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MCTP 3-10F

Fire Support Coordination in the Ground Combat Element



U.S. Marine Corps

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UNITED STATES MARINE CORPS

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FOREWORD

Marine Corps Tactical Publication 3-10F, *Fire Support Coordination in the Ground Combat Element*, is a framework for coordinating and employing supporting arms in consonance with maneuver elements. It applies to the ground combat element of the Marine air-ground task force and provides reference for Marines that plan, coordinate, and execute fires and effects in support of the ground combat element. While this publication covers many aspects of fire support; it focuses on fire support coordination in the infantry division, regiment, and battalion. It applies across the competition continuum and is studied along with Marine Corps Warfighting Publication 3-31, *Marine Air Ground Task Force Fires and Effects*.

Fire support doctrine is based on a common understanding of the nature of war and on our warfighting philosophy as described in Marine Corps Doctrinal Publication 1, *Warfighting*. This doctrine provides for fast, flexible, and decisive action in a complex environment characterized by friction, uncertainty, fluidity, and rapid change. This publication is a field reference guide for commanders, their staffs, and fire support coordination personnel and forms the basis for specific fire support coordination tactics, techniques, and procedures.

This publication supersedes Marine Corps Warfighting Publication 3-16, *Fire Support Coordination in the Ground Combat Element*, dated 28 November 2001, erratum dated 2 May 2016, and change 1 dated 4 April 2018.

Reviewed and approved this date.



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Summary of Changes

- Chapter 1 presents fires and effects tasks.
- Chapter 1 introduces information and some of the lexicon associated with it.
- Chapter 1 introduces the Marine littoral regiment and associated maneuver and fires elements.
- In Chapter 3, step 1 of the Marine Corps Planning Process (MCP) changes from mission analysis to problem framing in accordance with Marine Corps Warfighting Publication (MCWP) 5-10, *Marine Corps Planning Process*.
- In Chapter 3, the designation of the *Fire Support Appendix* changes from Appendix 19 to Appendix 17 of Annex C, *Operations* in accordance with MCWP 5-10. It also reflects that Appendix 3 to Annex C *Operations* has become *Information Operations*.
- Chapter 3 significantly expands discussion on course of action development steps for the staff.
- Chapter 3 now includes planning considerations for stabilization and breaching operations, as well as a detailed discussion about urban operations.
- Chapter 4 was renamed “Engagement” instead of “Targeting” to include the pursuit of nonlethal effects against neutral and friendly entities in the battlespace.
- Chapter 4 introduces new terms for engagement, including relevant actor, audiences, target audience, entity, engagement guidance, high-payoff entity (HPE) list, engagement synchronization matrix, network analysis, entity evaluation criteria, entity analysis, and civil preparation of the battlespace (CPB).
- Chapter 4 introduces the information models political, military, economic, social, information, infrastructure (PMESII) and areas, structures, capabilities, organizations, people, and events (ASCOPE) into the decide step of decide, detect, deliver, and assess (D3A) and criticality, accessibility, recuperability, vulnerability, effect, and recognizability (CARVER).
- Chapter 4 addresses more deliberate engagement processes like D3A and more dynamic engagement processes like find, fix, track, target, engage, and assess (F2T2EA) and find, fix finish, exploit, analyze, and disseminate (F3EAD).
- Chapter 5 no longer has a section on emerging munitions as that area is evolving quickly.
- The appendices were streamlined for brevity, directing the reader to other publications where appropriate.
- Appendix C now includes more details on effects and a desired effects description table to assist in engagement efforts.

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GLOSSARY

REFERENCES

CHAPTER 1

FUNDAMENTALS OF FIRE SUPPORT COORDINATION IN THE GCE

Fires are defined as the use of weapon systems or other actions to create specific lethal or nonlethal effects on a target. Fire support coordination includes the planning and executing of fires to ensure targets are adequately covered by a suitable weapon or group of weapons. The Marine air-ground task force (MAGTF) is the Marine Corps' principal organization for all missions across the competition continuum and consists of a command element, a ground combat element (GCE), an aviation combat element (ACE), and a logistics combat element (LCE). The MAGTF principally employs fire support provided by the GCE and the ACE but may also receive external fire support from other joint, combined, and multinational forces.

Historically, combined arms capabilities have focused on the ability to plan, coordinate, and execute fires (i.e., cannon and rocket artillery, mortars, naval surface fire support [NSFS] and aviation-delivered fires) to create lethal effects. Today, the GCE can leverage a broader range of capabilities, to include joint fires, missiles, network-enabled weapon systems, information capabilities, and enhanced intelligence, surveillance, and reconnaissance (ISR) via ground and airborne assets to generate lethal or nonlethal effects.

MARINE CORPS FIRES AND EFFECTS TASKS

The fires warfighting function integrates and synchronizes several processes. These fires and effects tasks include targeting, fire support, counterfire, countering air and missile threats, interdicting enemy capabilities, integrating information, and assessing fires and effects. Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, considering command objectives, operational requirements, available capabilities, and rules of engagement (ROE). Fire support is fires that directly support land, maritime, amphibious, space, cyberspace, and special operations forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives. Counterfire is the process of proactively or dynamically employing fires to destroy or neutralize enemy fires systems and weapons. Interdicting enemy capabilities limits, degrades, diverts, disrupts, delays, or destroys enemy surface capabilities before being used effectively against friendly forces or otherwise achieving their objectives. Countering air and missile threats integrates offensive and defensive operations and capabilities to achieve and maintain freedom of action and force protection. These operations are designed to destroy or negate enemy aircraft and missiles, both before and after launch. Integrating information involves the planning and employment of information activities and capabilities to create desired effects and achieve objectives. In the context of fires and effects, integrating information refers to informing, influencing, deceiving attacking, and exploiting relevant actors to achieve objectives. Assessing fires and effects is the process of assessing the effectiveness of fires and effects and their contribution to achieving objectives.

The GCE is a combined arms team and its ability to deliver fires is most effective when the team creates a combined arms effect. Combined arms are the full integration of arms in such a way that to counteract one, the enemy must become more vulnerable to another. It integrates fires with maneuver to create the commander's desired lethal and nonlethal effects across the battlespace.

Combat power is the total means of destructive and disruptive force that a military unit can apply against the opponent at a given time. It consists of tangible factors such as the destructive effect of available firepower, but also consists of intangible factors such as surprise, tempo, and morale.

Relevant actors include individuals, groups, populations, or automated systems whose capabilities or behaviors can affect the success of a particular campaign, operation, or tactical action. They are not all enemy. Relevant actors are classified as audiences, target audiences, or targets depending on their relationship to the threat and the selected means of engagement. Audiences are a broadly defined group that contains stakeholders and publics relevant to military operations that the commander wishes to inform. A target audience is an individual or group selected for specific influence. A target is an entity or object that performs a function for the threat considered for possible engagement or other action. Within the context of targeting an entity is a term used to describe facilities, individuals, virtual (nontangible) things, equipment, or organizations.

FIRE SUPPORT FUNCTIONS

Fire support functions are enabling functions performed to support operations in relation to the following considerations:

- Supporting forces in contact.
- Supporting the concept of operations (CONOPS).
- Integrating and synchronizing fire support.
- Sustaining fire support operations.

Regardless of the unit supported, these functions give the commander and fire support representatives a frame of reference to evaluate the overall effectiveness of fires. They serve as unifying factors for supporting arms and do not change or replace traditional missions, roles, and operations, but provide a common point of departure for all supporting arms.

Support Forces in Contact

Prerequisite to this function is the ability to provide responsive joint fire support to forces in contact with relevant actors in the battlespace. It enhances the friendly force's survivability and increases their freedom of maneuver and action. Individual fire support assets and information capabilities support forces in contact to generate lethal and nonlethal effects.

Support the Concept of Operations

This function enables the force commander to influence the battle with firepower, providing the means to create lethal and nonlethal effects that support the concept of maneuver and contribute to mission accomplishment. The concept of fires describes how the staff will synchronize and integrate joint fires to support the commander's objectives. Fire support assets and information capabilities can shape the battlespace by engaging the enemy's center of gravity (COG) through

attacks on enemy critical vulnerabilities and requirements by leveraging decisive combat power with a combined arms effect in pursuit of the commander's objectives.

Integrate and Synchronize Fire Support

Integrating and synchronizing fire support and information capabilities continuously and concurrently with the concept of maneuver requires the precise arrangement of coordinated activities in time, space, and purpose to produce the best effects. It provides the right engagement means delivered on the right entity, at the right time, creating a combined arms effect. Integration and synchronization occur between fires and the other warfighting functions (i.e., command and control [C2], maneuver, intelligence, logistics, information, and force protection). Risk mitigation is a function of coordination and integration, and both risk mitigation and increased lethality result from effectively coordinating fires.

Sustain Fire Support Operations

This function ensures fire support endurance and continuity in providing fires and information capabilities and involves the actions to achieve logistics sustainment and C2 support to coordinate movement control and battlespace management.

FIRE SUPPORT ROLE OF THE GROUND COMBAT ELEMENT

Each MAGTF element has a specific role in coordinating fire support. The command element implements the MAGTF commander's intent and focuses on deep operations to shape the battlespace and set conditions for its major subordinate elements. The ACE is a major provider of fire support through offensive air support (OAS) and electromagnetic warfare. The control of aircraft and missiles is a collaborative effort. The LCE commander is responsible for the conduct of rear area operations. The GCE receives and controls most fire support assets that include GCE assets as well as fires provided by other MAGTF and joint elements. To enhance combat power, the GCE leverages the full range of capabilities. This requires the integration all available capabilities through continuous planning and execution processes across all domains and dimensions of the operational environment to achieve military advantage, without degrading operational tempo. This requires the GCE to be organizationally and procedurally agile with staffs that plan and coordinate rapidly emerging capabilities across sections. This agility includes effective communications and engagement.

Fire support coordination centers (FSCCs) in the GCE interact with the MAGTF command element through the MAGTF fires and effects coordination center (FECC). The FECC coordinates fires with higher, adjacent, and external commands that GCE FSCCs cannot coordinate with, and handles those matters that affect the entire MAGTF. For more information on the FECC, see Marine Corps Warfighting Publication (MCWP) 3-31, *Marine Air-Ground Task Force Fires and Effects*.

During ground operations, the GCE interfaces with the ACE through the Marine air command and control system (MACCS). Forward air controllers (FACs), joint fires observers (JFOs) and joint terminal attack controllers (JTACs), who are part of tactical air control parties (TACPs) organic to GCE units, air officers (AirOs), the direct air support center (DASC), and other MACCS agencies, achieve control and coordination of air operations within and outside the GCE's area of operations (AO).

The GCE coordinates NSFS through naval gunfire (NGF) liaison sections, led by a naval gunfire liaison officers (NGLOs) and including US Navy personnel communicating to support ships. The GCE plans, integrates, and coordinates all fire support within its AO. It plans fires and information capabilities, conducts engagement and deep operations in its battlespace, and integrates fires with maneuver in close operations, contributing to the combined arms effects. All artillery is organic or attached to the GCE. The FSCC may coordinate with other elements of the MAGTF and adjacent external forces on behalf of the GCE. A force artillery headquarters (FAHQ) provides additional command and control, as well as cannon and rocket artillery support to the entire MAGTF and includes attached US Army, and allied units.

Elements of the GCE leverage information capabilities through information planners and electronic warfare support teams. The electromagnetic support teams coordinate across principal staff sections, working groups, targeting boards, information planners, and with higher headquarters to integrate the planning, execution, and assessment of cyberspace and electromagnetic spectrum actions. Offensive cyberspace operations and electronic attack are forms of fires that the staff integrates and synchronizes with other fires and maneuver to generate both lethal and nonlethal effects. While GCE staffs may source electronic attack fires from organic capabilities, the GCE relies heavily on external agencies for most offensive cyberspace operations support.

GROUND COMBAT ELEMENT FIRE SUPPORT COORDINATION ORGANIZATIONS

An FSCC is where communications, facilities, intelligence inputs, and personnel coordinate all forms of fire support for the GCE. It is an advisory and coordinating agency usually located with the combat operations center (COC). The senior GCE FSCC plans, coordinates, and executes all forms of fire support within the GCE's AO. In distributed operations, fire support elements will exist from division down to the company level. The fire support coordinator (FSC) organizes and supervises the FSCC under the G-3/S-3. Personnel and equipment quantities vary with the level of command and responsibility, size, and complexity of the forces involved, the degree of planning and coordination required, and the commander's desires. Detailed listings of personnel by grade, military occupational specialty, and billet description reside in unit tables of organization. The FSCC organizes and equips to do such tasks as—

- Identifying and recommending entities for engagement.
- Assisting in the development of essential fire support tasks (EFSTs).
- Coordinating, synchronizing, integrating, and deconflicting air, surface, and information fires with maneuver in the battlespace.
- Allocating available fire support assets to engage the targets, scheduling associated fires, and disseminating the plan to all appropriate supporting arms agencies for execution.
- Retaining authority to approve, modify, or deny all fire support requests, but expediting the execution of fires by allowing observers to coordinate directly with supporting agencies.
- Formulating artillery fire plans and coordinating for integration into the fire support plan.
- Facilitating quick-fire support planning, simplifying the integration of multiple fire support assets.
- Reviewing subordinate unit programs and schedules of fire.
- Coordinating, integrating, and deconflicting fires across or outside of unit sectors while facilitating permissive use of fires in the unit battlespace.

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- Minimizing restrictions to fires or maneuver to that which is necessary to facilitate integration and deconfliction.
- Maintaining awareness of unit positions to facilitate supporting fires at critical points in the battle.
- Assigning priority targets and priority of fires (POF).
- Determining positive or passive fires clearance procedures and approval levels.
- Determining centralized or decentralized message routing for fires requests.
- Facilitating fires in support of distributed operations.
- Coordinating and conducting suppression of enemy air defenses (SEAD) missions.
- Facilitating aviation support.
- Creating and implementing formal and informal airspace coordination areas (ACAs) to deconflict aviation from the effects of other supporting arms.

Positive clearing procedures require a transmission from the FSCC to the firing agency indicating approval or denial of all requests for fire. This only applies to fires short of a coordinated fire line (CFL). Passive clearing procedures, commonly known as “silence is consent,” do not require a transmission from the FSCC before the mission is fired by the firing agency. The FSCC should acknowledge receipt of the mission. This procedure can only be used with decentralized routing. Message routing has two modes. In the centralized mode, all requests for fire are sent to the FSCC then forwarded to the appropriate supporting arm. In the decentralized mode, requests for fire are sent directly to the firing agency. The FSCC monitors the request then signifies approval (if positive clearance is required), denial, or modification of the request.

Division Fire Support Coordination Center

The division FSCC plans, coordinates, and facilitates fire support. Supporting arms representatives identify requirements, produce estimates of supportability, and make recommendations to the division commander for prioritization and allocating fire support assets. The division FSCC plays a key role in deliberate targeting due to its command, control, communications, computers, and intelligence ability to collect and analyze target information. It is comprised of the division fire support team (FST) and the air section (organic to the division G-3). The division FST provides a liaison to division forces for control and coordination of fires, coordinates all supporting arms to execute the CONOPS, and consists of the following personnel who support the required planning and coordination for fire support functions:

- FSC.
- Assistant FSCs.
- NGLO.
- Target effects officer.
- Division fire support chief.
- Assistant fire support chief.
- NGF chief.
- JTAC manager – weapons tactics instructor.
- Fire support Marine/Advanced Field Artillery Tactical Data System (AFATDS) operator/journal clerk/map plotter/watch clerks.

The division FST consists of the following sections:

- Fires section.
- Target information section.
- NGF section.
- Air section.
- Information operations cell

Fires Section. This section is responsible for planning, coordinating, and executing timely fires against enemy targets and will—

- Develop the division's fire support plan.
- Establish and maintain communication with the MAGTF command element and subordinate elements for the planning, coordination, and execution of fire support requirements.
- Execute the commander's engagement guidance.
- Coordinate cross-boundary fires with higher, subordinate, and adjacent headquarters.
- Resolve fire support conflicts.
- Review subordinate fire support plans to ensure integration with the division's concept of fires.
- Allocate adequate fire support assets to subordinates to ensure the successful execution of operations.
- Develop, coordinate, and disseminate fire support coordination measures (FSCMs) to facilitate fires and safeguard friendly forces.
- Advise the commander and G-3 on the planned capabilities, limitations, and employment of fires assets.
- Provide representation to the operational planning team (OPT) to plan fires.
- Coordinate the maneuver of surface fire units and assets with battlespace owners.
- Participate in the planning of and monitor the execution and modification of the air tasking order (ATO).
- Monitor and coordinate counterfire.

The fires section consists of the following personnel:

- Assistant FSCs.
- Division fire support chief.
- Assistant fire support chief.
- Fire support Marine/watch clerks.

The division fire support chief and assistant are responsible for the smooth and efficient functioning of the division FST to ensure that fires are planned, coordinated, and executed to support the commander's intent and guidance. This includes the identification and set up of all required software and hardware equipment, establishing the network architecture for all required fires C2 systems, and training of fire support personnel in deliberate and dynamic targeting processes to support the execution of the division's mission. The fire support chiefs assist the assistant FSCs in the performance of their duties. The watch clerk supports FSCC operations

with fires C2 systems, information management, and developing and posting appropriate fire support products.

Target Information Section. This section's duties span deliberate and dynamic targeting requirements; it is responsible for the portions of the target development process that resides within the division G-3. The target information section provides representation to the MAGTF fires and effects synchronization working group and targeting boards. The target information section will—

- Establish and maintain communication with the MAGTF command element and subordinate elements for the planning, coordinating, and executing of engagement requirements.
- Supervise, support, and participate in appropriate daily targeting boards, working groups, and “huddles.”
- Support the development and updating of engagement products and tools.
- Ensure the synchronization of timelines for product development and delivery, working groups, and boards, with the division and fires sections' overall battle rhythms.
- Develop the proposed engagement objectives, priorities, and ISR support requirements to higher headquarters.
- Supervise and support the dissemination of approved engagement guidance and objectives.
- Ensure the integration of nonlethal engagement objectives.
- Support the development and nomination of relevant actors for consideration in the engagement process.
- Support tactical engagement processes.
- Supervise, produce, and post appropriate products, briefs, reports, and materials to engagement collaborative tools and status references (i.e., displays and electronic journals).

This section consists of a target effects officer and up to four enlisted personnel to work with the target intelligence officer from the G-2 section. The target effects officer chairs all boards, cells, and working groups that synchronize the collection plan with the fire support plan and concept of maneuver. The section develops a conceptual approach toward the enemy's critical capabilities. The target intelligence officer identifies critical components of those capabilities and future targets. The attack of which can accomplish the commander's shaping objectives. The section manages the target intelligence database to create lists of targets. The target effects officer sponsors those targets through the targeting board and forwards approved targets to higher headquarters.

Naval Gunfire Section. This section establishes and maintains capabilities for liaison and communications between supported units and appropriate NSFS control agencies. It informs and advises the GCE commander on employing, requesting, and controlling NSFS. The naval gunfire section will—

- Establish and maintain communication with the MAGTF command element and afloat commands for the planning, coordination, and execution of NSFS requirements.
- Execute the commander's engagement guidance.

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- Resolve NSFS conflicts.
- Assist in planning and coordinating the positioning, resupply, and movement of ships in support of GCE requirements.
- Review subordinate fire support plans that contain NSFS.
- Develop, coordinate, and disseminate battlespace geometries associated with NSFS requirements.
- Advise the commander and G-3 on the current capabilities, limitations, and employment of NSFS assets.
- Provide representation to the OPT to plan naval surface fires.
- Support counterfire requirements.

This section consists of the following personnel:

- NGLO.
- NGF chief.
- Clerks.

The NGLO coordinates all NGF supporting the ground maneuver forces or that may affect their AO and advises the FSC on all matters pertaining to NGF employment. These matters include capabilities, limitations, the status of fire support ships, and targets suitable for NGF engagement.

Air Section. This section consists of a division AirO and an assistant. The division AirO works closely with the FSC. The air section will—

- Advise the division commander and staff TACPs about integrating the six functions of Marine Corps aviation into regimental operations.
- Participate in forming operation plans and orders on air employment.
- Participate with the FSC in engagement and selecting appropriate means of attack.
- Prioritize joint tactical air strike requests (JTARs) and send them to the ACE for sourcing.
- Prioritize and resolve conflicts in air support requests.
- Prepare, forward, and coordinate air support requests.
- Relay pertinent information to other tactical air control elements.

Information Operations Cell. The division FSCC may also have an information operations cell that advises the FSCC on how to integrate information capabilities into the greater fire support plan to generate lethal or nonlethal effects and achieve the commander's objectives. The information operations cell provides representation to the MAGTF fires and effects synchronization working group and targeting boards. The information operations cell will—

- Support and participate in appropriate daily targeting boards, working groups, and “huddles.”
- Support the development and updating of engagement products and tools.
- Support the development of proposed engagement objectives and priorities.
- Support the dissemination of approved engagement guidance and objectives.
- Support the integration of nonlethal engagement objectives.

CUI

- Support the development and nomination of relevant actors for consideration in the engagement process.
- Support tactical engagement processes.
- Produce and post appropriate products, briefs, reports, and materials to engagement collaborative tools and status references.

This section consists of the following personnel:

- Assistant operations officer.
- Civil affairs officer.
- Information operations officer.
- Information operations planner.
- Information operations chief.
- Select information specialists.

Regimental Fire Support Coordination Center

The regimental FSCC plans, coordinates, and integrates supporting arms to support the regiment's CONOPS for current and future operations. It performs engagement and develops targets with its target acquisition assets. The regimental FSCC develops the regiment's fire support plan, requests NSFS and air support, and plans fires within the regiment's AO. It allocates fire support assets to subordinate battalions (e.g., close air support [CAS] sorties, NSFS ships) and assists and supervises subordinate FSCCs. The regimental FSCC will—

- Establish and maintain communication with the division, adjacent units, and subordinate elements for the planning, coordinating, and executing of fire support requirements.
- Execute the commander's engagement guidance.
- Set conditions by shaping the battlespace to facilitate subordinate operations.
- Monitor and coordinate counterfire operations.
- Receive requests for fires from subordinate battalions.
- Clear fires that affect the regiment's AO and that of subordinate battalions.
- Coordinate with higher, adjacent, and subordinate units.
- Ensure integration of all fires with the intelligence collection effort and the concept of maneuver.
- Coordinate the ingress and egress routes for all aviation assets performing assault support, CAS, and reconnaissance missions within and through the battlespace.
- Develop, coordinate, and disseminate FSCMs to facilitate fires and safeguard friendly forces.
- Develop and forward fire plans to support the concept of maneuver.
- Assist in the planning and coordination of movements and positioning by artillery units with the artillery battalion within its AO to support the regiment.

Regimental Fire Support Team. The regimental FSCC conducts artillery liaison and coordination functions for the regiment and operates the fire support coordination and artillery nets in the FSCC. Its personnel have similar responsibilities to those of their counterparts at the division FSCC. The regimental FST generally consists of the following personnel:

CUI

- FSC.
- Assistant FSC.
- Assistant liaison officer (LNO).
- NGLO.
- Fire support chief.
- Assistant fire support chief
- Fire support Marine.
- Field radio operators.

The artillery battalion commander is usually the infantry regiment's FSC. The assistant regimental FSC performs FSC duties when the battalion commander is absent from the infantry regimental FSCC. Personnel in the infantry regimental FST have similar responsibilities to those of their counterparts at the division FSCC. The regiment may also have an information operations cell.

Tactical Air Control Party. The TACP consists of a regimental AirO, a FAC, and four field radio operators. The regimental AirO is a certified weapons tactics instructor who serves as a special staff officer to the regimental commander on aviation matters and is also the officer in charge of the regiment's TACP who serves as the air representative within the FSCC. The regiment TACP will—

- Integrate all six functions of aviation into the regiment's operations.
- Establish and maintain communication with higher and adjacent units and subordinate elements for the planning, coordinating, and executing of air support.
- Assist in planning airspace coordination measures (ACMs) and FSCMs within the regiment's AO.
- Ensure safe routing of all aircraft in the regimental battlespace and associated airspace.
- Prioritize and forward requests for aviation support to appropriate C2 agencies.
- Perform all functions of a FAC, if required.
- Train and manage regimental and subordinate battalion TACPs.

During distributed operations, the regimental FSCC may assume duties traditionally done at the division level.

Battalion Fire Support Coordination Center

The battalion FSCC performs fire support coordination by closely integrating fires with maneuver. It monitors and receives all fire support requests originating within the battalion and ensures integration with the concept of maneuver, deconfliction between friendly forces, and alignment with the commander's intent. It also coordinates missions for observers to attack targets outside the battalion's AO. The FSCC will—

- Establish and maintain communication with higher, adjacent, and subordinate units and elements for the planning, coordination, and execution of fire support requirements.
- Advise the commander on the employment of fire support assets.
- Execute the commander's engagement guidance.
- Set conditions by shaping the battlespace to facilitate subordinate operations.

CUI

- Receive requests for fires from subordinate units. Determine and service calls for fire (CFFs) or requests for fire with organic, supporting, or allocated assets. If fire support assets are not available to properly service targets, they will forward requests to higher.
- Clear fires that occur in the battalion's AO and that of subordinate units.
- Develop, coordinate, and disseminate FSCMs to facilitate fires and safeguard friendly forces.
- Develop and forward fire plans to support the concept of maneuver.
- Ensure the integration of all fires and information capabilities with the intelligence collection effort and the concept of maneuver.
- Approve, coordinate, and disseminate engagement products and priorities, FSCMs, and other appropriate documents.
- Conduct coordination with appropriate commands and agencies, as required.
- Assume duties traditionally done at the division and regiment level during distributed operations.

Battalion Fire Support Team. This team consists of the following personnel:

- FSC.
- Battalion fire support officer (FSO).
- NGLO.
- Battalion fire support chief/JTAC.
- JFO/fire support Marine.
- Field radio operators.
- Mortar representative.

The FSC is the fire support advisor to the battalion FSCC. Personnel in the battalion FST have similar responsibilities to those of their counterparts at the regimental FSCC.

Tactical Air Control Party. The TACP enables dispersed and simultaneous operations while also balancing the requirement for individuals qualified to control aviation-delivered fires with the need to maintain broad aviation integration expertise. It consists of the AirO and FACs. Its duties at the battalion level are the same as those at the regimental TACP.

81 mm Mortar Platoon Representatives. The battalion's organic 81 mm mortar platoon provides a mortar representative to work in the battalion FSCC and three mortarmen who are trained as forward observers within the company to support the companies and/or occupy observation posts (OPs).

Independent Battalion Fire Support Coordination Center

Independent battalions operating as maneuver elements establish FSCCs that function the same as infantry battalion FSCCs. Their staffs consist of personnel who provide fire support expertise (e.g., artillery, mortar, NGF, or air support). The FSC has the following personnel assigned:

- Artillery officer – FSC.
- Fire support chief.
- JFOs.
- Field radio operators.

Company Fire Support Team

The company FST provides a maneuver company with observers, spotters, and controllers who plan, call for, adjust, and control supporting arms. The company FST also serves as the company commander's primary means of planning and employing combined arms in support of maneuver. It collaborates with higher headquarters fire support agencies while coordinating, planning, and controlling organic and non-organic fire support assets for the company. Although the company FST resides with the company COC, the commander may also deploy it elsewhere within the battlespace to better support assigned company tasks and synchronize with the higher headquarters commander's intent. During distributed operations, the company FST can assume duties traditionally done at the division, regiment, and battalion level. At a minimum, the company FST consists of the following personnel:

- Company FST leader.
- Company FSO (artillery).
- JTAC/FAC.
- Mortar forward observer.
- JFOs.
- Fire support Marine.
- Radio operators.

Information capabilities representatives may assist the FST or company commander depending on the mission and fire support systems allotted.

Company Fire Support Team Leader. The FST leader coordinates with the higher headquarters FSC for fires planning to support the company commander's intent for fires. They supervise the FST in the planning and executing of deliberate and hasty fires to create the desired effects. These actions include engagement, development, and dissemination of products and orders, rehearsals, friendly fire avoidance, and effects assessment. They receive advice and guidance from the team members who are resident experts in artillery, NSFS, mortars, and CAS. They also organize and integrate FST functions and serve as the primary means of conducting fires communications with subordinate, adjacent, and higher commands. The FST leader will—

- Ensure that fire support planning is accurate and integrated into the concept of maneuver and fires are executed effectively.
- Ensure proper fire support integration and execution, working concurrently with the company commander to plan fires in support of the developing maneuver plan.
- Determine the task requirements for all fire support assets and ensure requests are forwarded to the appropriate fire support agencies.
- Develop and maintain situational awareness, know the capabilities and limitations of the team, synchronize its efforts, and establish priorities of work and procedures to ensure smooth operation.
- Ensure that the various supporting arms agencies are coordinated with maneuver for maximum combat power, mitigating the risks of numerous assets operating in the same battlespace.
- Ensure that all fire support means are integrated into the company commander's maneuver plan.

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- Direct FST members in the execution of fires, management of battlespace geometry, tracking and updating of friendly and enemy situations, and preventing friendly fire.
- Recommend, coordinate, and disseminate priorities, FSCMs, and other appropriate documents.
- Ensure assigned targets are refined, observed, rehearsed, and fired in support of the scheme of fires.
- Separate the fire support assets by time or space to ensure the safety of friendly forces.
- Clear fires in the company's zone of operations through approval, modification, and denial.
- Revise the fire support plan and deconflict fire support agencies.
- Facilitate rapid coordination of fires with the company concept of maneuver.
- Recommend FST augmentation to the company commander.
- Train organic company fire support personnel.

Company Fire Support Officer. The company FSO advises the company commander on the capabilities and limitations of fire support assets while planning and coordinating fires at the company level. The company FSO will—

- Provide the company commander and FST leader with recommendations on the employment of fire support.
- Know the amount and type of ammunition available and prepare to give advice on all types of indirect fire support, including naval surface fires, rockets, and mortars.
- Recommend target, engagement priorities, and FSCMs to support the concept of maneuver.
- Coordinate and disseminate fire support products to the appropriate agencies.
- Establish and maintain frequent contact with the other observers and any JTACs/FACs supporting the company.
- Plan, control, and adjust artillery, naval, and mortar fires onto targets.
- Plan for priority targets, SEAD, and final protective fires (FPFs) when developing any plan.
- Receive CFFs from subordinate platoons and determine the method of attack using organic, supporting, or allocated assets.
- Forward CFFs to higher headquarters for attack, as appropriate.
- Perform the duties of the FST leader as directed.

Company Joint Terminal Attack Controller. A JTAC is an essential element of the MACCS and TACP, who is qualified, certified, and designated to direct the action of combat aircraft engaged in CAS and other offensive air operations. They provide recommendations to the ground commander on the use of aviation and its integration with ground maneuver. They are employed at the company level to work in conjunction with JFOs and the AirO to provide aviation and fire support for unit operations. Forward air controllers are aviators designated as JTACs assigned to a non-aviation unit who integrate all functions of aviation during the planning and execution of ground operations. They also liaison with aviation units. They coordinate, integrate, and direct actions of combat aircraft engaged in CAS and other OAS operations. A JFO is qualified and certified to request, adjust, and control surface-to-surface fires, provide engagement information in support of Type 2 and 3 CAS sorties, and perform terminal guidance

operations in conjunction with a JTAC/FAC. For the remainder of this publication, the term JTAC is used to generically describe a terminal controller, FAC, or JTAC. The JTAC assists in assault support planning and execution.

81 mm Mortar Forward Observer. The mortar forward observer will—

- Plan, control, and adjust 81 mm mortar fires onto targets.
- Provide the company commander and the company FST leader with recommendations regarding the employment of mortars.
- Provide engagement information.
- Maintain communication.
- Assist the company commander and company FST leader in fire support planning and mortar requests.

Platoon Joint Fires Observer. A JFO is qualified and certified to request, adjust, and control surface-to-surface fires, provide engagement information in support of Type 2 and 3 CAS terminal attack controls, perform terminal guidance operations, and assist in fire planning. They assist maneuver commanders with the timely planning, synchronization, and responsive execution of CAS. The JFO serves at the platoon or below level as an extension of the TACP and works in conjunction with the company JTAC or battalion AirO to control CAS aircraft.

Fire Support Marine. Duties of the fire support Marine include employing fire support C2 systems, maintaining status boards, and plotting updates on situational maps. The fire support Marine will—

- Assist the company FSO in the planning, controlling, and executing of all fires from indirect fire support systems.
- Provide the company FSO with all pertinent information regarding indirect fire support system employment.
- Provide engagement information.

Functions of the Senior FSCC in the GCE

In addition to the FSCC's usual duties, the senior FSCC will—

- Conduct or support cross-component coordination for the execution of fires from rockets, missiles, and aircraft.
- Conduct and manage engagement functions to meet the GCE commander's intent.
- Serve on the targeting working group, targeting board, and fires and effects synchronization board.
- Establish and maintain products for the operations and fires C2 systems to ensure connectivity within the GCE. Specifically, they are required to produce or contribute to:
 - Engagement products: GCE engagement objective, battlespace shaping matrix (BSM), attack guidance matrix (AGM), high-payoff target (HPT) list, high-payoff entity (HPE) list, and damage criteria matrix (DCM).
 - Intelligence requirements: daily air-ground reconnaissance report.
 - Establish fires knowledge and information management tactics, techniques, and procedures (TTP), battle rhythms, reporting requirements, FSCMs, and fire support coordination procedures when existing procedures are inadequate.

- Report pertinent information, such as the location and ammunition status of friendly artillery units, FSCMs, and enemy anti-aircraft weapons to other staff sections of the FECC for further dissemination as required.
- In amphibious operations, provide representation to the supporting arms coordination center (SACC).

Direct Air Support Center

The DASC is the principal MACCS agency responsible for the direction of air operations that directly supports ground forces. It functions in a decentralized mode of operation but is supervised by the Marine tactical air command center (Marine TACC) or the Navy tactical air control center (Navy TACC). During amphibious operations, the DASC is the first MACCS agency ashore and lands in the same category (e.g., scheduled or on-call wave) as the GCE's senior FSCC. Its parent unit is the Marine air support squadron (MASS) of the Marine air control group.

The DASC processes immediate air support requests, coordinates aircraft employment with other supporting arms, manages terminal control assets supporting GCE forces, and controls assigned aircraft, unmanned aircraft, and itinerant aircraft transiting through DASC-controlled airspace. The DASC controls and directs air support activities affecting the GCE commander's battlespace, with a focus on close operations and those air missions requiring integration with the ground combat forces (i.e., CAS, assault support, and designated air reconnaissance). It may also control aircraft conducting deep air support missions. Additionally, the DASC provides battle damage assessments (BDAs) and mission reports from deep air support missions to the GCE's senior FSCC. Each MAGTF includes a MASS, which can provide a DASC element. The DASC size, configuration, and location, as well as its employment, are affected by multiple factors. Units are unlikely to see a DASC operating at the Marine expeditionary unit (MEU) level or below.

To accomplish its mission, the DASC can employ extensions throughout the area of responsibility. The MASS can employ all these extensions, multiple extensions, or only employ the DASC. Below is an explanation of DASC extensions and examples of their use.

Air Support Element. The air support element (ASE) is task organized by the DASC to extend DASC functions limited by line of sight (LOS), or to provide additional support for the GCE main effort or similar force requiring dedicated direct air support services. An ASE ranges in size from a small detachment capable of limited operations, to a robust C2 node that is similar in size and capability to a DASC, but still subordinate to a DASC. The MASS detachment for a MEU is also called an ASE and is used as a landward extension of the Navy Tactical Air Control System, while maintaining a coordination responsibility with the senior GCE (via the landing force operations center) and senior fires coordination agency (potentially the SACC). As a DASC extension, an ASE is in the supported unit's FSCC and provides liaison functions to that supported unit. An ASE will likely be found operating at the MEU or regimental level and might be found at the maneuver battalion level.

Air Support Liaison Team. An air support liaison team (ASLT) performs liaison functions and is employed with the senior FSCC when the DASC is unable to physically co-locate, or with subordinate echelons of the GCE (with the FSCCs) when direct air support requirements and

information exchange requirements exist. An ASLT operates at the maneuver battalion level and goes ashore with the battalion FSCC during amphibious operations.

FIRE SUPPORT COORDINATION CENTER OPERATIONS

Internal Organization

Internal organization allows for rapid coordination and exchange of information between FSCC personnel and other staff sections. The FSCC is physically located within the COC. Its configuration may vary with the mode of operation and tactical situation.

The FSCC is close to the G-2/S-2 and G-3/S-3 for easy information exchange. The positioning of automated information systems, maps, and status boards facilitates sharing information. The FSCC and chief position themselves to facilitate internal supervision of the FSCC and coordination with the G-2/S-2 and G-3/S-3.

Graphics, Maps, and Overlays

Automated information systems use graphically represented information and provide a digital medium for commanders and staffs to gain and maintain situational awareness. These systems also provide a common reference for planning future operations. However, units develop and maintain TTP and standing operating procedures (SOPs) to ensure the right people have the right version of the right products, at the right time and in the right format. For specific recommendations on overlay file and folder management recommendations, as well as information management recommendations with various C2 systems, see Marine Corps Reference Publication (MCRP) 3-10F.1, *Fire Support Systems for MAGTF Operations*.

Given the potential for operations in a denied and degraded command, control, communications, computers, and intelligence environment, FSCC personnel prepare to support and maintain paper maps, manual graphics, and information charts as a back-up to automation, and must be prepared to resume traditional FSCC processes when system or power failures arise. The tactical SOP standardizes devices for mounting overlays and maps throughout the COC so overlays and mission cards can be interchanged quickly between the planning map, the G-2/S-2 map, the G-3/S-3 map, and the fire support coordination map. The use of colored pushpins and control measure templates (e.g., fires, movement and maneuver, and airspace) may save time and prevent the loss of critical information. Staffs laminate maps or cover them with acetate to preserve them.

FIRE SUPPORT COORDINATION CENTER PERSONNEL DUTIES

Though fire support coordination roles of division, regimental, and battalion FSCCs differ, there are common sets of duties at each echelon. The following positions and representatives are examples of how the FSCC can organize.

Supporting Arms Representatives

Supporting arms representatives will—

- Advise the commander and FSCC on the supporting arms capabilities.
- Prepare staff estimates and estimates of supportability.
- Assist in preparing the fire support plan.

CUI

- Provide input to the FSC as FSCMs are planned.
- Coordinate, integrate, and deconflict the delivery of fires in consonance with maneuver.

Watch Officers and Chiefs

Senior personnel assigned to the FSCC may be assigned as watch officers and watch chiefs. As such, all assigned FSCC officers and staff noncommissioned officers prepare to supervise the FSCC without assistance during routine operations. This requires familiarization with all supporting arms and appropriate fires C2 systems, as well as the duties of other supporting arms representatives. During critical operational periods, actual supporting arms representatives are recalled to their positions. In establishing watch lists, duties may include:

- Supervise the initialization and activation of appropriate communication and C2 systems.
- Supervise the building of communications architecture configuration and edit databases.
- Establish communication to facilitate planning, coordination, and execution of fires.
- Supervise the coordination of required actions and reports with higher, adjacent, and supporting units.
- Establish a fires internal battle rhythm within the overall GCE staff battle rhythm.
- Supervise the establishment of the fires section watch rotation.
- Supervise the training and use of communication equipment, fires C2 systems, and collaborative tools.
- Supervise, develop, review, brief, and distribute plans.
- Coordinate and integrate supporting arms to support the concept of maneuver for current and future operations.
- Supervise engagement and develop relevant actors with organic target acquisition assets.
- Supervise the allocation of assets (i.e., artillery battalion, NSFS, and air) in the unit's AO.
- Coordinate and integrate ingress and egress routes for all aviation assets to support the concept of maneuver.
- Supervise the execution and coordination of dynamic targeting and mission processing.
- Review subordinate elements' fire support plans to ensure they support the concept of fires.
- Support the integration of FSCC operations with other staff sections.
- Advise the commander and staff on the current capabilities, limitations, and employment of fires assets.
- Supervise the dissemination and posting of appropriate products, briefs, reports, and materials, to include C2 systems reference materials (e.g., web-based collaboration sites, boards, displays, and electronic journals).

Watch Clerk

All fires watch clerks have a common set of tasks they perform without assistance during routine operations. These require familiarization with all supporting arms and appropriate fires C2 systems. These duties include:

- Load, initialize, activate, and operate appropriate communication equipment and C2 systems to support the FST operators that ensure that all fires C2 systems databases are maintained and updated with the latest versions of software and patches.

CUI

- Support the flow and display of information within the FSCC with appropriate fires C2 and collaborative tools.
- Monitor and ensure the fire support situation is displayed on all appropriate C2 systems in the COC (e.g., friendly units, FSCMs, and other geometries).
- Support the development of the fire support plan, fire plans, schedule of fires, and quick-fire plans, and transfer them into current operations for implementation when directed.
- Process and coordinate pre-planned CAS requests using communication equipment, fires C2 systems, and collaborative tools.
- Monitor the execution of the fire support plan, fire plans, and schedules of fires. Revise and adjust plans when directed with appropriate fires C2 systems.
- Support the execution and coordination of dynamic targeting, mission processing, and time-sensitive target (TST) engagement with appropriate fires C2 systems.

MARINE LITTORAL REGIMENT

Marine littoral regiments (MLRs) are employed to maneuver and persist inside a contested maritime environment to conduct sea-denial operations as part of a naval expeditionary force enabling fleet operations. The MLR consists of a headquarters with fires assets, a littoral combat team (LCT), a littoral logistics battalion, and a littoral anti-air battalion. The MLR employs the LCT as a task-organized maritime littoral unit capable of commanding and controlling distributed expeditionary advanced bases (EABs) that conduct sustained operations, enabling the fleet via sea denial. The LCT forms on the foundation of an infantry battalion with attached fires elements, and task-organize to provide the MLR commander the capability to operate multiple EABs, including fires EABs, forward arming and refueling EABs, or a combination of these, all operating under the command and control of the LCT headquarters.

CHAPTER 2

FIRE SUPPORT COMMUNICATION

Fire support communications facilitate the exchange of information needed for the planning, coordination, and executing of fires, and the command and control of fire support assets. They are robust, redundant, and flexible. The growth of digital fire support systems coupled with the complexity of Internet protocol routed radio systems requires a collaborative effort between the J-6/G-6/S-6 and the J-3/G-3/S-3 to plan fire support communications.

While traditional forms of communication, such as voice transmission and courier-conveyed written information, are still in use, data communication over Internet protocol routed networks are the preferred means of fire support communications.

As with other warfighting functions, the staff manages fires processes primarily through automated information systems that allow users to print messages and digitally maintain fires status information. The FSCC maintains an electronic and/or hard copy of all fire's journals. Units develop, rehearse, and maintain TTP and SOPs to record significant events affecting the operation and file incoming and outgoing messages chronologically after routing. The FSCC journal provides the information necessary to prepare oncoming watch-standers during shift changes. Units also maintain a separate fire mission log (i.e., digital format or paper) to keep the journal uncluttered, which provides a chronological flow and indicates mission clearance.

Most importantly, FSCC personnel become knowledgeable of the capabilities and limitations of each automated information system in their work area and learn to effectively initialize, maintain, and operate them. Fire support coordination center personnel need easy access to all fire support nets and automated information systems to maintain redundancy in the fires communications and coordination requirements. Watch officers and staff noncommissioned officers closely supervise radio and automated information system operators to facilitate coordination, keeping fire support nets separate from the supported command's tactical and command radio nets. Since both types of nets are extremely busy, collocating them can lead to increased noise in the COC and impede coordination among staff personnel. See Chapter 5 and MCRP 3-31.7, *Fire Support Systems for MAGTF Operations*, for the recommended layout of billets and systems within the FSCC and other fire-related agencies at the different echelons.

COMMUNICATION SECURITY

Communication security is essential in contemporary combat operations and widespread use of computers coupled with communications systems makes even less sophisticated adversaries able to monitor and attack vital communication infrastructure. Operators achieve communication security by two commonly used mechanisms, encryption and authentication.

Encryption

Encryption devices encode transmitted information in a way that requires the receiver to only understand the information if provided with the means to decrypt the data. Operators may employ transmission and certificate encryption simultaneously.

Transmission encryption provides a means of protecting information that is transmitted via radio or local area network (LAN) and wide-area network. Cryptographic circuits in the radio system or additional cryptographic equipment in the circuit (e.g., the simple key loader on a radio network) provide transmission encryption. The cryptographic circuits use a fill that allows radios to encrypt and decrypt information.

Computers may use certificate encryption known as secure socket layer encryption. With secure socket layer encryption, certificates are loaded to the computer applications or browsers, allowing a client or browser to login as a trusted machine and send secure data between client and server. For example, AFATDS acts as a client to the joint targeting toolbox (JTT) when receiving engagement data.

Authentication

Authenticated logins enable digital system users to access the appropriate tools and required information. A user's permissions to access and change information may be limited, but at least allow sufficient access to perform the assigned tasks. Wider access increases the risk of data compromise.

COMMUNICATION PLANNING CONSIDERATIONS

Radio Waveform Propagation

Electromagnetic waveforms transmit data wirelessly from one system to another. Common waveforms are—

- Very high frequency (VHF).
- Ultrahigh frequency (UHF).
- High frequency (HF).
- Adaptive Networking Wideband Waveform 2 (known as ANW2).
- Soldier Radio Waveform.
- Link 16 using Multifunctional Information Distribution System.
- Satellite communications (SATCOM).
- Mobile user objective system (known as MUOS).

Systems that employ a particular waveform are only compatible with other systems capable of using that same waveform.

Military Standard Communication Protocols

Data systems use military standard (MIL-STD) communication protocols to ensure systems from different manufacturers can exchange data. The most common means to communicate fire support data in point-to-point radio communications is variable message format, also known as K-series messaging. The target handoff system (THS) or radar systems use this form of data exchange to send fire requests to AFATDS, and for AFATDS to send fire commands to

howitzers. This exchange uses three protocols. The first is MIL-STD 188-220C, which defines the method for transmitting data from the computer's modem to the radio, and to the next radio and modem. This transport protocol defines how data is moved. Next is MIL-STD 2045-47001C, which defines how the message header is constructed. This allows the sender to address a message to one or more destinations on the network and provides information on how to handle the message based on its priority. Third is MIL-STD 6017, which defines how specific messages are constructed from data. This protocol creates the message. For example, the digital format of a CFF is one of the message types defined. The staff plans for networks that are composed of systems that employ the same protocols since they are generally not interchangeable.

Radio and Peripheral Devices Firmware

Radios and modems are themselves computers that employ software to operate the system. This software is called firmware because it resides in programmable modules. Most radio and modem firmware are at least slightly backward compatible or newer and older versions are interoperable. The J-6/G-6/S-6 ensures unit radio systems maintain current firmware. Some systems, like AFATDS and THS, automatically check for and upgrade modem firmware. Other systems require modem firmware installation from a separate application.

Radio Networks

Radio networks are groups of designated stations connected to each other for the purpose of communication. They may carry either voice or data transmissions.

Net Control Station

The net control station (NCS) is the user of a network designated to control use of and maintain discipline on the network. This concept applies to both voice and data networks. The NCS directs changes to network operating parameters, controls network establishment by directing the method stations on what to use to enter and exit the network, and controls network troubleshooting.

GROUND COMBAT ELEMENT COMMUNICATION SYSTEM TYPES

The MAGTF employs multiple communications systems with different capabilities. The fire support Marine requires a basic understanding of these systems.

Combat Net Radio

Combat net radio (CNR) is a term for point-to-point radio communications and is characterized by radios (across multiple frequency bands) transmitting and receiving between two systems at a time. The radio uses cryptographic circuits to provide encryption and frequency hopping to preclude jamming and detection. The digital radio wave form most associated with this type of communications is the single-channel ground and airborne radio system waveform.

Routed Internet Protocol Networks

Routed Internet protocol networks employ Internet protocol addressing and routing to convey messages. The important distinction between Internet protocol networks and CNR networks is that Internet protocol networks overcome the limitations of traditional point-to-point radio

networks. In CNR networks, traffic is limited to exchanges between users of that network. In Internet protocol networks, routers (and radios acting as routers) route data from one local network to others using Internet protocol routing rules. These connected LANs create a wide-area network, often referred to as a “cloud.” This method extends the range of the radio network by allowing each radio to act as a router or relay of messages to other stations. The AN/PRC-117G radio employing the Adaptive Networking Wideband Waveform 2 is an example of an Internet protocol network radio.

Communication Planning Criteria

Regardless of the type of network employed, the command addresses fundamental communication needs to support fires planning and execution. Staffs supplement and, in some cases, replace traditional voice networks with data networks. Many of these networks have adapted to Internet protocol clouds. Unit SOPs contain procedures for establishing communication and troubleshooting on voice or data nets.

GROUND COMBAT ELEMENT FIRES NETWORK PLANNING REQUIREMENTS

The following paragraphs discuss communication using traditional networks and match users with communication routing needs. Many of these networks can be chat, radio, data radio networks, or other options. Regardless of the network, the J-6/G-6/S-6 plans the ability to service users and their routing needs into the network.

The MAGTF Fires and Effects Coordination Net

The MAGTF FECC and subordinate FSCCs use the MAGTF fires and effects coordination net to conduct fires planning, coordination, and execution.

Ground Combat Element Fire Support Coordination Net

The GCE fire support coordination net supports the exchange of fire plans, target information, and FSCMs. Fire support coordination centers subordinate to the GCE FSCC use this net for cross-boundary coordination of air and ground fires. If more than one GCE operates in the MAGTF, each GCE establishes a GCE fire support coordination net.

Regiment Fire Support Coordination Net

Regimental FSCs coordinate and execute fire plans on the regiment fire support coordination net. Battalion FSCs use this net to pass fire support requirements to the regimental FSC and to coordinate cross-boundary fires. Each infantry regiment establishes a regiment fire support coordination net.

Battalion Conduct of Fire Net

Observers request and adjust artillery fire on the battalion conduct of fire (COF) net. Under centralized control, battalion FSCCs receive CFFs and coordinate requests. Under decentralized control, battalion fire direction centers (FDCs) receive CFFs while the FSCCs monitor and approve missions. Forward observers and FSOs may use the net to exchange target and fire planning information. The artillery battalion FDC establishes up to three COF nets when conducting artillery battalion-directed operations and acts as NCS on each. Otherwise, each infantry battalion establishes a battalion COF net.

Battery Conduct of Fire Net

Observers request and adjust artillery on battery COF net.

Division/Ground Combat Element Artillery Air Spot Net

This net allows aircrews to adjust artillery fire. When in use, FSOs monitor it for targets in their unit's designated AO just as they do with COF nets. Forward observers may use this net to coordinate with aircrews to attack targets in their company's AO.

Artillery Regiment Fire Direction Net

The artillery regiment fire direction net allows the artillery regiment to exercise tactical fire direction. It also facilitates the collection, exchange, and passing of combat and target information. Subordinate units may use it to request reinforcing fires. The current fires watch officer at the division FSCC may guard this net to keep abreast of artillery fire planning and pass fire support coordination traffic if no other net is available.

Artillery Battalion Fire Direction Net

The artillery battalion fire direction net allows the artillery battalion FDC to exercise tactical fire direction of subordinate units. If tactical fire direction is decentralized, batteries may use this net to request reinforcing fires.

Artillery Regiment Tactical Net

The artillery regiment tactical net allows the artillery regimental commander to command and control subordinate units. Types of traffic include changes in tactical mission assignments, displacement, and fire capability reports. It is also used as an alternate net for fire direction and fire support coordination traffic.

Artillery Regiment Command Net

The artillery regiment command net allows the artillery regimental staff to coordinate subordinate unit administrative and logistical activities. It is also used as an alternate net for fire direction. The division FSCC may monitor this net principally as an alternate net for communicating with the artillery regiment, should other nets become inoperative.

Artillery Battalion Command Net

The artillery battalion command net allows the artillery battalion commander to command and control subordinate unit administrative, logistic, and tactical traffic not related to fire direction. The supported infantry regimental or separate battalion FSCC may monitor this net as an alternate net for communicating with the battalion, should other nets become inoperative.

MAGTF/Landing Force Artillery Command/Fire Direction Net

The MAGTF establishes the MAGTF/landing force artillery command/fire direction net during amphibious operations for the rapid dissemination and coordination of fire support information. The GCE artillery FDC and SACC use it to remain current on the status of artillery battalions. When the MAGTF consists of two GCEs or has a FAHQ, both artillery regiments and the FAHQ monitor this net. The net remains active until the artillery regimental headquarters, or both the

artillery regimental headquarters, and the FAHQ are ashore and have established their own command and fire direction nets. If there is only one GCE, this net usually transitions to the artillery regiment command net with the artillery regiment as NCS. If there are two GCEs, the net usually terminates or becomes the command net of the FAHQ.

Other Artillery Nets

Artillery units routinely use other radio nets for internal functions (e.g., sensor or radar telling). For more information about these nets see Marine Corps Tactical Publication (MCTP) 3-10E, *Artillery Operations*.

Ground Combat Nets Monitored by Artillery. Artillery regiments and battalions monitor supported unit tactical and intelligence nets. Monitoring allows them to anticipate and project fire support requirements.

Infantry Battalion Mortar Net. This net allows mortar forward observers to request and adjust fire on targets and for the 81 mm mortar representative at the battalion FSCC to coordinate requests.

Naval Surface Fire Support Radio Nets

Naval surface fire support ships may have communication terminals the GCE can use for fire support. The MAGTF landing force makes prior coordination with the amphibious task force (ATF) to ensure that the communication plan of the landing force is workable by the assigned ships.

Naval Gunfire Ground Spot Net. Observers use the naval gunfire ground spot net to request and adjust NGF with a non-digital direct support ship. It is also used to exchange vital information between stations. The shore fire control party monitors the net and the NGLO provides clearance or communication relay.

Naval Gunfire Air Spot Net. The NGF air spot net allows aircrews to request and adjust NGF. The shore fire control party of the unit in whose AO the fires will impact, monitors the net and the NGLO provides clearance. Company FSOs may use this net to coordinate with an aircrew for the attack of targets in their respective company's AO.

Division/GCE Naval Gunfire Support Net. This net allows for NGF planning between the division/GCE naval gunfire officer (NGFO) and regimental NGLOs. Divisions and regiments use it to assign missions to general support ships. Regiments can also use it to request additional NSFS and aircrews.

MAGTF/Landing Force Naval Gunfire Support Net. The MAGTF/landing force naval gunfire support net provides a means to request NSFS and coordinate employment of NSFS ships in general support of the landing force.

Naval Gunfire Control: Naval Gunfire Control Overload Net. This net allows the Navy amphibious commander to request and assign NSFS ships, make relief and emergency reports, and transmit orders regarding the execution of scheduled fires. It is used to coordinate NSFS ship employment. Examples of net traffic include ammunition status and the results of target attacks. The Navy amphibious commander may establish one or more NGF control overload nets.

Aviation Radio Nets

The following nets are usually found in the DASC or FSCC.

Direct Air Support Net. The direct air support net is a discreet net between the DASC and Marine TACC used to transfer information on air support requests and mission and aircraft status.

Tactical Air Request/Helicopter Request Net. The tactical air request/helicopter request net connects the DASC to all potential direct air support aircraft requesters. It receives requests for immediate air support. Fire support coordination centers guard this net. Operators may pass BDAs over this net. The tactical situation may require multiple tactical air request nets.

Tactical Air Direction Net. The DASC, airborne coordinators, and terminal controllers use the tactical air direction net to control and direct fixed-wing and rotary-wing aircraft, and for an air control agency to brief support aircraft on target information and handoff to a JTAC, forward air controller (airborne) (FAC[A]), or TAC(A).

Tactical Air Control Party Local Net. The TACP local net allows for coordination between the AirO in the battalion FSCC and the TACP. Stations include the AirO in the battalion FSCC (NCS) and the FAC parties.

Table 2-1 shows traditional fire support radio nets and designates control, guard, and monitor responsibilities. On the modern battlefield, staffs will likely reduce these networks in number and supplement using data networks. This guard chart conveys the minimum connectivity needs of the users.

Table 2-1. Traditional Fire Support Radio Nets.

	MAGTF FECC	GCE FSC	RFSC	MAGTF/LF Arty CMD	Arty Regt CMD	Arty Regt FD	Arty Regt TAC	Div/GCE Arty Air Spot	Arty Bn CMD	Arty Bn FD	Bn COF (2)*	TAR/HR (1)	TAD (1)	TACP Local	Div/GCE NGF Support	NGF Air Spot	NGF Control	NGF Ground Spot	SFCP Local	NGF Control Overload	MAGTF/LF NGF Support	Infantry Bn Mortar	
SACC (AFLOAT)	C			C												C	C			C	C		
Navy											X	X				R							
MAGTF	C			C							X					R	X			R	C		
FAHQ	X			X																			
Division	X	C		R	R	R	X	R				X			C	C	R					X	
DASC												C	C										
INF	R	X	C	R		R		R	R	X		X	X		C	R						R	
INF			X					R		R	X	X	X	C		R		C	C			R	X
SEP		X			R	R		R	R	R	R	X	X	C	R	R		C	C			R	X
ARTY	R	X		R	C	C	C	C															
DS ARTY	R		X	R	X	X	X	R	C	C	C												
ARTY								R	X	X	X												
ARTY FO								R			X												
FAC												X	X	X									
MORTAR																						X	
NGF																		X	X				
LAAD																							
FIRE SPT															X	R	X	X			R	X	
MORTAR																						C	

Notes:

Nets may be chat, HF, VHF, or other communication options and not necessarily radio communication.

- (1) Net control located in SACC until displaced ashore.
- (2) Net control at battalion (battalion directed operations) or battery (autonomous operations).

Legend:

Arty	artillery	LAAD	low altitude air defense
Bn	battalion	LF	landing force
C	net control	R	as required (when directed)
CMD	command	Regt	regiment
Div	division	RFSC	regiment fire support coordination
DS	direct support	SEP	separate
FD	fire direction	SFCP	shore fire control party
FECC	fires and effects command center	SPT	support
FO	forward observer	TAD	tactical air direction
INF	infantry	TAR	tactical air request
HR	helicopter request	X	guard

CHAPTER 3

FIRE SUPPORT PLANNING

The goal of fire support planning is the efficient allocation of resources and capabilities to generate the commander's desired effects. Fires planners accomplish this by developing a feasible, supportable, executable, and complete fire support plan (refer to Appendix 17, Annex C examples in MCWP 5-10, *Marine Corps Planning Process* and support products). They also use current MAGTF C2 systems to achieve the commander's objective. To effectively plan for the employment and integration of fires, fires personnel engage in the planning process and the synchronization of fires with the other warfighting functions. Fire support planning answers the question, how will fires support the concepts of operations and maneuver to generate the commander's desired lethal and nonlethal effects? To accomplish this the staff will—

- Determine how fires and information capabilities can help achieve the commander's objectives.
- Develop fire support tasks that generate the commander's desired effects.
- Prioritize relevant actors.
- Use target acquisition and tracking methods.
- Determine when to engage specific relevant actors.
- Use the available and best fire support assets for engagement.
- Coordinate, integrate, and deconflict assets used for engagement.
- Determine how to assess the effects of engagement.

The staff integrates the collection and fire support plans to support target acquisition, execution, and operational assessment. Fire support planning provides crucial input for developing the collection plan and ensuring it is synchronized with fire support efforts. Integrated planning links acquisition assets to specific relevant actor acquisitions for engagement or information requirements to answer the commander's critical information requirements (CCIRs). Named areas of interest (NAIs) and target areas of interest (TAIs) are tied to a decision point, adjusted during course of action (COA) wargaming in the planning process, and therefore have an associated CCIR they answer.

The fire support plan is a feasible, supportable, executable, and complete plan that focuses on generating the effects that support the concepts of maneuver and operation. A concise plan is simple and understandable to the maneuver commanders, all fire support agencies, and information capabilities who execute it. An effective, integrated plan uses all available acquisition and engagement assets and maximizes combat power to create combined arms effects. An executable plan includes the time, space, and resources to achieve and assess the planned effects. A flexible plan has the agility to support the commander's intent when the unforeseen arises through well-defined decision points.

FIRE SUPPORT PRINCIPLES

Fire support planning is a continuous, concurrent cycle of analyzing the enemy, neutral, and friendly situation. Staff planners conduct engagement planning, task and allocate fire support assets and information capabilities, schedule engagements, and coordinate execution to integrate

fire support with the concept of maneuver, maximize combat power, and achieve the commander's objectives. The result is a coherent fire support plan. Effective planning requires a continuous interaction between higher and lower echelons. Marine Corps fire support planning is a top down, bottom-up refinement approach. The following principles provide guidance regardless of the tactical situation.

Plan Early and Continuously

To effectively integrate fire support with the concept of maneuver and achieve the commander's objectives, fires planning begins when higher headquarters issues a warning order. It continues during the initial OPT and development of branch and sequel plans and fragmentary orders (FRAGORDs). Plans include feedback mechanisms during execution that help the commander and staff determine if the commander's desired effects are being generated and if not, what to do about it. Throughout, fires personnel solicit additional guidance from the commander as needed.

Exploit All Available Engagement Assets

The FSC ensures that the staff identifies and incorporates relevant actor acquisition requirements as information requirements or CCIRs in the collection plan and evaluates relevant actor information from all available resources. This includes information from all the MAGTF and GCE sources, as well as theater and national level assets. If effects are not achievable at the echelon, then effects, not resources, should be requested from higher headquarters.

Consider All Available Assets

The FSC considers the use of all available assets to generate the desired effects. These assets include organic assets, as well as MAGTF and higher headquarter capabilities, such as precision-guided munitions (PGMs), smoke, illumination, information capabilities, and other resources. The FSC considers the commander's guidance and ROE when determining the use of available supporting arms in current and future operations. The staff also plans asset redundancy in case the initial selected assets fail to create the commander's required effects, or an asset is lost or becomes unavailable.

Use the Lowest Echelon Capable of Furnishing Effective Fire Support

The FSC decides the appropriate fire support required or if available assets are inadequate, requests additional support. The FSC always plans for the lowest echelon capable of accomplishing the mission. The FSC is prepared to conduct coordination with higher headquarters to best support the employment of various assets, integrate munitions trajectory, and deconflict target and entity location.

Use the Most Effective Fire Support Means

The FSC sends requests for fire support to the supporting arm that can deliver the most effective support within the required time. It considers the nature and priority of the relevant actor, the engagement time window, the availability of engagement means, the desired effects, the number and type of assets required to create the desired effects, and coordination requirements. Fires C2 systems facilitate asset and relevant actor pairing and help identify the best solution by providing several engagement options based on assets available and guidance provided.

Furnish the Type of Fire Support Requested

The fire support requester is in the best position to determine the fire support requirements. However, the FSC is in the best position to weigh the request against the commander's guidance, ROE, and the current and future needs for fire support. If the FSC disapproves the request, it stops the request and notifies all concerned. When possible, the FSC substitutes a new fire support means or information capability and alerts the supporting and requesting units. Fires C2 systems facilitate both rapid tasking, re-tasking, and dissemination of all requests digitally.

Avoid Unnecessary Duplication

A key task for the FSC is to ensure fire support duplication is resolved and only the minimum force needed to create the desired effect is used. Eliminating duplication conserves fire support assets and information capabilities, facilitates sustainment, and maintains tempo. This does not mean that only one asset is used. Taking advantage of the complementary characteristics of different types of assets and integrating their lethal and nonlethal effects provides the synergy of combined arms. While avoiding unnecessary duplication, it is still critical that the FSC plans for redundancy on key engagements in the event an asset is destroyed or becomes unavailable.

Coordinate Airspace

Inherent in fire support coordination is the deconfliction and integration of airspace with supporting arms. In support of airspace integration, FSCMs, ACMs, and coordination procedures protect aircraft while incorporating CAS and deep air support with indirect fires in support of close and deep operations. The extent of airspace coordination depends on available time. At lower levels, JTACs, forward observers, and aircrews perform coordination. At higher levels, the staff coordinates airspace through a variety of ACMs, positive or procedural control of aircraft, and command and control while providing situational awareness (e.g., aircraft and ground unit locations, munitions flight path (MFP), and three-dimensional visualization of geometries). Units at the battalion level and higher can request an ASLT to aid in this process.

Provide Adequate Support

The mission and commander's guidance determine the lethal and nonlethal effects that fire support creates for the plan to succeed. The FSC and air planners identify the requirements that facilitate the commander's CONOPS and support the concept of maneuver. Fires planners identify and coordinate position areas (PAs) and primary and alternate routes needed for the movement and positioning of artillery and rocket units. The staff passes this information to artillery commanders and S-3s. The timely movement of critical assets along crowded routes requires close coordination between the supporting arms and the maneuver staffs that own the battlespace. The FSCs inform maneuver commanders of any asset shortfalls in support of their plan.

Provide Rapid Coordination

Procedures for rapid coordination ensure speed and flexibility in the delivery of fires. Speed and flexibility will be critical on the future battlefield. Rapid coordination and integration of fire support only occurs through habitual training relationships, an understanding of doctrine, the use of appropriate permissive and restrictive FSCMs, and the establishment of SOPs and TTP supported by fires C2 systems. The FSC knows the capabilities and limitations and status of

available fire support weapons and information capabilities. Fires C2 systems facilitate the FSC's situational awareness as the battle develops.

Provide Safeguards and Survivability

Force protection includes consideration of both friendly asset shortfalls and enemy threats. The FSC minimizes the risk of friendly fire through the appropriate use of FSCMs, close coordination at all levels, and situational awareness through accurate battle tracking using C2 systems. The staff safeguards friendly units by applying permissive and restrictive FSCMs, coordinating PAs, and tracking accurate unit locations during target analysis. Fire support coordination measures minimize the potential for friendly fire while facilitating boldness and timeliness in combat. Suppression of enemy air defense protects aircraft and counterfire ensures freedom of action for maneuver forces.

Establish Fire Support Coordinating Measures

Fire support coordination measures facilitate the rapid engagement of targets throughout the battlespace while safeguarding friendly forces. They ensure that fire support will not jeopardize troop safety, interfere with the delivery of other fire support means, or disrupt adjacent unit operations. These FSCMs are discussed in detail in Appendix A and Joint Publication (JP) 3-09.

Establish Communications Support

Successful operations require a timely and efficient exchange of information. Collocating coordinating agencies to ensure effective collaboration is desirable, but not always feasible. The effective planning, coordination, and execution of a fire support system plan ensures the establishment and maintenance of critical communications. Against a peer threat, redundancy and operational security will be critical to the survival of communications assets and associated C2 nodes. Tab G, Appendix 17 identifies the hardware, software, communications architecture, and networking information required for the effective collaboration of fires command and control.

THE MARINE CORPS PLANNING PROCESS

The purpose of planning is to promote an understanding of the problem. This includes the difference between existing and desired conditions, and ways to solve it. Planning involves elements of both art and science, combining analysis and calculation with intuition, inspiration, and creativity. The Marine Corps Planning Process (MCP) integrates fires planning with the other warfighting functions (i.e., command and control, intelligence, maneuver, logistics, information, and force protection) and lines of operations. Steps of the MCP (see Figure 3-1) help organize the thought process of a commander and staff throughout the planning and execution of military operations. It applies across the competition continuum and is designed for use at any level of command. It can be as detailed or as abbreviated as time, staff resources, experience, and the tactical situation permit.

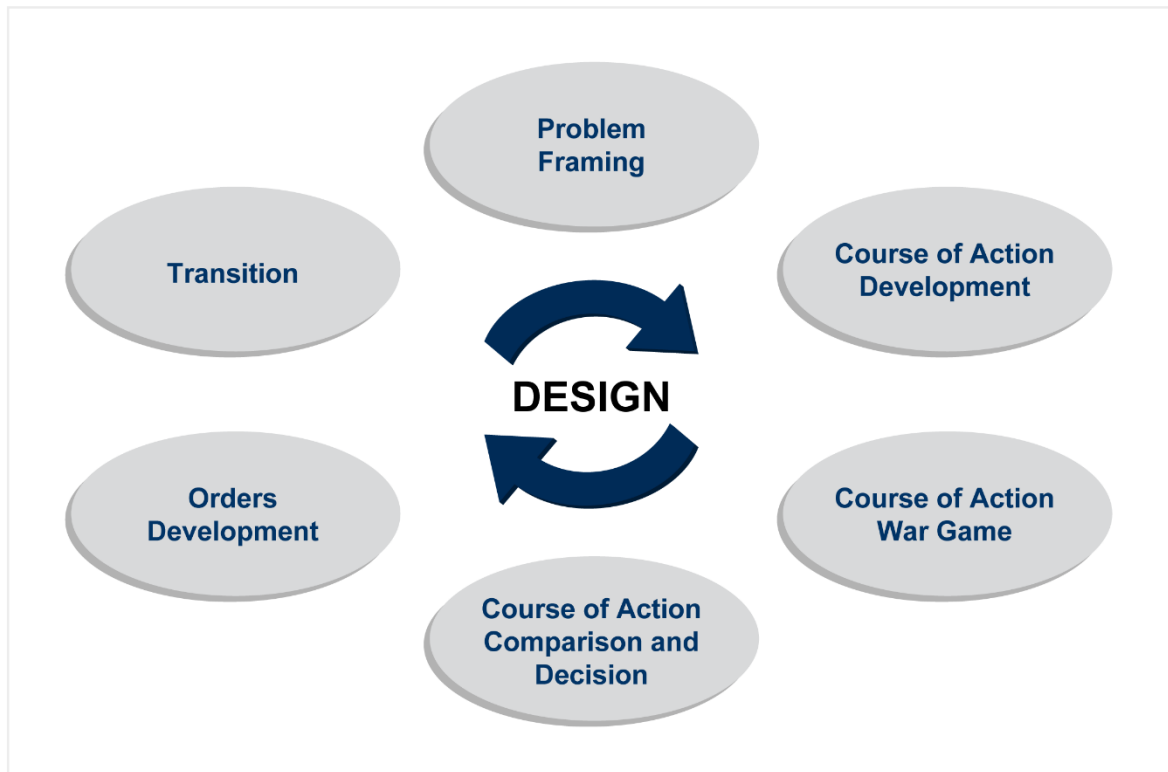


Figure 3-1. Steps of the Marine Corps Planning Process.

Fire support planning consists of three overlapping, sequential levels: conceptual, functional, and detailed planning. Conceptual planning is the highest level of planning. It establishes aims, objectives, and intentions and involves developing broad concepts for action. The key product of conceptual planning is the concept of fires. In accordance with the “single battle” concept, it is based on the commander’s intent, CONOPS, vision of decisive and shaping actions, and targeting guidance and priorities. Functional planning designs support plans for discrete functional activities like artillery, NSFS, or aviation. Detailed planning translates the conceptual and functional into a complete plan. Detailed planning contains the specifics of implementation and prescribes the actions or tasks necessary to achieve the commander’s objectives. It includes both deliberate and dynamic targeting to support operational requirements. The final output for effective fire support planning is an integrated, executable, and flexible fire support plan that aligns with the GCE and other major subordinate commands and supports the MAGTF operational objectives.

The outlined process will help FSCs better understand their role in the overall planning process and the procedures to develop a thoroughly integrated and effective fire support plan. See MCWP 5-10 for details on the MCPP.

Prior to problem framing, and during the formation of the OPT, fires planners take an active role in supporting G-3/S-3 and G-2/S-2 planners’ efforts to develop draft products and the initial

intelligence estimate. This allows fires planners to conduct coordination, identify required resources, gain an understanding of the problem, develop draft products, and prepare for the actual planning process. During this time, fires planners will gather critical resources, determine internal and external timelines requirements, and identify the makeup of boards, cells, and working groups. Fire planners review products from higher and adjacent units and begin coordination with higher, adjacent, and subordinate planners to exchange additional fires-related information.

Fires planners identify the roles and responsibilities for planning and developing orders for FST members. This varies by echelon and fire support representative (e.g., artillery, air, NSFS, mortars and other LNOs). These representatives coordinate with the lead planner to support OPT preparation work and with other staff sections, commands, and agencies to gather the information needed to facilitate planning and orders development. This includes the higher headquarters order and draft products, time-phased force and deployment data (TPFDD), kill box procedures, ATO and higher headquarters submission and engagement timelines, and unit and agency SOPs. The planning staff develops a detailed fires request for information (RFI) list based on planning and operational requirements. These representatives also support the development and validation of OPT products and formats the tabs and exhibits of Appendix 17, Annex C, to ensure they meet all requirements for execution.

Problem Framing

The purpose of problem framing is to gain an understanding of the operational and information environment and the nature of the problem. During problem framing, fires planners extract critical information for the development of their staff estimates, initial commander's intent for fires, and general commander concept of fires.

Design. Design is the conception and articulation of a framework for solving a problem. It begins during problem framing but is continuous and informs while being informed by the results of the other planning steps, execution, and assessment.

Commander's Orientation. Fires planners ask questions and provide input that enhances the commander's understanding of organic and available fires capabilities to support possible solutions. They also receive guidance on how the commander wants to employ fire support capabilities.

Understanding the Environment. For the commander and staff to understand the operational and information environment, they analyze information, facts, and the status of a wide range of factors that serve as context for the current situation. Refer to MCWP 5-10, MCRP 2-10B.1, *Intelligence Preparation of the Battlespace*, and MCTP 3-02A, *MAGTF Network Engagement: Targeting and Engaging Networks*, for useful items to help understand the operational environment.

Higher Headquarters Order. The FSC and all planners understand the mission (e.g., task and intent) of the commander two echelons up and the CONOPS (e.g., concept of maneuver and fire support plan) of the commander's higher headquarters. Essential to top-down planning is an understanding of the higher headquarters plan and how the unit "fits" into that plan. The FSC identifies the unit's responsibilities in the higher headquarters' fire support plan, as well as the

allocated fire support capabilities. These tasks reside in the fires paragraph and the EFSTs developed by higher headquarters.

The fire support plan (Appendix 17, Annex C), intelligence collection plan (Appendix 13, Annex B), and reconnaissance and survey plan (Appendix 14, Annex B) are sources for tasks that the FSC and unit accomplishes. Information from analyzing the higher headquarters order for fires information includes the following:

- External fire support assets available.
- FSCMs, ACMs and maneuver control measures (MCMs). (See Appendix A)
- Fire support coordination procedures, such as cross-boundary fire support coordination, airspace management for deep supporting fires, and targeting.
- Engagement tools (e.g., AGM, HPT target list, HPE list).
- Planned fires.
- Technical advice on fire support.
- ROE.
- Munitions restrictions.

Consider the following while planning fires:

- Employ fires in accordance with the ROE.
- Plan defensive fires to protect the force and base camp defense. Ensure radar zones become an integral part of the force protection plan. Place censor zones over friendly indirect fire positions. The FSO or targeting officer is responsible for moving, confirming, or cancelling radar zones in coordination with G-3/S-3 and target acquisition personnel.
- Coordinate lethal and nonlethal effects on relevant actors to avoid the employment of one negating the efforts of the other.
- Disseminate the fire support plan down through battalion, company, platoon, and squad leaders in charge of checkpoints, patrols, and logistics convoys.
- Use aviation and non-traditional ISR assets to assist in executing the reconnaissance and surveillance plan.
- Coordinate the clearance of fires with established civilian organizations, when appropriate.
- Plan and rehearse clearance of fires drills.
- Establish liaison with allied military organizations to facilitate CFFs and clearance of fires.
- Deliver fires into uninhabited areas (e.g., free-fire areas) or aviation as a demonstration or deterrent capability, when appropriate.
- Refer to the ROE for collateral damage estimation (CDE) requirements.

Commander's Initial Planning Guidance. The commander uses an understanding of the problem to formulate intent and guidance. Commander's initial planning guidance provides the preliminary decisions required to focus planners on the commander's conceptual vision of the operation. From this guidance, the FSC begins to frame fire support's role in the plan.

Intelligence Preparation of the Battlespace. Fire support coordinators understand and apply intelligence preparation of the battlespace (IPB) to fire support planning. It provides the staff and fires planners with an enhanced understanding of the enemy, their capabilities, and doctrine. It also provides information related to the environment, terrain, and weather that assists planning for the placement and movement of surface fire and air assets, and where enemy engagement will achieve maximum desired effects. During IPB, fires planners begin coordinating with the G-2/S-2 to link NAIs and TAIs and identify the best location for TAIs based on enemy locations or suspected locations. This analysis may identify additional information requirements. See MCRP 2-10B.1 and MCTP 3-02A for more information on IPB and civil preparation of the battlespace (CPB). Intelligence preparation of the battlespace may include:

- Enemy organization, capabilities, limitations, and methods of employment with an emphasis on fire support assets, direct fire weapons, aviation and air defense capabilities, and vehicle mobility.
- Known, suspected, or likely enemy locations.
- Likely enemy COAs.
- Key terrain, observation points, and weather.
- Cover and concealment, including natural and manmade obstacles.
- Effects of terrain on mobility, positioning, and communications.
- Effects of terrain and weather on munitions and lasers.

Staff Actions. In the next phase of problem framing, the staff conducts an analysis of tasks and centers of gravity, develops assumptions, determines limitations, develops a mission statement, and begins ongoing staff activities. These activities enhance understanding and increase the planner's ability to effectively plan. The engagement process begins during problem framing and provides initial input for fire support and collection planning. Engagement requires an assessment of the terrain and relevant actors, without regard to unit boundaries, and identifies those formations, equipment, facilities, and terrain the enemy commander requires to complete the mission successfully.

Specified and Implied Tasks. The FSC identifies specified and implied tasks. Input for these tasks comes from Appendix 17, Annex C of the higher headquarters order (e.g., fire support execution matrix [FSEM], reconnaissance and surveillance plan), and the unit commander's guidance. As planners analyze fires tasks in higher headquarters' plans and orders, they determine the unit's mission, which fires tasks apply, and provide directives to achieve the commander's objectives. From the specified and implied tasks, the FSC begins to determine the EFSTs their unit accomplishes to achieve the commander's guidance.

During problem framing, the FSC begins to determine the task and purpose of the proposed EFSTs. Each EFST is enemy-oriented and uses an engagement objective to achieve a friendly-oriented purpose. The FSC designs each EFST to ensure the synchronization of all assets and that those involved understand their role in the fire support plan and the creation of desired effects.

Analyze Centers of Gravity. The staff conducts a COG analysis based on the understanding gained through design and task analysis to identify or refine enemy and friendly COGs, and to determine which friendly and enemy weaknesses could become critical vulnerabilities and critical requirements. This information supports engagement through the identification of critical nodes and possibly where to apply friendly capabilities to hinder the enemy's ability to defend, attack, sustain, or command forces.

Determine Assumptions. In the absence of facts, fires planners help identify, develop, and record assumptions about the current situation or future events. This enables continued planning and allows the commander to make decisions concerning a COA. These assumptions apply to both friendly and enemy situations, as well as the environment. Valid assumptions are logical, realistic, and essential for planning. Planners should resist the temptation to assume away their challenges and an enemy's capabilities. Assumptions should generate RFIs that must be answered for planning to continue, otherwise these assumptions can become a risk to the success of the plan if they prove false.

Identify Limitations. Limitations are an action required or prohibited by higher headquarters. The staff identifies constraints (i.e., requirements that dictate an action) and restraints (i.e., requirements that prohibit an action) during problem framing and notes them in the method section of an EFST. They note the topics and carry them forward for use in subsequent planning.

Identify Resource Shortfalls. Fires planners help identify resource shortfalls (e.g., equipment, personnel, capability, or training) based on the tasks and available assets. The staff identifies shortfalls through the analysis of the higher headquarters' order TPFDD list (Appendix 1, Annex A), specified tasks, and assigned mission, to determine fire support requirements. Shortfalls can include a lack of subject matter experts, high demand low-density ammunition (e.g., PGMs, smoke, or illumination) and fires assets.

Commander's Critical Information Requirement Review and Update. The commander decides what information is critical, however the staff can propose CCIRs to the commander. Fires personnel support identifying CCIRs. These CCIRs drive the collections plan and priorities for both deliberate and dynamic targeting objectives. Additionally, early integration and alignment of fires and intelligence supports the development of the collection plan, to include decision points and TAIs linked to NAIs.

Submit Requests for Information. During problem framing, fires planners continue to submit RFIs on the development of supporting arms staff estimates and the identification of information requirements necessary to convert assumptions into facts, support future plans, and conduct current operations.

Support and Present a Problem Framing Brief. The staff presents a problem framing brief to the commander, reviewing the completed products, and ensuring a shared understanding within the staff. The brief facilitates discussion between the commander, the staff, and other representatives on the facts and assumptions about the situation. Fires planners assist in the production of staff products and develop individual fires products for the problem framing brief, as directed by the OPT lead. Planners prepare to answer fires related questions for clarification.

Commander's Course of Action Guidance. The problem framing briefing concludes with the COA guidance. This guidance is more prescriptive than the commander's initial planning guidance. It addresses what the commander expects fires to accomplish (i.e., providing task and purpose), the focus of fire support, initial engagement priorities, HPTs, HPE, force protection issues, and additional limitations or requirements. The focus is on the desired endstate (e.g., lethal and nonlethal effects) that the commander wants fires and information capabilities to attain. The MCWP 5-10 states that specific guidance can be in terms of warfighting functions, line of or types of operations or forms of maneuver, and includes the commander's vision of decisive, shaping, and sustaining actions. If the commander does not provide specific effects-related guidance or fails to address a critical element needed to continue planning, planners can interpret what the commander wants fires and information capabilities to accomplish based on the commander's intent and desired endstate or they can request specific commander's guidance on the use of lethal and nonlethal capabilities.

Issue the Warning Order. Fires planners support dissemination of the warning order to subordinate commands, to include other FSCs, observers, or supporting arms representatives. Included in the warning order is the mission of the supported unit, commander's intent, and guidance for fires. Additionally, fires planners continue to supply subordinate and supporting units with the current supporting arms staff estimates and any other pertinent fires products and information to support concurrent planning.

Refine Supporting Arms Staff Estimates. Supporting arms staff estimates begin upon receipt of the higher headquarters' warning order and are continuously refined. During development, fires planners gather and refine information on all factors affecting the deployment, sustainment, and execution of fire support assets. They also seek guidance for a timely examination of factors that support decision making and affect mission accomplishment. Information at this stage is a combination of fire support status (e.g., units, ammunition, TPFDD), IPB, resource shortfalls, recommended targeting priorities, specified and implied fires tasks, and draft EFSTs. The FSC translates data on supporting arms into meaningful capabilities, such as converting artillery ammunition counts into tangible capabilities that are meaningful to the commander's estimate process. For more information on translating data into meaningful capabilities see MCTP 3-10E and MCRP 3-10E.4, *Tactics, Techniques, and Procedures for the Field Artillery Manual Cannon Gunnery*.

Participating in problem framing allows the FSC to develop a shared situational awareness with the rest of the staff and subordinate units, which helps integrate the fire support plan with other functional plans to support COA development. With this situational awareness, the FSC and commander begin to draft the commander's intent, general concept of fires, and proposed EFSTs. The staff briefs elements of their estimates to the commander during the problem-framing brief along with a refined mission statement, and commander's intent. The commander and FSC have a common understanding of "what" fires can do for the unit before determining "how" to do it.

Course of Action Development

During COA development, the FSC conceptualizes the integration of fires and information capabilities into each COA and often modifies the commander's draft intent and concept of fires for each COA. To support the requirements of each COA and a general concept of fires, the FSC writes a by-phase concept of fires with specific EFSTs to accomplish the commander's objectives, assigns tasks for each supporting unit allocated or attached, and identifies the desired effects for each target set or entity planned for engagement. At a minimum, the fire support plan for each COA includes drafts of a concept of fires, FSEM, target list worksheet, entity list, fire support overlays (including known FSCMs, MCMs, and targets), schedules of fires, and target and engagement synchronization matrixes.

As a subparagraph to the CONOPS, the concept of fires paragraph describes the commander's guidance for fires and support of the concept of maneuver or CONOPS at higher levels. The concept of fires describes the logical sequence of EFSTs and how they contribute to the CONOPS. The FSC uses the specified and implied tasks identified during problem framing and from the commander's guidance for fire support to identify specific fire support tasks. Each phase, stage, and part of an operation may have its own set of EFST's to facilitate the accomplishment of maneuver's assigned tasks. The FSC then determines the precise method to accomplish each task. The overall paragraph organization mirrors the concept of maneuver paragraph. If the maneuver paragraph is phased or otherwise organized, the concept of fires paragraph will use the same organization. Just as maneuver tasks use task and purpose, fire support tasks use the task, purpose, method, and effect (TPME) thought process to develop a concise concept of fires that states what fires must accomplish in the operation.

The staff uses the target analysis and entity analysis processes to identify those relevant actors that support the commander's endstate and need engagement. The FSC begins the process after identifying high-value targets (HVTs) and high-value entities (HVEs) and continues to refine the list in subsequent steps of the MCPP, identifying those HPTs and HPEs whose engagement will significantly contribute to the success of the proposed COA. Refinement continues during COA development and wargaming, allowing the FSC to develop specific fire support tasks that will generate the lethal and nonlethal effects required to support each COA. The staff also makes initial plans to acquire, track, engage, and assess actions taken on HPTs and HPEs.

Fire support planning is an integral part of the CONOPS, shapes the battlespace, and sets the conditions that facilitate mission accomplishment. The fire support plan cannot be a separate plan developed in isolation. The planning staff updates and refines tools developed during problem framing. Depending on available time, the FSC might have to prioritize a few key fire support tasks and engagement objectives in enough detail to facilitate COA wargaming, and COA comparison and decision. Fires planners will support the following staff action, which they may conduct sequentially or simultaneously.

Update IPB Products and Conduct Preliminary Target and Entity Analysis. At the highest level of command within the GCE, the engagement process begins with the refinement of IPB, CPB, target analysis, and entity analysis for the entire AO. The commander, G-2/S-2, G-3/S-3, and supporting arms representatives focus engagement efforts to support the concept of maneuver. This interaction is the foundation for collection and fire support plans. The FSC develops and disseminates targets and entities to lower echelons with tasks for the engagement of specific targets and entities (top down). As planners determine the enemy's most likely and most

dangerous COAs and how they might react to proposed friendly COAs, the fires, intelligence, and information personnel conduct initial target and entity analysis. They conduct initial target and entity analysis to develop a draft FST list and HPE list for each COA, which is further refined during wargaming. Target analysis and entity analysis link the effects of target and entity engagement directly to the engagement function and involves a detailed analysis of enemy doctrine, tactics, equipment, organizations, and expected behavior for a selected COA. The target and entity analysis processes identify potential HVT and HVE sets associated with critical enemy and entity functions that could interfere with the friendly COA or that are vital to enemy success. The staff assesses each target and entity set by phase and ranks each based on its ability to interfere with the friendly COA. A notional assessment process of converting an HVT to an HPT or an HVE to an HPE includes:

- War game each friendly COA against the enemy's most likely and most dangerous COA.
- Identify critical or significant event HVTs and HVEs that affect friendly operations for each COA by phase and ask the following questions:
 - Can collection assets acquire the HVT and HVEs? (Consider established NAI, decision points, the need to establish more, or the need to adjust the collection plan.)
 - Can fires and information assets engage the HVT and HVEs? (Break down the entity into components that facilitate its operations, look at establishing TAIs, and look at available assets and range fans.)
- Is the HVT or HVE a critical node that will immediately degrade or prevent the enemy from achieving its goal if engaged? (Target can be degraded by engaging its critical requirements and critical vulnerabilities.)
- Is engagement of the HVT or HVE necessary for the friendly COA to succeed? (If not, do not expend critical resources.)
- Identify primary, secondary, and tertiary means of HPT or HPE acquisition. Incorporate into and refine the general or by-phase concept of fire and EFSTs.
- Establish required effects for friendly COA success. Incorporate into EFSTs.
- If the staff plans the engagement of an HPT or HPE in a TAI, identify primary, secondary, and tertiary means of engagement.
- Identify what asset is required by type and number to achieve desired effects. Incorporate this information into and refine the general or by-phase concept of fire, information plan, and EFSTs.

The development of HVTs into HPTs and HVEs into HPEs follows similar, parallel processes with the former focused on developing priority targets (e.g., enemy or threat) for attack and the later focusing on developing priority entities (e.g., neutral or friendly) for engagement in pursuit of the commander's desired lethal and nonlethal effects.

Course of Action Graphics and Narrative. Fires planners support the development of COA graphics and narrative by providing input on what fires assets and information capabilities they need to array and employ to support each COA. They work in conjunction with G-3/S-3 and G-2/S-2 planners on the best placement of MCMs and FSCMs. Using all previously developed products, fires planners draft fire support plans for each COA. Regardless of the specific COA

development technique used, the staff considers and incorporates the following factors into the fire support plan.

Identify Task Organization. Planners consider assigned tasks, objectives, and the tactical situation to identify the task organization that supports each COA. Task organization can change based on the flow of units in and out of the theater and might change in each phase of the operation.

Identify Significant Events. Fires planners identify significant events by phase, either by decisive, supporting, and sustaining actions or geographically, by deep, close, and rear for maneuver and fires.

Refine Commander's Intent for Fires and Concept of Fires. Once planners identify the events, they refine the commander's draft intent for fires and concept of fires for each COA from the problem framing guidance. See Appendix B for an example of commander's intent for fire support and concept of fires development.

Develop By-Phase Concept of Fires and Essential Fire Support Tasks. By reviewing significant events, planners can develop rough, by-phase concepts of fire, identifying the requirements, allocations, and positions of assets to support EFSTs. At this point, some critical information needed to complete the EFSTs might be missing. Each maneuver task can require more than one fire support task to achieve the objective. See Appendix C for detailed instruction on EFST development.

Quantify Desired Effects (Success). As the FSC and staff build the COA and determine how to accomplish each EFST, they quantify desired effects. Supporting assets use this quantification to determine the ammunition or engagement parameters needed to accomplish the EFST. They focus on what must be done, not what can be done. If they cannot create the desired effects with the assets allocated, then they rework the method or request additional assets. Specific percentages to damage criteria (e.g., 30% = destruction) are often difficult to quantify during ongoing military operations. The staff expresses effects as a measurable action of combat effectiveness that enables maneuver to accomplish a mission or task. An example of this could be limiting the enemy's ability to mass indirect fires above the platoon level for 48 hours, thus allowing the battalion to conduct an unopposed river crossing. The staff captures quantified effects on the DCM.

Plan the Method for Each Fire Support Task. The FSC determines which fire support and acquisition assets are required to accomplish the fire support tasks assigned to each supporting arms agency. They describe these requirements in amounts and types of fire support and acquisition assets. The staff prepares and refines initial requirements during COA analysis and wargaming. Formats for recording these requirements are contained in MCTP 3-20E, *Assault Support* and MCWP 5-10. If requirements surface after the staff allocates attack resources, the FSC forwards the requests to the next higher echelon. These requests can include radar, reconnaissance, JTARs, radio battalion, reinforcing fires, or nominating targets for attack.

The FSC allocates fire support and information capabilities for each COA. Allocation establishes what capabilities commanders can employ and is essential for concurrent planning at lower echelons. The MAGTF apportions air and NSFS capabilities for a specific use, such as a percentage of air for CAS or a number of ships for NSFS. The FSC then allocates these capabilities to subordinate units (e.g., number of sorties for CAS or assignment of tactical missions to NSFS ships). The commander allocates artillery by assigning tactical missions.

Identify Potential Position Areas. Positioning requires close coordination with maneuver unit's S-3's and movement control authorities. For planners, a critical part of positioning is the planning of PAs, firing points, hide positions, and reload points for surface fire assets (e.g., cannon and rockets), as well as fire support areas (FSAs) and fire support stations (FSSs) for NSFS. These take the form of general areas (also referred to as goose eggs) and are not exact points on the ground. Equally important is the coordination of movement routes and priority of access to those routes by fire support units with movement control authorities throughout the battlespace. Allocation of fire support will affect the positioning of fire support assets. For example, positioning an artillery battalion with a direct support tactical mission near the AO of a supported regiment facilitates support to that unit. Positioning also includes the location of target acquisition assets to acquire targets and observe fires. For details on positioning see MCTP 3-10E.

Identify Potential Ammunition Requirements. Ammunition availability is a major consideration for allocating fire support. Controlled supply rates imposed by the Class V supply chain might dictate tight control of ammunition expenditures. If these restrictions preclude one fire support means from providing adequate support, planners consider other means. The maneuver commander can consider modifications to the concept of maneuver to compensate for ammunition shortages. The staff expresses the ammunition allocation in terms the commander can quickly grasp, such as the number of battalion or battery volleys, minutes of illumination for a specific sized area, number of targets, number of specific-sized mine fields of a specific density, or sorties of CAS available.

Timing of fires is crucial when providing CAS or setting the conditions for maneuver to exploit. The FSC understands the tentative timing flow of the concept of maneuver to establish triggers. Fires planners refine these triggers during COA wargaming, through subordinate refinement, and rehearsals.

Assist S-2 in Collection Plan Refinement and Task Target Acquisition Assets. The FSC coordinates with the S-2 to ensure there are adequate, redundant collection assets integrated during the detect phase of the engagement process. Planners base integration on the COA's concept of maneuver, CCIRs, and any additional guidance. They incorporate observers, terminal controllers, weapons locating radar systems, and sensors into fire support and collection plans. The FSC allocates and tasks acquisition assets to observe the attack of the assigned EFSTs and provide BDA.

Determine Priority of Fires. The FSC further allocates fire support by assigning POF, providing guidance to organize and employ fire support means based on the relative importance of a unit's mission, and establishing the priority those assets will use to answer CFFs. Priority of

fires can be given for all fire support assets or a specific supporting arm. The POF may change depending on the phase of the operation. For example, a change in mission from the main effort to the supporting effort, or vice versa, could require a shift in the POF.

Develop Initial Tactical Target and Entity Lists. The fires planning staff develops the initial target list from target analysis, entity analysis, and COA graphics and narratives. The list consists of known or suspected enemy or entity locations, facilities, infrastructure, and key terrain. Either the senior GCE FSCC or MAGTF GCE FSCC vet, maintain, and distribute the GCE target list and entity list to the MAGTF. Staff members should not confuse the assigned target numbers to target list targets that use basic encyclopedia and unit identification codes assigned to targets on the joint target list for engagement in the joint or MAGTF deliberate targeting cycle. Other joint task force (JTF) components will not know of internally developed GCE target lists unless the staff distributes them on fires C2 systems. Staffs use these C2 systems to vet, distribute, and update target and entity lists. The systems help identify gaps or duplications in coverage.

Operators keep tactical target and entity lists, and tools for recording planned targets and entities, current and as short as possible. The staff deletes targets and entities that are successfully engaged or are no longer of value and adds new targets and entities as required. Targets and entities essential to one operation or phase of an operation, might not be essential to the next. When transitioning from one operation or phase to the next, the staff retains previously planned, still valid targets with the same target numbers and entities. This reduces the number of changes to the target and entity lists and makes record keeping easier. Due to size limitations of the target number block assigned to a unit and the duration of the operation, units might have to reuse target numbers to support different phases of an operation. The unit SOP or fires order addresses the process for recycling target numbers.

The staff submits targets and entities that the appropriate FSCC can plan and approve without further coordination, along with those that are coordinated directly, and disseminates those targets and entities to other supporting arm units and agencies. When fires C2 systems are not available, the target and entity list worksheets serve as a useful tool to identify targets and entities for engagement by supporting arms along with scheduling requirements. The staff can also disseminate information contained in the target and entity list worksheets via other digital methods (i.e., e-mail and web-based collaboration platform). The use of fires C2 networks ensures all units are aware of current target and entity list updates.

Test Feasibility. As the FSC and staff develop COAs, they apply doctrinal or accepted planning factors to ensure the plan is feasible. Factors come from the Marine Corps doctrinal and reference publications, other pertinent publications, or educated guesses based on previous experiences.

Support Course of Action Brief. Planners brief each COA separately using a standardized briefing format to keep the briefing focused and prevent the omission of essential information. The COA brief includes a COA graphic and narrative and includes key information such as refined facts, assumptions, or risks carried forward from problem framing. This can include possible enemy COAs, the response of the local population to each COA, the rationale for each COA, and recommendations for wargaming. This information includes the following:

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- Overall commander's intent and concept of fires for each COA with:
 - By phase concept of fires.
 - Main effort.
 - EFST and or HPT and HPE list.
- Identify other significant fires information such as:
 - Critical actions.
 - Conditions or requirements to facilitate CONOPS and concept of maneuver.
- Update fires staff estimates and:
 - Identify what is common to all COAs.
 - Identify general fires assumptions.
 - Identify COA assumptions.
 - List by phase or significant event.
 - Identify C2 requirements.
 - Identify liaison requirements.
 - Identify positioning and displacement or movement routes.
 - Requirements of all assets to support CONOPS.
 - Identify logistic support requirements.
 - Ammunition and information capabilities requirements.
 - Security requirements.
 - Rough FSCMs.

Commander Provides COA War Game Guidance. Following or during the COA brief, the commander selects or modifies the COAs or suggests additional COAs for wargaming. The commander also provides wargaming guidance and evaluation criteria. This guidance might include a list of friendly COAs to be analyzed against specific enemy COAs.

Before the staff can begin the COA war game, the commander chooses the evaluation criteria used to select which COA will become the CONOPS. The commander establishes evaluation criteria based on mission, enemy, terrain and weather, troops and support available-time available, judgment, personal experience, and an overall understanding of the situation. Commanders might choose evaluation criteria related to the principles of war, such as mass or surprise. These evaluation criteria help focus the wargaming effort and provide the framework for data collection.

During COA development, the FSC functions within the staff process as it incorporates and integrates tentative fire support plans with schemes of maneuver for each COA. Outputs from this phase are a tentative plan for each COA and include:

- Concept of fires (sequencing of EFSTs).
- Draft FSEM.
- Draft target list and FSCMs with overlays utilizing appropriate C2 systems.
- Draft target and engagement synchronization matrixes.
- Collection and reconnaissance and surveillance plan.

Course of Action War Game

In this step, the staff examines friendly COAs against the enemy's most likely and most dangerous COAs. This allows the staff to adjust for problems or weaknesses they identify in the friendly COAs. Wargaming is a technique that aids COA analysis and allows the FSC to validate or refine the fire support plan. During wargaming, the FSC continues to refine the HPT list or HPE lists allowing it to develop specific tasks for engagement that will create the desired effects on key targets or entities as required by each COA. The staff also refines plans for acquiring, tracking, engaging, and assessing engagements against the HPTs or HPEs.

War Game COAs. Wargaming revolves around a "turn-based" set of actions. Each turn includes discussion of the friendly action, anticipated reaction of enemies and adversaries and the local population, and then friendly counteraction. In this process, fire support representatives identify how fires support the concepts of operations and maneuver, providing a means to test the fire support plan's effectiveness and its integration with the concept of maneuver. Wargaming includes the identification of the following fires-related information during each turn:

- Fires decisive, shaping, or sustaining actions.
- Priority of fires.
- EFST by phase and their priorities.
- TAIs in support of EFST and supporting assets (identifying acquisition and engagement assets).
- Identification of fires and information capabilities, including positioning and movement requirements to support assigned tasks.
- FSCMs and ACMs in effect.
- Liaison requirements to and from other commands to facilitate the planning, coordination, and execution of fire support.
- Other requirements such as ammunition, logistics, acquisition, and communications.

Each wargaming turn helps fire support planners validate or refine previously identified requirements that accomplish the fire support tasks. Planners take notes to capture additional requirements or reassign specific fire support tasks to other supporting arms agencies. The FSC revises fire support plans for each COA as they identify changes.

Refine Staff Estimates, Support Concepts, and Estimates of Supportability. During wargaming, the recorder captures required document refinements. The FSC and fires planners refine fires documents at the end of the wargaming phase. Staff estimates assist in developing the fire support concept. These estimates and supporting concepts are critical to the COA comparison and decision step, which the staff will integrate into the plan or order.

Each supporting arms commander and representative in the FSCC begins an initial estimate of supportability as an output of the war game. This estimate analyzes the AO, enemy capabilities, and each proposed COA. It cites the advantages and disadvantages of each COA from the perspective of a particular supporting arm and is written and/or presented as a formal briefing. The staff develops a CONOPS and fire support tasks for each COA. If time is short, the staff expedites the estimate and explains in as much detail as the tactical situation permits. This can entail the supporting arms commander or representative providing a verbal estimate of the

supporting arm's capability to support a COA. The staff usually does formal estimates of supportability above the battalion level during deliberate planning.

At the conclusion of wargaming, the FSC refines the fire support plans of each COA. As outputs to this step, the FSC generates a final draft of the fires paragraph and information such as FSEM, target overlay, or target and engagement synchronization matrixes required in Appendix 17, Annex C. See Appendix D for sample estimates of supportability.

Prepare COA War Game Brief. The COA war game brief includes the advantages and disadvantages of each COA and suggested modifications. Fires planners contribute the following information to the brief:

- Initial guidance or changes to the existing engagement guidance product per COA (e.g., HPT list, HPE list, BSM).
- Collection requirement.
- Marine aircraft wing (MAW) apportionment requirements.
- Additional resource shortfalls.
- New RFIs.
- Estimated time required for the operation.
- Risk assessment.

Commander Provides Comparison and Decision Guidance. When the COA war game brief ends, the commander approves recommended changes to the COAs and provides guidance for the next phase of planning, which is COA comparison.

Course of Action War Game Considerations. The decision to conduct an informal or formal war game is determined primarily by time available. Staff members gain a deeper, more intuitive level of understanding of each COA during a formal war game, reducing decision-making time during execution. Planners consider wargaming at least two command levels down to allow thorough examination of key events and to determine critical support and coordination requirements. Planners may stop the war game and return to COA development if a COA proves unfeasible or lacks sufficient information to effectively war game.

Course of Action Comparison and Decision

In this step, the staff evaluates, compares, and decides which COA best accomplishes the mission. The FSC is prepared to brief the estimate of supportability of each COA to the commander. The level of detail for the brief varies depending on evaluation criteria and level of participation in the wargaming.

Evaluate COAs. The planning staff measures each COA against the commander's evaluation criteria. The FSC briefs the method to accomplish each fire support task along with the advantages and disadvantages of each COA from the perspective of each supporting arm. There

can also be a supporting arms representative brief. They then discuss and record the advantages and disadvantages of each COA.

Compare COAs. The staff ranks each COA with respect to advantages and disadvantages using the commander's evaluation criteria and other considerations such as mission accomplishment, EFSTs, and warfighting functions. They total and compare each ranking giving the commander the information to make an informed decision. Staffs provide input based on detailed estimates of supportability. Rankings might be more subjective than the ranking numbers indicate. One COA may rank "best" but is not supportable by one of the warfighting functions. The commander then decides if additional support is required, whether the COA needs adjustment, or discards the COA. To be comprehensive, this process requires graphics and narratives for each war gamed COA and the commander's evaluation criteria.

Commander's Decision. The commander compares COAs and selects the COA that best accomplishes the mission. This can include:

- Selecting a COA without modifications.
- Modifying a COA.
- Developing a new COA by combining favorable elements of multiple COAs.
- Discarding all COAs and resuming problem framing or COA development.

After deciding, the commander reviews the approved COA with subordinate commanders. Fires planners use the approved COA to focus further planning and develop the fire support plan.

Refine the Concept of Operations. Based on the approved COA, the staff refines the CONOPS, which is the basis for supporting concepts such as fires, logistics, and force protection. Planners finalize the concept of fires based on information developed during previous steps in the staff estimate, IPB, CPB, target and engagement synchronization matrixes, and war game results. Armed with the CONOPS and supporting concepts, planners can proceed with the functional and detailed planning essential for the development of the plan or order and implementation of the plan during execution.

Update the Warning Order. Once refinement of the COA is complete, the staff issues warning orders to subordinate commanders and appropriate supporting arms agencies.

Considerations. The results of COA comparison and decision provide the basis for orders development and consist of the CONOPS. Additional results include updates to IPB and CPB products, CCIRs, engagement priorities, FSCMs and ACMs, planning support tools, and staff estimates. The commander can also identify branches for further planning.

Orders Development

Orders development articulates the commander's intent, guidance, and decisions in a clear, useful form to the subordinates and supporting arms agencies that execute them. Orders are written or verbal, depending on time available.

The fire support plan contains only critical or new information and not routine matters usually found in SOPs. The exception is when there are multinational, allied forces, or other services

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attached to the GCE that might not have access to SOPs or are unfamiliar with MAGTF operations. A good order is judged on its usefulness and the ability of commands to understand their roles and execute assigned tasks. The initial task organization, mission statement, commander's intent, CONOPS, and specified and implied tasks are the required inputs to orders development. Other inputs may include:

- Commander's intent for fires and concept of fires.
- Updated intelligence and IPB products (e.g., target and entity analysis, NAIs, decision points, and TAIs).
- Planning support tools (e.g., FSEM, AGM, BSM, reactive attack guidance matrix (RAGM), and DCM).
- Updated CCIRs (incorporated in targeting, collection, and EFSTs).
- Staff estimates.
- Commander's identification of branches for further planning.
- WARNORD/planning order.
- Existing plans and orders.
- Orders development guidance from the chief of staff or executive officer.

The chief of staff or the executive officer directs orders development and dictates the format for the order, sets and enforces the time limits and development sequence, and assigns annexes to specific staff sections. The FSOs assign the writing of Appendix 17, Annex C tabs, and tools to specific fire support representatives.

Prepare the Order or Plan. The staff prepares orders in a variety of forms, per MCWP 5-10, ranging from simple verbal commands to detailed written documents with multiple annexes. Their form depends on time available, complexity of the operation, size of the staff, and level of command involved. Staff estimates, subordinate commanders' estimates of supportability, and other planning documents inform a plan or order's annexes and appendices. The critical steps in the preparation of an order or plan are:

- Assign tabs and exhibit production to appropriate section.
- Coordinate with internal staff sections (e.g., air, civil-military operations, information environment, G-2/S-2, G-6/S-6, G-7/S-7) and external organizations for review of related portions of the order.
- Continue to update major subordinate command planners with draft of plan.
- Provide major subordinate commands with such products as:
 - Staff estimates.
 - Estimates of supportabilities.
 - Draft Appendix 17, Annex C tabs and exhibits (e.g., daily at specific time or critical updates).
- Receive updates of major subordinate command draft products.

Orders Reconciliation. Orders reconciliation is an internal process where the staff conducts a detailed review of the entire order. The purpose of reconciliation is to ensure the basic order and all the annexes, appendices, and other elements are complete and in agreement. It identifies discrepancies or gaps in the planning that require corrective action. The staff compares the

commander's intent, mission, and CCIRs against the CONOPS and supporting concepts. Priority intelligence requirements and the intelligence collection plan supports the CCIRs. The critical steps in orders reconciliation are:

- Identify time required for FSO review and refinement.
- Make appropriate modifications to tabs and exhibits.
- Return to FSO for approval.
- Provide G-3/S-3 with input.

Orders Crosswalk. The orders crosswalk is an external process where the staff compares its order with those of higher, adjacent, and subordinate commands to achieve unity of effort and ensure the order meets the superior commander's intent. Similarly, confirmation briefs and rehearsal of concept (also referred to as ROC) drills help a commander ensure subordinate units' efforts nest within the plan or order. Critical steps in the orders crosswalk are—

- Identify time and place for crosswalk.
- Distribute approved draft Appendix 17.
- Conduct a decentralized review of higher headquarters and major subordinate commands order.
- Distribute crosswalk brief.
- Conduct crosswalk brief to planner review brief.
- Submit RFIs.
- Update order.

Approve the Order or Plan. The final action in orders development is the approval of the order or plan by the commander. The commander does not have to sign every annex or appendix. The commander can provide additional guidance after a review or clarification on aspects of the order.

Considerations. When writing plans or orders, planners remain consistent in their use of approved terminology, particularly in the case of tactical tasks. Additionally, SOPs are current, widely disseminated, and used if the plan or order references them. Planners address the following areas to ensure critical sections of orders and plans are complete.

Finalize Engagement Decisions. The staff makes final refinements to engagement decisions based on additional guidance or modifications specified by the commander during the COA comparison and decision brief. They finalize plans for acquiring, tracking, engaging, and assessing actions taken with HPTs and HPEs. Plans for assessing the effectiveness of engagements provide timely feedback to the FSC so it can determine the requirements for re-engagement. Final engagement products include the HPT list, HPE lists, target selection standards (TSS), AGM/BSM, and the DCM.

Finalize Essential Fire Support Tasks. The staff incorporates final refinements to the fire support tasks into the CONOPS. They adjust schedules of fire, FSCMs, and FSEMs to reflect task modifications.

Finalize Triggers. Triggers are a physical point on the ground or an action or event. During offensive or defensive operations, a trigger is often a maneuver action or event. In the defense, a trigger is more often a physical spot on the ground. Trigger development sequence determines:

- Position on the ground that you want to engage the enemy or to silhouette the enemy with fires.
- Enemy rate of movement. The G-2/S-2 does this by estimation, based on experience from doctrinal literature, or from scout reports of enemy speed.
- Time of flight of the rounds from the weapon system firing to impact.
- Mission processing time (i.e., time required from the CFF to rounds fired).
- Total mission time (i.e., time of flight plus mission processing time).
- Trigger point. Place the trigger point the required distance from a planned target location. (Total Mission Time x Speed of Enemy = Distance)

Finalize Observation Plan. The observation plan is a collaboration of the S-2 and S-3 that provides the task and purpose for each phase of the operation. The S-3 synchronizes it with the concept of maneuver during the MCPP. The FSC plans to have observers and sensors in position to support the maneuver commander's intent and execute each EFST. The plan addresses such things as, where the observer or sensor needs to be and when, security, communications, how the observer or sensor gets into and out of position, what the observer or sensor is to accomplish, and disengagement criteria.

Conduct Coordination. Fires planners conduct internal and external coordination to ensure the alignment and synchronization of the fire support plan.

Transition

The transition provides a successful shift from planning to execution, ensuring that those charged with executing the order have a full understanding of the plan. Transitions include briefs and rehearsals to increase situational awareness of the subordinate commanders and the staff and instill confidence and familiarity with the plan.

Prepare Transition Brief. Fires planners provide input to enhance an understanding of the concept of fires and subordinate commands roles and responsibility to the plan.

Conduct Transition Drills. Rehearsals, such as sand tables, map exercises, and rehearsal of concept drill, are effective transition drills. A combined arms rehearsal (also referred to as CAR) and concept drill rehearsal facilitates the effective synchronization of all warfighting functions before execution. Key fire support considerations during the rehearsal might include synchronization of the fire support plan with the concept of maneuver, target execution responsibilities (e.g., primary and alternate observers), artillery and mortar positioning and movement plans, placement, and timing of FSCMs, CAS employment, and verification of target acquisition asset availability.

Support Preparation of the Confirmation Brief. Confirmation briefs take place at all levels of command. Commanders conduct these briefs with higher commanders to confirm their understanding of commander's intent, specific task and purpose, and relationships between their

unit's mission and that of the other units in the operation. The briefs allow the higher commander to identify gaps in the plan, discrepancies between unit plans and the subordinate commanders' plans, and learn how subordinate commanders intend to accomplish their missions.

Adjust the Fire Support Plan. Refinements are adjustments to the fire support plan by subordinate elements and are crucial in top-down fire support planning. These would include changes to the observation plan and target and entity locations based on the subordinate unit's analysis of the terrain and selected concept of maneuver. The higher FSCC receives changes and approves or denies them.

As the tactical situation dictates, the FSC recommends fire support plan changes to the commander and is responsible for affecting those changes if approved. The staff establishes the method for disseminating changes, such as messenger, data C2 systems, or voice transmission, in advance. If during fire planning, a supporting arm determines that they can no longer provide support for a particular task, they notify the appropriate FSC who then adjusts the plan. The FSC either drops targets and entities from the fire support plan or reassigns them to another supporting arm.

Conduct Final Coordination Meeting. When time and the situation permit, and once all formal briefs, rehearsals, and adjustments are complete, fires planners might choose to conduct a final coordination meeting with staff and subordinates to identify updates and walkthrough responsibilities and processes.

Concurrent Planning Within the Ground Combat Element

Within the GCE, planning is a set of concurrent tasks that are happening at all levels. Figure 3-2 is a graphical depiction of how this takes place.

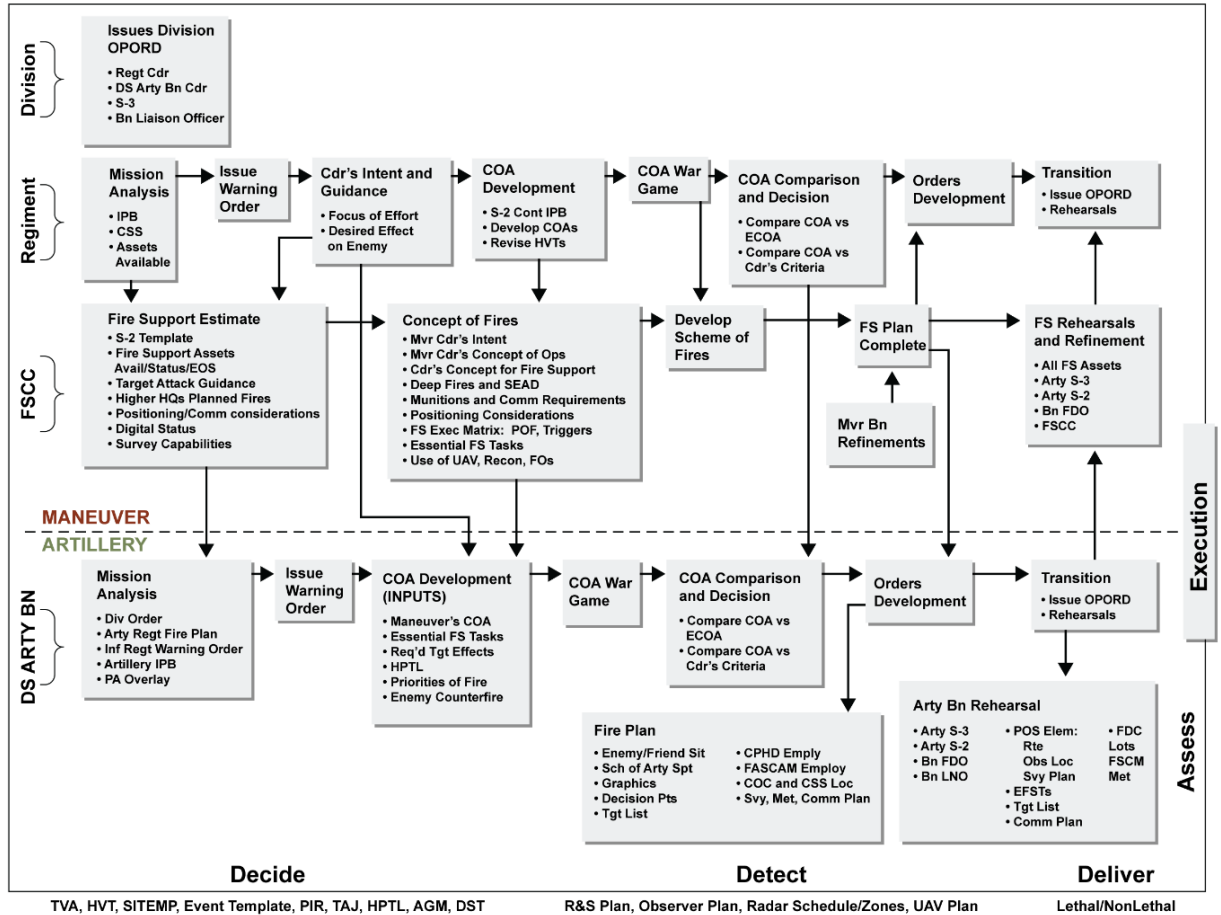


Figure 3-2. Fire Planning Using the MCPP.

Division Planning. Higher echelon staffs have more planning capacity and attempt to reduce the burden of lower echelon planning. The focus of higher echelon planning is to influence future operations while supporting current operations. Division fire support planners become familiar with higher headquarter's order format and guidance to integrate and synchronize the GCE fire support plan.

Planning includes disseminating guidance and information on engagement, anticipating requirements, allocating assets, and coordinating with higher and adjacent agencies. It does not impede nor substitute the planning efforts of lower echelons and seeks to achieve:

- Support forces in contact by using fires to isolate the battlefield for current operations and provide force protection (e.g., counterfire).
- Support the commander's plan by establishing guidance on fire support and using fires to shape the battlespace for future operations.
- Combine the different supporting arms capabilities to shape the battlespace and set the conditions or enable current operations.
- Sustain fire support by allocation and distribution of assets and by anticipating requirements and providing logistical support.

Regiment and Battalion Planning. Lower echelons plan concurrently with higher echelons using liaisons to facilitate concurrent planning. Lower echelons focus on providing close supporting fires and the coordination needed to integrate them with maneuver. Fire support planning at lower echelons seeks to achieve:

- Support forces in contact by providing close supporting fires.
- Support the commander's concept of operation.
- Integrate and synchronize fire support with the concept of maneuver to create a combined arms effect.
- Sustain fire support by judiciously employing limited assets where they will have the greatest effect.

The regiment plays a critical role in planning and controlling the movement, positioning, and allocation of fire support assets. The effective integration and synchronization of fires and maneuver is only possible through a close working relationship between the supported regiment and its FST.

Company Planning. Fires planning at the company level can use the troop leading steps commonly referred to as BAMCIS. The memory aid stands for—

- Begin planning.
- Arrange for reconnaissance.
- Make reconnaissance.
- Complete the plan.
- Issue the order.
- Supervise.

Company leaders can perform these actions in any sequence or simultaneously. The company FST leader organizes the efforts of supporting assets to meet all these requirements. See MCRP 3-30.7, *Commander's Tactical Handbook* and Appendix C for more information. An alternative company level planning method for the execution of EFSTs is TTLODAC, which is not sufficient above the battalion level because it does not provide the level of detail necessary for complex, large-scale operations. The acronym stands for—

- Target number.
- Trigger.
- Location.
- Observer.
- Delivery system.
- Attack guidance/number of iterations.
- Communications network.

THE FIRE SUPPORT PLAN

The FSC prepares the fire support plan containing critical information for the employment of fire support assets, which includes the commander's intent for fires and concept of fires. The plan

matches maneuver units tasked with engaging entities and fire support assets at a specific time or event. It is the basis for each supporting arms unit's own fire planning. The FSC uses the fire support plan to disseminate this information to subordinate and supporting units for execution. The extent of documentation depends on the quantity and type of data being disseminated, time available, training of personnel, and the adequacy of SOPs. Additional planning on information capabilities is found in Annex I, Information, of the OPORD. The FSC uses the format that best meets the command's needs and disseminates the plan in one of the following manners.

Part of the Basic Order

When the fire support plan is included in the execution paragraph of the operations order (OPORD), the amount of detail provided depends on the echelon of command and level of detail needed to execute the operation. At battalion and company levels, planners may incorporate the concept of fires into the CONOPS paragraph. The staff describes how they will integrate direct and indirect fire support assets, and information capabilities to support the concept of maneuver. This includes the sequencing of the task, purpose, and assets from each EFST (see Appendix C) in support of the CONOPS. The concept of fires shows the key tasks that fires and information capabilities must achieve to meet the commander's intent for fires and effects. If the OPORD does not include annexes, the remaining portions of the fire support plan, such as the FSEM, schedules of fire, and observer plan appear as attachments to the order.

Appendix 17 Fire Support to Annex C Operations

Although the staff briefly addresses fire support in the concept and conduct of operations at Annex C, the important details appear in Appendix 17 Fire Support to the Annex C. The appendix conveys the commander's intent for fires, concept of fires, EFSTs, AGMs, TSS, HPT lists, HPE list, DCMs, and FSCMs. Tabs to the appendix detail such things as aviation, artillery, and naval surface fire support, organization for combat, fire, radar, and counterfire plans, FSEMs, PAs, digital parameters, and liaison plans. Administration and logistics paragraphs state specific command guidance for ammunition management and references Annex D, Logistics/Combat Service Support. Paragraph 5, Command and Signal, identifies the necessary command relationships and communications support for the plan.

Fragmentary Order Fire Support Plan

A FRAGO fire support plan is a fire support plan prepared using a shortened format.

Part of Commander's Guidance

The commander spells out how fires and information capabilities will support the concept of maneuver and establishes what fires and effects must accomplish and when to support the plan. This can be graphically depicted in a FSEM showing the fires events supporting concept of maneuver events to include, when certain fires occur, who controls them (i.e., primary and alternate executor), priorities of fire, triggers or conditions necessary for the initiation of fires, and activities of all supporting arms. The commander provides instructions and critical information essential to executing the plan such as ammunition allocation, changes to attack guidance, and new FSCMs. The staff can submit new targets or entities that are critical and closely tied to the concept of maneuver for update to the tactical target or entity list.

Part of the Basic Fragmentary Order

Another option for disseminating the fire support plan is to place it in the basic FRAGO. Fire support information usually consists of changes to an existing fire support document (e.g., appendix or FRAGO fire support plan). The fire support plan may be a new FSEM, commander's guidance, or a list of specific fire support tasks, depending on the tactical situation.

SUPPORTING ARMS FIRE PLANS

Representatives from each of the supporting arms in the FSCC conduct fire planning. Their planning consists of those activities necessary to coordinate the employment of weapons and information capabilities to best support the CONOPS. Scheduling fires, determining provisions for attacking targets of opportunity, positioning firing units and observers, integrating information capabilities, coordinating communications and combat service support (CSS), and computation of firing data, are examples of fire and effects planning information. Fire and effects planning information is contained in applicable tabs to the fire support plan or the Information Annex. Detailed procedures, instructions, and information for each supporting arm is recorded in the appropriate annex to the operation order. For details on supporting arms capabilities, see Appendix E.

In fires and effects planning, the desired effect is a major consideration that influences weapons or information capabilities selection, munitions type and amount, and required time of engagement. The staff also considers the availability and characteristics of weapons and munitions, troop dispositions (e.g., unit locations and proximity to targets), and concept of maneuver. The goal is to use the best weapon-munition combination or information capability available to achieve the desired effect on approved targets or entities.

Amphibious operations are the most complex of all military operations. Success requires a common understanding between all joint forces of standard fire support coordination procedures. Publications such as MCTP 3-31A and MCRP 3-31.7 contain detailed information on supporting arms TTP for amphibious operations. See Appendix F for additional information on amphibious operations.

The supporting arms plans usually associated under the Appendix 17, Annex C are listed below.

Aviation Support

The aviation support plan is contained in Tab A, Appendix 17, Annex C of the OPORD. Aviation assets are made available through an apportionment and allocation process.

Apportionment (air). Apportionment represents the quantities of force capabilities and resources provided for planning purposes only, but not necessarily an identification of the actual force that may be allocated when a plan transitions to execution.

Allocation (air). Allocation is the translation of the air apportionment decision into total numbers of sorties by aircraft type available for each operation or task.

The MAGTF commander works closely with component commanders in the apportionment process. Based on recommendations by the ACE commander and other major subordinate commands, the MAGTF commander determines the apportionment of aviation effort within the MAGTF. The MAGTF targeting working group makes recommendations to the MAGTF commander at the MAGTF targeting board for the level of effort to distribute aviation sorties based on the CONOPs for a specific phase, stage, and part of the operations. The staff establishes air control measures to facilitate aircraft maneuverability while minimizing interference with indirect fires. Air officers in the GCE identify and anticipate aviation requirements and pass tactical air requests up the chain of command. The staff reviews requests for approval, prioritizes, modifies as required, initiates coordination, and if approved, forwards to the next higher echelon. Once the MAGTF G-3 air working group identifies, prioritizes, and approves all requirements, they are passed to the Marine TACC where the MAGTF direct support portion of the ATO is prepared.

The AirO prepares the aviation support plan to provide air support information to the supported unit. They coordinate the plan with the supporting ACE and the development of the Annex W, Aviation Operations, which addresses aviation specific procedures and information. The aviation support plan (Tab A, Appendix 17, Annex C) provides information on immediate and preplanned CAS (e.g., scheduled or on-call). With preplanned CAS, Marines from the GCE may track their JTAR request numbers on the ATO. The aviation support plan is the primary and often only document the support air assets review before launch. The staff includes any additional information required for the air assets in the main order. See MCRP 3-31.6, *Multi-Service Tactics, Techniques, and Procedures for Joint Application of Firepower (JFIRE)*.

Examples of other information that can be included in the aviation support plan are—

- Commander's aviation CONOPS.
- Airspace management.
- Air requesting and execution process.
- CAS operations.
- Kill box procedure.
- ACMs.
- Aircraft alert status.
- Preplanned air targets, NAI, and TAI with necessary attack instructions.
- Air delivered mines instruction (if applicable and allowed by ROE).
- Applicable air delivery procedures, such as target marking or SEAD.
- Laser pulse repetition frequency codes.
- Aviation laydown location.

Close Air Support. Close air support has three methods of control which include Type 1, 2, and 3. It also has two methods of attack which are bomb on target and bomb on coordinate. Fire support personnel use a CAS brief, also known as the Gameplan and 9-Line CAS Brief, to brief aircraft crews for CAS missions. These methods of control, methods of attack, and brief are detailed in JP 3-09.3, *Joint Close Air Support* and MCRP 3-31.6.

When possible, planners reference other publications and parts of the OPORD such as SOPs or Annex W Aviation Operations. Planning not only directs and coordinates actions but generates shared situational awareness. The more liaisons between the MAGTF, supported unit, and the ACE, the quicker the plan can be developed and effectively executed. For more discussion on air fire planning, see MCTP 3-20D, *Offensive Air Support*.

Artillery Support Plan

The artillery support plan, found in Tab B, Appendix 17, Annex C, incorporates fire support requirements of the senior maneuver unit and guides artillery units in the execution of assigned tasks. The FSCC develops and schedules fire plans while additional planning occurs in the supporting unit’s FDC. The FSC and G-3/S-3, in coordination with the artillery S-3, prepare the artillery plan for the senior maneuver unit’s fire support plan, with the senior artillery unit taking the lead for many of the exhibits. The artillery S-3 develops the OPORD that includes essential field artillery tasks that the staff derives from the EFST’s and counterfire tasks. For more information on artillery tactical missions and the seven inherent responsibilities, see Table 3-1 and MCTP 3-10E.

Table 3-1. Seven Inherent Responsibilities.

Arty Unit with Tactical Mission of...	Answers Calls for Fire in Priority From...	Has As Its Zone of Fire...	Furnishes Forward Observers...	Establishes Liaison With...	Establishes Comm With...	Is Positioned By...	Has Its Fires Planned By...
Direct Support	1. Supported unit. 2. Own observers. 3. Higher artillery headquarters.	Zone of supported unit.	To each company-sized maneuver element of supported unit.	Supported unit (down to battalion level).	Supported unit.	Unit commander as deemed necessary or ordered by higher artillery headquarters.	Develops own fire plan.
Reinforcing	1. Reinforced unit. 2. Own observers. 3. Higher artillery headquarters.	Zone of fire of reinforced unit.	No requirement.	Reinforced unit.	Reinforced unit.	Reinforced unit or ordered by higher artillery headquarters.	Reinforced unit.
General Support	Higher artillery headquarters.	Zone of supported unit.	No inherent responsibility.	No inherent responsibility.	No inherent responsibility.	Higher artillery headquarters.	Higher artillery headquarters.
General Support Reinforcing	1. Higher artillery headquarters. 2. Reinforced unit. 3. Own observers.	Zone of supported unit to include zone of fire of reinforced unit.	No requirement.	Reinforced unit.	Reinforced unit.	Higher artillery headquarters or reinforced unit subject to prior approval by higher artillery headquarters.	Higher artillery headquarters.

Note: With the advent of the new Fire Support Battalion, it is likely that forward observers will be furnished by the Fire Support Battalion at the artillery regiment.

The senior artillery unit will support the development of the GCE’s sensor and counterfire plan. This may require a separate tab or exhibit. The counterfire plan (Tab J, Appendix 17, Annex C) addresses how the GCE will prosecute counterfire and assigns each unit their counterfire responsibilities.

The infantry FSO and artillery S-3 develop the artillery support plan. They begin with the senior maneuver unit plan and expand on the assigned tasks to produce an order that will achieve the

commander's objectives. The artillery S-3 also develops the artillery OPORD, to include essential field artillery tasks, and receives target information, PAs, fire support requirements, and input from infantry FSOs, the senior artillery unit S-3, and S-2. The artillery S-3 forwards applicable portions of the senior artillery unit's OPORD (e.g., schedules of fires developed at the supported units FSCC, firing positions, movement plans) as early as possible to the supported unit for approval. The artillery S-3 also sends a copy to the senior artillery unit along with requests for additional fires. The completed OPORD is distributed to the firing batteries and reinforcing artillery.

Infantry FSOs also receive the plan and ensure they notify all FSOs, JTACs, and JFOs and those observers can observe fires planned in their sectors. The artillery unit continues planning to ensure that the required support is feasible (e.g., positioning of firing elements, ammunition availability, firing restrictions).

81 mm Mortar Fire Plan

The infantry battalion mortar platoon commander or platoon sergeant conduct fire planning for the mortar platoon in coordination with the battalion FSCC. They receive target information, fire support requirements, and input from the FSC. The mortar fire plan has no designated tab within the Appendix 17 but can be included as a part of the Tab B in a battalion level plan. At the infantry company level, the company commander, or a designated representative, does fire planning for the company mortar section. Fire support tasks assigned to mortars are the basis for these plans.

Naval Surface Fire Support Plan

The NSFS plan is contained in Tab C, Appendix 17, Annex C. The MAGTF submits its NSFS requirements to the appropriate naval component commander who examines overall Navy and MAGTF requirements and allocates NSFS assets to support the MAGTF. In amphibious operations, the MAGTF plans section prepares an NSFS plan in coordination with the MAGTF NGLO. They coordinate closely with the amphibious force fires cell and FSC in planning NSFS (if one exists). The MAGTF plans section and NGLO provides information on the MAGTF CONOPS, such as GCE concept of maneuver, allowing the amphibious force to plan NSFS employment to meet MAGTF requirements (e.g., positioning of FSA and FSSs). The use of NSFS depends to a large degree on hydrography, anti-ship threats, number and type of ships available, and on the commander's priorities and guidance.

The MAGTF NSFS plan contains pertinent information and instructions taken from the amphibious force NSFS plan. Subordinate echelons may simply refer to higher echelon plans and not issue a separate plan. These plans usually include specific instructions on the tactical use of NSFS and contain an NSFS operations overlay, a schedule of fires, and instructions on communications and reports. Upon deployment, much of the planning between the supported unit and the supporting ship may occur via radio or digital C2 systems. See MCWP 3-31, *Marine Air-Ground Task Force Fires and Effects*, for more information on NSFS fire planning.

Counterfire Plan

Counterfire is either deliberate or dynamic. Mid to high-intensity conflicts demand an aggressive and deliberate counterfire effort to limit or damage hostile fire support systems. This requires

allocating proportionate target acquisition and delivery assets at the Marine expeditionary force and division level. In dynamic counterfire, designated fire support assets respond to enemy mortar, artillery, missiles, and rocket fires during or immediately following enemy engagement of friendly forces.

The counterfire plan is contained in Tab J, Appendix 17, Annex C, but elements of guidance can be included in Tab B. Enemy fire support systems can inflict serious damage on friendly maneuver forces, fire support systems, and supporting infrastructure. Therefore, friendly assets eliminate enemy fire support systems, to include missiles, cannons, rockets, mortars, target acquisition, C2, and logistics elements as viable threats. Deliberate counterfire is a vital consideration for both maneuver and fire support planning. Both deliberate and dynamic targeting address deliberate counterfire against enemy indirect fires assets and their supporting organization and facilities. For more information on counterfire operations, see Chapter 5 and MCWP 3-31.

QUICK-FIRE SUPPORT PLANNING

Quick-fire support planning responds to immediate threats using the fire support assets available. During quick-fire support, the supported unit's FSC already has authority to plan fires of supporting arms and time does not permit detailed evaluation of targets and fire planning. The FSC, assisted by supporting arms representatives in the FSCC, identifies targets for engagement, allocates available fire support assets, schedules associated fires, and determines other pertinent information. They then disseminate the plan to all appropriate supporting arms agencies for execution. The general preparation steps for quick-fire support planning are below.

Create the Quick-Fire Plan

Some considerations when developing a quick-fire plan include—

- Considering the supported concept of maneuver.
- Determining targets for engagement and add these targets to the fire plan.
- Determining desired effects based on the commander's guidance.
- Assigning order and timing of target engagement.
- Determining duration of fires.
- Determining the time of execution. Times are relative to an H-Hour or on-call using offsets from a start time.
- Determining POF.
- Determining available firing assets (i.e., artillery, mortars, NSFS, OAS).
- Assigning units to targets and determining the volume of fire required.
- Issuing a warning order.

Schedule and Execute a Quick-Fire Plan

Depending on time available, the battalion FSCC may compute the schedule of fires or skip this step. If the FSCC did not previously compute the fire plan schedule of fires, they automatically evaluate each target against commander's guidance and available fire support to determine tactical fire direction solutions. When the battalion FSCC executes the fire plan, it processes targets as fire missions or air requests with a method of control being TOT. The FSCC transmits fire plan targets using digital fire support systems or sends corresponding fire orders and JTARs to non-digital agencies.

BATTLESPACE ORGANIZATION

The battlespace framework depicts how the commander might organize the battlespace so they can relate their forces to one another in time, space, event, and purpose. This framework consists of envisioned deep, close, and rear operations. Within their battlespace, commanders employ a combination of MCMs, ACMs, and FSCMs, otherwise known as battlefield geometry, to facilitate the coordination and execution of fire support while safeguarding friendly forces. These geometries help organize and define the battlespace. For the GCE, the placement of the permissive FSCMs like the CFL and battlefield coordination line (BCL) help to further define the battlespace. The GCE typically considers the battlespace beyond the BCL as deep. The battlespace is three dimensional and there is often an invisible altitude boundary or coordinating altitude between the MAGTF and joint force air component commander.

When organizing the battlespace, it is important to prioritize work and geometries regardless of whether in the offense or defense. Using this priority to organize the battlespace will ensure fire support maneuver, deconflict effects to mitigate friendly fire, and define coordination requirements. Steps to achieve this are:

- Determine enemy threat range and capability.
- Plan friendly positions and gun-target line (GTL).
- Plan final attack heading for aviation support.
- Determine ACAs.
- Plan FSCMs, ACMs, and MCMs.

OFFENSIVE OPERATIONS

Forces conduct offensive operations to take the initiative from the enemy, gain freedom of action, and generate effects to achieve objectives. Fire support in offensive operations is characterized by centralized planning with decentralized execution at lower echelons. Planning factors such as on-order missions, priorities of fire, and FSCMs are developed within a flexible framework to allow changes that are quickly disseminated, understood, and implemented. When conducting offensive operations, the FSC focuses on C2 and planning.

Basics of the Offense

The basics of the offense include considerations that are broken out as tasks, command and control, and planning.

Tasks. Based on the tactical situation and mission, the following fire support tasks may be required to support offensive operations.

Provide Fire Support in the Preparation Phase. Fire support in the preparation phase may include attacking targets as part of a deception effort, using smoke to screen the movement of friendly forces preparing to attack, and disrupting enemy defenses before the attack. The commander may direct the use of fires to engage enemy indirect fire weapons and OPs, reserves or second echelon forces, C2 centers, logistic and assembly areas, and front-line defenses during this phase.

Support the Movement to Contact and Potential Meeting Engagements. During a movement to contact or meeting engagement, fires assets could provide immediately responsive fires to leading elements or attack deep targets with massed indirect fires and air support. Commanders could leverage an aggressive counterfire plan to prevent enemy indirect fires from delaying the advance. They maximize the use of preliminary coordination and ISR assets to identify enemy locations and movement. The use of NAIs and TAIs supports these efforts by helping confirm CCIRs and engaging targets to set conditions necessary for success.

Provide Support During the Attack. The FSC uses all available fire support means to destroy, neutralize, or suppress targets that could impede or react to the attack. Focus ISR and target acquisition assets on objective areas and avenues of approach while using deep fires to engage reinforcements.

Plan Fires During Consolidation. Fires protect friendly units during reorganization, breaking up enemy counterattacks, and preventing enemy reinforcement, disengagement, or resupply. The FSC ensures collections and fire support engage TAIs.

Provide Support for Exploitation. Fires provide mobile, flexible fire support for maneuvering units to include placing fires on bypassed enemy pockets of resistance to fix them for attack by other fires or follow-on forces. It may also provide fires to slow enemy retreat. During attack and consolidation, the FSC ensures collections and fire support engage TAIs.

Command and Control. In the offense, the attacker has the initiative and can concentrate maneuver forces and firepower at the time and place of their choosing. The FSC maintains a balance between centralized and decentralized control of fire support assets to allow responsive fires, massing of fires, and shifting of fires as the main effort shifts. This requires the use of all MAGTF C2 systems to maintain situational awareness, collaboration, and rapid coordination and execution of supporting arms.

Planning. When planning for the offense, the staff will—

- Make plans as detailed as time allows before the attack. Make maximum use of the FSEM and AGM. Functional unit SOPs will expedite planning.

CUI

- Make fire support planning and coordination flexible for execution at lower echelons. Allocating fire support to subordinates and simple coordination procedures will facilitate this.
- Make speed in execution easier by planning priority targets, on-call targets, and schedules of fires such as groups, series of targets, or program of targets.
- Anticipate CAS requirements. Coordinate the assignment of alert status, such as ground or airborne, to increase responsiveness. Position attack helicopters forward in designated holding areas while planning for airspace coordination.
- Plan only essential targets. Cancel targets no longer needed and update targets (e.g., descriptions and locations), as the supported unit moves forward.
- Remember to establish engagement criteria or triggers and do not expose artillery by attacking targets before triggers are met.
- Place FSCMs, especially CFLs, where they make sense tactically and aid in attacking targets (permissive) or preventing friendly fire (restrictive).
- Ensure permissive FSCMs are well forward to accommodate the speed of advance and preclude endangering friendly forces.
- Use on-call FSCMs and key their activation to existing MCMs.
- Plan to provide continuous adequate fire support coverage within the zone of action.
- Position indirect fire weapons well forward. This will require coordination with the G-3/S-3.
- Consider the assignment of route precedence to indirect fire units with the movement control authority and the G-3/S-3.
- Consider replenishment of units, such as time and locations.
- Plan for continuous communications. Make use of SATCOM, radio relays, brevity codes, and signals. Use wire and messengers during preparation and shift to radio when the attack begins.
- Maintain close and continuous coordination with the designated reserve unit FSC to facilitate fire support if the reserve is committed.
- Plan observation, including target acquisition, adjustment of fires, surveillance of prearranged fires, and battlefield surveillance. Position observers where they can best see the battlefield.
- Know the location and status of reconnaissance teams, aircrews, and artillery weapons locating radar systems. Maximize the use of NAIs and TAIs.
- Anticipate less responsive fires during planned movements by supporting agencies.
- Plan to engage targets within 2/3rds the maximum range of the weapon system, ensuring supporting units can displace to maintain pace with maneuver and avoid gaps in support.

The four types of offensive operations are movement to contact, attack, exploitation, and pursuit. The following are considerations for specific offensive operations.

Movement to Contact

Consider the following while planning for a movement to contact:

- Assign POF based off the concept of maneuver, resources available, and mission assigned.

CUI

- Plan fires on critical points along the route of march.
- Plan priority targets. Ensure FSOs are maximizing the use of priority targets and that the targets are active or cancelled based on the forward element's movement.
- Plan fires to support the momentum of the supported unit, such as screens and suppressive fires, on bypassed enemy defenses or obstacle clearing.
- Plan for possible breaching operations considering the suppress and obscure of the memory aid SOSRA, which is defined as suppress, obscure, secure, reduce, and assault.
- Consider positioning elements of the company FST or platoon JFOs in overwatch positions.
- Consider tasking fire support to security and reconnaissance forces.
- Plan fires on reserves and uncommitted forces to facilitate the freedom of action once in contact.
- Plan fires along the axis of advance to assist in dealing with contingencies.
- Consider laser designator positioning.
- Ensure communication through retransmission sites for CFF.
- Ensure FSCs in trailing and adjacent units coordinate and pass information continually.
- Plan for hasty attack contingencies.
- Ensure the regiment is prepared to shift POF to the unit in contact and control of all available fires to the observer who is in the best position to control fires against the enemy.
- Plan for SEAD and counterfire.
- Consider placing a cannon battery with the advance guard in a regimental movement to contact or 81 mm mortars with the advance guard in a task force movement to contact to provide immediately responsive fires.
- Plan fires on possible counterattack avenues of approach against forces other than reserves and uncommitted units that may influence the operation.
- Plan for the coverage of fire positions with an on-call radar critical friendly zone (CFZ).
- Conduct rehearsals that consider the movement of fire support assets (who, when, where, and how) tied to flexible, known triggers, for the proper synchronization of maneuver with fires.
- Plan for the use of unmanned aircraft systems (UASs) to screen ahead and observe attacks on target.

Attack

Consider the following while planning for an attack:

- Align the timing of aviation assets with critical tasks.
- Develop conditions-based criteria for shifts of FSCMs, boundaries and POF.

CUI

- Identify key points for resupply and deconflict routes to accomplish the task.
- Plan aviation routes around planned maneuver and GTLs.

Forms of attack addressed here include hasty attacks, deliberate attacks, raids, and exploitations and pursuits.

Hasty Attack. Consider the following for a hasty attack:

- Use quick-fire planning techniques with the FSO leading the targeting team in developing EFSTs using maneuver commander guidance.
- Ensure regimental and battalion SOPs address quick-fire planning requirements to facilitate planning under time constraints.
- Assign POF based on the concept of maneuver, resources available, and mission assigned.
- Plan fires on known and suspected enemy direct fire positions.
- Plan EA on critical targets.
- Plan priority targets.
- Plan fires on likely assembly areas.
- Plan fires on the objective, on gaps, and beyond the objective to exploit success.
- Use smoke to obscure LOS of enemy observers and to screen friendly movement.
- Ensure reconnaissance, surveillance, and observation plans support execution requirements.
- Ensure the artillery battalion S-3, S-2, and fire direction officer, as well as the battalion FSOs or FSCs, are incorporated into the planning process.
- If a hasty attack is conducted from a transition out of a movement to contact, have clear triggers for command or support relationship changes, if any are planned.

Deliberate Attack. Consider the following for a deliberate attack:

- Ensure the integration of the reconnaissance and surveillance plan, concept of maneuver, fire support plan, engineer plan, and other plans.
- Support maneuver element's attack on the objective.
- Prevent the enemy's withdrawal from the objective.
- Use fires to create a gap in the enemy's defenses, causing them to react and expose vulnerabilities.
- Attack enemy indirect fire assets to keep them from firing on friendly forces as they advance.
- Set conditions for success at decisive points by planning for the use of available MAGTF and joint fires capabilities.
- Consider using preparation fires on the objective, coordinated with maneuver.
- Plan deliberate fires and SEAD to support CAS and air assault operations.
- Establish a trigger, initiated by a maneuver force, for lifting and shifting of fires. Consider redundant signals and rehearse them.
- Attack targets beyond the objective to prevent reinforcements and resupply.
- Plan smoke on flanks and the crossings of exposed areas.

CUI

- Plan fires on flanks of supported unit's advance to prevent counterattack or reinforcement (e.g., family of scatterable mines [FASCAM] may need special authorization for use).
- Plan EA on critical targets when assets are available.
- Establish bypass criteria and engagement criteria. Focus fires on EFSTs and HPTs.
- Ensure fire support assets are positioned and supplied to provide continuous support during the attack. Plan to engage targets within 2/3rds the maximum range of the weapon system.
- Plan suppression and obscuration during breaching operations.

Raids. Consider the following when conducting a raid:

- Prepare detailed fire support plans to cover all phases of the operation to include foreseeable emergency contingencies (e.g., aborting mission before reaching the objective).
- Ensure deliberate targeting supports the insertion and extraction of raid force and supporting assets.
- Plan for the insertion, position selection (e.g., PA's and FSA's), extraction, and logistical requirements of surface fires assets supporting the raid.
- Direct fires against the objective immediately before the attack.
- Plan fires to prevent reinforcements, screen the raid force, and support withdrawal.

Exploitations and Pursuits. Consider the following when planning an exploitation and pursuit:

- Use fires to maintain momentum.
- Plan fires to suppress bypassed pockets of resistance.
- Plan FASCAM on bypassed units to immobilize them while considering the safety of follow-on forces.
- Use CAS and attack helicopters to engage fleeting targets.
- Designate a restrictive fire line (RFL) between exploiting and converging forces, precluding friendly fire, and facilitating attack.
- Shift FSCMs in advance of the supported unit.
- Position radar systems and radar zones to facilitate counterfire operations. (See Appendix G)
- Use fires to slow the enemy's withdrawal and disrupt reinforcements.

DEFENSIVE OPERATIONS

Maneuver forces conduct a defensive operation to defeat an enemy attack, gain time, economize forces, and develop conditions favorable to offensive or stabilization activities. Defensive operations alone usually cannot achieve a decision. Their purpose is to create conditions for a counteroffensive that allows friendly forces to regain the initiative.

Centralized planning and execution characterize fire support in defensive operations. The FSC determines how fires can set the conditions for actions at decisive points. The staff considers on-order missions, POF, FSCMs, target reference points, FPFs, minimum safe distances, and risk

estimate distances to support a synchronized defense. They plan fires and develop EFSTs, coordinating fires on obstacles to enhance counter-mobility. Some considerations common to all defensive operations include planning to use indirect fire at its maximum range and positioning indirect fire forward to engage the enemy deep. The three types of defensive operations are area, mobile, and retrograde.

Area Defense

In an area defense, the commander positions the bulk of the defending force in selected tactical locations where the decisive battle is to be fought. Defensive planning places principal reliance on the ability of the defending forces to maintain their positions and control the terrain between them. The commander uses the reserve to add depth, block, or restore the battle position by counterattack. Consider the following when planning an area defense:

- Allocate the initial POF to security forces. If the enemy is attacking in echelons, isolate the first echelon by focusing fires, initially, on the follow-on echelons.
- Use counter-preparation fires to disrupt enemy preparatory fires. Planning considerations include ammunition consumption, counterfire, and required assets.
- Designate EFSTs for each phase (e.g., counter-reconnaissance, security zone, main battle, and counterattack) with triggers and dissemination instructions, if the staff plans the defense as a phased operation.
- Specify engagement criteria for each phase of the defense. For instance, the commander might approve the attack of single, lightly armored vehicles by artillery during counter-reconnaissance operations, but not during the main battle.
- Use of engineer assets to provide survivability positions for artillery and radar positioning.
- Place a permissive FSCM close to forward elements to facilitate the rapid attack of targets. Have a trigger planned to move it once security forces join the main battle area (MBA).
- Position fires assets to support security zone actions.
- Augment the security zone with additional observers.
- Ensure the FSO, S-2, and S-6 have considered communication with security forces.

Security Area. The security area begins at the forward edge of the battle area and extends as far to the front and flanks as security forces are deployed, usually to the forward boundary of the AO. Forces in the security area conduct reconnaissance to furnish information on the enemy and to delay, deceive, and disrupt the enemy.

Tasks. Consider the following tasks when planning a defensive security area:

- Engage the enemy with fires beyond the security area to create confusion and cause them to deploy early.
- Provide adequate and continuous close support for committed units of the security force.
- Maintain close liaison and communication with the MBA for withdrawal of the security force.

Command and Control. Consider the following C2 techniques for a defensive security area:

- Assign on-order tactical missions to artillery units in the covering force to facilitate egress to the MBA.
- Organize the covering force, including its own artillery, to operate independently.
- Centralize control of fire support during battle handover.
- Support the covering force in the division fire support plan. Regimental and battalion FSCs perform most of the fire support coordination in the covering force.
- Clearly delineate the procedure for transfer of command and control for fire support responsibilities between security forces and forces in the MBA.

Planning. Consider the following when planning for a defensive security area:

- Centralize planning and coordination as much as possible to facilitate such things as withdrawals and battle handoff.
- Plan fires to neutralize enemy reconnaissance elements and to slow, stop, or canalize enemy movement.
- Plan and coordinate routes, positions, communications, and control of fires with the MBA for the supported maneuver units.
- Plan, coordinate, and disseminate permissive FSCMs to facilitate rapid engagement of enemy forces.
- Plan FASCAM (air or artillery) to canalize, slow enemy forces, or protect a flank.
- Plan observation and fires to cover obstacles.
- Plan CAS on known concentrated enemy positions but, retain on-call CAS for immediate reaction when the enemy's main attack is discovered.
- Plan screening or obscuring smoke in front of friendly positions to reduce enemy observation and facilitate withdrawal to subsequent battle positions (also referred to as BP).
- Establish communication procedures and radio nets for CFFs and coordination and clearance during the rearward passage of lines.
- Plan fires on enemy C2 elements and key enemy vehicles to cause confusion, force early deployment, break up formations, separate tanks from infantry, and make tanks button up.
- Plan fires to cover disengagement and repositioning of supported maneuver elements.
- Plan fires to complement direct fire weapons.
- Position lasers forward to overwatch the likely avenues of approach.

CUI

- Plan target acquisition assets, such as reconnaissance, UASs, and sensors, to detect targets for deep attack.
- Coordinate electromagnetic attack to protect friendly communications required during withdrawal to subsequent battle positions or to engage enemy C2 systems.
- Coordinate with G-2/S-2 and G-3/S-3 on the placement of NAIs and TAIs.
- Develop engagement criteria to avoid exposing critical assets unnecessarily.

Main Battle Area. The commander builds the decisive action around identified decisive points, such as key terrain or HPTs. This decisive action in an area defense focuses on retaining terrain by using fires from mutually supporting, prepared positions supplemented by one or more counterattacks and the repositioning of forces from one location to another. The commander's decisive action usually involves close combat since an area defense emphasizes terrain retention.

Tasks. Consider the following tasks for the MBA:

- Mass fires to canalize and slow enemy forces.
- Plan fires and FASCAM on obstacles to disrupt enemy breaching efforts, fix enemy units, or protect a flank.
- Use fire support to isolate enemy forward echelons.
- Use smoke and other fires to assist supported units in disengaging and moving.
- Plan fires to separate infantry from armor.

Command and Control. Consider the following C2 techniques:

- Make contingency plans and implement based on the enemy main effort.
- Maximize use of wire communication, including laying wire in advance to planned alternate positions.
- Centralize control of fire support.

Planning. Consider the following when planning:

- Plan massed fires on enemy avenues of approach.
- Plan engagement areas within the battle area using all available fire support means.
- Plan fires on potential enemy overwatch positions and OPs.
- Plan for high levels of ammunition expenditure.
- Plan for engagement authority, TAI, specific time or condition, or a combination of these factors on when and with what assets to engage.
- Coordinate supporting arms fires at battalion level with direct fire weapons, including anti-tank guided missiles. Integrate fires with obstacles to slow and canalize the enemy for better engagement from direct fire weapons or other supporting arms.
- Establish FPFs and allocate them to units with the main defensive effort. The FSC plans artillery and mortar FPFs and ties them closely to direct fire final protective lines (FPLs). Ensure that everyone understands who is to order firing the FPF, under what conditions, and when (i.e., the signal or code word).
- Plan on-call CAS for lucrative targets such as armored formations.

CUI

- Develop a fire support plan for the counterattack.
- Reinforce obstacles with fire. Consider FASCAM to augment the existing obstacles and re-seed breached minefields.
- Employ smoke screens behind forward enemy elements to isolate them, break up their formations, and silhouette them.
- Plan for CAS employment (e.g., responsive airspace coordination or alert status).
- Plan air support on deep targets and those targets that that fire support assets can attack as the situation develops using on-call missions and search and attack methods.
- Plan fires to support disengagement and repositioning maneuver forces.
- Plan for counterfire. Consider a counter-preparation to disrupt enemy preparation fires. Employ all available assets. The FSC can employ air support and rockets on-call and in search and attack missions against deep counterfire targets.
- Plan fires to bring the enemy under fire early or to withhold fires until the enemy reaches designated positions or trigger points to affect surprise.
- Establish event-based triggers for displacement of assets and shifts in target precedence.

Engagement Areas. An engagement area is where the commander intends to trap and destroy an enemy force by massing all available weapons. Its development process helps achieve the commander's intent and compels the FSC to consider such factors as the number of indirect fire assets available, training proficiency of observer and firing unit, the enemy's direction and rate of march, triggers and intercept points, terrain analysis, anticipated enemy actions, and the amount of time the staff expects the enemy to remain inside the area. The process requires forethought, analysis, and mathematical calculation. See Figure 3-3 for the engagement area development process.

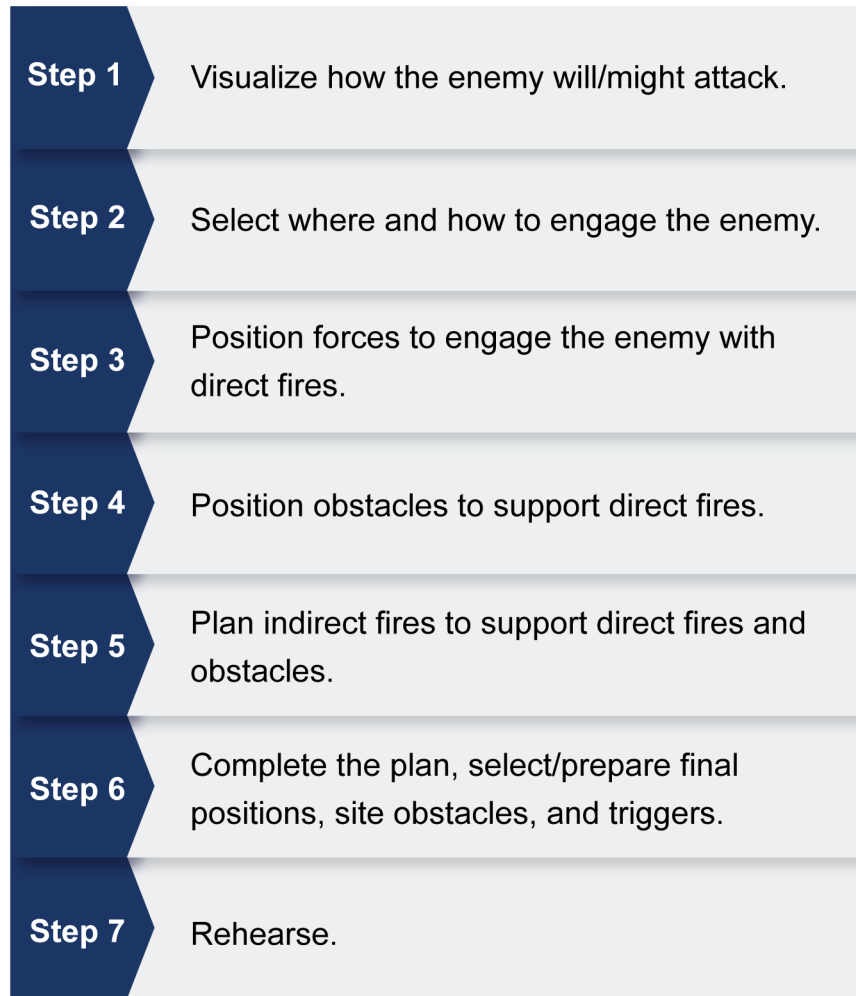


Figure 3-3. Engagement Area Development Process.

Rear Area. The rear area extends forward from a command's rear boundary to the rear of the area assigned to the command's subordinate units. This area provides for the performance of CSS functions. Fire support planning and coordination in the rear area is complex. The rear area can contain many combat support and CSS units. This density and the challenge of timely exchange of information between fire support agencies and the CSS units can increase the chance of friendly fire. Commanders can choose to require positive clearance for missions requested in the rear area. Consider the below when planning for fire support in the rear area.

Tasks. Consider the following tasks for the rear area:

- Establish liaison with the force controlling the rear area.
- Allocate or designate fire support to support a rear area contingency plan.
- Identify fire support request procedures, means of observation, and communication links for fire support for a rear area contingency.

Command and Control. Consider the following C2 techniques for the rear area:

- Designate fire support elements by on-order missions.
- Make liaison early between the GCE unit with the on-order rear area mission and the rear area operations center.

Planning. Consider the following when planning for the rear area:

- Consider using attack helicopters to observe targets and avoid nearby friendly elements.
- Determine ammunition requirements for any rear area contingency.
- Incorporate rear area units' fire support plans into the GCE's fire support plan.

Mobile Defense

Mobile defense is a type of defense that integrates maneuver and fires with terrain to seize the initiative from the enemy. It destroys the attacking enemy through maneuver and offensive action. Consider the following when planning fire support for a mobile defense:

- Plan and integrate fires for deliberate attack in support of the striking force.
- Plan and integrate fires for the defending force as in area defense.
- Plan an RFL to support converging forces operations.

Retrograde Operations

A retrograde defensive operation consists of any movement or maneuver of a command to the rear, or away from the enemy. Since forces conduct retirement when not in contact, there are few fire support tasks other than positioning fire support in the retirement column, ready to respond if needed. There are three types of retrograde operations, delay, withdrawal, and retirement.

Delay Operations. A delay involves a force under pressure trading space for time by slowing down the enemy's momentum. The goal is for the delaying force to inflict maximum damage on the enemy without decisive engagement. Forces execute delays when they have insufficient combat power to attack, to establish an adequate position or mobile defense, or when the plan calls for drawing the enemy into an area for counterattack.

Tasks. Consider the following tasks for delay operations:

- Attack the enemy forces far forward.
- Suppress enemy forces and degrade their ability to maneuver.
- Assist combat units with disengagement fires.
- Cover obstacles, gaps, and flanks with fire.

CUI

- Provide maximum continuous fire for forces as they displace to the rear.
- Mass fires to slow the enemy as they deploy to concentrate for attack of blocking positions.
- Use fires as an overwatch element if executing a bounding overwatch maneuver scheme.

Command and Control. Consider the following C2 techniques for delay operations:

- Maximize decentralization.
- Allocate assets to the lowest possible levels.

Planning. Consider the following when planning for delay operations:

- Position fire support to exploit range, initially.
- Echelon in-depth for maximum continuous fire, later.
- Ensure indirect fire assets have priority on routes.
- Plan fires on natural obstacles and create obstacles with fires, (e.g., FASCAM).
- Maximize use of special munitions.
- Integrate with scheduled fires to support disengagement actions.
- Position observers in overwatch positions.
- Plan SEAD and counterfire.
- Plan suppression of enemy overwatch positions.
- Plan to support a counterattack.
- Allocate FPFs as necessary.

Withdrawals. Forces distinguish two types of withdrawal operations by the enemy's reaction to the withdrawal: withdrawal under enemy pressure or withdrawal not under enemy pressure. Planning considerations are the same for both. The biggest challenges are coordination and communication. To disengage a force from enemy contact, the staff clearly establishes and coordinates procedures for relieving fire support units. Each unit involved conducts concurrent planning.

Tasks. Withdrawals tasks are the same as for delays, but with greater emphasis on close fires to support disengaging forces. Provide the security force and detachment left in contact (if employed) adequate supporting arms for continual fires.

Command and Control. Maximum decentralization is appropriate. The force in contact passes responsibility for fire support to the security force before, during, or after the movement. The two forces collaborate on a plan of events. Artillery units will often change missions from general support to direct support and vice versa.

Planning. Consider the following when planning withdrawals:

- Plan fires on withdrawal routes.
- Conduct detailed planning for FASCAM to slow pursuit by the enemy.
- Mass fires to help disengagement and discourage enemy pursuit.

CUI

- Plan fires on obstacles and barriers. Create obstacles with FASCAM and by cratering roads.
- Displace artillery as late as possible without being overrun. Coordinate the timing and routes of withdrawal of the outgoing artillery with the responsible maneuver command.
- Keep artillery units in position until security forces relieve withdrawing units. Artillery units coordinate with the supported unit, and any relieving or reinforcing artillery, to provide continuous artillery support.
- Use CAS to interdict enemy reinforcement routes.
- Provide targets, fire plans, and order of battle information to the passing force during rearward passage of lines. Arrange for an exchange of outgoing and incoming FSCC liaison personnel.
- Plan smoke to screen movement, actual unit locations, and passage points.
- Plan EA on critical nodes, if assets are available.
- Concentrate combat power in the areas of the passage of lines.
- Plan for secrecy.
- Seek stealth and security in a withdrawal that is not under pressure.
- Use on-call fire support only when the operation is compromised.
- Position aircrew or spot teams in overwatch positions.

Retirements. During a retirement, a force out of contact moves away from the enemy. The retiring unit organizes for combat but does not anticipate interference from enemy ground forces. Typically, another unit's security force covers the movement of the retiring force. However, mobile enemy forces, unconventional forces, air strikes, air assault operations, or long-range fires may attempt to interdict the retiring unit. The commander plans for enemy actions and organizes the unit to fight in self-defense, usually conducting retirement operations to reposition forces for future operations or to accommodate the current concept of the operation. Fire support considerations are the same as those in an area defense or the rear area.

OTHER TACTICAL OPERATIONS

Marines routinely conduct other tactical operations during offensive, defensive, and retrograde operations. Each usually requires fire support and may involve special considerations for the FSC which include encircled forces, linkups, relief in place (RIP), passage of lines, river crossings, air assault, night, stabilization, urban, and breaching operations. See Appendix H for terrain and environment considerations.

Encircled Forces

An encircled force has lost its freedom of maneuver because the enemy controls all ground routes of evacuation and reinforcement. Two operational options are possible: defense by an encircled force or breakout from encirclement. Encircled forces are particularly vulnerable to enemy massed indirect fire because the enemy knows their exact location, so counterfire is paramount.

Tasks. Consider the following tasks for encircled forces:

- Reorganize available fire support.
- Determine with the force commander the most critical areas in the defense, future breakout plans of the force, and the amount of outside help available.
- Prepare for the breakout.
- Obtain all available outside support, particularly air.

Command and Control. Centralized control of fire support assets is required for encircled forces.

Planning. Consider the following when planning for an encircled force:

- Plan fires for the defense and subsequent breakout.
- Affect coordination with outside fire support elements.
- Use fire support for deception.
- Establish FSCMs, such as placing RFLs between converging friendly forces.
- Coordinate counterbattery radar search sectors.
- Position encircled indirect fire weapons where they can best support the breakout operation.
- Use indirect fire, CAS, and PGMs extensively during the breakout.

Linkups

Linkups are the joining of two friendly forces, which may be moving toward each other, or one may be stationary. The controlling higher headquarters of both forces establishes the command relationship between the two forces and the responsibilities of each. An RFL is the most used FSCM to support a linkup. Forces that linkup exchange as much information as practical before the operation. They consider the fire support needed before, during, and after linkup, recognition signals and communication needs for both forces, and future operations following the linkup.

Tasks. Fire support personnel know the FSCMs and recognition signals and are continuously aware of the progress of linkup forces.

Command and Control. Centralized control of fire support is desired. Communication nets are adequate for the control of fire support at all levels.

Planning. Consider the following when planning linkups:

- Most planned fires are short of the RFL and the risk of friendly fire is high. The controlling higher headquarters clears targets beyond the RFL.
- Smoke and illumination fires may cause adverse effects on other friendly forces.
- Plan fires to ensure that the enemy force between two friendly forces cannot escape. Use FASCAM to block enemy withdrawal if tactically appropriate.
- Position indirect fire weapons to mass fires at linkup points.
- Appropriate firing positions afford easy access to routes for use after the linkup.