

# CHAPTER 10

## ROUTE CLEARANCE

*The ability to move forces and material to any point in an area of operations is basic to combat power and often decides the outcome of combat operations. Maneuver depends on adequate lines of communication (LOC) within the area of operations. It is necessary to conduct route and road clearance operations to ensure LOC enables safe passage of combat and support organizations. Route clearance is conducted by a sweep team.*

### SWEEP TEAM ORGANIZATION

Organizing a sweep team varies depending on the mission. There are two types of sweep operations—deliberate and hasty.

- A deliberate sweep is very thorough and includes a complete electronic and visual sweep of the road (shoulders, culverts, ditches, and bridges). It is made before a road is open to traffic. There is no set time limit. An average of 1 to 3 kilometers can be covered per hour.
- A hasty sweep consists of visual inspection, search, and use of mine detectors. The road surface, culverts, ditches, and bridges are inspected and searched. The sweep team looks for mines, wire, or any other sign of recent mining activity (such as disturbed earth and obstacles). Electronic detectors are used to check suspected areas. A hasty sweep is used when the METT-T analysis does not permit a deliberate sweep or when there is an urgent need for a road to be opened. Time and distance factors may be imposed. An average of 3 to 5 kilometers can be covered per hour. It is possible to bypass a well-emplaced mine or other explosive device using this sweep method.

A sweep team is a trained detection team that searches for mines and explosive devices. The organization of a sweep team depends on the

type of mission and the length and difficulty of the road to be swept. Typical sweep team members include—

- One NCOIC.
- Two markers/probers.
- Four detector operators.
- One radio operator.
- One medic.
- Two demolition men.
- One vehicle driver.

Equipment used by a sweep team includes—

- One panel marker.
- One map.
- Four smoke grenades (minimum).
- Four detectors (includes two backup detectors) and extra batteries.
- Two grappling hooks and two 60-meter lengths of cord.
- One demolition kit or demolition bag per demolition man.
- Four probes.

The sweep team is escorted by a security element to provide security against the enemy. The security element composition is dictated by the tactical situation. The enemy often mines or remines areas recently cleared by sweep teams. Rear security elements must be alert to this technique and be prepared to react.

If a sweep team is attacked, immediately deploy men and return fire. The security element normally assumes command upon enemy attack. The security element commander organizes the defense or counterattack and requests support as needed.

## MINE LOCATIONS

The enemy normally places more than one mine in each mined area. Enemy mines are likely to be placed in-

- Frequently used roadways leading to and from construction sites.
- Brush and other traffic obstructions placed on roadways.
- Bridge bypasses.
- Obvious turnarounds and shoulders.

## EMPLOYING ELECTRONIC MINE DETECTORS

Normally, mine detectors will only be used in a deliberate breach or to clear minefield after all covering fires have been suppressed. However, mine detectors can be employed by combat arms units.

The unit leader receives the mission, performs preliminary planning, and coordinates for required support. He then briefs personnel and organizes them into three teams—one to draw,

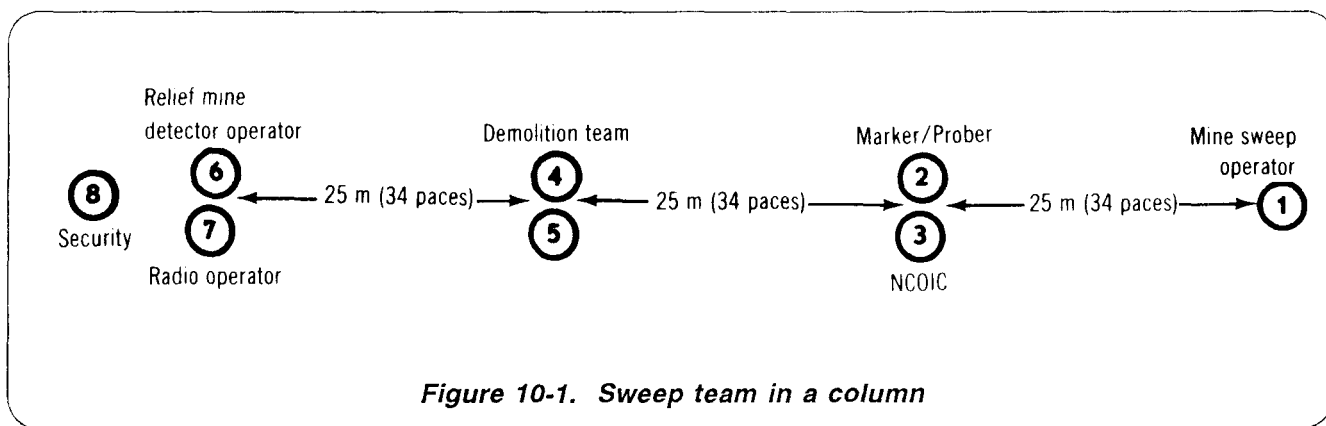
prepare, and inspect demolitions; one to prepare and inspect mine detectors; and one to conduct a reconnaissance of the proposed breaching site. The unit leader inspects personnel and equipment. Teams walk through their tasks. If required, coordination is made with a security element. The unit moves to the mined area, marks the entrance, and prepares mine detectors.

## CONDUCTING A SWEEP

For route clearing, the normal sweep team configuration is eight soldiers in a column. (See Figure 10- 1.) This configuration is best suited to sweep routes in friendly territories that are not under constant surveillance.

- Soldier 1 (mine detector operator) leads.
- Soldier 2 (marker/prober) and Soldier 3 (NCOIC) follow 25 meters (34 paces) behind Soldier 1.
- Soldiers 4 and 5 (demolition team) follow 25 meters behind Soldiers 2 and 3.
- Soldier 6 (relief mine detector operator) and Soldier 7 (radio operator) follow 25 meters behind Soldiers 4 and 5.
- Soldier 8 (rear security) follows behind Soldiers 6 and 7.

If the sweep team clears an entire minefield rather than a single lane or road, as discussed in Chapter 9, it is organized with several clearance teams working in echelon. The above sweep team configuration can be modified for manual minefield clearance operations. Two probes lead and each one clears a 1 -meter



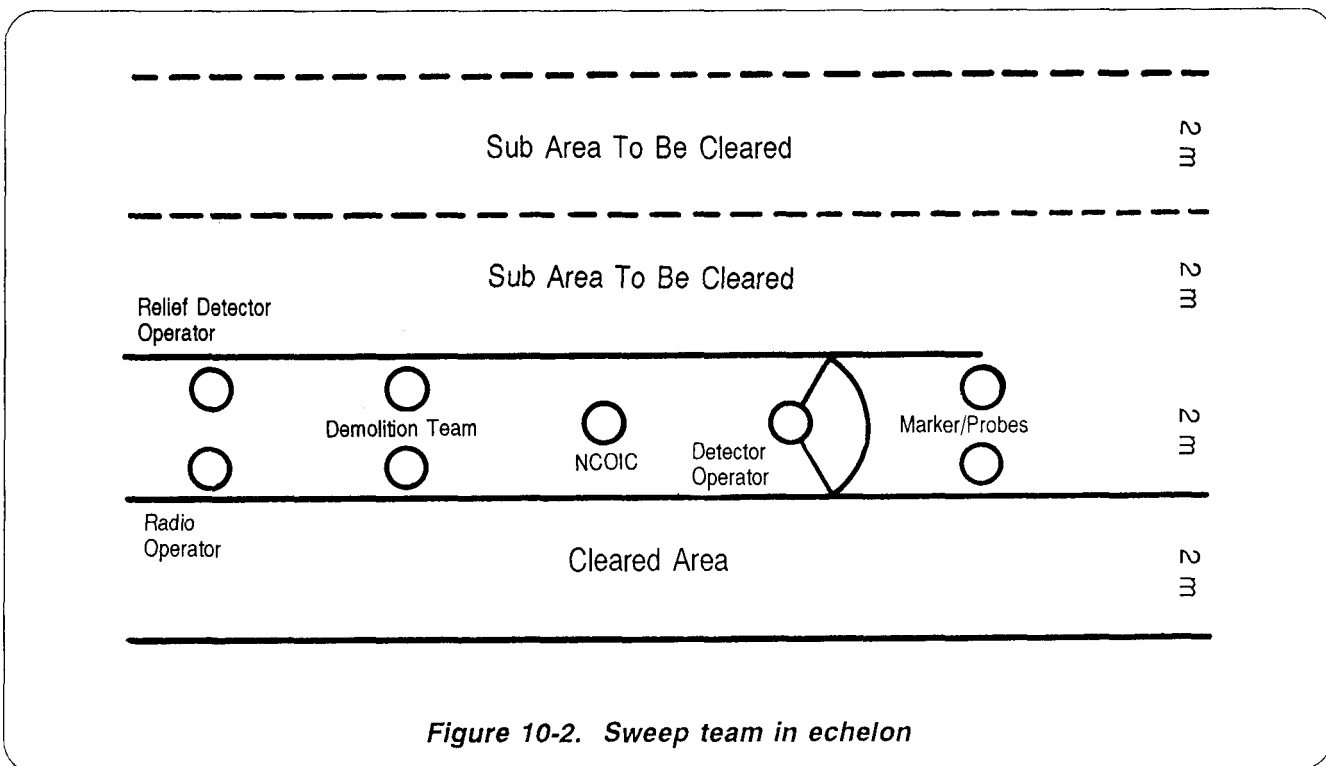
path. They must overlap because buried plastic threat mines are difficult to locate with the AN PSS / 11 mine detector. The prober on the left dispenses a left-hand guide tape. The detector operator (located behind probers) proofs and locates deeply buried mines. (See Figure 10-2.) The actual distance between team members and the location of the security element depend on the tactical situation, terrain, and visibility.

- Electronic detection.
- Probing.
- MCRS.

A combination of the following detection methods make the most effective sweep:

- Visual detection.

MCRs can be used for detecting mines and are preferred for proofing. A CEV with mine rake or an MCB can be used for proofing. As a last resort, a 5-ton dump truck (loaded with sand or earth and driver floorboard and compart-



ment sandbagged) can be backed up in the lane to proof it.

## Disposition of Suspected Mines

The sweep team takes the following actions when a suspected mine is found:

- Pinpoints mine location. Do not leave any mine unmarked.
- Searches for wires in the immediate area. Trace wires in both directions to determine if items are attached to them. If there is nothing attached, cut loose trip wires.

### DANGER

**Never cut taut trip wires. Alert the security element to search for an enemy manning a command-detonated mine. Keep troops away from the mine until all wires are traced and cut. Be alert for booby traps and ambush.**

- Probes the suspected location and uncovers the object for identification. Expose enough of the object to see whether it is a mine or debris. Other personnel stay at least 25 meters away.
- If the object is debris, gets in a protected position and carefully removes debris with a grappling hook and rope. Be alert for booby traps or AHDs wired to debris.
- If the object is a mine, withdraws and notifies the OIC who decides whether to bypass it, destroy it in place, remove it with a grappling hook and rope, or notify EOD personnel for removal by hand (this action is seldom taken).

## Mine-Removal Techniques

After a mine is located, it can be clearly marked and bypassed, detonated in place, removed by rope or wire, or neutralized and removed by

hand. The method used depends on the location of the mine, the identity of the mine and fuze, and the tactical situation.

Trip-wire and tilt-rod fuzed mines can be detonated by using a grappling hook and rope as discussed in Chapter 9. Grapnels can be improvised from any available material (such as a bent drift pin or scrap).

- ★ Hand-emplaced charges are the standard demolition material used to destroy mines in place (see FM 5-250). A 1-pound block of explosive placed close to the mine (without touching) is sufficient to detonate most types. A group of charges, placed next to several mines, can be connected with detonating cord and fired simultaneously.

Rope or wire can be used to pull a mine out of its installed position. This eliminates the potential hazard to personnel if a mine is equipped with AHDs. This is a safe method and only detonates mines equipped with AHDs. It also reduces noise and cratering. An expedient A-frame, designed to obtain a vertical lift on a mine, makes it easy to pull a mine out of a hole on the first attempt. Use the following procedures for removing mines with a rope:

- Uncover only enough of the mine to expose a handle or projection. Attach a 60-meter rope or wire to the mine or engage a grapnel. If there is no projection, engage a grappling hook on the bottom of the mine, opposite the direction of the pull.

### DANGER

**Do not move the mine while uncovering or attaching rope because it might detonate an AHD.**

- Ensure covered area is not mined. Take cover or lie in a prone position at least 50 meters from the mine. Pull the mine from the hole.
- If mine type is unknown, wait 30 seconds before leaving cover and approaching the mine. This guards against the possibility of a delay-firing mechanism.

## Hand Neutralization

Appendix A discusses procedures for hand neutralization of US mines. Foreign mines and booby traps should only be neutralized by EOD personnel.

Mines are neutralized by hand when—

- Conducting a covert breach.
- The mine is located on a bridge, building, or other facility required for use by friendly forces.
- Neutralization by other means is not allowed.
- The mine can positively be neutralized by hand and is required for reuse.
- The mine type is unknown and recovery must be attempted for intelligence purposes.
- Chemical mines are located in areas where contamination would restrict use of the area by friendly troops.

## Safety

The following safety procedures should be observed:

- All sweep team members wear helmets and flak jackets to protect them against fragmentation.
- All vehicle floorboards are sandbagged.

- Vehicles are dispersed at 50-meter intervals when en route to and from a sweep area. (If a mine is detonated by one vehicle, it will not cause casualties in other vehicles.)
- Only one person at a time is allowed at a suspected mine location.
- Assume mines and explosive devices are equipped with AHDs until proven otherwise.
- Do not run; move only in previously cleared areas.

## Reports

The spot report is submitted by the sweep team NCOIC to higher headquarters when any enemy mine or explosive device is discovered or detonated. A spot report is made on any enemy activity in the sweep area.

The NCOIC submits status of progress and completion reports until the team has completed the road sweep. Progress reports must be timely and accurate to permit effective movement by a reacting force, if needed, and to speed notification of road clearance to the parent unit.

The mine and booby trap incident report is given to the commander to document each mine and booby trap incident. It is forwarded through intelligence channels at the end of the sweep operation.