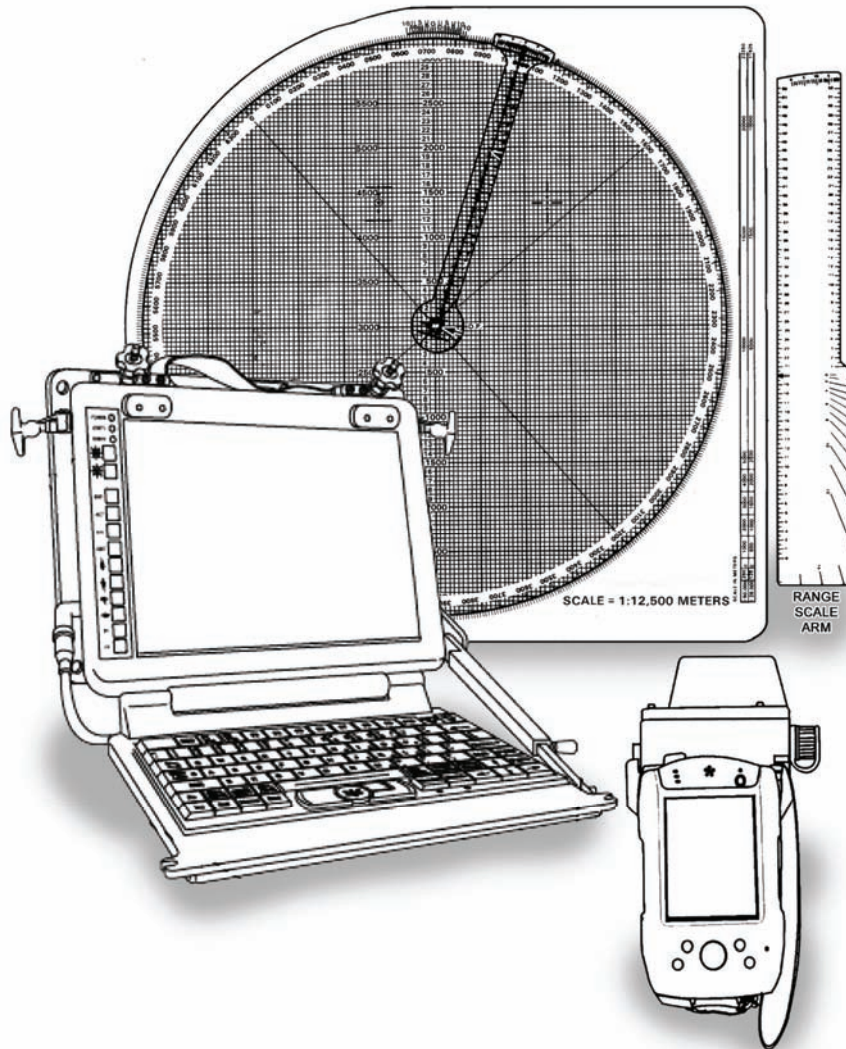


MORTAR FIRE DIRECTION PROCEDURES



July 2008

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Mortar Fire Direction Procedures

Contents

	Page
Preface.....	xix
Part One INTRODUCTION AND FUNDAMENTALS OF MORTAR FIRE CONTROL.....	1-1
Chapter 1 INTRODUCTION.....	1-1
Organization	1-1
General Doctrine	1-1
Indirect Fire Team	1-2
Mortar Positions.....	1-3
Missions and Fire Direction Control Procedures.....	1-4
Fire Control Systems.....	1-6
Chapter 2 FUNDAMENTALS OF MORTAR FIRE DIRECTION	2-1
Section I. Elements of Firing Data and Ballistics.....	2-1
Direction	2-1
Range	2-2
Vertical Interval.....	2-2
Distribution of Bursts	2-2
Interior Ballistics	2-2
Nature of Propellants and Projectile Movements.....	2-2
Standard Muzzle Velocity.....	2-3
Nonstandard Muzzle Velocity.....	2-3
Exterior Ballistics	2-4
Trajectory.....	2-4
Section II. Firing Tables	2-6
Purpose	2-6
Unit Corrections.....	2-6
Standard Range	2-7
Dispersion and Probability.....	2-9
Mean Point of Impact.....	2-10

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	Probable Error.....	2-12
	Section III. Fire Planning	2-14
	Terminology	2-14
	Target Considerations.....	2-16
	Support of Offensive Operations	2-17
	Support of Defensive Operations.....	2-18
	Fire Support Coordination Measures.....	2-19
	Company Fire Support Plan.....	2-20
	Battalion Fire Support Plan.....	2-22
	Section IV. Target Analysis and Attack	2-22
	Target Description.....	2-22
	Registration and Survey Control.....	2-23
	Size of Attack Area	2-23
	Maximum Rate of Fire.....	2-23
	Amount and Type of Ammunition.....	2-25
	Unit Selection	2-26
	Typical Targets and Methods of Attack	2-27
Part Two	FIRE DIRECTION CENTER.....	3-1
Chapter 3	INTRODUCTION	3-1
	Principles of Fire Direction.....	3-1
	Organization.....	3-1
	Personnel Duties.....	3-2
Chapter 4	MAJOR CONCERNS OF THE FIRE DIRECTION CENTER.....	4-1
	Types of Sheaves	4-1
	Computer's Record.....	4-3
	DA Form 2188-R (Data Sheet)	4-9
	DA Form 2188-1-R (LHMBC/MFCS Data Sheet).....	4-14
	Angle T.....	4-17
	Firing Tables	4-19
	DA Form 3675-R (Ballistic Message)	4-22
	Computer Meteorological Message.....	4-36
	6400-Mil Meteorological Message	4-37
	Computation of Meteorological Corrections for Large Sector Capability.....	4-37
	Meteorological Corrections	4-40
Chapter 5	CALL FOR FIRE.....	5-1
	Introduction	5-1
	Observer Identification	5-1
	Warning Order	5-1
	Methods of Target Location	5-2

	Target Description	5-3
	Method of Engagement	5-3
	Methods of Fire and Control	5-4
	Message To Observer	5-6
	Call For Fire Format	5-7
	Authentication	5-8
Part Three	MORTAR BALLISTIC COMPUTER	6-1
Chapter 6	INTRODUCTION	6-1
	Description	6-1
	Audio Alarm	6-11
	Capabilities	6-12
	Memory Storage Capacity	6-13
Chapter 7	PREPARATION OF FIRE CONTROL EQUIPMENT	7-1
	Types of Data Entry	7-2
	Initialization	7-5
Chapter 8	TYPES OF MISSIONS	8-1
	Grid Mission Switch	8-1
	Shift Mission Switch	8-5
	Polar Mission Switch	8-8
	Technical Fire Control	8-11
	Sheaves	8-12
	Traversing Fire	8-13
	Searching Fire	8-20
	Illumination	8-21
	Coordinated Illumination	8-23
Chapter 9	SPECIAL PROCEDURES	9-1
	Registration and Sheaf Adjustment	9-1
	Mean Point of Impact Registration	9-4
	Radar Registration	9-6
	Final Protective Fires	9-8
	Immediate Smoke or Immediate Suppression	9-12
	Quick Smoke	9-13
	Special Keys and Functions	9-19
Chapter 10	DIGITAL DEVICE SUPPORT	10-1
	Application	10-1
	Communications	10-1

Part Four	M16 AND M19 PLOTTING BOARDS	11-1
Chapter 11	INTRODUCTION	11-1
	Capabilities.....	11-1
	M16 Plotting Board	11-2
	M19 Plotting Board	11-4
Chapter 12	PREPARATION OF FIRE CONTROL EQUIPMENT	12-1
	Observed Firing Charts.....	12-1
	Modified-Observed Firing Chart.....	12-13
	Transfer of Targets	12-19
	Deflection Conversion Table.....	12-22
	Grid Mission	12-23
	Shift from a Known Point Mission	12-23
	Polar Plot Mission	12-24
Chapter 13	TYPES OF MISSIONS.....	13-1
	Traversing Fire.....	13-1
	Searching Fire.....	13-8
	Illumination	13-12
Chapter 14	SPECIAL CONSIDERATIONS.....	14-1
	Registration and Sheaf Adjustment	14-1
	Mean Point of Impact Registration.....	14-13
	Vertical Interval Correction Factors	14-17
	Radar Registration	14-19
	Final Protective Fires	14-21
Part Five	MORTAR FIRE CONTROL SYSTEM	15-1
Chapter 15	INTRODUCTION	15-1
	Section I. Initialization and Configuration	15-1
	Description	15-1
	Capabilities.....	15-8
	Soldier Graphic User Interface	15-9
	Data Initialization and System Configuration.....	15-13
	Section II. Additional Functions	15-26
	Ammunition/Status Function	15-27
	Meteorological Data Screen.....	15-32
	Target/Known Point Screen.....	15-36
	Safety Fan Screen	15-39
	Check Fire.....	15-40
	Plain Text Messages.....	15-41
	Alerts Function	15-44

Chapter 16	FIRE MISSIONS	16-1
	Section I. Parts of a Standard Fire Mission	16-1
	Standard Fire Mission Procedures.....	16-1
	Sequence of Actions from the Initial Call For Fire to the End of Mission.....	16-1
	Digital and Manual Fire Mission Tabs and Screens.....	16-2
	Common Actions	16-4
	Section II. Basic Fire Missions	16-5
	Basic Digital Missions.....	16-5
	Manual Missions.....	16-16
	Section III. Special Missions	16-19
	Registration Point	16-20
	Target/Known Point.....	16-22
	Illumination Mission	16-24
	Coordinated Illumination Mission	16-30
	Final Protective Fires.....	16-32
	Smoke Missions	16-43
Part Six	LIGHTWEIGHT HANDHELD MORTAR BALLISTIC COMPUTER	17-1
Chapter 17	INTRODUCTION	17-1
	Section I. Initialization and Configuration	17-1
	Description.....	17-1
	Capabilities	17-3
	Battery Life	17-4
	Graphic User Interface	17-4
	Startup	17-8
	Data Initialization and Configuration.....	17-9
	Meteorological Data.....	17-17
	Safety Fan	17-20
	Check Fire	17-22
	Section II. Communication	17-23
	Cable Connection	17-23
	Parameter Setup	17-24
	Set Up a Unit Address.....	17-26
	Edit a Unit Address.....	17-26
	Enable or Disable a Channel.....	17-27
	Send Status Screen.....	17-28
	Plain Text Messaging	17-28
	Section III. Global Positioning System	17-29
	Setup and Initialization	17-29
	Standby Mode	17-31
	Global Positioning System COMSEC Key	17-31
	Zeroizing the Global Positioning System Crypto Key.....	17-31

Chapter 18	FIRE MISSIONS	18-1
	Section I. Manual Fire Missions.....	18-1
	Grid Missions	18-2
	Shift From a Known Point Missions	18-12
	Polar Plot Missions	18-13
	Laser Polar Plot Missions	18-14
	Quick Fire Missions.....	18-15
	Direct Lay Missions.....	18-16
	Hipshoot Missions.....	18-17
	Targets/Known Points.....	18-21
	Section II. Digital Fire Missions	18-21
	Receipt of the Message	18-22
	Section III. Special Missions	18-33
	Registration Missions.....	18-34
	Illumination Missions.....	18-39
	Coordinated Illumination Missions	18-46
	Final Protective Fires	18-49
	Smoke Missions.....	18-61
	Search and Traverse Missions	18-74
Appendix A	MORTAR TRAINING STRATEGY	A-1
	General	A-1
	Training Evaluation	A-1
Appendix B	ICONS FOR THE MORTAR FIRE CONTROL SYSTEM.....	B-1
Appendix C	SAFETY PROCEDURES	C-1
	Surface Danger Zones.....	C-1
	Safety Diagram	C-4
Appendix D	FIELD-EXPEDIENT SURVEY TECHNIQUES	D-1
	Graphic Resection	D-1
	Hasty Survey.....	D-4
Appendix E	FIRE DIRECTION CENTER CERTIFICATION	E-1
	Section I. Conduct of the Program.....	E-1
	Eligible Personnel	E-1
	Qualification	E-1
	General Rules	E-2
	Section II. Certification	E-2
	M16/M19 Plotting Board Certification	E-2
	Mortar Fire Control System Certification.....	E-3
	Lightweight Handheld Mortar Ballistic Computer Certification	E-4
	Mortar Ballistic Computer Certification	E-5

Section III. Mortar Ballistic Computer Example Test	E-5
Situation A	E-6
Situation B	E-9
Situation C	E-11
Situation D	E-13
Situation E	E-19
Situation F	E-21
Situation G	E-23
Situation H	E-27
Situation I	E-31
Situation J	E-32
Situation K	E-34
Situation L	E-37
Situation M	E-39
Situation N	E-41
Situation O	E-44
Section IV. Plotting Board Test.....	E-46
Situation A	E-46
Situation B	E-47
Situation C	E-54
Appendix F ERROR MESSAGES	F-1
Characters	F-1
Messages, Explanations, and Actions	F-1
Glossary	Glossary-1
References	References-1
Index	Index-1

Figures

Figure 1-1. Indirect fire team.	1-2
Figure 2-1. Direction to the target.....	2-1
Figure 2-2. Elements of the trajectory.	2-5
Figure 2-3. Example of Firing Table 120-E-1.	2-6
Figure 2-4. Mean point of impact.....	2-10
Figure 2-5. Burst in elliptical pattern.....	2-10
Figure 2-6. A 100-percent rectangle.....	2-11
Figure 2-7. Dispersion rectangle.	2-11
Figure 2-8. One probable error.....	2-12
Figure 2-9. Range probability curve.	2-12
Figure 2-10. Probable error in deflection.....	2-13
Figure 2-11. Group of targets.	2-15
Figure 2-12. Series of targets.....	2-15

Figure 2-13. Final protective fires symbol..... 2-16

Figure 4-1. Example of completed DA Form 2399-R (Computer's Record)..... 4-3

Figure 4-2. Example of completed DA Form 2188-R (Data Sheet)..... 4-9

Figure 4-3. Example of completed DA Form 2188-1-R (LHMBC/MFCS Data Sheet)..... 4-14

Figure 4-4. Angle T between 400 and 1600 mils. 4-17

Figure 4-5. Angle T exceeding 499 mils. 4-18

Figure 4-6. Sample pages from firing tables for 60-mm mortar..... 4-20

Figure 4-7. Sample pages from firing tables for 81-mm mortar..... 4-21

Figure 4-8. Sample pages from firing tables for the 120-mm mortar..... 4-22

Figure 4-9. Six-character groups. 4-23

Figure 4-10. Example of completed DA Form 3675-R (Ballistic Message)..... 4-24

Figure 4-11. Example of completed DA Form 3675-R (Ballistic Message)..... 4-25

Figure 4-12. Line number and zone height relative to meteorological data plane. 4-27

Figure 4-13. Example of completed first seven lines for DA Form 3675-R (Ballistic Message)..... 4-28

Figure 4-14. Data guide for DA Form 2601-1-R (MET Data Correction Sheet for Mortars). 4-30

Figure 4-15. Example of completed DA Form 2601-1-R (MET Data Correction Sheet for Mortars). 4-31

Figure 4-16. Sample page from firing table for air temperature and density corrections. 4-32

Figure 4-17. Sample page from firing table for wind components..... 4-33

Figure 4-18. Sample pages from firing table for basic data and correction factors..... 4-34

Figure 4-19. Sample page from firing table for propellant temperature..... 4-35

Figure 4-20. Example of completed DA Form 2601-2-R (MET Data Correction Sheet 6400 mils [Mortars])..... 4-38

Figure 4-21. Example of completed DA Form 2601-2-R (MET Data Correction Sheet 6400 mils [Mortars]) for a full 6400-mil capacity..... 4-39

Figure 4-22. Initial meteorological message. 4-41

Figure 4-23. Second meteorological message. 4-42

Figure 4-24. Updated registration corrections, deflection..... 4-43

Figure 4-25. Updated registration corrections, range..... 4-44

Figure 4-26. Deflection and range corrections. 4-45

Figure 4-27. Example for updating target data. 4-47

Figure 6-1. Mortar ballistic computer. 6-1

Figure 6-2. Initialization switches..... 6-2

Figure 6-3. Action switches..... 6-5

Figure 6-4. Alphanumeric and minus sign keys..... 6-6

Figure 6-5. Fire mission keys..... 6-7

Figure 6-6. Output switches..... 6-9

Figure 6-7. Display switches..... 6-10

Figure 6-8. Light-emitting diode indicators..... 6-10

Figure 7-1. Mortar ballistic computer switch panel. 7-1

Figure 7-2. Declination diagram..... 7-4

Figure 8-1. Excerpt from example DA Form 2399-R (Computer's Record) with call for fire and FDC order completed. 8-14

Figure 8-2. Example of completed DA Form 2399-R (Computer's Record) for adjustment..... 8-15

Figure 8-3. Example situation chart number 1. 8-17

Figure 8-4. Example situation charts numbers 2 and 3. 8-17

Figure 8-5. Example situation charts numbers 4 and 5. 8-17

Figure 8-6. Example of deflection conversion table. 8-19

Figure 8-7. Range-lateral spread. 8-23

Figure 9-1. Determination of a spotting. 9-7

Figure 9-2. Fire direction center order. 9-18

Figure 11-1. Vernier scale. 11-2

Figure 11-2. M16 plotting board. 11-3

Figure 11-3. M19 plotting board. 11-4

Figure 12-1. Preparation of the plotting board. 12-2

Figure 12-2. Superimposition of referred deflection scale under the mounting azimuth. 12-3

Figure 12-3. Determination of the deflection. 12-3

Figure 12-4. Charge versus range chart. 12-4

Figure 12-5. Determination of charge..... 12-4

Figure 12-6. Charge zone and range. 12-5

Figure 12-7. Plotting of observer's correction. 12-6

Figure 12-8. Determination of deflection and range..... 12-7

Figure 12-9. Board updated. 12-8

Figure 12-10. Hollow cross with target number..... 12-8

Figure 12-11. Plotting of mortar position. 12-9

Figure 12-12. Plotting of first round. 12-10

Figure 12-13. Parallel-line plotting..... 12-11

Figure 12-14. Determination of range with edge of DA Form 2399-R (Computer's Record). 12-12

Figure 12-15. Grid intersection to represent pivot point..... 12-14

Figure 12-16. Superimposition of the grid. 12-15

Figure 12-17. Plotting of a mortar position. 12-16

Figure 12-18. First plot. 12-17

Figure 12-19. Replotting of mortar location. 12-18

Figure 12-20. Observed chart. 12-19

Figure 12-21. Forward plotting target to modified-observed chart from the observed chart. 12-20

Figure 12-22. Deflection conversion table..... 12-22

Figure 12-23. Resection. 12-24

Figure 12-24. Intersection. 12-25

Figure 12-25. Direction and distance. 12-26

Figure 12-26. Estimate of range from the reference point of the forward observer's location..... 12-27

Figure 13-1. Example of DA Form 2399-R (Computer's Record) with a completed call for fire and fire direction center order.	13-2
Figure 13-2. Example of DA Form 2399-R (Computer's Record) with completed adjustment.	13-3
Figure 13-3. Plotting of starting points.	13-4
Figure 13-4. Alignment of No. 2 and No. 3 plots.	13-5
Figure 13-5. Example of a completed DA Form 2399-R (Computer's Record) for a completed mission.	13-7
Figure 13-6. Example of completed DA Form 2399-R (Computer's Record) for a search mission.	13-11
Figure 13-7. Fall of rounds during a search mission.	13-12
Figure 13-8. Height of burst line for an M301A3.	13-13
Figure 13-9. FT 81-A1-3, charge 8, used in determination of location of round in relation to the height of burst.	13-14
Figure 13-10. Firing adjustment.	13-16
Figure 13-11. Firing adjustment.	13-17
Figure 13-12. FT 81-A1-3, charge 5, used in determination of location of round in relation to the height of burst.	13-18
Figure 13-13. Firing adjustment.	13-20
Figure 14-1. Splitting of a 50-meter bracket.	14-2
Figure 14-2. Deflection conversion table.	14-3
Figure 14-3. No. 1, No. 3, and No. 4 mortars out of sheaf.	14-4
Figure 14-4. Transfer limits for one registration point.	14-5
Figure 14-5. Multiple transfer limits.	14-6
Figure 14-6. Plotting of rounds.	14-6
Figure 14-7. Example of completed DA Form 2399-R (Computer's Record) for firing a total range correction mission on the surveyed chart.	14-9
Figure 14-8. Example of completed DA Form 2399-R (Computer's Record) for a reregistration.	14-11
Figure 14-9. Example of completed DA Form 2188-R (Data Sheet).	14-12
Figure 14-10. Example of completed DA Form 5472-R (Computer's Record [MPI]).	14-16
Figure 14-11. Altitude correction.	14-18
Figure 14-12. Determination of a spotting.	14-20
Figure 14-13. Application of correction to fire the second round.	14-20
Figure 14-14. Determination of danger mortar.	14-22
Figure 14-15. Example of completed DA Form 2399-R (Computer's Record) for computing final protective fire missions.	14-23
Figure 14-16. Drawing final protective fire symbol with attitude indexed.	14-24
Figure 14-17. Determination of danger mortar.	14-25
Figure 14-18. Plotting of No. 1, No. 2, and No. 3 mortars.	14-26
Figure 14-19. Alignment of each mortar with its impact point.	14-26
Figure 15-1. Mortar Fire Control System.	15-2
Figure 15-2. Commander's interface.	15-4
Figure 15-3. Power distribution assembly.	15-5

Figure 15-4. Pointing device.....	15-6
Figure 15-5. Gunner's display.....	15-6
Figure 15-6. Driver's display.....	15-7
Figure 15-7. Vehicle motion sensor.....	15-8
Figure 15-8. Graphic user interface.....	15-10
Figure 15-9. Log-in screen.....	15-12
Figure 15-10. Unit List screen.....	15-14
Figure 15-11. Unit Configuration screen.....	15-15
Figure 15-12. Data screen.....	15-16
Figure 15-13. Geographic Reference screen.....	15-17
Figure 15-14. Position screen.....	15-18
Figure 15-15. Universal Transverse Mercator Alternate Methods screen.....	15-20
Figure 15-16. Polar Alternate Methods screen.....	15-21
Figure 15-17. Military Grid Reference System Alternate Methods screen.....	15-21
Figure 15-18. Latitude/ Longitude Alternate Methods screen.....	15-22
Figure 15-19. Mounting Azimuth and References screen.....	15-23
Figure 15-20. Channel A screen.....	15-24
Figure 15-21. Ammo By Unit screen.....	15-27
Figure 15-22. Ammo Fire Unit screen.....	15-28
Figure 15-23. Ammo Roll Up screen.....	15-29
Figure 15-24. Status Fire Unit screen.....	15-30
Figure 15-25. New Meteorological Data screen using VMF R5.....	15-34
Figure 15-26. New Meteorological Data screen using VMF PKG 11.....	15-34
Figure 15-27. Current screen.....	15-35
Figure 15-28. Targets screen.....	15-37
Figure 15-29. Known Points screen.....	15-38
Figure 15-30. Safety Fans screen.....	15-40
Figure 15-31. Check Fire screen.....	15-41
Figure 15-32. Plain Text Message Read screen.....	15-42
Figure 15-33. Send screen.....	15-43
Figure 15-34. Alerts screen.....	15-44
Figure 16-1. Mission Data screen.....	16-2
Figure 16-2. New Call for Fire screen.....	16-5
Figure 16-3. Mission Data screen.....	16-6
Figure 16-4. Solution screen.....	16-7
Figure 16-5. Safety Data screen.....	16-8
Figure 16-6. Plot screen.....	16-9
Figure 16-7. Solution screen.....	16-10
Figure 16-8. Mission Status screen.....	16-11
Figure 16-9. Messages screen.....	16-12
Figure 16-10. Mission Data screen.....	16-13

Figure 16-11. End of Mission message	16-14
Figure 16-12. Save Data screen.....	16-15
Figure 16-13. Manual Call for Fire screen.....	16-16
Figure 16-14. Manual Adjust Fire screen.....	16-18
Figure 16-15. Manual End of Mission screen.....	16-19
Figure 16-16. Save Registration screen.....	16-20
Figure 16-17. Registration screen.....	16-21
Figure 16-18. Targets screen.....	16-22
Figure 16-19. Known Points screen.....	16-23
Figure 16-20. New Call for Fire screen.....	16-24
Figure 16-21. Mission Data screen.....	16-25
Figure 16-22. Solution screen.....	16-26
Figure 16-23. Safety Data screen.....	16-27
Figure 16-24. Solution screen.....	16-28
Figure 16-25. Mission Status screen.....	16-29
Figure 16-26. Messages screen.....	16-30
Figure 16-27. New Call for Fire screen.....	16-33
Figure 16-28. Final Protective Fire Mission Data screen.....	16-34
Figure 16-29. Final Protective Fire Solution screen.....	16-35
Figure 16-30. Safety Data screen.....	16-36
Figure 16-31. Solution screen.....	16-37
Figure 16-32. Plot screen.....	16-38
Figure 16-33. Mission Status screen.....	16-39
Figure 16-34. Subsequent Adjust screen.....	16-40
Figure 16-35. Solution End of Mission screen.....	16-41
Figure 16-36. Mission Status screen.....	16-42
Figure 16-37. Messages screen.....	16-43
Figure 17-1. Lightweight handheld mortar ballistic computer.....	17-2
Figure 17-2. Lightweight handheld mortar ballistic computer interface.....	17-3
Figure 17-3. Lightweight handheld mortar ballistic computer graphic user interface.....	17-4
Figure 17-4. Desktop.....	17-5
Figure 17-5. Password screen.....	17-9
Figure 17-6. Setup Geographical Reference screen.....	17-10
Figure 17-7. Minimum easting and northing.....	17-11
Figure 17-8 Locating minimum zone.....	17-11
Figure 17-9 Unit List screen.....	17-12
Figure 17-10 Unit List Add/Edit screen.....	17-13
Figure 17-11. Ammunition screen.....	17-15
Figure 17-12. Ammunition Add/Edit screen.....	17-15
Figure 17-13. Ammunition Roll-Up screen.....	17-16
Figure 17-14. Setup Data screen.....	17-17

Figure 17-15. Met New screen..... 17-18

Figure 17-16. Met Edit Station screen..... 17-19

Figure 17-17. Met New Edit Lines Screen. 17-19

Figure 17-18. Met Current screen. 17-20

Figure 17-19. Safety Fan Segment screen. 17-21

Figure 17-20. Add New Safety Fan Segment screen..... 17-21

Figure 17-21. Lightweight handheld mortar ballistics computer communications connector. 17-23

Figure 17-22. Setup Commo Parameters screen. 17-24

Figure 17-23. Setup Commo Addresses screen..... 17-26

Figure 17-24. Edit Commo Address screen. 17-27

Figure 17-25. Send Status screen..... 17-28

Figure 17-26. Global Positioning System Status screen..... 17-30

Figure 18-1. Manual Missions menu. 18-2

Figure 18-2. Manual grid mission entry..... 18-2

Figure 18-3. Mission Data screen. 18-3

Figure 18-4. Solution/Gun Orders screen. 18-5

Figure 18-5. <Target> screen..... 18-6

Figure 18-6. Safety Data screen. 18-8

Figure 18-7. Subsequent Adjust screen..... 18-9

Figure 18-8. End of Mission screen..... 18-10

Figure 18-9. Ammunition Expended screen..... 18-11

Figure 18-10. Shift Mission screen..... 18-12

Figure 18-11. Polar Mission screen..... 18-13

Figure 18-12. Laser Polar Mission screen. 18-14

Figure 18-13. Quick Fire Mission screen. 18-15

Figure 18-14. Direct Lay Mission screen..... 18-16

Figure 18-15. Direct Lay: first adjustment. 18-17

Figure 18-16. Hipshoot Mission screen..... 18-17

Figure 18-17. Hipshoot Solution screen..... 18-18

Figure 18-18. Hipshoot: Subsequent Adjustment screen. 18-19

Figure 18-19. Hipshoot End of Mission screen. 18-20

Figure 18-20. Targets screen..... 18-21

Figure 18-21. Mission priority icon displayed on the Menu button..... 18-22

Figure 18-22. Call for fire menu selection. 18-22

Figure 18-23. Digital Fire Mission: New Call For Fire screen. 18-23

Figure 18-24. Digital Fire Mission: Mission Data screen..... 18-24

Figure 18-25. Digital Fire Mission: Solution/Gun Orders screen..... 18-25

Figure 18-26. Digital Fire Mission: Message Send Status screens. 18-25

Figure 18-27. Digital Fire Mission: <Target> screen..... 18-27

Figure 18-28. Digital Fire Mission: Mission Status screen..... 18-27

Figure 18-29. Digital Fire Mission: Mission Messages screens..... 18-29

Figure 18-30. Digital Fire Mission: first adjustment. 18-29

Figure 18-31. Digital Fire Mission: final adjustment..... 18-30

Figure 18-32. Digital Fire Mission: Fire for Effect Solution screen. 18-30

Figure 18-33. Digital Fire Mission: selecting Rnds Complete..... 18-31

Figure 18-34. Digital Fire Mission: end of mission message..... 18-32

Figure 18-35. Digital Fire Mission: Select Known Point Number screen..... 18-32

Figure 18-36. Registration: Mission Initialization screen. 18-34

Figure 18-37. Registration: Solution/Gun Orders screen. 18-35

Figure 18-38. Registration: first subsequent adjustment. 18-36

Figure 18-39. Registration: second subsequent adjustment. 18-36

Figure 18-40. Registration: Fire For Effect Solution screen. 18-36

Figure 18-41. Registration: Adjust Sheaf screen..... 18-37

Figure 18-42. Registration: Error and Warnings screen..... 18-38

Figure 18-43. Registration: Save Registration Point screen..... 18-39

Figure 18-44. Illumination: Mission Initialization screen. 18-40

Figure 18-45. Illumination: Targets screen. 18-41

Figure 18-46. Illumination: solution and display of fuze setting. 18-43

Figure 18-47. Illumination: Safety Data screen..... 18-44

Figure 18-48. Illumination: first subsequent adjustment. 18-45

Figure 18-49. Illumination: second subsequent adjustment. 18-45

Figure 18-50. One-gun Illumination Fire For Effect Solution screen. 18-46

Figure 18-51. Coordinated Illumination: Mission Initialization screen. 18-47

Figure 18-52. Coordinated Illumination: Mission Data screen..... 18-48

Figure 18-53. Coordinated Illumination: High-Explosive Solution screen. 18-48

Figure 18-54. Manual Grid Final Protective Fire: Mission Initialization screen..... 18-50

Figure 18-55. Final Protective Fire: Mission Data screen..... 18-50

Figure 18-56. Final Protective Fire: Initial Solution screen. 18-51

Figure 18-57. Final Protective Fire: changing the adjusting gun. 18-52

Figure 18-58. Final Protective Fire: first adjustment..... 18-53

Figure 18-59. Final Protective Fire: A1’s initial adjustment. 18-53

Figure 18-60. Final Protective Fire: A1’s second adjustment and solution. 18-54

Figure 18-61. Final Protective Fire: preparing to adjust the sheaf. 18-55

Figure 18-62. Final Protective Fire: adjusting A2..... 18-56

Figure 18-63. Final Protective Fire: A3’s solution..... 18-57

Figure 18-64. Final Protective Fire: A4’s adjustment solution. 18-58

Figure 18-65. Final Protective Fire: section solution. 18-59

Figure 18-66. Final Protective Fire: changing the fire for effect volleys. 18-59

Figure 18-67. Final Protective Fire: storing the final protective fires. 18-60

Figure 18-68. Quick Smoke: target location information. 18-62

Figure 18-69. Quick Smoke: Mission Initialization screen..... 18-62

Figure 18-70. High-Explosive Adjustment Phase – first solution..... 18-63

Figure 18-71. High-Explosive Adjustment Phase: first adjustment 18-64

Figure 18-72. High-Explosive Adjustment Phase: first adjustment solution. 18-64

Figure 18-73. High-Explosive Adjustment Phase: second adjustment. 18-64

Figure 18-74. High-Explosive Adjustment Phase: second adjustment solution..... 18-64

Figure 18-75. High-Explosive Adjustment Phase: change the method of fire from
adjust to fire for effect. 18-65

Figure 18-76. High-Explosive Adjustment Phase: first confirmation round..... 18-65

Figure 18-77. Smoke Card screen. 18-66

Figure 18-78. Smoke Card example with solution. 18-67

Figure 18-79. Quick Smoke: guns A1, A2, A3, and A4 solutions for the maintaining
phase. 18-68

Figure 18-80. Quick Smoke: End of Mission screen. 18-69

Figure 18-81. Quick Smoke: Ammunition Expended screen. 18-69

Figure 18-82. Immediate Smoke: Mission Initialization screen. 18-70

Figure 18-83. Immediate Smoke: Mission Data screen. 18-71

Figure 18-84. Immediate Smoke: Solution/Gun Orders screen. 18-71

Figure 18-85. Immediate Suppression: Mission Initialization screen. 18-72

Figure 18-86. Immediate Suppression: Mission Data screen. 18-73

Figure 18-87. Immediate Suppression: Solution/Gun Orders screen. 18-73

Figure 18-88. Search and Traverse: Mission Initialization screen. 18-74

Figure 18-89. Search and Traverse: Mission Data screen. 18-75

Figure 18-90. Search and Traverse Sheaf Information screen..... 18-75

Figure 18-91. Search and Traverse Operation screen. 18-76

Figure 18-92. Search and Traverse: initial solution..... 18-79

Figure 18-93. Search and Traverse: first adjustment..... 18-79

Figure 18-94. Search and Traverse: second solution. 18-80

Figure 18-95. Search and Traverse: final adjustment..... 18-80

Figure 18-96. Search and Traverse: fire for effect solution..... 18-81

Figure 18-97. Search and Traverse Round and Hand Wheel Fire Data screen..... 18-82

Figure 18-98. Search and Traverse: End of Mission and Ammunition Expended
screens..... 18-83

Figure C-1. Mortar surface danger zone. C-2

Figure C-2. Effects of vertical interval and crest clearances. C-3

Figure C-3. Basic safety diagram. C-5

Figure C-4. Safety T. C-6

Figure D-1. Three distant points. D-1

Figure D-2. Line drawn in any direction. D-2

Figure D-3. Protractor aligned with correct azimuth..... D-2

Figure D-4. Two more lines drawn from dot..... D-3

Figure D-5. Positioning of tracing paper..... D-3

Figure D-6. Hasty survey..... D-4

Figure D-7. Subtense bar. D-5

Figure D-8. Traverse leg 1..... D-6

Figure D-9. Construction of a diagram..... D-7

Figure D-10. Distance table for a 2-meter subtense bar. D-8

Figure E-1. Situation A (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-7

Figure E-2. Call for fire and FDC order (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-9

Figure E-3. Situation C (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-11

Figure E-4. Situation D: first mission (an example of completed DA Form 3677-R [Computer MET Message]). E-14

Figure E-5. Situation D: second mission (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-15

Figure E-6. Situation E (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-19

Figure E-7. Situation F (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-22

Figure E-8. Situation G: first mission (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-24

Figure E-9. Situation G: second mission (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-25

Figure E-10. Situation H (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-29

Figure E-11. Situation I (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-31

Figure E-12. Situation J (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-33

Figure E-13. Situation K (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-35

Figure E-14. Situation L (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-38

Figure E-15. Situation M (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-39

Figure E-16. Situation N (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-41

Figure E-17. Situation N: second mission (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-42

Figure E-18. Situation B: first mission (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-48

Figure E-19. Situation B: second mission (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-49

Figure E-20. Situation B: third mission (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-51

Figure E-21. Situation B: fourth mission (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-52

Figure E-22. Situation C: first mission (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-55

Figure E-23. Situation C: second mission (excerpt from an example of completed DA Form 2399-R [Computer's Record]). E-58

Tables

Table 1-1. Battalion fire support personnel. 1-3

Table 1-2. Company fire support personnel. 1-3

Table 2-1. Consolidated target list..... 2-21

Table 2-2. Rates of fire for the 60-mm mortar. 2-24

Table 2-3. Rates of fire for the 81-mm mortar. 2-24

Table 2-4. Rates of fire for the 120-mm mortar. 2-25

Table 2-5. Targets and methods of attack. 2-28

Table 2-5. Targets and methods of attack (continued). 2-29

Table 4-1. Types of sheaves. 4-2

Table 4-2. FDC order field titles and information documented in each field. 4-5

Table 4-3. Initial chart data field titles and information documented in each field. 4-6

Table 4-4. Initial fire command field titles and information documented in each field..... 4-6

Table 4-5. Observer correction field titles and information documented in each field. 4-7

Table 4-6. Chart data field titles and information documented in each field. 4-7

Table 4-7. Subsequent command field titles and information documented in each field..... 4-8

Table 4-8. Setup field titles and information documented in each field..... 4-10

Table 4-9. Weapon data field titles and information documented in each field. 4-10

Table 4-10. Forward observer data field titles and information documented in each field. 4-11

Table 4-11. Ammunition data field titles and information documented in each field..... 4-11

Table 4-12. Target identification field titles and information documented in each field. 4-11

Table 4-13. Chart data field titles and information documented in each field. 4-12

Table 4-14. Firing correction field titles and information documented in each field..... 4-12

Table 4-15. Firing data field titles and information documented in each field..... 4-12

Table 4-16. Intelligence field titles and information documented in each field..... 4-13

Table 4-17. Geographical Reference field titles and information documented in each field. 4-15

Table 4-18. Data field titles and information documented in each field. 4-15

Table 4-19. Weapon Data field titles and information documented in each field..... 4-15

Table 4-20. Subscribers field titles and information documented in each field..... 4-16

Table 4-21. Commo field titles and information documented in each field. 4-16

Table 4-22. Character groups in the introduction and their corresponding meanings..... 4-26

Table 4-23. Character groups in the body and their corresponding meanings..... 4-27

Table 4-24. DA Form 2601-1-R (MET Data Correction Sheet for Mortars) field titles and information documented in each field..... 4-29

Table 6-1. Mortars and corresponding ammunition. 6-12

Table 8-1. TFC menu abbreviations and their uses..... 8-12

Table 8-2. Gun-target azimuth chart. 8-16

Table 9-1. Normal final protective fire dimensions, for each number of mortars.....	9-8
Table 9-2. Smoke chart for the 120-mm M929 WP.	9-15
Table 9-3. Smoke chart for the 81-mm M819 red phosphorus.....	9-16
Table 9-4. Message switch entries and related information.	9-20
Table 9-5. Transmit switch entries and related information.....	9-21
Table 9-6. Safety Data switch entries and related information.	9-21
Table 12-1. Replotting of previously fired targets.	12-21
Table 13-1. M16 plotting board data for traversing fire.....	13-1
Table 13-2. Example of illumination adjustment.	13-13
Table 14-1. Plotting of a surveyed registration.	14-2
Table 15-1. Function keys.....	15-3
Table 16-1. Tabs and screens.	16-3
Table 17-1. Battery life expectancy.....	17-4
Table 17-2. Message icons.....	17-7
Table 17-3. Message priorities.....	17-7
Table 17-4. Parameter Setup fields and settings.....	17-25
Table 17-5. Global Positioning System crypto key status and meaning.	17-31
Table 18-1. Grid Mission screen fields and related information.	18-3
Table 18-2. Mission Data screen fields and related information.	18-4
Table 18-3. Solution/Gun Orders screen fields and buttons, and related information.	18-5
Table 18-4. <Target> screen buttons and related information.	18-7
Table 18-5. Safety Data screen fields and related information.....	18-8
Table 18-6. Subsequent Adjust screen fields and related information.	18-10
Table 18-7. End of Mission screen selections and related information.	18-11
Table 18-8. Digital Fire Mission: New Call For Fire screen control buttons and related information.....	18-23
Table 18-9. Digital Fire Mission: Message box fields and purposes.	18-23
Table 18-10. Digital Fire Mission: Send Status screen Message window fields and purposes.....	18-26
Table 18-11. Digital Fire Mission: Mission Status screen fields and buttons, and purposes.....	18-28
Table 18-12. Illumination: additional sheaves and related information.	18-42
Table 18-13. Illumination: two-gun range and lateral spread distances.....	18-42
Table 18-14. Quick Smoke: Mission Data screen fields and related information.....	18-63
Table 18-15. Search and Traverse Sheaf Information screen fields and related information.....	18-76
Table 18-16. Search and Traverse Sheaf Operation screen fields and related information.	18-77
Table 18-17. Search and Traverse types and methods.	18-78
Table 18-18. Search and Traverse Round and Hand Wheel Fire Data screen fields and related information.....	18-82

Preface

This manual provides guidance for military occupational specialty (MOS) 11C Soldiers and their trainers on the employment of the 60-mm mortars (M224), 81-mm mortar (M252), and 120-mm mortar (M120). It discusses the practical applications of ballistics and a system combining the principles, techniques, and procedures essential to the delivery of timely and accurate mortar fire. (See FM 3-22.90 for information about mechanical training, crew drills, and the characteristics, components, and technical data of each mortar.)

This manual is divided into six parts. Part 1 discusses the fundamentals of mortar fire direction; Part 2 summarizes the operational procedures of a fire direction center (FDC); Part 3 describes the capabilities and use of the mortar ballistic computer (MBC); Part 4 describes the capabilities and use of the M16/M19 plotting boards; Part 5 discusses the Mortar Fire Control System (MFCS); and Part 6 discusses the lightweight handheld mortar ballistic computer (LHMBC).

This manual was revised to delete references to obsolete material and systems and add references to new material and systems. In addition to various editorial corrections, this revision—

- Removes all references to M2 and M19 mortar systems, as they are now obsolete.
- Removes all references to M29 and M29A1 mortar systems, as they are now obsolete, except for M29A1 use with the M303 subcaliber insert.
- Adds references to the LHMBC.
- Replaces references to common terms with their accepted modifications.

This publication prescribes DA Form 2188-R (Data Sheet), DA Form 2188-1-R (LHMBC/MFCS Data Sheet), DA Form 2399-R (Computer's Record), DA Form 5472-R (Computer's Record [MPI]), DA Form 2601-2-R (MET Data Correction Sheet 6400 Mils [Mortars]), and DA Form 2601-1-R (MET Data Correction Sheet for Mortars).

This publication applies to the Active Army, the Army National Guard (ARNG)/Army National Guard of the United States (ARNGUS), and the US Army Reserve (USAR) unless otherwise stated.

Terms that have joint or Army definitions are identified in both the glossary and the text. Terms for which FM 3-22.91 is the proponent FM are indicated with an asterisk in the glossary.

Uniforms depicted in this manual were drawn without camouflage for clarity of the illustration. Unless this publication states otherwise, masculine nouns and pronouns refer to both men and women.

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PART ONE

Introduction and Fundamentals of Mortar Fire Direction

Chapter 1

Introduction

The mission of the mortar platoon is to provide close and immediate indirect fire support for maneuver battalions and companies.

ORGANIZATION

1-1. Mortars are organized as part of a company, battalion, and cavalry squadron. They are organized either as sections or platoons in infantry brigade combat team (IBCT) companies and as platoons in tank and heavy brigade combat team (HBCT) battalions. Regardless of the organization to which they belong, mortars have the battlefield role of providing the maneuver commander with immediate indirect fires. Mortars fulfill this mission when all of the elements responsible for placing effective mortar fire on the enemy are properly trained.

GENERAL DOCTRINE

1-2. Doctrine demands the timely and accurate delivery of indirect fire to meet the needs of supported units. All members of the indirect fire team must strive to reduce, by all possible measures, the time required to execute an effective fire mission; they must be thoroughly indoctrinated with a sense of urgency. A key principle of effective training is the use of appropriate doctrine. (See Appendix A for more information.)

1-3. Good observation is required for effective mortar fire. Limited observation results in a great expenditure of ammunition and less effective fire. Every target needs some type of observation to ensure that fire is placed on the target. Observation of close battle areas is usually visual. Radar or sound observation is best used when terrain features hide targets or when great distance or limited visibility is involved. When observation is possible, corrections can be made to place mortar fire on the target using adjustment procedures. Lack of observation, however, must not preclude firing on targets that can be located by other means.

1-4. Mortar fire must be delivered using the most accurate means that time and the tactical situation permit. When possible, survey data will be used to accurately locate the mortar position and target. Under some conditions, only a rapid estimate of the relative location of weapons and targets may be possible.

1-5. To achieve effective massed fires, units should survey the area using accurate maps of mortar positions, registration points (RPs), and targets. The immediate objective is to deliver a large volume of accurate, timely fire to cause as many enemy casualties as possible. Surprise fire often increases the number of casualties inflicted in a target area. If surprise massed fires cannot be achieved, the time required to bring effective fires on the target should be as brief as possible.

1-6. Mortars can inflict the greatest demoralizing effect on the enemy by delivering as many rounds as possible (from all mortars in a section or platoon) in the shortest period of time possible.

1-7. Mortar units must be prepared to handle multiple fire missions. Mortars are area fire weapons, but units can employ them to neutralize or destroy area or point targets, to screen large areas with smoke for sustained periods, to provide illumination, or to provide an immediate, heavy volume of accurate fire for sustained periods.

1-8. In HBCT battalions, units can normally fire mortars from mortar carriers (mortars maintain their ground-mounted capability). This permits rapid displacement and quick reaction to the tactical situation.

INDIRECT FIRE TEAM

1-9. The team mission is to provide accurate, timely response to the unit it supports. Effective communication is vital to the successful coordination of the indirect fire team's efforts. Indirect fire procedures are a team effort (Figure 1-1). They include locating the target, designating the correct asset to fire the mission, determining firing data, clearing indirect surface-to-surface fires, applying data to the mortar, and preparing the ammunition. Since the mortar is normally fired from the defilade position (where the crew cannot see the target), the indirect fire team gathers and applies the required data, and coordinates and synchronizes the fires with the concept of the operation. This team consists of a fire support officer (FSO) in the fires cell (FC), forward observer (FO), a fire direction center (FDC), and mortar squads.

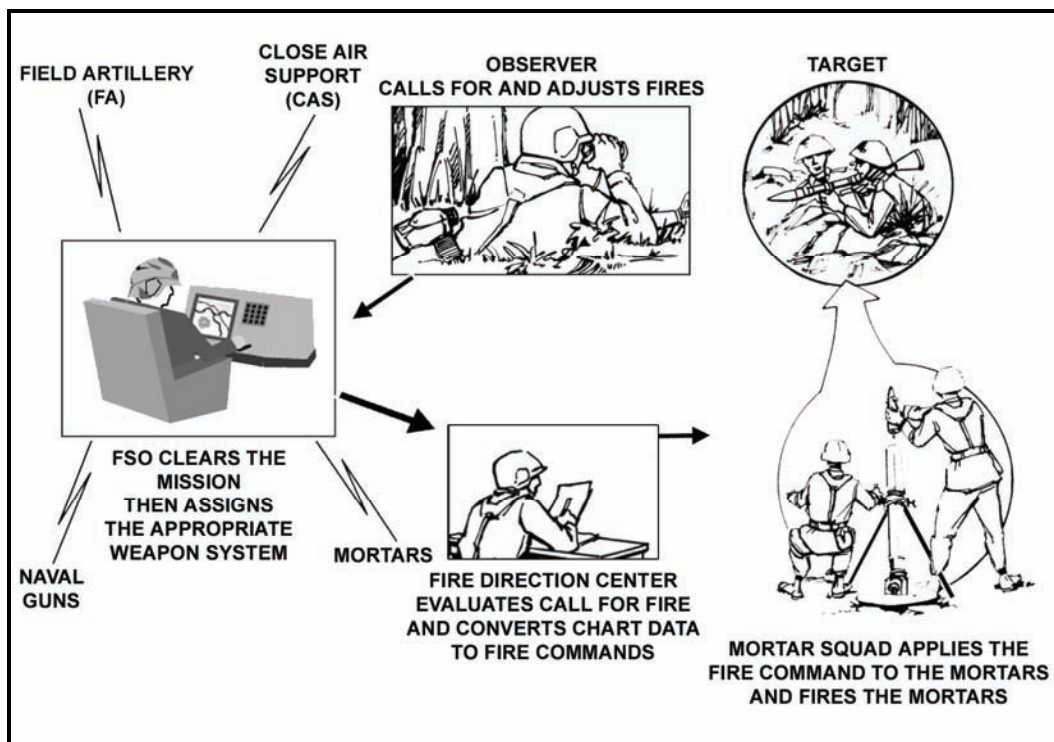


Figure 1-1. Indirect fire team.

1-10. The battalion FSO coordinates and synchronizes fire support for the maneuver battalion. He is in charge of the FC and is the principal fire support advisor to the maneuver battalion commander. The FC is located with the operations element of the maneuver force. The commander is responsible for integrating fire support, but typically delegates planning and supervisory authority for clearing indirect fires for the unit to the FSO. Table 1-1 shows the organization of an FC in support of IBCT and HBCT battalions.