

Appendix C

Breaching

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Section 1. Breaching Operations

Obstacle breaching is a high-frequency task during offensive operations with the goal of projecting combat power to the far side of an obstacle. Key considerations for the commander include: an understanding of the various types of obstacles and the capabilities and limitations of his available mobility assets.

The breaching fundamentals *are suppress, obscure, secure, reduce, and reconstitute* (SOSRR). These fundamentals are the same for all breaches but may vary in degree based on the situation:

- Sufficient support elements are employed to *suppress* enemy elements that are overwatching the obstacle.
- The support force requests smoke to *obscure* breach force operations.
- The breach force creates and proofs a lane through the obstacle, allowing the assault force to *secure* the far side of the obstacle.
- Actions taken to further *reduce* and mark obstacles to allow the assault force, main attack force, and any follow-on forces to continue the attack.
- Reconstitution of personnel and assets to conduct subsequent breaches.

Each of the actions are covered in more detail:

Suppress. Suppression is focusing all available fire on enemy personnel, weapons, or equipment that prevents the enemy from prohibitively interfering with friendly forces during breaching operations. It includes the full range of lethal and non-lethal fires from direct and indirect fire weapons, aviation, and electronic warfare. Suppression helps to isolate the breaching site and fix the enemy in position thus providing protection to forces reducing and maneuvering through the obstacles. Suppression is primarily the responsibility of the Support Force discussed below. However, the Breach Force and the Assault Force also have roles in suppression and will be discussed herein.

Obscure The most effective obstacles are those covered by fire and observation and must be obscured when breaching. To obscure is to hide or make something not clearly seen or easily distinguishable. While the primary obscuration means is smoke, electronic warfare is also a way to obscure breaching activities by providing protection from direction finding and jamming. Obstacle reduction efforts should be hidden from enemy observation as much as possible. Consideration is always given to selecting a breaching site where the terrain provides natural concealment from enemy observation. Obscuring smoke placed on the breaching area and screening smoke placed between the breaching area and the enemy conceals friendly activities, intentions, and obstacle reduction

activities. Smoke should be employed across a wide front in order to deceive the enemy as to the actual breach site(s)

Secure. The breaching site is secured to prevent the enemy from interfering with the obstacle reduction and exploitation of the breach force. A friendly force must control the breaching site, to include enemy listening/observation posts, before it can reduce the obstacle. This is accomplished by suppressive fire and/or physical occupation. Generally, tactical obstacles are secured by fires; protective obstacles are secured by force. The Support Force is responsible for securing the nearside of the obstacle. The Breach Force creates and proofs a lane through the obstacle, allowing the assault force to secure the far side of the obstacle. The Breach Force must also contain sufficient assets to provide local security against those forces the Support Force cannot sufficiently engage due to terrain or other cover.

Reduce Reduction is the creation and marking of lanes through a minefield or obstacle to allow passage of the attacking ground force. The number and width of lanes created varies with the situation and type of breaching operation. Lanes must be wide enough to allow a force to rapidly pass through the obstacle and continue the attack. The unit reducing the obstacle marks and reports obstacle and lane locations and conditions to higher headquarters. Lanes are normally handed over to follow-on forces that will further reduce or clear the obstacle when possible and not when under enemy fire.

Reconstitution Upon completion of the breach, the Breaching Task Force will normally have seriously depleted essential Class V and possibly personnel and breaching equipment. The commander is normally faced with two options, reconstitute forces for continued breaching operations or release the elements back to their respective commands. If the commander intends to continue breaching operations, resupply of critical materiel must be conducted and assets redistributed for future breaching operations.

Section 2. Types of Breaching Operations

The following paragraphs cover major types of breaching operations: hasty, deliberate and covert. Amphibious breaches are covered in MCWP 3-17.3, *MAGTF Breaching Operations*. Also included is a discussion of the bypass operation, which the commander must consider as an alternative to conducting an actual breach.

Bypass

When a unit bypasses an obstacle, it physically changes direction, moving along a route that avoids the obstacle. Obstacles should be bypassed whenever possible to maintain the momentum of the operation. Commanders, however, must ensure that conducting the bypass will provide a tactical advantage without exposing the unit to unnecessary danger. Previously unreported obstacles and bypassed enemy forces should be reported to higher headquarters. If possible, they should conduct a reconnaissance to evaluate tactical considerations, including the following:

- The limits of the obstacle.
- Physical aspects of the bypass route, including location, availability of cover and concealment, and key terrain influencing the route.
- Confirmation that the bypass route will take the unit where it needs to go while avoiding possible enemy ambush sites and kill sacks.

Hasty Breach

A hasty breach or in-stride breach is the rapid creation of a route through a minefield, barrier, or fortification by any expedient method. A hasty breach is used against a weak defender, when the enemy situation is vague or changes rapidly, or against very simple obstacles. Little or no time may be available in which to plan or prepare for this type of breach, particularly during the conduct phase of an attack, and well-rehearsed, pre-planned standard battle drills must be used. To maintain momentum and take advantage of the enemy situation, the hasty breach is normally conducted with the resources that are immediately available.

Deliberate Breach

A deliberate or assault breach is used against a strong defense or complex obstacle system. It is similar to a deliberate attack, requiring detailed knowledge of both the defense and the obstacle systems. With this knowledge, forces conducting the deliberate breach can develop detailed plans, task organizes to accomplish the mission, and execute rehearsals. A deliberate breach is further characterized by a buildup of combat power on the near side of obstacles. The term deliberate breach does not apply to the speed or tempo with which the attack is executed. Deliberate breaching operations require significant planning, coordination, and preparation.

In a battalion deliberate breach, the tank company is most likely to be part of the support or assault force; the engineer company, task organized with plow and roller tanks, serves as the breach force. The battalion commander may also form the breach force by task organizing a tank or mounted infantry company with one or more engineer platoons

Clandestine Breaching

Breaches can be conducted either overtly or clandestinely. Overt operations are conducted in the open without concealment. Clandestine operations are conducted in secret or under limited visibility. Thorough reconnaissance and detailed intelligence assist the commander in determining the best location to breach, concealed routes to the obstacle, and the type of breaching equipment and number of personnel required. The covert breach relies on stealth and dismounted maneuver, with the breach force employing quiet, manual lane reduction techniques. Coordination is of the utmost importance. All forces must know what event triggers the shift from clandestine to overt breaching, without this information they may be prematurely exposed to the enemy or to

friendly fire. Because surprise is critical, the key to conducting a breach clandestinely may require delaying suppression of the enemy until the last possible moment (depending on the enemy situation). For example, suppression of the enemy may be delayed until:

- The breach force is detected by enemy forces.
- The Breach Force is close to the obstacle and must expose itself in order to reduce the obstacle.
- Lanes are open and the assault force attacks.
- The Breach Force completes lane reduction and detonates charges to clear obstacles, signaling direct and indirect suppressive fire to support the Assault Force.

Clandestine breaching also requires withholding the use of obscuring smoke. Weather and darkness are the best concealment for clandestine operations. Security is achieved through stealth, which outweighs the need for speed. Silently eliminating enemy outposts provides additional security, but may give away friendly activity. Obstacle reduction must be conducted as silently as possible by using manual techniques vice mechanical equipment.

Section 3. Breaching Elements

Support Force

The mission of the support force is to suppress the enemy's ability to interfere with the actions of the breach force. The support force usually leads movement of the breach elements. After identifying the obstacle, it moves to covered and concealed areas and establishes support by fire positions. The support force leader sends a SPOTREP to the commander. This report describes the location and complexity of the obstacle, the composition of enemy forces that are overwatching the obstacle, and the location of possible bypasses. The commander decides whether to bypass or to breach the obstacle. He must keep in mind that a bypass may lead to an enemy kill zone.

In either case, the support force suppresses any enemy elements that are overwatching the obstacle to allow the breach force to breach or bypass the obstacle. All available assets, including artillery, air, electronic warfare, naval surface fire support (NSFS), and direct fire weapon systems should be used to suppress and obscure the enemy. As the breach and assault forces execute their missions, the support force lifts or shifts supporting fires. Because the enemy is likely to engage the support force with artillery, the support force must be prepared to move to alternate positions while maintaining suppressive fires. The support force may have reserve breaching and assault assets (line charges, track width mine plows, AVLBs, and armored combat earthmovers) that are intended for use only in the event the breach and assault forces become ineffective and to expedite reconstitution where multiple obstacles must be breached in quick succession.

The M1A1's range, armor protection and magnified sights allow it to carry out the support force role very efficiently.

Breach Force

The mission of the breach force is to create and mark lanes that enable the main attack force to pass through an obstacle to continue the attack. It is normally a combined-arms force which may include engineers, infantry, tanks, assault amphibious vehicles (AAVs), light armored vehicles (LAVs), and armored vehicle launched bridges (AVLBs). The breach force must be capable of overcoming an enemy counterattack. Assets are allocated based on the number of lanes required. Two breached lanes per each battalion-sized task force are highly recommended. The commander of the breaching force should also plan for at least 50% redundancy in breaching equipment due to expected losses during opposed breaching operations.

The breach force is organized into an engineer reconnaissance team, security team, and obstacle reduction team, and a lane marking team.

- The engineer reconnaissance team verifies intelligence about the obstacles, locates the forward edge of obstacle zones so the rest of the breach force does not inadvertently enter the obstacle, and marks the standoff distance for explosive reduction.
- The security team provides local security when the breach force cannot be covered by the support force. Infantry, LAVs, tanks, and AAVs normally provide security while the engineers are reducing obstacles.
- The obstacle reduction team physically creates the lanes and proofs the lanes for mines, if required.
- The lane marking team initially marks the newly created lanes for passage of the assault force, the main attack force, and follow-on forces. The lane marking team is also ready to assume the mission of obstacle reduction if the obstacle reduction team is rendered ineffective

Once the breach force has reduced the obstacle and the assault force has passed through the lanes, guides are employed to conduct the handover to follow-on units. At a minimum, lanes must be marked and their locations and conditions reported to higher headquarters and follow-on units.

Proofing is verifying that a breached lane is free of live mines. This can be accomplished by checking the breached lane with a secondary breaching means other than explosives, such as probing, mine detectors, mine plows, or mine rollers. Proofing is done only when the potential risk of live mines remaining in the lane exceeds the risk of loss to enemy fire while a lane is being proofed. It is important to remember, obstacle reduction is the physical creation of a lane through or over obstacles.

Tank units may be some of the first units to move through the lane to provide security for the assault force on the far side of the obstacle. In some instances, the breach force may move to hull-down firing positions that allow it to suppress enemy elements

overwatching the obstacle. At other times, it may assault the enemy, with suppressive fires provided by the support force.

The following describes the breaching actions of a tank platoon:

A tank platoon can create a lane by itself if it is equipped with the assets required to breach the type of obstacle encountered. If the tank unit does not have this capability, it may be required to provide close-in protection for attached engineers with breaching assets. Three breaching methods are available to the platoon:

- Mechanical breaching, usually with mine plows or mine rakes.
- Explosive breaching, employing such means as the mine-clearing line charge (MICLIC), M173 line charge, or 1/4-pound blocks of TNT.
- Manual breaching, with Marines probing by hand or using such items as grappling hooks, shovels, picks, axes, and chain saws. Manual breaching is the least preferred method for the tank platoon.

In extreme cases, the commander may order the tank platoon to force through an obstacle. This technique requires the breach force to move in column formation through the obstacle location. If available, a disabled vehicle can be pushed ahead of the lead breach vehicle in an attempt to detonate mines.

The mine plow is the breaching device most commonly employed by the tank platoon. The battalion or company commander may allocate one to three plows per platoon. When properly equipped and supported, the platoon can create up to two lanes through an obstacle.

Plow tanks lead the breach force. Immediately following them are vehicles that proof the lane; these are usually tanks equipped with mine rollers. This process ensures that the lane is clear. (Note) If the location and/or dimensions of the obstacle are unknown, the platoon leader may choose to lead with tanks equipped with mine rollers to identify the beginning of the obstacle.

If the platoon is allocated one plow, the Platoon Sergeant's wingman normally serves as the breach tank. The Platoon Sergeant follows immediately behind to proof the lane and provide overwatch. The platoon leader's section follows the Platoon Sergeant.

If the platoon has two or more plows, it can create multiple lanes, usually 75 to 100 meters apart. The wingman tanks are normally equipped with the plows, with the section leaders' tanks following to proof the lanes and provide overwatch (see Figure C-1).

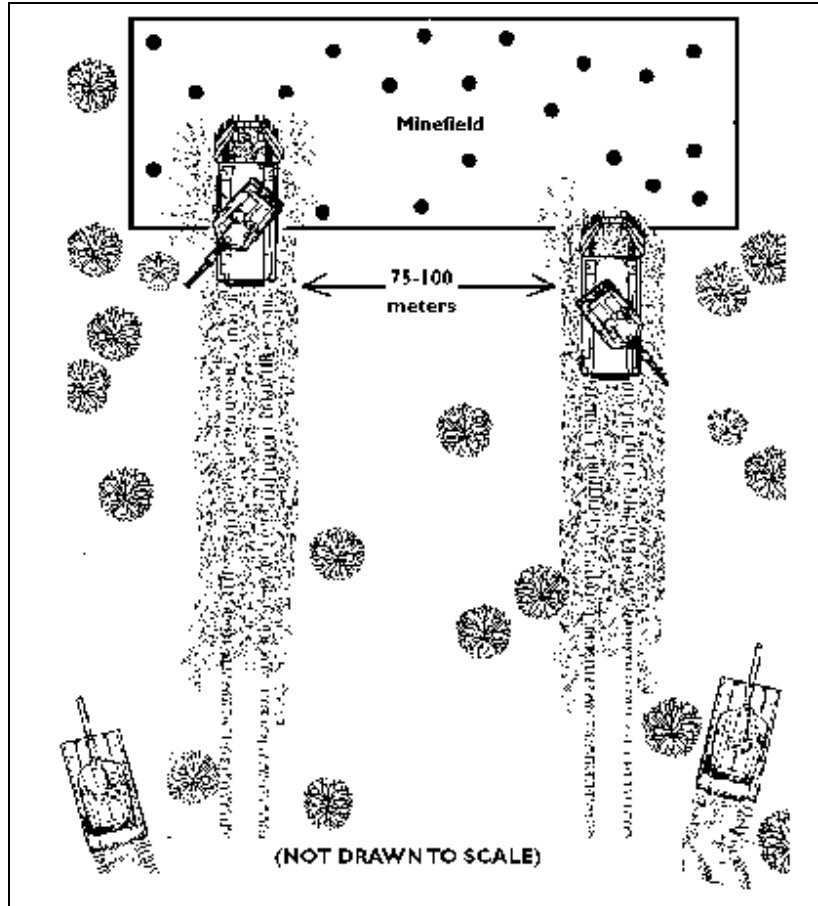


Figure C-1. Plow tanks create multiple lanes while the section leaders' tanks provide overwatch.

To create a wider lane, two plow tanks can stagger their movement along a single lane (see Figure C-2). This technique is also used in order to clear a lane that HMMWVs and other wheeled vehicles can go through without a center lane of mine-ridden spoil. Using Figure C-2 as a literal example, a wide lane with no center lane would be created on the right side of the double proofed lane.

NOTE: The lanes created on the left side would not be doubled proofed, and spoil from the second tank through would be put into the first tanks' right lane.

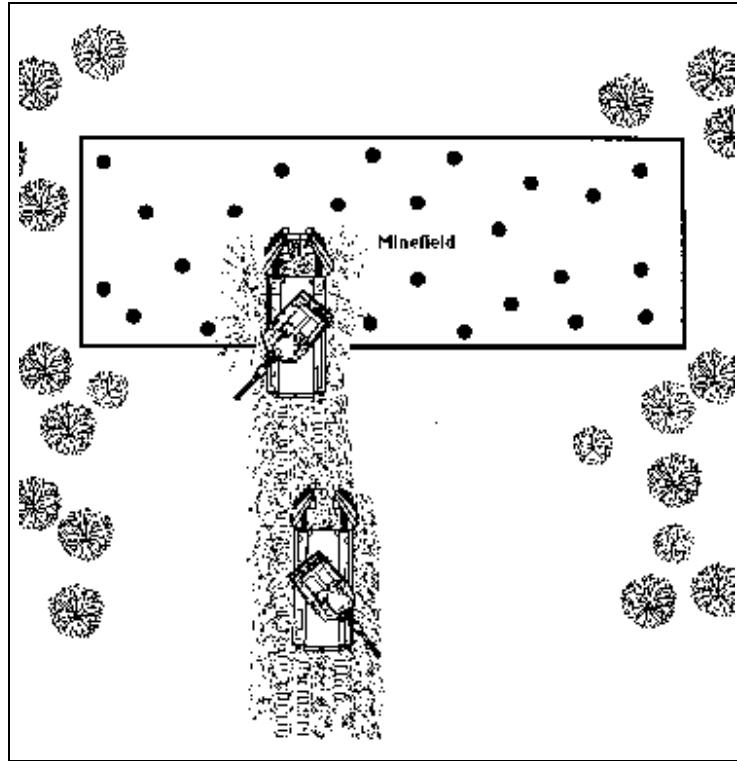


Figure C-2. Plow tanks use staggered movement to create a wider lane.

After a lane is created and proofed, it is normally turned over to attached engineers for marking. The platoon leader reports the location of the lane and the method of marking to higher in order to expedite the movement of the assault force. If no engineers are available, an attempt should be made to at least mark the entrance and exit of the breach using NATO marking procedure. Unit SOPs will dictate marking methods and materials, which commonly include the following:

- Engineer stakes with tape.
- Guides.
- Chem lights.

Throughout the operation, the platoon leader provides continuous updates of the breach force's progress to higher headquarters and other elements involved in the breach. He also coordinates with the support force for suppressive fires.

The assault force will often move behind the breach force and closely follow the breach vehicles through the new lane.

Assault Force

The mission of the assault force is to destroy or dislodge the enemy on the far side of the obstacle, or in between obstacle belts, in order to allow other combat forces to continue the attack. While the breach is in progress, the assault force assists the support force or

follows the breach force while maintaining cover and dispersion. Once a lane is cleared through the obstacle, the assault force moves through the breach. It secures the far side of the obstacle by physical occupation and/or continues the attack in accordance with the scheme of maneuver. The assault force must be of sufficient size to eliminate the enemy and should be a combined arms force consisting of elements such as: infantry, light armored vehicles, AAVs, tanks, and engineers. Fire control measures must be coordinated so Support Force and Breach Force fires are lifted and shifted as the assault force maneuvers into the enemy position.

Tank units are ideally suited for assault force operations against mobile enemy defenses in open terrain. Tanks also work well with mechanized infantry as an assault force attacking dug-in enemy positions in close terrain.

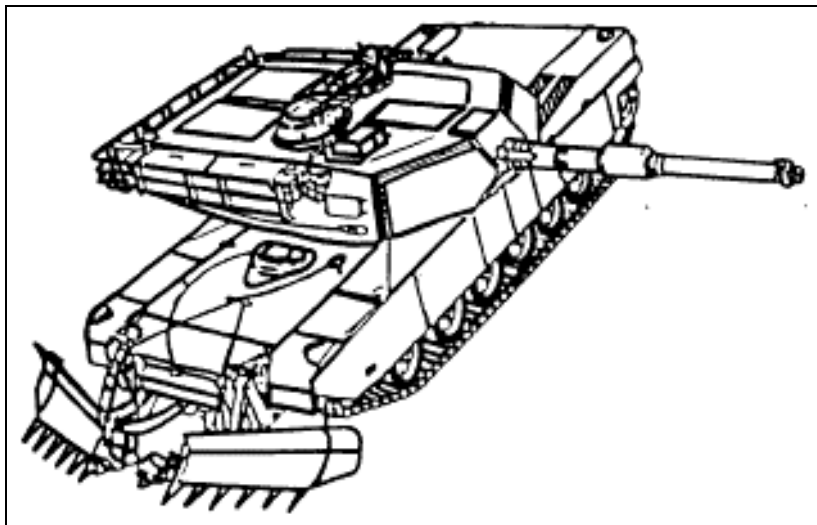
Section 4. Mobility Assets

The following paragraphs summarize the capabilities and limitations of the breaching assets available to the tank battalion.

Mine Plow - Also known as the mine-clearing blade, the mine plow is used to breach and proof minefields. The system affords good survivability. When fully operational, a tank equipped with a mine plow can quickly clear two 58-inch-wide lanes, one in front of each track.

NOTE: The plow's dogbone assembly will detonate the tilt rods of mines in the area between the two plowed lanes; however, only plows equipped with the improved dogbone assembly, known as the IDA, will defeat magnetically activated mines.

The plow must be dropped at least 100 meters before the tank reaches the minefield. It then is not lifted until the tank is at least 100 meters past the far edge of the minefield. The plow must have 18 inches of spoil to be effective, limiting the tank's speed to 10 mph or less in the lane. The mine plow should be used only in a straight line; it does not work well on hard, rocky, or uneven ground where it cannot maintain adequate spoil. Mine detonation can cause violent upward movement of the blade; the tank's main gun must be traversed to the side during plowing to prevent damage to the gun tube. The plow's lifting straps can become entangled in wire obstacles. Manual lifting of the plow takes at least 10 minutes.



Track Width Mine Plow for M1A1

Weight: 3 tons

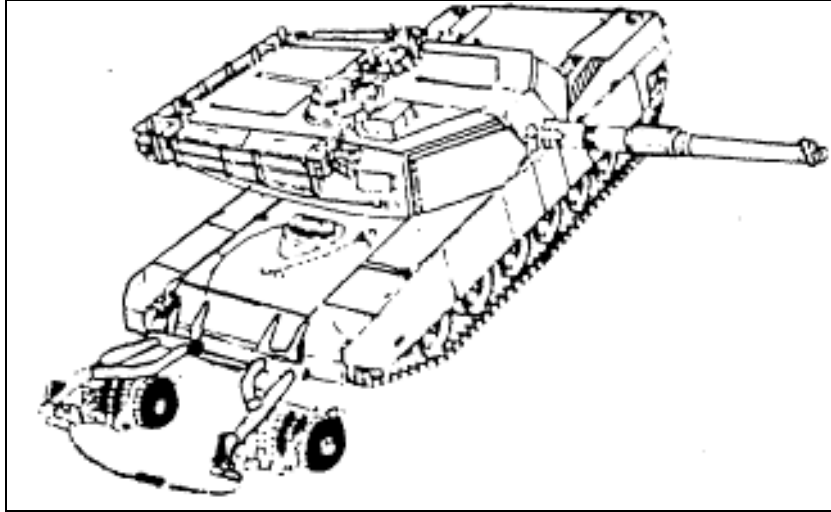
Speed when mounted and lowered: <10 km/hr

Creates 58 inch cleared path in front of each track

Primary use: Clearing path through minefield

Lifts and pushes surface—laid mines or buried mines up to 4 inches deep in front of its path.

Mine Roller - THE mine roller is used to identify the forward edges of a minefield and to proof lanes. The roller sweeps a 44-inch path in front of each track and is also equipped with a dogbone assembly. It is also effective at breaching wire obstacles. The roller, however, is not effective on broken or uneven ground. The mine roller, like the mine plow, will not defeat magnetically fuzed mines unless equipped with the IDA. The main gun must be traversed to the side or rear when contact with a mine is possible or imminent; detonation can throw the roller (or pieces of it) violently upward, possibly damaging the tube.



Mine Roller for M1A1

Weight: >10 tons

Speed when mounted and lowered: 5-10 km/hr

Creates 44 inch path in front of each track

Primary use: Detection of minefields

Secondary use: Proof lanes created by other means (i.e., follow plow tank)

Designed to withstand 2 mine explosions (depending on type of mine)

AVLB - The AVLB is primarily employed to cross short gaps, such as narrow streams, antitank ditches, craters, canals, or partially blown bridges. Its span is 18 meters (60 feet) using prepared abutments and 17 meters with unprepared abutments. The capacity of the bridge is one military load class (MLC) 60 vehicle (this is waived for M1-series tanks in combat operations). The AVLB launcher, which requires 10 meters of overhead clearance for transportation and operation, is most visible and vulnerable during launching of the bridge. An experienced crew can launch the bridge in two to five minutes. Technical characteristics of the AVLB are provided in Appendix A.

MICLIC - Used to breach wire and mine obstacles, the MICLIC clears a lane 100 meters deep and 14 meters wide. (NOTE: The MICLIC must be fired 62 meters from the obstacle to get the full 100 meters of depth.) The charge may create two skip zones, where the mines are not detonated, on the right and left side of the centerline of the

cleared lane. The skip zones, which are about 1.5 meters wide, require all MICLIC lanes to be proofed. The MICLIC is effective against pressure-activated antitank mines and against mechanically activated antipersonnel mines. Effectiveness is limited against magnetically activated mines, including scatterable mines, and those with multi-impulse (double-impact) or time-delay fuzes. The MICLIC is not effective on severely broken ground where the line charge cannot lay flat. When detonated, the MICLIC has danger area with a radius of 1,600 meters.

ACE - Using its blade, the ACE can defeat berms and antitank ditches. The ACE can also skim a minefield with its blade; however, it is slow and vulnerable in this role and should be employed this way only as a last resort. The vehicle is further limited by its one-man crew.

Engineer Attachment - THE most versatile of all breaching assets, the engineer attachment can conduct explosive or manual breaches, proofing and can mark lanes through an obstacle. While it is conducting these breaching and proofing operations, however, the attachment is extremely vulnerable to enemy direct and indirect fires.

If other breaching assets are unavailable, an infantry or tank platoon can conduct explosive breaches (with hand-emplaced charges) and/or use manual breaching kits (normally consisting of grappling hooks, gloves, and wire cutters). At the same time, however, employment of either type of platoon organization in breaching operations has distinct disadvantages. The pace of the breach will be slow, and the operation will leave the platoon vulnerable to enemy attack.