
CHAPTER 5

MORTARS IN SUPPORT OF DEFENSIVE AND RETROGRADE OPERATIONS

Defensive operations retain ground, gain time, deny the enemy access to an area, and damage or defeat his attacking forces. A successful defense consists of reactive and offensive elements working together to deprive the enemy of the initiative. The mortar platoon participates in a defense as part of a larger force. Mortars provide the commander with the ability to strike out against the enemy, to regain his initiative and synchronization, and to counterattack by fire. They are an integral part of any defense and can be used for the following:

- **Deceive or divert enemy attention.**
- **Screen friendly maneuver.**
- **Obscure enemy observation and fires.**
- **Neutralize, suppress, or destroy enemy forces.**
- **Fix the enemy in position for a counterattack.**
- **Deprive the enemy of the use of defilade or decisive terrain.**
- **Illuminate the battlefield for more effective friendly fires.**
- **Harass the enemy and interdict his massing of assault forces.**

5-1. DEFENSIVE OPERATIONS

Defense is a coordinated effort by a force to defeat an attacker and to prevent him from achieving his objectives. The immediate purpose of the defense is to cause an enemy attack to fail. The defensive battlefield consists of three areas that are viewed by commanders when planning operations (Figure 5-1). The mortar platoon leader is not concerned with all three areas at the same time; however, he must understand the defensive framework. The mortar platoon leader can expect to be involved in one area at a time but may provide support in overlapping areas. (For details on the defensive framework see FM 7-20 and FM 71-2.)

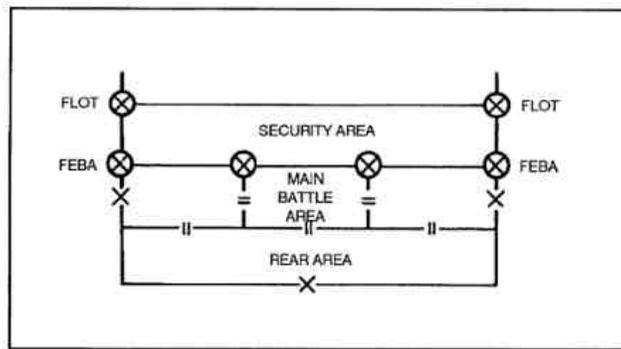


Figure 5-1. Three areas of defensive framework.

5-2. PRIORITY OF FIRES AND PRIORITY TARGETS

The commander routinely modifies indirect fire support by assigning priority of fires to one of his subordinate commanders or by establishing a sequence priorities of fires. These priorities of fires permit the rapid, flexible shifting of fires as the tactical situation develops. In the defense, priority of fires is normally given first to the company that can best place effective long-range fires on the enemy. As the enemy continues to advance, the priority of fires may be shifted to the company responsible for defending the most dangerous avenues of approach into the battalion's sector or battle position. If more than one company is positioned to cover the same avenue of approach (for example, around an engagement area), priority of fires should be given to the company or platoon that can best observe and place effective fire on the enemy forces that pose the greatest threat. As the battle develops, the priority of fires may be changed. To ensure that the most threatening enemy forces are fired on first, the commander must prioritize anticipated demands but may intervene to modify his guidance. The mortar platoon leader must stay in contact with the TOC and the battalion FSO to quickly change priorities of fires when needed.

a. **Priority of Fires.** Priority of fires are normally assigned to a forward security force, which may be the scout platoon, or to another maneuver force given a security or a counterreconnaissance mission. It can be subsequently assigned to weight a critical sector or battle position.

(1) The commander may shift the priority of fires to meet the threat, as required. He can assign priority of mortar fire to increase the effectiveness of direct fires. For example, the effectiveness of TOW and Dragon missiles can be increased by having mortar fire obscuring enemy overwatch elements, forcing enemy armor to button up, suppressing accompanying infantry, and canalizing the enemy.

(2) Priority of fires is assigned to a counterattacking force upon initiation of the counterattack.

b. Priority Targets. Priority targets are used to increase fire support responsiveness on specific targets or specific high threat areas. In addition to artillery priority targets that may be allocated to him, the battalion commander has one or two mortar priority targets he can allocate. The company commander has one priority target he can allocate. Only mortar platoons with six mortars can be allocated two priority targets, one for each section, and still provide adequate target coverage and results. Medium mortar platoons and light mortar sections cover only a single priority target. The company commander indicates his priority target in the REMARKS column of his target list. Anticipated changes of the priority target are indicated as ON-ORDER PRIORITY TARGETS on the same target list.

(1) The battalion commander and FSO must carefully consider priority targets before assigning them. Priority targets should lie in the sector of the company or platoon having priority of fires. This prevents any confusion if the mortar platoon receives several calls at the same time. If a conflict is possible (such as when the scout platoon has priority of fires, yet a priority target has been allocated to a rifle company), the commander, FSO, operations officer, and mortar platoon leader must coordinate to avoid confusion.

(2) Priority targets are not always fired on using HE ammunition. Illumination, smoke, or a mix of HE and WP can be used as the designated rounds to be fired. During darkness, one mortar within the section can be designated to fire illumination only.

(3) With the exception of FPF, priority targets have a predetermined amount of ammunition set aside to be fired on them. At the maximum rate of fire, the mortar section fires this ammunition immediately upon the observer's call for fire. The FDC then orders the section to repeat the mission, shift fires, or cease fire, based on the message from the observer.

c. Final Protective Fires. FPF are preplanned barriers of both direct and indirect fires designed to protect friendly troops from an enemy dismounted assault. They are the highest type of priority targets and take precedence over all other fire requests. The FPF differ from a standard priority target in that they are fired at the maximum rate of fire until the mortars are ordered to stop or until ammunition is depleted. Because mortar rounds are smaller than DS artillery rounds, they can be targeted closer to friendly forces and still be safe. Closer FPF are easier to integrate into direct-fire FPLs. The high rate of fire achievable by mortars creates effective barriers of fire. The allocation of FPF is identical to the allocation of priority targets (one for each battery and one for each mortar platoon). While firing FPF, mortar sections are not normally allowed to cease fire and displace due to countermortar fire. They must take precautions to avoid or withstand countermortar fire (see Chapter 7).

(1) A mechanized or armor battalion commander may direct the six-gun heavy mortar platoon to prepare 2 three-gun FPF. He should do this only if the terrain dictates the need for more FPF than he has been allocated and then only after

seeking additional artillery allocations. The heavy mortars should otherwise fire FPF as a platoon (see Table 5-1).

SIZE	TYPE	NUMBER OF MORTARS	APPROXIMATE	
			WIDTH (METERS)	DEPTH (METERS)
120-mm	M120	6 (platoon)	360	60
120-mm	M120	3 (section)	180	60
107-mm	M30	6 (platoon)	240	40
107-mm	M30	4 (platoon)	160	40
107-mm	M30	3 (section)	120	40
81-mm	M29A1	4 (platoon)	140	40
81-mm	M29A1	3 (section)	100	40
81-mm	M252	4 (platoon)	150	50
60-mm	M224	2 (section)	60	30

Table 5-1. Normal FPF dimensions for each number of mortars.

(2) The company commander is responsible for the precise location of the mortar FPF and FPF integration into the direct fire FPLs. The FDC plots and precomputes all firing data for the FPF as early as possible.

(3) The mortar FPF widths from Table 5-1 are neither precise or restrictive. The mortar sheaf can be opened or closed to cover the specific terrain on which the FPF is located. Table 5-1 is derived from data on the bursting diameter of mortar rounds, extracted from various sources. In the past, many publications have mistakenly used the term bursting *radius* while providing the actual distance of the bursting *diameter*. The bursting diameter of an HE round is twice the distance from the point of impact at which the round will reliably place one lethal fragment per square meter of target. The following mortar lethal bursting diameters are estimations since the type round, fuze, range, and target surface all affect the mortar's lethal bursting diameter:

- M120 (120-mm) mortar--60 meters.
- M30 (107-mm) mortar--40 meters.
- M252 (81-mm) mortar--38 meters.
- M29A1 (81-mm) mortar--35 meters.
- M224 (60-mm) mortar--30 meters (M720 round); 20 meters (M49A4 round).

(4) Artillery FPF are allocated to companies in the most critical defensive positions. Mortar FPF may be allocated to cover less critical avenues of approach that are in the same sector or in a different sector. Once allocated to a company,

that commander designates the precise FPF location where they can best augment the direct-fire weapons. Figure 5-2 shows how mortar FPF are positioned to integrate them into the direct-fire FPLs of the defender.

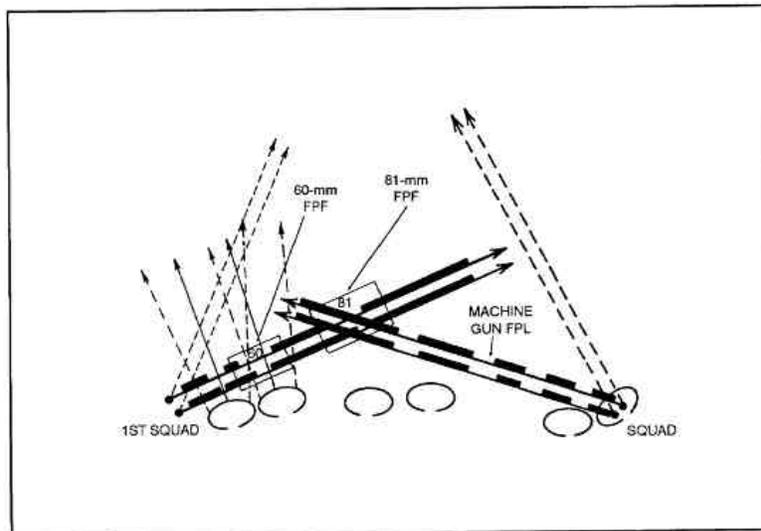


Figure 5-2. Positioning mortar final protective fires.

(5) Mortar FPF are always targeted on an avenue of likely dismounted attack. They can be any distance from the friendly position that fits into the ground commander's tactical situation but are always within the range of organic direct-fire weapons, normally within 100 to 400 meters of friendly troops. The importance of accurate defensive fires and the danger close situation means that each mortar firing the FPF must be individually adjusted into place normally using delay fuze settings and the creeping method of adjustment.

(6) The company commander may retain the authority to call for the mortar FPF to be fired, or he may delegate it to a platoon leader. If the decision is delegated to the forward platoon leader, he may direct his FO to transmit the request to fire the FPF directly to the FDC or through the company FSO. When the request is transmitted directly to the FDC, the rifle platoon leader informs the company commander. The mortar section or platoon leader always informs the commander when he initiates firing the FPF.

(7) The commander and mortar platoon leader must have alternate means of communication to call for the FPF. No one means of communication, radio, wire, or voice is sufficient--an alternate means must be established. In addition to

standard voice messages, the commander and mortar platoon leader should establish a simple visual pyrotechnic signal.

(8) Mortar FPF are fired only when needed. Once begun, FPF are fired until ordered terminated or until all mortar ammunition is gone. HE ammunition with PD fuzes is normally used in firing the FPF. When planning FPF, the mortar platoon leader decides how many rounds to prepare, based on ammunition available and the CSR, and sets them aside for use. This allows the mortars to quickly begin the FPF and maintain them without halting to prepare rounds when the call for fire is received. Additional rounds can be prepared during the firing of FPF if the ammunition requirement exceeds the quantity prepared.

5-3. MORTAR DEFENSIVE FIRE SUPPORT TASKS

In the defense, the mortar platoon leader must understand the intent of the defensive techniques the commander desires to employ. These techniques affect how the mortar platoon provides support, since specific actions and techniques vary depending on the characteristics of the defense.

a. Mortar fires are used in the defense against both mounted and dismounted enemy forces.

(1) Against a mounted attack, they are used to suppress--

- (a) Armored forces by using proximity-fuzed HE rounds to cause tanks and fighting vehicles to button up, reducing their effectiveness.
- (b) Antiarmor guided missile systems while friendly maneuver units are displacing.
- (c) Enemy direct-fire overwatch positions, mainly those of unprotected systems such as T-12 antitank guns.
- (d) Air defense vehicles.
- (e) Enemy mortars and AGS-30 automatic grenade launchers.

(2) Against a dismounted attack, they are used--

- (a) To engage dismounted enemy infantry beyond direct-fire weapon ranges.
- (b) To break up enemy troop concentrations.
- (c) To cover dead space in front of friendly positions.

(d) To reduce the enemy's mobility and to canalize his assault forces into engagement areas.

(e) To neutralize and destroy enemy forces attempting to breach friendly obstacles.

(f) To suppress and obscure enemy direct-fire support weapons, including laser weapons.

(g) To provide close-in FPF against the enemy's dismounted assault.

(h) To deny the enemy the use of a specified piece of terrain.

(i) To conceal friendly obstacles from the attacking force.

(3) Against both the mounted and dismounted attacks, mortar fire is used-

(a) To screen movement of friendly forces between firing positions.

(b) To isolate attacking enemy units.

(c) To illuminate areas where enemy forces are known or suspected to be, so they can be engaged with other weapons.

(d) To mark targets for attack by direct-fire weapons or aircraft.

b. Mortar fires are often used to support security forces. The security forces can be given priority of mortar fires, operational control of the mortar platoon (or section), or even attachment. The mortar fires are used to engage the advancing enemy at long ranges, to inflict casualties, to delay and disorganize his movements, and to assist the security force in breaking contact. If the mortar platoon or section moves forward of the main defensive positions to accomplish these tasks, the leader coordinates the subsequent rearward displacement. He confirms the timing of the displacement, changes in OPCON or fire priority, the routes of displacement, the passage point through the friendly barriers, recognition signals, and the plan for occupying the subsequent position.

c. Closely coordinated mortar fire can increase the effectiveness and survivability of antitank weapons significantly. The antitank company commander can be given priority of mortar fires or even OPCON of a mortar platoon or section. Antitank company commanders rarely have mortar squads attached to the company. The antitank company does not have a company FSO. An FSO or FO team can be task-organized. However, the mortar platoon leader and the antitank company commander must be prepared to coordinate and execute fires in support of antiarmor companies without a FIST. Since both sections and platoons are organic to the same battalion, this is easily accomplished. Mortar sections and platoons support the antiarmor battle in many ways.

(1) The HE fires force tank crews to button up. This reduces their field of view and their ability to detect friendly forces. Mortar rounds should be set to achieve airbursts to reduce the amount of dust and dirt thrown into the air. This interferes less with friendly direct fires.

(2) Mortar smoke rounds can be fired to isolate the lead element of an advancing enemy force from the main body. The antitank company can then attack this isolated element, free from enemy overmatching fires. Mortar smoke can be placed between the antitank company and the enemy to aid in the movement out of initial firing positions to subsequent ones. All commanders involved must coordinate the use of mortar smoke rounds. Also, the mortar platoon leader must be prepared to cease firing smoke rounds *immediately* if shifting winds move the smoke to an unfavorable area.

(3) Smoke and HE rounds can be used to complement the effects of antiarmor ambushes and to cover the withdrawal of the ambushing force.

d. The mortar platoon's or section's primary task during defensive operations is to provide immediate, close, and continuous HE fires to the defending force. This is especially critical during "defend to retain" missions. A mortar section will often be placed in DS of a company or platoon defending to retain a battle position or strongpoint.

e. Fires delivered before the enemy attack are designed to breakup the attack before it starts or to disorganize, delay, and weaken the attack. These fires are categorized as follows:

(1) ***Harassment and interdiction fires.*** Ammunition resupply constraints severely restrict the amount of harassment and interdiction fires mortar platoons or sections provide. In a high threat environment, harassment and interdiction fires can expose the mortar firing location to enemy target location and counterfire. Against a dismounted enemy on close terrain, mortar platoons may fire large amounts of harassment and interdiction fires to slow and disorganize the enemy as he concentrates forces and supplies to continue his offensive. Mortar harassing fire can severely limit the enemy in preparing battalion and regimental OPs and in laying wire lines. If the enemy must move men and supplies through a defile or across a ford, interdiction fire can severely hamper reinforcement and carving parties. Mortar harassment and interdiction fires are usually unobserved, and they require extensive coordination to ensure accuracy and safety. Some may be fired based on recurring patrol reports, aerial sightings, or sensor alerts. Close coordination with field artillery survey teams and target locating radars can greatly increase the effectiveness of mortar interdiction fires.

(2) ***Planned defensive targets and targets of opportunity.*** Defensive fires are planned on all known, likely, and suspected enemy locations. This does not mean that an unmanageable number of targets are planned. Known enemy locations are the first priority, followed by suspected and then likely. As enemy forces appear

near planned targets, mortar fire is delivered on them. Targets of opportunity that appear suddenly are engaged by shifting fires from planned targets.

(3) **Counterpreparation fires.** These are prearranged fires delivered when an enemy attack is imminent. Since the mortar's range is limited (compared to artillery), artillery fires most of the counterpreparation fires. Mortar platoons and sections may fire against enemy forces that are massing near friendly forward positions. Mortar smoke can be fired to obscure the view from suspected enemy OPs. Mortar illumination can be fired to confirm or deny the presence of enemy forces near defensive positions, while not revealing individual weapon's locations. Mortar platoons or sections may provide most, or all, of the countermortar fires since US mortars outrange most Threat mortars and can hit targets in deep defilade.

f. Once the enemy attack begins, mortar fires are delivered to break up the enemy's formations, to suppress and neutralize supporting weapons, and to destroy as much of the enemy force as possible. Targets in relationship to friendly defensive positions are planned as follows:

(1) In front of the position on all confirmed and suspected enemy locations, on likely avenues of approach, and on prominent terrain features that can be used by enemy overwatch elements.

(2) In front of friendly barriers and obstacles. These fires are often critical to the defense. Any obstacle not covered by both direct and indirect fires can be obscured and breached. High explosive with proximity settings can effectively prevent enemy dismounted forces from breaching an obstacle. Mortar fire is preferred for this task since it is always available to the battalion commander. Its use permits the field artillery to concentrate destructive fires against enemy formations backed up behind the obstacle.

(3) On top of the position so that if the enemy penetrates friendly defenses, effective fire can be delivered on him immediately. If the friendly forces are fighting from properly constructed fighting positions, the mortar fire from a proximity-fuzed round, can be placed directly on them to kill the exposed enemy. This is a combat emergency technique since some friendly casualties could still result. Mortar fires planned on friendly positions also aid immediate counterattacks.

(4) Behind friendly positions to provide flexibility to the defense if the enemy surprises the defender by attacking from the rear. They also aid the defender in blunting the enemy penetration, making the counterattack decisive.

g. Fire support for a counterattack is similar to that for the offense, except fire support priorities are divided between the forces still defending and the forces counterattacking.

Mortar platoons may have to provide all or most of the fire support to the defending forces while the artillery supports the counterattack.

5-4. RETROGRADE OPERATIONS

A retrograde operation is an organized movement to the rear or away from the enemy and must be approved by the next higher authority. It may be forced by enemy action or be voluntary. A retrograde operation is characterized by centralized planning and decentralized execution. Unlike the defense, the commander avoids decisive engagement to the extent that maneuver is restricted. A retrograde operation is designed to preserve the integrity of a force until the offense can be resumed. An inherent task is to inflict as much damage on enemy forces as the situation permits. Mortars participate in the retrograde by providing responsive indirect fire support to harass, delay, destroy, suppress, obscure, or illuminate the enemy. (Examples of the types of missions that mortars can expect to fire are listed in the defense section.) Also, the mortar platoon can screen the displacement of the rifle companies and provide deceptive fires to confuse the enemy as to the commander's intent to withdraw or delay.

5-5. MORTAR UNITS SUPPORTING RETROGRADE OPERATIONS

The mortar platoon supporting the delay or withdrawal provides the commander with a quick and effective means to support his maneuver. Mortar fire can be used to screen the movement of friendly units between positions and delay lines, or to suppress enemy weapons so the maneuver platoons can move to break contact without heavy enemy fire. Positioning of ammunition must be planned to allow for an increased use of smoke. Mortar fires may be used to deceive the enemy by maintaining a heavy volume of fire while friendly elements withdraw.

a. Three types of retrograde operations areas follows:

- In the *delay*, space is traded for time. Enemy contact is maintained, but decisive engagement is avoided.
- In the *withdrawal*, the friendly force deliberately disengages from the enemy and moves to the rear. Withdrawal usually follows a delay and can precede a retirement. A withdrawal can be made with or without enemy pressure.
- In the *retirement*, the friendly force is not in contact with the enemy and moves to a secure area.

b. In a delay or withdrawal, the mortar platoon plans its displacement so that it is in position to fire when needed. When and how to displace is based on how far the mortars are behind the forward units, how far to the rear those units will move, and the intensity of enemy contact. The platoon usually displaces by section.

c. In the withdrawal, the mortar platoon can be effective when employed in support of the security force. Employing mortars in split sections allows the mortars to be used in the deception plan and to support withdrawing maneuver elements. An effort must be made

to keep mortar fire at the same level during withdrawal to increase the effectiveness of the deception plan.

d. A section or squad can be attached or placed under OPCON of the security force or detachment in contact. If enemy pressure is great, the entire mortar platoon can be employed to support the disengagement.