Chapter 2

Regimental Operations

This chapter, Appendix E, and MCWP 3-16.3, *Tactics, Techniques, and Procedures for the Cannon Battery*, serve as guidelines for regimental operations.

2001. Mission

The mission of the Regiment is to furnish close and continuous fire support by neutralizing, destroying, or suppressing targets which threaten the success of the division.

2002. Duties and Responsibilities of Regimental Operations Personnel

a. Regimental Commander. The commanding officer of the artillery regiment controls the operations of his regiment. He also functions as the division artillery officer and division Fire Support Coordinator (FSC).

(1) As the division artillery officer, he advises the division commander and his staff on artillery matters. He determines the requirements for artillery support and recommends the organization for combat. He is also concerned with matters pertaining to artillery ammunition, target acquisition, meteorology, survey, and training. He maintains situational awareness of the enemy.

(2) As the division FSC, he advises the division commander and his staff on fire support coordination matters, including fire support coordination training. He is also responsible for the operations of the division FSCC. He is assisted by two assistant fire support coordinators (AFSCs).

b. Assistant Fire Support Coordinator. The AFSCs provide artillery representation to the division FSCC. They are special staff officers with individual responsibilities and access to the division commander and his staff. Their specific duties include, but are not limited to, advising the commander on fire support, coordinate the preparation of estimates of supportability, incorporate the targeting process into fire support planning, provide clearance on requests for fire missions and air strikes, disseminate target information, and execute the attack of targets from the targeting process according to attack guidance. Detailed guidance is provided in MCWP 3-16, *Tactics, Techniques, and Procedures for Fire Support Coordination*.

c. Regimental Operations Officer. In addition to fighting the regiment, the operations officer specifically:

- Recommends artillery organization for combat.
- Recommends attack guidance.
- Guides the survey, met, and radar efforts of the regiment.
- Develops the artillery estimate of supportability.
- Plans future operations.
- Incorporates the principles of AWIFM-MAP, as outlined in chapter 1, in the execution of assigned missions.

d. Regimental Assistant Operations Officer/FDO/Watch Officer. There are two assistant operations officers/FDOs assigned to the regiment. They divide the watch based on operational requirements which permits continuous operations. Their duties include but are are not limited to:

- Prepare Tab B (Artillery Fire Plan) to Appendix 12 (Fire Support) to Annex C (Operations) of the Division operations order.
- Develop and execute the Artillery Execution Matrix.
- Coordinate plans/positioning with maneuver units.
- Supervise all functions of the COC.
- Perform tactical fire direction.
- Execute current operations.
- Maintain the plans map.
- Brief the CO, S-3, oncoming watch officers and others, as required, using the Watch Officer's checklist (see figure 2-1).

e. Regimental Operations (Ops) Chief. The Regimental Ops Chief is the principal assistant to the operations officer. His duties include but are not limited to:

- Assists the operations officer in planning.
- Coordinates survey, met, and radar support.
- Prepare Tab J (MCFSS Plan) to Appendix 12 (Fire Support) to Annex C (Operations) of the Division operations order in conjunction with the Division FSCC.

f. Regimental Assistant Operations (Ops) Chief/Watch Chief. The Regimental Assistant Ops Chief/Watch Chief is the principal assistant to the FDO/Watch Officer. His specific dutes include but are not limited to:

- Supervises the enlisted personnel of the FDC.
- Ensures required reports are received and processed.
- Ensures sit map and all status boards are current and accurate.
- Ensures the journal and missions fired log are properly maintained.

2003. Tactical Policies

a. Tactical Precepts. The following artillery precepts will be adhered to when supporting operations.

(1) Mass fire on deep targets to prevent reinforcement of enemy positions.

(2) Weight the main attack in the offense/focus of effort in the defense. Position artillery well forward to exploit range capability and facilitate exploitation.

(3) Provide counterfire. Employ air assets to conduct counterfire when feasible.

(4) Configure the Regimental Main COC in order to move the Forward COC and maintain independent operations, for a limited time period. Position the Main COC 2-4 km forward of the Division Main COC, or as dictated by terrain and tactical considerations.

b. Tactical Planning Considerations

(1) Emphasize digital tactical and technical fire direction, command, control, and communications while maintaining a voice backup capability.

NOTE: The tactics, techniques, and procedures outlined throughout this chapter are applicable in a digitized environment. See MCRP 3-16.2A, *Tactics, Techniques, and Procedures for AFATDS* for corresponding digital message formats.

(2) Expect and anticipate execution of hasty and informal fire plans.

(3) Plan and provide for long range communications through retransmission sites and relay stations.

(4) Decentralize meteorological (MET) support.

(5) Collocate NBC control center operations with the regimental main COC.

(6) Maintain integrity of prescribed mobile loads of ammunition for rapid movement in the exploitation phase of the offensive.

(7) Disseminate universal time by using the Precision Lightweight GPS Receiver (PLGR) time feature or via shortwave radio tones on the 5, 10, 15, and 20 MHz HF bands.

2004. Fire Support Coordination Center (FSCC)

An FSCC is a single location in which are centralized communications facilities and personnel incident to the coordination of all forms of fire support (JP 1-02). An FSCC exists at the MAGTF level and at each echelon of the GCE from division to battalion levels. The FSCC for a MAGTF is the Force Fires Coordination Center (FFCC). The FSC organizes and supervises the FSCC under the staff cognizance of the G-3/S-3. The number of personnel and amount of equipment varies with the level of command and responsibility, the size and complexity of the forces involved, the degree of planning and coordination required, and the desires of the commander.

2005. Regimental Combat Operations Center

Throughout this manual Combat Operations Center (COC) will be used as the generic command cell. It is important to understand that the only difference between a COC and Command Post (CP) is the presence of the commander.

a. Main Combat Operations Center (Main COC). This COC is composed of the regimental commander (as desired), his principal staff, and required members and equipment from Headquarters Battery necessary to control the regiment, conduct liaison with adjacent units and receive direction from higher headquarters. The Main COC handles the bulk of command and control for the regiment. The Main COC has the ability to reconstitute the Forward COC that can perform the mission of the Main COC. Recommended personnel to establish the Main COC command group are as follows:

- S-1 representative.
- S-2.
- S-3 or S-3A.
- S-4 representative.
- Regimental communications officer or assistant communications officer.
- Regimental survey chief.
- Counterbattery radar officer.
- Liaison officers as assigned.
- Regimental metro officer.
- Regimental NBCD officer.
- HQ Battery support elements.

b. Forward Combat Operations Center (Fwd COC). This COC is composed of the regimental commander (as desired), designated principal staff, and required members and equipment from Headquarters Battery necessary to assume the mission of the Main COC. The Fwd COC possesses high mobility, yet can be task-organized for self-sustainment and specific missions. The Fwd COC is activated in order to allow displacement of the Main COC, or weight a particular zone within the battle area to provide fluid command and control during

rapid maneuver scenarios. Recommended personnel to establish the Fwd COC command group are as follows:

- Regimental Commander.
- S-2 representative.
- S-3 or S-3A.
- S-4 representative (if necessary).
- Regimental communications officer or assistant communications officer.
- Regimental survey officer (if necessary).
- Liaison officers as assigned.
- NBCD representative.
- HQ Battery commander (occupies Main COC once established).

c. Administrative and Logistic Operations Center (ALOC). The ALOC is composed of elements within Headquarters Battery, and representatives of subordinate units required to provide administrative, medical, messing, and maintenance facilities. The ALOC possesses communications to command and control the logistics mission of the regiment. Location of the ALOC will be in the rear of the regimental operating area, near a Main Supply Route (MSR), and in position to provide rapid logistical support and effectively coordinate operations with combat service support elements.

d. Alternate Division Command Post. The regimental Main COC is the designated alternate division command post when severe degradation or catastrophic loss of command, control, and communications (C3) occurs within the division CP. This alternate CP provides short term C3 to the division. Ideally, the alternate division command post will dissolve within 36 hours and the division Main COC/FSCC will reconstitute. The capability exists with normal succession of command to function for longer periods if necessary.

e. Alternate Regimental Combat Operations Center. An alternate regimental COC will be designated to provide continuity of command when the regimental COC sustains significant degradation in C3 capability. Designation of a regimental alternate COC will be promulgated in operations plans and orders (this will normally be a GS battalion however, all battalions will be prepared to serve as the alternate regimental COC). Each battalion will be prepared to assume responsibilities as the alternate COC.

2006. Continuity of Operations (ConOps)

The Regiment Main COC is responsible for command and control (C2) of the regiment and must be prepared to serve as the alternate division CP when severe degradation or catastrophic loss of command, control, and communications (C3) occurs within the Division CP. In addition, each Battalion FDC must be prepared to tactically control the fires of the regiment and able to serve as the alternate Regimental COC simultaneous to tactically controlling fires of the battalion when the regiment COC sustains significant degradation in C3 capability or

serves as the alternate division CP. The alternate COC for the regiment will be designated in the applicable operation order or fragmentary order.

a. Alternate Divison CP

(1) Assumptions

(a) Due to the limited resources of communications platoon, single channel radio will be the primary means of communications.

(b) DASC will remain operational or will be established using assets supplied by the supporting Marine Aircraft Wing (MAW). These nets will include:

- Tactical Air Request/Helicopter Request - TAR/HR (HF)
- Tactical Air Direction - TAD 1 (UHF)
- TAD 2 (UHF)
- Tactical Air Traffic Control - TATC (UHF)
- TATC (HF)

(2) Concept. When activated, the regiment assumes responsibilities as the alternate division CP. Simultaneously, the regimental forward COC begins preparations to assume C2 of the regiment. The regiment maintains C3 with existing personnel, facilities, and equipment. The alternate division CP monitors the division tactical situation in order to exercise control of the division if control is passed. The alternate division CP provides a COC and FSCC capability. C3 will continually be enhanced as remaining division assets are reassembled and operations reconstituted. C3 will be passed back to the division Main as quickly as possible and generally upon obtaining a capability equal to that of the alternate division CP. Primary C3 nets normally guarded by the division CP will be provided by the regiment. Other communication facilities/nets will be provided by Communications Company, Headquarters Battalion. The reconstituted site of the division main will be determined based on METT-T. The Headquarters Battery commander will be assigned as the Headquarters Commandant for the alternate division CP. Operations will be generally conducted in the following phases.

(a) Phase I. The regiment assumes control of division operations.

(b) Phase II

1 Surviving members of the division staff arrive at the alternate division CP location and receive briefs and updates from the commander and staff of the regiment.

2 The division staff begins to reconstitute operations in expeditionary facilities provided by the regiment (SICUP tents, maps, status charts, double-remoted communications nets, etc.).

(c) Phase III. The division staff assumes C3 internally and the forward COC assumes C2 from the Main COC (either internally or externally).

(3) Security and Administration. The Headquarters Commandant of the alternate division command post coordinates local security and administrative requirements with the regimental COC. The regiment will provide personnel and communications to establish control for the division when command is transferred.

(4) Personnel. Upon activation, all staff sections will augment the regimental COC to establish C3 of the division while maintaining C2 of the regiment.

(5) Administrative and Logistical Support

(a) The regiment will provide limited administrative and logistical support for the alternate division CP until Headquarters Battalion, Division can resume these functions.

(b) At a minimum, the regiment will provide the following alternate division CP facilities: tent, power, lights, maps, and remoted communications.

(c) Situation maps and overlays passed to the division will be in the scale used by division (most commonly 1:100,000).

b. Alternate Regimental COC. The alternate command post will assume control under the following conditions:

(1) When directed by the regimental commander.

(2) When the regimental headquarters cannot be contacted by any communication means from any subordinate battalion for a specified period of time.

c. Actions Upon Assumption of Control. Notification of assumption of regimental control by a battalion will be made to division headquarters, all battalions within the regiment, adjacent artillery headquarters, and any attached unit headquarters. Necessary assistance from other units will be requested at this time. Paragraph 2012d outlines detailed procedures for passage of command and control.

2007. Fire Direction

a. Objective of Fire Direction. Fire direction involves tactical decisions and the computation of technical firing data. The objectives of fire direction are as follows:

- Continuous, accurate, and timely fire support under all conditions of weather, visibility, and terrain.

- Flexibility to engage targets over a wide area.
- Prompt massing of fires of all available units in any area within range.
- Rapid delivery of fires within the zone of the supported unit.
- Control of artillery through orders, policies, priorities, and by means of adequate liaison and communications.
- Implementation of safety measures.
- Gaining/exchanging target information.
- Coordination of subordinate unit's fires and integration of the artillery fire plan with other supporting arms.

b. Organization of the Fire Direction Center. The FDC is organized to meet the requirements and conditions existing at the artillery headquarters. Its configuration may vary with the mode of operation and tactical situation; i.e., degree of permanence. FDCs may be established in tents, buildings, or in vehicles. In the typical regimental and battalion FDC, the operations and intelligence sections are collocated. The arrangement must allow for rapid fire direction and exchange of information between personnel. Maps and charts should be positioned to facilitate sharing of information. Radios must be positioned to allow monitoring and rapid access by *actuals*, when required. Space must be allowed for LNOs or representatives of attached elements; e.g., TPC. Only essential personnel should be in the FDC. In the regimental and battalion FDCs, a watch officer/FDO supervises the operation of the FDC, under the cognizance of the S-3. The S-3 positions himself where he can best perform his duties. In the battery FDC, the battery FDO supervises the operations of the FDC.

c. FDC Forms, Records, and Charts. The FDC maintains necessary forms, records, and charts to conduct fire direction. The MCWP 3-16.4, *Tactics, Techniques, and Procedures for Artillery Manual Gunnery* discuss the requirements for technical fire direction. For tactical fire direction, some of the requirements are as follows:

(1) Situation Map. The situation map is actively sought and maintained by FDCs to ensure adequate fire support and safety to friendly forces. The following situation maps are kept:

- **Artillery Situation Map** - battery positions, artillery headquarters echelon positions, supported unit headquarters echelons, fire capabilities overlay depicting the range and traverse limits of the firing units, target overlay, radar capabilities overlay, as required.
- **Supported Unit Situation Map** - scheme of maneuver overlay, fire support coordination measures overlay, checkpoints and route overlay, FO positions (firing battery), maneuver unit positions.
- **Enemy Situation Map** - maintained by intelligence section. Emphasis is on plotting high payoff targets.

(2) S-3 Journal. The S-3 journal is used to record all incidents and messages with an entry describing the action taken, if any. Copies of messages and orders sent and received

and records of fire missions are kept. At specific intervals, the journal is closed and becomes part of the unit journal.

(3) Miscellaneous Forms, Records, and Charts. Examples are fire order standards, ammunition and communications status.

d. FDC Reporting. FDCs exchange reports with each other and their supported units. These reports assist in tactical fire direction and fire support coordination. Appendix J provides the formats for these reports.

(1) Ammunition Report (AMREP). The AMREP is used to maintain an accurate ammunition status of firing units. The AMREP facilitates ammunition resupply and the forecasting of consumption rates. The AMREP is submitted frequently enough to allow operational and resupply decisions. The frequency for submission is often specified in unit SOPs or in operation orders. The report is submitted to the higher artillery headquarters. The artillery LNO with the supported unit's FSCC is kept abreast of the artillery's ammunition status.

(2) Displacement Report (DISREP). The DISREP is used to report the displacement of a firing battery or element. The DISREP is submitted when the unit can no longer fire from its present position due to displacement. The report is submitted to the higher artillery headquarters and to the supported unit.

(3) Fire Capabilities Report (FIRECAP). The FIRECAP is used to report the firing status of an artillery battery or element. The report is made when a unit occupies a new firing position and is ready to fire or when a change occurs in the number of weapons available; e.g., a gun out of action due to enemy action or mechanical malfunction. The FIRECAP is sent to the higher artillery headquarters and the supported unit.

(4) Command Post Report (CPREP). The CPREP is used to report the time of opening and closing of a headquarters echelon and the location of the new echelon. The report is submitted to the higher artillery headquarters and the supported unit.

(5) Flash Report/Spot Report/Target Report (FLASHREP/SPOTREP/TAREP). These reports are submitted after significant incidents such as contact with the enemy, incoming fires, receipt of friendly casualties, damage to friendly equipment, findings of significant intelligence value, initiation/completion of tactical operations. The TAREP is used to pass target data. The TAREP is submitted when a significant target is detected, or after the attack of a significant target or target on the target list. These reports are submitted to the higher headquarters and to the supported unit.

(6) Radar Report. The radar report is used by the artillery to control and coordinate the use of the radars of the CBR platoon. The report is used by the CBR platoon and the controlling artillery unit.

(7) Firing Report (FIREP). The FIREP is used to report the firing on a major target. Major targets are normally specified in the operation order or SOP. The report is submitted to the higher artillery headquarters and/or supported unit.

(8) NBC Reports. NBC reports are used to report NBC contamination and conditions as determined by friendly units. They are sent as directed by established SOPs, operations orders, or fragmentary orders.

(9) Other Reports. Other reports may be submitted by the artillery as prescribed in the operation order or SOPs. Unnecessary reports, or reports which duplicate data submitted in other reports, should be avoided.

e. Clearance to Fire

(1) Calls for Fire. Artillery fires on targets beyond an established coordinated fire line (CFL) can be delivered without clearance from the unit in whose zone of action the fires will impact. Fires on targets short of the CFL, however, require some method of clearance. Based on the commander's rules of engagement, the procedure for clearing these calls for fire will be specified in operation orders or unit SOPs as either positive clearance or passive clearance. Artillery COF nets are monitored by artillery LNOs in battalion FSCCs. After coordinating the monitored call for fire as discussed in MCWP 3-16, *Tactics, Techniques, and Procedures for Fire Support Coordination*, the LNO (on behalf of the FSC) approves or disapproves the request for both (1) clearance to engage the target and (2) the use of artillery on the target (type and volume of fire requested). Under positive clearance procedures, each call for fire on targets short of the CFL must be specifically cleared by a voice or digital transmission from the FSCC of the unit in whose zone of action the fires will impact. This may require FSCCs monitoring calls for fire from its observers to seek clearance from other FSCCs. Under passive clearance procedures, the FSCC monitors the call for fire transmission, and either remains silent if the fire mission is cleared (*silence is consent*), or interjects by voice or digital transmission if the fire mission is not cleared or if more time is required to clear the fire mission (e.g., with another FSCC). Passive clearance is the preferred method in combat. In order to avoid inadvertent clearance resulting from a loss of communications, commanders may modify passive clearance procedures by stipulating that fire missions are not cleared unless the FSCC acknowledges that the call for fire was monitored. Regardless of the procedure used to clear the engagement of the target, approval for the use of artillery on the target (vice another fire support means) is normally conveyed by the FSCC remaining silent (*silence is consent*). For further discussion, see MCWP 3-16, *Tactics, Techniques, and Procedures for Fire Support Coordination*.

(2) Adjustments. Cumulative corrections in the adjustment phase of a fire mission must be watched for possible interference or danger to friendly units.

(3) Fires Beyond the Fire Support Coordination Line (FSCL). Units firing on targets beyond the FSCL must inform all other affected units in sufficient time to allow

necessary reaction to avoid friendly casualties and to avoid unnecessary duplication. The MAGTF FSCC will establish procedures for exchanging this information.

(4) Other Clearance. Clearance must be obtained on those munitions that can cause danger or affect operations of the supported or other units. Examples are smoke, illumination, ICM, FASCAM. See MCWP 3-16, *Tactics, Techniques, and Procedures for Fire Support Coordination* and unit SOPs.

2008. Regimental Fire Direction Center

The regimental FDC is composed of personnel from the operations platoon. The typical regimental FDC will have watch sections consisting of the FDO/watch officer, operations chief, and fire control men. The regimental communications platoon provides a communications watch supervisor and sufficient personnel to man the radio terminals in the FDC. Functions of the regimental FDC during operations include targeting and counterfire activities, tactical fire direction, movement and positioning of units, and other functions. The FDC, TPC, intelligence section, and other headquarters sections make up the main echelon COC.

a. Targeting and Counterfire Activities. The regimental FDC works closely with the division FSCC and division G-2 section in targeting matters. The artillery regimental commander, as division FSC, ensures that the agencies' functions are coordinated. The regimental S-3 and S-2 interface with their counterparts in the artillery battalions and with the counterbattery radar (CBR) platoon commander for targeting matters. Specific emphasis is on counterfire targets.

b. Tactical Fire Direction. The regimental FDC exercises tactical fire direction of organic artillery battalions and attached artillery units; e.g., attached multiple launch rocket system (MLRS). It exercises tactical fire direction to the degree consistent with the communications capability, positioning of units, and range capability. The regimental FDC receives fire missions from several sources, including the division FSCC and its own observers; e.g., survey, weapon-locating radars, etc. It also receives requests for reinforcing fires from artillery battalions. The regiment assigns fire missions to a battalion(s) or attached unit. To avoid diverting DS artillery from its primary mission, artillery units in GS are normally tasked first. The regimental FDC directs the massing of artillery battalions on targets worthy of such attack.

c. Movement and Positioning. The regimental FDC monitors the location of artillery battalions, attached artillery units, and weapons-locating radars.

(1) DS and Reinforcing Artillery Battalions. The artillery commander of an artillery battalion in DS positions his batteries to best support the supported unit. He keeps the regimental FDC informed on the positions of his units. The DS artillery commander keeps the regimental FDC informed of all displacements directed by the DS battalion to include the

reinforcing artillery battalion. When required, the artillery regimental commander or S-3 may assign a position area to a DS or reinforcing battalion. This is normally done to facilitate a future mission assignment. Such assignment must not preclude the battalion from accomplishing its current mission.

(2) GS and GS-R Artillery Battalions. The regimental commander or S-3 directs the positioning of GS and GS-R units and radars operating under regimental control. These units are positioned to ensure adequate coverage of the division, to provide mutual support, to weight the battlefield, and to facilitate future mission assignments. The positions of artillery DS and reinforcing missions are considered in the positioning of GS and GS-R units with the division FSCC. He also keeps the division FSCC informed of the locations of DS and reinforcing artillery.

(3) Route Priorities. The regimental S-3 establishes priorities for the use of the main supply route. He coordinates the movement of artillery units with the division G-3/G-4 and regimental S-2/S-4 and issues movement orders.

(4) Headquarters Battery. The regimental commander directs the movement and positioning of the headquarters battery in coordination with his staff and the headquarters battery commander.

d. Other Functions of the Regimental FDC. These functions include the following:

- Ammunition management.
- Muzzle velocity management.
- Coordination of CBR platoon employment.
- Arrangement of survey and MET support.
- Coordination of EW support.
- Coordination of engineer support.
- Interface with supported unit's FSCC on artillery matters.
- Dissemination of fire support coordination measures, attack guidance, and other information received from supported unit.
- Preparation of the artillery fire plan.
- Dissemination of firing restrictions and safety guidelines.
- Coordination of NBC defense and NBC operations.

2009. Regimental Planning Element

The regimental planning cell will be established as required by position improvement. The senior Marine from the survey information center (SIC) is responsible for the establishment, operation, and displacement of the planning cell. The planning cell will focus on future operations, therefore, requiring close and continuous operation with the division CP and FSCC.

2010. Combat Operations Center Security

Provisions for security and installation of an adequate defense for the COC promote the accomplishment of the overall mission of the regiment. Preparations will be made to counter any form of attack. The COC will be capable of defending itself without outside aid. The defense of the COC will be developed, as permitted, by available time, situation, and necessity. The Headquarters Battery Commander will develop detailed procedures for planning, preparing, and executing the defense of the COC.

a. Defense of the COC. The defense of the COC will be maintained by assigning primary, secondary, and contingent sectors of responsibility to each security position. This includes positioning automatic weapons and rocket launchers to cover all avenues of approach, and by forming a reaction platoon from organic personnel. Sectors of responsibility for all weapons will be assigned and coordinated to ensure complete coverage of the COC perimeter. Each Marine will be assigned a definite fighting position in the event of attack. Maximum use of natural and artificial obstacles are essential. These fighting positions will integrate the 360 degree defense of the position area.

(1) Active Defensive Measures. Active defensive measures consist of the use of all organic and attached weapons with the aggressive employment of all personnel to repel an attack. Individual arms, automatic weapons, machine guns, and anti-personnel/anti-tank mines will be employed.

(2) Passive Defensive Measures. Passive defensive measures consist of measures taken to conceal or disguise the COC by providing protection for weapons together with the aggressive employment of personnel, preparation of obstacles to slow the enemy, and establishment of a warning system to alert the unit. Concealment of the COC involves careful selection of a position taking advantage of the natural terrain. Camouflage of the position consists of measures using materiel, objects, and simulation devices. All tents, vehicles, and other items of major equipment will be camouflaged. Additionally, great consideration needs to be placed on positioning generators to muffle sound. Reverse slopes from the enemy, foliage, and/or well dug holes can assist in this effort.

b. Reaction Force. The reaction force is formed under the command of the Headquarters Battery Commandant. The force will be capable of immediately reacting to any emergency occurring within or around the COC. The force will be composed of approximately twenty-five personnel furnished by sections. Personnel will be made aware of their duties and must be available at all times. This force will be used to augment the security platoon as required. The reaction force will muster at a place designated by the force commander (see Appendix E).

c. Local Security Platoon. The local security platoon is organized and employed by the local security chief under direct control of the Headquarters Battery Commandant.

d. Local Security Chief. The responsibilities of the local security chief are as follows:

(1) Assist the Headquarters Battery Commandant in controlling the operation of the security platoon and the reaction force.

(2) Position security points both inside and outside the COC.

(3) Ensure required signaling devices are installed and operable and procedures are established for their proper use.

(4) Conduct small unit patrols as required in accordance with Appendix E.

(5) Assign personnel to machine gun positions.

(6) Perform other duties as directed by the Headquarters Battery Commandant.

(7) Construction of defensive diagram (see Appendix E).

e. Signals. Although commanders will designate specific signals to correspond to various threats or conditions, the following signals are standard.

(1) Defense Against Air Attack. Low level strafing and bombing attacks usually occur during daylight hours. Upon the sounding of the air attack signal, personnel will assume air defense positions and all weapons systems will engage the aircraft.

(2) NBC Defense. The signal for an NBC attack will be continuous banging of metal on metal. When the alarm is sounded, all personnel will immediately don and clear their field protective masks and remain masked until the "all clear" signal is sounded.

(3) Ground Attack. Upon the sounding of the ground attack signal, the reaction force will assemble at the rally point with their assigned gear. Primary watch standers remain in place and all other non-essential personnel report to their assigned fighting positions.

2011. Regimental Combat Operations Center Displacement

The headquarters element will displace on order of the regimental commander. Displacement should be invisible to subordinate and supported units without excessive degradation of operability to furnish close and continuous fire support to maneuver units.

a. Displacement by Echelon. Displacement by echelon is the preferred method as it provides continuous C3. When displacing by echelon, the Forward COC will move to the new COC site while the Main COC retains control of the regiment. When established, the Forward COC will assume control of the regiment and the Main COC will move to the new COC location. Procedures for passage of command and control are established in paragraph 2012d.

(1) Each COC will maintain the capability to man the minimum required radio nets during displacement. Prior to displacement, the communications officer will coordinate communications plan changes with higher, subordinate, and adjacent commands.

(2) Passage of command and control forward will be kept as simple as possible, especially when encrypted communication equipment is used. The Forward COC will remain off the Fire Direction and TAC nets until ready to assume control. Updates of essential information (outlined in figure 2-1) will be passed forward from the Main CP prior to relinquishing control.

(3) Typically the S-3A displaces with the Forward COC while the S-3 remains with the Main CP. Specific configuration and manning is mission dependent and is at the discretion of the regimental commander.

b. Displacement by Unit. When the Regimental COC must displace by unit, regimental control will be passed to one of the battalion's FDC. Passing control to a battalion with a direct support tactical mission should be avoided whenever possible.

2012. Advance Party Operations

The headquarters battery advance party typically consists of the Battery Commander, the Regimental S-6, an S-3 representative, a communications vehicle with personnel as designated by the S-6 Officer (wire, MUX, etc.), and security personnel. If the personnel are available, a representative from each section should accompany the advanced party. The specific configuration of the advanced party is mission and personnel dependent and, therefore, it may change throughout combat operations. However, every effort should be made to maintain continuity among advanced party personnel in order to maintain a high level of proficiency.

a. Site Selection. Selection of a new COC location must be conducive to tactical operations as well as command and control. The following are some considerations and techniques for site selection.

(1) The most important consideration is the ability to communicate with higher and supported units from the new site.

(2) Potential HQ Battery position areas (PAs) aS designated by the S-3.

(3) The HQ Battery Commander and S-6 conduct a thorough map reconnaissance of potential PAs.

(4) Routes are selected based on METT-T and information provided by the S-2.

(5) Reconnaissance of potential PAs is conducted by either the HQ Battery Commander or S-6.

(6) Final site selection is based on S-6/HQ Battery commander concurrence and presented to the S-3 for approval.

(7) Once the site is designated, advance party personnel typically depart 30-45 minutes ahead of the Forward COC. This time is adjusted based on the current tactical situation and METT-T.

(8) The route is verified by advance party and pre-designated check points are reported back to the Main COC along with any essential information which could affect the Forward COC's movement.

(9) A Command Post Report (CPREP) is transmitted from the Forward COC to the Main COC upon displacement from the current position (see Appendix J).

b. Actions Prior to Occupation. Standard RSOP procedures are established in Appendix G of this publication.

(1) The COC site is the first site selected and the rest of the position orients off the projected front of the vehicle.

NOTE: One technique for orienting all vehicles and cells in the new position is for the Forward COC vehicle to orient on 12 o'clock. All remaining vehicles and cells emplace and orient off this vehicle (see figure 2-9).

(2) COC site criteria includes:

(a) Ability to communicate on appropriate nets.

(b) Sufficient terrain to incorporate camouflage, cover, and concealment.

(3) Priority of Work. The following is a list of tasks which must occur and some may occur simultaneously

(a) Wire personnel will commence running wire from the COC to the antenna farm.

(b) Antenna farm personnel continue to establish communications.

(c) FD and FSC nets are established in the COC.

(d) Generator site selected.

(e) Pick-up point selected.

(f) Battery Commander selects individual vehicle positions based on terrain for the Forward and Main COCs.

c. Actions Upon Arrival of Forward COC

(1) A guide is sent to a prearranged pick up point to guide the Forward COC into position. The guide should possess a radio tuned to the convoy frequency, is typically the Battery Command Net.

(2) As the Forward passes through the pick-up point, the guide will lead the first Forward vehicle to the COC site where it will be placed in position by the S-3 advance party representative.

(3) Other Forward vehicles will be met at the pick-up point by the HQ Battery commander and communication Marines to guide the remaining vehicles to their respective positions. Precautions must be exercised to prevent a choke point at the pick-up point resulting in a lucrative target for the enemy.

(4) Focus of effort is the establishment of an operational COC. All personnel must share this understanding and assist in this endeavor.

(5) The HQ Battery commander completes individual vehicle positioning.

(6) The ECP is manned and wired into the COC and the HQ Battery commander's or XO's position.

d. Passage of Command and Control. Once an operational COC has been established the S-3A (or S-3) at the Forward COC will initiate the passage of command and control from the Main COC to the Forward CP. Figure 2-1 is an example of essential information which must be accurate and known by the Forward COC prior to receiving command and control of the regiment. As much of this information should be recorded prior to the Forward COC departing the Main COC location in order to facilitate rapid passage of command and control.

(1) At a minimum the following nets will be established by the Fwd COC prior to the passage of command and control:

- Division Fire Support Coordination – Div FSC (VHF)

- Artillery Regimental Fire Direction – Arty Regt FD (VHF)
- Artillery Regimental Tactical – Arty Regt TAC (VHF)

(2) The following, in conjunction with figure 2-1, illustrates one technique which may be utilized to facilitate passage of command and control:

(Forward) "__th Marines, This is __th Marines Forward, over"
(Main) "This is __th Marines, Roger, over"
(Forward) "Are there any updates at this time?, over"
(Main) "Updates are as follows…" (see figure 2-1)
(Forward) "Roger, I am Prepared to Assume Control, over"
(Main) "Roger, __th Marines Forward, out"*
(Forward) "__th Marines, out"*

NOTE: * Call signs change therefore making the passage of command and control "invisible" to supported units.

e. Actions Upon Arrival of Main Body

(1) A guide is sent to the pick up point to facilitate a rapid and orderly occupation by the Main COC.

(2) Representatives from every section will meet their respective vehicles at the ECP to guide them into position.

(3) Planning cell is established.

(4) Position improvement is continuous.

NOTE: There are several tactical procedures which may be used to facilitate a rapid passage of command and control back to the Main COC. One technique is for the Main COC to collocate with the Forward COC therefore eliminating establishment of extra communication nets as well as structural organization.

2013. Regimental Survey

This paragraph, utilized in conjunction with MCWP 3-16.7, *Tactics, Techniques, and Procedures for Marine Survey*, sets forth procedures for conducting survey operations.

a. Mission. The mission of regimental survey is to provide a common grid over the division area. This includes establishing initial control, densification of existing control, and

conversion to common control over stations not in the division network. The survey section will normally perform fourth order surveys to permit the massing of fires, delivery of surprise observed fires, delivery of effective unobserved fires, and transmission of target data from one unit to another in order to aggressively neutralize and destroy enemy targets. The establishment of a common grid is a command responsibility.

b. Duties of Regimental Survey Personnel

(1) Regimental Survey Officer. The regimental survey officer is a member of the regimental special staff. His duties include, but are not limited to:

- Accompany the regimental commander or his representative on reconnaissance of the new position.
- Advises the commander of the capabilities and limitations of the survey section.
- Formulate and implement the regimental survey plan.
- Maintain close liaison with the battalion survey officers and coordinate survey operations within the regiment.
- Establish, coordinate, and supervise the activities of the Survey Information Center (SIC).

(2) Survey Chief. The survey chief is the principal assistant to the survey officer. His duties include, but are not limited to:

- Perform, when directed, any or all of the duties of the Regimental Survey Officer.
- Ensure all survey data is correctly derived, transmitted, and filed in appropriate records at the SIC.
- Supervise and train surveyors in the conduct of operations and maintenance of survey equipment.

(3) Chief of Party (Conventional and PADS)

- Trains his survey party.
- Supervises and coordinates field operations of his survey team.
- Responsible for the maintenance and accountability of his equipment.

(4) Survey Recorder/Computer

- Maintains the required forms for computations of survey.
- Performs independent computations with a survey computer system
- Maintains the survey sections computer systems
- Performs the duties of chief of party in his absence

(5) Instrument Operator

- Operates and performs preventive maintenance checks and services on the teams survey equipment.

c. Survey Information Center (SIC)

(1) The SIC will be established by the regimental survey officer in the vicinity of the regimental COC.

(2) The SIC is organic to the regimental survey section and is the only section authorized to compile, maintain, and issue changes to a trigonometric (trig) list pending approval from the commanding officer. The SIC will maintain a file of Survey Control Points (SCPs) applicable to the area of operations.

(3) The SIC will disseminate survey information to all interested parties of the regiment and division. This information can be in the form of trig lists, SCP listings, survey assistance, computations, or points of contact with higher agencies such as National Geodetic Survey (NGS), National Imagery and Mapping Agency (NIMA), etc.

(4) The SIC will maintain a combination operation/situation map which will depict, at a minimum:

- Friendly situation
- Survey Control Points
- Present and proposed artillery positions, observation posts, meteorological and Radar sites, and other pertinent information.

d. Regimental Survey Methods. All regimental survey sections will accomplish field work procedures and computations involved in GPS surveying, traverse, intersection, resection, hasty survey, and astronomic observation techniques in accordance with MCWP 3-16.7. The regimental survey section is the only unit within the regiment permitted to establish permanent survey control points.

(1) Starting Control. See MCWP 3-16.7, *Marine Survey*.

(2) Distance Determination. See MCWP 3-16.7, *Marine Survey*.

(3) Angle Measurement. See MCWP 3-16.7, *Marine Survey*.

(4) Recorder's Notes/Closure of Survey. See MCWP 3-16.7, *Marine Survey*.

(5) Computations. See MCWP 3-16.7, *Marine Survey*.

(6) Station Marking. All station marking will be in accordance with MCWP 3-16.7, *Marine Survey*.

- If a station must be placed in a roadway, the location will be marked by a nail driven through a piece of colored flagging and a witness stake will be placed near the edge of the road.
- Stations will be tagged with the name of the station, order or accuracy, the surveyor's unit, and date of survey.
- Regiment is the only unit authorized to select a 4th order station for enclosure in a trig list and to monument it in concrete or any other permanent marker.
- Survey Control Points are considered public domain and are not to be used as staging areas, rally points, CPs, or targets. Forward Observers may temporarily occupy suitable SCPs to conduct HOB/MBI registrations, but must CSMO the station upon completion. Survey equipment found on top of a station must not be disrupted, due to the possibility that survey operations may be in progress.

(7) Priority of Survey

- Establish SCPs for the battalions.
- Extend control to Counterbattery Radar Sites.
- Establish declination stations.
- Extend control to meteorological stations.
- Perform target area survey that is outside a battalion's area of responsibility.
- Assist battalion survey sections and other units (mortars, PLRS, EW, etc) as required.

2014. Regimental Meteorology

This paragraph, utilized in conjunction with MCWP 3-16.5, *Tactics, Techniques, and Procedures for Artillery Meteorology*, sets forth procedures for conducting meteorological operations.

a. Mission. Atmospheric conditions effect the accuracy of artillery fires. To increase the possibility of target neutralization from first round fire for effect and to support the artillery in the accomplishment of its mission, the MET section must provide timely and accurate MET messages. This will allow artillery units to correct for all nonstandard weather conditions and ensure effects on target. The mission of the artillery is to provide the following types of electronic MET messages:

(1) Computer. Computer METs are utilized to apply MET corrections to the computer solution of the gunnery problem and for use in the AN/TPQ-36 radar.

(2) Ballistic. Ballistic METs are utilized to apply MET corrections to the manual solution of the gunnery problem and BUCS.

(3) Fallout. Fallout METs are utilized by NBC sections to determine the downwind hazards caused by a nuclear, biological, or chemical agent attack.

(4) Target Acquisition. Target Acquisition METs are utilized to apply MET corrections to AN/TPQ-37 counterbattery radars (relative humidity is used by the Q-37 to correct for refraction).

(5) Limited Source Observation. Although these messages provide only a limited picture of what the current weather conditions are at a small portion of the battlefield, they can be used to provide the theater commander with an accurate picture of the weather for the entire area of operation, when they are combined. This MET message is also given to the NBC Defense Officer for use in projecting chemical down wind hazard areas.

b. Duties of Meteorological Personnel

(1) Regimental Meteorology (MET) Officer. The MET officer is a member of the regimental special staff. He is responsible for making recommendations and advising the regimental commander and his staff on all artillery MET matters. His duties include, but are not limited to:

- Selection of positions for the MET stations.
- Coordinates with adjacent MET sections and supported units concerning MET schedules.
- Ensures all MET data disseminated is verified in accordance with MCWP 3-16.5, *Tactics, Techniques, and Procedures for Artillery Meteorology*.

(2) Regimental Meteorology Chief. The regimental metro chief acts as the principal assistant to the metro officer and, when directed, performs any and all duties of the MET officer. His duties include, but are not limited to:

- Supervise the operation of the MET station.
- Direct the emplacement of the MET section equipment

c. Coordination of MET assets. It is the responsibility of the artillery regimental/battalion commander to recommend the position of the MET assets which are assigned to his organization. It is the MET officer's responsibility to determine the exact location of the MET assets. The MET team leader will determine the exact location of the MET equipment within the MET site. In many instances, the MET section chief will act in the capacity of the MET officer and must be technically qualified to perform those duties.

d. Meteorological Operations. The regimental MET station will be employed where it can best support the artillery regiment. It is possible for MET messages to be available from more than one source. When messages from more than one MET section are available, the following selection criteria will be adhered to:

(1) First Preference – select the MET message from a section within 20 km of the projectile midpoint trajectory and less than two hours old.

(2) Second Preference – select the MET message which best supports the ballistic trajectory utilizing terrain, firing positions, and prevailing winds in relation to the MET station.

e. **Meteorological Site Selection**. The primary consideration in site selection is the ability of the MET section to accomplish its assigned mission. The commander's mission order and his intent must be understood and carried out. The requirements of the supported unit must be considered before a site is selected. Also, what types of MET support are required (electronic/ballistic/PIBAL) and what units require the support.

(1) Tactical Situation. The commander must provide a situation statement prior to selecting a site. The statement must consider both the enemy and friendly situations, with particular emphasis on how they relate to the assigned mission. It is critical that the MET officer know the friendly scheme of maneuver and the anticipated enemy course of action.

(2) Coordination of MET Assets. Coordination is essential with adjacent units to ensure that multiple flights are not flown when a single flight would suffice if it were disseminated properly. It is the responsibility of the MET officer to inform the commander of the necessity for this type of liaison. The MET chief should coordinate all liaison activities with adjacent units. The size of the area that must be covered and the type of terrain is essential data when determining terrain validity. Consideration must also be made for the operating frequency of the radiosondes to prevent MET sections from tracking the wrong radiosonde.

(3) Communications. The site must facilitate the transmission and receipt of communications from the headquarters element and the using unit. In the site selection process, the MET team chief must plan for radio or wire, voice and digital communications. The type of MET equipment to be used is critical when considering communications. The AN/TMQ-41 (MMS), is capable of both digital and voice communication by either wire or radio.

f. Supported Units. Not only must the MET sections be able to communicate with the units requiring MET support, they must also be positioned where they can provide the most accurate MET data to the largest number of units possible. Positioning must be as efficient as possible. A clear and open area is necessary for establishing a MET site and emplacing the AN/TMQ-41 (MMS). Consideration should also be given to the possibility of signal

interference from high powered communication assets. The MET station should be located where it can best support the artillery, yet tactically survivable. Also, the MET station must know the primary direction of fire and the direction the wind is blowing.

g. Supporting Unit. A MET section operating on a four hour schedule consumes approximately 1000 pounds (or 125 cubic feet; roughly equivalent to the cargo space of a highback HMMWV) of expendable supplies per week. The MET section can transport only a seven day supply on their vehicle assets. The supporting unit should maintain a 14 day supply on hand per MET section (X 3 MET sections).

h. Methods of Measuring Atmospheric Conditions. MET personnel are responsible for measuring, computing, and reporting the current atmospheric conditions as it relates to the artillery. MET sections employ two methods of measuring atmospheric conditions; electronic and visual (PIBAL).

(1) Electronic MET. The electronic method is the most accurate and the preferred method of measuring atmospheric conditions. The AN/TMQ-41 (MMS) is the primary means for determining electronic met data. The MMS has the capability for digital interface with the BCS, IFSAS, and AFATDS. The system can digitally communicate via wire and radio. The MMS does not emit signals as it tracks a radiosonde. The MMS also has a remote launch capability, which enables the system to track a radiosonde launched from as far as 20 km from the MMS site. Also a mobile mode which enables the MMS to march order while a flight is in progress continuing to track it until arrival at the next position at which time the message is disseminated.

(2) Visual MET. Visual Met is the determination of upper air conditions from Pilot Balloon (PIBAL) observation. Visual MET is used as an alternative or backup to electronic MET. Visual MET is the primary method of measuring atmospheric conditions for independently deployed firing batteries when distance and MET validity is considerable and electronic means cannot be utilized.

i. Requirements and Dissemination of Data. In order to ensure the best support possible, the following information is required for MET support:

- Type of message required.
- Number of lines required (based on maximum ordinate).
- Dates required.
- Delivery times (local standard time).
- Method of delivery to include frequency and call signs.

(1) METs will be flown as scheduled by the MET officer based on guidance from the regimental S-3 and patterned atmospheric conditions for the area of operation. Additional METs, modifications to the schedule, or special requirements, should be coordinated with the regimental S-3.

(2) MET messages will normally be transmitted digitally to the COC for redistribution/dissemination to subordinate units, or in the case of a direct support battalion directly to the BN COC. The best method for transmission will be employed in all cases. MET messages will be distributed in accordance with the current SOP for communications or as per current operations order.

(3) Battalions with a direct support tactical mission requesting MET support must coordinate with the regimental S-3 and MET officer. Once a MET team is attached, the MET team chief is responsible to the battalion S-3 for the positioning and the operation of the MET station.

- Logistical support (fuel, local security, communications and chow) will be provided by the unit being supported.
- Tactical guidance will be provided by the battalion S-3. In addition, the unit supported must provide survey reconnaissance support.

(4) Units receiving a MET message will verify its validity in accordance with the guidelines set forth in MCWP 3-16.4, *Artillery Manual Cannon Gunnery*. If there is any question as to the validity of the MET message, the unit will contact the regimental FDC, battalion FDC, or MET team for clarification/verification.

2015. Counterbattery Radar Platoon

a. Mission. The primary mission of the CBR platoon is to locate enemy rocket, mortar, and artillery weapons and process all acquired enemy locations in a timely manner for counterfire and intelligence purposes. Secondary missions that can be assigned by the supported artillery unit are adjusting or registering artillery. When a radar is used for a secondary mission, it is unable to perform its primary mission.

b. Capabilities of AN/TPQ-46A. The AN/TPQ-46A firefinder radar is capable of determining accurate first round locations of enemy rocket, mortar, and artillery weapons firing either high or low angle from 750 meters to 24,000 meters. Mortars are not normally detected at ranges over 12,0000 meters. The radar is normally employed to electronically scan a sector of 1600 mils in the hostile mode of operation. However, the radar has the ability to search an area of up to 6400 mils by using the extended azimuth function. In this function, the designated search area is divided into 1600-mil sections and the radar automatically searches each sector for the amount of time assigned by the operator. If a sector has not been programmed for search, the antenna may be reprogrammed and operational within 20 seconds. The radar detects, verifies, and tracks projectiles in flight. The radar has two modes of operation: hostile and friendly.

(1) Hostile Mode of Operation. In-flight tracking data is used to determine the hostile weapon location and the predicted impact point. The radar can simultaneously track up

to 10 projectiles and store 99 targets in memory while searching for new targets. Special procedures allow for averaging of closely grouped weapons, elimination of repeated weapon locations, and weapon-location height adjustment. Weapon location can be determined to an accuracy of 50 meters. Impact predictions are accurate to approximately 100 meters. The radar sections transmit data digitally or by voice to the TPC, and to a firing unit, if assigned.

(2) Friendly Mode of Operation. The radar can register and adjust friendly indirect fire. For this use, firing batteries are linked either digitally by BCS or voice to a radar section. If voice, the preferred method is wire. Impacts are determined to an accuracy of 50 meters.

c. Capabilities of AN/TPQ-37. When operating in joint environments it is very likely that employment of AN/TPQ-37 radars will effect Marine Corps operations. The AN/TPQ-37 is optimized to locate longer-range, low-angle, higher velocity weapons such as long range artillery and rockets. However, it will also locate short-range, high-angle, lower velocity weapons complementing the AN/TPQ-46A. The AN/TPQ-37 has a minimum range of three kilometers and a maximum range of 50 kilometers. For artillery, the higher probability of detection is approximately 30 kilometers. Minimum and maximum detection ranges can be established for the AN/TPQ-37 so long as they are separated by at least 900 meters (same requirement as the AN/TPQ-46A.

The AN/TPQ-37 sector of search is from 300 mils (minimum) to 1600 mils (maximum). Although the AN/TPQ-37 is not equipped with the extended azimuth search function like the AN/TPQ-46A, the antenna maintains a 6400 mil traverse capability. The antenna may be reprogrammed to search a new sector and operational within 20 seconds. The AN/TPQ-37 can be emplaced and operational within 30 minutes and march-ordered within 15 minutes during daylight hours. Although the actual capabilities of this radar are classified, it can determine locations with fire for effect (FFE) accuracy (see Figure 2-3). For technical operating and operational limitations during adverse conditions, extremely hot or cold weather, see TM 11-5840-355-10-1.

d. Employment of Radar Teams. In MEF operations, the CBR platoon is normally employed as a unit and controlled by the artillery regimental commander. The TPC is established in the artillery regimental main COC or co-located with the FSC at the Division COC. The CBR platoon commander works under the cognizance of the regimental S-2. He works closely with the regimental S-2 and S-3 to ensure that all CBR assets are being optimally utilized and that all counterfire and intelligence data generated by those assets are being processed correctly. If the MEF is operating over a wide area or in rough terrain, it may be necessary to divide the platoon into detachments to provide optimum support. In this situation, each detachment will be task organized with control either being retained by the artillery regimental commander or passed to designated artillery battalion commanders (either DS or GS). Such decentralization can enhance timely target engagement.

(1) The CBR platoon commander coordinates the employment of radars operating under regimental control. The S-2 and S-3 provide guidance as deduced from the plan of

observation. The S-3 designates the areas that will receive radar coverage. Based on this guidance, the CBR platoon commander selects a sector of search and general position area for each radar section. The radar section chief selects the actual site for the radar. The general position area should provide sufficient space for the radar section chief to find a site to meet technical consideration.

(2) The battalion S-2 coordinates the employment of radars placed under battalion control. The CBR detachment commander recommends to the battalion S-3 the general position area. The radar section chief selects the actual site for the radar. The radar provides targets to the battalion FDC, where the information is acted on, and sent to the regimental FDC. If the battalion cannot achieve the desired effects on a target or is too involved with other missions, reinforcing fires are requested. This will usually occur when the battalion is too involved with close support to engage a counterfire target. The regiment provides guidance on positioning, coverage zones, cueing, and frequencies. The regiment can reallocate radar assets across the division front as dictated by the situation.

(3) Offensive Operations. Positioning authority of radar teams remains with the regiment based on division G-2/G-3 guidance and coordination with the maneuver commander. Radar teams may be attached to DS battalions. The following planning considerations apply regardless of radar's tactical mission:

- The regiment will position radars to maximize coverage and reduce zonal overlap.
- DS battalions may be tasked with providing survey support for radars in their zone of fire however, the AN/TPQ-46A possesses the Modular Azimuth Positioning System (MAPS) for self survey support.
- DS battalions may be tasked with clearing position areas within their zone of fire.
- DS battalions should establish a link with the radars and their supported unit's zone to facilitate counterbattery fires in their zone of fire.

(4) Defensive Operations. The following planning considerations apply:

- Radar employment will be centralized to the maximum extent.
- The regiment will position radars to maximize coverage and reduce zonal overlap.

e. Positioning. Tactically, the radar is positioned to provide coverage of the zone of action of the supported unit and to provide overlap coverage with other radars. Generally, the radar is positioned three to six kilometers behind the forward line of own troops (FLOT). Radars should be positioned at least 1000 meters apart and not face each other. Alternate positions are always selected. Technical considerations must also be considered:

(1) The radar site should be flat. The slope of the ground must be less than 120 mils for the radar antenna to be leveled for proper functioning. The optimum radar site will have

terrain which gently slopes downward in the direction of search for a distance of at least 1000 meters and then rises sharply to form a screening crest (a hill mass). A screening crest between the radar and the enemy will protect the radar from the enemy's EW, direct observation, and direct fire. The screening crest should be located within 300 to 1000 meters of the radar site and in friendly territory. The screening crest must afford protection to the radar site without degrading radar operation. The ideal screening crest angle for the AN/TPQ-46A radar is 15-30 mils or less. The radar can function with a screening crest of up to 100 mils, but accuracy and detection decrease as screening crest height increases.

(2) The radar site should provide cover and concealment but the cover should not interfere with visual or electronic line of sight (LOS). Electronic LOS is a straight path from the transmitting antenna to a reflecting object (projectile) or a receiving antenna unobstructed by terrain or other objects. Care must be also taken to ensure that the area in front of the antenna does not absorb or attenuate radar emissions. Reflections will cause multipath errors which produce false targets in the radar's computer. Optimally, the site will be surrounded on three sides with tall vegetation to provide a tunneling effect of radar emissions and to reduce the amount of side lobe radiation escaping from the radar site.

(3) Probability of detecting projectiles is a prime consideration in the positioning of radars. In the hostile fire mode, the radar should be positioned to sight the projectile while it ascends and approaches the radar. The probability of detection varies with the horizontal angle (aspect angle) formed at the hostile weapon position between the direction of the hostile projectile and the direction of the radar position. In the friendly fire mode, the radar must be able to sight the projectile as it descends and travels away from the radar. The aspect angle for friendly fire is 1000 mils.

(4) The radar must be positioned for good communications to the TPC. If possible, the radar position should be near a firing battery to facilitate survey and logistical support, and to take advantage of any existing defensive perimeters. The position must be accessible and provide adequate space for dispersion of four HMMWVs, tents for personnel, generators, remoted antennae, and other equipment.

f. Cueing. The radar emits a very high powered beam of energy especially vulnerable to detection. To minimize its vulnerability, a system of *cueing* (external actions or inputs that cause a surveillance or target acquisition device to turn on and search a suspect area) must be established for the radar to radiate appropriately in both the hostile and friendly modes. The CBR platoon commander and S-2 coordinate cueing schedules and instructions based on all intelligence information and the commander's guidance. The cueing instructions will vary with the threat, terrain, and mode of operation. Alternate cueing methods should be planned.

(1) Hostile Mode. In the hostile mode, the radar is oriented and activated on a suspected weapons location as determined by information and intelligence sources. The radar is cued only when enemy indirect fire weapons are active. FOs, OPs, and aerial observers are examples of sources that can be used to cue radars. The radar can radiate for 15 minutes or more without being located by enemy ground-based EW if optimum conditions are met. These

conditions are: a minimum search sector, screening crest, and a tunneling effect created by vegetation. If the site has a screening crest but no vegetation for a tunneling effect, limit radiation to eight minutes. If a screening crest is not available, or is inadequate, limit the radiation time to two minutes. If the radar radiates for more than two minutes, then it must displace immediately to prevent detection.

(2) Friendly Mode. In the friendly mode, the operator will initiate radiating when the firing unit announces **SHOT** and will cease radiating when the radar console signals **DISPLAY NEXT LOCATION**, or 15 seconds after the firing unit announces **SPLASH**, whichever occurs first.

(3) Regardless of the merits of the radar site or enemy EW capability, the enemy EW threat as well as friendly EW missions conducted must be constantly evaluated and updated for maximum radar efficiency and survivability. Radiating times of over two minutes should be carefully considered before implementation.

g. Zone Management

(1) The radar employment officer will establish radar search fans based on guidance from the G/S-2/3. He will establish common sensor boundaries (CSBs) in order to reduce multiple target generation. For planning purposes, the CSB will be established at the maximum range of the AN/TPQ-46A coverage which will become the minimum search range for the AN/TPQ-37. Measures should be taken to provide a specific area of overlap based off the tactical situation.

(2) The radar employment officer will establish call for fire zones (CFFZs), critical friendly zones (CFZs), artillery target intelligence zones (ATIZs) and censor zones (CZs) based on guidance from the G/S-2/3.

- **ATIZ -** An area in enemy territory that the maneuver commander wants to monitor closely. Weapon locations in this zone will be reported immediately. Their priority is exceeded only by targets in a critical friendly zone or a call-for-fire zone.
- **CFFZ -** An area in enemy territory that the maneuver commander considers extremely important to neutralize fires from by immediate counterfire.
- **CFZ -** An area in which are located friendly units or units that the maneuver commander designates as critical.
- **CZ -** A CZ is an area from which the commander wishes to ignore all target detections. CZs must be used very judiciously, since the computer does not report to the operator a round originating from a CZ. A CZ may be used to ignore a friendly artillery position that, because of its aspect angle to the radar, could be detected as enemy artillery. This situation could occur when an uneven FLOT exists or when friendly units are in enemy territory

h. Command and Contol. The CBR platoon is employed for responsiveness. The CBR platoon employs as a unit or task-organized detachments. Depending on the situation, radars can be centrally controlled by the artillery regiment and the CBR platoon assigned a GS mission.

Some radar sections can be attached to or placed under the operational control of a battalion when the situation dictates. Attachment is favorable for logistics or survey reasons, for widely-separated operations, and for the initial phases of an amphibious assault or expeditionary landing. A detachment normally contains one to three radar sections, a TPC, and support personnel and equipment, as required; i.e., maintenance, service, and survey support. The detachment commander, normally the radar employment chief or a designated individual, serves as a special staff officer to the supported artillery unit's commander. The supported artillery commander controls the detachment through the detachment commander. See MCRP 3-16.1A, *Tactics, Techniques, and Procedures for Field Artillery Target Acquisition*.

i. Counterfire HQ. Pending I MEF and 14th Marines January meeting. 14th Marines will provide input for this paragraph while maintaining the scope of Paragraph 1014.

2016. Employment of the Target Processing Center

The Target Processing Center (TPC) is a detachment of the Counterbattery Radar (CBR) Platoon. The TPC aids in processing all counterfire related targets and acts as a liaison between the supported unit and the radars. The TPC operates in accordance with the decide, detect, deliver, and assess (D3A) methodology outlined in MCWP 3-16A, *Tactics, Techniques, and Procedures for the Targeting Process*. Under most circumstances, the TPC will be located with the regimental FSCC to take advantage of readily available intelligence, collocation with the regimental FSCC (to clear counterfires) and ready access to the division air officer (to request aircraft for air attack of counterfire targets). The TPC will be capable of movement by echelon with the division Main CP and the division Forward CP. The TPC may also be located at the Regimental COC. Close coordination with the division G-2/G-3 and FSCC is required in this situation.

a. Integration of TPC into the COC. When an artillery organization is being supported by the CBR platoon, it is critical for the TPC to be fully integrated into that unit's COC. To effectively function, the TPC should be located near the S-2 and close enough to the S-3 for information to be exchanged in a timely fashion. The TPC must route all counterfire and intelligence data obtained by the radar through the S-2 for collation and analysis, prior to it being passed to the S-3. The TPC must keep the S-3 informed of all relevant information pertaining to the CBR platoon, such as when the radars are moving, where the radars are moving to, the status of friendly fire missions and the operational status of the radars. The S-2 and S-3 must keep the TPC informed of changes to enemy and friendly situations, anticipated movements, and other information which could be important to the effective employment of the

CBR assets. It is important for the TPC to be included in both the Forward and Main command groups to ensure constant communication between the supported units and the radars. The CBR platoon/detachment commander and the TPC chief must maintain close liaison with the supported communications officer to ensure he is aware of the communications requirements of the TPC and that TPC radio and communications equipment are incorporated into the communications plan.

b. Target Production. Target production by the TPC varies from simple to complex and is based on commander's intent and commander's criteria. In its simplest form, target production is the mere passing of target data acquired from a reliable source to the fire control element for prosecution. Complex target production involves the collation of data from one or more sources for analysis so a decision can be determined to fire at the target or to file the target until more information can be accumulated.

c. Target Selection Standards. Although targeting data is collected continuously, targets will be produced according to the commander's criteria. This set of guidelines will determine the difference between incoming data that will be collated for future use and incoming data that will generate an immediate fire mission.

d. Target Production Map. The TPC maintains a target production map as an aid for producing valid targets and for displaying required information for intelligence purposes. The target production map consists of a map of the area of operations with four overlays. These overlays are as follows:

(1) Friendly Situation Overlay. This overlay is used to maintain the positions and activities of all friendly units in the area of operations.

(2) Geometry/Control Features Overlay. This overlay contains all fire support coordinating measures, battlefield geometry, and radar search zones (call for fire, critical friendly, ATI, sensor).

(3) Radar Overlay. This overlay contains current radar locations and sectors of search (i.e., radar fans).

(4) Target/Target Indicator Overlay. This overlay displays enemy activity and target intelligence provided by all target acquisition assets.

e. Information Flow. Information enters the TPC via several communication nodes. The information processing and distribution within the TPC is dependent upon the type of data which has been received. Targets received from radars are processed rapidly and forwarded to the S-2. Data considered as a target indicator or data which needs to be collated for future use, is plotted and stored until the collated data is sufficient to upgrade a target indicator to target status.

(1) Information from G-2. The division intel net and Digital Voice Secure Telephone (DVST) are the primary means of communication between the G-2 and regimental S-2. The Local Area Network (LAN), facsimile (FAX) machine, and couriers should be used to send pertinent traffic to the G-2.

(2) Information from CBR. Hostile weapons locations enter the TPC from counterbattery radar communication nodes.

(a) Targets Received from Radars. When an enemy weapon location is transmitted from the radar to the TPC, the following sequence of events will occur:

1 The computer operator in the TPC will enter the data sent from the radar into the target file. All information sent by the radar is written in the target log.

2 Once the computer operator has compiled all of the data for a particular target location, he will immediately pass the printout to the S-2 and the plotter. The plotter will plot the hostile weapon location on the target and target indicator overlays of the target production map.

(b) The S-2 will determine if the target should be assigned a high priority for counterfire purposes (based on the guidance of the maneuver commander) or be targeted as intelligence information. The S-2 should use the impact predict location and the enemy weapon location to assist in assigning priorities to the target. Once the S-2 determines the priority, he will either pass the printout back to the TPC for collation or present the information to the S-3 with recommendations. If the target is to be fired on, the target will be transmitted to the S-3 computer operator from the TPC.

(c) Once action has been taken on a target or target indicator by the S-3, that information will flow back to the TPC to facilitate file management.

(3) Information from FDC. A significant amount of target traffic enters the COC via the FDC. Reports from battalion S-2s and FOs will arrive over the regimental intel or FDC nets.

f. Battle Damage Assessment (BDA). BDA is a critical step in the targeting process. BDA reports from FOs are critical since a target may still present a threat after it has been fired upon. BDA received by direct support artillery battalions should be sent to higher headquarters via the supported infantry regiment. The artillery regimental S-2 should report BDA of general support artillery fire missions and regimental mass missions to higher headquarters/supported maneuver commanders.

(1) The TPC must coordinate with the S-3 regarding the commander's attack guidance matrix. The highest priority targets must be brought to the FDC's attention immediately.

(2) Target selection standards information must be considered when making a confirmed/suspected target determination. Targets should be analyzed carefully to prevent firing on dummy targets and old positions. Some considerations to be examined are:

- Is the enemy using deception measures?
- How effective are enemy deception measures?
- What are the enemy artillery tactics?

g. Quickfire Operations. Quickfire is a tactic involving the use of the TPQ-36 counterbattery radar and a fire support asset to destroy enemy artillery. The first step is to accurately locate the target, by primarily using the TPQ-36 counterbattery radar. Once it is determined that the target cannot be eliminated by friendly artillery, it is handed over to the another fire support asset for attack. The alternate method is to pass the target information to the division FSCC. The division FSCC will then assign the target to a fire support asset for attack.

2017. Request for Reinforcing Fires

The request for reinforcing fires form (figure 2-5) is designed to assist FDCs in recording, properly formatting, and transmitting technical fire direction information. It utilizes procedures and doctrinal formats found in MCWP 3-16.4, *Artillery Manual Cannon Gunnery*. The following procedures will be utilized with the request for reinforcing fires form:

a. Mass Fire Collective Call Sign. Each regiment will develop a collective call sign to be utilized on all missions directed to or initiated by the regimental COC.

b. Readback. Readback of all tactical fire direction information will be performed by the designated readback station. All other units will acknowledge receipt of the fire order in battalion numerical sequence subsequent to the readback.

c. Reporting Ready and Time of Flight. Firing units will only report "Ready" and "Time of Flight" on fire missions where the time of opening fire is designated as "At My Command", and short countdown TOTs. For time interval TOTs these reports are unnecessary (firing units will only report to the controlling element when they are unable to meet the time on target).

d. Reporting. During a mass fire mission, all required reports (i.e., shot, rounds complete, etc.) will be sent to the controlling element.

e. Reporting During Schedule of Fires. When a schedule of fires is initiated, firing units will report "Shot" at the beginning of the schedule of fires and "Rounds Complete" at the end of the schedule of fires. When a firing unit fails to meet the scheduled ammunition expenditure for individual targets within a schedule it will be reported immediately to the

controlling element. This will afford the agency initiating the schedule to decide if a repeat of the mission or attack by another fire support means is required to meet the commander's attack guidance. Also, if a firing unit anticipates missing a specific timeline in the schedule of fires it will report this to higher headquarters immediately. This will afford higher headquarters the opportunity to deconflict with the establishing agency.

PASSAGE OF COMMAND AND CONTROL/WATCH OFFICER'S CHECKLIST

1. Commander's Intent:

_____
_____
_____
_____
_____

2. Organization for Combat

UNIT	TACTICAL MISSION

3. Recent Significant Events:

_____
_____
_____
_____
_____

4. Scheme of Maneuver:

_____
_____
_____
_____
_____

5. Frag Order In Effect: _____

Figure 2-1. Passage of Command and Control/Watch Officer's Checklist.

6. Active Fire Missions

TARGET #	OBSERVER	FIRE ORDER	STATUS

7. Observer Locations

OBS	LOCATION	OBS	LOCATION	OBS	LOCATION

8. Unit Locations

UNIT	LOCATION

9. H-Hour: _____ L-Hour: _____

10. MOPP Level: 0 1 2 3 4

Figure 2-1. Passage of Command and Control/Watch Officer's Checklist (cont).

11. Fire Caps

UNIT	LOCATION	AOL	WPN STR	DTG(established)/OPORD

12. Scheduled Fires

TYPE	UNIT(s)	DTG
GROUP		
SERIES		
PLANS		

Figure 2-1. Passage of Command and Control/Watch Officer's Checklist (cont).

13. Fire Support Coordinating Measures

FSCM TYPE	IN EFFECT AND DESCRIPTION
FSCL	
CFL	
RFA(s)	
NFA(s)	
RFL(s)	
FEBA	

Figure 2-1. Passage of Command and Control/Watch Officer's Checklist (cont).

14. Changes to Attack Guidance:

_____
_____
_____
_____
_____

15. Future Plans

a. Movements

_____
_____
_____
_____
_____
_____

b. Frag/Warning Orders

_____
_____
_____
_____
_____
_____

c. Other

_____
_____
_____
_____
_____
_____

Figure 2-1. Passage of Command and Control/Watch Officer's Checklist (cont).

16. Employment of CBR/MET/Survey

a. CBR

_____
_____
_____
_____
_____
_____

b. MET

_____
_____
_____
_____
_____
_____

c. Survey

_____
_____
_____
_____
_____
_____

17. Last Target Number: _____

18. Anticipated Changes

a. Commander's Intent

_____
_____
_____
_____
_____
_____

Figure 2-1. Passage of Command and Control/Watch Officer's Checklist (cont).

b. Organization for Combat

UNIT	TACTICAL MISSION

c. Task Organization

_____
_____
_____
_____
_____
_____

d. Tactical Situation

_____
_____
_____
_____
_____
_____

Figure 2-1. Passage of Command and Control/Watch Officer's Checklist (cont).

CHARACTERISTICS	WEAPON LOCATING RADARS		MOVING TARGET LOCATING RADARS	
	AN/TPQ-46A	AN/TPQ-37	AN/TPS-25A	AN/TPS-58B
PLANNING RANGES **ARTILLERY AND MORTARS** **ROCKETS**	12,000M (note 1) 24,000M (note 1)	30,000M (note 1,2) 50,000M (note 1,2)	12,000M (PERSONNEL) 18,280M (VEHICLES)	10,0000M (PERSONNEL) 20,000M (VEHICLES)
AZIMUTH SEARCH SECTOR COVERAGE	1600 MILS (6,400 IN EXTENDED AZIMUTH MODE)	1,600 MILS	360 OR 540 MILS (SELECTABLE)	500 TO 2,500 MILS (VARIABLE)
ACCURACY	FFE ACCURACY	FFE ACCURACY	0 TO 100M	0 TO 50 M
TRAVERSE	6,400 MILS	6,400 MILS	6,400 MILS	6,400 MILS
ELEVATION	15 TO 30 MILS SCREEN CREST	5 TO 15 MILS SCREEN CREST	+/- 265 MILS ELOS	+/- 200 MILS ELOS
EMPLACEMENT TIME	20 MIN	30 MIN	15 TO 45 MIN	15 TO 30 MIN
FORDING CAPABILITY	16 IN	30 IN	DEPENDS ON PRIME MOVER RESTRICTIONS	DEPENDS ON PRIME MOVER RESTRICTIONS
TRAVEL WEIGHT	TRAILER 4,440 LBS SHELTER 2,780 LBS	TRAILER 17,780 LBS SHELTER 2,780 LBS	2,033 LBS	2,228 LBS
DIMENSIONS (LENGTH, WIDTH, AND HEIGHT) TRAILER	170.75 X 84.5 X 94 IN	234.75 X 96 X 134 IN		
SHELTER ON 2 ½ TON TRUCK	264.25 X 97.75 X 123.75 IN	234.24 X 97.75 X 123.75 IN		
5-TON TRUCK W/60 KW GENERATOR	N/A	323.25 X 96 X 119.75 IN		
SHELETER (ALONE)	109.25 X 81.5 X 79.75 IN	109.25 X 81.5 X 79.75 IN		
60-KW GENERATOR WITHOUT TRUCK	N/A	156 X 86.5 X 63.75		
Q-37 ANTENNA AND TRANSCEIVER GROUP WITHOUT TRAILER	N/A	163.5 X 96 X 91.25 IN		
AN/MJQ-25 GENERATOR WITH TRAILER	171.12 X 82 X 98 IN			
AIR TRANSPORT	EXTERNAL CH-47D, UH-60, CH-53E INTERNAL C-130	EXTERNAL CH-47D INTERNAL C-141	EXTERNAL UH-60 INTERNAL C-130	EXTERNAL UH-60 INTERNAL C-130
TYPE OF TARGETS	MORTARS, ARTILLERY, ROCKETS	MORTARS, ARTILLERY, ROCKETS	PERSONNEL LIGHT/HEAVY WHEELED VEHICLES, LIGHT/HEAVY TRACKED VEHICLES	PERSONNEL LIGHT/HEAVY WHEELED VEHICLES, LIGHT/HEAVY TRACKED VEHICLES
NORMAL DISTANCE FROM FORWARD LINE OF TROOPS	3 TO 6 KM	8 TO 12 KM	1 TO 2 KM	1 TO 2 KM

Figure 2-2. Target Acquisition Radar Planning Table.

Note 1: See figure 2-3 for detection probabilities.

Note 2: See TM 11-5840-355-10-2

WEAPON	CEP	ACCURACY
Mortar	50% CEP	35 Meters or 0.35% of range, whichever is greater
Mortar	90% CEP	90 Meters or 0.90% of range, whichever is greater
Artillery	50% CEP	35 Meters or 0.35% of range, whichever is greater
Artillery	90% CEP	90 Meters or 0.90% of range, whichever is greater
Rocket	50% CEP	70 Meters or 0.70% or range, whichever is greater
Rocket	90% CEP	175 Meters or 1.0% of range, whichever is greater

Figure 2-3. AN/TPQ-37 CEP Accuracies.

- CG'S INTENT
- ORGANIZATION FOR COMBAT
- SIGNIFICANT EVENTS
  - CHANGES IN TASK ORGANIZATION
  - SCHEME OF MANEUVER
  - FRAG ORDER IN EFFECT
  - UNITS IN CONTACT
  - TARGETS ACQUIRED AND ATTACKED
  - MOPP STATUS AND RECOMMENDATION
- FSCMs IN EFFECT AND ON ORDER
- FUTURE PLANS
  - MOVEMENTS
  - WARNING ORDERS
  - CBR/MET/SURVEY/LAV/UAV
- ANTICIPATED CHANGES
  - CG'S INTENT
  - ORGANIZATION FOR COMBAT
  - TASK ORGANIZATION
  - TACTICAL SITUATION
- AIR OPERATIONS

Figure 2-4. Example Briefing Format for Tactical Situations.

1

1. _____ THIS IS _____ REQUEST REINFORCING FIRES "OVER"
2. WARNING ORDER
   A. TYPE OF MISSION: NOW ADJUSTING/FFE
   B. SIZE OF ELEMENT TO FFE (CALL SIGN) "OVER"
3. TARGET LOCATION
   A. TARGET NUMBER _____
   B. GRID _____ ALT _____ LENGTH _____ WIDTH _____ ATTITUDE _____
   C. ALTITUDE (OMIT IF AF) _____ "OVER"
4. TARGET DESCRIPTION _____
5. METHOD OF ENGAGEMENT _____
6. METHOD OF FIRE AND CONTROL _____ "OVER"

NOTE: THIS IS TRANSMITTED BY REQUESTING UNIT

FIRE ORDER

_____ THIS IS _____ "OVER"

1. WARNING ORDER
   A. NOW ADJUSTING
   B. FIRE FOR EFFECT
2. UNIT TO FFE _____/ADJ UNIT _____
3. TARGET NUMBER _____
4. TARGET LOCATION _____
   A. GRID _____
   B. ALTITUDE (OMIT IF AF) _____
5. DISTRIBUTION***** _____
6. PROJECTILE ***** _____
7. AMMUNITION LOT AND CHARGE ***** _____
8. FUZE***** _____
9. NUMBER OF ROUNDS***** _____
10. RANGE SPREAD/LATERAL SPREAD/ZONE FIRE/SWEEP FIRE/HIGH ANGLE
11. TIME OF OPENING FIRE
    A. WHEN READY
    B. AMC
    C. TOT
    D. TOT AT _____
    E. TOT _____ MIN FROM MY MARK...
12. CONTROLLING UNIT _____

***** MAY BE STANDARDIZED

NOTE: THIS IS DEVELOPED AND TRANSMITTED BY HIGHER HEADQUARTERS

MTO: UNIT TO FFE _____
CHANGES FROM CCF _____
NUMBER OF ROUNDS I/E _____
TARGET NUMBER _____
CLEARED BY _____ AT _____
TARGET NUMBER _____ DTG FIRED _____

NOTE: THIS IS DEVELOPED AND TRANSMITTED BY HIGHER HEADQUARTERS

2 **Figure 2-5. Example Request for Reinforcing Fires Form.**

REPLOT DATA

_____ THIS IS _____
UNITS TO FFE _____ ADJ _____
REPLOT DATA
A. TARGET NUMBER _____
B. GRID _____
C. ALT _____

UNIT	ROGER	READY	TOF	SHOT	RDS COMPLETE	EOM
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

SURVEILLANCE
_____
_____
_____
_____

Figure 2-5. Example Request for Reinforcing Fires Form (cont).

ATTACK GUIDANCE MATRIX				
CATEGORY	**HIGH PAYOFF**	**WHEN**	**HOW**	**REMARKS**
C3				
FS				
MAN				
ADA				
ENG				
RSTA				
REC				
N/CH				
POL				
AMMO				
MAINT				
LIFT				
LOC				

WHEN:
- **I = IMMEDIATELY**
- **A = AS ACQUIRED**
- **P = PLAN**

HOW:
- **S = SUPPRESS**
- **N = NEUTRALIZE**
- **D = DESTROY**
- **EW = JAMMING OR OTHER**
- **DNE = DO NOT ENGAGE**

X% = SPECIFIED AMOUNT OF DAMAGE
/G2/S2 = COORDINATE ATTACK WITH G2/S2

REMARKS

Figure 2-6. Attack Guidance Matrix.

COMMANDER'S CRITICAL INFORMATION REQUIREMENTS (CCIR's)	
MISSION EXECUTION CHECKLIST	
CODEWORD **TIME** **EVENT**	
AIR ALERT STATUS: _____	**HOT ITEMS:**
NBC ALERT STATUS: _____	**1. _____**
MOPP LEVEL: _____	**2. _____**
	3. _____
	4. _____
	5. _____

1 **Figure 2-7. Commander's Critical Information Requirements (CCIR's).**

NAMED AREA OF INTEREST (NAI)/TARGET AREA OF INTEREST (TAI) MATRIX				
NAI	**RECON TM**	**INTEREST**	**TAI**	**ATTACK MEANS**

Figure 2-8. NAI/TAI Matrix.

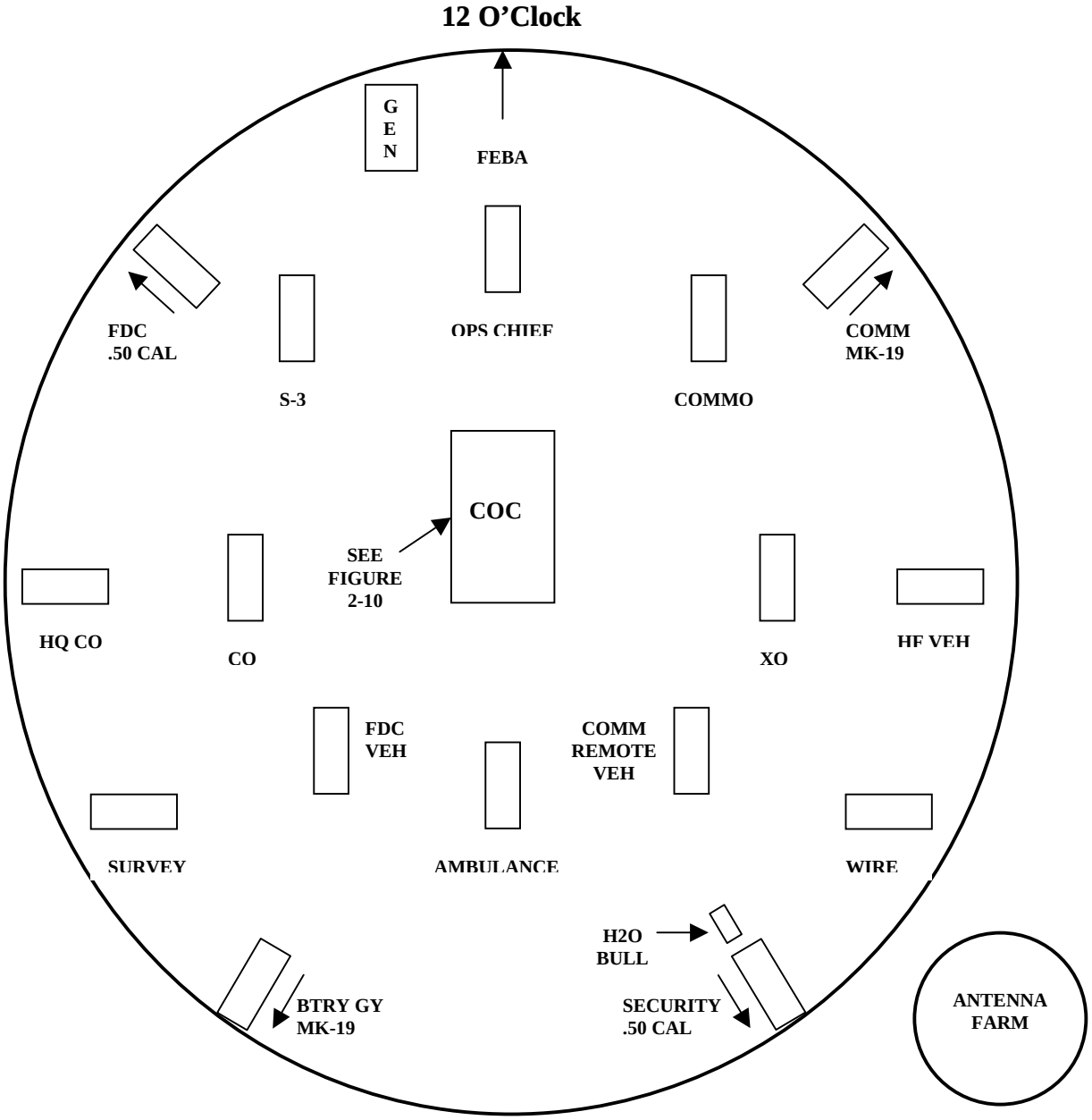
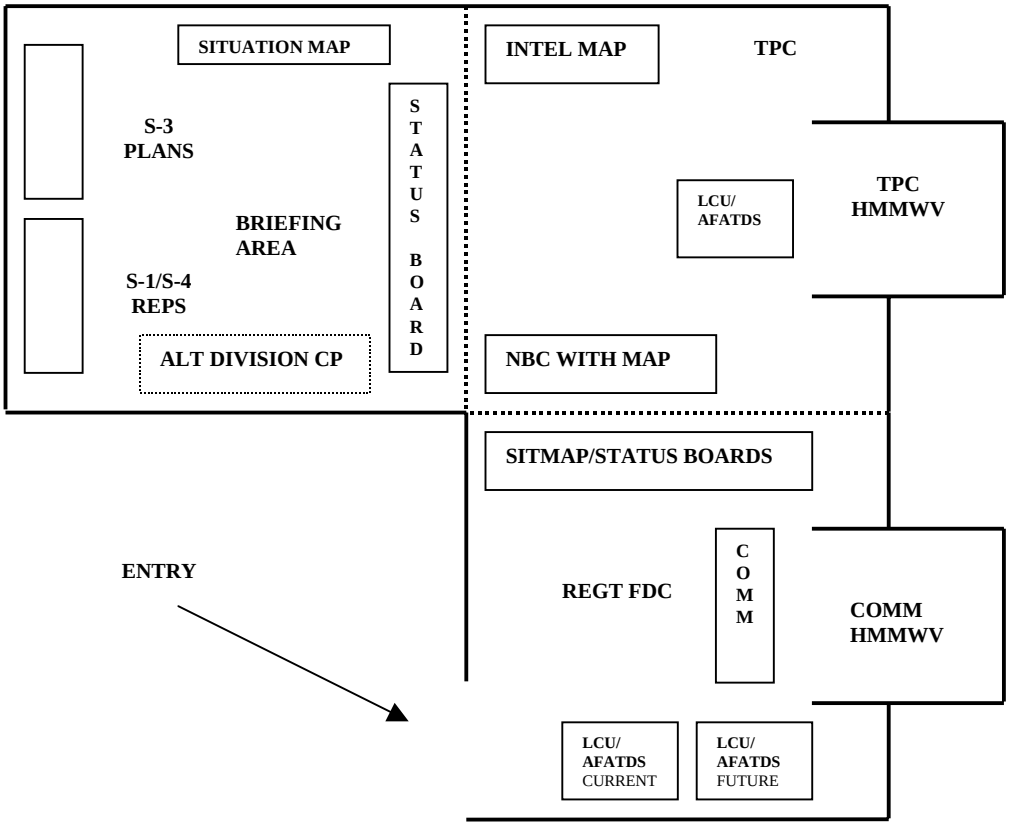


Figure 2-9. Example Regimental COC Site Layout.



NOTE: All COCs should contain only one entry point in order to faciliate the control of personnel on the access roster.

Figure 2-10. Example Regimental COC Configuration.