Part Three. Counteroperations

CHAPTER 8
COUNTERMINE OPERATIONS

Countermine operations are taken to breach or clear a minefield. All tasks fall under breaching or clearing operations. These tasks include detecting, reporting, reducing, proofing, and marking. Techniques and procedures are contained in Chapter 9.

DEFINITIONS

Obstacle. The term *obstacle* is used often in this chapter because the same breaching and clearing operations are used for minefields and other obstacles. For the purpose of this manual, breaching and clearing techniques and procedures focus solely on minefields.

Reduction. Reduction is the act or actions taken against an obstacle that diminishes its original effect. Regarding minefields, a lane breach would yield a reduction of the minefield obstacle.

Mine neutralization. Mine neutralization is when the mine has been rendered incapable of firing on passage of a target. The mine may still be dangerous to handle.

Breaching. Breaching is the employment of a combination of tactics, techniques, and procedures to project combat power to the far side of an obstacle. It is a synchronized combined arms operation under the control of the maneuver commander. Breaching actions are plays the unit executes on contact with an obstacle. Breaching is usually executed under enemy fire, but it can be executed when the obstacle is not covered by enemy fire.

Minefield clearance. Clearing is the total elimination or neutralization of an obstacle. Clearing operations are not conducted under fire. They are usually performed after the breaching operation by follow-on engineer forces, or anytime in a friendly area of operations where an obstacle is a hazard or hinders movement.

Route clearance. Route clearance is the removal of mines along preexisting roads and trails.

BREACHING OPERATIONS

Breaching is a synchronized combined arms operation under the control of the maneuver commander. FM 90-13-1 provides combined arms commanders and staffs with doctrine, tactics, and techniques needed to successfully overcome obstacles. Maneuver units employ the following types of breaching operations: bypass, in-stride, deliberate, assault, and covert. The first step in understanding breaching operations is to know the obstacle breach theory.

Knowing the theory behind breaching operations equips the engineer and maneuver commander with fundamentals needed to integrate a breach into the tactical planning, preparation, and execution of an operation.

Successful breaching operations are characterized by the application of intelligence, fundamentals, organization, mass, and synchronization breaching tenets.

Intelligence

In any operation where enemy obstacles can interfere with friendly maneuver, obstacles intelligence (OBSTINTEL) becomes a priority intelligence requirement (PIR). Finding enemy obstacles or seeing enemy obstacle activity validates and refines the intelligence officer's (S2's) picture of the battlefield. OBSTINTEL helps determine enemy intentions, plans, and strength. It is particularly important for discovering the types of mines and mine fuzes the enemy has used. The engineer depends on this information because he must determine which reduction techniques offer the best chance for success and minimize the risk to the breaching force. This requires a dismounted reconnaissance patrol to examine the minefield. When collecting OBSTINTEL, recon - naissance is a combined arms activity that includes engineers. An engineer squad moves with scouts or the patrol and conducts dismounted reconnaissance of templated or discovered obstacles. A combination of light and heavy engineers is the ideal obstacle reconnaissance force. Mechanized engineers use their mobility to reconnoiter numerous tactical obstacles, while light engineers use stealth to reconnoiter protective obstacles. (See Appendix C.)

Fundamentals

Breaching fundamentals are enduring principles that apply regardless of METT-T or specific breach assets. Tactics, techniques, and procedures may vary within the following breach fundamentals:

Suppress. Suppression is the focus of all available fires on enemy personnel, weapons, and equipment to prevent effective fires on friendly forces. Suppressive fires include the full range of weapons from direct and indirect fires, electronic countermeasures (ECM), and directed energy.

Obscure. Obscuration hampers enemy observation and target acquisition, and it conceals friendly activities and movement. Obscuration smoke deployed on or near the enemy position minimizes the enemy's vision. Screening smoke employed in the breaching area and on the enemy conceals movement and obstacle reduction activities. Obscuration also means using terrain to mask movement and breaching activities. Man-made obscuration includes artillery and mortar smoke, smoke generators, vehicle on- board smoke, and smoke pyrotechnits.

Secure. The force secures the breaching operation site to prevent the enemy from interfering with obstacle reduction and ensures safe passage of the force through lanes erected during obstacle reduction.

Reduce. Obstacle reduction is the creation of lanes through the minefield to allow passage of the attacking force. The number and width of lanes varies with the situation and type of breaching operation. Lanes must be sufficient to allow the force to cross the minefield and accomplish its mission. (Table 8-1 provides information on lane widths.) For an in-stride or deliberate breach, a minimum of two lanes are required for a task force and one for a company. For an assault breach, one lane is required per assaulting platoon. The unit reducing the minefield will mark and report the minefield, lane locations, and conditions to higher headquarters. Follow-on units will further reduce or clear the minefield, if required.

Organization

The commander organizes his force to accomplish the breaching operation quickly and effectively. He must organize support, breach, and assault forces with assets necessary to accomplish their role.

Support. The primary responsibility of the support force is to eliminate the enemy's ability

Table 8-1. Lane widths

Assault Footpath - 1 meter

The footpath is breached to pass dismounted troops so they may continue an attack or secure the far side of the minefield while vehicle lanes are being breached.

Initial Lane - 4 meters

The initial lane is the minimum width to pass the breaching and assault forces. It is widened and marked as soon as the tactical situation allows.

Single Lane - 8 meters

The single lane allows one-way vehicle traffic to pass with relatively little impact on vehicle speed or safety.

Double Lane - 16 meters

The double lane allows two-way traffic through the breach.

to interfere with the breaching operation. It must isolate the battlefield with fires and suppress enemy fires covering the breach location. This involves massive direct and indirect fires against the enemy to fix him in position and to attack and destroy enemy vehicles and personnel able to bring fire on the breach force.

Breach. The primary responsibility of the breach force is to create lanes through the minefield that allow passage of the assault force. The breach force is also responsible for marking lane lengths as well as entry and exit points to speed the passage of the assault and follow-on forces. The breach force includes engineers and breaching assets to reduce the minefield and infantry and armor assets to provide local security and suppression. The breach force applies the fundamentals of suppress, obscure, and secure while reducing the minefield. Once lanes are breached, the breach force secures the far side of the minefield and provides suppressive fires as the assault force passes through lanes. The maneuver commander allocates engineer platoons and equipment based on the number of lanes required. Normally, 100 percent more breaching assets than required are positioned with the breach force for redundancy. In close combat, one engineer platoon with breaching assets is required for each lane.

Assault. The primary responsibility of the assault force is to destroy or dislodge the enemy on the far side of the minefield. It secures the far side by physical occupation (as in most deliberate breaching operations). The assault force may be tasked to assist the support force with suppression while the breach force reduces the minefield.

Mass

Breaching is conducted by rapidly applying concentrated force at a point to crack the minefield and rupture the defense. Massed combat power is directed against an enemy weakness. The commander masses engineers and breaching equipment to reduce the obstacle. The breach force is organized and equipped to use several different reduction

techniques in case the primary technique fails. Achieving necessary mass for the assault requires the breach force to open enough lanes through the minefield to permit rapid passage and the build-up of forces on the far side.

Synchronization

Breaching operations require precise synchronization of suppression, obscuration, security, and reduction (SOSR) breaching fundamentals by support, breach, and assault forces. Failure to synchronize effective suppression and obscuration with obstacle reduction during an assault can result in rapid, devastating loss of friendly troops in the minefield or in the enemy's fire sack.

Types of Breaching Operations

Breaching operations make maneuver possible in the face of enemy obstacle efforts. Since obstacles may be encountered anywhere, maneuver forces integrate breaching operations into all movement plans. When possible, enemy minefields are bypassed to maintain the momentum and conserve critical countermine assets. However, when making the decision to bypass rather than breach, consider the likelihood of friendly units being channelized into kill zones. Bypassing is done by maneuvering around the minefield or, if aviation assets are available, moving over the minefield. When maneuvering around the obstacle, attempt to locate a portion of the force in overwatch positions to cover the bypass of the main element. Even when the decision is made to conduct a breach, scouts should continue to reconnoiter for bypass routes.

In-stride. In-stride breaching is a very rapid technique using standard actions on contact and on normal movement techniques. It consists of preplanned, well-trained, and well-rehearsed breaching actions and reduction procedures by predesignated combined arms elements. The in-stride breach takes advantage of surprise and initiative to get through the obstacle with minimal loss of momentum. The force uses the in-stride breach against weak defenders or very simple obstacles and executes it from the march. The in-stride breach is normally conducted by a TF or brigade during a movement to contact or during a hasty attack. It maintains the momentum of the attack by denying the enemy time to mass forces to cover the obstacles. Brigade and TF commanders plan and prepare for an in-stride breach by task-organizing subordinate TFs or company teams with forces necessary to conduct independent breaching operations. The subordinate commander designates specific support, breach, and assault forces. Proper integration of engineers and breaching assets into TF and company team formations is critical to the success of an in-stride breach.

Deliberate. Deliberate breaching is a scheme of maneuver specifically designed to cross an obstacle in order to continue the mission. The deliberate breach is characterized by thorough reconnaissance, detailed planning, extensive preparation, and explicit rehearsal. Units conduct a deliberate breach when it is impossible to take the obstacle in stride or when an in-stride breach has failed. A unit conducts a deliberate breach when the forces required for support, breach, and assault are beyond the capability of a task-organized subordinate unit. Maneuver company teams, TFs, and brigades conduct deliberate breaching operations. Normally, a company team executes a deliberate breach because the commander must halt the unit's momentum to maneuver his platoons as support, breach, and assault forces.

Assault. Assault breaching allows a force to penetrate an enemy's protective obstacles and destroy the defender in detail. The assault breach is conducted by company teams and platoons assigned to assault an objective as part of a larger force attack. Engineers contribute to the assault in four major areas:

- Conduct decentralized obstacle reduction to maintain the mobility of the assault force and momentum of the attack.
- Reduce fortifications with demolitions.
- Widen initial assault breaches to permit follow-on forces to move on or through the objective.
- Hand over assault lanes to follow-on forces for widening and improved marking.

Engineers are integrated into assault forces to provide decentralized, responsive support at the lowest possible level. This is a sharp contrast to the in-stride and deliberate breach, where engineer platoons operate as a unit under the control of the platoon leader.

Covert. Covert breaching is a special operation used by dismounted forces during limited visibility. It is silently executed to achieve surprise and to minimize casualties. The covert breach relies on stealth, quiet manual lane reduction techniques, and dismounted maneuver. The TF commander plans to conduct a covert breach when the mission specifies infiltration through enemy forward, lightly defended obstacles to attack an objective deeper in the enemy's sector. A commander may also use the covert breach during an assault when the need for surprise outweighs the need for overwhelming suppression.

The main difference in a covert breach and other breaching operations is the execution of the SOSR breaching fundamentals. The TF commander task-organizes his force to support, breach, and assault the obstacle. In the covert breach, suppression from the support force is a *be-prepared* task upon detection of the breach force or an *on-order* task once the breach is complete and the assault is initiated.

CLEARING OPERATIONS

Clearing is the total elimination or neutralization of mines from an area. Breaching operations are usually conducted under enemy fires while clearing operations are not conducted under fire. Clearing operations can be conducted by engineers during war or after hostilities as part of nation assistance.

A limited clearing operation can be conducted by follow-on engineers after the force conducting a breaching operation has reduced the minefield and secured the area. In this situation, the clearing operation initially improves existing breach lanes by widening and marking them, and it clears and marks new lanes through the minefield. The clearing operation supports continued passage of forces. Eventually, all mines are eliminated or neutralized.

A clearing operation is also conducted to eliminate all mines in a minefield previously identified, reported, and marked in a friendly area of operations that hinders mobility or is a hazard to friendly forces or civilians.

The most extensive clearing operations occur as part of post-war nation assistance. Procedures and techniques for clearing operations presented in this section provide the fundamentals for large-scale clearing operations.

Upgrading Breach Lanes

Upgrading breach lanes is limited mine clearing conducted by follow-on engineers to improve existing lanes through minefields and to reduce new lanes. This clearing operation is intended to further reduce the minefield so follow-on units can pass through it as quickly as possible.

The breach force that initially reduced the obstacle and marked the lanes turns over the lanes to follow-on engineers. Follow-on engineers can expect lane widths of 4 to 5 meters. The total number of lanes depends on the size of the lead breach and assault forces. Two to four assault lanes are normal if the lead unit was brigade-size.

If forces continue to pass through existing lanes while further reducing and clearing is conducted, follow-on engineers first begin reducing new lanes. At a minimum, a brigade requires four lanes, and a division requires eight lanes to pass forces through the minefield. Lanes reduced during clearing should be a minimum of 100 meters apart. The clearing force reduces additional lanes using equipment and techniques outlined in Chapter 9. Lane clearance is more deliberate

than lane breaching and normally takes longer. Fewer mechanical breaching assets are available for the clearance operation. Follow-on engineers will probably not have tank-mounted mine-clearing blades or rollers. Combat engineer vehicles with mine rakes are scarce. The main mechanical clearing asset is an armored dozer with a mine rake. Mine-clearing line charges (MICLICs) are used, if available. Engineers with mine detectors, mine probes, and demolitions assist in clearing additional lanes. Lanes are widened to 16 meters to allow for two-way traffic. They are marked using the original marking system for breach lanes or by using the division SOP. Entrances, exits, and left and right lane markers are emplaced to provide day and night capability. Lane-marking procedures are contained in Chapter 9.

After additional lanes are reduced and marked, and forces begin using them, engineers improve initial breach lanes by widening them to 16 meters. The marking system is improved to the new lane width. Traffic control is critical during additional lane reduction and when shifting lanes to improve existing lanes. Engineers conducting reduction and clearance may also provide guides at the lanes. Control procedures are outlined in FM 90-13-1.

To eliminate the danger of forces entering the minefield adjacent to lanes, the minefield is marked with fencing (barbwire or concertina) and mine markers. Marking is emplaced across the front, on both sides, between lanes, and to the left and right of the crossing site as far out as practical.

Engineers may also help remove damaged vehicles from minefield lanes. Recovery vehicles should be available near lanes for this purpose.

Mine Clearance

Clearing operations occur when engineers receive a mission to clear an area of mines or clear a specific minefield in a friendly area of operation. In this case, the minefield was reported and may already be marked on all sides. The worst case would be if the minefield was reported but not marked and its limits were unknown. The engineer unit receiving the mission bases plans on available information and prepares equipment based on the estimate.

Actions at the minefield begin with a thorough reconnaissance to identify minefield limits and types of mines. This is a time-consuming process that is hazardous to shortcut. Identified limits are marked with an expedient system of single-strand barbwire or concertina. In this situation, since all mines must be destroyed, the unit takes a systematic approach to clearing mines. The procedure depends on the type of mines and whether the mines are buried or surface-laid.

If mines are magnetic- or seismic-fuzed, mechanical assets are used. Pressure mines can be destroyed using hand-emplaced explosives. When a manual procedure is used, eliminate AP mine trip wires with grapnel hooks before moving forward to detect mines.

Using the manual procedure, engineers visually detect mines or detect them with mine detectors and probes. They also mark mines for destruction by explosives. Chapter 10 contains information on mine-sweeping procedures.

After mines are destroyed, proof used lanes and routes to ensure all mines were eliminated. This is done by using a mine roller or mine clearing blade/rake. Proofing is discussed further in Chapter 9.