

WAR DEPARTMENT FIELD MANUAL
FM 5 - 20 B

CORPS OF ENGINEERS

CAMOUFLAGE
OF VEHICLES



WAR DEPARTMENT • APRIL 1944

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CHECK LIST

1. QUARTERING PARTY

- a. Make reconnaissance of area to be occupied. If aerial photographs and large-scale maps are obtainable, study them before and during reconnaissance. Purpose is to—
 - (1) Provide adequate dispersion.
 - (2) Site unit parking within dark and heavily textured areas of the terrain pattern. Make use of overhead cover, clumps of bushes, scrub growth, and folds or other shadow-casting irregularities in the ground surface.
 - (3) Take advantage of overhead cover and the terrain pattern to conceal traffic circulation.

- b. Make a track plan, preferably on a map overlay. This is necessary to prevent violations of camouflage discipline and to take full advantage of natural terrain features. Copies should be distributed to all motor officers and key unit N.C.O.'s. Track plan should—
 - (1) Make full use of all existing roads and paths for entering and leaving, for circulation within the area, and for access to security outposts.
 - (2) Locate new routes close to and parallel to lines which are normal features of the terrain pattern.
 - (3) Provide one-way traffic circulation.
 - (4) Show portions of routes to be wired in.
 - (5) Show portions of routes to be patrolled by traffic guides to prevent short cuts and other violations of camouflage discipline.
 - (6) Show portions of routes and parking areas requiring overhead or oblique screening.
 - (7) Show portions of routes where tracks must be obliterated after traffic has passed.
 - (8) Show locations of traffic signs. Reflectors and lighted signs for night traffic should have natural or artificial overhead screening.
 - (9) Show locations of soft or soggy areas which may become noticeably rutted.
 - (10) Show locations of unloading areas.
 - (11) Show locations of unit parking areas.
 - (12) Show locations of areas where materials may be cut without making scars attracting attention of enemy aerial observers.

2. MOTOR OFFICERS

- a. Instruct drivers in details of track plan. Make sure they understand purpose of it.
- b. Check parking for—
 - (1) Dispersion.
 - (2) Concealment measures.
- c. Cover repair and refueling areas with overhead screens, if natural overhead cover does not exist.

3. DRIVERS

- a. Maintain dispersal distances on the march, at halts, and in bivouac.
- b. If vehicle breaks down, don't park in an open field. If possible, pull off main road on to a side road and park under trees, or in the shadow of bushes or a building. Drape vehicle if repairs will take more than a short time. Don't keep shiny tools or repair parts in sun, where reflections may attract enemy airmen.
- c. Follow traffic signs and instructions of traffic guides when approaching, within, and leaving a concealed position. Keep to designated routes, unloading areas, and parking areas.
- d. Don't make unnecessary noises during concealed movements. Disconnect horns during these operations.
- e. To conceal your vehicle in a parking area—
 - (1) Park under overhead cover, if available, or parallel to and close beside a building, hedge, or other natural terrain lines, or close beside a clump of bushes. Park to take advantage of shadows.
 - (2) To prevent shine, cover windshield, headlights, cab windows, and taillights with mud, rags, foliage, or prepared covers. To conceal betraying shadow, drop curtain over rear entrance to cargo space.
 - (3) Drape with net. Arrange props so net is at least a foot above top of vehicle, and so props make soft and irregular bumps in net. Pull edges of net out as far as they reach and stake them to the ground. In sparsely wooded areas, carry props and stakes with you.
 - (4) If vehicle is *not* draped, use cut foliage to break up form of vehicle and the shadow it casts. If vehicle *is* draped, use cut foliage to break up prop bumps and edges of net. Choose foliage which blends with the surroundings and keep it in its natural growing position.
 - (5) If in bivouac or a concealed position, cut foliage only in areas designated for that purpose.
 - (6) Don't wash body of vehicle unless ordered to by motor officer. In some terrains, mud and dust help to blend vehicle with surroundings.
 - (7) Maintain blackout discipline at night.

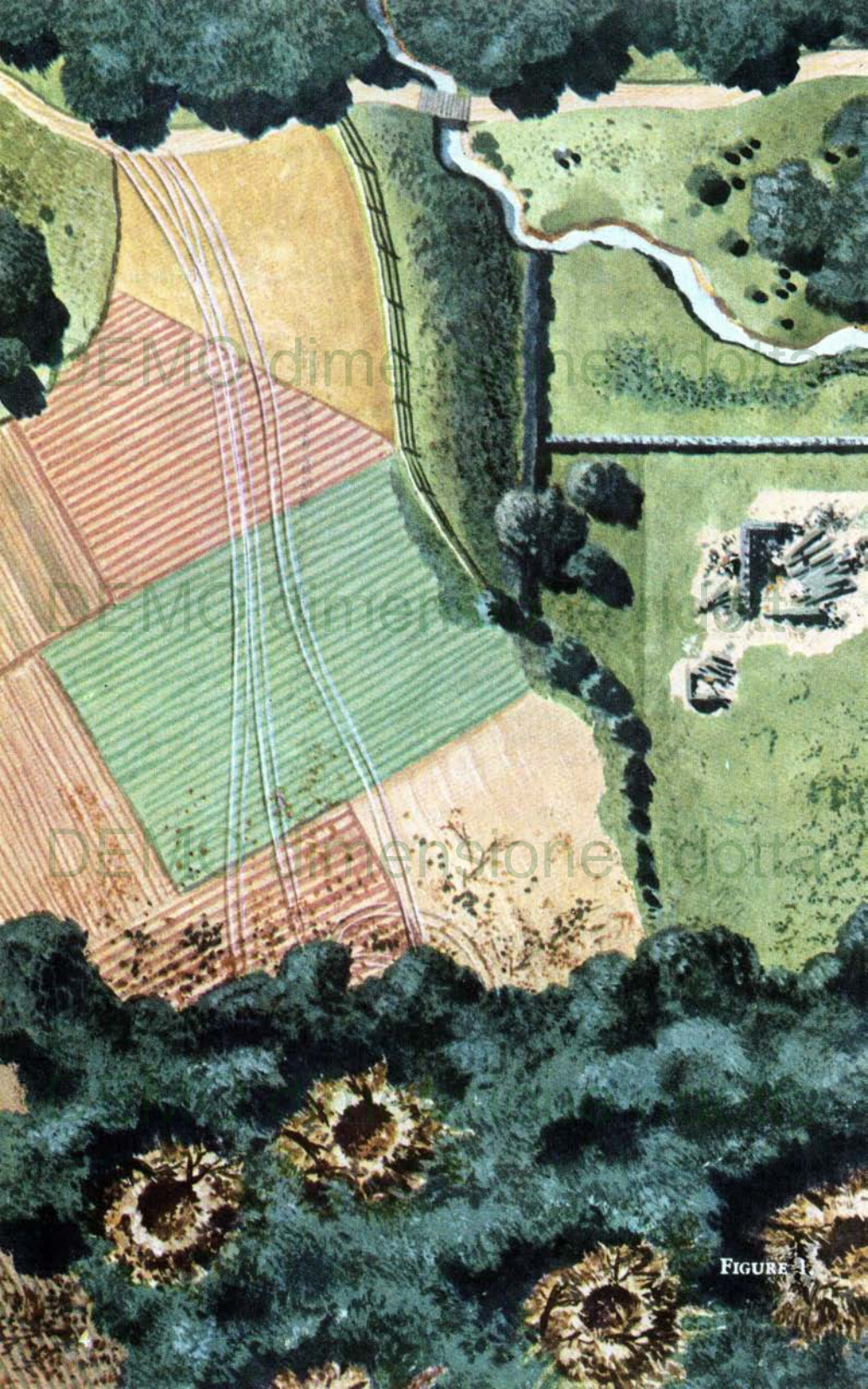


FIGURE 1

CAMOUFLAGE OF VEHICLES

INTRODUCTION

Knowledge of the principles of camouflage is as important to the vehicle driver as proper vehicle maintenance. A badly concealed vehicle can draw a bombing or strafing attack, which is even more crippling than a poor maintenance job. In either case, the result is a lost vehicle. In the case of poor camouflage, it may mean much more—enemy discovery of a unit, disclosure of an important tactical plan, or complete destruction of installations.

Camouflage of vehicles depends not only on concealing vehicles themselves but equally on preventing and concealing their tracks. Methods of solving these two problems are covered in this book.

Figure 1 illustrates the importance of track concealment. Three tracks cutting diagonally across the plowed fields lead enemy airmen to the position previously concealed in the lower part of the picture. This has been bombed out. Tracks like these are the result of either lack of training in adequate track planning or in proper camouflage discipline. This position would have remained undiscovered if vehicles had made only one new track to the position, following the fence line and the line of bushes.

It should be borne in mind that enemy ground and aerial observation is drawn quickest by anything which is moving, and that nothing can be done to conceal vehicles moving through undergrowth or along exposed routes.

ENEMY AERIAL OBSERVATION

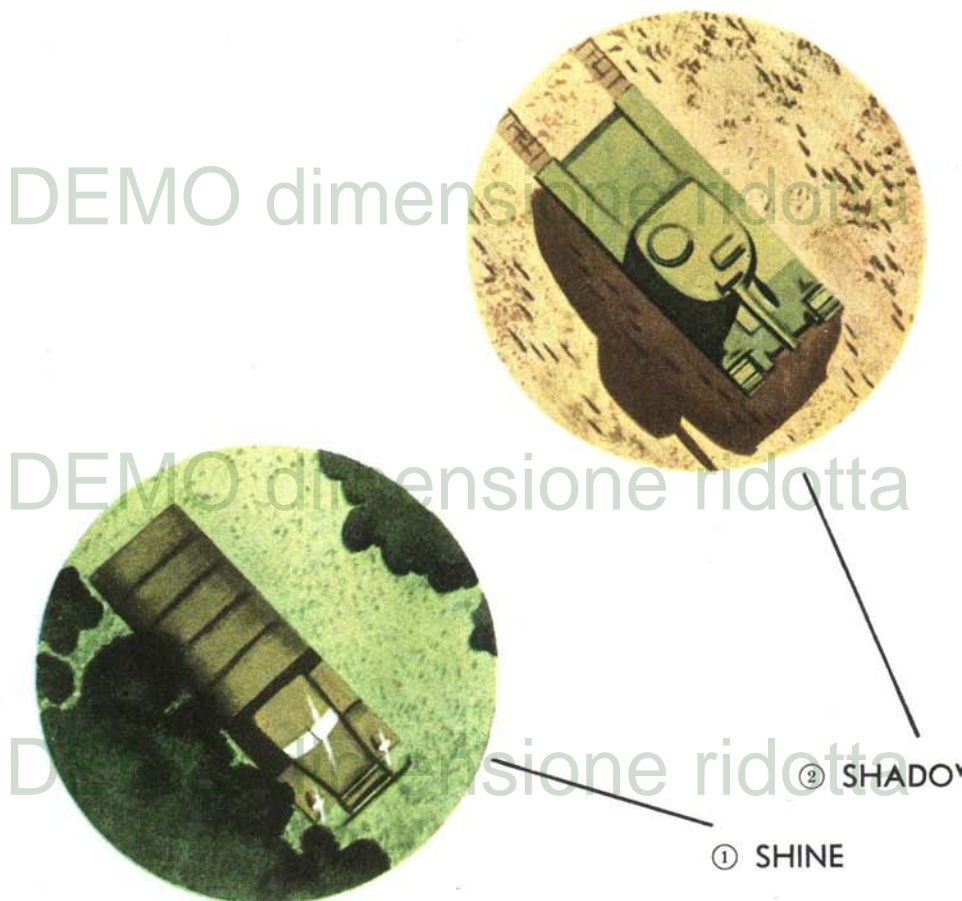
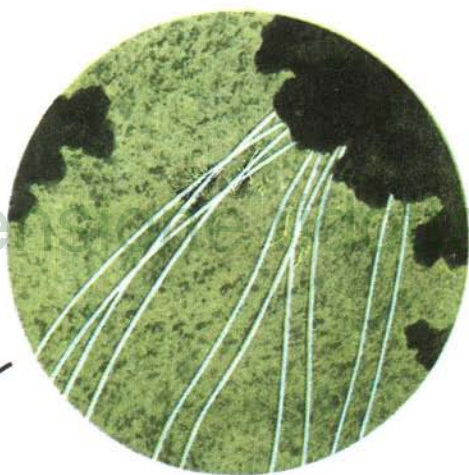
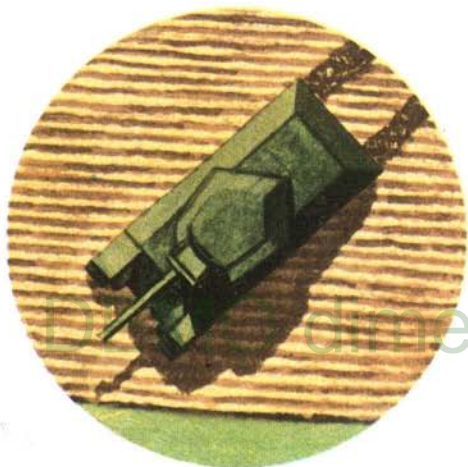


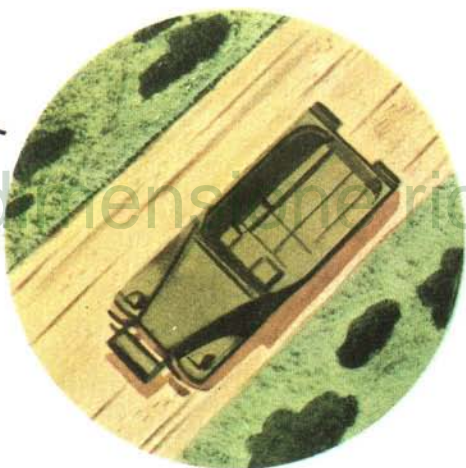
FIGURE 2.—The factors which reveal vehicles to enemy aerial observation and which must be concealed or camouflaged are illustrated above. Aerial observers and photo interpreters are able to locate vehicles and often to identify their types, number, and intentions by detecting the presence of one or more of these factors. Even where the color of the vehicle is similar to its surroundings, the “value,” or difference in lightness and darkness between them, may indicate the presence of the object. In an ordinary photograph, “values” indicate the presence of objects that are differently colored. When it is impossible to make a vehicle the same color as its surroundings, much is accomplished if the lightness or darkness of the vehicle is made similar to the surroundings.



③ SHAPE

④ TRACKS

⑤ COLOR
AND VALUE



ENEMY GROUND OBSERVATION



② SHADOW

① SHINE

DEMO dimensione ridotta

FIGURE 3.—Vehicles are revealed to both ground and aerial observation by the same factors. However, because there is a tremendous difference in the appearance of a vehicle when seen from the ground and from the air, different measures must be taken against each kind of observation.



③ SHAPE

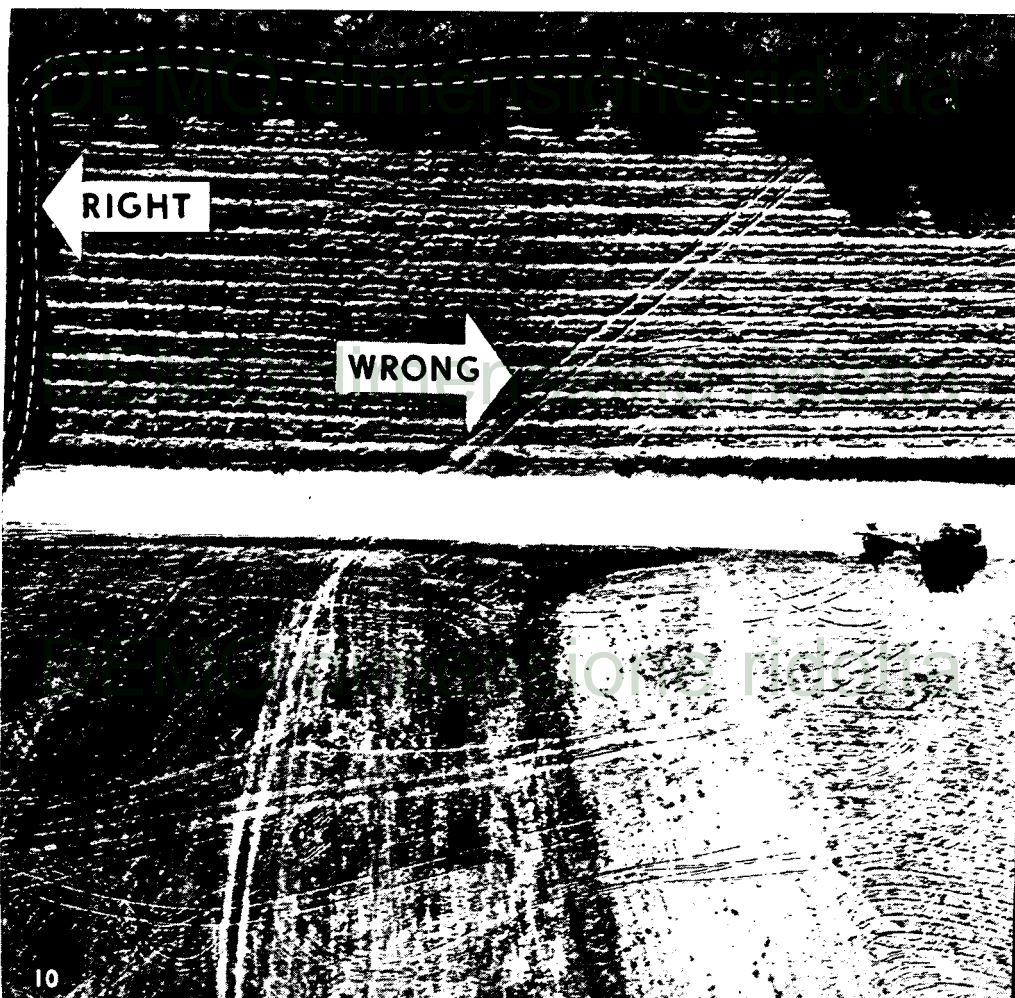
④ TRACKS

⑤ COLOR
AND VALUE

TRACKS

Tracks are especially revealing signs to the aerial observer and to the interpreter of aerial photographs. They may reveal the location, strength, and even the intention of a whole unit. The gradual turns of wheeled vehicles are distinguishable from the skidding turns of track-laying vehicles, and often a single track across an area of low vegetation is clearly visible.

FIGURE 4.—Tracks crossing natural terrain lines are noticeable, while tracks parallel to natural terrain lines are likely to be overlooked.



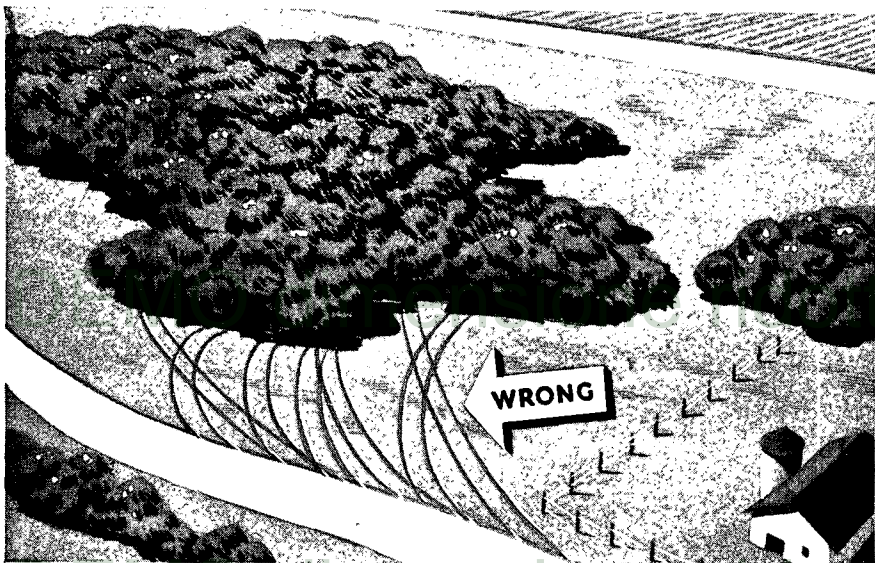
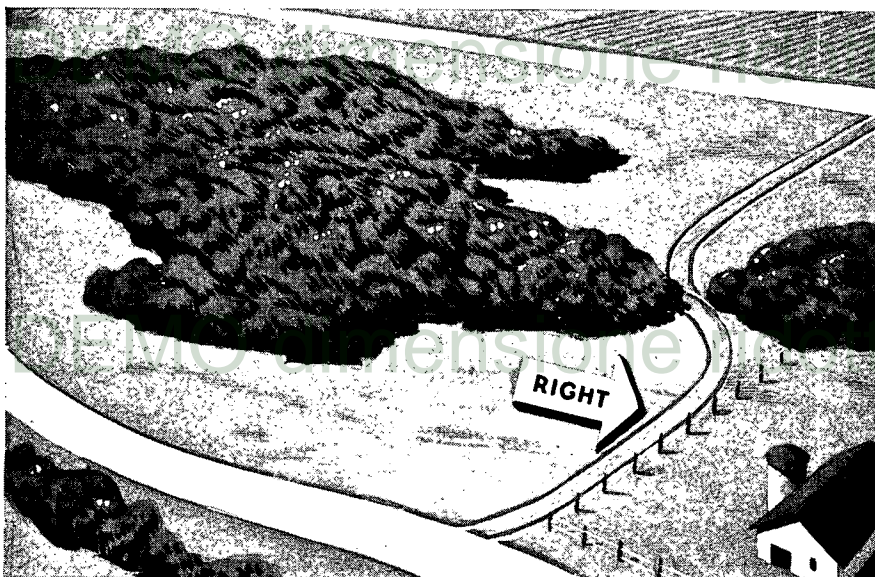


FIGURE 5 ①.—Here, tracks point clearly to a concealed installation or bivouac because of lack of planning and lack of camouflage discipline.

②.—Here is the correct way to gain access to a concealed position. Vehicles stay in one track which is continued past the position to a logical termination, such as a road. This track must show signs of equal wear throughout. Locate turnoff where it is least conspicuous.



TRACK DISCIPLINE AND SITING

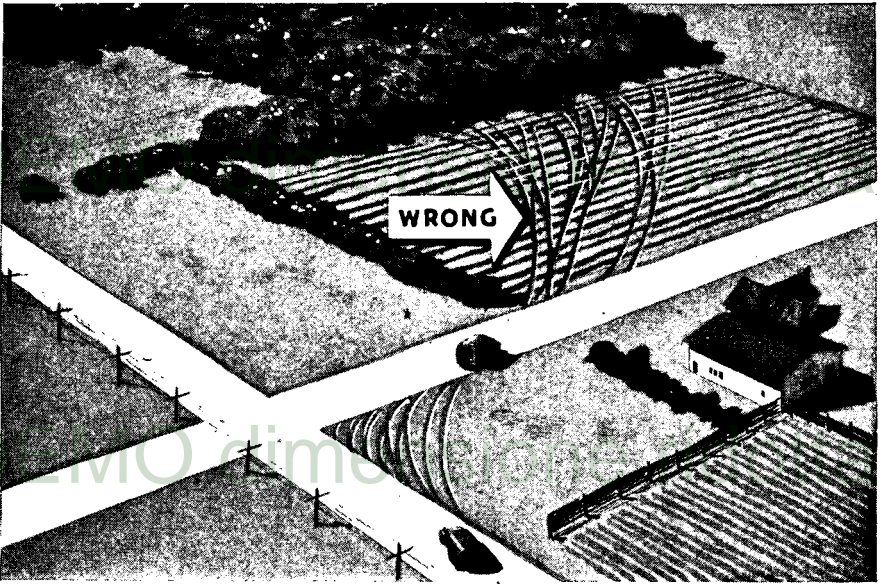


FIGURE 6 ①.—Cutting corners is a good indication to the enemy of traffic activity. It is a driver's responsibility to maintain the normal appearance of the terrain by not making this kind of scar.

②.—If there are no existing routes to a concealed position, any new ones should follow closely and be parallel to hedge lines, fences, cultivation lines, or other natural terrain lines. Tracks made this way are inconspicuous from the air.

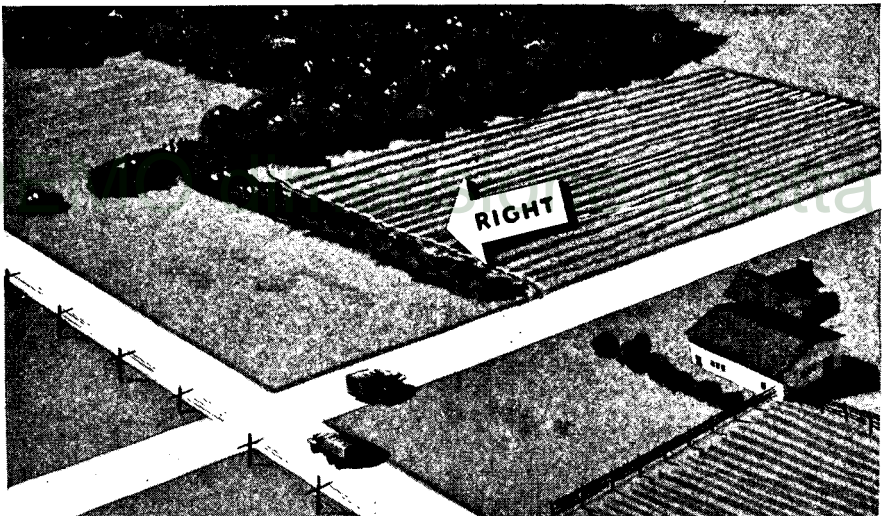


FIGURE 20. — Blankets, shelter halves, or pieces of dark-colored burlap or osnaburg are expedients for covering the reflecting surface of a windshield quickly. Foliage may be used to cover headlights.



FIGURE 21. — The wise driver makes his own slip-on covers for headlights, windshields, and other reflecting surfaces. He keeps them covered at all times, if possible. They may be made of pieces of burlap, osnaburg, or salvage.



FIGURE 22. — Mud and leaves applied liberally to the windshield reduce shine. When moving, the area traversed by the windshield wiper should remain clear.





FIGURE 31.—Even at close range this vehicle blends with the background. It is concealed with natural materials.

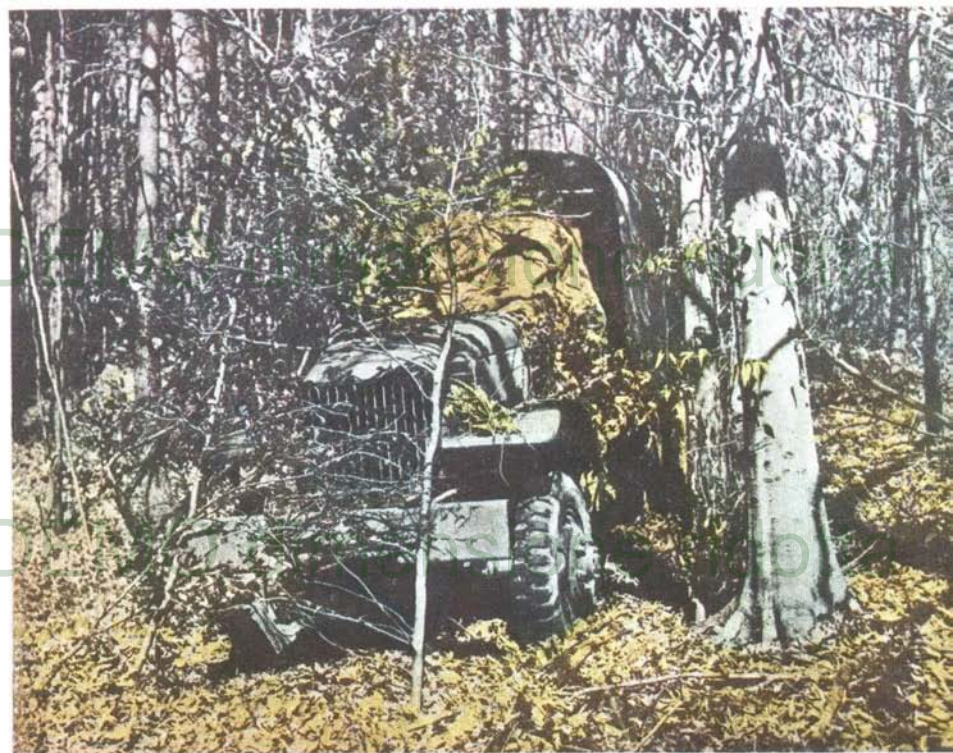
FIGURE 32.—Overhead cover is sparse here. This tank destroyer is sited so its over-all shadow is broken up. The long shadow line below the skirt is concealed from ground observation by natural materials.





FIGURE 33.—Trees break up the shape and over-all shadow of this half track. Dead vegetation is common in the surroundings, and it has been used to hide the shadows underneath the fenders and within the wheels.

FIGURE 34.—A combination of natural materials and blankets prevents shine from headlights and windshield on this truck.



PATTERN FOR DESERT TERRAIN

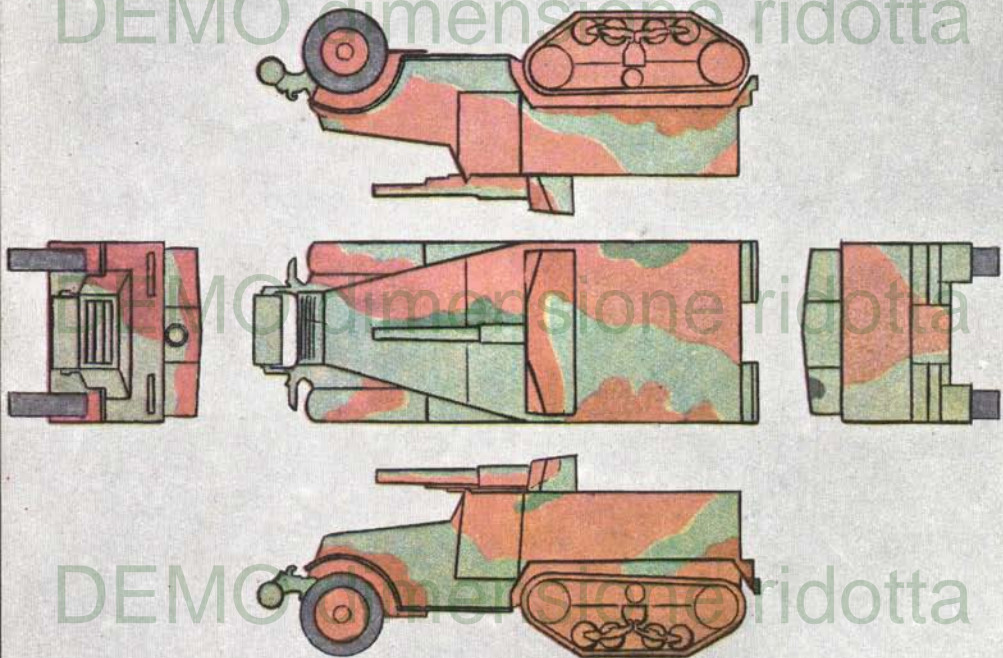


FIGURE 39 ① and ②.—Olive drab and earth red blend with reddish desert backgrounds. Other light colors useful in a desert are sand and earth yellow. Patterns break up angular lines of the vehicle.

PATTERN FOR SNOW TERRAIN

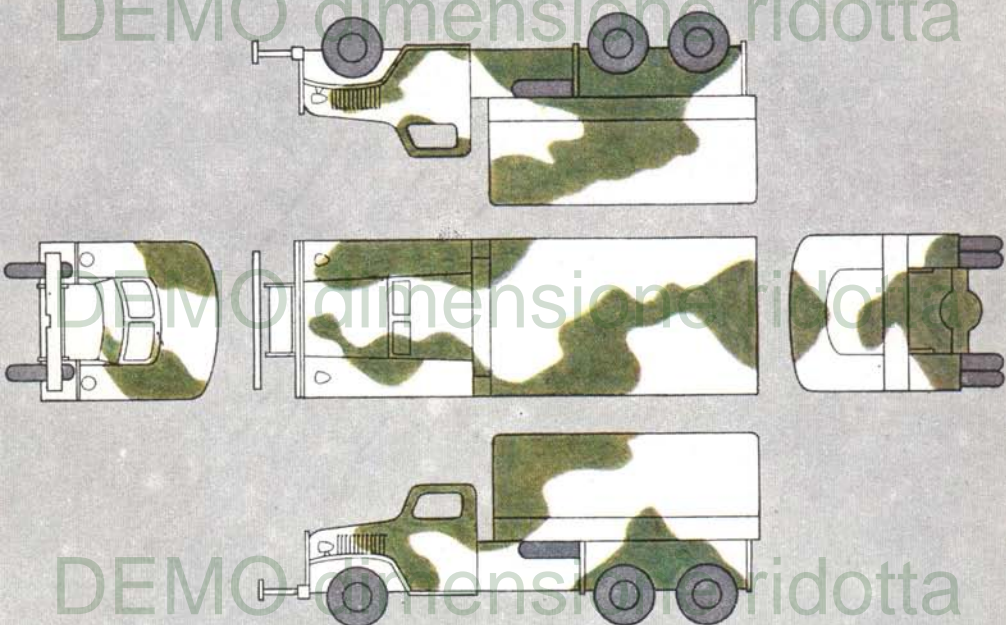


FIGURE 40 ① and ②.—White and olive drab for backgrounds of snow and trees. An equally effective scheme is black and white. In snow, countershading is not necessary.

ARTIFICIAL MATERIALS

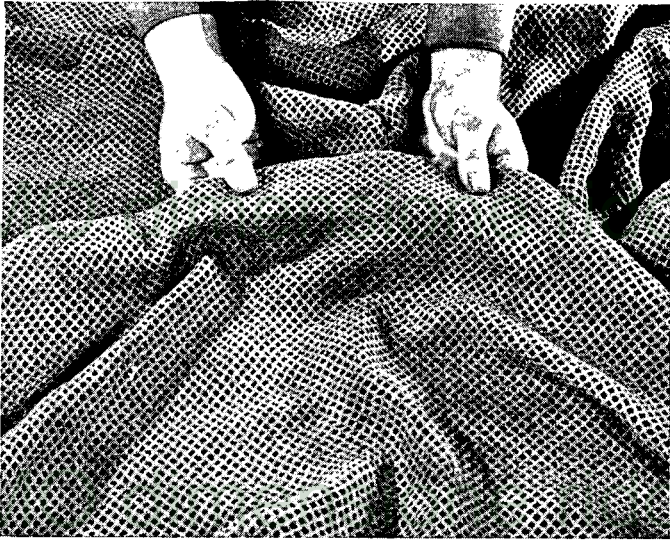


FIGURE 41.—Shrimp net which is used as a vehicle drape. This net furnishes only partial protection, as it is liable to shine. Where used as a drape, local natural materials should be added.

Camouflage nets, used as drapes, are the principal artificial materials used to conceal vehicles. Drapes are either small-mesh shrimp net, ungarnished (fig. 41), or large-mesh twine net, garnished (figs. 42 through 45). Both are easy to use, quickly erected, and quickly removed. They are easily adapted to various kinds of terrain, but they have limitations and they must be used correctly. Every vehicle driver must know what he can expect of a net in the way of concealment and how to erect it over his vehicle to best advantage.

Drapes can give complete concealment against direct observation but, as with most artificial camouflage, against photographic observation, they often fail to blend properly with the background and consequently may be detected. In every case, however, drapes properly suspended or propped up do conceal the identity of the object under the drape, even though the drape itself may be detected. In no case will the drape be allowed to rest directly on the vehicle, thus revealing its outline.

Drapes must be tied in with bushes or other natural terrain features by proper siting of vehicles.

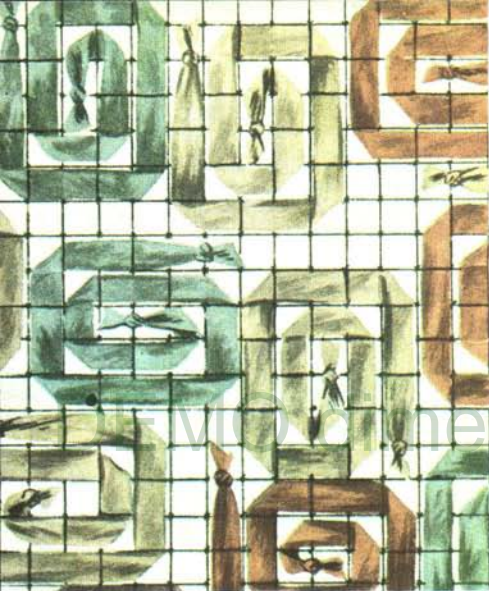


FIGURE 42.—Section of twine net garnished in typical Greek-key pattern with burlap or osnaburg strips. Mainly effective against long-range observation, this pattern adapts itself to various terrains.

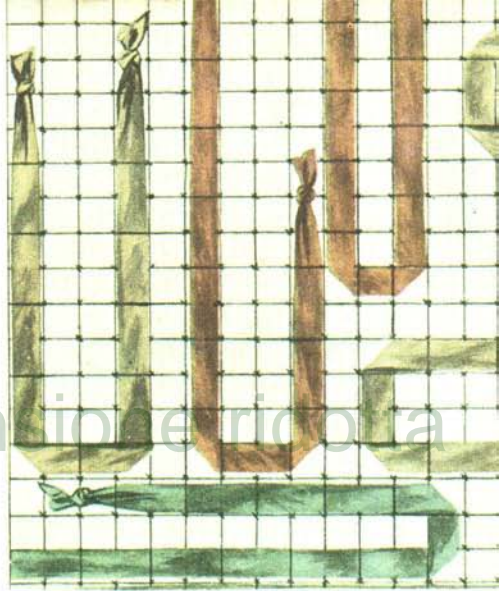


FIGURE 43.—Section of twine net garnished with U-shaped pattern. At the margins of the over-all pattern, the ends of the U should extend outward toward the edges of the net.

FIGURE 44.—Small section of twine net garnished with bow-tie garnishing, extremely effective both from the air and from close ground observation, almost exactly reproducing the coarse, leafy texture of bushes and high grass.

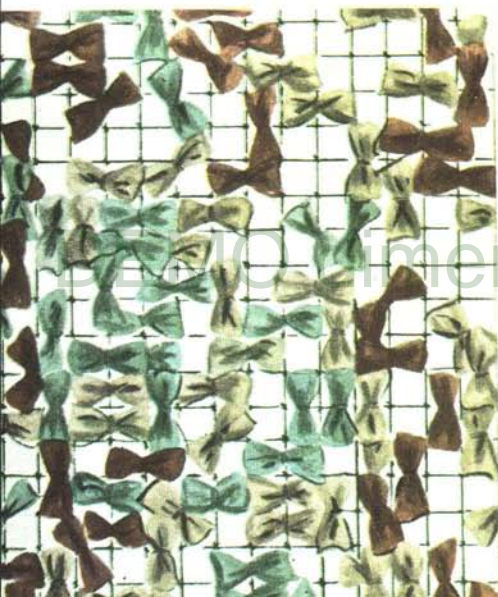


FIGURE 45.—Small section of twine net garnished with patch garnishing, useful at long ranges in barren mottled terrain, is made of large pieces of cloth fastened to net. Bunching each piece gives it a rough surface.

