# CHAPTER 3

# FIRE SUPPORT PLANNING AND COORDINATION

**Mortar fire is a key resource used by the commander to immediately influence the outcome of a battle. Mortars can deliver lethal and effective firepower almost anywhere within the company's or battalion's zone of action on short notice. In the offense, mortars are used to establish a base of fire to enable maneuver against the enemy. In the defense, mortars are used to break up and destroy the enemy's assault. However, rarely are there enough mortars or ammunition to allow the engagement of every target identified. Fire support planning and coordination are key to effective and efficient employment of mortar firers.**

**Mortar fire support planning is the continuous and concurrent process of analyzing, allocating, coordinating, and scheduling mortar fires. Integrating these fires with the maneuver plan optimizes the commander's combat power. Because mortars are organic to the companies and battalions, they provide immediate, responsive, reliable fire support to the commander. Mortar platoons and sections can be responsive and reliable only if their fires are planned, coordinated, and fully integrated into the scheme of maneuver.**

## Section I. MORTAR COMMAND AND SUPPORT RELATIONSHIPS

*Mortar command and support relationships are the means by which commanders at battalion and company levels establish the framework within which they want the mortar platoon or section to operate. Commanders choose and convey to all concerned the command relationship that best supports their plan of fire support. Since the mortars are organic to the battalion, the battalion commander normally retains control at battalion level. He has the option to attach or even place the mortars under the operational control (OPCON) of a subordinate company, but he selects the support relationship that most clearly supports how he intends the mortars to support the operation. The commander must establish the appropriate support relationship and any specific priorities in addition to clearly articulating his plan for fire support. He may place the mortar platoon or section GS of the battalion with an established priority target(s), in GS of the battalion without established priorities of fire, or in direct support (DS) of a company or platoon. For example, the main effort company, the reconnaissance platoon, or the breaching team might have a mortar section*



154-042 0 - 94 - 2

*in DS during some phase of an operation. The versatility of the mortar platoon or section, particularly in the heavy forces, is limited only by the imagination of the commander. For example, the commander may attach or place one section of his mortars in direct support of a rifle company while retaining one section in GS of the battalion.*

## 3-1. COMMAND RELATIONSHIPS

Situations may occur when the mortar platoon cannot support the entire battalion while remaining under battalion control as an organic element, such as when a rifle company or platoon is given a mission that separates it from its battalion—for example:

- A raid or ambush.
- An advance, flank, or rear guard.
- A screen.
- A detachment left in contact.

In these situations, the commander may specify command relationships for mortars by either placing a mortar platoon or section OPCON to a maneuver element or by attaching it to that element. These command relationships carry with them inherent responsibilities that everyone involved in fire support must know. When a commander's intent cannot be adequately supported by a standard command relationship, a nonstandard one may be assigned. This is accomplished by issuing a separate mortar platoon or section mission statement, with explicit instructions on the command relationship desired.

a. **Operational Control.** OPCON is the authority delegated to a commander to direct forces provided him to accomplish specific missions, usually limited by function, time, or location (see FM 101-5-1).

(1) A commander who has OPCON controls the tactical employment, movement, and missions of the mortars. He plans and controls their fires. He is *not* responsible for logistic or administrative support. OPCON of the mortar platoon is given for a limited time or for a certain mission. Once the mission is accomplished, the mortar platoon reverts to battalion control.

(2) A mortar platoon or section that is OPCON to a company or troop establishes direct communications with that headquarters. Fire missions are passed on the battalion mortar fire direction net or on another net designated by the controlling headquarters.

(3) A company or platoon that has OPCON of the mortar platoon plans the platoon's fires and can further assign priority of fires and priority targets.

b. **Attachment.** This is the temporary placement of units or personnel in an organization. Subject to any limitations imposed by the attaching commander, the commander receiving the attachment exercises the same degree of command and control as he does over units organic to his command (see FM 101-5-1).

(1) A commander who has mortars attached is responsible for planning and employing their fires, as well as providing all classes of supply; MEDEVAC; vehicle recovery and administrative support. He specifies the general mortar firing location and directs displacement. He is responsible for the security of the mortar element.

(2) Attachment is a restrictive command relationship. It ensures that mortar fires are immediately responsive to the new headquarters. However, it hinders the mortar platoon or sections in providing responsive fires to any other element of the battalion or squadron. It places a logistics burden on the headquarters receiving mortars as attachments. A commander with mortars attached must designate the priority of fires and priority targets.

(3) Attachment of mortar platoons and sections is not a normal command relationship. Some examples of when the attachment of mortars is appropriate are—

(a) During unit movement over great distances or along multiple routes.

(b) During dismounted infiltrations.

(c) Company or platoon raids when the objective is out of range of normal supporting fires.

(d) During the initial phase of an airborne operation until the battalion has completed its assembly and linkup.

(e) During the initial phase of an air assault until the landing zone has been secured and the battalion headquarters can coordinate the actions of the companies.

## 3-2. SUPPORT RELATIONSHIPS

The commander specifies support relationships by assigning one of the two standard tactical missions for mortars–either GS (with or without priorities) or DS. These tactical missions carry with them inherent responsibilities that everyone who is involved in fire support must know. They describe in detail the fire support responsibilities of a mortar platoon or section. When a commander's intent cannot be adequately supported by a standard tactical mission, a nonstandard one may be assigned. This is done either by issuing a separate mortar platoon or section mission statement along with explicit instructions on each of the inherent responsibilities, or by assigning a standard tactical mission and explaining how it has been altered. (See Table 3-1 for the inherent responsibilities of each mortar standard tactical mission.)

a. **General Support (With Priority of Fires).** The assignment of priorities of fire allows the commander to retain overall control of the fires of his organic mortars but also makes them available to his subordinate commanders. When two or more observers are calling for fire at the same time, the mortar platoon leader has clear guidance as to whom the platoon should support first. The platoon also fires for nonpriority observers when priority fire missions are complete. The commander can alter the priority of fires at any time as the tactical situation changes.

(1) If given a GS mission with priorities of fire established, the mortar platoon leader must position at least one section of the platoon to cover the

company or platoon with priority of fires. He should attempt to locate a position that permits coverage for the entire battalion.

| A mortar platoon or section with a mission of — | General Support with priority of fire | General Support with priority target (s) | General Support without priorities | Direct Support |
|---|---|---|---|---|
| Answers call for fire in priority from — | 1. Priority unit<br>2. All other units | 1. Unit calling for priority target<br>2. All other units | Elements within the battalion in order of receipt of call for fire | 1. Supported company or platoon<br>2. Mortar plt ldr<br>3. All others |
| Has as its zone of fire — | 1. Zone of action/ sector of priority unit<br>2. Bn zone of action/sector | 1. Priority target<br>2. Bn zone of action/sector | Bn zone of action/sector | Supported unit zone of action/ sector |
| Establishes Communi-cations with — | 1. Priority unit<br>2. Bn TOC<br>3. All others | 1. Unit with priority target<br>2. Bn TOC<br>3. All others | Bn TOC | Supported unit HQ and FIST |
| Is positioned by — | Bn Cdr | Bn Cdr | Bn Cdr | Coordinated among supported unit, platoon leader, and bn commander |
| Has its fires planned by — | Bn FSE | 1. Bn FSE<br>2. Unit with priority target | Bn FSE | Supported company or platoon |

**Table 3-1. Inherent responsibilities of mortar standard tactical missions.**

(2) If providing priority of fires coverage to one company or platoon means a mortar platoon cannot provide coverage for all the other elements of the battalion, the platoon leader *must* inform the battalion commander and FSO.

(3) If the commander changes the company or platoon to which he allocates priority of fires, the mortar platoon or section may be forced to displace to provide coverage. If so, the mortar platoon leader must immediately notify the commander of his need to displace.

b. **General Support (With Priority Targets).** This is a standard tactical mission during which the delivery of fires on a specific target takes precedence over all other fires for the mortar section or platoon. The mortar platoon prepares for the engagement of such targets as much as

possible. It lays its mortars on this target when not engaged in other fire missions. If any observer calls for the priority target to be fired, the mortar platoon does so immediately, even if engaged in another fire mission. Only the battalion commander can direct the platoon to cease firing on a priority target to engage in another fire mission. With the exception of the FPF (a special priority target), once a priority target mission is complete, the platoon immediately returns to firing other missions unless the order REPEAT is sent by the FO.

(1) The commander may designate a priority target as to type, location, or time sensitivity. The commander must give his FSO specific guidance as to when targets become priority targets and when they are no longer priority targets. He must also state the desired effects-on-target and any special ammunition to be used.

(2) A mortar platoon is normally assigned only one priority target at a time. A heavy mortar platoon can be assigned one priority target for each section. Under unusual circumstances, such as in a strongpoint defense, a section can be assigned more than one priority target. This may occur during execution of the battalion's close-in SEAD fires or during illumination missions. Multiple priority targets require close coordination between the mortar platoon leader and battalion FSO. The commander can alter priority targets as the tactical situation changes.

(3) The FPF is a special type of priority target. Normally, the FPF target is assigned to the company or platoon that is covering the most dangerous avenue of dismounted approach or covering the battalion's most vital sector. Most often this company or platoon also has priority of fire. This prevents conflict of missions. In some situations, however, one commander may have priority of fires while another has the FPF. This could occur when a security force has priority of fires initially, but the FPF target is assigned to a defending company. This requires close coordination between the battalion commander, S3, FSO, and mortar platoon leader. A specific amount of mortar ammunition is always designated, prepared, and set aside for use with the FPF target. This FPF ammunition may not be used on any other mission without specific authorization from the commander.

c. **General Support (Without Priorities Established).** A mortar platoon or section assigned a standard tactical mission of GS, but without priorities established, provides fires exclusively at the direction of the battalion (or company) headquarters. Assigning the GS mission without priorities of fire may be appropriate during—

(1) Large-scale screening missions.

(2) Closely phased deliberate attacks.

The GS mission provides mortar fires immediately responsive to the needs of the commander. A mortar platoon or section with this GS mission will be less responsive in attacking targets of opportunity since there is no direct communications link with the FISTs at company level. The GS mission is most effective against planned targets. General support (without priorities) is the most centralized of all standard tactical missions.

d. **Direct Support.** A mortar platoon assigned the standard tactical mission of DS is immediately responsive to the fire support needs of a particular maneuver company or some other element such as the reconnaissance platoon. The mortar platoon must establish effective communication with the supported commander. (For detailed descriptions of wire and radio communications nets, see Appendix L.) It must coordinate fire and movement with the battle plans of that commander. The difference between DS and GS with priority of fire is that a mortar platoon with a DS mission positions itself to conform to the *supported* commander's plans, even at the expense of the other commanders in the battalion. The essential feature of the DS mission is the one-on-one relationship between the mortar platoon and the supported commander. From the standpoint of battalion control, the DS mission is the most decentralized of the tactical missions. It is often used to place a mortar section in support of a rifle company. The commander that has a mortar platoon or section in DS can further assign priorities of fire and priority targets.

## Section II. FIRE SUPPORT PLANNING

*Indirect fires destroy, neutralize, or suppress the enemy. Fire support planning is necessary to ensure these fires strike the right place at the right time.*

### 3-3. PURPOSE OF INDIRECT FIRES

Indirect fires are employed for three main purposes: close support, counterfire, and interdiction. They may also be used for deception.

a. Close support fires are targeted against enemy troops, weapons, or positions that are threatening or can threaten the friendly unit during either the attack or the defense. Providing close support fires is the most common mission given the mortar platoon or section. Because mortar fires are immediately available, they allow the battalion or company commander to rapidly multiply combat power effects and quickly shift fires about the battlefield. Close support mortar fires are the key to a successful maneuver at the platoon and company level—they can make the difference between success or failure in the defense. Close support mortar fires are normally requested and adjusted by platoon-level forward observers, but they may be initiated by any leader within the chain of command. Examples of close support fires include illumination, screening, suppressive, marking, preparatory, and final protective fires.

b. Counterfires are used to attack enemy indirect fire weapons, observation posts, and artillery command and control facilities. Counterfire at long range is mainly the responsibility of the field artillery, but mortar sections and platoons provide close counterfire, especially against enemy mortars. Mortar counterfire is an immediate action taken to restore the freedom of action to the maneuver commander, before more powerful counterfire weapons can be brought to bear. Mortar fires are used to attack enemy mortars firing from reverse slopes and defilade positions that make them safe from low-angle artillery counterfire. Mortar smoke and WP rounds are used to obscure the view from enemy OPs, reducing the

effectiveness of enemy indirect fire. During the defense of a strongpoint, mortar fires may be planned and integrated into the field artillery counterfire or the J-SEAD program. Their responsiveness, rapid rate of fire, and area target effects are used to suppress enemy gunners.

c. Interdiction fires are used to disrupt, delay, and destroy enemy forces that cannot fire their primary weapon system on friendly forces because of range limitations or intervening terrain. Field artillery cannon and missile battalions are responsible for most ground interdiction fires. Mortar sections and platoons fire limited, specific types of interdiction fires on likely or suspected enemy assault positions or assembly areas. As the advancing US forces close on an objective, mortar fires can be shifted from preparatory or suppressive fire (close support fires) to interdiction fires targeted on likely enemy withdrawal routes or suspected rally points. Normally, the benefits gained from unobserved mortar interdiction fire intended to harass the enemy do not outweigh the costs of ammunition expended and the increased danger of counterfire. Dismounted infantry, decisively engaged with an enemy on close terrain, can employ harassment and interdiction fire to its advantage. In some cases, when the enemy avenue of approach is canalized within deep defilade, such as a ravine or a street between high buildings, mortar interdiction fire may be the only way to attack him.

d. Deception fires are used to delude and confuse the enemy. Mortars can be used to fire false preparatory fires on enemy positions or landing zones. They can also be used to create deceptive smoke screens to focus the enemy in one location while friendly forces attack from another.

## 3-4. EFFECTS OF INDIRECT FIRES

The battalion or company commander must decide, and then clearly state, what effects he wants to achieve with mortar fire on a particular target. Four effects are: destruction, neutralization, suppression, and obscuration.

a. Destruction renders the enemy combat ineffective. Since only direct hits with HE rounds can destroy hardened targets, such as armored vehicles or bunkers, mortars are not often used against them to achieve destruction. Against soft targets, such as trucks or frame buildings, mortars can be used for destruction, but even then the amount of ammunition expended is large. It requires about 30 percent casualties to render a unit combat ineffective. If the enemy infantry is exposed, mortar fires can easily achieve destruction on them. By themselves, mortars can rarely achieve destruction against a dug-in enemy. Only the 120-mm mortar is powerful enough to damage well-constructed field fortifications.

b. Neutralization knocks a target out of action temporarily. Against hardened targets, it is difficult to achieve neutralization with mortar fire. Against some targets it can be achieved, especially dismounted infantry or wheeled vehicles. Experience has shown that it takes about 10 percent casualties to neutralize a unit. A higher percentage may be required, depending on how experienced and strong the enemy is. Neutralization usually lasts no more than a few hours.

c. Suppression limits or prevents the enemy in the target area from firing back or performing other combat tasks. The effects of suppressive fires are immediate, but they last only as long as the fire continues. The key to any successful infantry assault is properly applying suppressive fires. A mortar platoon's high rate of fire and organizational responsiveness make it an excellent suppressor. Suppressive fires play a large role in generating combat power by infantry forces. The suppressive fires of mortars, along with other weapons, allow the infantry to close within range for a final assault. Effective suppressive fires increase infantry mobility. The more effective suppressive fires are, the less dependent infantrymen are on stealth, cover, and concealment. Mortar fires can continue to suppress the enemy until the assaulting forces are close enough to use their hand-carried weapons for suppression. Suppressive fires carry the assault over the last 200 meters and into the enemy's defensive position. At that point, the enemy either chooses to discontinue resistance by surrendering or withdrawing, or he is killed or wounded.

d. Obscuration interferes with the enemy's ability to observe the actions of friendly forces or prevents it altogether. Obscuration fires do not neutralize or suppress an enemy, since he can still employ his weapons, but reduces the effectiveness of enemy fire. Mortars can fire bursting WP rounds directly on an enemy position to both suppress and obscure, or they can fire either WP or smoke rounds to obscure observation. Mortar obscuration is effective for immediate response missions of limited scope and for short periods. The 81-mm (M252) and the 120-mm mortars have the most effective obscuration rounds.

## 3-5. FIRE SUPPORT COORDINATION MEASURES, TERMS, AND TECHNIQUES

To facilitate fire support coordination, maneuver commanders at battalion and higher echelons can direct the implementation of fire support coordinating measures. These measures are shown on maps, charts, and overlays. The measures are designed to reduce the requirements for coordination or to restrict firing into certain areas. Fire planners at all echelons use terminology peculiar to their task, and members of the mortar platoon must know the terms in order to provide the type of support required.

a. **Maneuver Control Measures.** Boundaries are the basic maneuver control measures used by commanders to designate the geographical area for which a particular unit is tactically responsible. They are normally designated along terrain features easily recognizable on the ground. They affect fire support in two ways as follows:

(1) They are *restrictive* in that no indirect fire support means can deliver fires or effects across the boundary unless those fires are coordinated with the force having responsibility for the area within that boundary.

(2) They are *permissive* in that the maneuver commander has complete freedom of fire and maneuver within his boundaries (unless otherwise restricted by higher headquarters). Many times, boundaries will reduce the need for other fire support coordinating measures.

b. **Fire Support Coordination Measures.** Fire support coordination measures are designed to make the rapid engagement of targets easy and, at the same time, provide safeguards for friendly forces. They ensure that fire support will not jeopardize troop safety, will interface with other fire support means, and will not disrupt adjacent unit operations. Graphic portrayal will be in black and will include, at a minimum, the abbreviation of the measure, the establishing headquarters, and the effective date-time group. Usually, coordinating measures are labeled at each end of a line or within the graphic, space permitting. There are two general classes of fire support coordination measures: permissive and restrictive.

(1) ***Permissive measures*** mean that requirements for coordination are reduced. They expedite attacks on targets.

(2) ***Restrictive measures*** provide safeguards for friendly forces. They indicate where firing is restricted or even prohibited. When these measures are employed, the graphic display will also contain the title or abbreviation of the measure, the establishing headquarters, and an effective date-time group. The mortar platoon leader must coordinate with the FSO/FIST to ensure that all restrictive fire control measures are known to all concerned personnel.

c. **Coordinated Fire Line.** The CFL is a permissive measure. Mortar fires can be delivered beyond the CFL without additional coordination. It is established by brigade or higher headquarters; however, it may be established by a battalion operating independently. In the example in Figure 3-1, the area that extends from the CFL forward to the end of the boundary can be attacked by all fire support means without coordinating with 2d Brigade. This includes attacks by mortar platoons in the brigades adjacent to 2d Brigade.

d. **Fire Support Coordination Line.** A fire support coordination line (FSCL) is a permissive fire control measure that may be established by a corps within its area of operation to support its concept of the operation. The purpose of an FSCL is to allow the corps and its subordinate and supporting units (for example, Air Force) to expeditiously attack targets of opportunity beyond the FSCL.

e. **Free-Fire Area.** An FFA is a permissive fire control measure that defines an area into which mortars can fire without additional coordination.

f. **Restrictive Fire Line.** An RFL is a restrictive fire control measure often used during linkup operations. It is a line between converging friendly forces that prohibits fires or their effects across the line without coordination with the affected force. It is established on identifiable terrain by the common commander of the converging forces.

g. **Restrictive Fire Area.** The RFA is an area with specific restrictions and in which fires that exceed those restrictions will not be delivered without coordination with the establishing headquarters.

h. **No-Fire Area.** The NFA is an area into which no fires or their effects are allowed. It is established on identifiable terrain. It may be established in conjunction with a host nation to preclude damage or destruction to national asset, population center, or shrine. It also may be

established to protect an element of tactical importance, such as a fuel storage area. Two exceptions to the no-fire rule exist as follows:

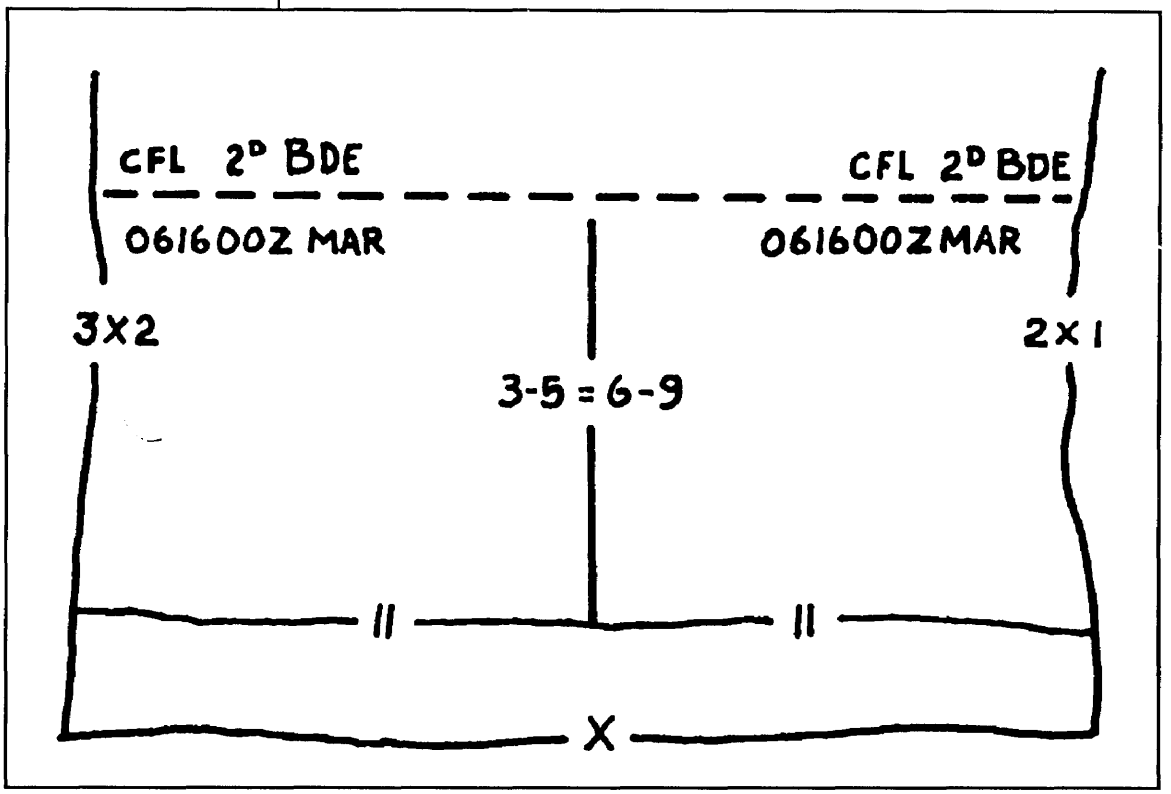



**Figure 3-1. Example of a coordinated fire line.**

(1) When the establishing headquarters allows fires on a mission by mission basis.

(2) When a friendly force is engaged by an enemy located within the NFA and the commander returns fire to defend his forces. The amount of return fire should not exceed that sufficient to protect the force and continue the mission.

i. **Airspace Coordination Area.** An ACA is a block of airspace in the target area in which friendly aircraft are reasonably safe from friendly surface fires. It may be formal or informal. (See TC 90-7 for details on ACAs.)

j. **Fire Support Coordination Terms.** Fire support coordination terms are standardized. They mean exactly the same thing to artillerymen and mortarmen.

(1) ***Targets.*** The term target is the most fundamental term used in fire support planning. A target is personnel, materiel, or a piece of terrain that is designated and numbered for future reference attack. There are two broad categories of targets: targets of opportunity and planned targets.

(a) *Targets of opportunity.* A target that appears during combat, and against which no attack has been prearranged.

(b) *Planned target.* A target upon which fires are prearranged. The degree of prearrangement varies, but some before-action coordination has been done to facilitate its engagement. Planned targets may be further subdivided into scheduled, on-call, or priority targets.

- **Scheduled target.** A planned target to be fired IAW a time sequence. Targets can be scheduled for firing by time or by event. In scheduling by event, firing is keyed to the accomplishment of a maneuver phase, such as crossing the LD/LC in the offense. As a result, the FDC must monitor the command net in order to keep abreast of the progress of the maneuver force.
- **On-call target.** A planned target that has not been scheduled for attack at a specific time but may be attacked when requested. The on-call target requires less reaction time than a target of opportunity.
- **Priority target.** A target which when requested for attack takes priority over all other requests. Priority targets are designated by the maneuver commander, who provides specific guidance as to when the targets will become priority, munitions to use, accuracy, and desired effects.
- **Final protective fires.** The FPF is a special set of priority targets. It is a prearranged barrier of direct and indirect fire that prevents or stops the enemy from advancing.

This paragraph complies with QSTAG 221.

(2) ***Target numbering system.*** To designate targets for fire support operations, the Army adheres to the provisions of QSTAG 221. Target designators consists of two letters (the first letter is always A, K, Y, M, or W for US forces) followed by four numerals; for example, AB3002. This numbering system is used for each corps-size force.

(a) Target numbers serve as an index to all other information regarding a particular target, such as location, description, and size. Within a major force, normally at corps, a common target numbering system is used. Fire planners and fire support resources at all echelons, including the mortar platoon, are assigned blocks of target numbers for their use. Because target numbers are assigned in blocks to specific users, a target can be readily traced back to its originating source.

(b) The two-letter group denotes the originator of the target. Each Army headquarters allocates a first letter to each of its corps. The letters A, K, Y, W, or M may be reused by US armies as long as adjacent corps do not share the same letter.

(c) The second letter (A through Z) is assigned by corps down to brigade level.

(d) Standard blocks of numbers are assigned to each brigade:

| Numbers | Assigned To |
|---|---|
| 0001 through 1999 | Brigade fire support cell. |

| | |
|---|---|
| 2000 through 2999 | FSO, lowest numbered maneuver battalion or squadron. |
| 3000 through 3999 | FSO, second lowest numbered maneuver battalion or squadron. |
| 4000 through 4999 | FSO, third lowest numbered maneuver battalion or squadron. |
| 5000 through 6999 | Additional FSOs. |
| 7000 through 7999 | FDC of the DS field artillery battalion. |
| 8000 through 8999 | Counterfire/counterbattery targets. |
| 9000 through 9999 | Toxic chemical targets. |

(e) The battalion or squadron suballocates as follows:

| **Numbers** | **Assigned To** |
|---|---|
| 000 through 199 | Battalion/squadron FSO. |
| 200 through 299 | FIST, A company/troop. |
| 300 through 399 | FIST, B company/troop. |
| 400 through 499 | FIST, C company/troop. |
| 500 through 599 | FIST, D company/troop. |
| 600 through 699 | Additional FISTs. |
| 700 through 799 | Battalion squadron mortar platoon (or section). |
| 800 through 999 | As required. |

**EXAMPLE:** Assume that the battalion to which the mortar platoon is assigned is allocated target numbers 3000 to 3999. The mortar platoon's block of numbers would be 3700 to 3799. If the battalion is organic to the 2d brigade, the target numbers of the platoon would be B3700 to B3799. If the brigade is assigned to the lowest numbered division in the corps, the mortar platoon's block of numbers could be AB3700 to AB3799.

(f) Target numbers are usually established in the division or regimental tactical SOP. The numbers suballocated to brigades should be incorporated into the brigade, battalion/squadron, company/troop, and platoon SOPs.

(3) ***Target symbols.*** Standard symbols are used in the preparation of maps, charts, and overlays to identify targets by type.

(a) *Point target.* A point target is a target that is less than 200 meters wide. The symbol is shown in Figure 3-2.

(b) *Linear target.* A linear target is more than 200 meters but less than 600 meters long. Targets longer than 600 meters will require fire support assets other than mortars or must be further subdivided into multiple targets for attack. A linear target is designated on the target list by two grids or a center grid, length, and attitude.

(c) *Rectangular target.* A rectangular target is wider and longer than 200 meters. It is designated on the target list by four grids or a center grid, length, width, and attitude.

(d) *Circular target.* A target that is circular in nature or is vague as to its exact shape. It is designated by a center grid and a radius on the target list.

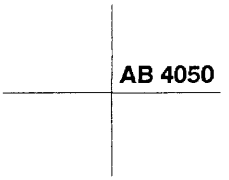
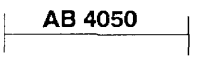
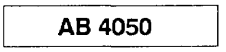
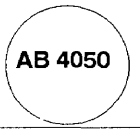
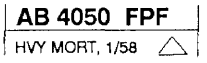
| TYPES OF TARGET | SYMBOL | DISCUSSION |
|---|---|---|
| POINT |  | A cross is used. It may be canted if several targets are in close proximity to each other or when the symbol might be confused as a grid intersection. The intersection of the lines represents the center of the target. The target list describes the nature of the target and other pertinent information. |
| LINEAR |  | This symbol is for those targets that are long and narrow (for example, roads and trench lines). Coordinates shown on the target list are for the center point. The target list also shows the length and attitude. |
| RECTANGULAR |  | These targets have both length and width. Coordinates shown on the target list are for the center point. The length and width shown on the target list represent the overall length and width of the target. |
| CIRCULAR |  | This symbol represents an area-type target. Coordinates shown on the target list are for the center point. The radius of the target is also included on the target list. |
| FINAL PROTECTIVE FIRE |  | The symbol for an FPF is similar to that for a linear target. It includes the target number, the designation FPF, and the unit to fire. |

**Figure 3-2. Target symbols.**

(e) *Final protective fires.* FPF are types of priority fires that are similar to linear targets. The symbol used includes the target number, the designation of the FPF, and the system/unit to deliver the fires.

(f) *Target reference point.* Maneuver elements use a TRP to orient direct-fire weapon systems. All TRPs should be dually identified in terms of the direct-fire weapon system and the target numbering system. The symbol is the same as that for a standard target with a target number and a TRP letter. All TRPs should be plotted on the map and identified as a target. TRPs will be included on the target list and identified in the remarks section as TRPs.

(4) ***Group of targets.*** A group of targets consist of two or more targets upon which simultaneous fire is desired. It is graphically shown by circling the targets and identifying the group with a group designation number. The group designation number consists of the two letters assigned to the brigade and a sequence number inserted between the two letters. For example, if the brigade's target numbers begin with the letters AB, the first group of targets is designated A1B; the second group

A2B. The fact that a group of targets has been formed does not preclude the attack of individual targets within the group. An artillery battalion is normally the lowest echelon capable of planning and executing a group of targets; however, mortar targets maybe included within a group of targets (Figure 3-3).

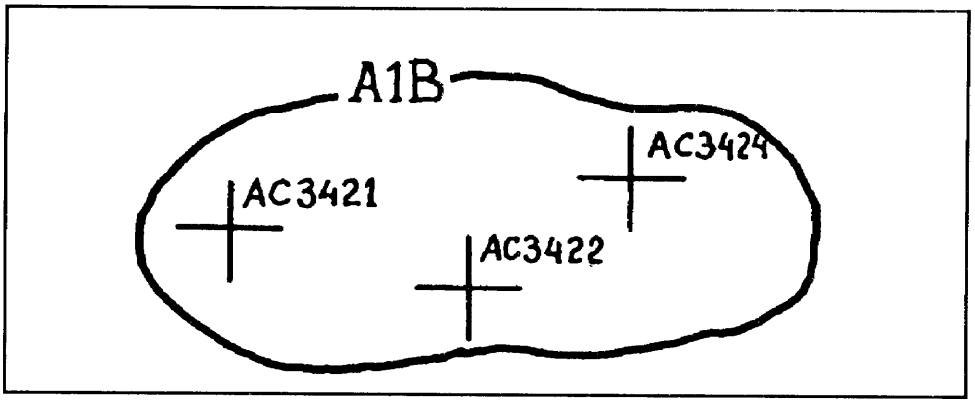



**Figure 3-3. Series of targets.**

(5) ***Series of targets.*** A series of targets consist of a number of targets or groups of targets planned to be fired on in a specific sequence to support a maneuver phase. The series is identified by a code name and all of the targets or groups of targets included in the series are enclosed by a line. The fact that a series has been formed does not preclude the attack of individual targets or groups of targets within the series. However, once the series has been initiated, all of the targets must be fired on in the predetermined sequence as provided by the target list or schedule for the series. The supporting DS artillery battalion is the lowest echelon that plans and designates a series of targets; however, mortars can fire in conjunction with a planned series of targets (Figure 3-4).

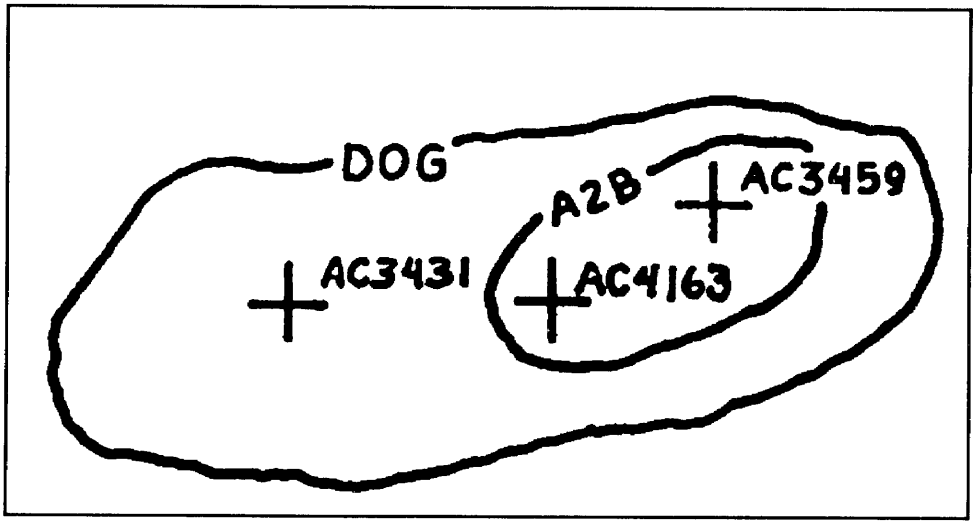



**Figure 3-4. Group of targets.**

(6) ***Program of targets.*** A program of targets is planned for a number of similar targets; for example, all enemy air defense targets, all observation posts, or all mortar targets. A particular program concentrates on one type of target. A program can be initiated on call, at a specified time, or when a particular event occurs. Once initiated, targets are fired IAW a predetermined time schedule. Programs of targets are not shown on charts, maps, or overlays. The DS artillery battalion is the lowest echelon that plans a program. Mortars can fire in conjunction with a program.

## 3-6. TARGET DATA PROCESSING

During bottom-up refinement of the top-down planning process, the forward observer in each infantry platoon identifies any additional targets as directed by the platoon leader. He then forwards his additional targets to the company FSO who further refines the fire plan to support the company commander's scheme of maneuver and his intent for fire support. The company commander forwards the list of additional targets to the battalion fire support element. A copy is also given to the company mortar platoon or section (Figure 3-5).

a. The battalion FSO analyzes each company's additional target list, resolves duplication by deleting redundant targets, adds any new targets provided by the battalion staff or external agencies, and produces a consolidated battalion target list and overlay (Figure 3-6).

b. Based on the battalion commander's guidance, the FSO establishes a precedence of targets for engagement. He determines specific weapons and shell-fuze combinations to attack each planned target.

## 3-7. BATTALION FIRE SUPPORT PLAN

The battalion commander is responsible for the fire support plan. It is based on the commander's intent for fire support, developed by the battalion fire support officer, and reviewed by the battalion S3. It includes targets selected for engagement by the mortar platoons. The company commander is responsible for the company's fire support plan. It is developed by the FSO to support the company commander's plan for maneuver. A simple plan works best. The commander should give the mortar platoon a specific mission during each phase of an operation. The platoon's mission must be realistic and clearly understood by both the platoon and the observers who will be calling for fire.

a. The mortar platoon executes its portion of the fire support plan by engaging planned targets IAW schedules of fire provided by the FSO/FIST. It responds to calls for fire on planned targets and targets of opportunity originated by the company fire support teams, battalion FSO, or others. The mortar platoon has no formal fire planning responsibility, other than technical computation of firing data for planned mortar targets and ensuring that the commander's guidance is met. However, the mortar platoon leader must be knowledgeable about fire support planning coordination.

b. To ensure the timely and accurate execution of the mortar platoon's portion of the fire support plan, the platoon leader must consider: support requirements, terrain and positioning of firing sections commensurate with the battalion's/company's scheme of maneuver, means by which he will command and

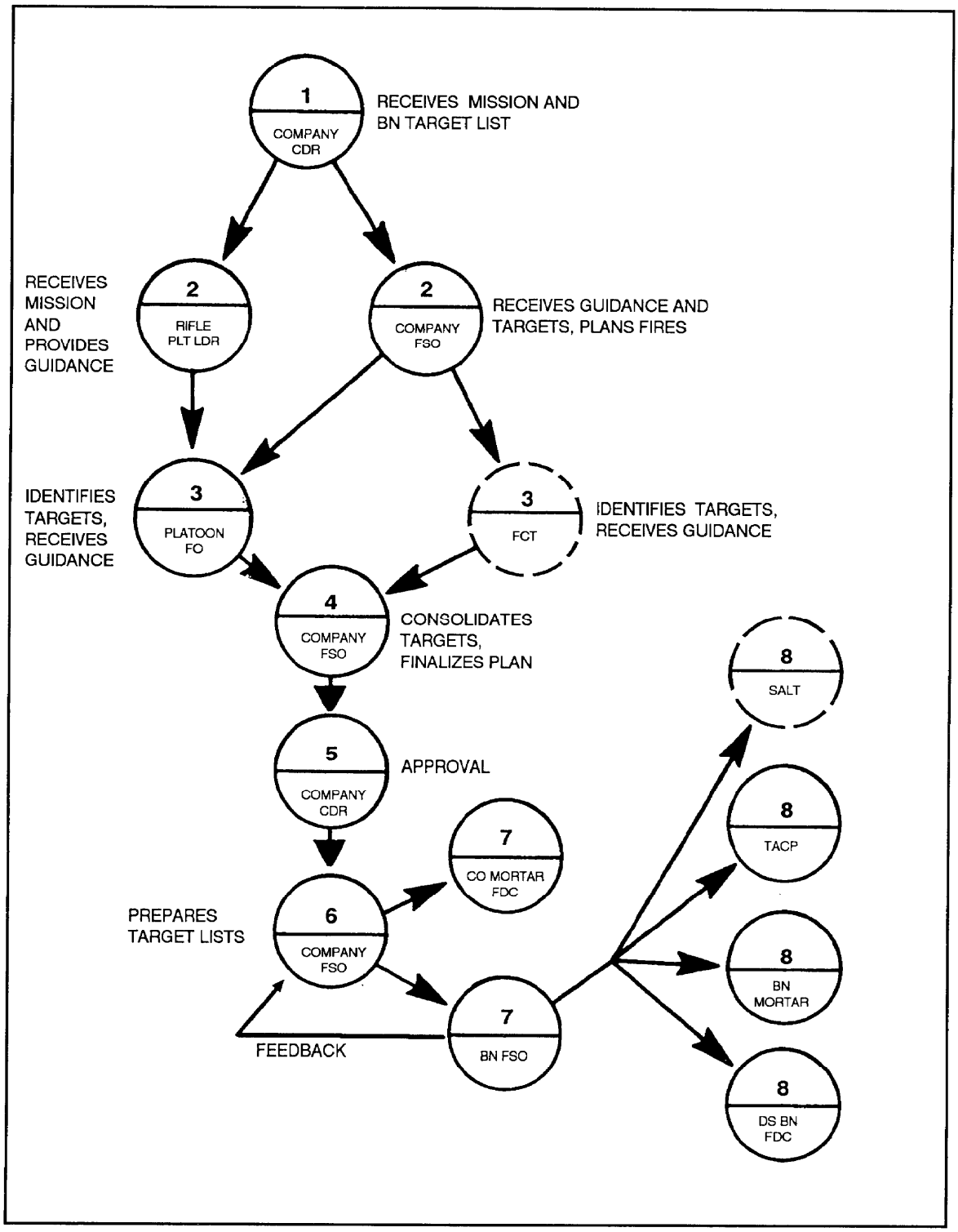



**Figure 3-5. Company team fire support planning process.**

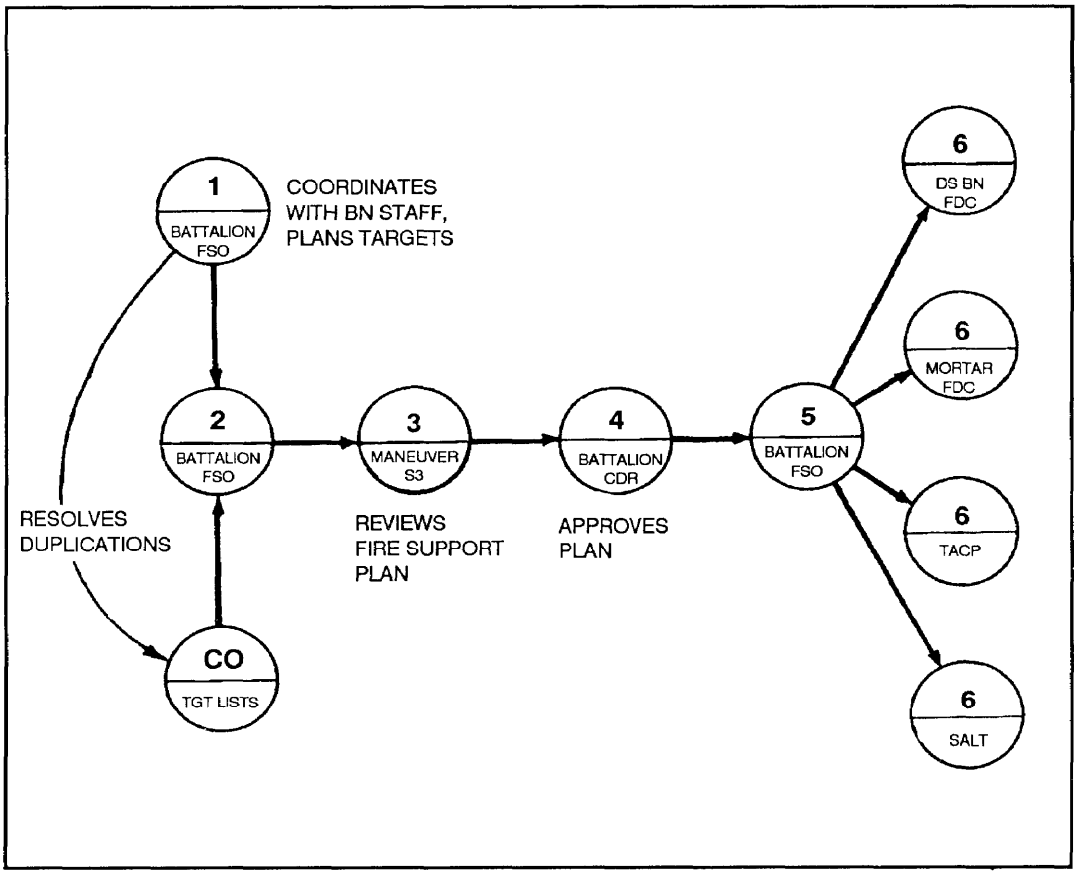



**Figure 3-6. Battalion Squadron fire support planning process.**

(1) Analyze the mortar targets given in the fire support plan to ensure that sufficient quantities of ammunition (by type) are available for firing against planned targets and targets of opportunity. This includes checking on the commander's intent to use smoke or illumination extensively.

(2) Select and reconnoiter firing positions that enable mission accomplishment, provide for the ability to mass fires, and provide essential characteristics of terrain favorable to mortar employment.

(3) Coordinate the use of terrain, the displacement plan, and resupply routes with the battalion S3 and support platoon leader, or the company commander and executive officer, as applicable.

(4) Coordinate required field artillery support, such as survey and meteorological data, with the battalion FSO/FIST to enhance first-round accuracy, and the ability to mass fires from separate firing section locations.

## 3-8. BATTALION TARGET LIST AND OVERLAY

The consolidated target list, overlay, and implementing instructions constitute the fire support plan for the battalion. A copy is provided to the mortar platoon for technical data processing. This enables each mortar platoon to precompute firing

data for each planned target, thereby reducing response time. If multiple firing positions are planned, the sections can compute firing data from each firing position for each target.

a. The target overlay in the fire support plan shows targets planned to support the battalion's mission. The overlay shows any fire support coordinating measures that have been established, or that have been planned. Used in conjunction with the operations overlay, the target overlay is a quick reference for coordinating fires. Coordinating measures shown on the overlay should be transcribed onto firing charts in the FDCs to ensure compliance with any restrictions. The overlay, when transcribed on the operations map, keys the platoon to the status of individual targets in relation to friendly maneuver. The target overlay must be checked continuously against the maneuver graphics to ensure it supports the commander's plan.

(1) The battalion target overlay displays planned fires in relation to the scheme of maneuver or plan for the defense. This overlay provides a ready means for resolving duplications, ensuring adequate coverage of the zone, and identifying targets that will require special coordination.

(2) A target overlay contains marginal information that identifies the overlay, references the applicable map sheet(s), and provides orienting data in the form of grid register marks.

(3) All planned targets to support the maneuver battalion operation are displayed on the target overlay.

b. The target list in the fire support plan is the basic document used to communicate planned target data. The target list provided to the mortar platoon contains all of the targets planned to support the operation, regardless of whether mortars or artillery are preferred to attack the target. Targets selected specifically for attack by the mortar platoon are designated in the remarks portion of the target list. If time does not permit the reproduction of the complete target list, an abbreviated target list is furnished that contains only those targets selected for engagement by the mortars. As a minimum, the target list given to the mortar platoon contains a target number, description, and location for each planned target. Special attention is given (in the remarks column) to a target list requiring extensive use of ammunition beyond basic load capabilities. For example, a 15-minute smoke screen for a river crossing operation is probably beyond basic load capabilities (Figure 3-7).

(1) ***Line number.*** Line numbers can be designated corresponding to specific targets. Line numbers refer to a specific target without using its assigned target number. Use of line numbers instead of target numbers is administrative in the processing of planned targets. They are never used in calling for the attack of targets.

(2) ***Target number.*** Each planned target is assigned a target number. Target numbers are assigned by the individual or agency that originates the target, and blocks of target numbers are provided for all fire planning agencies. A block of target numbers is given to each mortar platoon so the FDC personnel can assign a target number when an observer directs, RECORD AS TARGET, upon completion of a mission against a target of opportunity, or upon completion of a registration.

(3) ***Description.*** A target description for each planned target must be provided. Based upon the target description, targets are analyzed to select the most effective munition for engagement, the most effective means of engagement, and the

quantity of ammunition required to suppress, neutralize, or destroy the target. The target description also aids in prioritizing targets for engagement.

**TARGET LIST WORK SHEET**

For use of this form, see FM 6-20; the proponent agency is TRADOC

SHEET 1 OF 1

| LINE NO | TARGET NO | DESCRIPTION | LOCATION | ALTITUDE | ATTITUDE | SIZE LENGTH | SIZE WIDTH | SOURCE / ACCURACY | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | AA 3411 | 82-mm MORTAR POSITION (4 TUBES) | 923435 | | | | | | MORTAR TGT ONLY |
| 2 | AA 3412 | MECH INF IN TRENCH LINE | 918560 | | 1600 | 400 | 50 | | HE PROX |
| 3 | AA 3413 | AIRCRAFT LANDING STRIP | 920450 | | 4800 | 1200 | 200 | | GROUP A1A |
| 4 | AA 3414 | SUSP REGT CP | 947343 | | | (RADIUS 800m) | | | 50% WP |
| 5 | AA 3415 | FPF | 875689 | 340 | 1650 | 200 | | | ADJ W/ DELAY |
| 6 | AA 3416 | ROAD JUNCTION | 885670 | | | | | | TRP A3 |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 19 | | | | | | | | | |
| 20 | | | | | | | | | |

DA Form 4855-R, Jan 83 replaces DA Form 4855, Oct 77, which is obsolete

**Figure 3-7. Sample of a battalion target list.**

(4) ***Location.*** The grid location of the center of each planned target must be provided. The target location furnished on the target list must be used to precompute data for planned targets. For linear, rectangular, and circular targets, locations provided on the target list are the grid coordinates for the center of the target.

(5) ***Altitude.*** This is the distance the target is above sea level, stated in meters. The mortar section FDC uses this information to make corrections to the firing data.

(6) ***Attitude.*** The attitude of a target is the direction (azimuth) from north in mils of a linear or rectangular target along its long axis. It is used with target length and width to enable the computation of data to provide a special sheaf, or the determination of multiple aiming points to engage the total target area (Figure 3-8).

(7) ***Length.*** The length of a target is determined along the long axis of a rectangular or linear target. Half of the length is applied to each side of the target's grid location corresponding to the attitude (azimuth) of the target.

(8) ***Width.*** The width of a target is determined along the short axis of a rectangular target. Half of the width is applied to each side of the target grid location at right angles to the attitude of the target.

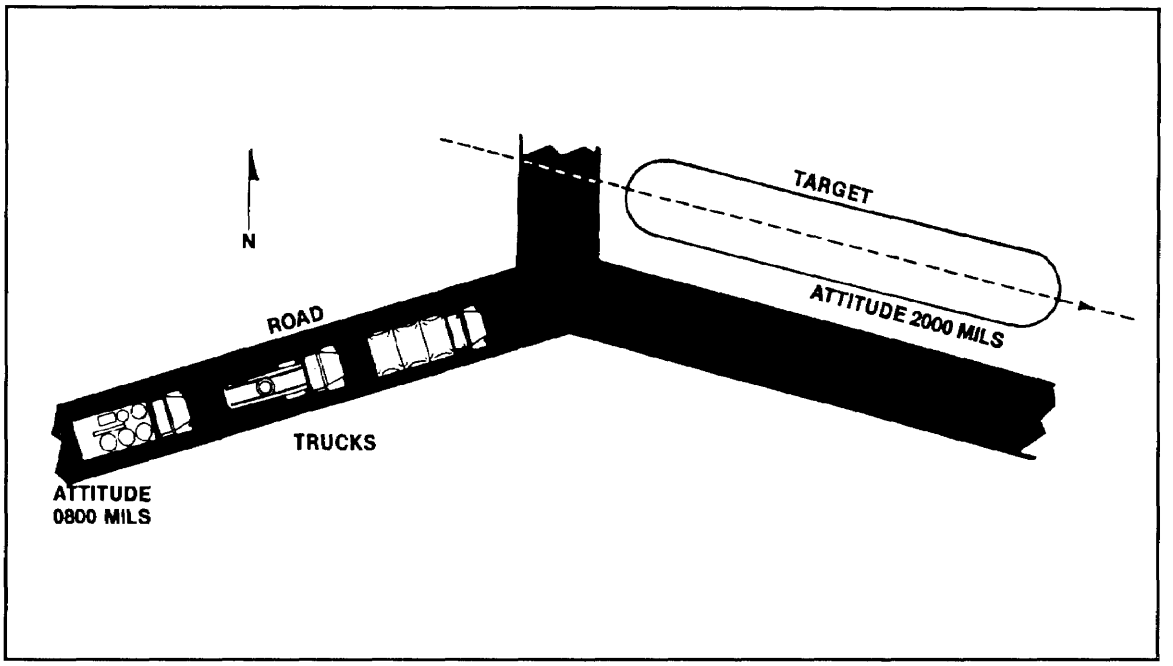



**Figure 3-8. Target attitude.**

(9) ***Radius.*** The radius of a target is provided to describe the overall size.

(10) ***Source/accuracy.*** The mortar platoon does not normally use any information contained in this column.

(11) ***Remarks.*** The remarks portion of the target list is used as follows:

(a) To prescribe the quantity of ammunition (by shell/fuze type) to be expended upon a target.

(b) To identify targets as part of a group, series, or program of targets.

(c) To recommend or fix responsibility on a specific fire support resource to attack certain targets.

(d) To schedule fire on specific targets by time or by event.

(e) To designate priority targets.

(f) To specify the duration of smoke or illumination required for a specific target.

The remarks portion of a target list may also be used for information regarding a specific target that is not provided for in the target list format. Specifically, the size, shape, or orientation of a target can be provided in the remarks by referring to a target's attitude, length, width, or radius.

(12) ***Transmission.*** Target lists can be hand carried with the fire support plan or (with proper precautions) sent by electronic means.

c. In addition to the target overlay and target list, the battalion fire support plan will usually include some form of implementing instructions. If not written in the fire support plan, implementing instructions can be provided orally.

(1) The commander routinely makes decisions that affect the way the mortar operates. Through his analysis of the METT-T factors, the commander determines how he can best use the mortar platoon's firepower to accomplish the mission. He communicates his decisions by providing his intent for fire support to his S3, FSO, and mortar platoon leader. He also provides any other guidance he feels necessary. While not intended to be an all-inclusive list, the following are representative of the commander's guidance that affect mortar employment:

(a) Ammunition constraints by type and quantity.

(b) Priority of fire to designated subordinate companies or platoons.

(c) Allocation of mortar fire to attack on-call priority targets.

(d) Attack guidance, or the degree of damage required for particular targets (for example, suppress, neutralize, or destroy).

(e) Establishment of fire support coordinating measures.

(f) Anticipated changes in mortar employment (operational control, attached) to support future operations.

(g) Communication constraints and special requirements.

(h) Precedence of targets by type for engagement by various firing resources.

(i) General designation of position to provide for attack of targets and survivability.

(j) Instructions regarding moves.

(k) Coordination requirements.

(1) Special considerations for smoke, or illumination use, especially in MOUT.

(m) The enemy's capacity to fire countermortar fire.

(2) Implementing instructions for the mortar platoon might be from several sources. Although a written OPORD is seldom distributed at battalion level or below, the OPORD format is adhered to in oral presentations. As such, the mortar platoon leader pays particular attention to the execution paragraph with emphasis on the commander's intent, the scheme of maneuver, and plan for fires. Implementing instructions for targets can appear in the remarks column of the target list.

d. Implementing instructions are also provided in the form of schedules for firing. Schedules are prepared for firing a series, a program, a preparation, or a counterpreparation. Regardless of the type of schedule provided, they direct the firing of the mortar platoon onto designated targets at a specific time. The schedule designates the TOT and the amount of rounds to be fired, or it gives the TOT and the duration of fire (for example, TOT H-5, duration four minutes). The mortar platoon leader studies the schedule of fires closely to determine the ammunition required and the target shifts involved. The FSO plans a one-minute shift time for mortars. The platoon leader synchronizes his watch with the FSO, and keeps the platoon on the schedule. If the rounds scheduled for a certain period are not all fired by the shift time, the mortar squads check fire, shift, and stay with the schedule. Any targets not fired are reported to the FSO immediately (Figure 3-9, see page 3-20).

| LINE NO. | UNIT | UNIT | ROUNDS (per mortar) | TIME ON TARGET |
|---|---|---|---|---|
| 1 | BATTALION MORTAR PLATOON | AB2375<br>AB3427<br>AB2678<br>AB2352 | 36 (a)<br>12 (a)<br>45 (c)<br>36 (b) | H-19 to H-15<br>H-14 to H-10<br>H-11 to H-4<br>H-3 to H+6 |

**REMARKS**
(a) High Explosive, Prox.
(b) 50% Smoke, 50% HE Prox.
(c) 50% High Explosive, Prox 50% HE Dly.

**Figure 3-9. Sample of a schedule of fires.**

e. The fire support execution matrix is a graphical, easy to use way of assigning target responsibilities and allocating fire support resources to the battalion/squadron. The matrix shows which targets are most critical to the battalion's success, and who is responsible for firing them. The matrix shows the allocation of priority targets and FPF. The matrix shows the mortar platoon's firing positions and the expected displacements by phase (Figure 3-10).

f. The company fire support execution matrix is a tool used to aid in executing the battalion plan. The company FSO and mortar platoon or section leader develop the matrix. It is designed for the key leaders in the company to understand and execute the fire support plan without the FSO (Figure 3-11, see page 3-22).

## 3-9. PROCESSING AND COORDINATING CALLS FOR MORTAR FIRE

Wire communications are the most secure and reliable means of coordinating and calling for mortar fires. The mortar FDC always ties into the battalion or company wire net as soon as possible. The speed of modern combat demands the use of FM radio nets to call for and coordinate mortar fires. The organization and use of radio and telephone nets described in this paragraph give mortar leaders at company and battalion levels a description of the nets available for fire support planning and coordination with FISTs and FSOs, and for receiving calls for fire.

a. There are seven radio nets important to the mortar platoon leader. He does not routinely operate in all of them, but he can enter any of them to accomplish his mission. Some stations in the artillery-controlled nets may operate in the digital mode only. The mortar platoon leader cannot routinely operate in these nets. (See Appendix L for diagrams of these various radio and wire nets.)

PRIORITY OF FIRES AND KEY TARGETS.

| PHASE LINE\ TRIGGER PT | PL /MACE | PL /BOW | PL /ARROW | PL /BLUE | OBJ A |
|---|---|---|---|---|---|
| TF | | | | | |
| TM/CO A | | | BB 3401 | BB 0011<br>BB 0012<br>MORTAR PRIORITY | |
| TM/CO B | BB 0001<br>BB 3003<br>FA PRIORITY | BB 3001<br>MORTAR PRIORITY | | | |
| TM/CO C | | | BB 3010 | | |
| TM/CO D | | BB 0007<br>BB 3002 | BB 0013<br>BB 0009<br>FA PRIORITY | BB 0015<br>GP B1B | |
| SCOUTS | BB 0029<br>BB 3004 | BB 0017 | | | |
| MORTARS | POS A1,A2 | BB 3001<br>POS B1 | POS B2, C1 | BB 3111<br>POS C2 | |

| FA ORGANIZATION FOR COMBAT | MORTAR POSITIONS | AMMUNITION AVAILABLE |
|---|---|---|
| 4-5 FA (155SP) DS TO 2 BDE | POS A1 123455<br>A2 124456<br>POS B1 1274556<br>B2 128452<br>POS C1 131500<br>C2 130495 | 12 BN 3 RDS DPICM<br>20 PLT 6 RDS HE<br>30 MIN ARTY SMOKE<br>20 MIN MORTAR SMOKE<br>30 MIN ARTY ILLUM<br>30 MIN MORTAR ILLUM |
| FS COORD MEASURES | | |
| CFL: PL BOW<br>0/0 CFL: PL ARROW0/0<br>0/0 CFL:<br>0/0 CFL: | | TAC AIR |
| | BDE CDR ATK GUIDANCE | 4 TF SORTIES<br>4 ACAs (#) 20-30<br>(SEE ACA OVERLAY) |
| FASCAM | DEST ADA | HIGH PAY OFF TGTS |
| TF ALLOCATION: 2 BDE 2<br>PLANNED:<br>195450 200444<br>199455 221456 | NEUT RECON ELEMENTS<br>SUPP AR, MECH PLTS | ZSU 32-4, SA 9,<br>MRB's CRP (3 BMP, 1 BRDM)<br>ENGINEERS |

COC IS:-A-,-B-,-C-,-D-FSO WITH-A-FSE BEING 0/0 BN FSE

C DAY-1- FA DS BN CDR: H70_A FSO: A99_ FA FDC: _H55_
E CF 2: 45.20 BDE FSCOORD: E24_B FSO: B99_MORTAR FDC:_U55_
O FD 1: 55.70 BDE FSO: J99_C FSO: J99_
I MORTAR: 32.60 BN FSO: Q99_D FSO: D99_OIC-O-NCOIC-N-RATELO-R-

COORDINATING INSTRUCTIONS:

1. TARGET ALLOCATION: A 3, B 3, C 2, D 4.
2. CUT OFF FOR TARGET SUBMISSION 052200 OCT.
3. SURVEY TARGETS FOR D, A, B, MORTAR FIRING POSITONS. FSOs TAKE SURVEY TO NEXT LOCATION.

**Figure 3-10. Sample of a battalion fire support execution matrix.**

***COMPANY FIRE SUPPORT MATRIX***

**COMMANDER'S INTENT FOR FIRE SUPPORT: COMPANY OFFENSE**

SMOKE ON BB 1001 TO COVER OUR INITIAL MOVEMENT ACROSS THE LD. FIRE GROUP B1B ON OBJ FOX AS 2d AND 3d PLATOONS CROSS PL BLUE. USE BB 3109 TO HELP BLOCK A COUNTERATTACK FROM HILL 333.

| TGT # | GRID | DESCRIPTION | DECISION POINT | EXECUTION | |
|---|---|---|---|---|---|
| | | | | PRIMARY | BACKUP |
| BB 1001 | 123456 | Smoke OP | When 1st Plt is ready to cross LD | 1st Plt | FSO |
| BB 1002 (Group B1B) | 123567 | Suspected Inf Squad | 2d and 3d Plts cross PL Blue | CO Cdr | 2d Plt |
| BB 3108 (Group B1B) | 135467 | AT Position | 2d and 3d Plts cross PL Blue | CO Cdr | 2d Plt |
| BB 3109 | 143335 | Road Junction | If counteratk Bridge at 146576 | 2d Plt | 3d Plt |
| BB 2102 | 136324 | Suspected AT Position | If receive fire from position | FSO | XO |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

HIGH PAYOFF
TARGETS ALL AT-5 POSITIONS

ACTIONS UPON : XO MONITORS 4.2 MORTAR NET FOR FIRE SUPPORT COORDINATION.
LOSS OF FSO : PLT LDRS SWITCH TO CF2 OR THE MORTAR NET TO FIRE MISSIONS.

| | PRIORITY OF FIRE | | | | AMMUNITION AVAILABLE TO TF | CEOI DAY 05 | DAY 06 |
|---|---|---|---|---|---|---|---|
| | Cross LD | | Cross PL Blue | | | | |
| | FA | MORT | FA | MORT | | FA NET 31:10 | 45:10 |
| CO | 1st Plt | 1st Plt | 2d Plt | 2d Plt | FA DPICM/HE 16 Bn 3 RDS | MT NET 56:00 | 44:50 |
| BN | A Co | B Co | A Co | B Co | FA Smk 25 min | MT FDC D34 | W45 |
| | | | | | MT HE 22 Plt 6 | FA FDC F7M33 | H6178 |
| BDE | 3-37 | | 3-37 | | MT Smk 20 min | BN FSO K98 | P72 |

COORDINATING INSTRUCTIONS:

1. SHOOT 4.2 MORTAR SMOKE ON BB 1001.
2. GROUP B1B TARGETS ARE ARTILLERY PRIORITY TARGETS.
3. SHOOT IMMEDIATELY ANY ZSU 23-4 OR SA 9 TARGETS.

**Figure 3-11. Sample of a company fire support execution matrix.**

(1) The DS artillery battalion command fire net is used by the artillery commander to control his batteries, and to pass tactical information. The battalion FSO operates in this net to conduct the fire planning. This net is used to pass target lists to the battalion FSO. The DS artillery battalion FDC is the NCS of this net. The mortar platoon leader may be directed to enter this net when fire plans are tightly controlled by brigade.

(2) The DS artillery battalion fire net is used by the FIST headquarters and FO to call for field artillery fire. No other information passes over this net. Three fire nets (Fl, F2, F3) are normally authorized in a DS battalion, one for use by each firing battery and assigned for use by the FIST and FSO assigned to support a maneuver battalion. The DS field artillery battalion FDC will be the NCS for this net. The mortar platoon leader can monitor this net to keep informed when it is being operated in the voice mode.

(3) The company command net allows direct coordination between the platoon leaders (including mortar platoon or section leader), the company commander, and the company FSO. Although this net can be used to request mortar fire, it is the least desirable net to use. Calls for fire and observer's adjustments can quickly clog this important net. The company commander is the NCS for this net. The battalion mortar platoon leader may enter a company command net, especially if one of his mortar sections is attached or under OPCON of the company.

(4) The company fire control net is used by the company FSO to control actions of FO parties. It is also used by platoon leaders, platoon sergeants, and other non-field artillery observers to request artillery and mortar fire through the FIST. The FIST HQs is normally the NCS for the CFC net. When firing support planning and coordination must be over the FM radio (rather than face-to-face), this is the net used. It is also used for processing fire missions from either platoon FOs or non-field artillery observers. Stations operating this net are FOs, FIST headquarters, and company mortars. The battalion FSO can (on occasion) enter this net to coordinate with the FIST chief.

(5) The primary net for processing and controlling fires of the battalion mortars is the battalion mortar fire direction net. Normally, the battalion mortar platoon leader, the FDC(s), FSO, and FOs operate within this net when requesting fires from the battalion mortars. In mechanized battalion mortar platoons, there are two fire direction nets: FD1 and FD2.

(6) The battalion mortar platoon always operates in the battalion command net. It operates in the administration/logistic net when necessary.

(7) The mortar platoon can conduct all of its coordination and fire control on the battalion wire net. Wire nets are always established when the battalion prepares defensive positions. They may also be established during night attacks.

(8) The radios in a battalion mortar platoon allow it to operate in many different nets, and pass information to any FM radio station in the battalion. By designating mortar squads within the platoon to monitor the lesser used nets, the mortar platoon keeps informed while retaining enough radios free to conduct fire coordination and execution.

(9) The company mortar platoon or section has fewer radios, and its radios nets are simpler.

b. There are three methods available to the company commander for controlling the forward observers' calls for fire. The company commander and company FSO determine, based on the experience of the FOs and the tactical situation, if the FOs are to send fire requests to the FIST headquarters (centralized control), directly to the mortar FDC (decentralized control), or if they will be predesignated. The company FSO monitors all calls for fire regardless of the method used.

(1) The *centralized* method is the most restrictive. It requires the FO to have his radio set on the CFC net. When a rifle platoon leader needs indirect fire, his FO calls the FIST HQs and submits a *target description* and *target location. The* company FSO determines if this request should be fired by the company mortars (if available), or sent to the battalion mortars or the supporting artillery. If the request is to be fired by company mortars, the company FSO may elect to give verbal authorization for the mortars to fire the mission or may establish that silence is consent to fire. The company mortars operate within the CFC net monitoring and processing the calls for fire pending authorization from the company FSO. If the FSO determines that the mission needs to be fired by battalion mortars, he directs the FO to switch to the battalion FD net and send his request. Once the FO completes his mission, he returns his radio from the fire net back to the CFC. This method allows the company FSO the most positive control over the FOs, and prevents net overload. It is the slowest and least responsive method (Figure 3-12).

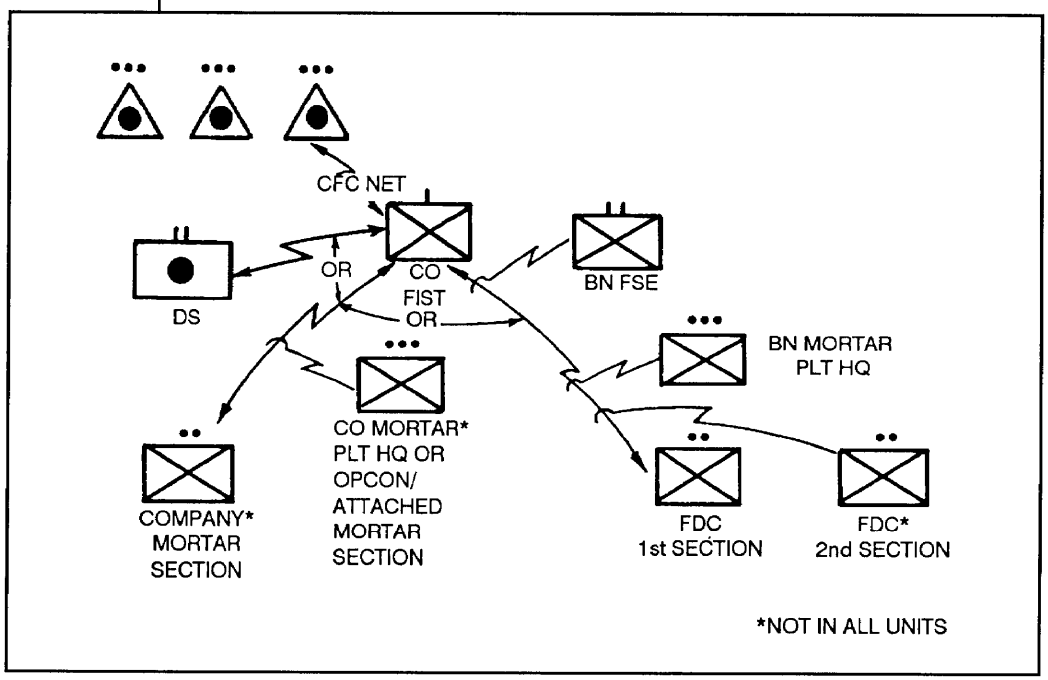



**Figure 3-12. FM radio fire request to FIST headquarters (centralized control).**

(2) In the *decentralized* method, the platoon FOs are allowed to call for fire from either the artillery or the mortars based on their own judgment. The FO does not have to contact FIST HQs before sending his call for fire, but the FIST HQs monitors all transmissions to ensure coordination of fires on target is accomplished. The FIST HQs can override any decision made by an FO and direct him to use another fire support means, a method of engagement, or to even cancel a mission. Anytime an FO is not engaged in a fire mission, he operates in the CFC net. The FO sends his request directly to the designated FDC on its fire control/direction net. The company FSO monitors each request and, in this situation, silence is consent. The battalion FSO monitors requests directed to the battalion mortars in the same way. When battalion mortars are being employed by platoon from one location, the second FDC section monitors the fire request and computes firing data for the platoon as a check on the controlling FDC section, when directed. When the sections are separated, the second FDC section monitors the fire request and computes firing data for its mortars. When a section or squad is attached or placed OPCON to a company, the section/squad operates in the company fire control net or as directed by the company commander. The advantage of this method is that it is highly responsive to each rifle platoon; however, to use this method requires highly trained FOs. It is difficult for the company FSO to control. The range of the platoon FO's radio may not be sufficient, and multiple FOs may overload a net (Figure 3-13).

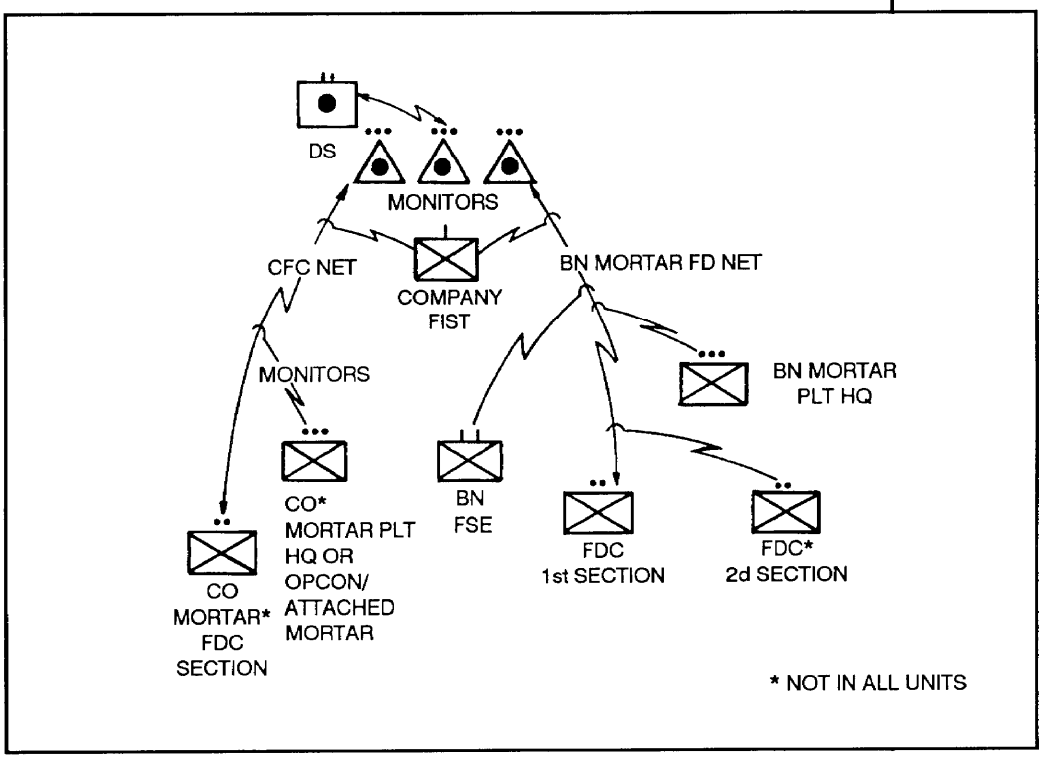



**Figure 3-13. FM radio fire request to any FDC (decentralized control).**

(3) In the *predesignated* method, the company FSO assigns one/any/all FOs a fire net in which to operate. This option includes provisions to assign two FOs to one net. Net assignment is dependent upon tactical considerations. Platoon FO can request as many missions as he desires and all nets are monitored by FIST HQs. If the FO requests the use of an asset other than his predesignated asset, he must coordinate with FIST HQs. If an FO is given a different asset for a particular mission, he will return to the original predesignated asset upon completion of the mission. Predesignation cannot last for the duration of an operation. This method is highly responsive, provides positive control by the FIST HQ, and prevents net overload (Figure 3-14).

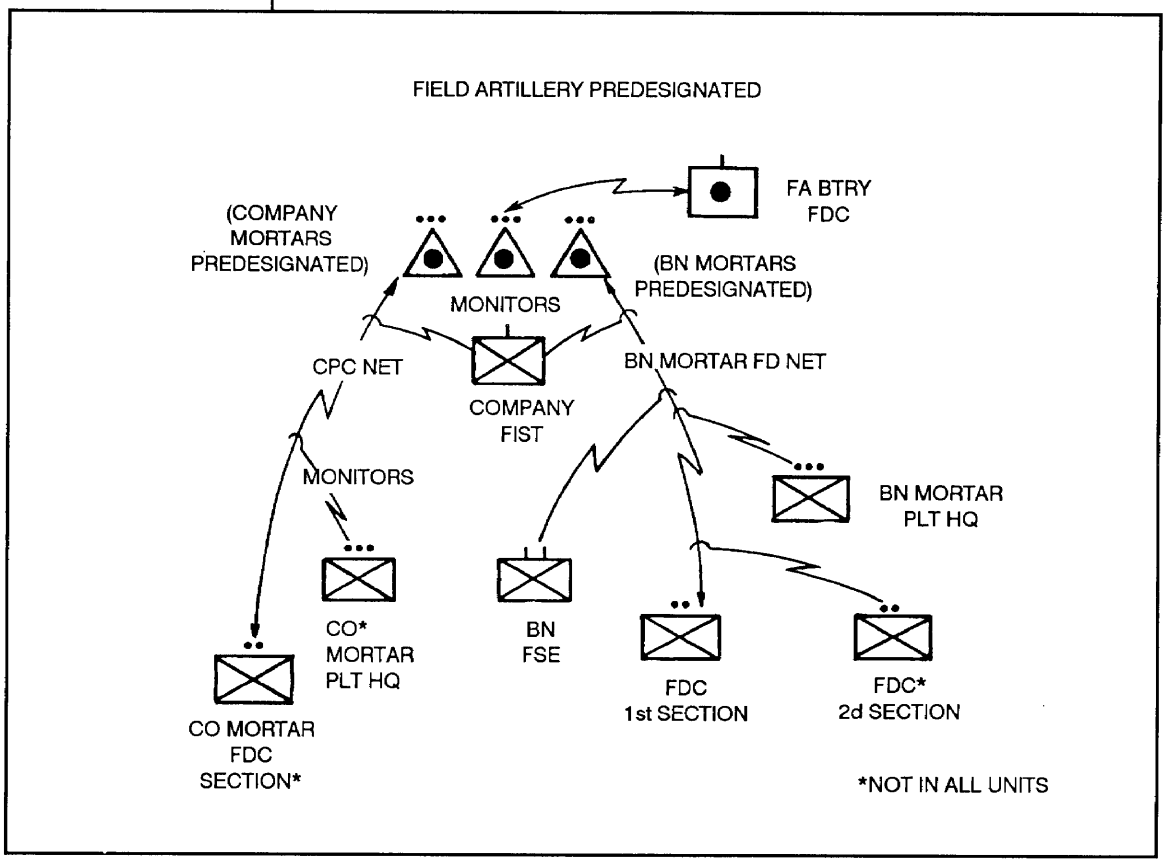



**Figure 3-14. Predesignated method.**

c. FOs do not have to be under the same control options at the same time. The three methods of control by FOs must be tailored to the tactical situation. Normally, a combination of two or more methods are used. In tailoring the use of the three options for controlling the fire support assets and FOs, the commander considers the following items:

(1) Decentralized control requires well-trained FOs.

(2) The platoon requiring the most responsive support should get the mortars.

(3) The platoon with the most difficult mission gets the assets that are effective against targets that he is expected to locate.

(4) The FO that sees the farthest should be able to shoot the farthest.

(5) Each FO must have access to a fire asset.

(6) Personnel other than FOs can be designated to call for mortar fire.

## 3-10. AMMUNITION SUPPLY RATES

The expenditure of mortar ammunition must be controlled based on tactical priorities and ammunition availability. Tactical commanders provide this control by the use of ammunition allocations.

a. **Required Supply Rate.** The battalion or squadron operations officer computes or estimates the type and amount of mortar ammunition needed for a particular combat operation or phase. He then submits these RSRs to the brigade headquarters. The mortar platoon leader assists the operations officer in determining the RSRs. He uses historical records, rate-of-fire computations, or a combination of both. Once the RSR is determined, it is used to plan the transportation requirements for moving the mortar platoon's ammunition from the ATP to the firing location (see Table 3-l).

b. **Controlled Supply Rate.** Due to rapidly changing combat situations and problems that may arise in the logistical system, the actual ASR of mortar ammunition can be less than the RSR. If so, action must be taken to control expenditures. Each tactical commander, down to battalion level, announces a CSR of mortar ammunition, expressed in rounds (by type) per mortar per day. The mortar platoon or section leader considers the CSR during his planning and execution of fires. The CSR cannot be exceeded except in emergencies, and then only by the permission of the next higher commander. It is more combat effective to limit the number of mortar missions fired, firing enough rounds for each mission, than to ration rounds.

(1) When the CSR is small (10 to 20 rounds), the mortar missions should be limited to those that can be observed and can immediately affect friendly troops and operations.

(2) When the CSR is larger (20 to 100 rounds), mortar fire missions can include those that affect planned operations as well as some that involve planned fires without adjustment.

(3) Intense operations against a strong enemy force can generate an RSR of 100 to 300 rounds. If a CSR is imposed, the mortar platoon leader must periodically report his ammunition status to the operations officer and FSO.

| MORTAR UNIT | WEIGHT PER ROUND (APPROX)* | QUANTITY PER CONTAINER | CUBIC VOL* PER CONTAINER | WEIGHT* PER CONTAINER | AMMO WEIGHT* PER THREE MIN PREP** |
|---|---|---|---|---|---|
| 60-mm SEC (2 MORTARS) | 4.5 LBS | 8 EA | 2.0 CU FT | 86 LBS | 800 LBS |
| 81-mm, M29A1, PLT (3 MORTARS) | 9.6 LBS | 3 EA | 1.4 CU FT | 35 LBS | 1,700 LBS |
| 81-mm, M252, PLT (3 MORTARS) | 9.5 LBS | 3 EA | 1.9 CU FT | 45 LBS | 1,800 LBS |
| 107-mm SEC (3 MORTARS) | 27.5 LBS | 2 EA | 1.5 CU FT | 78.5 LBS | 3,000 LBS |
| 107-mm PLT (6 MORTARS) | 27.5 LBS | 2 EA | 1.5 CU FT | 78.5 LBS | 6,000 LBS |
| 120-mm SEC (3 MORTARS) | 33.0 LBS | 2 EA | 2.0 CU FT | 80.0 LBS | 2,400 LBS |
| 120-mm PLT (6 MORTARS) | 33.0 LBS | 2 EA | 2.0 CU FT | 80.0 LBS | 4,800 LBS |

*ALL WEIGHTS AND VOLUMES ARE ROUNDED OFF—ALL APPLY TO HE AMMUNITION.

**THREE MINUTES OF MAXIMUM RATE FIRE BY THE INDICATED *FIRING UNIT*, NOT FOR EACH MORTAR.

**Table 3-1. Weight and bulk of packaged mortar ammunition.**