CHAPTER 8

TYPES OF MISSIONS

All fire missions, except final protective fires, begin with the GRID, SHIFT, or POLAR switches. The needed elements of the fire request are entered into the MBC. The WPN/AMMO switch is used to identify the section and the adjusting piece. The firing data are displayed after pressing the compute switch.

8-1. TECHNICAL FIRE CONTROL

Based on information given in the call for fire, the FDC chief/section leader decides how best to engage the target. Once the FO enters the FFE phase, the MBC operator can use the technical fire control (TFC) switch to engage the target (as directed by the FDC order).

a. The TFC control menu allows the FDC to enter or change information for the following:

Default Values
Sheaf Parallel
Method of Control: Adjust Fire
Weapons to fire: Base piece selected
Registration data: NO
MET data: Standard

b. When all of the defaults are acceptable, the TFC switch is not needed. A brief description of the TFC menu abbreviations and their uses follows:

(1) **SHEAF:PRL** — This is the type of sheaf needed to engage the target. Sheaves selectable within the menu are PRL (parallel), CVG (converge), and SPECIAL.

(2) **CON:AF** — CON stands for control of fires. The multiple choice selections include AF (adjusting fire), FFE (fire for effect), DST (destruction), and REG (registration).

NOTE: In the adjust fire mode, the only weapon shown is the same weapon selected through the WPN AMMO switch. When the operator enters FFE, all assigned available weapons in that section are included in the computation of fire data. When control is FFE or DST (destruction), some weapons (not the adjusting weapon) may be deleted by using correction entry.

(3) **GUNS** — This shows which mortars are available for the designated control of fires. For example, if **AF** appears on the previous screen, the only mortar shown on this display is the piece designated by the MBC operator in the WPN/AMMO menu.

(4) **REG/MET** — If a MET has been entered and made current, this display would show **REG/MET: YES.** This tells the operator that MET or registration corrections will be applied to the target firing data. If the display shows **REG/MET: NO,** there are no corrections applied.

(5) **MET:STD** — This tells the operator what type of MET corrections are used for the fire mission. There are two possible types: STD (standard) and CURR (current).

8-2. SHEAVES

The term *sheaf* denotes the lateral distribution of the bursts of two or more weapons firing at the same target at the same time. The distribution of bursts is the pattern of bursts in the area of the target. Normally, all weapons of the platoon / section fire with the same deflection, charge, and elevation. However, since targets may be of various shapes and sizes and the weapons deployed irregularly, it may be best to adjust the pattern of bursts to the shape and size of the target.

a. Individual weapon corrections for deflection, charge, and elevation are computed and applied to obtain a specific pattern of bursts. These corrections are called *special corrections.* These corrections are computed and applied based on the target attitude, width, length, and adjusting point.

b. When the mortar section or platoon engages a target, different sheaves can be used. The types of sheaves include the parallel, converged, open, standard, and special (see Chapter 4).

(1) When mortars fire a parallel sheaf, the distance between impacts of rounds is the same as the distance between mortars. The mortars all fire using the same firing data. A parallel sheaf is normally used on area targets.

(2) When mortars fire a converged sheaf, the rounds, fired from two or more mortars impact on the same point in the target area. This sheaf is normally used on a point target such as a bunker or a machine gun position.

(3) When mortars fire an open sheaf, the distance between impacts of rounds is half again the distance between mortars. Normally, 8 l-mm and 4.2-inch mortars are 35 to 40 meters apart; thus, in an open sheaf, rounds should land about 60 meters apart. For the 60-mm mortars, which are normally 25 to 30 meters apart, rounds should land about 45 meters apart. All mortars fire using different deflections. The open sheaf is used when the target is slightly wider than the area a standard sheaf would cover.

(4) When mortars fire a standard sheaf, rounds impact within the total effective width of the bursts, regardless of the mortar locations.

(5) When mortars fire a special sheaf, each mortar has a certain point to engage. The mortars may have different deflections, charges, and elevations. This sheaf is normally used in an attitude mission.

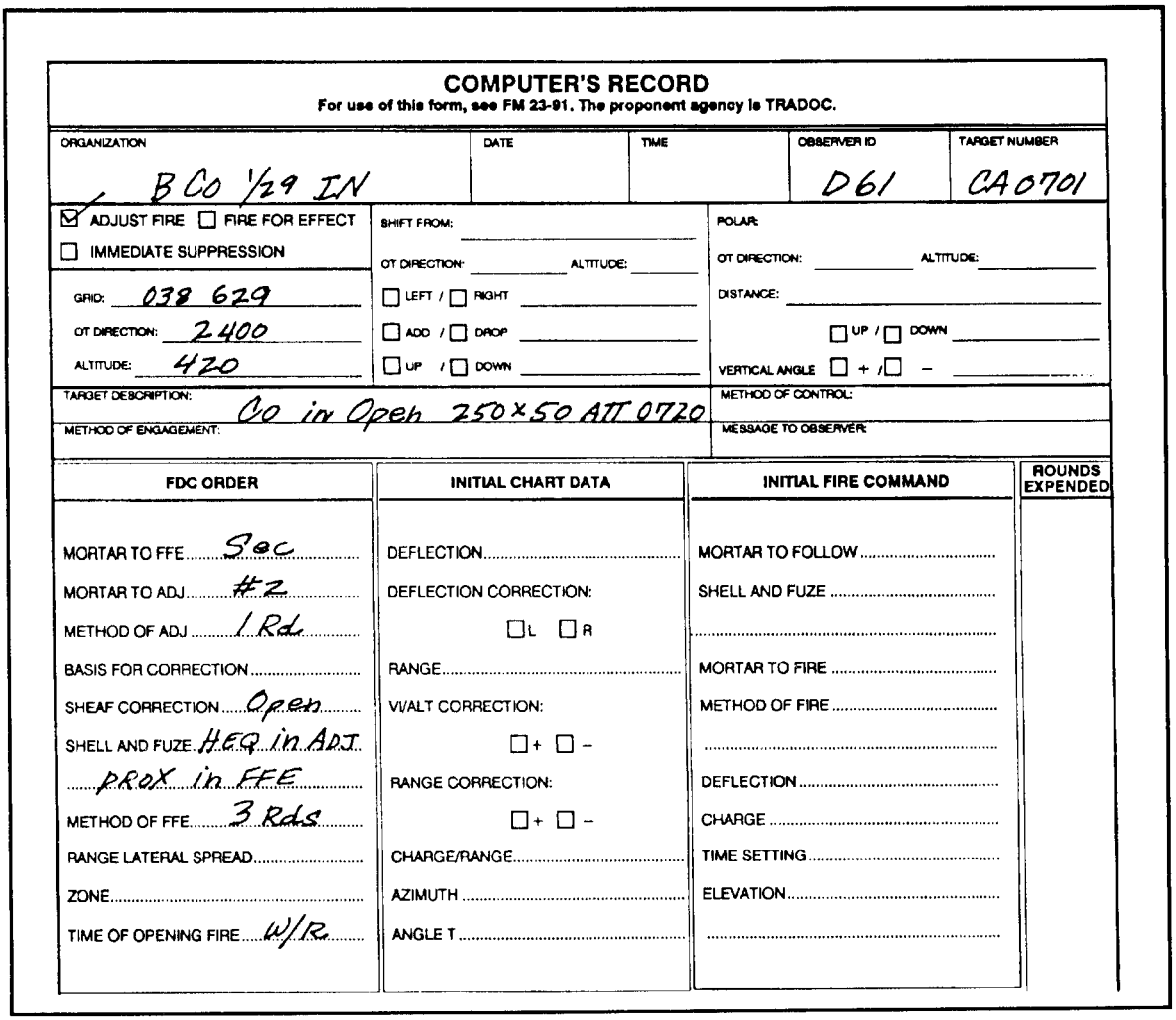
NOTE: When mortars fire an open sheaf or a standard sheaf, the operator must use the special sheaf function and enter the appropriate data to obtain the desired results.

8-3. TRAVERSING FIRE

Mortars use traversing fire when the target is wider than what can be completely engaged by a standard or open sheaf. They engage wide targets using a distributed FFE. Each mortar of the section covers a portion of the total target area and traversing across that area. The mortars are manipulated for deflection between rounds until the number of rounds given in the fire command has been fired.

NOTE: The target attitude should be within 100 mils of the attitude of the mortar section (WPN DATA menu).

a. Upon receiving the call for fire, the section leader/chief computer determines from the size and description of the target that traversing fire will be used to cover the target. He then issues the FDC order (Figure 8-1),



COMPUTER'S RECORD
For use of this form, see FM 23-91. The proponent agency is TRADOC.

ORGANIZATION	DATE	TIME	OBSERVER ID	TARGET NUMBER
B Co 1/29 IN			D61	CA0701

☑ ADJUST FIRE ☐ FIRE FOR EFFECT
☐ IMMEDIATE SUPPRESSION

SHIFT FROM:
OT DIRECTION: ALTITUDE:
☐ LEFT / ☐ RIGHT
☐ ADD / ☐ DROP
☐ UP / ☐ DOWN

POLAR:
OT DIRECTION: ALTITUDE:
DISTANCE:
☐ UP / ☐ DOWN
VERTICAL ANGLE ☐ + / ☐ –

GRID: 038 629
OT DIRECTION: 2400
ALTITUDE: 420

TARGET DESCRIPTION: Co in Open 250×50 ATT 0720
METHOD OF ENGAGEMENT:
METHOD OF CONTROL:
MESSAGE TO OBSERVER:

FDC ORDER	INITIAL CHART DATA	INITIAL FIRE COMMAND	ROUNDS EXPENDED
MORTAR TO FFE: Sec	DEFLECTION:	MORTAR TO FOLLOW:	
MORTAR TO ADJ: #2	DEFLECTION CORRECTION:	SHELL AND FUZE:	
METHOD OF ADJ: 1 Rd	☐L ☐R		
BASIS FOR CORRECTION:	RANGE:	MORTAR TO FIRE:	
SHEAF CORRECTION: Open	VI/ALT CORRECTION:	METHOD OF FIRE:	
SHELL AND FUZE: HEQ in ADJ	☐+ ☐–		
PROX in FFE	RANGE CORRECTION:	DEFLECTION:	
METHOD OF FFE: 3 Rds	☐+ ☐–	CHARGE:	
RANGE LATERAL SPREAD:	CHARGE/RANGE:	TIME SETTING:	
ZONE:	AZIMUTH:	ELEVATION:	
TIME OF OPENING FIRE: W/R	ANGLE T:		

Figure 8-1. Call for fire and FDC order completed.

NOTE: Distribution of mortar fire to cover area targets (depth or width) is computed at one round per 30 meters and four rounds per 100 meters.

b. When using the information in the call for fire, FDC order, and FO corrections, the FDC computes the data to adjust the base mortar (usually the No. 2 mortar) onto the center mass of the target area. He computes the firing data to center mass. The FDC selects the SAFETY DATA switch and records the range and burst point grid coordinate on DA Form 2399 (Figure 8-2.).

COMPUTER'S RECORD
For use of this form, see FM 23-91. The proponent agency is TRADOC.

ORGANIZATION	DATE	TIME	OBSERVER ID	TARGET NUMBER
B Co 1/29 IN			D61	CA0701

☑ ADJUST FIRE ☐ FIRE FOR EFFECT
☐ IMMEDIATE SUPPRESSION

GRID: 038 629
OT DIRECTION: 2400
ALTITUDE: 420

SHIFT FROM:
OT DIRECTION: ALTITUDE:
☐ LEFT / ☐ RIGHT
☐ ADD / ☐ DROP
☐ UP / ☐ DOWN

POLAR:
OT DIRECTION: ALTITUDE:
DISTANCE:
☐ UP / ☐ DOWN
VERTICAL ANGLE ☐ + / ☐ –

TARGET DESCRIPTION: Co in Open 250×50 ATT 0720
METHOD OF ENGAGEMENT:
METHOD OF CONTROL:
MESSAGE TO OBSERVER:

FDC ORDER	INITIAL CHART DATA	INITIAL FIRE COMMAND	ROUNDS EXPENDED
MORTAR TO FFE: Sec	DEFLECTION: 0918	MORTAR TO FOLLOW: Sec	
MORTAR TO ADJ: #2	DEFLECTION CORRECTION:	SHELL AND FUZE: HEQ	
METHOD OF ADJ: 1 Rd	☐L ☐R		
BASIS FOR CORRECTION:	RANGE: 2750	MORTAR TO FIRE: #2	
SHEAF CORRECTION: Open	VI/ALT CORRECTION:	METHOD OF FIRE: 1 Rd	
SHELL AND FUZE: HEQ in ADJ	☐+ ☐–	3 Rd PROX in FFE	
PROX in FFE	RANGE CORRECTION:	DEFLECTION: 0918	①
METHOD OF FFE: 3 Rds	☐+ ☐–	CHARGE: 5	HE
RANGE LATERAL SPREAD:	CHARGE/RANGE: 5	TIME SETTING:	
ZONE:	AZIMUTH:	ELEVATION: 0963	
TIME OF OPENING FIRE: W/R	ANGLE T: 80		

OBSERVER CORRECTION			CHART DATA		SUBSEQUENT COMMANDS						
DEV	RANGE	TIME (HEIGHT)	DEFL	CHARGE (RANGE)	MORTAR FIRE	METHOD FIRE	DEFL	RANGE / CHARGE	TIME (SETTING)	ELEV	
L/20							0960	2750		0963	② HE
	-100						0962	2650		1010	③ HE
	-50	FFE					0963	2600			

Figure 8-2. Example of completed DA Form 2399 for adjustment complete.

c. After the adjustment is complete, the FDC must perform the following procedures:

(1) Divide the target into equal segments by dividing the width of the target by the number of mortars in the FFE.

EXAMPLE

target width = 300 meters
number of mortars in the FFE = 3
300/3 = 100 meters each mortar has to cover.

(2) Determine and apply the modification (either +/- RNG correction or left/right DEV correction). Divide the the segment width (100) by 2 to determine the amount of the modification – for example, 100/2 =50. Use one of the following methods to apply the modification.

(a) Use Table 8-1 to determine the direction (plus or minus) for the modification. As an example, let the GT be 5300 mils, traverse right. Since the GT azimuth falls in the azimuth block of 4901-1499, the modification will be a plus if traversing left and a minus (–) if traversing right. Since the mortars will traverse right, their modification will be –50.

GUN-TARGET AZIMUTH 4901-1499
TRAVERSE LEFT (+) TRAVERSE RIGHT (–)
GUN-TARGET AZIMUTH 1500-1700
ATTITUDE < 1600 TRAVERSE LEFT (–) TRAVERSE RIGHT (+)
ATTITUDE > 1600 TRAVERSE LEFT (+) TRAVERSE RIGHT (–)
GUN-TARGET AZIMUTH 1701-4699
TRAVERSE LEFT (–) TRAVERSE RIGHT (+)
GUN-TARGET AZIMUTH 4700-4900
ATTITUDE < 1600 TRAVERSE LEFT (+) TRAVERSE RIGHT (–)
ATTITUDE > 1600 TRAVERSE LEFT (+) TRAVERSE RIGHT (–)

Table 8-1. Gun-target azimuth chart.

OR

(b) When the FDC finds itself without the GT AZ chart an alternative method of computing for the modification is needed. Therefore, draw the situation to help new FDC personnel develop an understanding of how and why the MBC computes for the traverse data.

EXAMPLE
(Figures 8-3 through 8-5)

Target = 300 x 50 meters
Attitude (TGT) = 0400 mils
GT AZ (DOF) = 5300 mils
Three-mortar section

Guns must be placed so they are using the direction of the target attitude (400 mils). The FDC determines if it needs a plus or minus correction to get to the starting point.

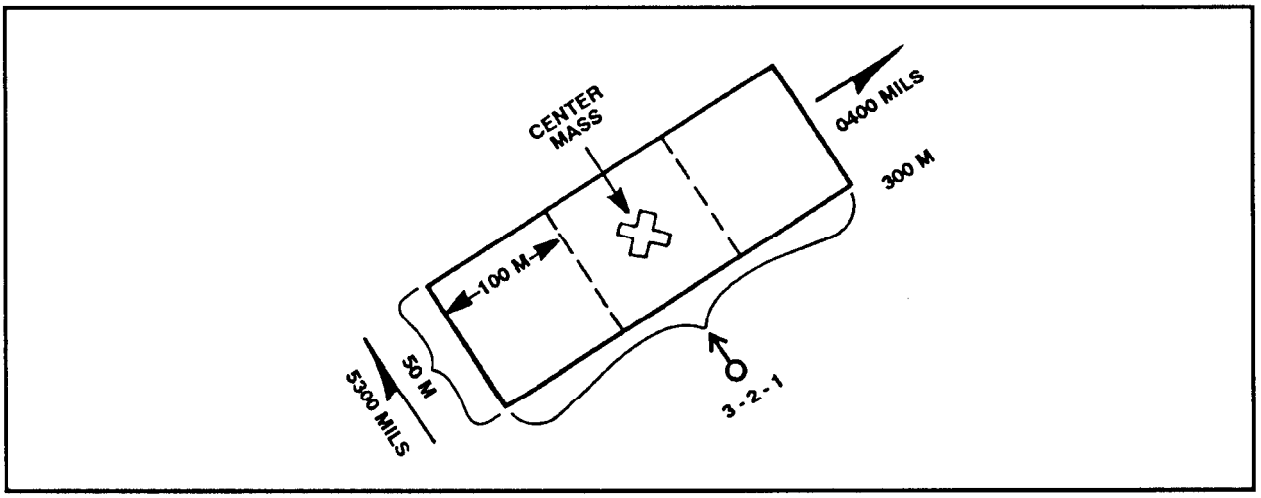


Figure 8-3. Example situation chart number 1.

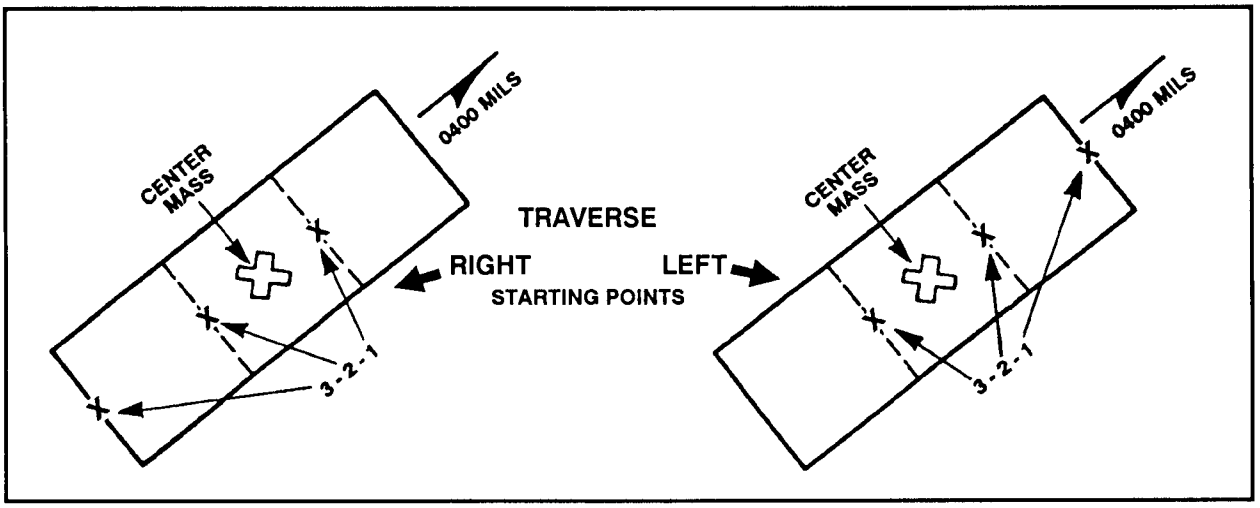


Figure 8-4. Example situation chart number 2 and 3.

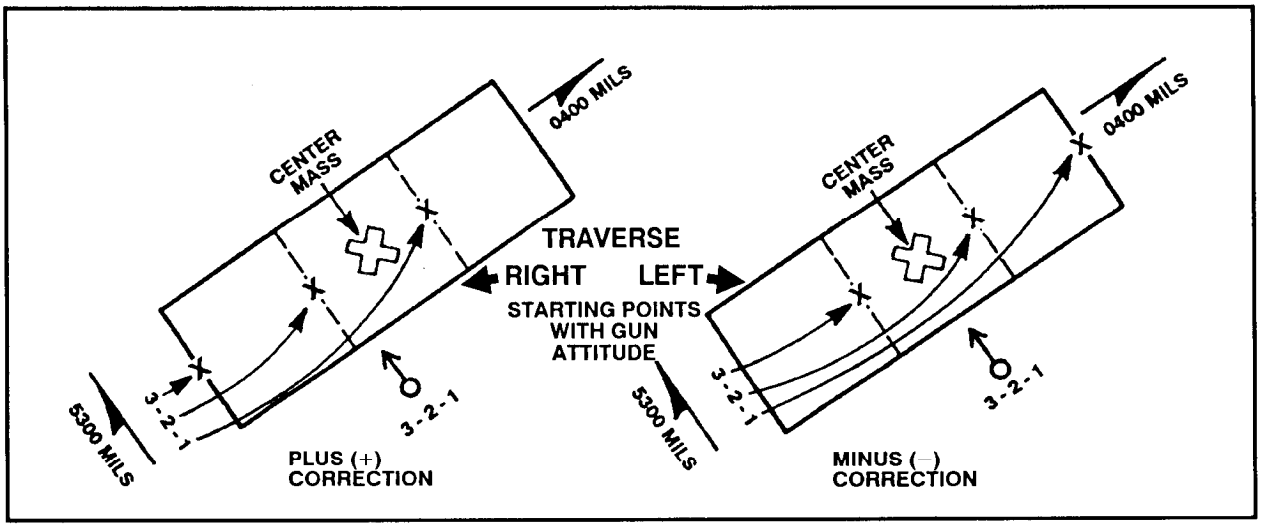


Figure 8-5. Example situation chart number 4 and 5.

OR

(c) Determine the perpendicular to the attitude (add or subtract 1600 mils; use whichever is closer to the final azimuth of fire) and apply the modification as a left or right correction. When computing for firing data using the perpendicular, copy the range and burst point grid coordinate, and the final azimuth of fire.

(d) Add or subtract 1600 mils to the target attitude. Use the answer that comes closer to the final azimuth of fire for the direction correction in the ADJ menu.

(e) Select the ADJ switch and change the direction to the perpendicular azimuth.

(f) Instead of making a range correction as in the previous examples, make a DEV (deviation) correction. This correction is one-half the distance each mortar must cover.

(g) If traversing left, enter a right DEV correction; if traversing right, enter a left DEV correction.

(3) Once the modification (regardless of the method used) has been entered into the ADJ menu of the MBC, press the TFC switch and change or enter the following data:

(a) Change: **SHEAF:PRL** to read **SHEAF:SPECIAL.**

(b) Change: **ADJ PT:FLANK** to read **ADJ PT:CENTER.**

(c) Enter target width (total area to be covered in the call for fire) such as **300** x 50 meters.

(d) Enter target attitude such as **400** mils.

(e) Change: **CON:AF** to read **CON:FFE.**

(f) Press the COMPUTE switch and receive firing data.

(4) Determine the number of rounds for each segment.

EXAMPLE

Assume that the width of the target is 350 meters. Divide the area into equal segments: 350/3 = 116. Each mortar covers 116 meters of the target area. Multiply the even hundred by 4: 1 x 4 = 4. The remainder of the target width (16 meters) is covered by adding one round. Therefore, rounds for each segment equal 5.

(5) Determine the mil width of one segment. If the mil width of one segment is determined, the other segments are the same. Use one of two methods to determine the number of mils for one segment:

(a) In the first method, the start point deflections for all the mortars are given. By comparing the mil difference between either No. 1 mortar and No. 2 mortar or No. 2 mortar and No. 3 mortar (or No. 3 mortar and No. 4 mortar, if available). For example, No. 1 mortar has a deflection of 2719 mils and No. 2 mortar has a deflection of 2773 mils. The mil difference is 54 mils (subtract the smaller from the larger: 2773-2719 = 54 mils).

(b) The second method uses the DCT (Figure 8-6) to determine the mil width of one segment. Enter the DCT at the final range, rounded off to the nearest 100. Go across the deflection-in-meters line to the closest meters to cover the segment. The point at which the range line and the deflection line meet is the number of mils that will cover the segment.

RANGE IN METERS	DEFLECTION IN METERS														
	1	10	20	30	40	50	75	100	125	150	175	200	300	400	500
500	3.0	20	41	61	81	102	152	201	250	297	343	388	550	687	800
600	1.7	17	34	51	68	85	127	168	209	250	289	328	472	599	708
700	1.5	15	29	44	58	73	109	145	180	215	250	284	412	529	632
800	1.3	13	25	33	51	64	95	127	158	189	219	250	365	472	569
900	1.1	11	22	34	45	57	85	113	141	168	195	223	328	426	517
1000	1.0	10	20	31	41	51	76	102	127	152	176	201	297	388	473
1100	.93	9	18	28	37	46	69	92	115	138	161	183	271	355	435
1200	.85	8	17	25	34	42	64	85	106	127	148	168	249	328	402
1300	.79	8	16	23	31	39	59	78	98	117	136	155	231	304	374
1400	.73	7	15	22	29	36	55	73	91	109	127	145	215	283	349
1500	.68	7	14	20	27	34	51	68	85	102	118	135	201	265	328
1600	.63	6	13	19	25	32	48	64	80	95	111	127	189	250	309
1700	.60	6	12	18	24	30	45	60	75	90	104	119	178	235	291
1800	.57	6	11	17	23	28	42	57	71	85	99	113	168	223	276
1900	.54	5	11	16	21	27	40	54	67	80	94	107	160	211	262
2000	.51	5	10	15	20	25	38	51	64	76	89	102	152	201	250
2100	.49	5	10	15	19	24	36	48	61	73	85	97	145	192	238
2200	.46	5	9	14	19	23	35	46	58	69	81	92	138	183	228
2300	.44	4	9	13	18	22	33	44	55	66	77	88	132	175	218
2400	.43	4	8	13	17	21	32	42	53	63	74	85	127	168	209
2500	.41	4	8	12	16	20	31	41	51	61	71	81	122	162	201
2600	.39	4	8	12	16	19	29	39	49	59	68	78	117	155	194
2700	.38	4	8	11	15	19	28	38	47	57	66	75	113	150	187
2800	.37	4	7	11	15	18	27	36	45	56	64	73	109	145	180
2900	.35	4	7	11	14	17	26	35	44	53	61	70	105	140	174
3000	.34	3	7	10	14	16	25	34	42	51	59	68	102	135	168
3100	.33	3	7	10	13	16	25	33	41	49	57	68	98	131	163
3200	.32	3	6	10	13	16	24	32	41	48	56	64	95	127	158
3300	.31	3	6	9	12	15	23	31	39	46	54	62	92	123	153
3400	.30	3	6	9	12	15	22	30	37	45	52	60	90	119	149
3500	.30	3	6	9	12	15	22	29	36	44	51	58	87	116	145
3600	.29	3	6	8	11	14	21	28	35	42	49	57	85	113	141
3700	.28	3	6	8	11	14	21	28	34	41	48	58	82	110	137
3800	.27	3	5	8	11	13	20	27	33	40	47	54	80	107	133
3900	.27	3	5	8	10	13	20	26	33	39	46	52	78	104	130
4000	.26	3	5	8	10	13	19	26	32	38	45	51	76	102	127

Figure 8-6. Example of deflection conversion table.

(6) To determine the number of turns it will take to cover one segment, divide the number of mils for each turn on the traversing hand crank by the mil width of one

segment – for example, 10 (number of mils for each turn) / 54 = 5.4 (rounded off to the nearest one-half turn) or 5 1/2 turns to cover 116 meters.

(7) To compute the number of turns between rounds, the number of rounds to be fired must be known for each segment (FFE). This information is in the FDC order. To determine the turns between rounds, divide the total turns by the intervals (always one less than the number of rounds) between rounds – for example, 5 rounds = 4 intervals; 5.5 (total turns) / 4 (intervals):

5.5 / 4 = 1.3 (rounded to nearest 1/2 turn)
= 1 1/2 turns between rounds

8-4. SEARCHING OR ZONE FIRE

Area targets that have more depth than a standard sheaf covers require that mortars use searching fires to effectively engage these targets. Any target having more depth than 50 meters can be covered by mortars. This is done by either elevating or depressing the barrel during the FFE. In the call for fire, the FO sends the size of the target and the attitude. He gives the width and depth on the attitude of the target. (Attitude is the direction [azimuth] through the long axis of the target.)

a. All mortar systems use *searching fire* with the exception of the 4.2-inch mortar, which uses zone fire to cover the target area. Before determining the search data, the FDC must compute any correction that was sent with the FFE command from the FO. Also, the burst point grid coordinate must be recorded.

(1) Press the ADJ switch and enter the target attitude in place of the direction.

NOTE: Whether searching up or searching down, always determine the firing data for the far edge of the target area first. This saves time if the charge designated at the near edge is different than the one designated at the far edge.

(2) When using *searching fire,* enter an add correction that is half the total target length. This places the mortars on the far edge of the target.

(3) Compute the firing data for the far edge and record the information.

(4) Enter a correction to place the mortars on the opposite edge of the target. The correction to enter will be a drop and the distance will be the entire length of the target area.

(5) Compare the charge needed to hit the near edge with the charge needed to hit the far edge of the target. The charge *must* be the same. If they are not, select the charge designated for the far edge by using the WPN / AMMO menu and recompute the near edge firing data.

(6) Determine the number of turns between rounds by determining the mil distance to cover the target area and by dividing it by 10 (the number of mils in one turn of the elevation hand crank). Round off the answer to the nearest one-half turn. Compute the distribution of mortar fire to cover area targets (depth or width) at one round per 30 meters and four rounds per 100 meters.

(a) Compare the far edge elevation to the near edge elevation and subtract the smaller from the larger.

(b) Divide the mil distance by 10 and round off to the nearest half a turn.

(7) Determine the turns between rounds by dividing the intervals into the turns and by rounding off to the nearest half turn. The intervals are always one less than the number of rounds in the FFE.

b. The 4.2-inch mortar does not fire a search mission the same as the 60-mm, 81-mm, or 120-mm mortars. It does not have the same elevating characteristics as these mortars; therefore, the 4.2-inch mortar uses *zone fire.* The 4.2-inch mortar platoon/section usually fires two standard zones: a 100-meter zone (three rounds for each mortar) for a platoon-size target, and a 200-meter zone (five rounds for each mortar) for a company-size target. A larger zone can be covered by firing more rounds.

(1) *Establishing the 100-meter zone.* Once the FO gives the FFE, the computer proceeds as follows:

(a) Firing without extension. Add and subtract 3/8 charge from the base command charge. (The base command charge is the command charge in the FFE center mass of target.) This gives each mortar three rounds with a different charge on each to cover the 100-meter zone (Figure 8-7).

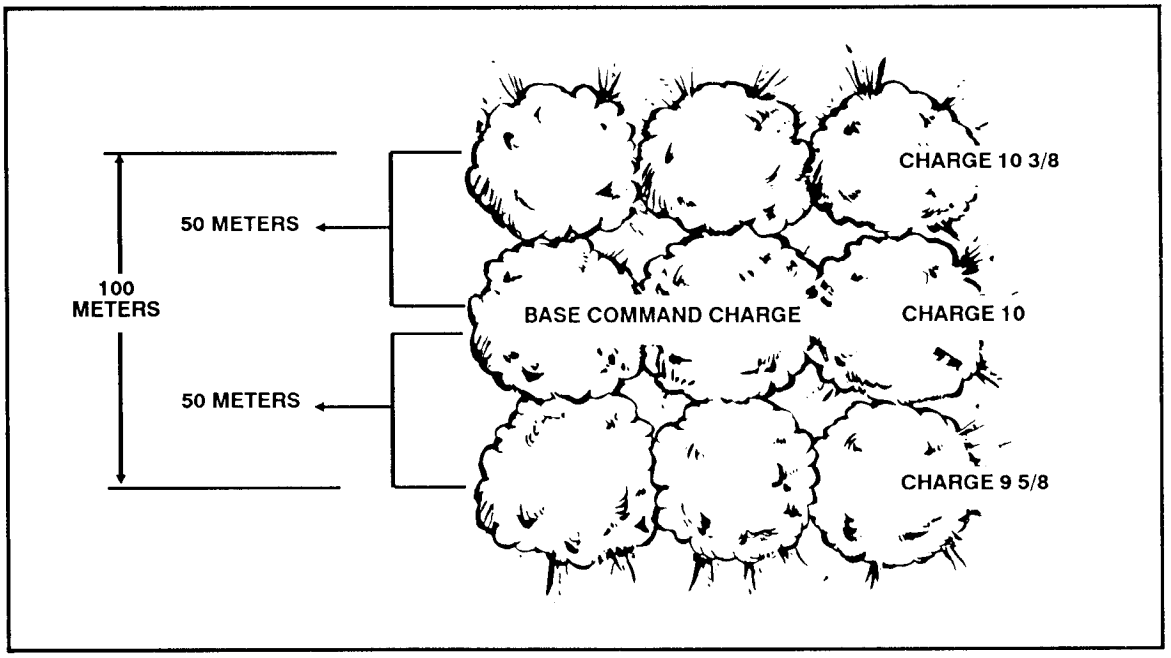


Figure 8-7. Firing 100-meter zone.

(b) Firing with extension. Add and subtract 4/8 charge from the base command charge and use three rounds for each mortar.

NOTE: A 3/8 charge correction to any charge without extension moves the round about 50 meters at any elevation used. A 4/8 charge correction to any charge with extension moves the round about 50 meters at any elevation used.

(c) Firing the 100-meter zone. Once the mortars are up (rounds set for proper charges) and the fire command is given, the rounds are fixed in any sequence — for example, No. 1 fires long, short, center mass; No. 2 fires center mass, short, long.

(2) *Establishing the 200-meter zone.* Once the FFE has been given by the FO, the computer proceeds as follows:

(a) Firing without extension. Add and subtract 3/8 charge from the base command charge for the rounds on either side of the base round and 6/8 charge for the long and short round (Figure 8-8).

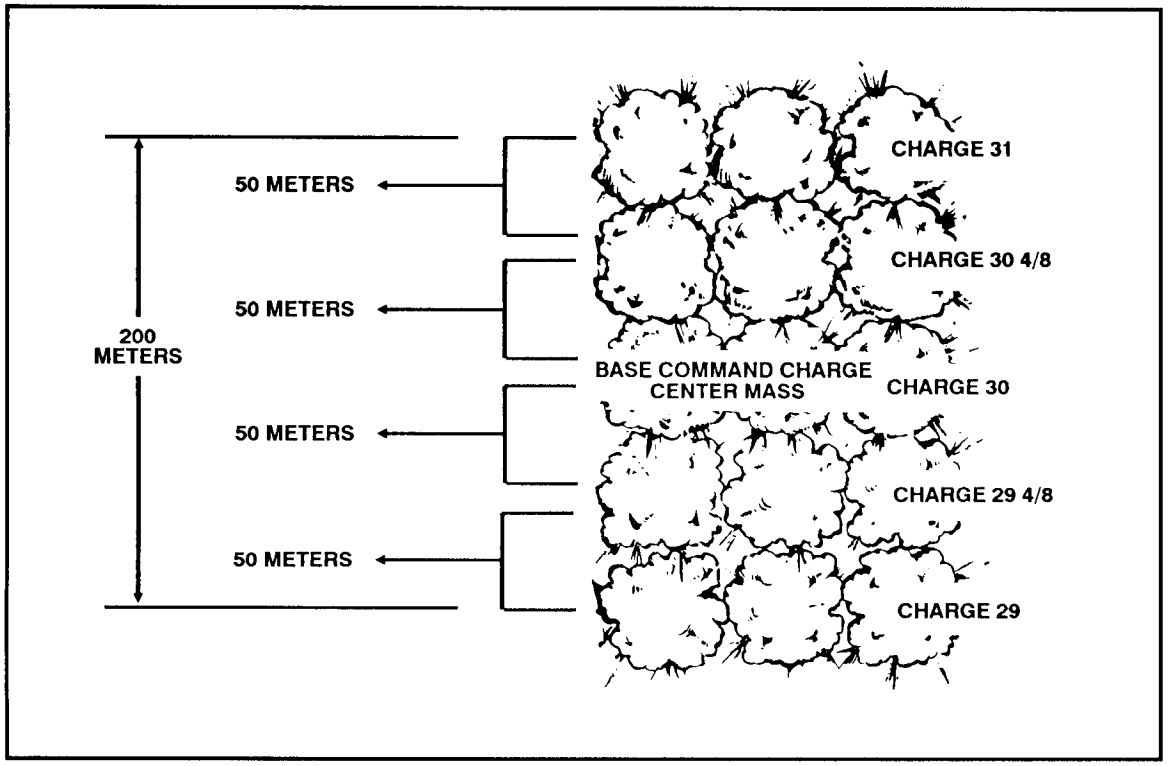


Figure 8-8. Firing 200-meter zone.

(b) Firing with extension. Add and subtract 4/8 charge from the base command charge for the rounds on either side of the base round and a whole charge for the long and short rounds.

(c) Firing the 200-meter zone. The mortars can fire the rounds in any sequence.

NOTE: If a larger zone is needed, use the same procedures, only firing more rounds for each mortar and cutting the charges.

8-5. ILLUMINATION

Illumination assists friendly forces with light for night operations.

a. The FDC routinely obtains firing data. However, the FDC uses one of the flank mortars to adjust the illumination, leaving the base mortar ready to adjust HE rounds if a target is detected.

NOTE: Normally, when a four-mortar section is firing, the No. 4 mortar is used to adjust the illumination, leaving the No. 2 mortar as the base mortar. When the No. 1 mortar is used to adjust illumination, the No. 3 mortar becomes the base mortar.

b. The FO makes range and deviation corrections for illumination rounds in not less than 200-meter increments. He also makes corrections for height of burst (up or down) of not less than 50-meter increments.

c. Multiple mortar illumination procedures are used when single mortar illumination does not light up the area enough. Two mortars are used to fire illumination only when visibility is poor. Two mortars, usually side by side (No. 1 and 2, No. 2 and 3, and so on), fire rounds at the same time at the same deflection, charge, and time setting to provide a large amount of light in a small area. If the FO suspects a large target or if he is uncertain of target location and desires a larger area be illuminated, he may call for illumination: range, lateral, or range-lateral spread .

(1) *Range spread.* Two mortars fire one round each at the same deflection but with different charges so that rounds burst at different ranges along the same line. The spread between the rounds depends on the type of mortar firing the mission. The 4.2-inch mortar rounds have 1,000 meters between bursts, and the 81-mm mortar rounds have 500 meters between bursts. When four mortars are present in the firing section, the No. 2 and No. 3 mortars normally fire the range spread. When firing a three-mortar section, the range spread may be fired with just one mortar, which fires both rounds.

(a) Enter the type of target location called in by the FO into the MBC to initiate the mission. The weapon selected by the FDC in the WPN / AMMO menu (to activate the section) should be one of the mortars that is going to fire the mission.

(b) The initial firing data determined for the mission are center of mass target data. These data are not fired but are used as the starting point for the adjustment of the spread.

(c) Enter the ADJ menu. Use the GT for direction and enter a correction for the first round of the spread. Compute the firing data and record them.

(d) Select the ADJ menu and enter a correction to get the required distance between rounds, which depends on the mortar system being used.

(e) Compute for firing data, record it, and fire the two rounds for the range spread.

NOTE: The two rounds should burst at the same time. The far round must be fired first, with the near round being fired after, at the difference between the time settings.

EXAMPLE

Assume the mortar selected to fire is the No. 2 mortar. Enter the initial target location and determine the center mass data. Next, enter the ADJ menu and give the No. 2 mortar a correction of +500 (for 4.2-inch) or +250 (for 81-mm). Compute these data and record them. Enter the ADJ menu again and make a correction of – 1000 (for 4.2-inch) or –500 (for 81-mm). Compute and record these data.

Using both sets of data to fire the rounds, rounds will burst the desired length (1,000 or 500 meters) between rounds on the GT line.

NOTE: A range spread may be fired using one mortar and firing both rounds – one long and one short.

(2) *Lateral spread.* Two mortars fire one round each at different deflections but with the same charge. Therefore, the rounds burst at the same range along the same attitude.

(a) Using the No. 2 mortar, process the call for fire and determine firing data for center mass.

(b) Using the ADJ menu to enter left and right corrections, use the GT as the direction and enter the first correction.

NOTE: The No. 2 mortar is used for the initial round. The first correction can be either a right or left correction. For example, the first correction for the 4.2-inch mortar is R 500 and the first correction for the 81-mm mortar round is L 250.

(c) Compute for the firing data and copy it down.

(d) Select the ADJ menu and enter the reverse of the first correction the entire distance required between rounds: L/R 1,000 meters for the 4.2-inch or L/R 500 meters for the 81-mm.

(3) *Range-lateral spread.*If the target area is extremely large or if visibility is limited, the FO may call for range-lateral spread. This procedure combines the two methods (Figure 8-9). This results in a large diamond-shaped pattern of bursts. If mortars use the flank mortars for the lateral spread and the center mortar(s) for the range spread, the danger of rounds crossing in flight is removed.

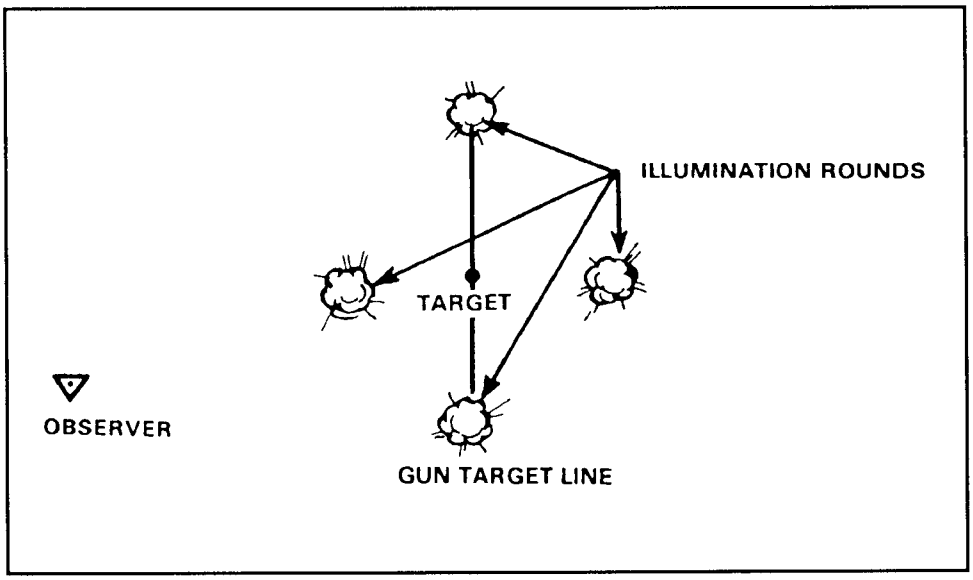


Figure 8-9. Range-lateral spread.