

CORPS OF ENGINEERS

CAMOUFLAGE OF
INDIVIDUALS AND
INFANTRY WEAPONS



WAR DEPARTMENT • FEBRUARY 1944

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C O N T E N T S

This manual supersedes paragraph 30, FM 5-20, 1 June 1940.

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FM 5-20A, Corps of Engineers Field Manual, Camouflage of Individuals and Infantry Weapons, is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

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Part 1 ← left out

C H E C K L I S T

1. INDIVIDUAL (watch form, shadow, texture, color).

a. Prepare individual equipment in the following order:

- (1) Helmet (break form, color, shine; keep garnishing short).
- (2) Face and hands (darken, disrupt).
- (3) Weapons (disrupt).
- (4) Shine (darken, conceal, remove).
- (5) Canvas equipment (darken).
- (6) Camouflage clothes, body nets (where necessary; especially patrols, observers, covering parties).

b. Choose position carefully for:

- (1) Fire mission (field of fire, observation, communications).
- (2) Other factors (concealment, cover, obstacles).

c. Consider enemy viewpoint (ground and air; enemy is alert).

d. Use natural concealment (terrain features, darkness, mist, shadow).

e. Blend with background.

- (1) Silhouette (avoid becoming one).
- (2) Shadows (use them, do not make them).

f. Avoid careless movement.

- (1) Move by bounds between good concealed fire positions.
- (2) Move swiftly or crawl very slowly (when forced to).
- (3) Select time and place of movement that enemy will least notice.
- (4) Use concealed routes, buildings of all kinds, burned-out places, gorges, defiles, cliffs, embankments, caves, hollows, ditches, hedges, edges of woods with undergrowth, fence lines, terrain irregularities which contain usable shadows. Keep off roads and paths.
- (5) Avoid landmarks, lone trees and rocks, fence corners, light ground, edges of woods with no undergrowth, all targets in silhouette.

g. Camouflage discipline.

- (1) Maintain camouflage.
- (2) Carelessness may reveal the team (move quietly, watch banging equipment).
- (3) Don't look up at planes.
- (4) Don't walk or drive in open; make no unnecessary tracks.
- (5) Disperse on march and in bivouac.
- (6) At halts during a march, disperse and take cover.
- (7) Don't throw newspapers, boxes, ration tins, or cans in the open.
- (8) Don't use open flashlights or matches in a combat area at night.
- (9) In sudden enemy light, stop moving, or drop.

2. FOXHOLES

- a. Choice of position.
- b. Natural concealment.
- c. Background.

- d. Tracks.
- e. Spoil and concealment.
- f. Covers.

3. SHELTER TENTS

- a. Strike or cover front.
- b. Don't pitch in daytime.

4. WEAPONS

- a. Know how flat-top garnishing works.
- b. Know how to blend nets with different backgrounds.
- c. Know how to erect net easily, quickly, properly.



FIGURA 1.



FIGURE 2.

YOU ARE THE TARGET

Individual camouflage is the *concealment* a soldier uses in combat to surprise, deceive, and outwit the enemy.

The ground is the soldier's observation post, jump-off point for attack, route of advance and communication, fortification, protection, and obstacle. He must know how to use the ground for effective concealment. He adapts his dress for best concealment while in the firing positions and for mobility, and carefully selects his routes between positions for such concealment as is possible while he is in motion. Interruptions, crawling (very slow) and running (very fast), aid concealment of motion.

The simple principles in this book have been battle tested. If the soldier learns and practices them continuously in training, he will know what to do about concealment at the right time in battle.

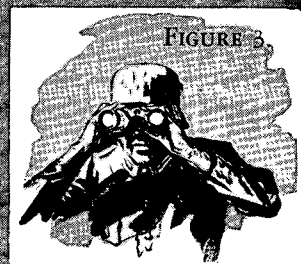
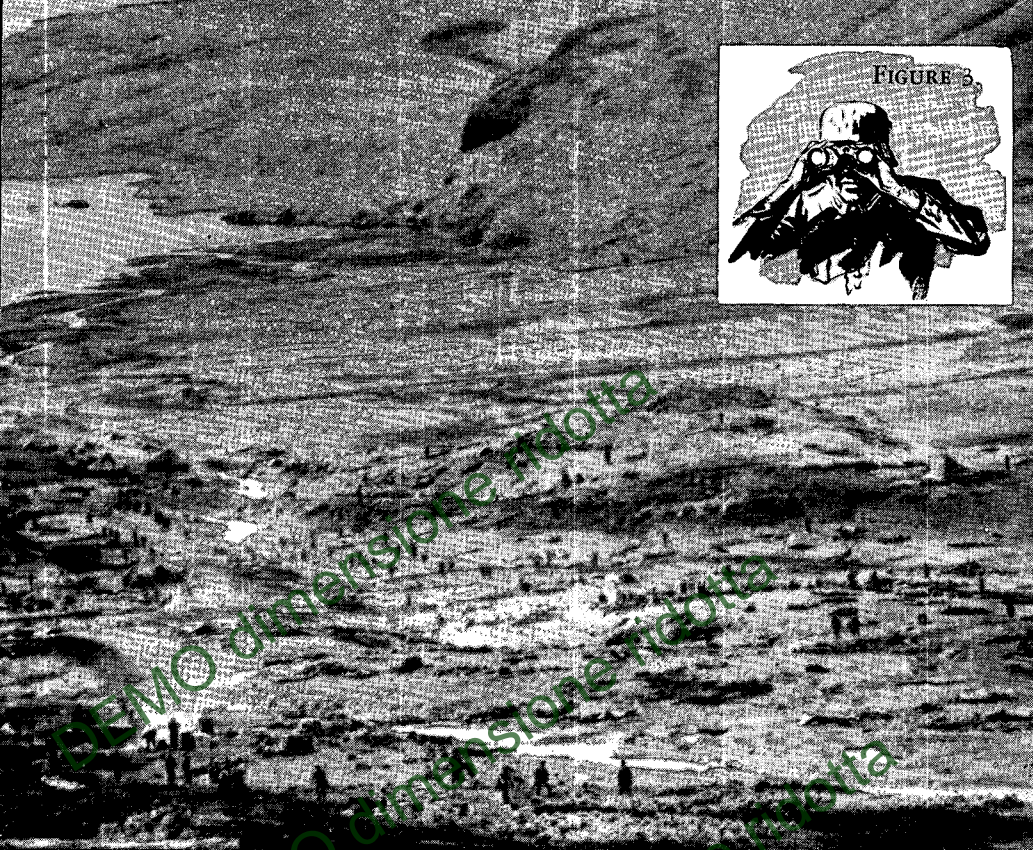


FIGURE 4.

ENEMY OBSERVATION

Camouflage activities of the individual are designed to deceive two kinds of enemy observers—ground and air. The above photograph shows a ground observer's view of a landing operation. We are all familiar with views from the ground, but views from the air are different. Many things that are invisible from the ground can be seen from the air. In modern war, the enemy puts much reliance on aerial photographs for information about our activities and our intentions. The more they reveal to him the better prepared he will be, and the harder to defeat.

By becoming familiar with the different look of things from the ground and from the air, by study of the ground view, and by studying aerial photographs, you can learn how to guard yourself and your unit against both kinds of observation. Bear in mind, too, that hostile observers both on the ground and in the air may use field glasses, telescopes, and cameras equipped with special lenses to increase their range of vision.

CONCEALMENT DEPENDS ON—

Effective concealment of the individual depends primarily on background—your choice of it, and your knowledge of how to employ it to your advantage.

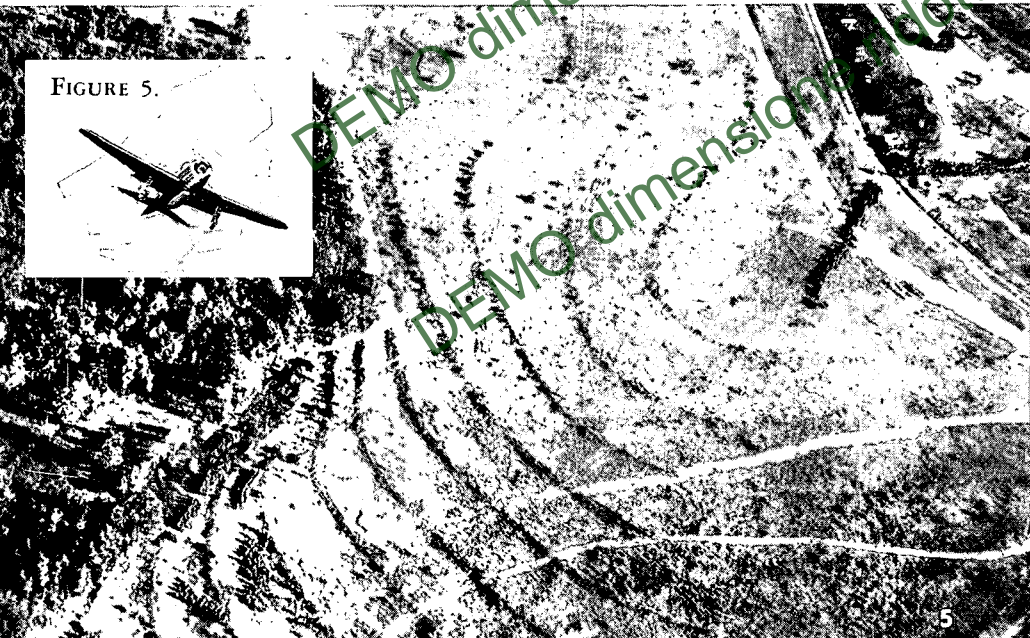
Background is your surroundings seen from the ground and from the air. They may be anywhere—a portion of a jungle; an area in a barren, rocky desert; a farmyard; or a city street.

Background is the controlling element in individual concealment. It governs every camouflage measure taken by the individual. You wear clothes which blend with the predominant color of the background, and tone down the color of your skin and your equipment for the same purpose. You practice blending with your background by hiding in shadow and by avoiding contrast between your silhouette and the background. You avoid movement which the stillness of the background will emphasize. To keep the appearance of the background free of signs which point to the presence of military personnel, you follow concealed routes; and you conceal spoil, tracks, equipment, and installations.

This book tells how you—the individual soldier—can conceal yourself. In the illustrations background, movement, signs of activity, and dress are inseparably connected, just as they are on the battlefield. Each soldier must be aware of them every moment of the day.

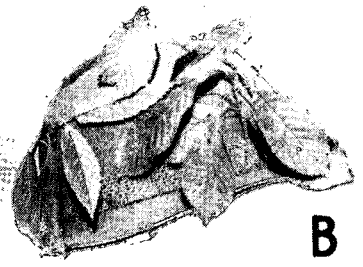
FIGURE 6.

FIGURE 5.





A



B

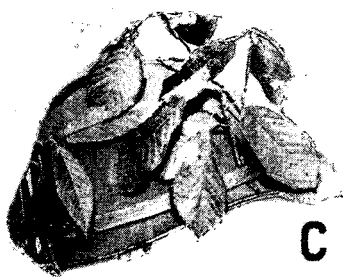
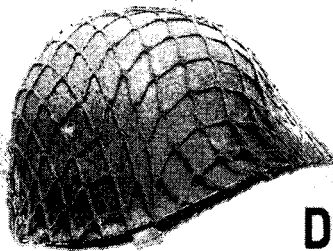


FIGURE 7.

HELMET CAMOUFLAGE

The outline of your helmet is one of the striking characteristics of a soldier's equipment. Its curved, familiar shape can be identified by the enemy. One of your first steps in preparing for the job of staying alive to fight is to disrupt both the form of your helmet and the strong, straight-lined shadow it casts. Here are six ways of disrupting its form, all of which, except **A**, will reduce its shine at the same time.

A uses a disruptive paint pattern on the helmet. Take care to carry the pattern across the curved lines of the edges, especially those seen from the front. Besides ordinary non-glossy paint, liquid vesicant

**C****D**

chemical agent detector, M5, can be applied to the helmet in a mottled pattern to give two kinds of protection at once. Under conditions of great heat or extremely rough handling, it may be necessary to renew this paint each week.

B uses a strip of burlap or osnaburg around the base of the helmet. Foliage can be slipped into the band and held in place. Do not use too much foliage. Do not place the band too high.

C uses the same principle as **B**, but here the issue rubber band is used.

D shows a helmet covered with a mesh helmet net. By itself, this net aids in toning down the helmet and eliminating some of the shape but the shape of the helmet is still there.

E shows the helmet net put to better use. Foliage has been inserted in the mesh. It is held securely and can be quickly replaced with fresh materials when the old materials wilt and change color. The main point is to break up the shape of the helmet with short natural material which will not readily catch in surroundings and which will not disclose the head when it is moved slightly.

F is an improvised helmet cover made of a circular piece of osnaburg, burlap, or other cloth, 20 inches in diameter. A 1-inch hem is sewn around the edges, a tape or drawstring is pulled through it and the whole thing is pulled tightly onto the helmet. It is painted to break up the solid color. Slits 2 inches wide have been cut in it to allow for the insertion of foliage.

No matter what kind of helmet camouflage you use, it is incomplete if the shadow underneath the helmet is not broken up by arranging the bits of foliage so that pieces of it hang over the rim of the helmet. Small irregular pieces of cloth, similarly arranged, will accomplish the same purpose.

**E****F**



FIGURE 8.

SKIN TONED DOWN



FIGURE 9.

Your face, bright in color and, like your canvas equipment, is a beacon to the enemy observer — who usually has the sighting end of a rifle at his eye. Color your face, neck, and hands to get rid of that light tone (fig. 8). Gloves may be worn. Coloring may be done by painting them in a disruptive pattern (fig. 9), or it may be done by toning them down in an even color (fig. 10).



FIGURE 10.

On the face, disruptive patterns should cut across the nose line, cheek bones, eye sockets, and chin lines.

Lampblack, burnt cork, or just plain mud can be used as toning materials. Some soils contain harmful bacteria and should not be used in mud form to darken the face unless a medical officer has determined that they are safe to use.

A mesh mosquito face net (fig. 11), properly toned down, is an effective method of breaking up the outlines of the face. Such a net can be dyed in strong coffee or in an issue dye.



FIGURE 11.

SHINE



FIGURE 12.

WEAPON TONEDOWN

Even your weapons need some attention in the way of camouflage. The outline of the rifle or carbine is easily recognized. It may be painted properly under the supervision of an officer or noncommissioned officer, or it may be wound with tape or cloth of a grayed color to disrupt its outline. Leaves or other natural material wrapped with tire tape are effective. The bayonet can be toned down with mud. When camouflaged by painting, weapons and equipment must be darker than surroundings. Flat surfaces are roughened by adding sand to prevent shine.



SHINY OBJECTS

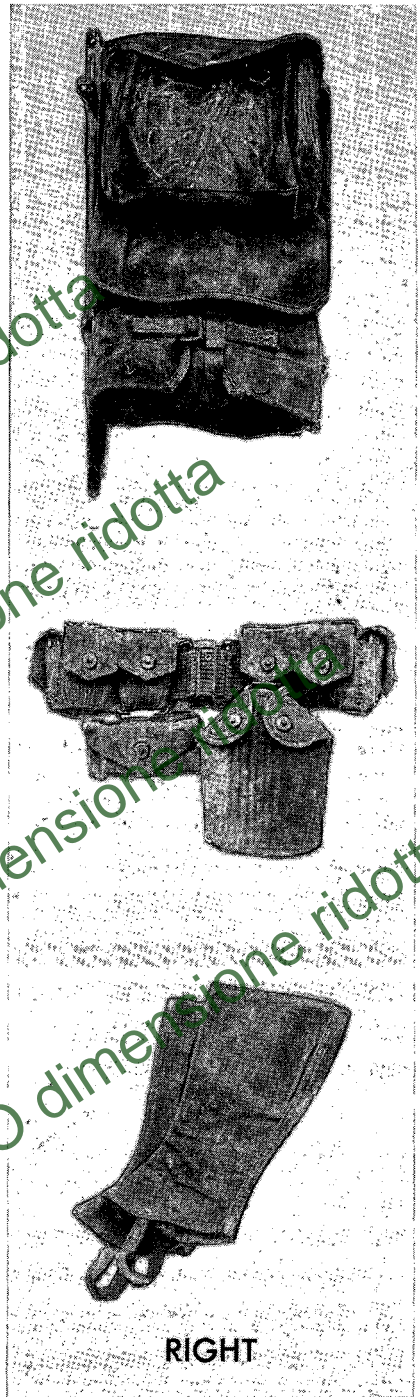
The reflection from a brightly shining object is a common giveaway. All shining articles should be concealed. Put your watch and shiny rings in your pocket, and keep that bright mess kit out of sight when you are not using it. Note the shine on the helmet.

CANVAS EQUIPMENT



FIGURE 13 ① and ②.

Clean canvas equipment is correct for inspections, but in combat zones such equipment is an invitation to a bullet. In motion, light-color patches are easy to spot. One of your first jobs in dressing for the job of fighting is to tone down (darken) the color of your canvas equipment. It can be done with paint, mud, charcoal, or anything else which will make the tone of the canvas about the same as the rest of your clothes. To color canvas to match the OD uniform, use OQMG No. 3, Compound for Coloring Web Equipment.



RIGHT

With the same materials, tone down (darken) the color of your pack, cartridge belt, canteen cover, leggings, and shelter half. The pictures on this page illustrate the difference such coloring makes. In figure 14 ① the soldier almost blends with the background, but those bright canvas articles stand out in the picture; they make excellent aiming points.

In figure 14 ② the soldier has darkened his canvas equipment. He is harder to see; the familiar outlines of his canvas equipment no longer stand out to the enemy observer.

FIGURE 14 ① and ②.





FIGURE 15.

CAMOUFLAGE CLOTHING

Individual concealment is mostly a matter of using your head and the materials at hand. This applies to camouflage clothing as well. When issue camouflage clothing is unavailable, the soldier makes his own, suiting its form and color to the terrain. Here one soldier is painting another's green twill fatigue uniform. A brush is not necessary. A dauber made with a wad of cloth on the end of a stick will do. Another method is to stamp the pattern on the cloth with a block of wood dipped in paint. But even paint itself is not essential. Any coloring material may be used—dye, black crankcase drippings, or even a mixture of mud and cup grease. The important thing is to make your clothes look less like a soldier's uniform and more like the terrain in which you will move.

However, a soldier is not invisible simply because he wears a camouflaged suit. The suit is just the *beginning* of the concealment job. It makes it easier for you to conceal yourself—but it makes it easier only if you know the other principles of individual concealment.

FIGURE 16. — Careful analysis of the background, before painting, produced these examples of camouflage suits improvised by a unit for use by observers and snipers in special terrain. A gray, rocky landscape suggests a snake pattern applied on fatigues dyed a light color.



FIGURE 17. — A different pattern is needed to blend this soldier with an area in a desert. Its irregular lines resemble the concealing pattern on the back of a turtle.



FIGURE 18. — In broken rocky country, this mottled pattern is effective concealment from enemy observation, ground and air. The soldier stays close to the objects with which he is blended. Such patterns are conspicuous when moving or against wrong background.





FIGURE 19

FIGHTING CLOTHES

The issue uniforms are carefully designed to blend with a wide variety of surroundings under average conditions. For fighting at close ranges, special measures may be taken.

JUNGLE SUITS

The above soldier is wearing the jungle-patterned suit formerly issued by the Army, on request of a theater-of-operations commander, to troops engaged in jungle warfare. Its mottled pattern blends with the green foliage, and the outline of the soldier and his equipment melt into the background. The cloth cover which fits over the helmet has loops into which sprigs of foliage can be fitted to increase concealment. Wear the suit with caution, however, in extremely dark sections of a jungle because in this case the lightest colors in the pattern are especially noticeable during movement.



FIGURE 20.

The reverse side of the jungle suit is shown in figure 20. It is colored dark OD, which is the predominant color of jungle backgrounds.



FIGURE 21.

SNOW SUITS

For use in arctic country, the Army issues a snow suit, a two-piece garment, plain white, designed to blend with a white or mottled white-and-black background. Snow country isn't all white. There is some black in it; shadows and dark objects appear darker than usual. The suit cannot conceal the small patches of shadow which surround the human figure, but that is not necessary if the background, too, contains numerous dark spots.

SILHOUETTE

The soldier in figure 23 ① may think he blends with the ground — and he does. But look at his sharp silhouette against the bright river. Stay off such clearly defined edges. The correct way to look over the bank is with good background both before and behind you (fig. 23 ②). The enemy is no respecter of position. He won't stay in front of you to oblige you. Assume he is everywhere. Don't give him an opening like this.

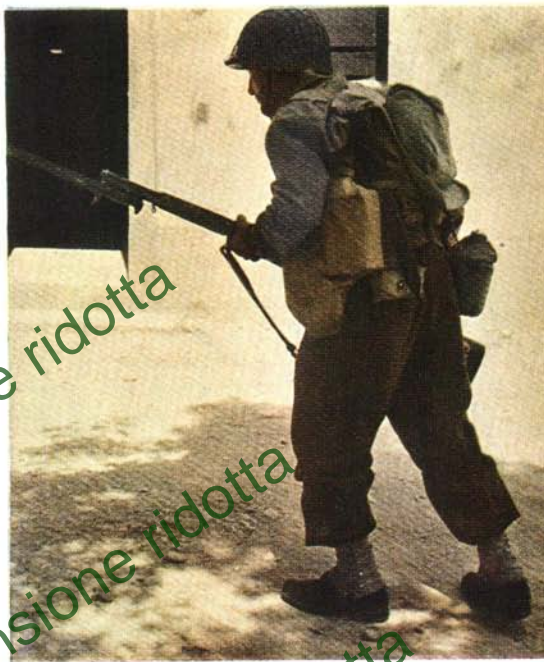


FIGURE 24.

Avoid bright backgrounds of all kinds (fig. 24), especially when such backgrounds are unbroken by shadows and dark objects. In the same way, when you are in a light-colored uniform, avoid contrast with dark, shadowed objects (fig. 25). If you must be revealed against a contrasting background, be aware of it, and be there for the shortest possible time. Select your next point of concealment in advance and get there as quickly as you can.



FIGURE 25.

CAMOUFLAGED COVER



ONE-MAN
FOXHOLE

FIGURE 50.

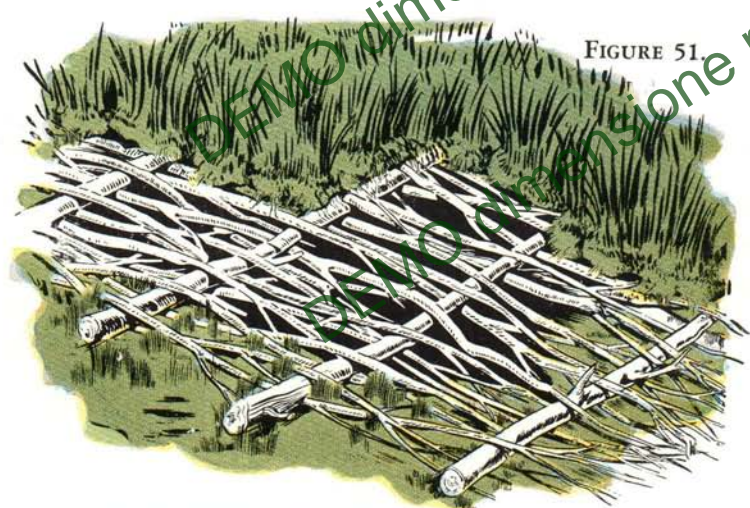


FIGURE 51.

DETAIL OF CAMOUFLAGED COVER



FIGURE 52

MACHINE GUNS

The machine gun is the vital weapon in both attack and defense. It receives the closest attention of enemy troops and its concealment must be as perfect as possible. It engages troops at comparatively close range, it fires frequently, and the enemy will continuously try to find and destroy the gun. Usually, machine-gun positions are hasty, in which case camouflage means siting to best advantage and then using natural materials at hand. The above photograph shows a machine gun well sited among natural materials. In the following pages are some of the methods used to camouflage machine guns. As before in this book, the essential factors are background and silhouette. No position can be regarded as completely concealed, however, unless shine, spoil, and tracks have been eliminated.

WRONG



FIGURE 53.

BACKGROUND AND SILHOUETTE

In the above figure the crew has forgotten its background; the gun and gunners are silhouetted. Below, the crew has taken proper action to distort their silhouette, to blend the outline of the gun and its crew with the background. Foliage common to the area is used, and is placed in its natural position.

FIGURE 54.

RIGHT





FIGURE 55.

DEBRIS

Debris offers excellent positions for machine guns. The confused area makes it difficult to pick up the silhouette of a gun and its crew, especially if the position has been chosen with a good background. Figure 55 shows a well-sited, well-concealed position in debris.

Several factors must be taken into account in such an area, however. When the gun is fired, dust may be kicked up and betray the position to the enemy. If possible, take care to eliminate such a possibility by wetting it down. Debris is effective camouflage, but it should be sturdy enough to resist shock and fire. Otherwise it may collapse upon the position.

Also, an isolated patch of debris in a street is conspicuous. It is an obvious place for concealment and is sure to draw enemy fire whether he sees a gun in the position or not. Stay away from isolated positions of concealment.

Always have an alternate concealed position chosen in case you are required to move.

DRAPES

When the best position in the terrain is not good enough and natural materials are insufficient for concealment, artificial materials are used.

A simple, quickly erected camouflage device is the drape, made of shrimp net or of garlished twine net. Propped over the machine gun to distort its shape, it is erected near natural vegetation of some sort, with which it is "tied in" and blended. At close range the nature of the camouflaged object is concealed, and from a distance the drape itself melts into the surroundings.

Figure 56 illustrates a quickly prepared surface emplacement. The drape is thrown over the gun and blended with surrounding vegetation. This takes only a few seconds, but it does an effective job. The front of the drape has been lifted for firing the piece.

FIGURE 56.





FIGURE 57.

MACHINE GUN FLAT-TOP

The flat-top is an answer to the problem of concealing dug-in machine gun positions. The simple flat-top illustrated above requires no framework. Its materials are four posts about 2 feet long, some No. 10 wire and a garnished 15- by 15-foot twine net.

Corner posts are not driven; they rest on the ground and are held in place by double strands of No. 10 wire, tightened by racking. When wire is not available for guys, tent-guy ropes will do the trick. Corners of the net are slipped over the posts before racking. To dismantle the flat-top, the corner posts are knocked out and the net collapses.

The figure below shows the completed job, with natural foliage used to break up the shadow of the gun embrasure.

FIGURE 58.





FIGURE 67.

MORTARS

Mortars should always be sited in defilade. Since a mortar covering a designated target area has a wider choice of position than other small weapons, such defilade can almost always be found, and concealment from ground view is fairly easy. The aerial observer is the enemy's principal means of discovering the position of mortars, and the mortar must be well camouflaged against the aerial observer as well as against the possibility of enemy flanking action.

Siting in windows and broken ground patterns, plus intelligent use of natural and artificial materials, offer the mortar concealment from the air.

FIGURE 68.



RIGHT



FIGURE 69 ①.

A foxhole emplacement for a mortar needs camouflage. Without camouflage, it is much easier to detect than a hasty position. In figure 69 ① the crew has dug its foxholes carefully, concealed the ammunition and spoil, and pulled grass in around the emplacement. Care must be taken not to make giveaway tracks in this kind of terrain.

Figure 69 ② shows what could have happened if the job were done by a badly trained crew. This position has taken no advantage of the characteristics of the weapon and made no provisions to conceal the ammunition. Spoil from the foxholes marks the place for aerial observation. The crew has not taken best advantage of their position. Their equipment is not toned down, no attempt has been made to use natural materials on their helmets; and their faces and hands have not been toned down.

FIGURE 69 ②.

WRONG



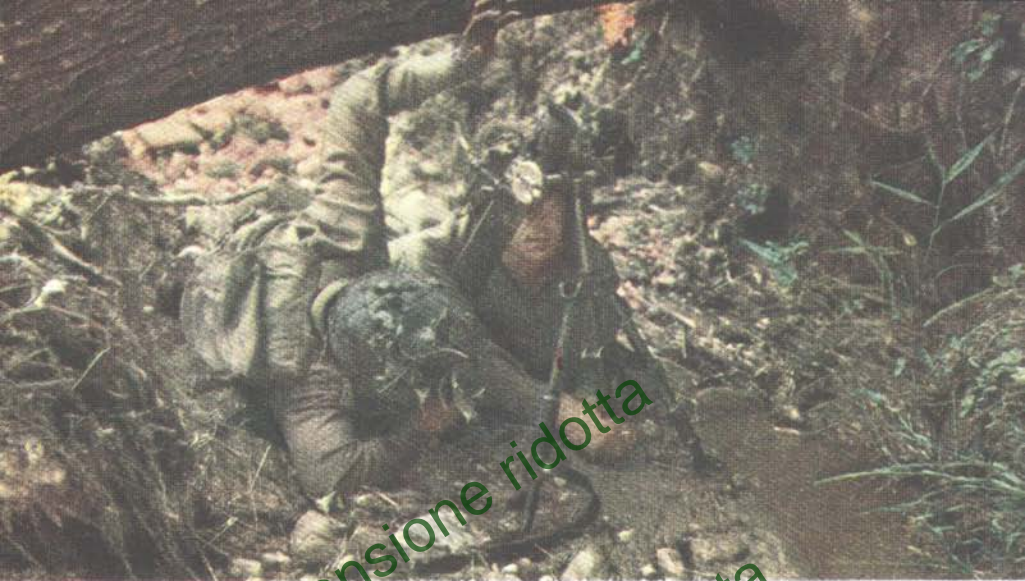


FIGURE 70.

SITING

The figures on this page show excellent choice of position and use of existing natural concealment. The position above is in a creek bed under a fallen tree. The men and mortar are concealed from overhead as well as flanking views.

Below, position in heavy foliage is well hidden. From the air it would be difficult to separate the position from the foliage pattern.

FIGURE 71.

