C H A P T E R 5

SELF-EXTRACTION FROM UXO HAZARDS

The use of submunitions and scatterable mines on the modern battlefield will have a direct impact on mobility, survivability, and logistical support requirements. All units must be able to maintain their mobility despite these hazards. Our forces must be able to self-extract from submunition and scatterable mine threats in order to survive.

EOD units are responsible for the elimination of these threats from the battlefield, while engineer elements provide breaching and mine-clearing support for these threats. These elements will not be readily available to all units that receive submunition or scatterable mine at tacks from the enemy. Any unit that cannot self-extract will risk being destroyed in place by follow-on attacks.

DETECTION

Detection is the first step in extraction. Submunitions and scatterable mines are very small in size and are difficult to detect in optimum circumstances. In some terrain, such as dense foliage, tall grass, or uneven ground, many of them will go undetected. During periods of limited visibility or at night, detection is almost impossible. Combat vehicle personnel traveling cross-country in a buttoned-up vehicle will be at a great disadvantage, because they will not be able to see them or to avoid them.

The unit detecting a submunitions area or scatterable minefield is required to mark it, report it, and, if so directed, breach through it. All areas will remain marked until they are cleared.

IMMEDIATE ACTIONS

When an operating area becomes contaminated with submunitions or scatterable mines, a certain amount of confusion is understandable. Therefore, a recognized and rehearsed system of alerting personnel to the danger and orders on how to evacuate the area are essential. Alerting systems may include loudspeakers, radios, or runners. A combination of these systems may be the most effective.

The unit field SOP should include procedures for evacuating personnel from an area and reestablishing operations at another location. An established and trained evacuation plan will reduce personnel and vehicle losses. The plan must be flexible so it can be adapted to fit the different scenarios and environments that might be encountered.

When setting up operational bases or work sites, the UXO threat must be considered. Roads are critical for evacuation. Hard-surfaced roads are the best evacuation routes and are also the easiest to clear. The evacuation plan should include procedures for unit elements to reconnoiter and mark clear paths or to link paths from other unit positions to their position and to the nearest hard-surfaced road.

A unit that has been directly fired on must presume that more fires are coming. The unit must be able to self-extract from the area in order to resume operations or be able to protect assets in order to continue the assigned mission. The extraction procedure resembles an in-stride breach as outlined in FM 20-32 and FM 90-13-1, or in FMFM 13-7 for the Marine Corps. Units that are conducting movement operations can use route clearance procedures to force a cleared lane through the area.

Combat units that have the assets to conduct an in-stride breach can do so and reduce the hazard for follow-on forces and continue in the original direction of the march. Combat support (CS) and combat service support (CSS) units must rely on their operation order (OPORD) to designate alternate support areas. These units must employ their organic assets to reconnoiter and create cleared

lanes in the direction of the alternate support location. Not all equipment may be retrievable. The emphasis should be placed on relocating personnel and operational equipment as quickly as possible.

SITUATIONAL ASSESSMENT

After taking immediate actions to alert personnel, locate the submunitions or scatterable mines, and provide protection for personnel and equipment, the following operational situation and tactical factors should be assessed:

- Ž Effect of the delay on the mission.
- Ž Threat from direct and indirect fire. The risk of casualties from direct or indirect fire may be greater than that from the submunitions or scatterable mines.
- Ž Type of terrain. The terrain determines the effectiveness of submunitions or scatterable mines, their visibility, and, consequently, their ability to be detected, avoided, or neutralized.
- Ž Alternate routes or positions available.
- Ž Degree of protection available.
- Ž Availability of specialized support, such as EOD or engineer teams and equipment.

After assessing the situation, three main options are available, as follows:

- Ž Accept the risk of casualties and continue with the assigned mission.
- Ž Employ tactical breaching procedures and extract to alternate routes or positions.
- Ž Employ preplanned alternate tactical plans according to the current OPORD.

BREACHING TECHNIQUES

Hazardous areas must be bypassed if at all possible. When bypassing is not feasible, you must try to neutralize the submunitions and scatterable mines that prevent movement.

There is no single device or technique that will neutralize every submunition or scatterable mine in every situation. The differences in fuzing, self-neutralization, terrain, and unit mission mean that multiple techniques must be considered.

When employing breaching techniques, take all protective measures possible to protect personnel and equipment. Personnel who are not directly involved should be under cover, away from the area. Personnel who are directly involved must make use of all available cover.

The following extraction techniques should be considered in the order listed:

- Perform area reconnaissance, and mark a cleared route.
- Use engineer equipment to remove or neutralize items.
- Destroy items using explosive charges.
- Destroy items using direct-fire weapons.
- Contain the item by building barricades.
- Move UXO out of the way remotely.

DANGER

Employing breaching techniques on ordnance other than submunitions or scatterable mines is not recommended. The amount of explosives involved would create more of a hazard to your operations than the UXO itself.

WARNING

Prior to employing breaching techniques, make sure that none of the items are filled with chemical or biological agents.

ENGINEER EQUIPMENT (HEAVY-FORCE BREACHING)

Using engineer equipment is the preferred method of breaching small submunitions and scatterable mines. This procedure allows

for the quickest clearance of an evacuation route. Suitable equipment includes a bulldozer or grader, a combat engineer vehicle, and an armored combat engineer earthmover. If an unarmored vehicle is used (such as a bulldozer or a grader), the operator's cab must be protected by sandbags.

Three major disadvantages to heavy-force breaching are as follows:

- Ž Equipment may be damaged or operators injured. If either happens, extraction through the area will be hampered.
- Ž Equipment may only partially clear the area, requiring further clearance procedures.
- Ž Equipment may bury some submunitions or scatterable mines, which would keep them from being detected while using the evacuation route.

EXPLOSIVE CHARGES

Mine-Clearing Line Charge

The mine-clearing line charger (MICLIC) is a rocket-propelled explosive line charge used to reduce minefield containing single-impulse, pressure-activated AT mines and mechanically activated APERS mines. It has limited effectiveness against magnetically activated mines, including scatterable mines and those containing multiple-impulse or delay-time fuzes.

The MICLIC will explosively clear a path through an area. Several MICLICS may be required in the same area to ensure that a wide enough path is cleared.

Three major disadvantages to using MICLICs are as follows:

- Ž The explosive charges may not be close enough to the submunition or scatterable mine to cause destruction. This can result in "kick outs" where submunitions or scatterable mines can be thrown away from the detonation, possibly towards your position.

- Further reconnaissance of the area is required prior to using the route for evacuation in order to detect those submunitions or scatterable mines that are still in place after using MICLIC.
- MICLIC cannot be used if detonation of the submunitions or scatterable mines will cause unacceptable damage.

Hand-Placed Explosive Charges

This is the most effective way to clear an evacuation route. The explosive charges should be placed to the side of the UXO as close as possible without touching it. The explosive charge should be placed to the side of the UXO that is closest to the unit's position. This will direct most of the fragmentation away from the unit. Enough time fuse should be used to allow personnel to return to a safe area prior to the detonation.

Four major disadvantages to using hand-placed charges are as follows:

- They are very labor intensive to use and expose personnel to a greater risk, especially if the submunitions use magnetic, delay, or trip-wire fuzing.
- Their use is very slow and time consuming, because all items must be detected, marked, and destroyed individually.
- They cannot be used if detonation of the submunitions or scatterable mines will cause unacceptable damage to the operational area and/or equipment.
- They should not be used in heavy concentrations of submunitions or scatterable mines. The detonations will cause "kick outs."

DIRECT-FIRE WEAPONS

Submunitions and scatterable mines can be destroyed or disabled by the use of direct-fire service weapons. The goal of this procedure is to produce a disabling reaction that rapidly reduces or eliminates the designed fuze functioning of the submunition or scatterable mine. Service weapons such as the 5.56 millimeter, the

7.62 millimeter, the .50 caliber, and the 25 millimeter will most likely produce the desired effect. The person firing the service weapon should approach the UXO only close enough to be able to fire accurately. However, this person should never be closer than 25 meters to the item. When performing the direct-fire procedure, the aiming point is center mass. Single shots should be fired until the item is hit. On some larger items, multiple hits may be required to be sure that the submunition or scatterable mine has been disabled. Frontal protection is required for mounted and dismounted personnel. Figure 5-1 shows the dismounted procedure, while Figure 5-2, page 5-8, shows the light-vehicle mounted procedure with sandbags being used for frontal protection. If several persons are being used to clear a large area, ensure that each person is protected sufficiently from all areas. No one person should be closer than 25 meters to any item being engaged.

Three major disadvantages to direct-fire destruction are as follows:

- It is very slow and time consuming. Each item must be individually located, and each person can only engage one target at a time.
- Some submunitions are too small to engage effectively with direct-fire weapons from a distance of 25 meters.
- The terrain has a major affect on this procedure. Because submunitions and scatterable mines are so small. it does not take very much vegetation or loose dirt to hide them.

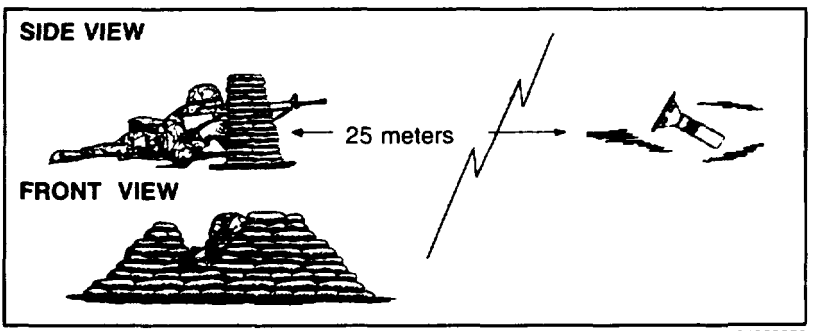

Figure 5-1. Dismounted direct-fire procedure.

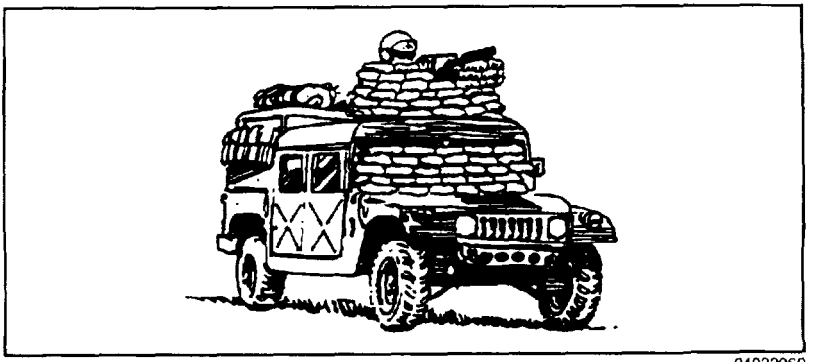

Figure 5-2. Light-vehicle mounted direct-fire procedure.

CONTAINMENT

Each submunition or scatterable mine contains less than two pounds of explosives. Thus, by using engineer equipment, one or two items can be contained by building barricades or by placing loose fill dirt on top of them. This procedure is recommended for use only where equipment must be recovered and no other procedure is acceptable. Placing fill dirt on top of the UXO may cause a detonation that could damage the equipment or injure the operator.

There is one major disadvantage to containment. Building barri cades is time consuming and thereby exposes a large number of personnel to the UXO.

REMOTE MOVEMENT

If the submunition or scatterable mine must be moved, it must be moved remotely using grapnel hooks, rope, or some other suitable material. To begin this procedure, there must be a distance of at least 50 meters between the person moving the UXO and the UXO itself.

Three major disadvantages to remote movement are as follows:

- Movement of the item can cause detonation.
- Personnel must approach the item in order to attach necessary materials.
- The UXO will he pulled toward the person moving it.