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## CHAPTER 6

### MORTAR PLATOON AND SECTION TACTICS, TECHNIQUES, AND PROCEDURES

**This chapter presents some mortar platoon and section tactics, techniques, and procedures that have proven to be useful. A tactic or technique that has been successful in the past or is used often may not be appropriate under all conditions of METT-T. The mortar leader must analyze the situation and use his best judgment as to the appropriate course of action. Procedures are closely associated with existing items of equipment and allow less judgment in their execution. The leader must decide when it is appropriate to initiate or terminate a certain procedure. Tactics, techniques, and procedures can be successfully modified to meet the existing METT-T factors.**

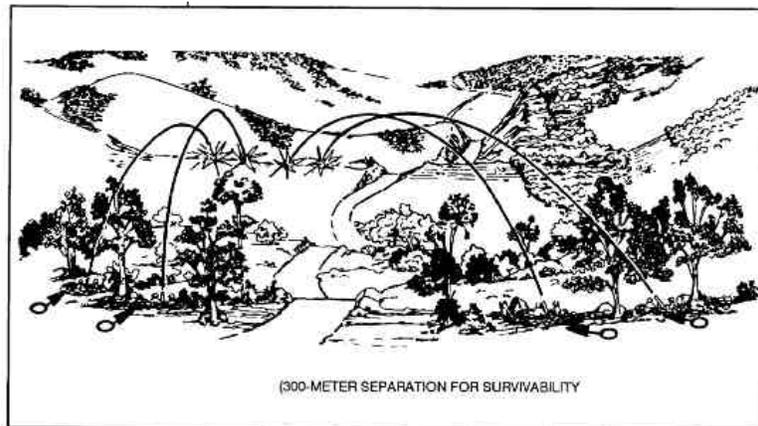
#### Section I. EMPLOYMENT TECHNIQUES

*The maneuver commander employs the mortar platoon based on his analysis of the mission, the enemy, the terrain and weather, and the troops and time available. There is no mortar employment option that is routine. Each has both advantages and disadvantages. The **battalion commander** has three options when considering how to use the battalion mortar platoon: by platoon, section, or squad(s). The **company commander** with a company mortar platoon has two options when considering how to use it: by platoon or squad(s). Company commanders with light mortar sections use them as a section, although a single mortar squad may be attached to a rifle platoon for a short time or a specific mission.*

#### 6-1. EMPLOYMENT BY PLATOON

Under this employment option, the platoon operates from one or two firing positions and fires all mortars on each target, under the control of the platoon leader. Even when the mortar platoon is being used as a single firing unit, it can still fire multiple missions simultaneously. It can displace from its firing position either by echelon or as a complete platoon. Platoons with four or more mortars may occupy two separate firing positions. If these positions are up to 300 meters apart, it greatly decreases the enemy's chance of neutralizing them with countermortar fire (Figure 6-1). Generally, four-mortar platoons do not split up but occupy a single firing position. If the platoon occupies two positions, the distance between mortar sections is limited primarily by the ability to cover the target area, the terrain, the enemy threat, and limits in command and control (for example, wire or radio limitations). The key is that all mortars must be able to engage the platoons'

assigned targets. Separated firing positions, if used, must not be so far apart as to prevent the platoon leader from controlling them both. Separating the sections must not prevent massing the fires of the platoon on a single target.



**Figure 6-1. Firing locations (300-meter separation for survivability).**

a. Massing fires requires the FDCs to compute data for each section on the same target. If speed is essential in engaging a certain target, the FDCs compute the fires of both sections on a single adjusting point. This produces a smaller, more concentrated sheaf in the target area. If a six-round, standard sheaf is required, the controlling FDC adjusts with the innermost mortar of one section onto the adjusting point and computes FFE data (Figure 6-2). The other section FDC plots an imaginary adjusting point at a distance of the bursting diameter, left or right of the fired adjusting point, and computes FFE data based on the imaginary adjusting point. Registration and meteorological data improve the accuracy for the nonadjusted section.

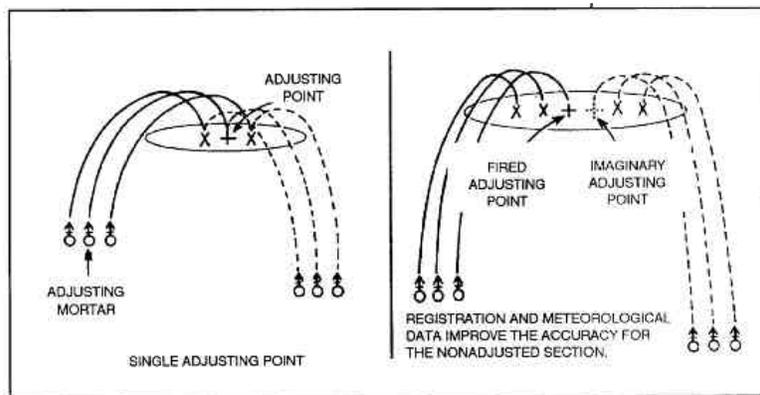


Figure 6-2. Six-mortar standard sheaf.

b. Both sections of the platoon can be located in the same area. This configuration increases the vulnerability of the platoon to being located and destroyed by enemy fire, but it enhances command and control of the platoon and local security.

c. When employed by platoon, one FDC is normally the controlling FDC for the platoon. The controlling FDC is the mortar fire direction net control station. When the sections are firing from the same location, the other FDC follows along or rests to provide for CONOPs. The controlling FDC issues the fire command designating the platoon, a section, or a squad deliver fire. It also identifies the type of ammunition and the number of rounds to be fired.

d. When the sections are separated, each FDC section prepares the firing data for its section. However, one FDC remains as the controlling FDC. If the fire mission requires only one or two mortars to be fired (for example, a smoke or illumination mission), the controlling FDC designates which mortars are to be fired.

## 6-2. EMPLOYMENT BY SECTION

Section employment places each section as a separate firing unit. Depending on the type of mortar platoon, a section may consist of two or three mortars. Each section acts semi-independently and covers its own targets or sector.

a. The mortar platoon is normally employed by section when it needs to cover wide frontages. Each section is positioned so it can provide fires within the area of responsibility of a part of the battalion. Depending on the range to the target and the separation of sections, more than one section may be able to mass fires on the same target. When employed by section, each section has an FDC or a computer.

b. The sections operate on the platoon's mortar fire direction net. The FIST FOs must request fire from a designated section using that section's call sign. If separate frequencies or wire lines are available, each section may operate on its own fire direction net.

c. The mortar platoon leader and the section sergeant control the displacement of each section. Displacement is coordinated with the movement of the part of the battalion or company that the section is supporting. Since both sections cannot cover the entire sector, they may be moving at the same time.

d. Section employment is more appropriate when the rifle companies operate over wide frontages or move along widely separated axis. It is difficult to control and to support logistically.

### **6-3. EMPLOYMENT BY SQUAD**

Squad employment places one or more mortar squads on the battlefield as separate firing units. This usually supports special requirements such as--

- Security force operations.
- One mortar illumination mission(s).
- Roving mortar adjustment technique.
- Antiarmor ambush or other combat patrol.
- Withdrawals not under enemy pressure (as part of a DLIC).

a. When employed by squad, a fire direction computer from the FDC should accompany the squad. If more than one squad is employed in this manner, it may not be possible to place a fire direction computer with each squad. Therefore, squad leaders must be prepared to compute firing data.

b. An entire mortar platoon may be divided and employed by squads. This is the least desirable method of employment and is used only when the situation or terrain prevents adequate support if otherwise employed. Examples of when it may be necessary to employ the platoon by squads are as follows:

(1) When the supported maneuver element is required to cover a large front such as a battalion task force screening a division's flank.

(2) During rear area combat operations to provide security for critical installations.

These situations may not occur often. If adequate support can be provided by a section, employment by squads should be avoided. Employment by squads reduces the effects on a given target, increases command and control problems, and exposes the mortar squads to destruction by small enemy forces. It is also the most difficult option to support logistically. (Table 6-1.)

<u>EMPLOYMENT OPTION</u>	<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
Platoon: Intact (one location).	<p>Massing of fires simplified.</p> <p>Most responsive to the battalion commander.</p> <p>Platoon command and control problems are eased.</p> <p>Easiest to support logistically.</p> <p>FDCs can operate 24 hours.</p> <p>Only option for seriously under-strength platoons.</p> <p>Most secure against ground attack.</p>	<p>Platoon more vulnerable to counterfire.</p> <p>Positioning may be limited by terrain.</p>
Platoon: Separated (two locations).	<p>Increased survivability against indirect fire.</p> <p>Less restricted by terrain.</p>	<p>Command and control requires more effort.</p> <p>Decreased survivability against ground attack.</p> <p>Possible increase in radio traffic.</p> <p>Massing of fires requires more effort.</p> <p>Logistics require more effort.</p>

Table 6-1. Summary of employment options.

<u>EMPLOYMENT OPTION</u>	<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
Sections:	<p>Increased survivability against indirect fire.</p> <p>Can cover larger front.</p>	<p>Decreased effects on target (fewer rounds per volley).</p> <p>Command and control more difficult.</p> <p>Logistics more difficult.</p> <p>Increased vulnerability to ground attack.</p> <p>Massing of fires more difficult.</p>
Squads:	<p>Greatest survivability against indirect fire.</p> <p>Cover even larger front.</p> <p>Responsive fire provided to small detachments.</p> <p>Deception efforts aided.</p>	<p>Decreased effects on target.</p> <p>Least responsive to the battalion commander.</p> <p>Most vulnerable to ground attack.</p> <p>Logistics support burden placed on the supported element.</p> <p>Massing of fires extremely difficult.</p> <p>Not enough FDC personnel to go with each squad.</p>

Table 6-1. Summary of employment options (continued).

c. If platoons must be employed by squads, each squad can be attached to the supported maneuver element. The attached squads normally operate on a radio net of the supported unit or as directed by the supported commander. Forward observers request fires from a designated squad using that squad's call sign.

d. If a target is within range of more than one squad, fires may be massed to engage that target. The massing of fires requires more effort due to mortar dispersion and the increased number of radio nets involved. It is neither fast nor accurate.

## **Section II. RECONNAISSANCE, SELECTION, AND OCCUPATION OF MORTAR POSITIONS**

*The tempo of the modern battle and the threat of enemy counterfire mean that mortar platoons and sections may have to move often. This frequent movement reduces responsiveness and requires greater reliance on emergency engagement missions. To reduce the time spent displacing, a mortar platoon must be able to do the reconnaissance, selection, occupation, and movement tasks quickly and efficiently. The key to a successful RSOP is frequent and effective training. Accurate position location is a critical element of the computation of firing data. Mortar positions should be verified by position location devices, graphical resection, or hasty survey. Map spotting is the least accurate method.*

### **6-4. DEFINITION**

Reconnaissance is the examination of terrain to determine its suitability for use in accomplishing the mortar platoon's mission. A continuous and aggressive reconnaissance is essential to timely and accurate fire support. The platoon leader must continually perform this reconnaissance and plan ahead to meet any contingency. He is given the general location of his new position, or he may select it himself and propose it to the commander.

### **6-5. METHODS OF RECONNAISSANCE**

The three methods by which the platoon leader may conduct a reconnaissance are *map*, *air*, and *ground*. The best reconnaissance is one that uses a combination of all three.

a. **Map Reconnaissance.** Any reconnaissance begins with a map inspection. Potential positions and routes to the new position can be chosen. This method is fast and allows unsuitable routes to be eliminated. It also identifies possible ambush sites. In some combat situations, a map reconnaissance may be the only one possible. There are two major disadvantages to conducting only a map inspection:

- Terrain and other features may have changed--for example, a bridge shown on the map may no longer exist. Military load classifications of bridges are not listed on maps and must be physically inspected.
- The surface conditions of the route and position cannot be determined--for example, the soil texture may not support a mortar carrier or a mortar prime mover.

If available, aerial photographs should be used to supplement maps, because they are more recent, show more detail, and present a clearer picture of the current condition of the terrain to be crossed.

b. **Air Reconnaissance.** If time and resources are available, information gained from an air reconnaissance can be beneficial in selecting routes to be used and areas to be occupied. Although this is a fast method, true surface conditions can be indistinguishable or may appear distorted. The commander or platoon leader must be careful that his flight plan does not compromise the route or the new position area. This method may not be available to the platoon leader in all operations or theaters.

c. **Ground Reconnaissance.** The best method of reconnaissance is the ground reconnaissance since the suitability of routes can be physically examined. The true condition of the terrain is critical if the surface has been affected by enemy action (NBC attack) or weather conditions. The ground reconnaissance has the disadvantage of being the slowest method of reconnaissance.

## **6-6. PLANNING THE RECONNAISSANCE**

To maximize its tactical benefit, the reconnaissance must be thoroughly planned before it is executed. As part of the planning phase for any operation order or RSOP, the factors of METT-T must be considered before any action is taken.

a. **Mission.** The mission is the governing factor in planning the RSOP. The platoon must perform its mission with minimal degradation as a result of tactical or survivability moves.

b. **Enemy Situation.** The current enemy situation must be thoroughly understood. The disposition, intentions, and capabilities of enemy forces must be analyzed before the RSOP, particularly their local capabilities as revealed in current combat information.

c. **Terrain and Weather.** The platoon leader must analyze the routes to be used by the platoon and the time and distance required to make the move. Moving the platoon over long, difficult routes requires well-planned, coordinated movement orders and detailed SOP. The effects of the weather on the terrain to be crossed must be analyzed to facilitate rapid movement. Weather affects visibility (fog, haze) and trafficability (ice, rain-softened ground).

d. **Troops.** The current troop strength must be considered. The mission may not change, but the troops available to accomplish it will. As the other factors of METT-T vary, so will the number of troops needed to perform the mission. Because of casualties and these varying conditions, adjustments must be made during the planning phase.

e. **Time.** The amount of time available for the RSOP will affect all phases of its accomplishment. The time factor will change because of events on the battlefield. Whether minutes or hours are allowed for the RSOP, adjustments must be made.

## 6-7. RECONNAISSANCE PARTY

The platoon leader or his designated representative performs the reconnaissance. The platoon sergeant and section sergeants should be able to perform a detailed ground reconnaissance. The reconnaissance party should be as small as possible while still able to accomplish the mission. The platoon leader, an NCO, and a driver normally compose the reconnaissance party.

## 6-8. POSITION SELECTION

With mission accomplishment being the most important factor, mortar firing positions are selected based on the following:

- Mission accomplishment.
- Tactical situation.
- Range.
- Target area coverage.
- Survivability.
- Overhead and mask clearance.
- Surface conditions.
- Communications.
- Routes.

a. **Mission Accomplishment.** Mission accomplishment is the most important factor. The position must permit the mortar section or platoon to accomplish its primary mission.

b. **Tactical Situation.** The platoon leader must understand the tactical situation, the supported unit's mission, and the location of friendly units, and potential enemy threats. By considering the tactical situation, the mortar platoon leader can ensure that the mortar platoon provides effective indirect fire support while maintaining security for the mortars.

c. **Range Criteria.** Maximum and minimum mortar ranges determine whether mortars can support from selected firing positions. Mortars should be able to fire at least one-half to two-thirds of their range to the front of the forward elements of the supported friendly force. These range criteria are only a guide, not inflexible rules. These may vary due to factors of METT-T or due to the commander's guidance. The mortars must be positioned far enough back so that fires can be placed directly in front of and behind the rifle platoon defensive positions. The longer ranges available from the M252 and M120 mortars do not mean platoons equipped with these weapons must be located further to the rear than those with the shorter-ranged M29A1 or M30 mortars. The added range allows the platoon leader flexibility in choosing firing positions. For example, he can fire out of deeper defilade and still cover the battalion (or company's) sector. Positions that place targets at the extreme edge of mortar range should be avoided, if possible.

d. **Target Area Coverage.** Mortar positions should give maximum coverage of the battalion or company frontage. To do this, the mortar platoon leader begins by

considering positions in the center of the sector. Positioning in the center of sector *does not* take precedence over the priority targets or priority of fires that a commander assigns to a specific mortar element. For example, if the mortars must be positioned on a flank to support the company with priority of fire, or a priority target, or because of terrain, then positioning in the center of sector becomes a secondary concern. The mortar platoon leader must choose an area that allows him to cover the company with priority of fires or his priority targets. He then chooses a firing position within that area that maximizes the fires he can provide for the rest of the battalion without reducing support to the priority company. If the priority of fires is planned to change, the mortar platoon leader must either choose a position from which he can cover both units, plan a displacement, or operate by section to cover the other unit.

e. **Survivability.** Mortar crews face many threats on the battlefield including NBC hazards, countermortar fire, and ground and air attacks. These must all be considered when a mortar position is selected. The position should facilitate both active and passive defense measures so it--

- Cannot be hit by direct or low-angle indirect fire (defilade) (Figure 6-3).
- Can be entered without enemy observation.
- Offers good cover and concealment.
- Avoids obvious avenues of approach from the FEBA.
- Has more than one entrance and exit route.
- Takes advantage of existing terrain features and natural obstacles.

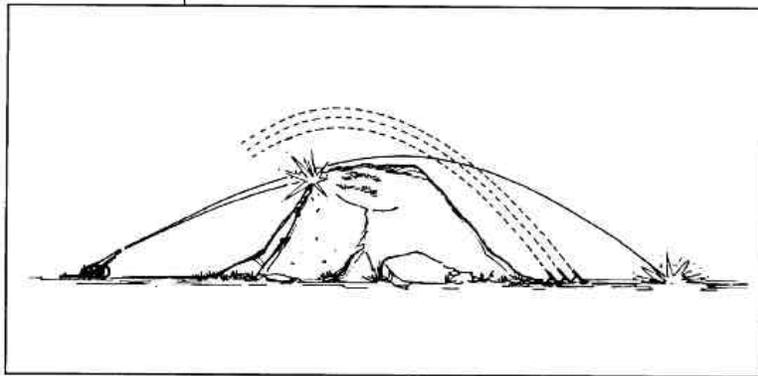


Figure 6-3. Defilade.

f. **Overhead and Mask Clearance.** (Figure 6-4.) Concealing and positioning the mortars should not interfere with their operation.

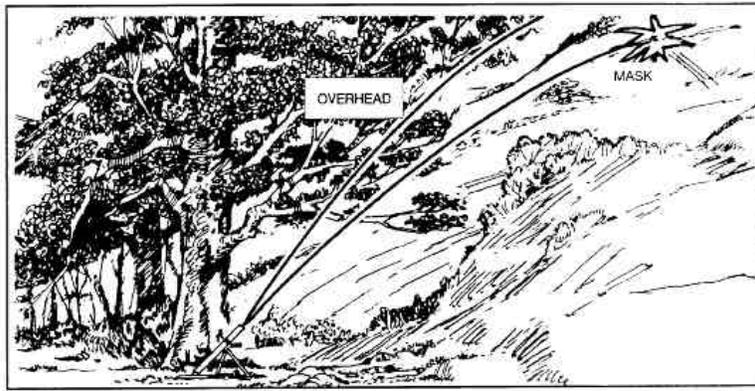


Figure 6-4. Overhead and mask clearance.

(1) Overhead interference is normally caused by trees or buildings. Overhead clearance is checked by putting the mortar into maximum elevation and looking up and along the side of the mortar to estimate a round's line of flight.

(2) Mask interference is to the front of the mortar and could be a hill, building, or tree. Mask clearance is checked by turning the mortar elevation down to the minimum and visually inspecting the clearance from the end of the mortar tube to the front.

(3) If clearance cannot be obtained through the mortar's full-range of elevation, then the FDC is notified of the minimum and maximum safe elevations allowed. The need for overhead and mask clearance must not prevent the mortar platoon leader from selecting positions in deep defilade. If the mission can be accomplished by selecting a firing position in deep defilade with a slightly restricted field of fire, in most cases, that position should be chosen.

g. **Surface Conditions.** The soil at each mortar position must be well drained and firm so that the mortar baseplates do not sink into the soil when the mortars are fired. If mortars are mounted on carriers, the soil must be firm for the carriers to remain stable when mortars are fired. When mortars must be fired on ground that is not stable, firing pads are constructed (see FM 5-103). When the ground is frozen, slots should be chopped into the earth for the baseplate spades, and extra time must be allotted to emplace mortars. When temperatures cycle repeatedly above and below freezing, personnel must ensure baseplates do not become frozen into the earth.

h. **Communications.** The mortar platoon must be able to communicate with the supported unit, and mortar squads must be able to communicate with the FDC.

(1) During reconnaissance, radio checks are made at the position to be occupied.

(2) Maximum effort must be made to protect the platoon from the direction-finding capabilities of the enemy. Direction antennas and maximum use of wire communications reduce the electronic signature of the platoon. If available, a DMD allows the mortar platoon to communicate with FOs through digital messages rather than by voice. This decreases the time needed to send messages.

i. **Routes.** Mortar positions should be close to access routes to speed resupply and displacement. Positioning close to access routes should not prevent concealment. After the reconnaissance has been conducted, an advance party is sent to the initial or next position. If time is limited, reconnaissance may be performed in conjunction with advance party operations.

#### **6-9. ADVANCE PARTY OPERATIONS**

The advance party includes a minimum of personnel and equipment needed to prepare a position for occupation. It accompanies the mortar platoon leader, or his representative, and begin preparations when he confirms the firing locations. For either a deliberate or a hasty occupation, a prearranged signal or procedure should be used to alert and assemble the advance party. The signal should be in the platoon SOP, which also lists the personnel, equipment, vehicles, and place of assembly.

a. The platoon leader determines the exact composition of the advance party on the basis of the tactical situation and assets available. Table 6-2 lists some assets needed for the advance party. This composition will not fit all mortar platoons and situations.

<u>PERSONNEL</u>	<u>EQUIPMENT</u>
Platoon leader, platoon sergeant, or section sergeant.	Vehicle with radio, map, compass, binoculars, chemical and nuclear detection equipment, and GPS if available.
FDC computer.	Map, grid sheet, overlay paper, coordinate scale, and protractor .
Radio telephone operator.	A declinated aiming circle, field telephone commo wire, minefield, and NBC warning signs.
Guide from each mortar squad.	M23 MBC, M16 plotting board, TFTs, and updated/weapon location data card.
	Marking stakes with tape and hammer.
	Axes, shovels, aiming posts with lights, and flashlights.

**Table 6-2. Typical advance party personnel and equipment.**

b. Table 6-3 lists the primary duties of advance party personnel. This table does not list all possible tasks to be performed, but it does serve as a starting point for advance party SOP. If a mortar accompanies the advance party, it can be laid and registered while the remainder of the platoon is moving.

<u>JOB</u>	<u>RECONNAISSANCE PHASE</u>	<u>SELECT/ORGANIZE PHASE</u>	<u>OCCUPATION PHASE</u>
Platoon Leader	Conduct map reconnaissance.	Select primary position for occupation.	Supervise and or direct occupation.
	Select primary and or alternate routes and checkpoints.	Determine azimuth of fire.	Reconfirm map location.
	Determine order of march.	Conduct hasty survey or map spot.	
	Brief key personnel and advance party.	Make plan for occupation.	
	Conduct ground reconnaissance.	Designate mortar, FDC, and aiming circle locations.	
Platoon Sergeant or Section Sergeant	Assist platoon leader on reconnaissance.	Plan defense.	Direct security defense.
	Assemble advance party.	Select vehicle positions (if necessary).	Lay mortars.
	Supervise security.	Supervise security sweep.	
		Set up and or orient aiming circle.	
		Determine initial deflection.	
	Brief guides on occupation plan.		

Table 6-3. Primary duties of advance party personnel.

<u>JOB</u>	<u>RECONNAISSANCE PHASE</u>	<u>SELECT/ORGANIZE PHASE</u>	<u>OCCUPATION PHASE</u>
Platoon Leader's Driver	Help in radio communication during security sweep.	Help in security sweep. Lay wire to aiming circle and FDC. Monitor NBC detection equipment. Position chemical agent detector upwind of selected position monitor.	Guide platoon from release point, if necessary. Guide vehicles into area, if necessary.
FDC Guide	Help in security measures.	Help in security sweep. Lay wire to FDC position. Record initial deflection, azimuth, and location. Initialize data base in M23 MBC. Reconnoiter route from release point to section position.	Meet section at release point, and guide it to assigned position.
Mortar Guides	Help with security during movement.	Help in security sweep. Prepare section position. Record initial deflection, and pass it to the squad leader upon occupation. Reconnoiter route from RP to section. Lay wire to the FDC.	Meet squad at release point, and guide it to assigned position. Align on azimuth of fire and give gunner initial direction.

Table 6-3. Primary duties of advance party personnel (continued).

c. In some instances, a complete mortar squad may be in the advance party. It should become the base mortar at the new firing position.

d. The equipment required to prepare a new position should be identified, maintained, located and loaded on prescribed vehicles.

e. The advance party also--

(1) Verifies and marks the route (with engineer tape, signs, lights, aiming posts, or road guides), as needed. If the tentative routes are determined to be unsuitable, the advance party leader contacts the remainder of the platoon and reports.

(2) Checks cover and concealment. This ensures that tentative routes and positions have the best cover and concealment.

(3) Locates and marks minefields and obstacles, as time allows. (See FM 20-32 for details on minefields marking.) It reports the discovery of minefields to the battalion TOC, and mortar leaders mark these areas on their maps. SOPs must prescribe actions taken when minefields are encountered.

(4) Uses NBC detection equipment during movement to detect contaminated areas. It reports the location of all contaminated areas. It marks the locations of contaminated areas on maps and alters the route of the displacing element.

(5) Determines and reports the time required to displace to the next position.

(6) Verifies tentative emergency occupation positions along the route selected during map reconnaissance. It informs the displacing element of any changes in the suitability of these positions.

f. After the reconnaissance, the advance party occupies the new mortar position. It prepares the position to the maximum extent possible before the main body arrives. The main body continues to improve the original position.

#### **6-10. OCCUPATION**

The advance party starts the occupation of the new firing position and works continuously until the main body arrives. Occupation by the main body is therefore a continuation of the actions by the advance party

a. The advance party starts the occupation by--

(1) Verifying the position location.

(2) Checking the position and surrounding areas for mines, NBC contamination, and enemy forces.

(3) Establishing local security and OPs.

(4) Marking mortar positions with stakes or lights (Figure 6-5).

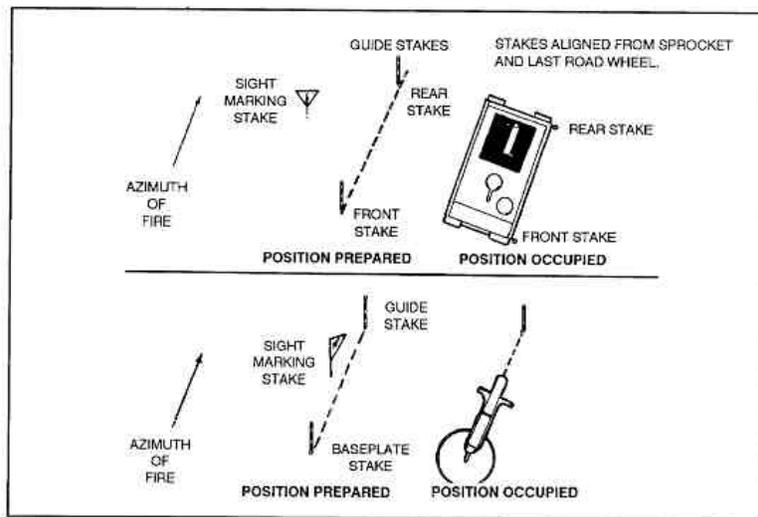


Figure 6-5. Marking positions.

(5) Setting up the aiming circle and determining the azimuth of fire. The advance party identifies the direction of fire with direction stakes.

(6) Completing a rough lay of the mortar positions, if time allows. This method is useful for night occupations. (Figure 6-6.)

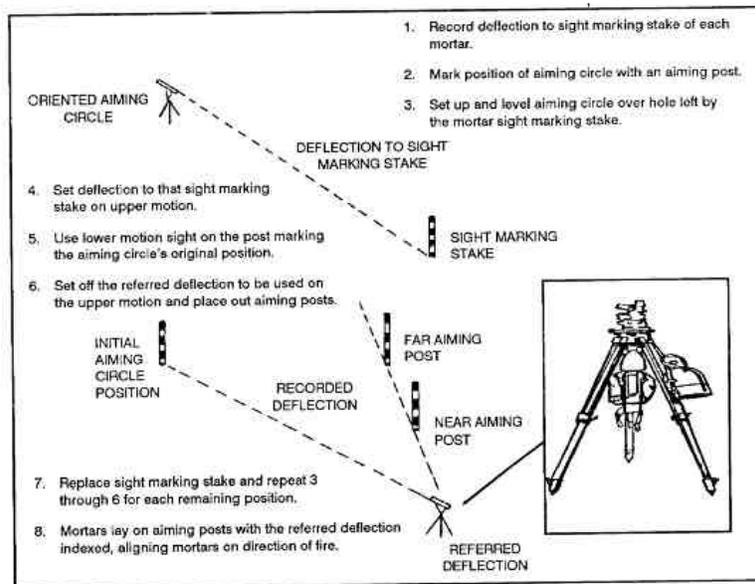


Figure 6-6. Rough lay of mortar position.

(7) Marking entrances to and exits from positions.

(8) Upon arrival, guiding the displacing element into position(s). The FDC is positioned near the middle of the formation to allow FDC members to announce fire commands to the mortars by voice, if necessary. However, wire is the primary means of communication between the FDC and mortars.

(9) Laying the mortars and wire. The MBCs or plotting boards should already be prepared.

(10) Determining and clearing mask and overhead obstructions.

(11) Improving security and defensive measures.

(12) Erecting camouflage or cutting and arranging it.

(13) Digging in the positions.

(14) Preparing alternate and supplementary positions, as time permits. It continually improves the positions until the mortars displace.

b. Before moving, the mortar platoon leader ensures that the following tasks are accomplished:

- (1) Headquarters is informed of the move.
- (2) The platoon position is inspected for documents, overlays, or anything else that may compromise security.
- (3) Obstacles and mines are retrieved.
- (4) Early warning devices (trip flares, platoon early warning system) are retrieved.
- (5) Communication wire is retrieved.
- (6) Personnel at the OPs are ordered to return to the position.
- (7) If carrier-mounted mortars were dismounted, they are remounted on the carriers.
- (8) Ammunition that cannot be moved is fired (if the tactical situation permits).
- (9) The MBC is initialized for the next firing position (if known).
- (10) Mortars are ordered out of action.
- (11) Time permitting, dug-in positions are filled in and camouflaged.

#### **6-11. MOVEMENT BRIEFING**

Before leaving to reconnoiter the new position, the platoon leader briefs key personnel on movement information.

a. As a minimum, the movement briefing should contain the following information:

- (1) ***Situation.***
  - Enemy situation: Rear area activity, major avenues of approach, air activity, and potential ambush sites.
  - Friendly situation: Changes in tactical missions and locations of friendly maneuver units and supporting artillery.
- (2) ***Mission.*** Changes in the mission of the maneuver unit.
- (3) ***Execution.***

- Concept of the operation. General location of the platoon positions, azimuth of fire, routes, order of march, location of SP and RP, and times.
- MOPP status.
- Areas of known chemical or nuclear contamination.

(4) *Administration and logistics.* When and where to feed personnel, priority for maintenance recovery, ammunition resupply, and refueling location.

(5) *Command and signal.*

- Command: Changes in the location of the CP and the location of the commander.
- Signal: Movement radio frequencies, net control restrictions, and signals for immediate actions at the halt and during movement.

b. After being briefed by the platoon leader, the FDC chief briefs the remaining key personnel on the following:

- Tactical situation.
- Routes to be used.
- Any anticipated problems.
- Movement (SP) time.

## **6-12. NIGHT OCCUPATIONS**

Night occupations present special problems of command and control. The limited visibility makes almost every task associated with position occupation harder to accomplish. To conduct efficient night occupations of firing positions, the mortar platoon leader must establish a detailed SOP and train his platoon in its use.

a. The use of wire communications is more important at night than during daylight occupations. Wire ends must be clearly tagged to prevent confusion.

b. Guides must be thoroughly briefed and should pace the routes to and from the platoon's different elements before and after darkness. They should have filtered flashlights to guide the vehicles.

c. Color coding of individual squads or sections facilitates identification during night operations (for example, first squad-blue, second squad-red, third squad-yellow, and fourth squad-green).

d. Light discipline must be maintained. Chemical lights are useful during night occupations, but their use must be standardized and controlled.

## **6-13. TYPES OF OCCUPATION**

The three types of occupation are deliberate, hasty, and emergency.

a. A *deliberate* occupation is one that has been planned and has the advance party precede the platoon to conduct extensive preparation of the new position. A deliberate occupation may take place during daylight hours following a daylight operation, at night after a daylight preparation, or at night following a nighttime preparation. Only the minimum number of vehicles and personnel should go forward. Too much activity during preparation risks compromise. When the tactical situation allows, a good procedure for deliberate occupations of a new position is to do the preparation before darkness and to move the sections by night. Deliberate nighttime occupation following a nighttime preparation is often necessary, but it can be time-consuming.

b. The *hasty* occupation is also planned. It differs from the deliberate occupation mainly in the amount of time available for preparation by the advance party. A hasty occupation may be necessary because of rapid combat operations or unforeseen circumstances. The advance party or the reconnaissance party may be able to accomplish some site preparation such as orienting the aiming circle and initializing the MBC.

c. An *emergency* occupation results when a call for fire is received while the platoon is making a tactical movement. It requires the mortar platoon or section to occupy the first available location without any prior site preparation (see Appendix G).

#### **6-14. DELIBERATE OCCUPATION**

A guide meets the platoon at a pickup point and leads the vehicle to the entrance of the position area. There the vehicle guides are waiting to lead the vehicles to their selected locations.

a. Each guide aligns his carrier on the azimuth of fire or leads the mortar squad vehicle to a position near the firing point, and gives the initial deflection to the gunner.

b. Previously laid wire lines are used to establish communications to the aiming circle operator and FDC.

c. The platoon sergeant implements the security and defense plan as personnel become available.

d. Other considerations for night occupations are as follows:

(1) Light discipline must be practiced. Proper preparation for a night occupation minimizes the need for lights. Vehicle blackout drive and blackout marker lights should be turned off as soon as the ground guide begins to lead the vehicle into position. During the laying process, only the aiming circle and the weapon being laid should have any night lights on.

(2) Noise discipline is most important, since noise can be heard at much greater distances at night.

(3) The time for occupation is increased.

(4) Each vehicle guide should know where his vehicle is in the order of march so the platoon can move smoothly into position without halting the column.

(5) Filtered flashlights are used to lead the vehicles.

e. Vehicles will not move *within* the position without a guide.

#### **6-15. HASTY OCCUPATION**

In a day or night hasty occupation, the platoon requires more time to occupy. This is because some preparatory tasks cannot be completed during the limited time available for the reconnaissance and selection phase. This may result in the following:

- Delay in getting the vehicles off the route of march.
- Laying by voice.
- Increased laying time, since guides might not have aligned the stakes on the azimuth of fire or obtained initial deflections.
- Increased FDC preparation time, because not all initial update/weapon location data will be available.

#### **6-16. SUSTAINMENT**

Once the occupation is completed and the platoon is ready to answer calls for fire, sustainment begins.

a. Sustaining actions are continuous and performed in the priority determined by the platoon leader. These actions include the following:

- Improve position defense plans.
- Improve camouflage.
- Bury or raise wire lines overhead.
- Harden positions.
- Perform maintenance.
- Rehearse.
- Cross train.
- Resupply.
- Complete position area survey.

b. Care must be taken in the way ammunition is resupplied and vehicles are refueled, particularly in tracked mortar platoons. These activities can reveal the location of the platoon. If possible, these tasks should be accomplished at night.

c. The advance party should always be prepared to leave at a moment's notice

### **Section III. DISPLACEMENT PLANNING**

*After he considers the scheme of maneuver and the commander's guidance, the mortar platoon leader develops a displacement plan based on his part of the fire plan. The displacement plan normally includes a map overlay that shows initial positions and subsequent positions. If time permits, the platoon leader selects and includes alternate and supplemental positions. The displacement plan also includes routes to be taken between positions and any pertinent control measures to support a specific operation or for a specific time (Figure 6-7).*

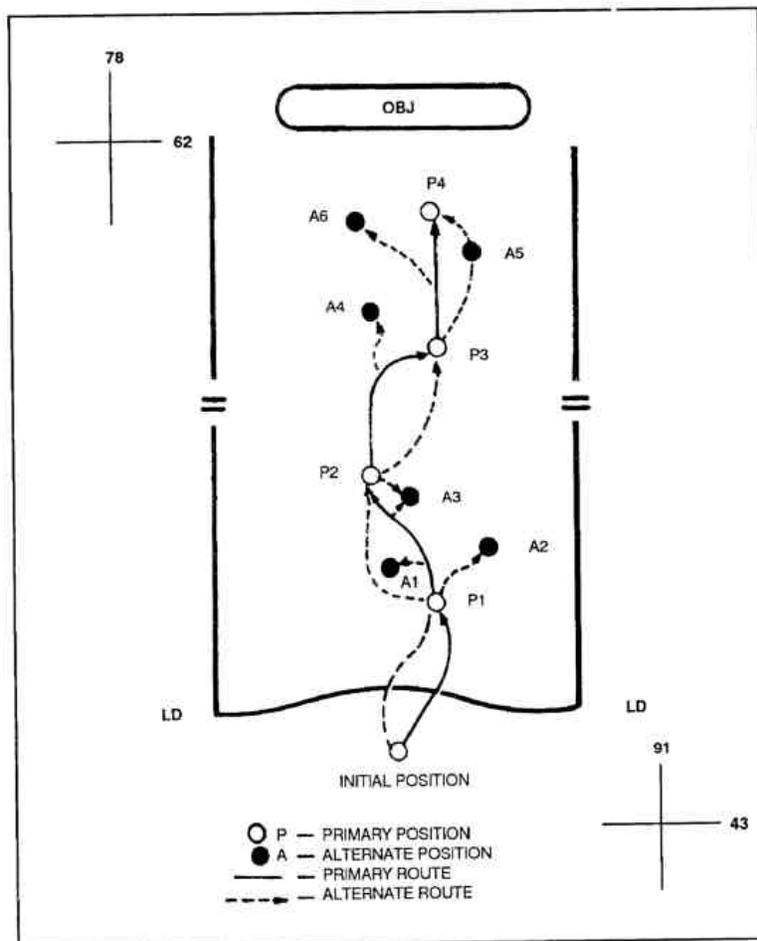


Figure 6-7. Example mortar displacement overlay.

### 6-17. DISPLACEMENT TIMING

The battalion or company commander controls the displacement of the mortar platoon in one of two ways:

a. He can direct the mortar platoon to displace only on order, which is the most restrictive way to control displacement. The battalion commander himself orders the platoon to displace or directs the operations officer or FSO to relay the order.

(1) The mortar platoon leader is responsible for keeping the battalion TOC informed of his status. At a minimum, he reports whenever his fires are falling beyond two-thirds of the maximum range in the offense or less than one-third of the range in the defense. These reports help the commander make timely decisions about mortar displacement. The platoon leader keeps himself informed of the combat situation so he can anticipate the order to displace and be prepared to execute it. If the mortar platoon leader feels he must displace, he informs the commander of the situation and requests permission.

(2) If the mortar platoon leader loses total communications with the TOC, he uses his best judgment about when to displace. He tries all possible means to reestablish communications with the TOC or its designated alternate.

(3) If he cannot reestablish contact, the mortar platoon leader changes to the command frequency of the company (or platoon) having the priority of mortar fires to reestablish his link to the battle. He must play an active role in keeping the lines of communication open to maintain effective fires.

b. He can direct the mortar platoon leader to displace whenever certain predetermined events occur. This is less restrictive for the mortar platoon leader, but it reduces the flexibility of the battalion or company commander

(1) An event-oriented displacement plan is established based on a time schedule, planned phases of an operation, the crossing of designated phase lines, or the receipt of code words signifying some event. Whatever events are chosen, the mortar platoon leader anticipates the one most likely to happen next and is ready to execute the displacement plan immediately. He monitors communications to learn when a specified event occurs. If he loses communications, he actively seeks information as to the course of the battle once communication is restored.

(2) When the situation changes and the platoon leader feels he must displace out of order with events, he informs the TOC and requests permission. If communications are lost, he makes a judgment. He always seeks to take whatever action is needed to keep the mortar platoon in range and in communication with the supported maneuver elements.

#### **6-18. DISPLACEMENT PLANS DURING OFFENSE, DEFENSE, AND RETROGRADE OPERATIONS**

The rapidly changing conditions of modern ground combat require the mortar leader to always be prepared to displace. Detailed displacement planning aids in providing immediately responsive fires.

a. To support *offensive* operations, a displacement plan must permit rapid displacement of the mortars and immediate fire support when needed. It must be flexible to allow for changes in the scheme of maneuver. The enemy situation, the distance to be covered, and the requirement for continuous fire support determine the number of mortars to be moved at one time and the displacement technique.

b. A *defensive* displacement plan has the same requirements as an offensive plan. Also, the platoon leader plans for extensive use of alternate and supplementary positions. He also anticipates future operations and plan displacements to assume the offense or to conduct a retrograde operation. (The same factors affecting the displacement in the offense apply to the defense.)

c. In *retrograde* operations, initial employment of mortars may be by platoon or section, depending on the situation and front to be covered. Displacement is planned to provide continuous mortar fire support throughout the operation. Plans should include designated locations for prestocking ammunition, when possible. Close coordination and communication with supported elements ensure that displacement is planned and timed to allow the mortars to move in advance of maneuver elements. Therefore, maneuver element's movements are covered, which prevents mortars from being left behind.

d. After a tentative displacement plan has been developed, the advance party conducts a reconnaissance to verify routes and positions. It then departs to perform actions that aid displacement and occupation by the displacing element. At the new position, the advance party prepares the position for occupation to the maximum extent possible until the displacing element arrives.

e. After the displacement plan is finalized, copies of the overlay are distributed to the commander or operations officer, the FSO, the platoon and section sergeant, or the FDC chief. This plan is used to help control the movement of mortars. As the tactical situation and mission change, the displacement plan is updated. Often these changes are the result of the reconnaissance.

#### **Section IV. DISPLACEMENT TECHNIQUES**

*The maneuver commander's OPORD provides the mortar platoon leader the needed information and guidance for deciding which of the three techniques to employ. The displacement technique used for a particular operation depends on the factors of METT-T. They are as follows:*

- Scheme of maneuver of supported unit.
- Enemy activity
- Trafficability of terrain.
- Number of sections/mortars in the platoon.
- Availability of supporting artillery.
- Time available.

#### **6-19. DISPLACEMENT BY PLATOON**

Displacement by platoon is used when there is little immediate likelihood of enemy contact or when artillery can provide adequate support during displacement. This technique requires the platoon to displace all of its mortars in one move. This is the fastest way to displace the platoon; however, the platoon cannot provide immediate responsive fire support while moving. If the platoon must fire during movement, it uses emergency techniques of engagement. Movements from the assembly area to the initial firing position are almost always by platoon.

#### **6-20. DISPLACEMENT BY SECTIONS**

This technique requires one section to remain in position while the other section moves. When the displacing section is in position and ready to fire, the remaining section displaces. Depending on the platoon's organization, each section displaces with a portion of the platoon FDC or with its organic FDC. Displacing by sections is accomplished when continuous fire support from the mortars is required. Since one section must be ready to provide fire support while the other section moves, this technique is slower than displacement by platoon. Displacement by sections is used more often by platoons with four or more mortars. Small platoons rarely form one-gun sections for displacement.

#### **6-21. DISPLACEMENT BY SQUAD(S) OR SECTION(-)**

This technique is similar to displacement by sections except less mortars are involved. It is usually employed by platoons or sections with two or three mortars. In two-mortar platoons/sections, displacement involves displacing one mortar while the other provides continuous support. In three-mortar platoons/sections, one or two mortars remain in place while one displaces.

- a. When mortars are in position and ready to fire, either one or both remaining mortars are displaced. When possible, part of the FDC is sent with the displacing squad(s), or a squad leader is sent with an M16 plotting board, who serves as the temporary FIX.
- b. When displacing by sections or squad(s), successive or alternate bounds can be used (Figure 6-8). Alternate bounds are normally used when displacement must be rapid in order to stay up with supported elements. Successive bounds are used when the maneuver element's movements are not so rapid such as in defensive or retrograde operations.

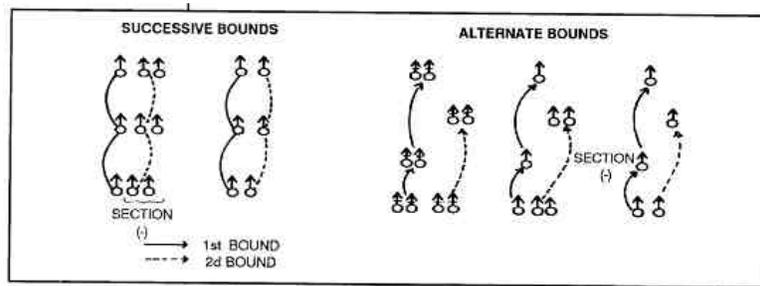


Figure 6-8. Types of bounds.

## Section V. MOVEMENT

*Because of their weight, heavy mortars are usually moved by vehicle. Medium mortars are both hand carried and moved by vehicles. The light mortars of the dismounted infantry company are usually hand carried. Mortar platoons or sections move independently or as part of a larger unit.*

### 6-22. INDEPENDENT MOVEMENT

The mortar platoon normally moves as part of a larger group, but it may move independently for short distances.

- a. When moving dismounted, the mortar platoon employs the same dismounted movement techniques as other infantry squads: traveling, traveling overwatch, or bounding overwatch. Bounding overwatch is not often used because the mortar platoon or section does not normally seek to make dismounted contact with the enemy.
- b. When moving mounted, the mortar platoon leader has several options for moving the platoon in a tactical configuration. Each option has specific advantages and disadvantages. The platoon leader decides which method is best for the existing METT-T conditions.

### 6-23. OPEN COLUMN

The platoon uses the open column road movement for daylight movements when there is an adequate road network that is not overcrowded, when enemy detection is not likely, when time is an important factor, and when considerable travel distance is involved. Vehicle interval in an open column is about 100 meters.

- a. Advantages of this method are as follows:
  - Speed (the fastest method of march).
  - Flexible.

- Reduced driver fatigue.
- Improved vision on dusty roads.
- Fewer accidents.
- Ease in dispersing vehicles as a passive defense measure against an air attack.
- Less chance of the entire platoon being ambushed.

b. Disadvantages of this method are as follows:

- Greater column length requires more road space.
- Other traffic often becomes interspersed in the column.
- Communication within the column is complicated.
- Proper vehicle spacing is hard to maintain.

#### **6-24. CLOSED COLUMN**

For closed column movement, the vehicle interval is less than 100 meters. At night, each driver can observe the cat's-eyes of the blackout markers on the vehicle in front of him and maintain an interval of 20 to 50 meters. During daylight, the platoon uses closed column when maximum command and control is needed—for example, during limited visibility or when moving through built-up or congested areas.

a. Advantages of this method are as follows:

- Simplicity of command and control.
- Reduced column length.
- Concentration of defensive firepower.
- Full traffic capacity of the road can be used.

b. Disadvantages of this method are as follows:

- Column is vulnerable to enemy observation and attack.
- Quick dispersion is difficult.
- Strength and nature of the column are quickly apparent to enemy observers.
- Convoy speed is reduced.
- Driver fatigue increases.
- May cause congestion at point of arrival.

#### **6-25. INFILTRATION**

When the platoon moves by infiltration, it dispatches vehicles individually or in small groups without reference to a march table. This technique is time-consuming, and the vehicles are difficult to control. The platoon uses it when the enemy has good target acquisition means and quick reaction capabilities.

a. Advantages of this method are as follows:

- Least vulnerable to hostile observation.
- Ideal for covert operations.
- Provides passive defense against air and artillery attack.
- High speeds are possible.
- Deceives the enemy as to the size of the infiltrating force.
- Does not hinder cross traffic.

b. Disadvantages of this method are as follows:

- It is difficult to command and control.
- Individual vehicles may get lost.
- Small elements are more vulnerable to ground attack.
- It is time consuming.

#### **6-26. TERRAIN MARCH**

The terrain march is an off-road movement. A platoon or section using this type of movement should travel close to tree lines, along gullies, and close to hill masses. A terrain march should be conducted when enemy observation or interdiction by artillery fire or air attack is likely. A platoon may move safely on a road for some distance and change to a terrain march at a point where enemy observation becomes likely or vehicle congestion provides the enemy an inviting target.

a. Advantages of this method are:

- The strength and nature of a column are difficult to determine.
- Traffic is avoided.
- Passive defense against air and artillery attack is provided.

b. Disadvantages of this method are:

- Displacement time may be increased.
- Ground reconnaissance is required.
- Soil conditions may complicate movement.
- Improper movement leaves wheel or track marks to the new position.
- Extensive coordination is required to avoid traveling through other unit areas.

c. The platoon using the terrain march may move in open column, in closed column, or by infiltration. Also, it can displace either as a unit or by echelon. If the mortar platoon (or section) can move in a formation similar to a standard firing formation, this speeds emergency fire missions.

#### **6-27. MOVEMENT ORDERS**

The details given in a movement order depend on the time available, the tactical situation, and traffic conditions. The order may be supplemented by strip maps, sketches, and

march tables. The main items in a movement order are based on the commander's or platoon leader's reconnaissance.

**a. Situation.**

**b. Mission.**

**c. Execution.**

(1) Destination.

(2) Organization, to include order of march and composition of the column.

(3) Instructions to the main body, to include start point, checkpoints, designated rally points, release point, times for arrival at and clearance of these points, rate of march, route of march, order of march, and review of immediate actions to take in case of trouble.

**d. General Instructions.** These include restrictions on use of roads, maximum speed of march units, catch-up speeds, alternate routes, detours, use of lights, and any special instructions regarding march discipline or defense against air or ground attack.

**e. Command and Communications Instructions.** These include the use of radios, messengers, flags, whistle or horn signals, pyrotechnic signals, and arm-and-hand signals.

## **6-28. LOAD PLANS**

A load plan prescribes efficient loading of personnel and equipment for movement. Each vehicle should have one. A good load plan ensures a squad will move into the new position with all its equipment and that the equipment most essential to the mission is loaded last. It should be recorded and graphically portrayed. All load plans between like sections within the same battalion should be identical.

## **6-29. MOVEMENT PREPARATION**

When the command PREPARE TO MARCH ORDER is given, everything possible will be accomplished to quickly displace. However, these actions must not hamper the ability to continue to deliver fire. Actions may include, but are not limited to, the following:

- Stow squad and section equipment.
- Upload all ammunition.
- Stow camouflage nets.

## **6-30. ORGANIZATION OF THE PLATOON COLUMN**

The organization of the platoon column varies according to the tactical situation, the threat, the position area to be occupied. The following points should be considered

- a. If feasible, there should be two air guards for each vehicle. One scans the sky forward of the vehicle while the other scans the sky rearward.
- b. Machine guns and light automatic weapons should be distributed evenly throughout the column. They should be aimed alternately to the left and right sides of the route of march.
- c. SOP should specify that some personnel fire on full automatic or three-round burst and that some personnel fire on semiautomatic to maintain continuous fire.
- d. The NBC detecting and monitoring equipment should be located with the lead vehicle of the convoy. The platoon could upgrade its MOPP level during movement.
- e. Unarmed or lightly armed vehicles should be positioned in the column where they can best be protected by more heavily armed vehicles.

### **6-31. MARCH DISCIPLINE**

Officers and NCOs ride where they can best control the march. The senior person in each vehicle is responsible for ensuring that all orders concerning the march are carried out. Key personnel should disperse throughout the column to preclude loss of too many of these personnel as a result of enemy action. Also, each vehicle commander must watch for signs, markers, signals, and other traffic.

- a. The column must keep moving. The platoon leader should designate a soldier to pick up mission-essential personnel and equipment if a vehicle breaks down. In most cases, the driver stays with the vehicle. If the disabled vehicle cannot be repaired in a reasonable time or recovered by the platoon, the position and condition of the vehicle are reported to the commander for recovery.
- b. The objective of march discipline is to ensure full cooperation and effective teamwork by march personnel. Teamwork includes the following:
  - (1) Immediate and effective response to all signals.
  - (2) Prompt relaying of all signals.
  - (3) Obedience to traffic regulations and control personnel.
  - (4) Use of cover, concealment, camouflage, dispersion, blackout precautions, smoke, and other protective measures against air, armor, and NBC attack.

(5) Maintenance of the correct speeds, positioning, and between vehicles within the column.

(6) Ability to recognize route-marking signals and signs.

### **6-32. CONVOY CONTROL MEASURES**

Predetermined signals should be established to aid in convoy control. Colored flags in daylight, and flashlights or chemical lights at night can aid in simple but important communications within the column.

a. The *start point* is normally a geographical feature identifiable on the ground and on a map. The first vehicle of the convoy must cross the start point at the specified start time. The commander or platoon leader determines the route to the start point and the time needed to get there. If the platoon displaces part of a battalion move, the *start point* is also the point at which the battalion assumes control of the marching element.

b. Normally, a *checkpoint* is a geographical feature identifiable on the ground and on a map. It is used in reporting progress along the route of march and may be used as a target when planning fires in defense of the convoy.

c. Normally, the *release point* is a geographical feature identifiable on the ground and on a map. The last vehicle of a convoy must cross the RP at the specified time. The platoon leader determines the route from the RP to the new position area. If the platoon displaces as part of a battalion move, the RP is also the point at which the platoon regains control of the marching element. The platoon leader may send a guide from the advance party to the release point to lead the squads into the new position area.

d. A *pickup point* is a location within the position where the guide meets the mortar squad and leads it into position.

e. Normally, a *rally point* is a geographical feature identifiable on the ground and on a map. It is used as a point of assembly and recovery from dispersion due to enemy attack. The designated rally point(s) should be located near or on the alternate route to the new position.

f. Marking the route aids in the move. A *route-marking detail* posts signs at those critical locations where elements of the march might make a wrong turn. (Details concerning traffic control and route marking are in FM 19-25 and FM 55-30.)

### **6-33. HALTS**

Halts should be planned before movement begins. Unscheduled halts should be avoided, but when needed, they must be kept short.

a. During administrative marches, halts are made at regular intervals or at selected sites to rest personnel, to service the vehicles, and to check the loads. Normally, halts are not scheduled for short tactical marches.

b. Wooded areas, built-up areas, or winding sections of road should be selected as halting places during extended vehicle marches. These locations provide concealment and do not present a straight line of vehicles for attack by enemy aircraft. Platoons should avoid stopping near crossroads, railroads, and other easily identifiable reference points.

#### **6-34. MARCH COLUMN CONTINGENCIES**

A mortar platoon is vulnerable to enemy fire while moving.

a. **Immediate-Action Procedures.** Preplanned immediate actions can decrease vulnerability. In establishing immediate action procedures, the platoon leader should consider the following:

- (1) The enemy situation --what he expects to be attacked with.
- (2) His organic resources for countering the different types of attack.
- (3) The nonorganic support available for countering attacks.
- (4) The type of communications to be used with the immediate actions--flags, radio, arm-and-hand signals, and so forth.
- (5) How best to neutralize the attack.

b. **March Column Under Artillery Attack.** The immediate action in defense against hostile artillery fire is to move out of the danger zone, to report the situation to higher headquarters, and to continue the mission. If a platoon expects hostile artillery fire during the march, it can reduce its vulnerability by moving--

- By open column or infiltration.
- Under the cover of darkness or during other periods of reduced visibility.
- By terrain march.

c. **March Column Under Air Attack.** During an air attack all available personnel should engage the aircraft immediately. Following the example of the convoy commander, the column either increases speed and interval or halts. If the column halts, vehicles should disperse alternately off both sides of the road.

d. **Roadblock.** If a roadblock halts a platoon, the maximum amount of firepower available, including direct lay, should be placed immediately on and on both sides of the roadblock. If the roadblock cannot be neutralized, the platoon must try to disengage.

Upon disengaging, the platoon should meet at a designated rally point, render a SPOTREP, and resume its march by an alternate route.

## **Section VI. MORTAR SECTION AND PLATOON FIRING FORMATIONS**

*The mortar platoon or section leader must always consider METT-T factors when he decides the firing formation for his mortars. The main emphasis must be on mission accomplishment, but the factors of METT-T will also affect the choice of the firing formation. The platoon leader always considers the appropriate amount of dispersion, the need for position hardening and available camouflage and concealment.*

### **6-35. TERRAIN MORTAR POSITIONING**

When the threat of enemy counterfire and aerial attack is high, the platoon leader should consider dispersing the mortars over a larger area. He should maximize the use of natural cover and concealment offered by the local terrain. This type of dispersal, without regard to any set distance between mortars or effects on a parallel sheaf, is called *terrain mortar positioning*. This requires the computation of corrections by the FDC in order to fire a standard sheaf (Figure 6-9). The time required to compute these corrections decreases the responsiveness of the mortars from a given location, unless the terrain mortar position corrections (TMPCs) can be computed before occupation of the position. Since mortars move often, computing such corrections before occupation may be impossible. The modified version allows the platoon to use a form of terrain mortar positioning that does not decrease mortar responsiveness. A detailed discussion of terrain mortar positioning and how to complete DA Form 5424-R, Terrain Mortar Position/Special Corrections Worksheet, (Figure 6-10) can be found in FM 23-91. (A blank reproducible copy of this form is located in the Blank Forms section of this manual.)

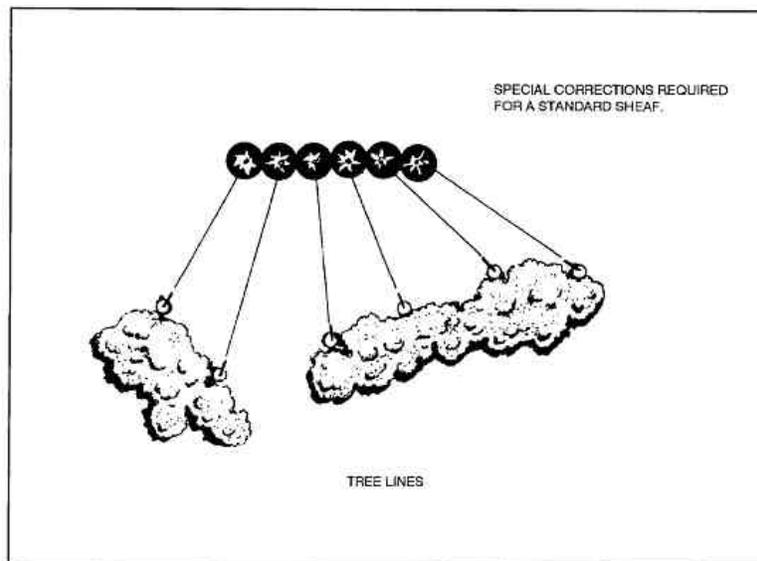


Figure 6-9. Terrain mortar positioning.

TERRAIN MORTAR POSITION/SPECIAL CORRECTIONS WORKSHEET									
SECTOR: LEFT <u>REAR</u> RIGHT		TRANSFER LIMITS					CHARGE ELEVATION OR <u>0900</u>		
CENTER DEFLECTION - 300m		DF	3000	2800	2600	DF	CENTER DEFLECTION - 300m		
CENTER RANGE - 3000M		CR	2500 (MAXIMUM)	4500	6500 (MAXIMUM)	CR	CENTER RANGE - 3000M		
① MORTAR NO	② CORRECT TO BULLET LINE NO.	③ POSITION LATERAL CORRECTION L or R	④ 100-YD BALE CONVERSION TABLE PHYSICATES RANGE	⑤ POSITION DEFLECTION CORRECTION ① = 100 L or R	⑥ POSITION RANGE CORRECTION R - + L - +	⑦ CORRECTED RANGE ④ OF 10M PLUS CENTER RANGE	⑧ FINE SETTING ~ ②	⑨ POSITION TIME CORRECTION ④ MINUTE PER CENTER RANGE	
		≈ 3M	≈ 1m	≈ 1m	≈ 10M	≈ 10M	0.1, FB	0.1, FB	
1	1	L50	23	L12	-30	4470	32.5	-0.1	
2	2	L20	23	L5	-30	4470	32.5	-0.1	
3	3	0	23	0	0	4500	32.6	—	
4	4	0	23	0	+40	4540	32.8	+0.2	
5	5	R15	23	R3	+70	4570	32.9	+0.3	
6	6	R25	23	R6	+20	4520	32.7	+0.1	

LEGEND:  
 100-YD: Number of rods required to make the scale of the round 100 meters for a specified range.  
 F: Forward  
 B: Backward  
 0.1, FB: Post Setting Inaccuracy  
 ~: Corresponding to  
 ≈: To The Nearest

DA Form 5424-R, May 85

Figure 6-10. Example of completed DA Form 5424-R.

### 6-36. PARALLEL FORMATION

The parallel formation has the mortars on line. The distance between mortar positions is the bursting diameter of HE ammunition for the particular mortar employed. The parallel formation is used to employ two or more mortars where the terrain allows dispersion of the mortars and maximum cover and concealment. A parallel sheaf is formed in the target when all mortars fire the same data. The parallel formation provides maximum coverage of a linear target. It does, however, present an easy linear target for enemy aircraft and artillery to engage and makes all-round security difficult to provide. This formation is one of the easiest to move into during a hasty occupation of a firing position since individual mortar placement is by SOP (Figure 6-11).

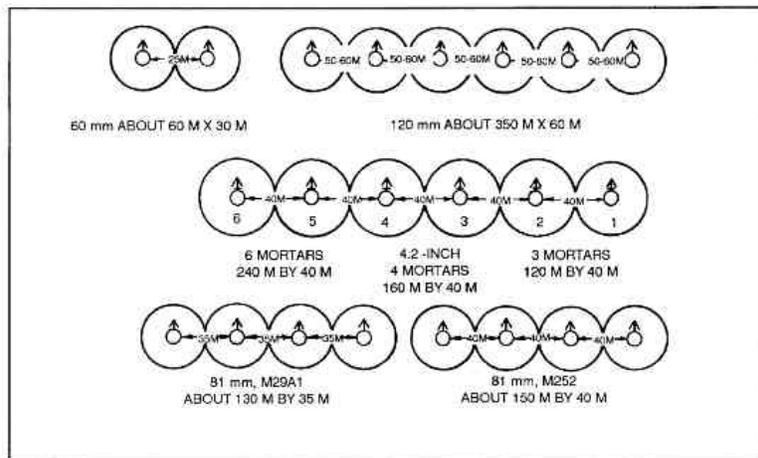


Figure 6-11. Target coverage from the parallel formation.

### 6-37. LAZY W FORMATION

The Lazy W formation lays the mortars on a modified line (Figure 6-12). It provides better flank security with almost the same target coverage as the parallel formation when all mortars fire the same data. The Lazy W is used when the terrain affords little cover and concealment. It adds depth to the sheaf, which is useful when engaging area targets.

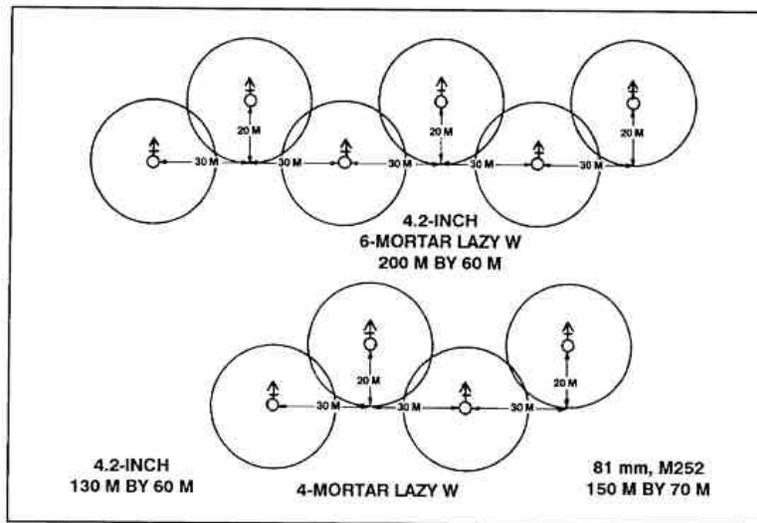


Figure 6-12. Lazy W formation.

### 6-38. DIAMOND FORMATION

The diamond formation allows a four-mortar platoon to fire in all directions with equal ease (Figure 6-13). It is used when 6400-mil coverage is required (for example, in support of encircled forces). It creates a tight, defensible position against ground attack and is excellent for use in restricted terrain. Special corrections, similar to those used in attitude missions, are required to fire a standard sheaf. Since the distance between mortars is decreased, the formation is more vulnerable to air attack and counterfire. The diamond formation is also useful in built-up area (Figure 6-14). By selecting the guns to fire, the FDC can create different sheaf patterns in the target area without computing time-consuming deflection and elevation corrections.

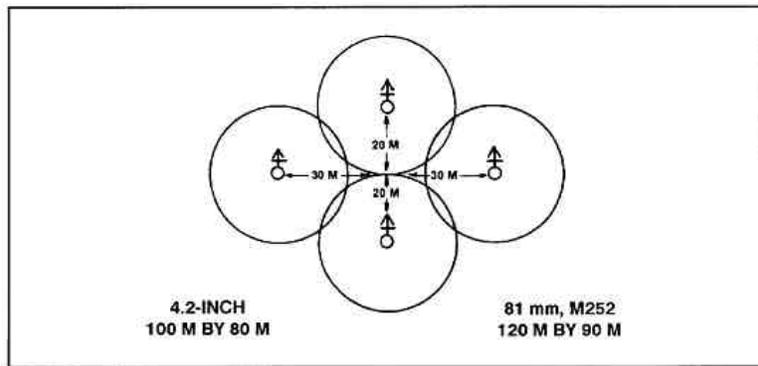


Figure 6-13. Diamond formation.

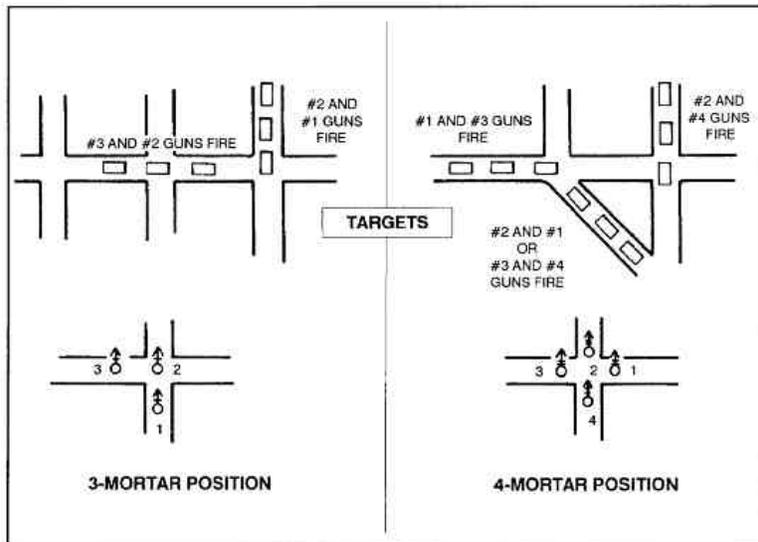


Figure 6-14. Diamond formation used in built-up areas.

### 6-39. TRIANGLE FORMATION

The triangle formation is a modification of the diamond formation in that only three mortars are used (Figure 6-15). It is used also when the 6400-mil coverage is required. This formation has the same advantages and disadvantages as the diamond formation.

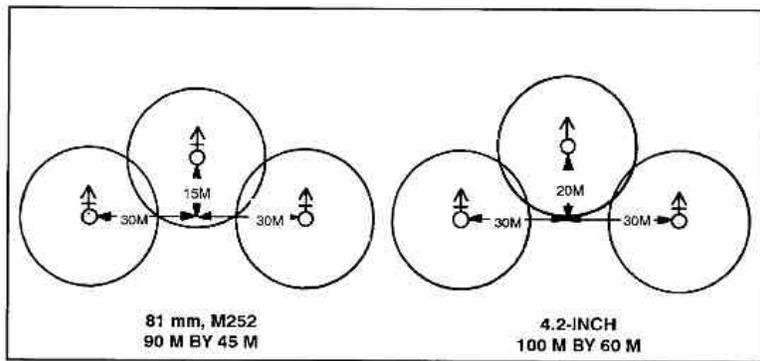


Figure 6-15. Triangle formation.

#### 6-40. SIX-MORTAR STAR FORMATION

The star formation is used by a six-mortar platoon for the same reasons the diamond and triangle are used by smaller platoons—6400-mil coverage (Figure 6-16). This is a complicated formation to move the mortar platoon into, but it is the most compact and defensible. It is used in the strongpoint or perimeter defense.

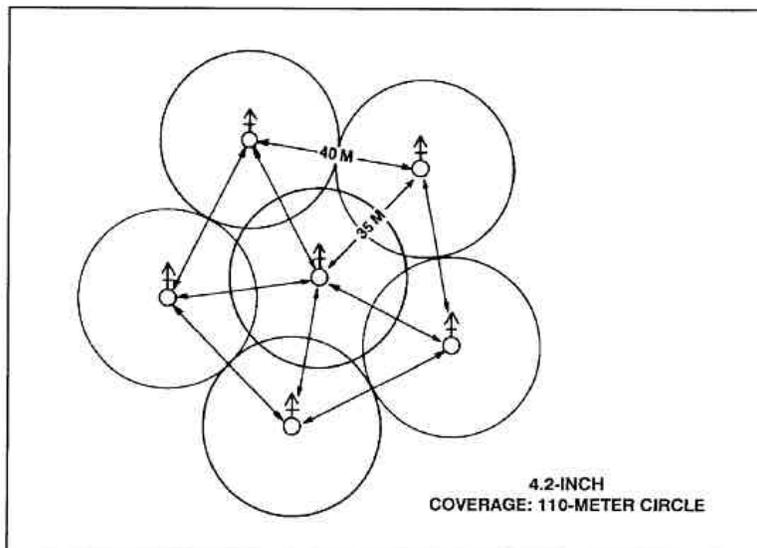


Figure 6-16. Six-mortar star formation.

**NOTE:** The platoon leader must understand and evaluate the trade-offs required in using the diamond, triangle, and star formations. The ability to provide 6400-mil coverage and increased defensibility is gained by decreasing platoon dispersion (increased vulnerability to counterfire). Corrections to fire standard parallel sheafs require more time for computation and thereby decrease responsiveness.