

Chapter 4

Firing Battery Operations

4001. General

Precision, accuracy and timeliness are critical requirements for artillery fires. Constant drill is required to ensure precise operations which lead to necessary accuracy and speed. This chapter and MCWP 3-16.3, Tactics, Techniques, and Procedures for the Artillery Cannon Battery, outlines the techniques and procedures for firing battery operations in a combat environment.

4002. Mission

The mission of the artillery firing battery is to provide timely, accurate fires for the artillery battalion in support of amphibious/land-based MAGTF operations. In MEU operations the artillery firing battery provides timely, accurate fires in support of the GCE.

4003. Duties of Firing Battery Personnel

a. Battery Commander. Under the supervision of the battalion commander, battery commanders (CO) will direct battery operations with responsibilities including, but not limited to the following:

(1) Leading the advance party and conducting Reconnaissance, Selection, and Occupation of Position (RSOP) in accordance with Appendix G and MCWP 3-16.3, Tactics, Techniques, and Procedures for the Artillery Cannon Battery.

(2) Ensuring coordination for survey requirements with higher headquarters or establishing hasty survey as required by the tactical situation or organizational structure.

(3) Directing the layout of positions.

(4) Ensuring survivability and advising the maneuver commander on all matters concerning the employment of artillery fires.

b. Executive Officer. The Executive Officer (XO) commands the firing platoon. He should be fully capable of assuming control of the battery at any moment and should conduct RSOP for the battery whenever the CO is not available. He is located where he can best

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1 control operations of the battery (with assistance from the Battery Gunnery Sergeant). He
2 supervises and coordinates all logistical and maintenance efforts, including the distribution of
3 all classes of supply. He is the primary liaison between the battery and all logistical support
4 agencies. During occupations he is responsible for verifying the lay of the battery and will
5 ensure the accurate computation of XO's Min QE. The XO is ultimately responsible for the
6 overall establishment and supervision of the plan for battery defense. At all times during firing
7 he will direct howitzer operations and consult with the FDO concerning ammunition
8 management. During displacement he leads the main body to the next firing position. The XO
9 is guided in the performance of his duties by MCWP 3-16.3, Tactics, Techniques, and
10 Procedures for Cannon Battery.

11
12 **c. Liaison Officer.** The Liaison Officer (LNO) serves as the battery CO's
13 representative and artillery/fire support advisor to the supported maneuver battalion. Primary
14 duties include keeping the artillery battalion/battery informed of the maneuver battalion's plans
15 and monitoring/controlling the forward observer (FO) teams. He also participates directly in
16 fire support planning and must constantly be aware of the location and situation of the artillery
17 battalion and batteries. The LNO is guided in the performance of his duties by MCWPs 3-16,
18 Tactics, Techniques, and Procedures for Fire Support Coordination and MCWP 3-16.6,
19 Supporting Arms, Observer, Spotter, and Controller.

20
21 **d. Fire Direction Officer.** The Fire Direction Officer (FDO) is responsible for the
22 training and supervision of the fire direction personnel. He will ensure the accurate
23 computation of firing data for the engagement of targets based on commander's guidance,
24 attack criteria, and the tactical situation. He will maintain a situation map to reflect battlefield
25 geometry and the current enemy situation. He is responsible for eliminating the potential of
26 fratricide by clearing intermediate crests along the gun-target line. The FDO is guided in the
27 performance of his duties by MCWP 3-16.4, Artillery Manual Cannon Gunnery and MCWP 3-
28 16.3, Tactics, Techniques, and Procedures for the Artillery Cannon Battery.

29
30 **e. Assistant Executive Officer.** The Assistant Executive Officer (AXO) assists the
31 CO during RSOP and advance party operations during which he sets up and orients the lay
32 circle using the most preferred method available. In the absence of the CO the AXO will
33 select the location for the battery operations center (BOC). Once the battery occupies and has
34 been laid by the XO, he will assist the XO in the general supervision of the battery position.
35 The AXO will serve as the FDO in the BOC. The AXO is guided in his duties by MCWP 3-
36 16.3, Tactics, Techniques, and Procedures for the Artillery Cannon Battery.

37
38 **f. First Sergeant.** The First Sergeant is the senior enlisted advisor to the CO. He will
39 assist and supervise the establishment of local security during RSOP procedures and the battery
40 plan for defense. He advises the CO on administrative matters and the enlisted members of the
41 battery. The First Sergeant is guided in the performance of his duties by FMFM 3-1,
42 Command and Staff Action and MCWP 3-16.3, Tactics, Techniques, and Procedures for the
43 Artillery Cannon Battery.

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1 **g. Battery Gunnery Sergeant.** The Battery Gunnery Sergeant is the primary expert
2 on artillery matters. He be prepared to assume the duties of the XO if required. He will assist
3 the XO in the overall establishment and supervision of the plan for battery defense. The
4 Battery Gunnery Sergeant is guided in the performance of his duties by the duties assigned to
5 “Chief of Firing Battery” in MCWP 3-16.3, Tactics, Techniques, and Procedures for the
6 Artillery Cannon Battery.

7
8 **h. Operations Chief.** The Operations Chief (Ops Chief) is the technical expert and
9 trainer within the FDC. He ensures that all equipment is on hand and operational, all
10 appropriate records are maintained, and supervises the computation of all firing data. He is
11 responsible for the fire control map to include the current location of friendly units and fire
12 support coordinating measures. He ensures the smooth performance of the FDC and functions
13 as the FDO in his absence. MCWP 3-16.3, Tactics, Techniques, and Procedures for the
14 Artillery Cannon Battery.

15
16 **i. Motor Transport Chief.** The Motor Transport Chief is responsible for all vehicle
17 support and maintenance for the battery. He advises the CO/XO on convoy formations and
18 procedures as well as the positioning of ring-mounts. Whenever possible he should develop
19 strip maps to orient drivers and key personnel prior to movement. Additionally, he ensures
20 vehicles are operational and routine maintenance is performed.

21
22 **j. Ammunition Chief.** The ammunition chief reports directly to the Battery XO for
23 guidance. He is responsible for ensuring the correct amount of ammunition is received and
24 delivered to howitzer sections as directed. He must work in concert with the XO to ensure
25 adequate ammunition is available and project future requirements based on the current
26 operational tempo.

27
28 **k. Local Security Chief.** The Local Security Chief is responsible for recommending
29 the local security efforts of the battery. He trains and supervises personnel in the use and
30 employment of crew-served weapons. He accompanies the CO on RSOP and leads security
31 sweeps by the advance party. When in position, he generates the defensive diagram and
32 ensures it is reviewed by the XO and forwarded to battalion for integration with battalion
33 defensive plans. The Local Security Chief is guided in the performance of his duties by
34 MCWP 3-16.3, Tactics, Techniques, and Procedures for the Artillery Cannon Battery.

35
36 **l. Communications Chief.** The Communications Chief is the principle advisor to the
37 CO for all communications matters. He is responsible for establishing and maintaining battery
38 wire diagrams and radio communications. He will provide a representative for the advance
39 party who is proficient in advising the CO on communications sites. Additionally, he will train
40 all communications personnel on establishing, protecting, repairing, and recovering internal
41 battery and section wire.

42
43 **m. Howitzer Section Chief.** The Howitzer Section Chief is responsible for
44 maintenance, training, and safe operation of his howitzer section. He is an expert in the safe
45 operation and employment of the howitzer, to include: maintenance, handling of ammunition,

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1 local security, convoy operations, navigation, direct fire to include the M-2 and M240G
2 machine-guns, MK-19 and emergency actions to include the emergency destruction of his
3 howitzer and prime mover. Howitzer Section Chiefs are guided in the performance of their
4 duties by the appropriate TM for his weapon and MCWP 3-16.3, Tactics, Techniques, and
5 Procedures for the Artillery Cannon Battery.
6
7

8 4004. Advance Party Operations

9
10 This paragraph, used in conjunction with Appendices D and E, provides guidelines for
11 conducting advance party operations.
12

13 a. Personnel Composition

- 14
- 15 • CO
- 16 • AXO
- 17 • Battery First Sergeant
- 18 • Designated number of complete howitzer sections.
- 19 • Local security chief
- 20 • FDC representative
- 21 • Communications representative
- 22 • One wireman.
- 23 • One ground guide for each howitzer.
- 24 • One man NBC monitor/survey team (AXO is assigned the duties of NBCD O).
- 25 • One corpsman
- 26 • BOC personnel.
- 27 • Mechanic
- 28 • Appropriate number of drivers.
- 29

30 b. Advance Party Tasks

31
32 (1) The advance party convoy will halt 100-200 meters prior to the new position and
33 dismount the security force. NBC monitor/survey team moves with the lead element of
34 security force. Upon reaching the outer perimeter of the new position, the team commences
35 NBC survey procedures. Upon completion of NBC survey, the results and established MOPP
36 level for the new position will be transmitted to the battery FDC.
37

38 (2) Conduct a security sweep of the new position to secure outside perimeter.
39

40 (3) Concurrently, position MK-19 along the most likely high speed avenue of
41 approach and position of M2 machine-gun along the long axis covering the new position.
42

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1 **(4)** Once the position is secure, the CO with the assistance of the local security
2 chief, will select positions for each howitzer, the FDC, the antenna farm, and the battery's
3 logistics elements. The acronym **SPEARR** may be utilized to assist in the conduct of the
4 advance party.

- 5
- 6 • **Security** – A security sweep of the position is conducted.
- 7 • **Position** – Positioning of the battery's assets will be determined by the CO or local
8 security chief. Gun guides will tape and stake their firing positions and ensure
9 howitzer marking stakes are placed appropriately (with M14 pantel light on at
10 night).
- 11 • **Establish Communications** – Wire communications are established within the
12 position using DR-8s and H-200s. Hand and arm communications or radio
13 communications may be used as a back-up.
- 14 • **Azimuth of Fire/initial deflection, subtense, and VA** – Once comm is established,
15 ground guides report to the aiming circle to receive initial deflection.
- 16

NOTE: The establishment of communications should not delay this procedure. Voice or hand
and arm signals should be used as a back-up.

- 17
- 18 • **Record** – Ground guides record initial deflection.
- 19 • **Recon** – Ground guides walk their track plan from howitzer position to pick-
20 up/release point and await main body arrival.
- 21

22 **(5)** Once each position has been established, priority of work is:

- 23
- 24 • Determine location of orienting station.
- 25 • Ground guides prepare individual howitzer positions and set in marking
26 stakes with tape to visually depict azimuth of fire on the ground. When
27 composition of advance party includes howitzer sections, focus of effort
28 will be to lay the howitzers while the remaining howitzer ground guides
29 prepare their respective positions.
- 30 • Establish firing capability (if accompanied by howitzers).
- 31 • Begin developing local security plan.
- 32 • Establish battery wire communications.
- 33 • Set up and orient aiming circle. Give initial deflection to each gun guide.
34 Determine subtense and vertical angle to each howitzer. The FDC
35 representative determines howitzer position coordinates, direction, and
36 distance from the orienting station.
- 37 • Establish radio communications with higher headquarters.
- 38 • Select alternate and supplementary positions.
- 39 • Call the main body forward (if required).
- 40 • Begin position improvement.
- 41
- 42

4005. Movement of the Main Body

Displacements may be directed by higher headquarters or by the CO, depending upon whether control is centralized or decentralized. In all cases, the battery must promptly submit a DISREP to its immediate, higher headquarters when displacing. Units must develop and rehearse procedures for control measures, immediate action and signals to improve tactical march techniques. Refer to MCWP 3-16.3, *Tactics, Techniques, and Procedures for the Artillery Cannon Battery* and Appendices D and E of this publication.

a. Planning the Move. The CO must determine which of the four methods of march to utilize, based on the tactical situation. The four methods are outlined in Appendix D and include:

- Open column
- Close column
- Infiltration
- Terrain march

b. The XO conducts his movement order brief in accordance with ST 6-50-20 (XO's Handbook), the FDO, Gunnery Sergeant, section chiefs, motor transport chief, communications chief, ammo chief, and all remaining vehicle operators.

c. Employ Adequate Security Measures. Adequate security measures include, but are not limited to:

(1) Concealment along the route

(2) Air sentries posted. The convoy's direction of movement will be established as 12 o'clock.

- A-drivers will be responsible for the ten to two o'clock sector
- The two Marines located at the rear of each vehicle will cover the two to six and six to ten o'clock sectors.
- With five ton trucks equipped with a mounted M2 machine-gun or MK-19, the A-driver will cover a 360 degree sector.

(3) Distribution of machine-guns and ring mounts throughout the convoy.

(4) NBC detecting and monitoring equipment (located with the lead howitzer section).

- Light/noise discipline
- NVGs
- Dispersion

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1
2 **d. Other Considerations**

3
4 **(1)** Disperse key personnel throughout the convoy with radios for adequate control
5 and to provide enhanced survivability.

6
7 **(2)** The motor transport chief, a mechanic, and a truck without a towed load will be
8 posted at the rear of the column.

9
10 **(3)** Normally a corpsman will be located in the convoy (this is typically the Battery
11 Gunnery Sergeant's vehicle).

12
13 **e. Conducting the Move.** These specific checks should be conducted prior to the
14 move:

15 **(1)** Ensure the order of march is known by everyone.

16 **(2)** Ensure vehicles are operationally safe and have adequate fuel prior to departure.

17
18 **(3)** Establish communications on battery command/convoy frequency.

19
20 **(4)** Employ vehicle guides to lead vehicles through terrain, occupied positions, or
21 when backing up.

22 **(5)** Upon the XO announcing close station march order (CSMO), the battery
23 sections will accomplish the following:

- 24
25
 - 26 • Strike nets.
 - 27 • Load all section equipment onto the section vehicle(s).
 - 28 • Op-check vehicle(s).
 - 29 • Account for all personnel, section equipment and weapons.
 - 30 • Prepare for movement; movement will be initiated by the XO's vehicle
 - 31 departing the position. All vehicles will follow, in the prescribed march
 - 32 order, from their individual locations within the position.

33
34 **(6) Enforce march discipline.** The following are examples of march discipline and
35 are outlined in Appendix D.

- 36
 - 37 • Keep moving
 - 38 • Relay all signals
 - 39 • Light/noise discipline
 - 40 • Convoy speed
 - 41 • Maintain vehicle interval
 - 42 • Marines are alert with weapons outboard
- 43
44

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- Wear helmet/flak jackets

(7) Continually estimate location while on the move by using odometer, terrain features, route markers, check points, PLGR, etc.

4006. Position Occupation

In order to ensure a smooth and rapid occupation of a battery position it is critical to establish and follow a priority of work. The following is one recommended priority of work list.

a. **Establishing the Position.** Priorities for the development of the firing position are:

(1) Establish fire capability

- Orient howitzers
- Establish inner battery communications
- Distribute ammunition
- Establish communications with the Battalion FDC (if applicable)

(2) Camouflage equipment

(3) Develop battery defensive plan

- Machine-gun and individual positions
- Location of LPs and Ops
- Anti-armor team positions
- Establish communications
- Develop the defensive diagram and range cards

(4) Protection of personnel and harden equipment

(5) Preparation of the alternate and supplementary positions

- The priorities for the development of the position will happen, in most cases, simultaneously.
- The improvements of the position, to include camouflage, is continuous throughout the occupation of the position and progresses at a rate compatible with operations.
- The factors of METT-T will determine the positioning of howitzers in a position.
- MCWP 3-16.3, *Tactics, Techniques, and Procedures for the Artillery Cannon Battery*, outlines the considerations for positioning the howitzers.

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1 **b. Laying the Battery.** Each officer in the battery and the Gunnery Sergeant will be
2 qualified to lay the battery. However, ideally all SNCOs will have the ability to lay the
3 battery.

4
5 (1) The lay methods in order of preference are:

- 6 • Orienting angle.
- 7 • Grid azimuth.
- 8 • M2 compass.
- 9 • Aiming point-deflection.
- 10 • Howitzer back-lay.

11
12
13 (2) The lay of the battery will be verified upon initial occupation.

14
15 (3) Aiming points and alternate aiming points will be employed as prescribed within
16 appropriate operators manuals and may differ with terrain.

17
18 (4) The acronym TLASBAPP (trails, lay, aiming point, site to crest, boresight,
19 azimuth markers, prefire checks, and position improvement) will be used to govern
20 occupations (see MCWP 3-16.3, *Tactics, Techniques, and Procedures for the Artillery*
21 *Battery*). As appropriate, the XO will have the gunners emplace alternate aiming points and
22 refer to a distant aiming point, if one is available. The section chiefs will record the piece
23 deflections to the alternate and distant aiming points on their gunner's reference card for future
24 reference.

25
26 **c. Minimum Quadrant Elevation.** The XO is responsible for determining the lowest
27 QE that can be safely fired from his firing position and will ensure projectiles clear all visible
28 crests. The XO will utilize the rapid firing tables in ST 6-20-20 as long as the sum of angle 1
29 and angle 2 does not exceed 300 mils. If the sum of angle one and angle two exceeds 300
30 mils, the XO will compute his minimum quadrant elevation as demonstrated in MCWP 3-16.3,
31 *Tactics, Techniques, and Procedures for the Artillery Cannon Battery*.

32
33 **d. Location of Prime Movers and Section Equipment.** Prime movers will ordinarily
34 be collocated with their howitzers in individual gun positions. However, factors of METT-T
35 may dictate that prime movers be staged in a secure area away from the gunline.

36 37 38 **4007. Local Security and Patrolling**

39 Refer to Appendix E of this publication

40 41 42 43 44 **4008. Fire Direction**

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1
2 The FDC will operate with the BCS as the primary means for technical fire direction and will
3 maintain a back up capability. Gun Display Units (GDUs) will be used by all howitzers to
4 receive fire commands from the FDC; voice commands will be used as back up.

5
6 **a. Firing Battery Procedures with the BCS.** In conjunction with the digital wire link
7 established between the BCS and the howitzer GDUs, a separate voice wire link will be
8 established between the FDC, the howitzers, and the BOC. An additional voice wire link will
9 be established solely between the FDC and BOC. Prior to the transmission of digital or voice
10 firing data to the gunline, all firing data will be verified prior to firing. The howitzer section
11 chiefs, BOC representative, and FDO will ensure constant monitoring of the wire link.

12
13 **b. Gunnery.** All techniques listed in MCWP 3-16.4, Artillery Mannon Cannon
14 Gunnery and ST 6-40-2 will be adhered to.

15
16 **c. FDC Functions.** The functions of the FDC include:

- 17
18
- 19 • Take all measures necessary to prevent fratricide.
 - 20 • Determine residuals and GFT settings.
 - 21 • Respond to all communications directed to the battery.
 - 22 • Compute technical data for firing element.
 - 23 • Perform tactical fire direction, as required.
 - 24 • Execute fire plans.
 - 25 • Receive fire order standards from battalion, when required.
 - 26 • Establish fire order/command standards for the battery.
 - 27 • Respond to fire orders from battalion.
 - 28 • Process requests for fire from supported units.
 - 29 • Submit request for reinforcing fires to battalion (when required).
 - 30 • Designate ammunition lots (if not designated by higher headquarters).
 - 31 • Issue fire commands to howitzer sections.
 - 32 • Assign priority targets/FPF to firing battery.
 - 33 • Submit reports to battalion.
 - 34 • Maintain an FDC journal.
 - 35 • Maintain a fire control map to keep track of friendly and enemy positions,
36 tactical control measures, fire support coordinating measures, and zone of
37 fire/target area in respective AOR.
 - 38 • Be prepared to assume control as the alternate battalion FDC, if designated.

39 **d. FDC Journal.** An FDC journal will be maintained in each FDC to record pertinent
40 data to include, but not limited to:

- 41
- 42 • Fire support coordinating measures.
 - 43 • Summary of tactical situation.
 - 44 • Future plans, if known.

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- 1 • Current ammunition status and lot designations.
- 2 • Current fire order/fire command standards.
- 3 • Fire plans to include target lists and schedules.
- 4 • Rules of engagement (ROE).
- 5 • Applicable reports (i.e., DISREP, CPREP, NBC Reports, etc.).
- 6 • Current residuals/GFT settings.
- 7 • MET messages.
- 8 • Important messages.

9
10 **e. Special Missions.** See paragraph 3005d.

11
12 **f. Standards.** Fire order standards and fire command standards will be established by
13 the respective FDO based on commander's guidance, tactical situation, and attack criteria.

14 15 16 **4009. Gunline Procedures**

17
18 Proper gunline procedures are essential in order to provide timely, accurate artillery fires in
19 support of the maneuver element. The following paragraph establishes common techniques
20 and procedures that will be adhered to whenever possible.

21
22 **a. Advance Party.** Each howitzer section will provide representation to the advance
23 party.

24
25 **b. Special Missions.** When firing special missions it is vital that all procedures on the
26 gunline are clearly understood and followed.

27 28 **(1) Priority Target**

- 29
- 30 • Lay on priority target data at end of mission.
- 31 • Prepare, segregate, and identify designated ammunition and powder.
- 32

33 34 **(2) Final Protective Fires (FPF)**

- 35 • The gunline will lay on FPF data at end of mission.
- 36 • Preferred ammunition for the FPF is HE/Q unless otherwise dictated by
37 the FDC.
- 38 • Howitzers will be fired at their maximum rate of fire for three minutes
39 followed by their sustained rate of fire until the command "cease loading"
40 or all prescribed ammunition is expended.
- 41

42 **(2) Fire Plans.** When operating in an automated environment, fire plans will be

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1 transmitted via GDUs. If time permits a dry-fire rehearsal will be conducted prior to the
2 actual schedule of fires being initiated. In the event GDUs are not operational or when
3 conducting degraded operations the following are proven practices:
4

5 **(a)** The Ops Chief or FDO will record all fire commands on a 5X7 card by line
6 number and submit to each section chief.
7

8 **(b)** The Ops Chief or FDO will talk directly to the section chiefs via the voice
9 wire link and pass the aforementioned data so it may be recorded by the gunline.
10

NOTE: Regardless of which method is utilized, the section chiefs will ensure designated
ammunition and powder is prepared and segregated by fire plan/series name.

11
12 **c. Direct Fire.** Direct fire is fire delivered on a target by use of direct laying
13 techniques. Direct fire is usually in conjunction with an emergency displacement, taking only
14 essential gear.
15

16 **d. Out of Traverse.** See applicable weapon's TM.
17

18 **e. Hasty displacement.** A hasty displacement is defined as an expeditious
19 displacement by a unit due to an imminent attack by the enemy. A successful hasty
20 displacement requires the following:
21

22 **(1)** Sections will displace with all gear except ammo that is on the deck and DRMO.
23

24 **(2)** On command to hasty displace, advance party personnel will immediately report
25 to the advance party vehicle. Section chiefs will ensure that all gear and equipment is
26 consolidated on or very near the vehicle for quick displacement. Section chiefs will also
27 ensure their drivers immediately op-check their vehicles and radios.
28

29 **(3)** Ammo/dunnage will be left on the deck for pick-up by service elements.
30

31 **(4)** The order of march for the advance party does not change.
32

33 **(5)** Order of march for the firing element will be dictated by particular gun
34 positioning and direction of exit from the GP.
35

36 **(6)** The standard time limit for a hasty displacement for the advance party during
37 daylight is four minutes and six minutes at night.
38

39 **(7)** The standard time limit for a hasty displacement for the firing battery element is
40 eight minutes during daylight and 12 minutes at night.
41

42 **(8)** Service elements have 30 minutes day or night to enter into the new position
43 with all ammo/dunnage.

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1
2 **f. Emergency Displacement.** An emergency displacement is defined as the urgent
3 displacement of a unit while under attack. The following techniques and procedures will be
4 adhered to when conducting an emergency displacement:
5

6 **(1)** Bring only mission essential gear to include:
7

- 8 • Howitzer with equipment necessary to achieve fire capability.
 - 9 • Personal equipment: 782 gear, NBC gear, and T/O weapon.
- 10

11 **(2)** Each section displaces to the established rally point when ready. There is no
12 order of march.
13

14 **(3)** Advance party personnel will remain with their sections until they arrive at the
15 rally point.
16

17 **(4)** At the rally point, re-orient, re-organize, and re-distribute personnel and
18 ammunition. The advance party will assemble at the advance party truck.
19

20 **(5)** The standard time limit for an emergency displacement is four minutes during
21 daylight and six minutes at night.
22
23

24 **4010. Battery Operations Center**

25

26 The Battery Operations Center (BOC) is designed to send a fully mission capable sub-unit of
27 the battery forward with the advance party in order to rapidly achieve fire capability upon
28 arrival of the firing element at a new position. The BOC also serves as an alternate FDC in
29 the firing position in the event the battery FDC experiences severe degradation or catastrophic
30 loss of command, control, and communications (C3) or possibly when the battery FDC
31 assumes control of the battalion FDC.
32

33 **a. Duties of Personnel in the BOC**

34

35 **(1) AXO/AFDO**

36

37 **(a)** The AXO commands the BOC. His first duty is to emplace the BOC as
38 directed by the CO. The AXO will then lay the howitzers (if accompanying the advance party)
39 using the most accurate method available. If no howitzers accompany the advance party the
40 AXO will determine initial lay data for each howitzer to include deflection, subtense, and VA.
41

42 **(b)** The AXO will act as the BOC's FDO/XO. The AXO will ensure that
43 section chiefs properly record information on section chief reports in order to determine XO's
44 Min QE.
45

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1 (c) Once the BOC becomes fire capable, the AXO will act as the FDO utilizing
2 a BUCS, BCS, or manual capability. He will ensure a situation map is utilized and that the
3 chart operator has set up and oriented his firing chart to the new position.
4

5 (2) Assistant Operations Chief

6

7 (a) The Assistant Operations Chief (A-Ops Chief) will ensure a technical fire
8 direction method is available and in concert with the FDC's method (MET, residuals, MVVs,
9 etc.) prior to the BOC departing for the new position. While the AXO is laying the battery (or
10 determining initial lay data), the A-Ops Chief establishes the BOC.
11

12 (b) The A-Ops Chief will ensure the fire control map contains the latest fire
13 support coordinating measures. He will have the last target number used by the battery and
14 have information on any schedule of fires/TOTs. Any other pertinent information should be
15 passed to the BOC from the FDC through the A-Ops Chief.
16

17 (c) The A-Ops Chief will compute XO's Min QE and identify any intervening
18 crests to be addressed when computing firing data.
19

20 (d) Once a fire mission is received, the A-Ops Chief will compute the firing
21 data after receiving the fire order from the AXO. Normal FDC procedures will ensue from
22 this point forward.
23

24 (3) **All other BOC Personnel.** The remaining personnel in the BOC will perform
25 their duties in accordance with MCWP 3-16.4, Artillery Manual Cannon Gunnery under FDC
26 personnel.
27
28

29 4011. Passage of Control

30

31 a. The passage of control from the FDC to the BOC will follow the procedures
32 outlined in Chapter 2. In addition:
33

- 34 • The FDO transmits an updated FIRECAP to battalion accounting for the number of
35 guns displacing with the advance party/BOC.
- 36 • During the road march, the BOC will monitor battalion fire direction and battery
37 command nets.
- 38 • Once the howitzers with the advanced party are fire capable, the BOC will request
39 passage of control from the battery FDC.
- 40 • The FDC will transmit a DISREP to the battalion FDC upon displacement of the
41 main body.
- 42 • The BOC will transmit a FIRECAP (this is due to the change in the number of
43 howitzers now firing capable) to the battalion FDC once passage of control from the
44 battery FDC to the BOC is complete.

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1
2 **b. Passing Control Back to the FDC.** Passing control back to the FDC will utilize
3 the same procedures mentioned above. If howitzers become fire capable prior to the battery
4 FDC assuming control back from the BOC, the BOC will transmit an updated FIRECAP to the
5 battalion FDC illustrating a change in weapon strength. Control from the BOC to the FDC will
6 be conducted via the most efficient means (i.e., by wire or battery command).

7
8
9 **4012. Emergency Fire Mission (Hip Shoot)**

10
11 All emergency fire missions will be conducted in accordance with MCWP 3-16.3, Tactics,
12 Techniques, and Procedures for the Artillery Cannon Battery.

EXAMPLE BATTERY COMMANDER'S POSITION CHECKLIST

1
2
3 **1. MISSION ACCOMPLISHMENT:** Can the battery provide support from the selected
4 position? This must be the overriding factor in determining position suitability. Additionally,
5 designate alternate and supplementary positions.
6

7 **2. SIZE OF AREA:** Is the selected position large enough to allow all battery equipment to be
8 adequately dispersed?
9

10 **3. TERRAIN CONSIDERATIONS**

11 **a. Defilade**

- 12 Protection from ground observation
- 13 Protection from direct fire
- 14 Protection from indirect fire
- 15 Terrain masking for antennae
- 16
- 17
- 18

19 **b. Trafficability**

- 20 Suitability of road surfaces
- 21 Inclimate weather plan
- 22
- 23

24 **c. Concealment**

- 25 Natural
- 26 Supplemental (man-made)
- 27 Disposal of empty canisters/dunnage
- 28
- 29

30 **d. Access Routes**

- 31 Concealed, preferably from rear of position
- 32 Dual routes
- 33
- 34

35 **4. SURVIVABILITY.** Use combination of all methods to ensure maximum survivability.

36
37 **a. Threat.** Prioritize most likely enemy threat to battery based on the S-2's analysis of
38 enemy weapons and target acquisition capabilities.

- 39 Ground Attack
- 40 Air Attack
- 41 Counterfire
- 42
- 43
- 44

45 **Figure 4-1. Example Battery Commander's Position Checklist.**

1 **b. Dispersion**

- 2
- 3 Maximum feasible distance (based on threat analysis and terrain. Goal of 100
- 4 meters between howitzers in a high counterfire threat environment. Disperse both
- 5 laterally and in-depth.
- 6 FDC/antennae remotod to maximum feasible distance. Goal of 750 meters in a high
- 7 EW threat environment.
- 8

9 **c. Hardening**

- 10
- 11 "Something is better than nothing"
- 12 Minimum. Protection for personnel (fighting holes) and ammunition
- 13

14 **d. Survivability Moves**

- 15
- 16 Must be completed as quickly as possible to reduce out of action time.
- 17 Move at least 1000 meters
- 18

19 **e. Defensibility**

- 20
- 21 Likely ground and air avenues of approach identified
- 22 LPs/OPs and engagement areas established along likely avenues of approach (should
- 23 be far enough to permit hasty displacement to supplemental or alternate positions).
- 24 Indirect fires planned from mutual support units on likely ground avenues of
- 25 approach.
- 26 Defense diagram prepared integrating all crew served weapons, howitzers,
- 27 individual weapons, and LPs/OPs.
- 28 Supplemental direct fire positions identified.
- 29 Range cards prepared for all howitzers and crew served weapons.
- 30 Patrols established and coordinated.
- 31 Reaction force established and mustering point identified.
- 32 Emergency signals established.
- 33

34 **f. Miscellaneous**

- 35
- 36 DAP identified and referred deflections recorded (at least 1500 M, preferably to the
- 37 flank, and visible at night).
- 38 Verify BCS/BUCS computed howitzer locations with PLGR or Map Spot.
- 39 Utilize hasty astro or simo to confirm directional control.
- 40 Verify ammunition lots and coordinate emplacement of M94 chronograph with
- 41 FDC.
- 42
- 43
- 44

45 **Figure 4-1. Example Battery Commander's Position Checklist (cont).**

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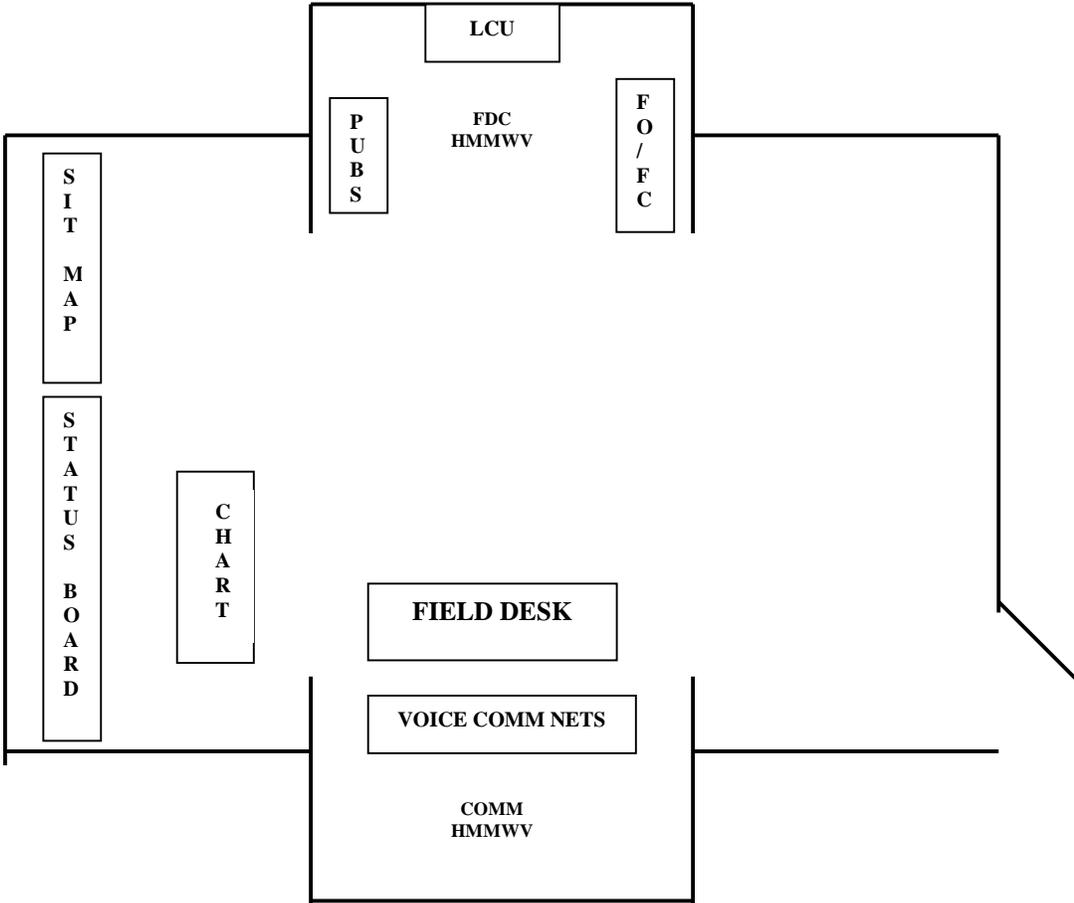


Figure 4-2. Example Battery FDC Configuration.