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Chapter 7

Individual Protective Measures

Topics

1.0.0 Cover and Concealment
2.0.0 Fighting Emplacements
3.0.0 Concealment
4.0.0 Camouflage

Overview

This chapter presents the principles of constructing, camouflaging, and using individual protective measures. Camouflaging is nothing more than hiding or concealing your position or equipment by blending it in with the natural or local surroundings to avoid detection by the enemy. Intelligent use of the terrain sometimes reduces the labor and time required for the construction of emplacements or positions to provide you protection while firing at the enemy. In many cases, the natural configuration of the ground provides emplacements that require little, if any, improvements. This chapter will provide you with guidance on the correct application of these protective measures.

Objectives

When you have completed this chapter, you will be able to:

1. Specify the principles of cover and concealment and their application in construction of a fighting emplacement.
2. Specify the principles of camouflage and the methods of camouflaging a temporary battlefield position, yourself, your equipment, buildings, and supply points.

Prerequisites

There are no prerequisites for completing this manual.

Features of this Manual

This manual has several features which make it easy to use online.

- Figure and table numbers are italicized within the handbook text. Figure and table reference numbers are conveniently located next to (or near) the applicable handbook text.
- Audio and video clips are included in the text, with italicized instructions telling you where to click to activate the appropriate link.
- Review questions are included at the end of this chapter as the chapter assignment. To submit assignments log into https://www.courses.netc.navy.mil, go to “Student Services”, in the drop down click on “Active Courses”, go to
"View/Submit Answers" next to the course you wish to submit answers for. Assignments may be submitted to the above Web site as they are completed, and instant scoring is available. Your completion letter is available as soon as you pass all assignments.

- A form at the end of each chapter allows your input for improving the manual or correcting errors to be brought to the attention of CSFE’s Technical Review Committee. Your input is important and will help keep this manual up to date and free of technical errors.
1.0.0 COVER AND CONCEALMENT

Cover is protection from the fire of hostile weapons. It may be natural or artificial. Natural cover (ravines, hollows, and reverse slopes) and artificial cover (fighting holes, trenches, and walls) protect you from flat trajectory fire (projectiles traveling at nearly horizontal angles), and partially protect you from high-angle fire and the effects of nuclear explosions.

Concealment is protection from hostile ground or air observation, but not from hostile fire. It, too, can be natural or artificial. Objects in their natural locations, such as bushes, grass, and shadows, provide natural concealment. Artificial concealment is made from materials, such as burlap, nets, tents, or natural material.

The best combat position provides maximum cover and maximum concealment.

2.0.0 FIGHTING EMBLACEMENTS

A fighting emplacement is the position you occupy for the purpose of firing your weapon at the enemy. It provides a good firing position with maximum cover and concealment. A temporary position is converted to a fighting emplacement and it may be improved by digging in, construction, concealment of fresh soil, and improvement.

2.1.0 Digging In

Start digging in when the combat situation requires or allows it, and take advantage of all available natural cover. You should have an entrenching tool; however, you can dig with your bayonet or helmet, or both. When necessary, clear the brush to improve your field of fire (the direction you will be firing at the enemy).

Since the Seabees work with ditchdiggers, backhoes, and other types of heavy construction equipment, you probably have access to this equipment to help with digging and building your fighting emplacement. Of course, this depends upon where the emplacement is, what the defensive situation is, and how long you are expected to stay in the position.

2.2.0 Construction

Construction includes the improvement of earthworks by placing logs or other objects in defensive positions, such as along parapets (a wall or river bank) and overhead. A position should be continually improved as long as it is occupied.

Another area that might show a difference in the construction of the defensive position would be if a battalion used a prefabricated fighting hole made from corrugated metal, or a bunker made of block or concrete with a metal plate for a roof. Since Seabees have access to construction materials, their positions can be made more permanent. Seabee positions are used as a base camp, or a central position, where they can go to project sites and return when the project has been completed.

2.3.0 Concealment of Fresh Soil

The appearance of fresh soil betrays the location of your emplacement to enemy observers. Therefore, the plan for your dug-in emplacement must include some way to dispose of the soil. Use part of it to make a parapet or ridge around the emplacement. When you start digging in, first slice off the top turf and set it aside. Then as you dig out fresh soil, use it to build a parapet around the position about 6 inches high and 3 feet wide. Then lay the turf back on this parapet. If more fresh soil must come out, place it in

7-3
a sandbag or on a canvas and move it well away from the position. Dispose of fresh soil under low bushes, in a stream, pond, or ravine, or camouflage it in another manner, to the rear of the forward edge of battle area.

2.4.0 Types of Dug-in Emplacements

The simplest type of dug-in emplacement is the skirmisher's trench, as shown in Figure 7-1. This shallow pit type of emplacement provides a temporary, open, prone firing position for the individual rifleman. When the situation demands immediate shelter from heavy enemy fire, and when existing defiladed firing positions (positions that provide protection from fire or observation, such as ridges, embankments, and ravines) are not available, each rifleman lies prone or on their side. With the entrenching tool, scrape and pile the soil in a low parapet between you and the enemy. Thus, a shallow, body-length pit can be formed quickly in all but the hardest ground. The trench should be oriented with respect to the line of fire of the enemy so it is least vulnerable to enfilade fire (fire from the flanking or side position). In a skirmisher's trench, you present a low silhouette to the enemy and are afforded some protection from small-arms fire.

Figure 7-2 shows camouflaged fighting positions that may be built while either in contact with the enemy or before contact with the enemy is made. They are a more permanent type of construction than the skirmisher's trench. They may or may not be covered. The two shown are covered, which helps prevent detection, but they do not provide much protection from enemy fire. They are constructed to enable someone to fire from a standing position with most of the body protected from enemy fire. These emplacements help provide protection from small-arms fire, shell fragments, bombings, and the crushing action of tanks.

Figure 7-1 — Skirmisher's trench.

Figure 7-2 — Camouflaged fighting position.
Figure 7-3, frame 1, shows a cut-timber revetment, constructed when the soil is soft enough to require the timber support shown. Again, this is a more permanent type of emplacement and is normally built only when a unit expects to stay in an area for quite some time. You would fire from a standing position with most of your body protected from enemy fire. Figure 7-3, frame 2, shows a fighting position with an overhead cover providing cover from enemy fire as well as concealment from the enemy.

The internal construction of a one-fighting position is shown in Figure 7-4. One-person deliberate fighting positions are constructed when time and materials are available and the tactical situation warrants additional protection. The excavation is relatively small, making it easier to use materials from the surrounding area for overhead cover and
camouflage. This position must allow the individual to fire to the front and oblique while behind frontal cover. Grenade sumps should be dug into the bottom front face of the position at approximately a 30-degree angle and 12 to 18 inches deep, about the length of an entrenching tool. The width of the sump should be approximately equal to the width of the entrenching tool shovel. Use whatever tools are available to slope the floor towards the grenade sump. This will make it easier to kick a grenade into the hole and get out of the way so the blast goes into the back wall.

Two-person deliberate fighting positions (Figure 7-5) are most common. Basic requirements for these positions are essentially the same as those for one-person fighting positions with key differences. Although this position is preferred, it is not without drawbacks. Two-person fighting positions require more digging and prove difficult to camouflage. It also provides a better target for grenades because the excavation is larger. Typical combat gear such as the M-16 rifle and helmet can be used to measure dimensions. Grenade sumps are constructed at each end of the two-person deliberate fighting position. This allows the blast to go straight up while occupants move to the opposite end of the position. The floor should be sloped towards the grenade sumps on each end to make it easier to kick the grenade into the sump.

![Figure 7-5 — Two-person fighting position.](image)

The types of dug-in cave holes shown in Figure 7-6 are dug in the side of hills or mountains and are used as a command post for the unit, a machine gun position, or a rifle or light automatic-weapon position. When possible, the entrance to these
emplacements should be concealed and camouflaged. They provide excellent protection from enemy observation and fire.

![Diagram of Rifle or Light Automatic Weapon Position or Command Post]

**Figure 7-6 — Dug-in cave holes.**

A hasty position (*Figure 7-7*) provides protection from small-arms fire, shelling, bombing, and strafing by enemy planes. It is a one-person position and is normally the type of emplacement dug by and for command post personnel.

![Diagram of Hasty Position]

**Figure 7-7 — Hasty position.**
2.5.0 Temporary Battlefield Positions

Figure 7-8 shows the application of cover and concealment principles in the selection of a temporary battlefield position. The illustrations indicate you should observe and fire around the side of an object, and keep as low as possible to cover and conceal most of your head and body. The illustrations shows a rifleman who is right-handed firing or observing; a rifleman who fires left-handed would observe and fire from the left side of the object they are using for cover and concealment.

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Figure 7-8 — Correct and incorrect battlefield positions.

3.0.0 CONCEALMENT

The first principle of concealment is to avoid all unnecessary movement. You may frequently be in a position where you can escape observation if you remain still, but instantly attract attention if you move. Any movement against a stationary background causes you to stand out very clearly; therefore, if you change position, move carefully (over a concealed route if possible) to the new position.

The second principle is to use all available concealment. Background is important; blend in with it to prevent detection. Trees, bushes, grass, earth, and artificial structures form backgrounds of various colors, and color is a factor in whether or not you will be concealed by blending. Select a background that blends with your uniform and absorbs the outline of your figure. Stay in the shadows whenever possible.
The third principle of concealment is keep low; that is, maintain a crouch or squat—or better still—a prone position. The lower silhouette you present, the more difficult it is for the enemy to see you. Keep off the skyline, even at night.

Finally, expose nothing that shines. Sunlight reflecting off a shiny surface can be seen for a great distance and attracts attention instantly.

4.0.0 CAMOUFLAGE

Camouflage is a general term applied to measures (either natural or artificial) taken to conceal yourself, your position, and your equipment from enemy observation. Three general rules for camouflage are as follows:

1. Take advantage of all available natural concealment.
2. Camouflage by altering the form, shadow, texture, and color of objects.
3. Camouflage against both ground and air observation.

4.1.0 Camouflaging a Position

To avoid detection by the enemy, use the following methods of camouflaging a position:

1. Before constructing your position, study the terrain and vegetation in the area so after your position is completed, by the use of camouflage, you are able to restore the area as near as possible to its original appearance.
2. Do not use more material than you need. Too much camouflage can reveal a position as quickly as too little camouflage.
3. Obtain natural material from a wide area. When you strip a small adjacent area of foliage, the stripped area gives the position away.
4. Always conceal excavated soil by covering it with leaves or grass or by dumping it under bushes, into streams, or into ravines.
5. After camouflaging, inspect the position carefully from the viewpoint of the enemy. Check it repeatedly to ensure that it remains natural in appearance and continues to conceal the position.
6. Practice Camouflage Discipline. Avoid doing anything, such as scattering cans or boxes around the camouflaged position that may give the position away. When possible, use old, established paths to and from your position. Do not create new paths that can be seen from the air. If necessary, vary the route to and from the position so there is no beaten path into the position.

4.2.0 Camouflaging Personal Equipment

The color of field uniforms and web equipment blends well with most terrain unless the equipment is badly faded. If it is faded, color it to blend with the surrounding terrain. When no paint is available; use mud, charcoal, or crushed grass.

Color in bold, irregular patterns. Alter the distinctive outline of your helmet with a cover of cloth or burlap colored to blend with the terrain. Let foliage stick over the edges, but do not use too much of it. Use a camouflage band, string, burlap strips, or rubber bands to hold the foliage in place.

Use mud or dirt to dull shiny surfaces of weapons, being careful not to foul working parts.
4.3.0 Camouflaging the Person

Exposed skin—even dark skin—reflects light. To prevent this, you should use camouflage face paint sticks. They are issued and used in a two-color combination. Although these sticks are called face paint sticks, they are used on any exposed skin and are issued and used in the following combinations:

1. Loam and light green for light-skinned personnel in other than snow regions
2. Sand and light green for dark-skinned personnel in other than snow regions
3. Loam and white for all personnel in snow regions

Apply face paint sticks or other materials as follows:

1. Paint the shiny areas (forehead, cheeks, nose, chin, and exposed skin on the back of your neck and your hands and wrists) with the darker color.
2. Paint the shadow areas (around the eyes and under the nose and chin) with the lighter color.
3. When applying face paint, use the buddy system.
4. When face paint is not available, burnt cork, charcoal, or lampblack may be used.

Mud should be used only when nothing else is available. Mud changes color as it dries, and when dry, it may flake off and leave exposed skin. Also, mud may contain harmful bacteria and should be used only on approval of a medical officer.

4.4.0 Camouflaging of Vehicles

A badly concealed vehicle can lead to much more than just a lost vehicle; it may mean discovery of your unit or complete destruction of an installation. As is always the case in camouflage, the aim should be to occupy a position without altering its appearance. To do this, you should park the vehicle under natural cover whenever available. When cover is inadequate, the vehicles should be parked so their shape will disappear into the surroundings. Better concealment can be obtained by using natural rather than artificial material to break up the shape and shadow of the vehicles. This type of material is always available near a parking site or motor pool and can be erected and removed quickly. When cut foliage is used, be sure it is put up as it was growing because the underside of the leaves is much lighter than the topside, and the difference in color could give your position away. In addition, cut foliage should be replaced as soon as it starts to wither.

The principal artificial materials used to conceal vehicles are drape nets. They are easy to use, quickly erected, and quickly removed. Drape nets give complete concealment against direct observation, but, as with most artificial camouflage materials, they can frequently be detected by photographic observation because they often fail to blend with the background properly. In any case, drapes do conceal the identity of a vehicle, even though the drape net itself may be detected.

4.5.0 Camouflaging of Buildings

The basic methods of concealment (blending, hiding, and deceiving) can be applied either to existing buildings or new construction. However, concealment is much easier when the camouflage scheme is incorporated into the designs for new construction and site selection.
Buildings can be concealed by screens of garnished nettings. Another method is to have disruptive patterns painted over the netting, roof, and gable-end walls. Where concealment from close observation is required, the netting should be sloped gradually to the ground. For structures with roofs steeper than 30 degrees, the netting must cover the whole building.

When the terrain permits, a new structure can be partially dug-in to the ground. This will reduce the structure’s height and, in turn, its shadows. The nature and size of buildings can be disguised in many ways, such as the following:

1. Place trees between the buildings.
2. Paint the roofs to match the surrounding terrain.
3. Vary roof lines with wooden framework, then cover them with burlap or fine-mesh wire netting to simulate sloping hip roofs.
4. Erect superstructures over existing buildings and cover them with burlap, plastic, or other material to alter their appearance so they resemble the surrounding native buildings.

4.6.0 Camouflaging of Supply Points

From a camouflage viewpoint, the large concentration of materials is the main problem. Huge amounts of equipment and supplies of all kinds are usually brought up at the same time. They must be unloaded and concealed quickly and yet be easily accessible for redistribution. Therefore, natural cover and concealment must be used at supply points whenever possible. Dispersal of these supplies is necessary to minimize damage from a single attack. Existing overhead cover should be used when new access roads are planned. When the supply point is to be permanent, the tracks running in and out of the installation can be concealed by overhead nets slung between trees. Traffic control should include measures to conceal activity and movement at, to, and from the installation. When natural cover is sparse or nonexistent, be sure the natural terrain features are used to advantage.

Maintain camouflage discipline at supply points including a minimum of changes in the appearance of the terrain. Control the debris so it does not accumulate and attract enemy attention.

4.7.0 Camouflaging of Water Points

Water points must have adequate concealment—either artificial or natural—for operating personnel, storage tanks, pumping, and purification equipment. When the surrounding terrain foliage is not thick enough for perfect concealment, natural or artificial camouflage materials can supplement it.

To keep the enemy from observing the shine of water in the tanks, place canvas covers or natural foliage over them. By using foliage or artificial materials, you can distort their features.

Small, open areas that must be crossed by vehicles or personnel operating in the area can be concealed with natural or artificial materials.

A water supply schedule must be instituted and maintained. Without camouflage discipline or with a violation of the schedule, a concentration of waiting vehicles that cannot be readily concealed could occur and be seen by the enemy.
Summary

In this chapter, you were introduced to the fundamentals of cover and concealment. Remember the difference, concealment will help you remain undetected, but only cover will protect you from rounds or shrapnel. When concealing from the enemy, don’t make a silhouette against the background. Rising up above a ridgeline or another area would make you a perfect a target for the enemy. Make sure you provide proper camouflage for your vehicles, building, supply transfer stations, and water points. Remember your different types of fighting emplacements, how to build them, and their proper use. They may mean the difference between coming home alive or not.
Assignment 7

Objectives
1. Specify the principles of cover and concealment and their application in construction of a fighting emplacement.
2. Specify the principles of camouflage and the methods of camouflaging a temporary battlefield position, yourself, your equipment, buildings, and supply points.

Questions
1. What position(s) will protect you the most against flat trajectory fire?
   1. Skirmishers trench
   2. Ravines and hollows
   3. A one-person fighting hole
   4. A two-person fighting hole

2. When searching for a combat position, one that provides the best protection would have what characteristics?
   1. Maximum cover
   2. Maximum concealment
   3. Maximum cover maximum concealment
   4. Minimum cover maximum concealment

3. What is the best action to take as a means of covering and concealing most of your head and body while occupying a temporary battlefield position?
   1. Maintain a high profile
   2. Choose a position close to a river
   3. Observe the enemy and keep silent
   4. Observe and fire around the sides of objects

4. What is the first principle of concealment?
   1. Keep low
   2. Move only when necessary
   3. Expose nothing that shines
   4. Use all available concealment

5. A fresh soil parapet or ridge around a fighting emplacement should have what approximate dimensions?
   1. 1 foot high and 3 feet wide
   2. 2 feet high and 4 feet wide
   3. 6 inches high and 3 feet wide
   4. 6 inches high and 4 feet wide
6. What is the simplest type of dug-in emplacement?

1. A camouflaged fighting hole
2. A skirmisher’s trench
3. A cut-timber revetment
4. A cave hole

7. What is the purpose of camouflaging?

1. To keep the enemy from seeing you, your position, or your equipment
2. To keep the enemy from firing on you or your position
3. To afford protection against small-arms fire
4. To afford protection against the effects of aerial bombs

8. The web equipment of your personal combat gear has faded and no camouflage paint is available. In what way could you camouflage your equipment using mud?

1. Make irregular patterns that blend with the terrain around you
2. Make regular patterns that contrast with the terrain around you
3. Spray a thin layer of mud evenly over all your equipment
4. Place patches of mud in sporadic locations

9. What is the recommended practice for applying loam and light green paint?

1. Paint shiny areas with loam and shadow areas with light green paint
2. Paint shiny areas with light green paint and shadow areas with loam
3. Paint hands with light green paint and wrists with loam
4. Paint hands with loam and wrists with green paint

10. Mud should only be used to substitute for face paint when approved by whom?

1. Medical Officer
2. Commanding Officer
3. Watch Officer
4. Company Chief

11. When netting is used to camouflage a building, it should be placed over the whole building when the roof is steeper than how many degrees?

1. 10
2. 20
3. 30
4. 40

12. What method aids in maintaining the camouflage discipline at supply points?

1. Maximize traffic into one area
2. Minimum of changes in the appearance of the terrain
3. Clutter the area with debris or trash
4. Centralize all vehicles in one location
## ASSIGNMENT 7

### Individual Protective Measures

Directions: Select the correct answer from the list of alternates below each question in the end of chapter assignment. Write in the answer next to the corresponding question number below. Use this answer sheet as a reference to completing the online assignment related to this assignment.

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Additional Resources and References

This chapter is intended to present thorough resources for task training. The following reference works are suggested for further study. This is optional material for continued education rather than for task training.

Combat Skills of Soldier, U.S. Army Field Manual (FM) 21-75.
Survivability, U.S. Army Field Manual (FM) 5-103.
Trainee Feedback

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7-17