Chapter 8
Camouflage in Special Environments

The fundamentals of camouflage do not change between environments. The eight rules for avoiding detection, the eight recognition factors, and the three camouflage principles (preventing detection, improving survivability, and improving deception capabilities) still apply. However, the results of their application do change. Different environments require thoughtful, creative, and unique camouflage techniques. The following is a discussion of different camouflage techniques that have proven effective in three special environments: desert, snow-covered, and urban terrain.

8-1. Desert. The color of desert terrain varies from pink to blue, depending on the minerals in the soil. No color or combination of colors will match all deserts. Patches of uniform color in the desert are usually 10 times larger than those in wooded areas. These conditions have led to the development of a neutral, monotone tan as the best desert camouflage paint color.

a. *Topography*. Although desert terrain may appear featureless, it is not completely flat. In many respects desert terrain resembles unplowed fields; barren, rocky areas; grasslands; and steppes. The challenges and effective techniques presented by these different terrains are similar.

b. *Shadows.* In any terrain, the lower the object, the smaller the shadow. The smaller the shadow, the easier it is to conceal the object from aerial observation. Shadows cast by folds of the ground are effective as camouflage when supplemented by artificial materials. The proper draping of camouflage nets will further reduce shadows. The best solution in desert terrain is to dig in and use overhead concealment or cover.

c. *Placement.* Proper placement and shadow disruption remain effective techniques. Place objects in gullies, washes, wadies, and ravines to reduce their shadows and silhouettes, as well as to take advantage of terrain masking. More dispersion is necessary in desert terrain than in wooded areas. Move objects as the sun changes its position to keep equipment in the shadows.

d. *Terrain Mottling.* When the ground offers little opportunity for concealment, use terrain mottling. This technique involves scarring the earth with bulldozers, thereby creating darker areas on which to place equipment so it blends better with the background. Ensure the mottled areas are irregularly shaped and at least twice the size of the object to be concealed. Place the object off center in the mottled area and drape it with camouflage nets. When employing the scarring

technique, dig two to three times as many scars as pieces of equipment to be concealed. Doing this will prevent the mere presence of mottled areas giving away a unit's location.

e. *Camouflage and Movement Discipline.* Camouflage and movement discipline are especially important in the desert. Vehicle movement produces dust, diesel plumes, and track marks, all of which are easy to detect in a desert environment. When movement is necessary, move along the shortest route and, if possible, on the hardest ground. Shine is a particularly acute problem remove all reflective surfaces or cover them with burlap. Use matte camouflage paint or expedient paints (grease mixed with sand) to dull the gloss of a vehicle's finish. Shade optical devices (such as binoculars and gun sights) when using them.

f. *Noise and Light Discipline.* Noise and light discipline are particularly important in desert terrain, since sound and light can be detected at greater distances on clear desert nights. The techniques for reducing these signatures remain the same as for other environments. Keep in mind that thermal sensors, while not as effective during the day, have an ideal operating environment during cold desert nights. A technique to confuse enemy acoustical surveillance efforts is to start all vehicle and equipment engines simultaneously.

8-2. Snow-Covered Areas.

a. *Paint.* When the prevalent environment color is white, commanders should direct a change to equipment camouflage that blends appropriately with the environment. Applying white paint or whitewashing over the permanent camouflage paint pattern is effective. The amount of painting, however, should be contingent on the percentage of snow coverage on the ground. As long as snow covers less than 15 percent of the background color, make no changes to the camouflage paint pattern. When there is 15 to 85 percent snow coverage, substitute white for green in the camouflage paint pattern. In terrain with more than 85 percent snow coverage, paint vehicles and equipment solid white.

b. *Placement.* A blanket of snow often will eliminate much of the ground pattern, causing natural textures and colors to disappear. Blending under these conditions will become difficult. Snow-covered terrain, however, will rarely become completely white, so take advantage of the dark features of the landscape. Site equipment in roadways, streambeds, trees, bushes, shadows, and ground folds. The colors of uniforms and personal equipment will contrast with the snow background, necessitating camouflage to reduce these easily recognized signatures.

c. *Movement.* Concealing tracks will be a significant problem, making movement discipline an absolute requirement. When moving, follow windswept drift lines—these features cast shadows—as much as possible. Vehicle drivers should avoid sharp turns and follow existing track marks as much as possible. Obliterate short lengths of track marks by trampling them with snowshoes.

d. *Thermal Signatures.* Snow-covered environments provide excellent conditions for Threat thermal and ultraviolet sensors. Terrain masking is the best solution to counter both types of sensors.

Use arctic LCSS and winter camouflage paint to provide ultraviolet blending. Use smoke to create a near-whiteout condition.

8-3. Urban Terrain. Urbanization is reducing the amount of open, natural terrain throughout the world. Therefore, modem military units must be able to apply effective urban camouflage. Many of the camouflage techniques used in natural terrain are effective in urban areas. The urban environment, however, presents unique camouflage opportunities.

a. *Planning.* Planning for operations in urban areas presents unique difficulties. Tactical maps do not show man-made features in enough detail to support tactical operations. Although these maps show details of adjacent terrain, you must supplement them with aerial photographs and local city maps. Local government and military organizations are key sources of information that can support tactical (and camouflage) operations. Key examples of the type of information they may provide are: diagrams of underground facilities, large scale city maps, and civil-defense or air-raid shelter locations.

b. *Site Selection.* The physical characteristics of urban areas enhance camouflage efforts. It is difficult for Threat surveillance to detect emplacements in urban terrain, making urban terrain an excellent location for concealing CPs, reserves, combat service support complexes, or combat forces. The physical structure of dense urban areas reduces the effectiveness of most modem sensors. Therefore, visual camouflage is the most important consideration.

(1) Terrain Patterns. The regular pattern of terrain, the diverse colors and contrast, and the large, enclosed structures offer enhanced concealment opportunities. Established, hardened road surfaces effectively mask vehicle tracks. Underground structures (sewers, subways, and so forth) are excellent means of concealing movement and high-value targets. Depending on the nature of the operation, numerous civilian personnel and vehicles may be present, confounding the Threat's ability to distinguish between military targets and civilian population.

(2) Man-Made Structures. Man-made structures provide symmetrical shapes that, when augmented by artificial means, provide ready-made camouflage. The camouflage of fighting positions will be especially important, given the reduced identification and engagement ranges (100 meters or less) typical of urban fighting. Limit or conceal movement and shine. These signatures provide the best opportunity for Threat surveillance to be successful in urban terrain. Careful placement of equipment and fighting positions remains important, not only to provide visual camouflage, but to avoid detection by contrast (thermal sensors detecting personnel and equipment silhouetted against colder buildings or other large, flat surfaces).

c. Establishing Fighting Positions. The fundamental rule is to maintain the natural look of the area as much as possible. Buildings with large, thick walls and few narrow windows provide the best concealment. When selecting a position inside a building, avoid the lighted areas around windows. Soldiers should always stand in shadows when observing or firing their weapons through windows. Select positions with covered and concealed access and egress routes (breaches in buildings, underground systems, or trenches). Since there should be plenty of opportunities, develop decoy positions to enhance camouflage operations.

d. *Placing Vehicles.* If possible, hide vehicles in large structures. Use local materials to help blend vehicles with the environment. Paint vehicles and equipment a solid, dull, dark color. If this is not possible, use expedient paints to subdue the lighter, sand-colored portions of standard camouflage paint patterns. Use shadows when placing vehicles outdoors. When moving, screen vehicles with smoke or take advantage of conditions of limited visibility.