Sentries.—a. Sentries should always be posted in pairs in such positions that one can cover the other. At night, sentries should lie down or sit or stand or squat in a fox hole. If the sentry is prone or sitting, persons challenged will be silhouetted. Only one sentry should challenge while the other covers him from a concealed position.

b. Pass words or counter-signs must be protected. They must be given in a low voice. In rear areas, the correct challenging procedure is:

Sentry: "Halt. Who goes there?"

Party: "Friends," or "A Company, First Marines," etc.

Sentry: "Advance one to be recognized."

Party advances to about five paces from sentry.

Sentry: "Halt."

Party halts.

Sentry: "What is the pass word?"

Party: "Philippines." (Or the pass word).

Sentry: "Islands." (Or the counter-sign).

c. In forward zones only the last exchange need be used. In this case the sentry should give the first half of the identifying phrase and the challenged party the last half.

73. Casualties.—a. Men who are wounded in battle must realize that by calling for a corpsman they first waste their own needed strength and second jeopardize their own lives as well as that of the corpsmen. A corpsman can only be at one place at one time. Doctors and corpsmen are so valuable to an organization that their lives must not be placed in jeopardy any more than is necessary. Wounded men will all receive attention, but they must wait their turn.

b. Wounded generally suffer from shock for a short period and they should not attempt too much movement, but when there is better cover nearby, and the wounded man can reach it under his own power, he should attempt to do so. Wounded must bandage themselves as well as possible. Men should receive training in application of a bandage to a leg wound or an arm wound using one hand, for they may be required to do this.

c. If the men are equipped with individual jungle first aid packets, they must be instructed in the use of the contents.

d. Except when ordered by an officer, men under no circumstances will withdraw from a fire fight to carry wounded to the rear. The duty of every Marine is to continue the fire fight, for the best way to assure that wounded comrades are in safe positions is to press the attack forward beyond them. Doctors, corpsmen, and litter bearers can then operate rapidly and efficiently.

74. Code Names.—Prior to entering combat, all officers are assigned code names. No officer will be addressed by his rank nor will titles be used in addressing noncommissioned officers. Salutes are not exchanged during combat.

75. Ammunition.—a. The unit of fire established in TBA is a unit of measurement set up for supply purposes. It does

not represent the amount of ammunition that is expected to be consumed in a day or a week or in any stated period of time in jungle combat.

b. Men need not be arbitrarily ordered to carry the number of rounds of small arms, of mortar ammunition, or of grenades established in TBA. In some cases, circumstances will dictate a reduction in the TBA figures; in others, it will be found desirable to increase them. The tactical situation as well as the difficulties of terrain to be overcome must both be taken into account in calculation of ammunition loads.

c. If a column is to move for any distance in the jungle, it may be impossible to carry one unit of fire in mortar ammunition and maintain the desired rate of march. Accordingly, this category may have to be cut down, or carriers used.

d. Seasoned troops will conserve ammunition; poorly trained troops will waste it.

e. Eleven clips (88 rounds) of .30 caliber ammunition for an M-1 rifleman has been found a sufficient supply for several days of hard jungle fighting. Many officers are of the opinion that five clips (40 rounds) is adequate for two or three days of jungle fighting providing troops are well trained.

76. **Special Equipment.**—a. Tennis, basketball or Army jungle shoes are valuable items of special equipment. When possible at night men should remove the shoes they have on during the day and put on tennis shoes. This will help rest and relax the feet. These shoes are also valuable for short scouting missions.

b. Dark kid or leather gloves are useful in the jungle to protect hands against briars and thorns.

c. A short machete-like blade for officers is a desirable item. The Collins "Legitimus" Knife as furnished to the Army Air Corps, or the L. L. Bean Machete have proved satisfactory and durable.

d. Members of Intelligence sections, communication personnel and artillery and heavy mortar observing teams should be equipped with several sets of light weight tree climbers. Several pairs of these should be carried in each company. The Japanese style is an efficient tree climber but too light for our use. When made out of heavier metal they can be used successfully.

77. **Clothing.**—The same type uniform that will be worn in action should be worn through the final training period, and all hands will wear the same uniform in action. If utility suits are worn during training and the men shift to camouflage suits just before action, there may be momentary confusion in the minds of some men when the Japanese are first encountered. Their greenish brown uniform has sometimes been mistaken for our own utility garment.

APPENDIX I

Patrol Reports.

There follow four forms on which is listed some of the information that patrols sent out to reconnoiter a route, a beach, a bridge, or a road or track might be expected to obtain.

Route Reconnaissance Report

REFERENCE: (Maps, aerial photographs, etc.)

ENCLOSURE: (Sketches, overlays, photographs, etc.)

1. Basic data.
 - a. Composition and armament.
 - b. Mission.
 - c. Passage of friendly lines, or departure from friendly area—where, when, how.
 - d. Where and when patrol began initial phase of reconnaissance.
2. Objective Data.
 - a. Route (start and finish).
 - b. General nature of terrain.
 - c. Suitable for vehicles (Jeeps? Trucks? Tanks?).
 - (1) If so, what portions?
 - (2) Estimate of amount of work necessary to make suitable.
 - d. Natural obstacles.
 - e. Water and food supply enroute.
 - f. Nature and extent of troop bivouac areas.
 - g. Cover and concealment available.
 - (1) From aerial observation.
 - (2) From ground observation.
 - h. Trails and roads of importance along route.
 - i. Key positions.
 - j. Additional information.
3. Enemy.
 - a. Defensive installations.
 - b. Location and number.
 - c. Arms and equipment.
4. Casualties.
 - a. Own.
 - b. Enemy.

5. Remarks or Observations.

Beach Reconnaissance Report

REFERENCE: (Maps, aerial photographs, overlays, etc.)

ENCLOSURE: (Sketches, overlays, photographs, etc.)

1. Basic Data.

- a. Composition and armament.
- b. Mission.
- c. Departure from friendly area—where, when, how.
- d. Began initial phase of reconnaissance—where and when.

2. Data on Beach.

- a. Location.
- b. Length (yards).
- c. Width (yards).
- d. Vertical differences between high and low tide (feet).
- e. Recession of water line between high and low tide (yards).
- f. Location of 3-foot depth line at low tide.
- g. Character of bottom from 3 foot depth line, (infantry men? wheeled vehicles?).
- h. Location of sand bars and reefs on approaches to beach with depths of water over each at high and low tide.
- i. Roads and trails from beach (include information on width, grade, and surface; whether or not suitable for movement of light tanks).
- j. Nature of soil on beach.
- k. Natural obstacles in water or on beach (type, extent and location).
- l. Nature of terrain immediately inland.
- m. Nature of beach vegetation.
- n. Average height of waves.
- o. Present utility of beach in regard to small boats.
- p. Beach area suitable for landing surf boats (Higgins; Ramp).
- q. Beach area not suitable for landing surface boats. (Higgins; Ramp).

3. Enemy.

- a. Defensive installations.

- b. Location and number.
 - c. Arms and equipment.
 - d. Enemy obstacles on beach and in water (mines, wire, etc.).
4. Casualties.
- a. Own.
 - b. Enemy.
5. Remarks or Observations.

Bridge Reconnaissance Report

REFERENCE: (Maps, Aerial photographs, etc.)

ENCLOSURE: (Sketches, overlays, photographs, etc.)

1. Basic Data.
- a. Composition and armament.
 - b. Mission.
 - c. Passage of friendly lines, and departure from friendly area—where, when, how.
 - d. Where and when the patrol began initial phase of reconnaissance.
2. Objective Data.
- a. Structural type of bridge (suspension, supported, etc., wood, steel, concrete, etc.)
 - (1) Number and type of spans.
 - (2) Number and type of supports.
 - (3) Beams and stringer dimensions.
 - b. Width and length of bridge.
 - c. Estimated capacity.
 - d. Direction of stream flow.
 - e. Height of bridge above water.
 - f. Abutments, type (concrete, reinforced concrete, brick).
 - g. Type of road surface over bridge (if rail, give number and gauge of tracks).
 - h. Fordability of stream at this point and immediate vicinity.
 - i. Bridge approaches.
 - (1) Key positions in vicinity.
 - j. Probable effects of weather on
 - (1) Stream.
 - (2) Surrounding terrain.

3. Enemy.—(Information on enemy in vicinity of bridge.)
 - a. Defensive installation.
 - b. Location and number.
 - c. Arms and equipment.
4. Casualties.
 - a. Own.
 - b. Enemy.
5. Remarks or Observation.

Road Reconnaissance Report

REFERENCE: (Maps, aerial photographs, etc.)

ENCLOSURE: (Sketches, overlays, photographs, etc.)

1. Basic Data.
 - a. Composition and armament.
 - b. Mission.
 - c. Passage of friendly line, or departure from friendly area—where, when, and how.
 - d. Initial phase of reconnaissance,—where and when.
2. Objective Data.
 - a. Type of road.
 - (1) Width (yards).
 - (2) Surface.
 - (3) Drainage.
 - (4) Traffic.
 - (5) State of repair.
 - b. Adjoining roads (roads which feed subject road).
 - c. Bridges.
 - (1) Type.
 - (2) Capacity.
 - (3) Width and length (yards).
 - (4) Fordability of stream (in event of bridge destruction).
 - d. Adjacent terrain.
 - (1) Key points.
 - e. Possible road block locations.
 - f. Cover and concealment available.
 - g. Probable effects of weather.
 - h. Additional information.

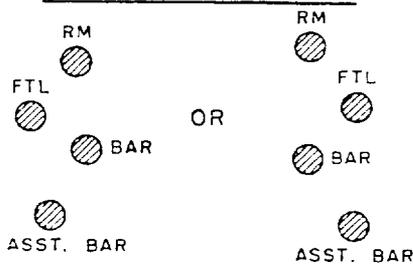
3. Enemy.
 - a. Defensive installations (include road blocks, types; steel rails, concrete blocks, logs, etc.).
 - b. Location and number.
 - c. Arms and equipment.
4. Casualties.
 - a. Own.
 - b. Enemy.
5. Remarks or Observations.

APPENDIX II
COMBAT DRILL
(EXTENDED ORDER DRILL)

FIRE TEAM

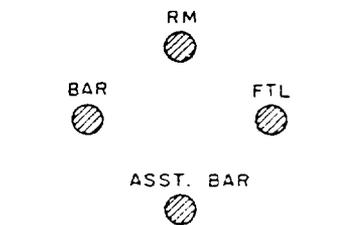
A. BASIC FORMATIONS

1. COLUMN



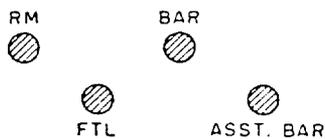
NOTE
FTL MAY BE ON
RIGHT OR LEFT
OF COLUMN

2. DIAMOND



NOTE
SAME AS ABOVE

3. SKIRMISHERS RIGHT

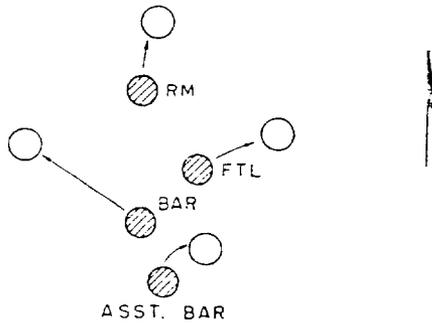


4. SKIRMISHERS LEFT

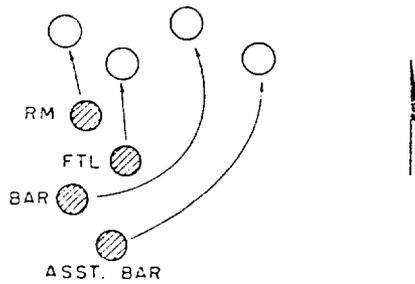


B. FROM COLUMN TO—

1. DIAMOND

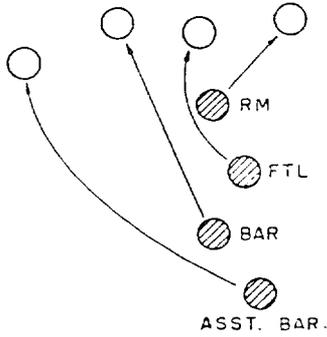


2. SKIRMISHERS RIGHT



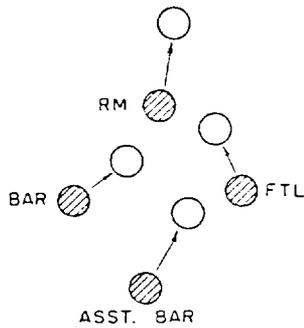
RD 4179

3. SKIRMISHERS LEFT

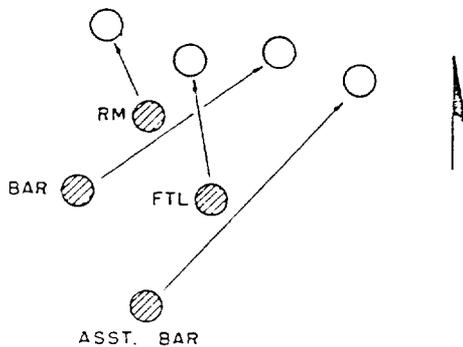


C. FROM DIAMOND TO —

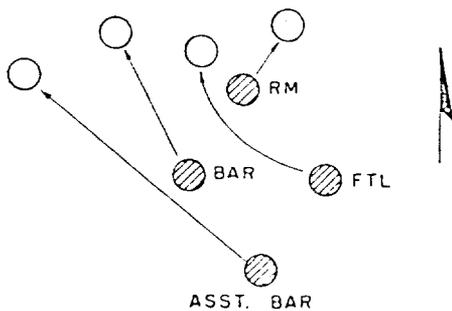
I. COLUMN



2. SKIRMISHERS RIGHT

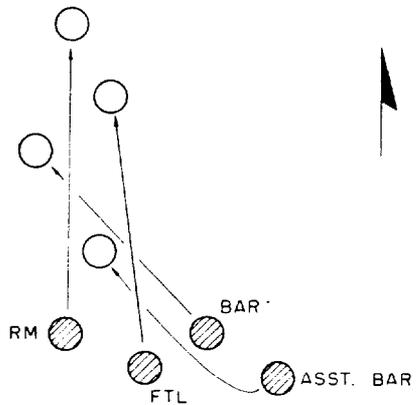


3. SKIRMISHERS LEFT

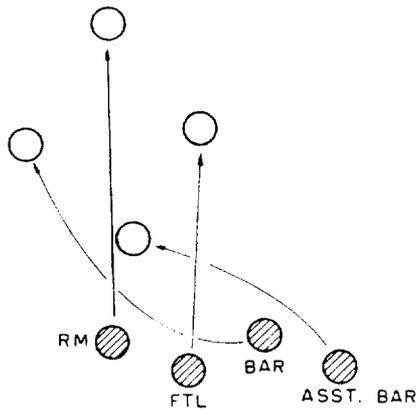


D. FROM SKIRMISHERS RIGHT

1. TO COLUMN

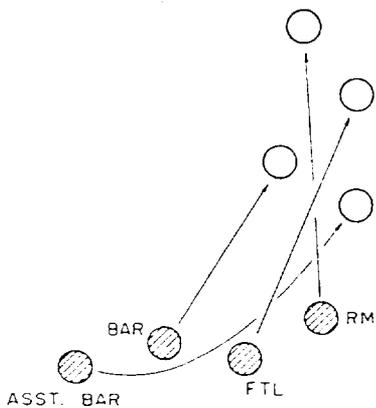


2. TO DIAMOND

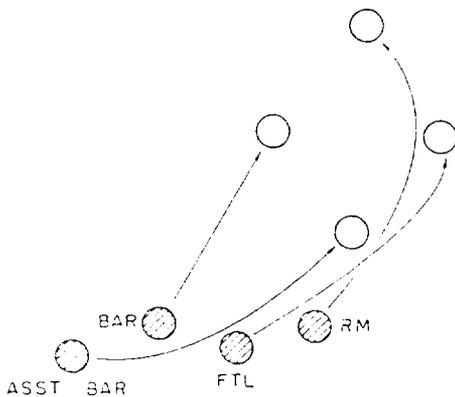


E. FROM SKIRMISHERS LEFT

I. TO COLUMN



2. TO DIAMOND



BIBLIOGRAPHY

Intelligence Bulletins, MID, War Dept.
Tactical and Technical Trends, War Dept.
The Jungle Book, MTP #9, India.
Battle Drill for Thick Jungle, General Staff, India.

12973(3) MCS QUANTICO, VA. 10-28-44-3M