TC 3-09.31 (FM 3-09.31)

Fire Support Training for the Brigade Combat Team Commander

November 2013

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HEADQUARTERS, DEPARTMENT OF THE ARMY

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Contents

		Page
	PREFACE	"v
	Purpose	<u>.</u> Èv
	Administrative Information	E v
	INTRODUCTION	'"'vi
	Scope	vi
	Applicability	vi
	Summary of Chapter Content	vii
Chapter 1	A SUMMARY OF THE BRIGADE COMBAT TEAM'S ORGANIZATION FO	OR FIRE 1-1
	Section I – Fire Support in Mission Command	1-1
	BCT Commander	1-1
	BCT Fire Support Coordinator	1-2
	Brigade Fire Support Officer	1-2
	Fires Cells	1-3
	Air Force Tactical Air Control Parties	1-5
	BCT Air Defense Airspace Management/Brigade Aviation Element	1-6
	Fires Battalion Command Post and Fire Direction Center	1-7
	Section II – Intelligence Collection, Surveillance, Reconnaissance, and Target Acquisition	d 1-7
	Intelligence Collection Surveillance and Reconnaissance	1-7
	Target Acquisition	1-9
	Section III – Fire Support Capabilities	1-12
	Indirect Fires and Attack Aviation Assets	1-12
	Electronic Attack Capabilities	1-14
	Section IV – Fire Support Related Sustainment Capabilities	1-15
Chapter 2	BCT FIRE SUPPORT TRAINING AT THE BRIGADE ECHELON	2-1

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	Section I – BCT and Subordinate Commanders' Role in Fire Support Training	2-1
	Section II – BCT Fires Cell Training	2-6
	Questions for the BCT Commander	2-6
	Training Emphasis for the BCT Fires Cell	2-6
	Fire Support Tables for the Fires Cell	2-9
	CATS Tasks for the BCT Fires Cell	.2-10
	Section III – Fire Support Training for the BCT's Intelligence Cell	.2-10
	Questions for the BCT Commander	.2-10
	Training Emphasis for the BCT's Intelligence Cell	.2-11
	CATS Tasks for the BCT Intelligence Cell	.2-12
	Section IV – Fire Support Training for the BCT's Air Defense Airspace Management/Brigade Aviation Element	.2-12
	Questions for the BCT Commander	.2-12
	Training Emphasis for the BCT Air Defense Airspace Managment/Brigade	2-13
	CATS Tasks for the BCT Air Defense Airspace Management/Brigade	.2-13
		. 2-14
	Section V – Training for BCT Combat Observation and Lasing Teams	.2-14
	Questions for the BCT Commander	.2-14
	Fire Support Tables for BCT Combat Observation and Lasing Teams	. Z- 14
	CATS Tasks for BCT Combat Observation and Lasing Teams	.2-15
	Section VI – Rehearsing Fire Support for BCT Operations	.2-15
Chapter 3	FIRE SUPPORT TRAINING FOR THE BCT'S MANEUVER BATTALIONS, CAVALRY SQUADRON, AND BRIGADE SPECIAL TROOPS BATTALION	3-1
	Section I – Training for Battalion and Squadron Fires Cells	3-1
	Questions for the BCT Commander	3-1
	Five Points for Making Fire Support the Commanders' Business	3-2
	Training Emphasis for Battalion and Cavalry Squadron Fires Cells	3-2
	Fire Support Tables for Battalion and Squadron Fires Cells.	3-4
	CATS Tasks for Battalion and Cavalry Squadron Fires Cells	3-4
	Section II – Training for Mortars	3-4
	Training Emphasis for Mortars	3-4
	CATS Tasks for Mortars	3-5
	Section III – Training for Fire Support Platoons	3-5
	Questions for the BCT Commander	3-5
	Training Emphasis for Fire Support Platoons	3-6
	Joint Fires Observer	3-8
	Fire Support Tables for Observers	3-9
	CATS Tasks for Maneuver Battalion, Brigade Special Troops Battalion, and Cavalry Squadron	.3-10
Chapter 4	FIRE SUPPORT TRAINING FOR THE BCT'S ORGANIC FIRES BATTALIO	N4-1
	Section I – The Training Role of the Fires Battalion Commander	4-1

	Section II – Training for the Fires Battalion Command Post and Fire	1
	Questions for the BCT Commander	• 1
	Training Emphasis for the Fires Battalion Command Post and Fire Direction Center	2
	CATS Tasks for the Fires Battalion Command Post and Fire Direction Center. 4-3	3
	Section III – Training for the Fires Battalion Target Acquisition Platoon 4-4	ŀ
	Training Emphasis for the Fires Battalion Target Acquisition Platoon	ł
	Training Tasks for the Fires Battalion Target Acquisition Platoon	5
	CATS Tasks for the Fires Battalion Target Acquisition Platoon	7
	Section IV – Training for Fires Battalion Firing Batteries	3
	Questions for the BCT Commander 4-8	3
	Training Emphasis for Fires Battalion Firing Batteries	3
	Gunnery Training Tasks for Fires Battalion Firing Batteries	
	CATS Tasks for Fires Battalion Firing Batteries	3
	Section V – Collective Field Artillery Gunnery Training	3
	Artillery Tables	3
	Collective Gunnery Training in Support of Combined Arms Training	ł
	Section VI – Fire Support Training for the Fires Battalion Forward Support Company	4
	Training Emphasis for the Fires Battalion Forward Support Company	ł
Appendix A	A SUMMARY OF CATS TASKS FOR FIRE SUPPORT TRAINING AT THE BRIGADE ECHELON OF THE BCTA-1	1
Appendix B	A SUMMARY OF CATS TASKS FOR FIRE SUPPORT TRAINING IN BCT MANEUVER BATTALIONS, THE CAVALRY SQUADRON AND BRIGADE SPECIAL TROOPS BATTALIONB-	1
	CATS Tasks for Mortars	3
Appendix C	A SUMMARY OF CATS TASKS FOR FIRE SUPPORT TRAINING IN THE BCT FIRES BATTALIONC-	1
	GLOSSARYGlossary-1	1
	REFERENCES References-1	1
	INDEXIndex-	1

Figures

Figure 2-1. BCT cell and staff training progression	2-5
Figure 2-2. BCT and subordinate unit training progression	2-6

Tables

Table 1-1. BCT fire support and forward observer teams 1-11
Table 1-2. BCT organic indirect fires capabilities 1-13
Table A-1. Fire support CATS tasks for the BCTs A-1
Table A-2. CATS tasks for the BCT's FIST/COLTs A-3
Table B-1. Fire support CATS tasks for the BCT's subordinate maneuver battalions, cavalry squadron, and brigade special troops battalion fires cells
Table B-2. Fire support CATS tasks for the BCT's subordinate maneuver battalions, cavalry squadron, and brigade special troops battalion fire supportB-2
Table B-3. CATS tasks for the BCT's combined arms or infantry battalion, cavalry troop, and infantry company mortar platoons B-4
Table C-1. CATS tasks for the BCT's fires battalion, HHBC-1
Table C-2. CATS tasks for the BCT's fires battalion, target acquisition platoonC-3
Table C-3. CATS tasks for the BCT's fires battalion, firing batteryC-4

Preface

PURPOSE

This Training Circular (TC) 3-09.31 describes fire support training for brigade combat team (BCT) commanders.

TC 3-09.31 depends on a number of key supporting manuals. ADP 7-0, FM 7-15, TC 3-09.8, and the Combined Arms Training Strategies (CATS) for the armor, infantry, and Stryker BCTs are the key training resources. FM 3-90.6, FM 6-20-40, and FM 6-20-50 are the key doctrinal manuals.

Most terms which have joint or Army definitions are in the text. For definitions in the text, the term is italicized and the number of the proponent publication follows the definition.

ADMINISTRATIVE INFORMATION

Unless this publication states otherwise, the masculine nouns and pronouns do not refer exclusively to men.

References to "battalion" and "company" include "squadron", "troop", and "battery" as appropriate.

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

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Introduction

SCOPE

This training circular (TC) describes fire support training for the brigade combat team (BCT) commander. The TC is not all inclusive but is intended as a quick study "smart book" for the BCT commander to use in developing his own strategy for fire support training based on Army Doctrine Publication (ADP) 7-0.

BCT commanders determine how to train their units. The manner chosen becomes the BCT commander's training strategy. FM 7-15, TC 3-09.8, and the Combined Arms Training Strategies (CATS) for armor, infantry, and Stryker BCTs collectively provide tasks and events that BCT commanders may use to help develop their fire support training strategy for the BCT.

TC 3-09.8 provides tables for the fires cell, observers, howitzer section, radar section, fire direction, survey and meteorological, and unit collective training to structure a progressive and sequential fire support training strategy for the BCT including dry-fire certification before live-fire qualification. The tables are not a strategy for training all tasks and areas required for the BCT and its subordinate units to obtain a rating of "trained" on an external evaluation as described in the unit CATS. However, the tables do outline a plan for fire support training for the BCT. After completion of individual and section qualifications, the BCT must train sections, teams, and leaders to operate together as a platoon, then battery/company/troop, then battalion/squadron, then as a BCT to provide timely and accurate fire support.

This TC begins with a summary of the BCT's organization and capabilities for fire support and then provides an overarching view of what fire support training is needed at each echelon of the BCT with suggestions for who should conduct it and when. It also suggests appropriate doctrinal and training references.

APPLICABILITY

The primary audience for this training circular is the commanders of armor, infantry, and Stryker BCTs as well as the commanders of subordinate and supporting units of those BCTs. Others include those in combined arms chains of command, field and company grade officers, middle-grade and senior noncommissioned officers (NCO), and battalion and squadron command groups and staffs. This TC also should be of interest to the corps and division commanders and their staffs who may employ BCTs in full spectrum operations. Other Army organizations may use this TC to assist in their planning for training in support of BCTs.

This TC includes a chapter summarizing the BCT's organization and capabilities for fire support; a chapter on fire support training for the brigade echelon; a chapter on fire support training for the BCT's subordinate battalions and the cavalry squadron, and a chapter on training for the BCT's organic fires battalion.

Embedded throughout the TC are lists of questions for BCT commanders to consider and to ask of their staff and their subordinate commanders and staffs. The lists of questions are to stimulate thought; they are not all inclusive. Answers to the questions are not necessarily included within the text of this training circular.

The brigade echelon discussions (see Chapter 2) for the fires and intelligence cells, for the air defense airspace management/brigade aviation element (ADAM/BAE) and for the combat observation and lasing teams (COLT) include brief summaries of related tables found in TC 3-09.8. The discussion for the fires cell and fire support platoon at the battalion and cavalry squadron echelon (Chapter 3) and that for the fires battalion's radar, meteorology, survey, fire direction, and howitzer sections (Chapter 4) include such brief summaries as well.

Summaries of BCT fire support tasks from the CATS for the armor, infantry, and Stryker BCTs are included as tables in the three appendices of this TC. Collectively, these summary tables should prove to be a handy reference to facilitate focusing on doing a few necessary tasks very well rather than checking the block on a "laundry list." The tables should also facilitate commander-to-commander dialogue among the BCT commander and his battalion commanders over where to focus on the tasks to be trained, the conditions for training, and the risks associated with not training on specific tasks or operational themes.

This TC provides the BCT commander with an overarching view of "what" fire support and fire support related training for the BCT is needed, "why" it is needed, "who" should conduct it, and "when" it should be conducted. Each chapter is also intended for leaders of BCT staff sections and command post integrating cells,

and the BCT's subordinate battalion and cavalry squadron commanders and their respective fire support personnel to use as a "take away" guide for their own fire support training.

SUMMARY OF CHAPTER CONTENT

Chapter 1 provides a summary of BCT organization and capabilities for fire support including-

- Fire support in mission command.
- Intelligence collection, surveillance, reconnaissance, and target acquisition.
- Fire support capabilities.
- Fire support related sustainment capabilities.

Chapter 2 describes fire support training for the brigade echelon including-

- BCT and subordinate commanders' role in fire support training.
- BCT fires cell training.
- Fire support training for the BCT's intelligence cell.
- Fire support training for the BCT's ADAM/BAE.
- Training for the BCT COLT.
- Rehearsing fire support for BCT operations.

Chapter 3 describes fire support and fire support related training for the BCT's maneuver battalions, the cavalry squadron, and brigade special troops battalion including—

- Training for the battalion and squadron fires cell.
- Training for mortars.
- Training for fire support platoons.

Chapter 4 describes training for the BCT's organic fires battalion including-

- The training role of the fires battalion commander.
- Training for the fires battalion command post and fire direction center.
- Training for the fires battalion target acquisition platoon.
- Training for the fires battalion firing batteries
- Collective field artillery gunnery training.
- Fire support training for the fires battalion forward support company.

Appendix A provides a summary of CATS tasks for fire support training at the brigade echelon of the BCT.

Appendix B provides a summary of CATS tasks for fire support training in the BCT's maneuver battalions, its cavalry squadron, and its brigade special troops battalion.

Appendix C provides a summary of CATS tasks for fire support training for the BCT's organic fires battalion.

Note. The approval of the force design update that returns the fire support personnel to the field artillery battalion does not change the intent of this document. The brigade combat team commander is responsible for the training of all personnel in his brigade.

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Chapter 1

A Summary of the Brigade Combat Team's Organization and Capabilities for Fire Support

Successful fire support for brigade combat team (BCT) operations depends upon the integrated and effective functioning of fire support, intelligence collection, and target acquisition; delivery of Army indirect fires and joint fires; and sustainment of fire support. This chapter provides the BCT Commander with a summary of the BCT's organization and capabilities for fire support.

SECTION I – FIRE SUPPORT IN MISSION COMMAND

BCT COMMANDER

1-1. The BCT commander decides what role fire support is to have in a particular BCT operation and clearly articulates that role as part of the commander's planning guidance. The BCT's fires battalion commander, who is also the BCT's fire support coordinator (FSCOORD), is responsible for advising the commander on the best use of available fire support resources. The brigade fire support officer is responsible for developing the fire support plan based on the commander's planning guidance and commander's intent for the BCT operation (the FSCOORD and brigade fire support officer are discussed later in this circular). The BCT commander's planning guidance provides the staff, FSCOORD, brigade fire support officer, and fire support personnel of the BCT's subordinate and supporting units with general and specific guidance, restrictions for the employment of fires, and the desired effects from fires. The guidance should include instruction for—

- Synchronizing and focusing Army indirect fires and joint fires with maneuver and with the other warfighting functions. In the past, fires have been referred to as being lethal or nonlethal. The term Army indirect and joint fires describes a range of capabilities, from lethal to nonlethal, to provide a wide range of effects. For example, lethal indirect fire engagement of a target may occur over the span of munitions from using a single guided munition round such as Excalibur to battalion mass fires using area munitions. It is acknowledged that the effects of fires still have lethal and nonlethal characteristics. Army indirect and joint fires are purposely tailored in their lethality, precision, intensity, duration, and method of delivery to best support the commander's intent and concept of the operation. They create discrete effects matched to the target or threat type, and minimize collateral damage, unintended consequences, and residual hazards.
- Integrating and synchronizing cyber-electromagnetic activities.
- Priority of fires.
- High-value targets (part of the planning guidance for the intelligence warfighting function).
- High-payoff targets to include methods of engagement and desired effects.
- An observer plan.
- Release authority by weapon system/munitions.
- Employment of terminally guided munitions (sometimes referred to as precision fires).
- Requirements, restrictions, and priorities for specified munitions.
- Task and purpose of fires; identify any essential tasks for fire support.
- Counterfire.

- Target acquisition radar zones including critical friendly, call for fire, artillery target intelligence, and sensor zones.
- Sensitive sites.
- Suppression of enemy air defenses.
- Fire support coordination measures.
- Attack guidance.
- A no-strike list including cultural, religious, and historical areas.
- Restricted target list including high-density civilian areas.

BCT FIRE SUPPORT COORDINATOR

1-2. The BCT's organic fires battalion commander is the FSCOORD. He is the primary advisor on the planning for and employment of field artillery and fire support. He may be given authority by the BCT commander to—

- Provide for consolidated and focused fire support specific training, readiness, and oversight (personnel management for all field artillery personnel within the BCT, equipment issue, and training).
- Facilitate establishing fires warfighting function related standing operating procedures across the BCT (to save time and ensure a single standard).
- Ensure the five requirements of accurate predicted fire are met including—
 - Accurate target location and size (fire support teams [FIST], combat observation and lasing teams [COLT], the target acquisition platoon, scouts, and other observers).
 - Accurate firing unit location (firing unit and fire direction centers).
 - Accurate weapons and munitions information (firing units, fire direction centers, fires battalion S-4, and brigade support battalion).
 - Accurate meteorological information (target acquisition platoon and fire direction centers).
 - Accurate computational procedures (fire direction centers and fires cells).
- Ensure efficiently resourced training packages (limit requirements for force tasking and reduce coordination requirements among units).

1-3. The FSCOORD may be assisted in these duties, particularly in staff functions, by the brigade fire support officer and other fire support personnel organic to the BCT; personnel who may not be under the FSCOORD's direct control unless the BCT commander grants that authority. Additionally, the FSCOORD may be authorized to recommend certification for the various elements of the BCT's entire fire support system.

Note. Each BCT commander determines the specific responsibilities of the FSCOORD and the brigade fire support officer.

BRIGADE FIRE SUPPORT OFFICER

1-4. The brigade fire support officer is the senior field artillery staff officer at brigade level. He is the primary staff officer responsible for Army indirect fires and joint fires planning, integration, synchronization, and execution. The brigade fire support officer plans and coordinates the fires warfighting function for BCT operations. He works closely with the FSCOORD, executive officer, and operations staff officer (S-3) to ensure mutual understanding of all aspects of fire support. The brigade fire support officer's responsibilities include—

- Planning, preparing, executing, and assessing fire support for BCT operations.
- Integrating Army indirect fires and joint fires through the targeting process.
- Directing and supervising the fires cell during BCT operations and developing the fire support products to support the operation plan (OPLAN)/operation order (OPORD).

- Training BCT fires cell personnel. As directed by the BCT commander, monitoring the training of subordinate battalion and cavalry squadron fires cell personnel; advising and assisting the respective commanders in the coordination for such training as requested.
- Advising the BCT commander and staff of available fire support capabilities and limitations.
- Providing the BCT commander with staff oversight (for his subordinate units other than his organic fires battalion) for fires warfighting function related training and readiness, including the assignment, professional development, training, standardization, and readiness of all fire support/field artillery personnel and maintenance and readiness of fire support/field artillery specific equipment. The BCT commander should specify the extent of such oversight duties and responsibilities. This will ensure full cooperation and compliance by the commanders of subordinate units that are assigned, attached, or placed under the operational control (OPCON) of the BCT.
- Chairing the targeting working group.
- Participating in the BCT's military decisionmaking process (MDMP).
- Working with the executive officer and S-3 to integrate fire support into the commander's concept of operations.
- Developing for the commander's approval the scheme of fires within the MDMP and targeting processes.
- Developing, recommending, and briefing the scheme of fires to the BCT commander, and preparing the fires portions of BCT OPLANs/OPORDs including the Scheme of Fires and Fire Support Coordination Measures subparagraphs in the basic BCT OPLAN/OPORD and Annex D, Fires as necessary.
- Developing for approval the fire support plan with fire support tasks and supporting products (for example, high-payoff target list, attack guidance matrix, target selection standards, targeting synchronization matrix, and fire support execution matrix).
- Coordinating the training of BCT subordinate organization fires cells (for example, those of the maneuver battalions, cavalry squadron, and brigade special troops battalion) with their respective unit and with the fires battalion. The BCT commander may designate the brigade fire support officer or the FSCOORD as the certifying official for all fire support/field artillery training within the BCT.
- Accompanying the BCT commander in the command group during execution of tactical operations when directed.
- Synchronizing Army indirect fires and joint fires with maneuver.
- Developing an internal battle rhythm to receive running estimate information and rehearsal times synchronized with BCT and subordinate unit battle rhythms.
- Establishing, in conjunction with the BCT S-6, a communications plan for primary, alternate, contingency, and emergency means for fire missions and reporting.
- Coordinating the targeting process. Directing the attack of targets by fires in accordance with the BCT commander's established priorities and desired effects.
- Keeping the BCT commander, FSCOORD and staff informed of the current status, location, and activity of all fire support assets. In conjunction with the targeting officers and fires battalion intelligence staff officer (S-2), keeping the maneuver S-2 informed of enemy indirect fire capabilities and limitations.
- Positioning the COLTs to support the commander's overall intent.
- Ensuring battalion fire support officers are aware of assigned fire support and field artillery tasks, and are refining targets in accordance with top down fire planning.

FIRES CELLS

1-5. The BCT's tables of organization and equipment provide for fires cells in the BCT's main command post (CP), in its maneuver battalions, cavalry squadron, and brigade special troops battalion.

BCT MAIN COMMAND POST FIRES CELL

1-6. The BCT main CP fires cell and its elements perform the tasks associated with integrating and synchronizing the effects of Army indirect fires and joint fires with the effects of other warfighting functions into BCT operations. Cyber-electromagnetic activities are synchronized with Army indirect fires and joint fires through the targeting process. The BCT fires cell is led by the brigade fire support officer and staffed by members who have expertise in the fires warfighting function. The fires cell is the centerpiece of the BCT's targeting architecture, focused on achieving the BCT commander's desired effects on targets with Army indirect fires and joint fires.

Note. Although unit tables of organization and equipment may identify separate lethal and nonlethal fires elements within the BCT fires cell, that partition does not limit personnel serving in the respective element to only lethal or nonlethal concerns or tasks. The targeting process selects and prioritizes all targets. The appropriate response (lethal, nonlethal, or a combination thereof) is then determined to engage a target. All major operations combine offensive, defensive, and stability elements executed simultaneously at multiple echelons. The engagement means employed will likely vary based on the type of operation at a given time in a given area. Personnel in both lethal and nonlethal fires elements must be prepared to "work" both engagement means.

1-7. The fires cell collaboratively plans, prepares, executes, and assesses fire support in an integrated effort with the other warfighting functions to support BCT operations. The targeting working group and targeting board bring together representatives of all staff sections concerned with targeting. They synchronize the contributions of the entire staff. The brigade operational law team provides legal review of proposed targets. The fires cell coordinates and integrates joint fire support into the BCT commander's concept of operations. See FM 6-20-40 and FM 6-20-50 for a detailed description of fires cell personnel functions and responsibilities.

1-8. The fires cell in the main CP may be augmented by other Army or joint resources and assets as mission, enemy, terrain and weather, troops and support available, time available, civil considerations (METT-TC) dictates. The cell has resources to plan for future operations from the main CP and to support current operations from the tactical CP (if formed and deployed). The fires cell has a limited capability to provide coverage to the command group and the deputy command group when deployed.

BCT TACTICAL CP FIRES ELEMENT

1-9. Selected personnel from the main CP fires cell man the fires element of the tactical CP if one is formed for a specified purpose. An Air Force tactical air control party (TACP) aligned with the BCT may send selected personnel with the tactical CP. The fires element in the tactical CP tracks and maintains situational understanding of all fire support assets. Its main function is to execute current operations; focusing on the main effort. See FM 6-20-40 and FM 6-20-50 for a more detailed description of tactical CP fires element functions.

BCT TARGETING WORKING GROUP AND TARGETING BOARD

1-10. The BCT's targeting working group and targeting board are critical to facilitating the targeting process and integrating targeting with BCT operations. Their purpose is to focus and synchronize the BCT's combat power and resources toward finding, attacking, and assessing current high-payoff targets.

- **Targeting Working Group**. The BCT's targeting working group is a grouping of predetermined staff representatives concerned with targeting. See FM 3-60 and ATP 3-60.1. The targeting working group meets to provide analysis, coordinate and synchronize the targeting process, and provide recommendations to the targeting board. The brigade fire support officer leads the targeting working group.
- **Targeting Board**. The BCT's targeting board is a temporary grouping of selected staff representatives with delegated decision authority to provide targeting decision recommendations for command approval. When the process or activity synchronized requires command approval,

a board is the appropriate forum. The brigade executive officer or S-3 typically leads the targeting board.

1-11. BCT targeting working group and targeting board success requires focus, participation by all warfighting functions, and staff representatives, preparation by all participants, and the rapid development and dissemination of required products. Collectively, the targeting working group and targeting board—

- Verify and update the high-payoff target list.
- Verify, update, and recommend tasking of intelligence collection, reconnaissance, surveillance, and target acquisition assets for each high-payoff target.
- Allocate delivery systems to engage each target.
- Confirm assets have been tasked to assess whether the BCT commander's desired effects have been achieved.
- Recommend allocation of BCT assets, and request higher level support.
- Create, update, and manage the targeting synchronization matrix and the intelligence collection plan.
- Identify target nominations for attack by division, corps, or joint assets.
- Synchronize Army indirect fires, joint fires, and cyber-electromagnetic activities.

BATTALION FIRES CELL

1-12. The fire support organizations at battalion level and below coordinate lethal fires to include organic mortars and any additional fire support allocated by the BCT fires cell.

1-13. The BCT has organic fire support organizations—battalion fires cells and company FISTs—that work closely with the BCT fires cell. These organizations are vital parts of the combined arms organizational design of the BCT. Fire support organizations in the maneuver battalions and the cavalry squadron support their respective commanders, and work closely with the BCT fires cell. The maneuver battalions, the brigade special troops battalion, and the cavalry squadron are each organized with a fires cell and may have an Air Force TACP.

1-14. The fires cells provide an organic fire support coordination capability within the unit headquarters and assist the maneuver battalions and the cavalry squadron in executing their respective portions of the BCT's scheme of fires. The fires cells also assist the maneuver battalions and the cavalry squadron in executing their own scheme of fires. Maneuver battalion fires cells also provide FISTs with digital linkage to their battalion mortars as well as to fire support assets available at the BCT or higher levels.

AIR FORCE TACTICAL AIR CONTROL PARTIES

BCT TACTICAL AIR CONTROL PARTY

1-15. A *tactical air control party* is a subordinate operational component of a tactical air control system designed to provide air liaison to land forces and for the control of aircraft (joint publication [JP] 3-09.3). An Air Force TACP normally collocates with the fires cell at the BCT main CP.

1-16. An *air liaison officer* is the senior TACP member attached to a ground unit who functions as the primary advisor to the ground commander on air power. An Air Force air liaison officer (ALO) is usually an aeronautically rated officer (JP 3-09.3). The ALO advises the BCT commander and staff on air support for BCT operations. The ALO leverages the expertise of his TACP with linkages to the higher headquarters TACPs to plan, coordinate, synchronize, and execute air support. He also maintains situational understanding of the total air support picture.

1-17. The TACP working with the BCT supports BCT operations from the main CP and may support the tactical CP if one is deployed. To support deployment of the tactical CP, the BCT's TACP can be split into two smaller TACPs, one coordinating and executing close air support in the close fight from the tactical CP and the second assisting the BCT executive officer and staff in coordinating and executing BCT operations

from the main CP. The battalion level TACP includes an ALO and joint terminal attack controllers with the added responsibility of terminal attack control. Air Force joint terminal attack controllers are required at each maneuver battalion company and cavalry troop. The company commander relies on the joint terminal attack controller for controlling close air support. TACPs coordinate activities through the joint air request net and the advanced airlift notification net.

BATTALION TACTICAL AIR CONTROL PARTY

1-18. The Air Force TACP is the Air Force liaison element to the battalion. The TACP at battalion level advises the commander on the capabilities and limitations of air power and assists him in planning, requesting, and coordinating close air support. The TACP provides primary terminal attack control of close air support for the battalion.

BCT AIR DEFENSE AIRSPACE MANAGEMENT/BRIGADE AVIATION ELEMENT

ROLE OF THE ADAM/BAE IN BCT OPERATIONS

1-19. The air defense airspace management/brigade aviation element (ADAM/BAE) is composed of air defense and aviation personnel who provide the BCT commander and staff with the aerial component of the common operational picture. The ADAM/BAE personnel ensure that the commander and his staff include air and missile defense and aviation considerations in routine planning and preparation for operations. By providing access to the Army Battle Command System with near-real-time situational awareness of the third dimension, the ADAM/BAE enables the BCT commander to optimize air battle/airspace management at all levels (including restricted operations area management). To accomplish its mission, the ADAM/BAE links into the integrated air defense system through direct coordination with air defense coordinators above brigade level; for example, the battlefield coordination detachment, the area air defense commander, and the Army Air and Missile Defense Command. Through constant coordination, the ADAM/BAE provides brigade integration and synchronization with joint theater air operations.

AIRSPACE COMMAND AND CONTROL

1-20. BCT airspace command and control involves detailed coordination and integration to enable effective use of close air support, indirect fires, organic and augmenting air defense artillery, tactical maneuver operations, and Army aviation (including unmanned aircraft systems). Airspace command and control helps minimize the risk of fratricide and increases overall force effectiveness.

1-21. The BCT airspace command and control team is comprised of the ADAM/BAE, the fires cell, and the Air Force ALO. They provide staff functions within the BCT's main CP for planning and executing airspace command and control for the BCT commander, executive officer and S-3. Subordinate and supporting units submit air control means requests to the BCT ADAM/BAE for processing and subsequent forwarding to higher headquarters airspace command and control elements. BCT airspace command and control responsibilities include—

- BCTs control an area of operations which includes Army airspace users and ground units transiting its area of operations.
- BCTs have authority over Army airspace users in their area of operations including close air support aircraft in support of BCT operations.
- BCTs are expected to be in contact and coordinate with Army aircraft transiting their area of operation.
- BCTs are assisted by division or other higher headquarters to integrate Army airspace use if adjudication is necessary.
- BCTs may find it necessary to request approval to control a volume of airspace, such as a high density aircraft control zone. However, if a BCT is to control this airspace for an extended period, the ADAM/BAE should be augmented with additional air control assets from the combat aviation brigade air traffic service company.

1-22. The division or other higher headquarters airspace command and control element provides planning and airspace integration support to the BCT's ADAM/BAE ensuring that the higher headquarters airspace plan is adjusted to take into account the BCT commander's priorities and concept of the operation. The airspace command and control section of the Army battlefield coordination detachment collocated with the joint air operations center provides liaison capability with the airspace control authority.

1-23. FM 3-01 and FM 3-90.6 provide detail on the BCT ADAM/BAE.

1-24. Further information on airspace command and control is contained in FM 3-52, FM 3-52.1, FM 3-52.2, and JP 3-52.

FIRES BATTALION COMMAND POST AND FIRE DIRECTION CENTER

1-25. The fires battalion main CP consists of two major functional elements: the operations and intelligence element (operations, intelligence, and target processing) and the fire direction center (FDC)—

- **Operations and Intelligence Element**. The operations and intelligence element manages both current and future operations and coordinates aspects of field artillery support. It also performs the planning and operational functions, to include developing fire plans/orders, conducting artillery focused intelligence preparation of the battlefield (IPB), developing artillery targets, planning and executing supported higher headquarters counterfire operations, tracking the status of subordinate units, and controlling unit movements.
- **Fire Direction Center**. The battalion FDC performs tactical fire direction by processing calls for fire, determining the type and amount of ammunition required to achieve the desired effects, and transmitting fire orders to the platoon FDCs or platoon operations centers (POC).

SECTION II – INTELLIGENCE COLLECTION, SURVEILLANCE, RECONNAISSANCE, AND TARGET ACQUISITION

INTELLIGENCE COLLECTION, SURVEILLANCE, AND RECONNAISSANCE

BCT CAPABILITIES

1-26. Intelligence in BCTs is a critical part of the Army intelligence enterprise, yet their primary mission is providing timely intelligence to the BCT commander—by developing situational awareness of the enemy, terrain and weather, and civil considerations and synchronizing intelligence collection activities. The raw data and information collected by surveillance and reconnaissance assets are a large part of the collection function of intelligence processes and requires timely analysis/fusion, distribution, and access to be effective. A key difference between surveillance missions and reconnaissance is that surveillance is systematic, usually passive in collection of information and may be continuous, while reconnaissance may be limited in duration of the assigned mission, is active in collection of information, and usually includes human participation.

1-27. The BCT's intelligence team includes the BCT S-2, intelligence cell, battalion S-2s and the brigade's military intelligence company—

- BCT S-2, Intelligence Cell, and Battalion S-2s. The BCT's S-2, intelligence cell and battalion S-2s translate the commander's intent and critical information requirements into intelligence collection, surveillance, and reconnaissance tasks. The military intelligence company operates as an extension of the BCT intelligence cell for management of assets. It provides analysis to support the development of the BCT common operational picture, targeting and assessment requirements, and IPB.
- **Military Intelligence Company.** The primary intelligence organization in the BCT is the MI company, which supports the BCT and its subordinate commands through collection, analysis,

and dissemination of intelligence information and products. The MI company also collaborates with the BCT S-3 in integrating intelligence collection, surveillance, and reconnaissance tasks and coordinating requirements and human intelligence operations as directed by the BCT S-3 and S-2. The military intelligence company also provides linkages to the theater army analysis and control element and joint/national agencies. The armor and infantry BCT military intelligence companies include a tactical unmanned aircraft system platoon (see the discussion later in this chapter).

Note. In the armor and infantry BCT's the brigade's military intelligence company is part of the brigade special troops battalion. The Stryker BCT does not have a brigade special troops battalion, so the brigade's military intelligence company is a separate company.

INTELLIGENCE AND TARGETING

1-28. The BCT targeting effort is managed and executed from the main CP by the BCT fires cell, the targeting working group, targeting board, and Air Force TACP. The military intelligence company contains a mission management capability to provide dynamic tasking of organic assets in response to targeting priorities. The BCT staff (Intelligence working group if formed by the commander) uses combat information from organic and external collectors to cue targeting assets such as unmanned aircraft systems or other sensors. Counterfire operations may be essential to the BCT by providing survivability and flexibility. Depending on the magnitude of the indirect fire threat, it may be necessary to dedicate a large portion of the BCT's reconnaissance capabilities to locating enemy indirect fire assets. An early focus on mitigating the indirect fire threat will improve the BCT's survivability. The BCT fires cell integrates fully with the BCT S-2/military intelligence team to manage the attack of targets and to produce battlefield damage assessment of targets once attacked.

1-29. The intelligence officer provides the fires cell and members of the targeting working group and targeting board with information and intelligence for targeting the threat's forces and systems. This includes identification of threat capabilities and limitations. The intelligence officer ensures the intelligence collection, surveillance, and reconnaissance plans support the finalized targeting plan. Subtasks of intelligence support to targeting include providing intelligence support to target development and to target detection. Intelligence support to target detection can come from many sources such as —

- Direct observation by special operations forces, scouts, and forward observers (FO).
- Electronic intelligence sources such as the Prophet radio frequency intercept system.
- Human intelligence sources employed by the BCT military intelligence tactical human intelligence platoons.
- Weapons-locating radar—AN/TPQ-36, AN/TPQ-37, and AN/TPQ-48-50 series.
- Unmanned aircraft systems.
- Higher headquarters and joint sources, including the Joint Surveillance Target Attack Radar System (JSTARS).
- Maneuver formations down through the squad level.

1-30. FM 3-90.6, FM 2-19.4, FM 6-20-40, and FM 6-20-50 provide detail on the BCT intelligence cell.

1-31. For more information on intelligence support to targeting, see FM 2-0, FM 2-01.3, and TC 2-50.5.

UNMANNED AIRCRAFT SYSTEMS

RQ-7 Shadow

1-32. All BCTs include a tactical unmanned aircraft system platoon equipped with the RQ-7B Shadow. In the armor and infantry BCTs, the platoon is part of the brigade special troops battalion's military intelligence company. In the Stryker BCT, the platoon is part of the cavalry squadron's surveillance troop. The RQ-7 Shadow provides capabilities for reconnaissance, target acquisition, and battlefield damage assessment. It is equipped with electro-optic and infrared sensors and has a laser designator for use

with laser-guided munitions capability. The Shadow has a range of 125 kilometers, an endurance of five hours, and it can fly at altitudes of 15,000 feet above mean sea level.

RQ-11 Raven

1-33. The RQ-11 Raven is a small unmanned aircraft system distributed among various units throughout all brigade combat teams. The RQ-11 Raven is equipped with electro-optic and infrared sensors, has a range of 8 to 12 kilometers (radius), an endurance of 60 to 90 minutes, and can fly at altitudes of 150 to 1,000 feet above ground level.

1-34. For more information on unmanned aircraft systems, see ATTP 3-04.15 and FM 3-04.155.

SIGNAL INTERCEPT

1-35. The AN/MLQ-40 Prophet is a signals intelligence and electronic warfare system that detects, collects, and exploits conventional and modern military emitters. Prophet provides indications, warning, location, tracking, and identification of threat emitters. Emissions tracked by multiple systems produce grid locations. Prophet will cross-cue other battlefield sensors (for example, tactical unmanned aircraft systems and radars) as well as provide additional data that may confirm indications and detections from the other manned and unmanned battlefield sensors. In the armor and infantry BCTs, there are two AN/MLQ-40 Prophets in the brigade special troops battalion's military intelligence company. In the Stryker BCT, there are three AN/MLQ-40 Prophets in the cavalry squadron's surveillance troop.

1-36. A secondary mission is electronic attack against selected enemy emitters to disrupt or disable targeted command and control nodes.

TARGET ACQUISITION

1-37. The goal of the target acquisition effort is to provide timely and accurate information to enhance the attack of specified targets. Target acquisition systems and equipment perform the key tasks of target detection, location, tracking, identification, classification, and battle damage assessment for fire support of BCT operations. BCT units and assets with inherent target acquisition and battle damage assessment responsibilities include COLTs, battalion fire support platoons (fire support teams and observers), and the organic fires battalion's target acquisition platoon.

CAVALRY SQUADRON

1-38. Each cavalry troop and maneuver company fire support team has the capability to laser- designate targets for precision guided munitions. The fire support team supports troop operations by aiding in the employment of supporting mortars and close air support. The cavalry squadron may also have OPCON of some of the BCT COLTs, which also have the capability to employ precision guided munitions. Supporting fires allocated to cavalry squadron operations are included in fire support tasks.

1-39. The target location accuracy in an initial contact report may not be sufficient to generate an immediate fire mission or other tactical response. The BCT fires cell must be attuned to this and ensure its targeting personnel work closely with the cavalry squadron fires cell to see that minimum target selection standards are met and/or cross-cue other sensors to gain an accurate target location.

MILITARY INTELLIGENCE COMPANY

1-40. The military intelligence company provides personnel and equipment to conduct all-source analysis assist in intelligence collection integration for the BCT. It also has the ground collection platoon that provides signals intelligence, measurement and signature intelligence, and human intelligence assets; and the tactical unmanned aircraft system platoon for reconnaissance, target acquisition, and battle damage assessment. Tactical human intelligence from the military intelligence company and any units operating in the BCT area of operations provides invaluable information and intelligence to the collection effort. Due to their cultural awareness and their close engagement with local populations, these teams provide the

commander unique insights and valuable information for satisfying commander's critical information requirements and for providing input to decisionmaking.

1-41. The BCT military intelligence company provides signal intercept support that is capable of establishing a signal baseline for detecting signal emissions broadcasting in sufficient strength to reach the intercept system. Attacking or exploiting the intercepted signal with linguists follows detection. Emissions tracked by multiple systems produce grid locations.

BCT COMBAT OBSERVATION AND LASING TEAMS

1-42. A *combat observation and lasing team* is an observer team controlled at the brigade level capable of day and night target acquisition and that has both laser-range finding and laser-designating capabilities (FM 3-09). There are typically four COLTs organic to the BCT's HHC.

1-43. The COLT gives the BCT commander a powerful capability to attack area targets as well as to employ guided munitions against point targets. A COLT can provide laser designation capability for any munitions that require reflected laser energy for final guidance. The COLT's self-locating and target ranging capabilities facilitate first-round fire for effect with area munitions.

1-44. The BCT fires cell supervises the planning and execution of COLT employment. COLTs are capable of acting as independent observers to weight key or vulnerable areas. Consider employing COLTs in pairs, employing them with a battalion's or cavalry squadron's fire support team, or teaming them with elements of the cavalry squadron.

Note. Combat observation and lasing teams will be replaced by Precision Weapons Teams. The training information remains the same for both teams.

MANEUVER BATTALION AND CAVALRY SQUADRON FIRE SUPPORT PLATOONS

1-45. The maneuver battalion and cavalry squadron fire support platoon, found in the headquarters and headquarters company (HHC) or headquarters and headquarters troop (HHT) of each BCT maneuver battalion and the cavalry squadron, normally includes FISTs and their FOs—

- A *fire support team* (Army) is a field artillery team organic to each maneuver battalion and selected units to plan and coordinate all available company supporting fires, including mortars, field artillery, naval surface fire support and close air support integration (FM 3-09). FISTs employed at company level provide maneuver companies and cavalry troops with fire support coordination, targeting, input for terminal attack control, and assessment capabilities. Each FIST vehicle possesses a target acquisition/communications suite with the capability for laser-range finding and designation for laser-guided munitions. The fire support team may also include Air Force joint terminal attack controllers, if available from the battalion/squadron.
- A *forward observer* is an observer operating with front line troops and trained to adjust ground or naval gunfire and pass back battlefield information. In the absence of a forward air controller, the observer may control close air support strikes (JP 3-09). Platoon FOs are equipped with target acquisition devices for accurately locating targets and the communications gear needed to forward targets to the Advanced Field Artillery Tactical Data System (AFATDS). FOs are the primary fire support observers in the company and are frequently collocated with platoon leaders. The FOs provide target refinement, execute planned fires, and request fires for their supported platoons. A joint fires observer, or as a last resort, a forward observer may direct close air support in emergencies when no joint terminal attack controller is available. With additional training and certification, the platoon forward observer can qualify as a joint fires observer. See Chapter 3 for more on joint fires observer qualification and training.
- Air Force joint terminal attack controllers, if available from the battalion Air Force TACP, can also deploy forward with a maneuver company or cavalry troop and position where they can best support the operation.

Fire Support Platoons

1-46. Each of the BCT's cavalry squadrons and maneuver battalions has a fire support platoon that includes both FISTs and observers (see Table 1-1).

Type of Team/Party	Armor BCT	Infantry BCT	Stryker BCT
Maneuver Battalion			
Fire support team	4	4	3
Observer party	6	9	9
Cavalry Squadron			
Fire support team	3	3	3
Observer party	0	8	0
Anti-Armor Company			
Fire support team	0	0	1
BCT – brigade combat team			

Table 1-1. BCT fire support and forward observer teams

FIRES BATTALION TARGET ACQUISITION PLATOON

1-47. The target acquisition platoon provides the fires battalion and the supported higher headquarters with the capability to acquire threat mortar, artillery, and rocket systems and provide target intelligence and information. This provides the fires battalion an organic counterfire mission processing capability. The target acquisition platoon (with its organic radars in "friendly fire mode") can also assist in registering fires by providing the impact point of the rounds. The [fires battalion] target acquisition platoon includes a platoon headquarters, an AN/TPQ-36 radar section, and a Q-48-50 series lightweight countermortar radar (The R series tables of organization and equipment will add the Q-48-50 radars). The armor BCT and Stryker BCT fires battalions each have one additional AN/TP Q-37 radar section.

1-48. The Q-36 detects and locates shorter ranged, high angle, lower velocity weapons such as mortars and shorter-range artillery. The Q-37 detects and locates longer range, low angle, higher velocity weapons such as long-range artillery and rockets. The Q-48-50 can detect mortars over a 360-degree (6400 mil) search sector. Non-field artillery personnel often man the Q-48-50 series lightweight countermortar radar. Cross training in lightweight countermortar radar operations and maintenance is critical to enable distributed operations.

1-49. The fires battalion's target acquisition platoon also has a meteorological section and a survey section. These sections provide meteorological data and survey support to the fires battalion and other units, as required and as time permits. The meteorology section provides meteorological support to artillery and mortars to enhance the accuracy of their fires. The survey section provides common survey for field artillery firing units and mortars when assets are available.

1-50. For radar employment considerations, see the counterfire discussion in FM 3-09.12 and ATP 3-01.60. For meteorology and survey considerations see FM 3-09.15 and FM 6-2 with Change 1.

SENSOR INPUTS

1-51. The AFATDS digital architecture enables timely and responsive fire support. The fires battalion should be the primary recipient of appropriate direct sensor inputs (for example, Firefinder radar and unmanned aircraft systems) to fully exploit this capability, particularly during the counterfire fight, counter reconnaissance fight, and the close fight. To meet the BCT commander's guidance for achieving desired effects, the fires cell constantly monitors execution of current operations and applies Army indirect fires attack options. The brigade fire support officer, fires cell planners, and the targeting working group and targeting board assist in determining how to best achieve the BCT commander's desired effects.

SECTION III – FIRE SUPPORT CAPABILITIES

INDIRECT FIRES AND ATTACK AVIATION ASSETS

1-52. The BCT's fire support assets include organic weapons systems (see Table 1-2) for each echelon in the BCT (company, battalion, and brigade) together with multiple layers of fire support at echelons above the BCT. Fire support available to the BCT includes—

- Each maneuver battalion and cavalry squadron has organic mortars. These can include 60-mm (and 120-mm mortars in SBCTs) at company level and 81-mm and 120-mm mortars at maneuver battalion and cavalry squadron level.
- The organic BCT fires battalion has 105-mm or 155-mm howitzers (see Table 1-2). The 155-mm howitzer is capable of delivering guided munitions such as Excalibur (see Chapter 3).
- Based on METT-TC, the division may attach, place under the OPCON of, or reinforce the BCT's fires battalion with one or more fires brigade cannon fires battalions (155-mm). Fires brigade long-range rocket and missile systems support BCT operations as needed. For instance, a fires brigade's multiple launch rocket system (MLRS) battalion equipped with either track M270A1 or wheel M142 high mobility artillery rocket system (HIMARS) launchers may reinforce the fires battalion of a BCT conducting a division's decisive operation. In rare cases, an entire fires brigade could support the operations of a single BCT (such as when a BCT is the covering force for a corps).
- Combat aviation brigade attack/reconnaissance helicopter elements and armed unmanned aircraft systems depending on need, may assist the BCT by providing close combat attack and interdiction attack in support of BCT operations.
- Air support by other Service ground attack aircraft and unmanned aircraft systems or guided munitions-carrying bombers may extend the reach of BCT-directed fires.

Indirect Fire Weapons	Quantities	Unit Distribution
Armor BCT		
120-mm mortars	14	4 per combined arms battalion x 2 battalions (=8), plus 2 per cavalry troop x 3 troops (=6); for a total of 14 in the armor BCT.
155-mm howitzers	16	2 by 8 fires battalion (M109A6 Paladin).
Infantry BCT		
60-mm mortars	14	2 per infantry company x 6 companies (=12), plus 2 per dismounted cavalry troop x 1 troop (=2); for a total of 14 in the infantry BCT.
81-mm mortars	8	4 per infantry battalion (stored in mortar carrier for use during dismounted operations) x 2 battalions (=8); for a total of 8 in the infantry BCT.
120-mm mortars	12	4 per infantry battalion x 2 battalions (=8), plus 2 per mounted cavalry troop x 2 troops (=4); for a total of 12 in the infantry BCT.
105-mm howitzers	16	2 by 8 fires battalion (M119A2).
Stryker BCT		
60-mm mortars	18	2 per infantry company x 9 companies (=18) (stored in the mortar carrier vehicle for use during dismounted operations); for a total of 18 in the Stryker BCT.
81-mm mortars	12	4 per infantry battalion (stored in mortar carrier for use during dismounted operations) x 3 battalions (=12); for a total of 12 in the Stryker BCT.
120-mm mortars	36	4 per infantry battalion x 3 battalions (=12), plus 2 per infantry company (mounted in mortar carrier vehicle) x 9 companies (=18), plus 2 per cavalry troop x 3 troops (=6), for a total of 36 in the Stryker BCT.
155-mm howitzers	18	3 x 6 fires battalion (M777A2).
BCT – brigade combat team m	nm - millimeter	

Table 1-2. BC	T organic indirec	t fires capabilities
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1-53. The BCT fires battalion interacts with the BCT's organic fire support capability at each maneuver echelon—a fires cell and COLTs at BCT level; fires cells in each battalion/cavalry squadron; and fire support teams and observers at company level. The fires battalion is also able to operate over a widely dispersed area due to its communications capability, organic counterfire radars, and a forward support company that performs all sustainment support functions for the fires battalion.

FIRES BATTALION

1-54. The BCT's organic cannon fires battalion provides immediately responsive, all weather close supporting fires. Massing fires from the 16-gun (armor and infantry BCTs) or 18-gun (Stryker BCT) cannon fires battalion remains an essential capability. The firing platoons provide flexibility to support dispersed operations although such dispersal can affect the ability to mass fires.

1-55. The BCT's organic cannon fires battalion provides field artillery fires to the BCT and subordinate units in priority and provides support for decisive and/or shaping operations. The fires battalion also provides counterfire against enemy mortar, cannon, and rocket elements in the BCT's area of operations. A BCT's organic cannon fires battalion should be prepared to execute any non-field artillery task (for example, base defense, patrolling, search and rescue, or flood relief) that the BCT commander assigns. This is most likely to occur during stability or civil support operations. Refer to the appropriate Army and/or joint doctrine, tactics, techniques, or procedures manuals for guidance in these situations.

1-56. Organic cannon fires battalions for armor, infantry and Stryker BCTs are equipped and organized as follows—

- Armor BCT Fires Battalion. In the armor BCT, the organic cannon fires battalion includes a headquarters and headquarters battery (HHB), two firing batteries of eight M109A6 Paladin self-propelled 155-mm howitzers (each with two four-gun platoons), and a brigade support battalion forward support company that is under OPCON of the fires battalion. The HHB's target acquisition platoon includes both a Q-36, and Q-37 counterfire radar for target acquisition along with four AN/TPQ-48-50 series lightweight countermortar radars.
- Infantry BCT Fires Battalion. In the infantry BCT, the organic cannon fires battalion is organized with an HHB, two firing batteries of eight M119A2 towed 105-mm howitzers (each with two four-gun platoons) and a brigade support battalion forward support company under OPCON of the fires battalion. The HHB's target acquisition platoon has one organic Q-36 counterfire radar and four AN/TPQ-48-50 series lightweight countermortar radars.
- Stryker BCT Fires Battalion. In the Stryker BCT, the organic fires battalion has an HHB and three batteries of six M777A2 towed 155-mm howitzers (each with two three-gun platoons). The HHB's target acquisition platoon includes one Q-36 and one Q-37 counterfire radar and four AN/TPQ-48-50 series lightweight countermortar radars (The R series tables of organization and equipment will add the Q-48-50 radars). The Stryker BCT's brigade support battalion does not have forward support companies. Consequently, the Stryker BCT brigade support battalion must task-organize to provide support to the Stryker BCT's organic units, including the fires battalion.

1-57. FM 3-09.21 provides detail on the BCT's organic cannon fires battalion.

MORTARS

1-58. Heavy and medium mortars are organic to BCT maneuver battalions and cavalry squadrons; light mortars are organic to infantry companies and the dismounted cavalry troop. The BCT commander and his subordinate battalion commanders decide how and when mortars—a key fire support asset—are integrated into the unit's operation. However, because they are fire support assets, the brigade fire support officer, BCT fires cell planners and subordinate battalion fire support officers should give advice and make recommendations to the BCT commander on their employment. The amount of control the brigade fire support officer and BCT fires cell planners have over the employment of available mortars is a matter for the supported or owning unit commander to decide. The commander may specify mortar support for subordinate units by changing the command relationship, assigning priority of fires, or assigning priority targets.

ELECTRONIC ATTACK CAPABILITIES

1-59. Joint doctrine describes nonlethal fires as any fires that do not directly seek the physical destruction of the intended target and are designed to impair, disrupt, or delay the performance of enemy forces, functions, and facilities, or to alter the behavior of an adversary. Examples include masking smoke, nighttime area illumination, area denial, and employment of some information capabilities such as electronic attack. See JP 3-09 for details.

1-60. *Electronic attack* is that division of electronic warfare involving the use of electromagnetic energy, directed energy, or antiradiation weapons to attack personnel, facilities, or equipment with the intent of degrading, neutralizing, or destroying enemy combat capability and is considered a form of fires (JP 3-13.1). Electronic attack includes—

- Actions taken to prevent or reduce an enemy's effective use of the electromagnetic spectrum, such as jamming and electromagnetic deception.
- Employment of weapons that use either electromagnetic or directed energy as their primary destructive mechanism (lasers, radio frequency weapons, particle beams).
- Offensive and defensive activities to include countermeasures.

1-61. The BCT military intelligence company provides signal intercept support capable of establishing a signal baseline that can detect signal emissions broadcasting in sufficient strength to reach the intercept system. Electronic attack systems attack the intercepted signal's source or linguists exploit the information gained. Emissions tracked by multiple systems produce grid locations. The AN/MLQ-40 Prophet is a signals intelligence and electronic warfare support system that detects, collects, and exploits conventional and modern military emitters. Prophet provides indications, warning, location, tracking, and identification of threat emitters. Emissions tracked by multiple systems produce grid locations. Prophet will cross-cue other battlefield sensors (for example, tactical unmanned aircraft systems and radars) as well as provide additional data that may confirm indications and detections from the other manned and unmanned battlefield sensors. In the armor and infantry BCTs, there are two AN/MLQ-40 Prophets in the brigade special troops battalion's military intelligence company. In the Stryker BCT, there are three AN/MLO-40 Prophets in the cavalry squadron's surveillance troop. A secondary mission is electronic attack against selected enemy emitters to disrupt or disable targeted command and control nodes. The only Army electronic attack system currently fielded is the Counter-radio controlled Improvised Explosive Device Electronic Warfare system. The other services have more robust electronic attack capabilities that support BCT operations.

1-62. For more on electronic attack see FM 3-36. For more on intelligence and electronic warfare see FM 2-0.

SECTION IV – FIRE SUPPORT RELATED SUSTAINMENT CAPABILITIES

1-63. Sustainment of fire support is one of the four basic joint fire support tasks (see JP 3-09). In the BCT, sustainment of fire support focuses on the BCT's fires battalion. Direct throughput of supplies to the fires battalion is the rule rather than the exception.

1-64. The forward support company is the key sustainment operator at the fires battalion level and provides subsistence, supply distribution, and field maintenance to the fires battalion. It is organic to the brigade support battalion and assigned to the fires battalion.

1-65. The forward support company consists of a company headquarters, a field feeding section, a field maintenance platoon, a distribution platoon, a supply section, ammunition section, and a fuel & water section.

1-66. The distribution platoon provides distribution of all classes of supply except Class VIII (the HHB medical platoon provides Class VIII supplies). The field maintenance platoon consists of a maintenance control section, service and recovery section, base maintenance section, and two maintenance support teams to support the firing batteries. The forward support company does not carry an authorized stockage list, except as necessary to support issue and turn-in. It may carry critical line replaceable units and combat spares as authorized or directed.

1-67. The principal source of external support to the fires battalion is the brigade support battalion, which provides centralized direct sustainment support to the BCT. The division/corps sustainment brigade provides additional sustainment support.

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Chapter 2

BCT Fire Support Training at the Brigade Echelon

The focus of this chapter is on brigade combat team (BCT) fire support and fire support related training at the brigade echelon. It describes fire support related training and the relationship to the fires warfighting function for successful fire support. Section I begins the chapter with a discussion of the training role of the BCT commander and his subordinate commanders. Section II discusses BCT fires cell training. Section III describes fire support training for the BCT's intelligence cell. Section IV discusses fire support training for the BCT's air defense airspace management/brigade aviation element (ADAM/BAE). Section V describes training for the BCT's combat observation and lasing teams (COLT), and Section VI concludes the chapter with a discussion of rehearsals for BCT fire support.

SECTION I – BCT AND SUBORDINATE COMMANDERS' ROLE IN FIRE SUPPORT TRAINING

And what we did is we pushed to the control of one Brigade Combat Team—although another one also benefited from it, but Colonel John Hort [the commander of the 3rd Brigade] of the great 4th Infantry Division had at his disposal, 24 hours a day: two Predator unmanned aerial vehicles (unmanned aircraft), three Shadow, three other lower-level systems—unmanned aerial vehicles (unmanned aircraft), three teams of two Apaches each. He had counterfire radars ringing the city—that would tell us where they shot at us from. We had guided missile launch rocket systems [guided Multiple Launch Rocket System (MLRS)] primed and ready to launch. And we did, as I noted earlier, put a strike right into the center of Sadr City and killed a group of individuals who were meeting right across from the hospital, without breaking a window in that hospital. He had other assets supporting him-special mission element intelligence surveillance and reconnaissance [ISR] assets; other governmental agencies; human intelligence operatives in there; downlinks from all these other systems that are up here as well-Global Hawk; JSTARS [Joint Surveillance Target Attack Radar System] for moving target indicators; EP-3s, even all the way up to national imagery and U2s. He had blimps with optics; he had towers with optics, all of this focused, again, and in support of, elements that included tanks—M-1 tanks were used, and they shot big main-gun round engagements; mechanized infantry and Bradleys; Stryker infantry—Stryker reconnaissance; snipers, light infantry; and all of that pulled together under one brigade commander who, over the course of several weeks, as I mentioned earlier, killed 77 rocket teams and also some—over 750 militia members.¹

General David H. Petraeus

2-1. The graduate level examination for assessing how well the BCT has done in fire support and fire support related training for the BCT during the months leading up to deployment occurs in-theater, as the BCT conducts combined arms operations against a capable enemy on his own ground.

¹ Petraeus, General David H. From the transcript of his special presentation at the Association of the United States Army's annual meeting, October 7, 2008. During the Battle of Sadr City, General Petraeus was commander of Multi-National Force Iraq.

2-2. Combat training center rotations can serve as a graduate level diagnostic for how well the BCT staff is able to coordinate, integrate, and synchronize combined arms in battle. Units must be prepared to fight upon arrival at a combat training center—just as they would in operations. Combat training centers exist to help commander's increase unit readiness to deploy as they progress through each Army force generation (ARFORGEN) phase. See ADP 7-0.

2-3. Combat training center take-home packages provide excellent information for the commander's assessment of readiness. These packages include video and written after action reports, a report of unit strengths and weaknesses, and recommendations for future home station training. Today, full spectrum operations conducted within the operational themes of major combat operations and irregular warfare are the norm during combat training center exercises, as are joint operations. The operations group at the National Training Center (NTC), Joint Readiness Training Center (JRTC), Joint Multi-national Training Center (JMRC), and the Air Force's Green Flag West at Nellis Air Force Base enable Army and Air Force personnel to gain proficiency in synchronizing the employment of artillery, mortars, attack helicopters, and close air support aircraft in support of BCT operations. NTC and Green Flag West can be the "final conditions check" before BCTs deploy.

2-4. The Center for Army Lessons Learned collects observations and tactics, techniques, and procedures from trainer/mentor teams at combat training centers and compiles them in combat training center trends reports every six months. One such report² noted "based on ninety previous attacks at the same place and time in the last ninety days, that units know exactly where the enemy will be and when, but units are challenged to make the mental leap to arrange ISR, fires, and maneuver assets in time and space to do anything about it...". The report also notes "eighty percent of units do not produce fires paragraphs and Annex D: Fires at any level, for either base orders or fragmentary orders. When units do produce fire support plans, they are normally so general they are useless. There is rarely a stated scheme of fires and maneuver to explain how fire support tasks unfold in time and space to place ISR [intelligence, surveillance and reconnaissance], maneuver, and fires at the right place and time to achieve an effect, and no linkage whatsoever between the wealth of detailed enemy pattern information and the tasks assigned in the fragmentary orders." Three former BCT commanders³ have also noted—

- "A fires annex is produced in twenty percent of rotational units' operation orders (OPORD)."
- "No fires communications net is maintained and if there is one, it isn't monitored."
- "Ninety percent of available fire support personnel are uncertified."
- "Counterfire is seldom executed (except by mortars)."
- "Inability to fire plan prevents effective close air support application."
- "Most cannon platoons would have fired 'out of safe' if not prevented by observer/controllers."
- "Firing incidents occurred during every rotation."
- "Leaders no longer understand the need to calibrate or use meteorological data. The culture of relentlessly pursuing accurate fires is rapidly eroding."

2-5. The BCT staff must train and train hard to do well during their combat training center rotation. To do so effectively the BCT's fire support coordinator (FSCOORD), brigade fire support officer and the BCT's subordinate commanders and their fire support officers must agree on how to train the full spectrum operations mission essential task list (METL) supporting fire support and fire support related tasks. Additionally they must agree on the conditions for training and on the risk associated with not training on fire support or fire support related specific tasks or operational themes. The Army has changed the core METL construct for the Army to one of full spectrum operations—offense, defense, stability, or civil support. Consequently, training focused only on major combat operations is no longer an option. Units will have only one mission-essential task list, and units will train to only one mission-essential task list at a

² Page 9 in CTC Trends Report No. 09-36, 3QFY08 and 4QFY08, Center for Army Lessons Learned, Fort Leavenworth KS 66027-1350.

³ Page 1 in MacFarland, Colonel Sean, Colonel Michael Shields, and Colonel Jeffrey Snow: "White Paper: The King and I: The Impending Crisis in Field Artillery's ability to provide Fire Support to Maneuver Commanders."

time; training should focus on doing a few tasks very well rather than checking the block on a "laundry list." Army tactical tasks (ART) included in Department of the Army (DA) approved⁴ fire support officer METLs for BCTs include—

- Conduct Command and Control (ART 5.0).
 - Execute the Operations Process (ART 5.1).
 - Integrate Information Engagement Capabilities (ART 5.3.1).
- Conduct Offensive Operations (ART 7.1).
 - Conduct a Movement to Contact (ART 7.1.1).
 - Conduct an Attack (ART 7.1.2).
 - Conduct Air Assault (ART 1.2.1.1.2) (infantry and Stryker BCTs only).
 - Conduct Airborne Assault (ART 1.2.1.1.1) (airborne brigades only).
- Conduct Defensive Operations (ART 7.2).
 - Conduct an Area Defense ART 7.2.2).
- Conduct Security Operations (ART 6.7.3).
- Conduct Area Security Operations (ART 6.5.3).
- Conduct Stability Operations (ART 7.3).
 - Provide Essential Civil Services (ART 7.3.3.1) (Immediate Response).
 - Coordinate Public Order and Safety (ART 7.3.2.1) (Immediate Response).
- Employ Fires (ART 3.0).
 - Provide Fire Support (ART 3.3).
- Conduct Civil Support Operations (ART 7.4) (Army National Guard Only).
 - Provide Support in Response to Disaster (ART 7.4.1).

Note. ARTs are likely to change as publications such as FM 7-15 are updated.

BCT COMMANDER'S GUIDANCE FOR TRAINING

2-6. Guidance for fire support and fire support related training for the BCT staff, battalion and company commanders should include attaining and maintaining proficiency in a few carefully chosen FSO METL supporting tasks. Do not ask them to attempt to train to check the block on the entire "laundry list" of Combined Arms Training Strategy (CATS) tasks.

Note. A summary of fire support and fire support related CATS tasks for each fire support and fire support related component of the BCT is included in Appendices A through C of this training circular (TC). Appendix A summarizes fire support and fire support related CATS tasks for the brigade echelon of the BCT; Appendix B for the BCT's maneuver battalions, its cavalry squadron and its brigade special troops battalion; and Appendix C for the BCT's organic fires battalion. The current list of CATS tasks should always be consulted to plan training.

QUESTIONS FOR THE BCT COMMANDER

2-7. Questions for BCT commanders to consider themselves and to ask of their staff and subordinate commanders regarding fire support training include those listed below. <u>The list is intended to stimulate</u> <u>thinking; it is not all inclusive and answers to the questions are not necessarily included within the text of</u> <u>this training circular—</u>

• Who is responsible for training the fire support personnel in the BCT?

⁴ Thurman, Lieutenant General James D., Army Deputy Chief of Staff G-3/5/7 Memorandum, Subject: Full Spectrum Operations (FSO) Mission Essential Task List (METL), 9 December 2009

- What is the plan for tracking the training of each element of fire support?
- What are the roles of the following individuals in planning and implementing fire support training—
 - Fires battalion commander (the FSCOORD)?
 - Brigade fire support officer?
 - Battalion commanders?
- What interaction does the fires battalion commander have with fire support personnel in a maneuver battalion?
- What authority does the fires battalion commander have to reassign artillery Soldiers for their professional development?
- How does the fires battalion commander influence the assignment and use of fire support personnel within the BCT?
- How well do battalion commanders within the BCT focus on training fire support skills?
- How are the rating schemes established for battalion fire support officers? Are they the same throughout the BCT?
- What challenges is the unit experiencing with modified table of organization and equipment (MTOE) fire support equipment being distributed to the intended end user?
- Who is responsible for training mortars within the BCT?
- When was the last time the BCT operations staff officer (S-3), movement and maneuver cell, fires cell, senior joint fires observer, ADAM/BAE, Air Force tactical air control party (TACP), intelligence staff officer (S-2) and intelligence cell, unmanned aircraft system team (including the Shadow camera operator), and battalion liaison officers collocated, trained, and rehearsed together during a command post exercise (CPX), field training exercise (FTX), or in support of a live fire exercise (LFX)?

PROGRESSIVE TRAINING FOR THE BCT

Training for Staff Sections

2-8. Training for BCT and battalion staff sections in fire support and fire support related skills is generally "crawl" level training (see ADP 7-0) used to prepare the Soldiers within the sections to accomplish their jobs when functioning as a team for the section's collective purpose. This training may be full or part task-focused; its purpose is to instill an understanding of each Soldier's role in accomplishing the functions required of the section. Another purpose is to gain and sustain general knowledge of staff responsibilities associated with the decisionmaking process. The trainer is usually the section leader or section noncommissioned officer (NCO). The events are classes, unit training, and staff exercises. Training planned and focused on fire support and fire support related task proficiency is a gate to command post functional or integrating cell and full staff training. Training for fire support and fire support related tasks normally occurs during the "reset" phase of ARFORGEN when the BCT redeploys from long-term operation or completes its planned deployment window in the available force pool.

Training for Command Post Functional and Integrating Cells

2-9. Functional or integrating cell fire support and fire support related training (Figure 2-1) should focus on selected critical interactive staff processes (for example, the interaction between the intelligence and fires cells and the ADAM/BAE that will contribute most directly to full staff competency for the BCT.) Functional cells optimize the conduct of warfighting functions; integrating cells coordinate and integrate forces and warfighting functions within a specified planning horizon (for example, future operations and current operations integrating cells). Based on personnel turnover and assessment of cell proficiency staffs may elect to conduct "crawl" level training by means of a class or classes in order to familiarize functional or integrating cell members with doctrine, tactics, techniques and procedures and BCT tactical standing operating procedures. The class serves as a gate to "walk" level (see ADP 7-0) staff training. It, like training for staff sections, normally occurs during the "reset" phase of ARFORGEN when the BCT

redeploys from long-term operation or completes its planned deployment window in the available force pool.

Note. During the "reset" phase of ARFORGEN, units are normally putting systems back in place, accounting for equipment, and conducting individual, section, and leader training. Additionally, equipment fielding and turn-in of equipment occurs. This is also the time when personnel turnover affects the unit the most and the reduction in manning or availability of personnel can prevent a unit from conducting quality training.



Figure 2-1. BCT cell and staff training progression

Full BCT Staff Training

2-10. Full BCT staff training (Figure 2-1) focuses on those critical staff processes that most directly influence full staff proficiency. Full staff training centers on the synchronization of the actions of staff sections and command post cells (for example, the fires and intelligence cells) in order to deliver required information to the commander on a timely basis and to ensure his intent is implemented. Upon mastering the skills and tactics, techniques, and procedures used within staff sections and cells, "walk" level full staff training takes place during one or more CPXs. Lower echelon (for example, battalion) CPXs are nested within the BCT CPX when possible. "Run" level training (see ADP 7-0) for the full staff and the command group occurs during both the CPX and the joint training exercise. It normally encompasses training for the full staff as well as subordinate units and is usually conducted during the "train/ready" phase of ARFORGEN when the BCT and its subordinate units prepare to conduct higher level collective training and prepare for deployment.

Section/Platoon Training

2-11. For training sections and platoons, a training cycle of "crawl, walk" is recommended, primarily due to turbulence and skill decay. "Crawl" level training occurs during a class or sergeant's training time (STT). The training should focus on fundamentals, which are trained by a number of means (for example, sand table or rock drill). The section or platoon progresses to training the tasks within a situational training exercise (STX) at the "walk" level. Section/platoon level training usually occurs during the "reset" phase of ARFORGEN when the BCT redeploys from long-term operation or completes its planned deployment window in the available force pool.

Battery/Company/Troop Training

2-12. Fire support and fire support related training at the battery/company/troop level (Figure 2-2) also follows a "walk, run" cycle. The "walk" events are the battery/company/troop STX conducted as multiechelon training during the battalion or BCT CPX, and LFX conducted under battalion or BCT control. The "run" level training occurs during the battalion FTX with the supported units in the field. Battery/company/troop level training is usually conducted during the "train/ready" phase of ARFORGEN (see ADP 7-0) when the BCT and its subordinate units are prepared to conduct higher level collective training and prepare for deployment.



Figure 2-2. BCT and subordinate unit training progression

Battalion and BCT Training

2-13. Each echelon focuses on training core competencies at their level. Core competencies are those capabilities and tasks that a unit is organized and equipped to perform in any type environment. The battery training strategy builds on training at the section and platoon levels and focuses on battery core competencies; similarly, the maneuver battalion strategy builds on training at the company, staff section, and functional/integrating cell level. The BCT's training strategy builds on all of these. Battalion level and BCT level training is usually conducted during the "train/ready" phase of ARFORGEN when the BCT and its subordinate units prepare to conduct higher level collective training and prepare for deployment.

SECTION II – BCT FIRES CELL TRAINING

QUESTIONS FOR THE BCT COMMANDER

2-14. Questions for BCT commanders to consider themselves and to ask of their staff regarding fires cell training include those listed below. <u>The list is intended to stimulate thinking; it is not all inclusive and answers to the questions are not necessarily included within the text of this training circular—</u>

- How well do the FSCOORD, brigade fire support officer, fires cell, and senior joint fires observer qualified Soldier coordinate air support issues with the Air Force air liaison officer (ALO), unmanned aircraft system NCO and the ADAM/BAE? Do they effectively coordinate for both manned and unmanned aircraft in support of BCT intelligence collection, and surveillance, and reconnaissance operations?
- Are the brigade fire support officer and FSCOORD able to effectively coordinate with battalion commanders, the cavalry squadron commander, and the ADAM/BAE to clear airspace for indirect fires?
- Do intelligence cell personnel provide effective intelligence support to targeting?
- Do fires cell personnel effectively support intelligence preparation of the battlefield (IPB)?
- What is the status of trained/certified personnel for target coordinate mensuration and collateral damage estimation (see CJCSI 3160.01 and CJCSI 3505.01A)?
- What capabilities are available to you that enhance your ability to execute counterfire?
- How many JFO qualified/certified Soldiers are assigned to the unit?
- What is your FIST certification process?

TRAINING EMPHASIS FOR THE BCT FIRES CELL

2-15. The BCT fires cell integrates the fires warfighting function for BCT operations. Fires warfighting function tasks, as described in FM 7-15 include—

• **ART 3.1 Decide Surface Targets.** This task includes analyzing the situation relative to the mission, objectives, and capabilities of the BCT and its fire support assets and resources, identifying and nominating specific vulnerabilities, and high-value and high-payoff targets that if influenced, degraded, delayed, disrupted, disabled, or destroyed will accomplish the intent for fires supporting the BCT operation.

- ART 3.2 Detect and Locate Surface Targets. This task includes perceiving objects of military interest (possible targets) and determining the location of targets on the battlefield. For example, target location can be expressed as grid coordinates and altitude.
- **ART 3.3 Provide Fire Support.** This task includes providing for the collective and coordinated use of Army indirect fires and joint fires through the targeting process to support BCT operations against surface targets. It also includes providing proactive and reactive counterfire; coordinating with the BCT S-3, Movement and Maneuver Cell and its ADAM/BAE in the tasks: Planning Rocket, Artillery, and Mortar Defense (ART 6.1.8) and Conducting Rocket, Artillery, and Mortar Defense (ART 6.1.9).
- ART 3.3.1.1 Conduct Surface-to-Surface Attack. This task includes using ground-based, indirect fire weapon systems to destroy, suppress, or neutralize enemy equipment (including aircraft on the ground), materiel, personnel, fortifications, and facilities.
- ART 3.3.1.2.1 Request Air-to-Surface Attack. This task includes requesting employment of Army special operations forces, Marine Corps, Navy, and Air Force aircraft and other systems to deliver rocket, cannon, missile fires and bombs on surface targets (see ATP 3-09.32).
- ART 3.3.1.2.2 Employ Close Air Support. This task includes employing aircraft for preplanned and immediate close air support missions and for joint air attack team operations to destroy, delay, disrupt, or suppress targets to support land operations. Close air support requires positive identification, friend or foe and Army procedural or Army positive control of aircraft. See joint publication (JP) 3-09.3.
- ART 3.3.1.2.3 Employ Air Interdiction. This task includes employing aircraft to destroy, disable, disrupt, or delay enemy military potential before its effective use against friendly ground forces. During air interdiction missions, attacking aircraft are far enough from friendly forces that detailed integration of each air mission with friendly ground maneuver is not required.
- ART 3.3.1.3 Employ Naval Surface Fires. This task includes employing fires provided by naval surface gun, missile, and electronic warfare systems to support units tasked with achieving the commander's intent (see ATP 3-09.32).
- ART 2.4.3 Conduct Combat Assessment. This task includes determination of Army indirect fires and joint fires have met the commander's attack guidance and whether reattack is necessary in order to meet the intent for fires as part of the BCT operation. The fires cell and intelligence cell cooperatively employ intelligence collection, surveillance, reconnaissance and target acquisition assets and resources to perform combat assessment.
- ART 3.3.5 Conduct Suppression of Enemy Air Defenses. This task includes neutralizing, destroying, or temporarily degrading surface-based enemy tactical air defenses by destructive and disruptive means. FM 3-01.4 provides detail on suppression of enemy air defenses).
- ART 3.4 Integrate Command and Control Warfare. This task includes integrating the use of physical attack, electronic warfare, and computer network attack, to degrade, destroy, and exploit an enemy's or adversary's command and control system or to deny information to it (see FM 7-15).

Note. ARTs are likely to change in terminology with the continuing revision of publications such as ADP 3-0, FM 3-61.1, FM 3-13, and FM 7-15.

- ART 3.4.2 Nominate Electronic Attack Targets. This task includes nominating targets within the electromagnetic spectrum to be destroyed, deceived, degraded, or neutralized (see FM 3-36).
- ART 6.1.8 Plan Rocket, Artillery, and Mortar Defense. This task includes planning and coordination to protect operational forces and forward operating bases from rocket, artillery, and mortar attack by direct defense and by destroying the enemy's rocket, artillery, and mortar capability. This also includes determining essential requirements to achieve mission accomplishment using rocket, artillery, and mortar defense weapons in a defensive role to deny, sense, warn, intercept, shape, respond and protect. Rocket, artillery and mortar defense operations include all forces and activities that support active defense, passive defense, and counterfire operations (see ATP 3-01.60).

• ART 6.1.9 Conduct Rocket, Artillery, and Mortar Defense. This task includes defending an assigned asset, friendly forces, and infrastructure against rocket, artillery, and mortar attack, and conducting rocket artillery and mortar defense to negate such attacks. Rocket, artillery, and mortar defenses destroy attacking enemy rocket artillery and mortars thereby nullifying or reducing the effectiveness of such attack. This task also includes using available sensors for detection, discrimination, and tracking of in-flight rockets, artillery and mortars to support cueing and handoff of targets for engagements and for providing attack warning support to Soldiers (see ATP 3-01.60).

2-16. The fires cell collaboratively plans, coordinates and synchronizes fire support aspects of inform and influence activities (such as artillery and air delivered leaflets) in an integrated fashion with the other warfighting functions to support BCT operations. It is the centerpiece of the BCT's targeting architecture. The targeting working group brings together representatives of all staff sections concerned with targeting. It synchronizes the contributions of the entire staff to the work of the fires cell. The brigade operational law team is collocated with the fires cell in order to provide legal review of plans, targeting and orders. The fires cell includes both lethal and nonlethal fires elements manned by fire support personnel and other BCT staff collocated with the fires cell, including the following—

- Brigade fire support officer.
- Assistant brigade fire support officer(s).
- Targeting officer(s).
- Counterfire officer.
- Electronic warfare officer.
- Electronic warfare support officer.
- Fires cell operations NCO.
- Fire support NCO(s).
- Target analyst NCO/targeting NCO(s).
- Fire support specialist(s).
- Information engagement staff officer (S-7).
- Civil affairs staff officer (S-9).
- Public affairs officer.
- Psychological operations NCO.
- Brigade operational law team.

Note. Joint augmentation supports BCT operations. In addition to an Air Force TACP and weather team, other joint augmentation provided to the BCT may include liaison officers to plan and coordinate fire support from the Marine Corps or Navy. These joint augmentees are collocated with the BCT fires cell and invited to participate in fires cell training.

2-17. The brigade fire support officer (assisted by the BCT S-3 and S-7) is responsible for training the members of the BCT fires cell to become adept at—

- Planning, coordinating, and synchronizing fire support for BCT operations.
- Working with the S-7, S-9, public affairs officer, and brigade judge advocate to integrate fire support, aspects of information engagement, and civil affairs into the BCT targeting process (see FM 3-13, FM 3-61.1, FM 3-57).
- Assisting the intelligence cell with IPB. FM 2-01.3 provide detail on this subject.
- Participating in the development of the collection plan with the BCT S-3, S-2, and other staff members, the military intelligence company commander (as needed), and the cavalry squadron to acquire targets. This can include incorporating the use of fires battalion assets such as the countermortar, counterbattery, and lightweight countermortar radars. For detail, see FM 3-20.96, FM 3-04.155, ATTP 3-04.15, FM 3-09.12, and ATP 3-01.60.
- Participating in the BCT's military decisionmaking process (MDMP) (see ADP 5-0).
- Briefing the BCT commander for his approval of the scheme of fires.

- Disseminating the approved scheme of fires to BCT fire support organizations, the division's fires brigade, and division and corps fires cells.
- Participating in the BCT targeting process. For detail on the targeting process, see FM 3-60 and JP 3-60.
- Determining and refining target locations for precision munitions. Precision munitions are coordinate seeking rounds that are aided by the global positioning system and/or are inertial measurement unit assisted. For detail, see ATP 3-09.30, ATP 3-60.1, and JP 3-09.1.
- Conducting target coordinate mensuration and hasty field collateral damage estimates using approved software and imagery (see CJCSI 3160.01 and CJCSI 3505.01A).
- Ensuring battalion fires cells plan fires in accordance with the BCT commander's guidance for current and future operations.
- Preparing the fires portions of the BCT operation plan (OPLAN)/OPORD. These include the Scheme of Fires and Fire Support Coordination Measures subparagraphs in the basic BCT OPLAN/OPORD and Annex D Fires (includes fire support overlay and fire support execution matrix, and targeting, field artillery support, air support, naval surface fire support, and command and control warfare appendices) as required (see FM 5-0).
- Managing the establishment of and changes to fire support coordination measures. See FM 3-09 for detail.
- Coordinating maneuver space for the positioning of field artillery assets. FM 3-90-1 provides detail.
- Coordinating clearance of fires.
- Coordinating assessment.
- Coordinating requests for additional fire support to include joint fires. For detail, see JP 3-09, JP 3-09.3, FM 3-04.126, and ATP 3-09.32.
- Providing input to the BCT's common operational picture to enhance situational understanding.

2-18. Detail on the BCT fire cell's execution of these functions is provided in FM 6-20-40 and FM 6-20-50.

Note. Members of the BCT targeting working group and targeting board should be familiar with the tasks executed by the BCT fires cell. However, their focus for training should be on understanding how the targeting working group and the targeting board function, and on becoming proficient in the skills needed to fulfill their own individual responsibilities on that group or board.

FIRE SUPPORT TABLES FOR THE FIRES CELL

2-19. Gunnery training tasks for the BCT fires cell are included in the fire support tables are found in TC 3-09.8—

- Fire Support Table I includes the basic individual tasks that members of the fire cell must master before proceeding to team-level tasks. Training and evaluation for these crawl-level tasks should occur during weekly sergeant's time/team training. A written examination is useful as a diagnostic tool. Sample questions are available on the Fires Knowledge Network, Master Gunner Site for the staff's use to develop examinations that are approved by the commander. As a prerequisite to effective fire support planning, fires cell members at all levels must understand the MDMP, demonstrate the capability to integrate fire support planning within the MDMP effectively, understand and integrate the use of Army indirect fires and joint fires in the targeting process. They must also plan for and use the support to targeting from ISR assets effectively. To accomplish these tasks, assigned personnel must know, understand, and be able to define all doctrinal terms applicable to fire support planning, for example fire support coordination measures, targeting terms and tools for fire support planning.
- Fire Support Table II includes the collective tasks required for fires cell members to occupy a new position and establish fire support operations. This training should be included as an STX in

a field environment. The fires cell should use detailed unit standing operating procedures to provide guidance on specific tools to be developed by the fires cell (for example the fire support execution matrix, target list, target synchronization matrix, fire support task matrix and support to IPB). The fires cell must train to establish a fires net plan that includes primary, alternate, contingency, and emergency communications nets. It must also train to establish and synchronize battle rhythm and targeting with the air tasking order cycle.

- Fire Support Table III includes fire cell tasks for fire support planning. To assess the capability of the fires cell to develop a fully integrated fire support plan requires fires cell participation as part of the BCT staff in a training event or exercise. The purpose of Table III is to ensure the fires cell is proficient in fire support planning tasks prior to participating in exercises with the full BCT staff.
- Fire Support Table IV includes fire cell tasks required to execute the BCT fire support plan. These tasks should be trained and assessed during an STX or staff exercise (STAFFEX) and require the use of the Advanced Field Artillery Tactical Data System (AFATDS) plus all tactical communications and digital entry devices assigned to the fires cell. Conducting this training event involves using interactive simulation that provides realistic cues and responses and required adjustment and refinement of the fire support plan, radar positioning and cueing plan, counterfire plan, and drill execution and support of branches and refinements of the BCT OPLAN/OPORD. A manual scenario using inputs from a master scenario events list, if an appropriate simulation is not available, normally drives the event. Critical tasks include fire cell participation in trigger events and technical/digital rehearsals.
- Fire Support Table VI is fires cell qualification. Executing this table requires participation of the BCT commander and staff. It also requires external evaluators (or observer/controllers) that would be problematic for most BCT fires cells except as a by-product of a BCT CPX or brigade warfighter exercise. The run-level event for the fires cell must include a combination of tasks trained in Fires Support Tables II through IV to demonstrate the capability to establish operations, conduct fire support planning, and execute fires. Fire Support Table VI qualification for the fires cell normally occurs during a live training event such as a company, battalion or squadron, or BCT combined arms live fire exercise (CALFEX) or FTX, or during a constructive event such as a Battle Command Training Center exercise or brigade warfighter exercise. The qualification usually occurs during a scenario-driven training event using a master scenario events list to provide cues and responses. An interactive simulation-driven event that includes plans and orders and scenario to drive fire support planning and execution, including counterfire inputs, radar positioning requirements and non-lethal fire planning center.

CATS TASKS FOR THE BCT FIRES CELL

2-20. Table A-1 (Appendix A) provides a summary of fire support CATS tasks for the BCT. The CATS should always be consulted to determine the current tasks.

SECTION III – FIRE SUPPORT TRAINING FOR THE BCT'S INTELLIGENCE CELL

QUESTIONS FOR THE BCT COMMANDER

2-21. Questions for BCT commanders to consider themselves and to ask of their staff regarding intelligence cell training include those listed below. <u>The list is intended to stimulate thinking; it is not all</u> inclusive and answers to the questions are not necessarily included within the text of this training circular—

- Do intelligence cell personnel provide effective intelligence support to targeting?
- Do fires cell personnel contribute effectively to IPB?
- How well do the FSCOORD, brigade fire support officer, fires cell, senior joint fires observer coordinate on air support issues with the Air Force ALO, unmanned aircraft system NCO and
ADAM/BAE? Do they able effectively coordinate for both manned and unmanned aircraft in support of BCT operations?

- When was the last time intelligence cell personnel trained with full motion video to observe targets and towns?
- Do fire support personnel routinely report initial battle damage assessment to the S-2 at the completion of a fire mission or target attack?

TRAINING EMPHASIS FOR THE BCT'S INTELLIGENCE CELL

2-22. Targeting does not happen without intelligence. The BCT intelligence cell controls or is the conduit for much of the intelligence available to the BCT. It is critical for the intelligence cell, the fires cell and the targeting working group and targeting board to be synchronized in their efforts and to provide a common understanding of information requirements including commander's critical information requirements, priority intelligence requirements, and friendly force information requirements. The BCT commander must clearly articulate priorities for the intelligence effort and make sure it meshes with the priorities for targeting.

2-23. The BCT intelligence cell (led by the S-2) coordinates the intelligence warfighting function for BCT operations. The *intelligence warfighting function* is the related tasks and systems that facilitate understanding of the enemy, terrain, and civil considerations (ADP 3-0). Members of the BCT intelligence cell train to be adept at the following—

- Managing the BCT intelligence process. For detail see FM 2-0 and FM 2-19.4.
- Managing IPB, including integration of input from other staff such as the fires cell. For detail on IPB see FM 2-01.3.
- Situation development, to include updating the enemy/threat, terrain and weather, and civil considerations portions of the common operational picture.
- Intelligence support to the targeting process, including participation in targeting working group and targeting board sessions, developing high-value targets, tracking high-payoff targets, and conducting combat assessment (see FM 2-19.4 and FM 3-60]).
- Providing intelligence support to information capabilities (see FM 3-13).
- Synchronizing intelligence support with combat and reconnaissance and security operations through close coordination with the commander, deputy commander, executive officer, S-3, and brigade fire support officer. For detail see FM 6-20-40 and FM 6-20-50.
- Analyzing commander's critical information requirements (see ADP 5-0).
- Recommending adjustments to the collection plan to facilitate the integration of surveillance and reconnaissance.
- Supervising collection operations.
- Coordinating technical oversight and support for military intelligence assets and units.

2-24. The BCT S-2, assisted by the brigade fire support officer should be responsible for training the intelligence cell in its fire support related duties and responsibilities. The intelligence cell supported by the military intelligence company should train to use combat information, targeting data, and intelligence from BCT and supporting organizations to develop an accurate and timely intelligence assessment. Besides performing such overarching tasks as IPB (ART 2.2.1) and ISR (ART 2.3), the training emphasis for the BCT's intelligence cell should include obtaining proficiency in performing fire support related tasks (see FM 7-15 for details) such as obtaining detailed weather and weather effects information and intelligence (ART 2.1.4.3), conducting geospatial engineering operations and functions (ART 2.2.1.5) and providing intelligence support to—

• **ART 2.4.1.1 Target development**. This task includes the ability to systematically analyze threat forces and operations to determine high-value targets, high-payoff targets, and systems and systems components for potential attack through maneuver, fires, electronic means, or information engagement.

- **ART 2.4.1.2 Target detection.** This task includes the dissemination of targeting information, assisting in development of sensor and attack guidance matrices required to detect and locate targets and synchronization of the ISR plan accordingly.
- **ART 2.4.2.1 Information engagement.** This task includes the coordination of psychological operations such as artillery and air delivered leaflets with lethal fires.
- ART 2.4.2.2 Command and control warfare. This task includes the identification of enemy, threat and adversary decisionmaking and command and control nodes, processes, and means by order of criticality and threat systems activities and procedures that may be vulnerable to command and control warfare.

Note. This ART will likely be modified with the next update to FM 7-15.

• **ART 2.4.3 Combat assessment.** This task includes the determination of whether the effects of Army indirect fires have met the attack guidance and whether reattack is necessary in order to meet the intent for fires as part of the BCT operation.

CATS TASKS FOR THE BCT INTELLIGENCE CELL

2-25. Tables A-1 (Appendix A) provides fire support CATS tasks for the BCT intelligence cell. The CATS should always be consulted to determine the current tasks.

SECTION IV – FIRE SUPPORT TRAINING FOR THE BCT'S AIR DEFENSE AIRSPACE MANAGEMENT/BRIGADE AVIATION ELEMENT

In the Sarai District of Tall Afar, where the most intense part of security operations took place, it's only a 400-by-800 meter box; and in that box we had AC-130s, close air support (CAS), GMLRS [guided-MLRS], cannon fire, mortar fire, OH-58s and AH-64s. Just the Army airspace C2 [command and control] issues were extremely complicated and, to our credit and the credit of the regiment's aviators, they really deconflicted that ballet masterfully. There was an awful lot of metal in the air in a very small space and we brought all those fires to bear without any fratricide.⁵

Lieutenant Colonel Paul Yingling

QUESTIONS FOR THE BCT COMMANDER

2-26. Questions for BCT commanders to consider themselves and to ask of their staff regarding ADAM/BAE training include those listed below. <u>The list is intended to stimulate thinking; it is not all</u> inclusive and answers to the questions are not necessarily included within the text of this training circular—

- Is the ADAM/BAE able effective in planning/coordinating Army aviation attack weapons team employment for close combat attack and intelligence collection, surveillance, reconnaissance, and target acquisition in support of BCT operations?
- How well are both the BCT ADAM/BAE and the division airspace command and control cell structures able to manage and coordinate the complex integration of airspace over the BCT and division area of operations?
- How well do the FSCOORD, brigade fire support officer, fires cell, senior joint fires observer coordinate on air support issues with the Air Force ALO, unmanned aircraft system NCO, and ADAM/BAE? Is their coordination for both manned and unmanned aircraft in support of BCT operations effective?

⁵ Page 11 in Yingling, Lieutenant Colonel Paul: Interview in *Operational Leadership Experiences in the Global War on Terrorism*, Combat Studies Institute, Fort Leavenworth, Kansas, 22 September 2006.

- How would additional elements of an Air Force air support operations center be beneficial to the integration of airspace and for deconflicting fires?
- What additional synergies can be achieved, if any, within the BCT ADAM/BAE or division command post (CP) from a joint air-ground integration cell?
- What additional requirements and impacts to the BCT ADAM/BAE and/or division CP accompany the addition of a joint air-ground integration cell at Division or a joint air support element at the BCT?

TRAINING EMPHASIS FOR THE BCT AIR DEFENSE AIRSPACE MANAGMENT/BRIGADE AVIATION ELEMENT

2-27. As with the 3rd Armored Cavalry Regiment in Tal Afar, deconflicting the airspace for a BCT operation can be a daunting task. The BCT commander is responsible for the employment of Army aviation assets and exercising airspace command and control within the BCT's assigned area of operations. The S-3 has overall staff responsibility for these functions.

2-28. The BCT's ADAM/BAE is the key organization for coordinating, deconflicting, and managing all airspace within the BCT's area of operations (including that of the BCT's subordinate and supporting units). The ADAM/BAE includes both the BCT's air and missile defense officer and its brigade aviation officer as well as combination of both air and missile defense personnel, aviation personnel, and digital equipment with which to perform airspace command and control and to maintain a near real-time air picture. This includes access to higher headquarters air and missile defense, fires, aviation command and control systems, and the joint air picture (provided digitally through direct coordination with the Army battlefield coordination detachment within the air operations center). The ADAM/BAE staff trains to become adept at—

- Advising the BCT commander on aviation (including unmanned aircraft systems) and air and missile defense operations.
- Conducting the detailed coordination and integration enabling the effective use of close air support; indirect fires; organic and augmenting air defense artillery; maneuver; and Army aviation (including unmanned aircraft) within the BCT's area of operations. This includes airlift and attack/reconnaissance aviation, air medical evacuation, aerial resupply, personnel recovery operations, and appropriate liaison with supporting aviation and air defense artillery units. Field Manual Interim (FMI) 3-01.50 provides details.
- Assisting in the development and/or integration of airspace coordinating and fire support coordination measures for BCT operations. For detail, see JP 3-52 and FM 3-09.
- Participating in the BCT's targeting process. For detail see FM 3-60 and JP 3-60.
- Analyzing airspace control orders, air tasking orders, and airspace use; reviewing airspace requests for conflicts with current operations; and monitoring the operations of airspace users. For detail, see FM 3-52 and FM 3-52.1.
- Evaluating any air threat to BCT operations and determining aerial threat courses of action. This includes integrating local and external air surveillance radars to create a single integrated air picture, disseminating air and missile early warning, and assisting in combat identification of airspace users.
- Analyzing the effects of weather and terrain on aerial operations.
- Developing products to support the MDMP, including air and missile defense and Army aviation running estimates, and schemes of support for each course of action and annexes to the BCT OPLAN/OPORD (see ADP 5-0).
- Developing the BCT air defense plan, including synchronizing subordinate unit air defense plans.

CATS TASKS FOR THE BCT AIR DEFENSE AIRSPACE MANAGEMENT/BRIGADE AVIATION ELEMENT

2-29. Tables A-1 (Appendix A) provides fire support CATS tasks for the BCT ADAM/BAE. The CATS should always be consulted to determine the current tasks.

SECTION V – TRAINING FOR BCT COMBAT OBSERVATION AND LASING TEAMS

QUESTIONS FOR THE BCT COMMANDER

2-30. Questions for BCT commanders to consider themselves and to ask of their staff and brigade fire support officer regarding COLT training and employment include those listed below. <u>The list is intended to stimulate thinking; it is not all inclusive and answers to the questions are not necessarily included within the text of this training circular—</u>

- Have you considered integrating COLTs into maneuver battalion or cavalry squadron operations (this will provide the COLTs with some degree of security)?
- Are COLTs an integral part of the BCT's observation plan?
- During defensive operations, do COLTs position within the range of friendly artillery?
- What is the plan to provide support, protection/extraction, and communications for the COLTs?
- Are the COLTs used primarily for intelligence or to attack critical targets?
- What are the control options for the COLTs?
- What is the COLTs potential role in providing fire support capabilities for a fires battalion live fire exercises (if not conducted in conjunction with the maneuver battalion's training events)?

TRAINING EMPHASIS FOR BCT COMBAT OBSERVATION AND LASING TEAMS

2-31. The brigade fire support officer or his representative positions COLTs to support the commander's intent and concept of the BCT operation. The commander normally gives approval for COLT positioning during development of the initial ISR plan. Consequently, the BCT commander should normally direct that the brigade fire support officer or his representative be responsible for training the COLTs and for performing precombat checks and mission briefings/rehearsals before their employment. BCT COLTs should train to be adept at—

- Attacking area targets with indirect fires (see ATP 3-09.32).
- Employing guided munitions such as the 155-mm Excalibur or GMLRS munitions against point targets. For detail see ATP 3-09.30 and ATP 3-60.1.
- Providing laser designation capability for any munitions that require reflected laser energy for final ballistic guidance (see JP 3-09.1).
- Developing and coordinating ingress and egress procedures including dismounted, mounted, and by helicopter.
- Working under the direction of the brigade fire support officer to be positioned for best coverage and greatest survivability. This includes employment as independent observers to weight key or vulnerable areas; employment in pairs, and employment in conjunction with one or more battalion fire support teams or with elements of the cavalry squadron. See ATP 3-09.30.
- Operating and maintaining their assigned vehicles, weapons, and communications equipment. For detail, see FM 3-20.21 and other applicable operator's manuals, technical manuals, and Soldier training publications described in TC 3-09.8.

FIRE SUPPORT TABLES FOR BCT COMBAT OBSERVATION AND LASING TEAMS

2-32. Gunnery training tasks for combat observation and lasing teams, fire support teams and observers are identical and included in the fire support tables for observers are found in TC 3-09.8. A summary of these tables is included as part of the discussion on fire support platoons in Chapter 3 of this training circular.

CATS TASKS FOR BCT COMBAT OBSERVATION AND LASING TEAMS

2-33. Tables A-2 (Appendix A) provides a summary of CATS tasks for BCT COLTs. The CATS should always be consulted to determine the current tasks.

SECTION VI – REHEARSING FIRE SUPPORT FOR BCT OPERATIONS

2-34. Rehearsals improve comprehension of the BCT OPLAN. Participants who are unclear on specific portions of the plan find answers through the repetitiveness afforded by rehearsing the operation. Combat rehearsals help the BCT gain agility, ensure synchronization, increase initiative, and improve depth of knowledge through practice. Rehearsals enable effective fire support and maneuver actions by reinforcing understanding of the scheme of maneuver and its associated scheme of fires. Rehearsals are an integral part of the planning process. Rehearsals should both practice and test the plan. Establish rehearsal procedures as part of the unit standing operating procedures.

2-35. The most common types of fire support related rehearsals are clearance of fires drills, combined arms rehearsals, fire support rehearsals (which can include a close air support battle drill), and field artillery tactical and technical rehearsals. Each of these is described in FM 6-20-40 and FM 6-20-50.

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Chapter 3

Fire Support Training for the BCT's Maneuver Battalions, Cavalry Squadron and Brigade Special Troops Battalion

This chapter addresses training for fire support related elements of the brigade combat team's (BCT) maneuver battalions, its cavalry squadron, and its brigade special troops battalion. Section I begins the chapter with a discussion of training for battalion and squadron fires cells. Section II describes training for mortars. Section III concludes the chapter with a discussion of training for fire support platoons (fire support teams and observers).

SECTION I – TRAINING FOR BATTALION AND SQUADRON FIRES CELLS

QUESTIONS FOR THE BCT COMMANDER

3-1. The BCT commander must decide how much of a role the fire support coordinator (FSCOORD) will have in fire support training for the BCT. Questions for BCT commanders to consider themselves and to ask of their staff and subordinate commanders regarding fire support training include those listed below. *The list is intended to stimulate thinking; it is not all inclusive and answers to the questions are not necessarily included within the text of this training circular—*

- What interaction does the FSCOORD have with fire support personnel in the battalions or cavalry squadron?
- Who has the authority to reassign artillery officers, warrant officers, and senior field artillery noncommissioned officers (NCO) for professional development?
- How does the FSCOORD influence the assignment/use of fire support personnel within the BCT?
- Does the FSCOORD have influence to ensure fire support personnel within the BCT are trained?
- How well do subordinate commanders within the battalion focus on training fire support skills?
- What is the rating scheme for fire support officers and NCOs within the battalion or cavalry squadron?
- What challenges is the unit experiencing with modified table of organization and equipment?
- Is fire support equipment being distributed to the end user?
- If the battalion or cavalry squadron is equipped with fire support team vehicles, how are they being used to accomplish fire support and battalion or company mission requirements?
- When was the last time the S-3, S-2, battalion or squadron fires cell, airspace clearance NCO, joint tactical air controller, senior joint fires observer, and Shadow/Raven camera operator, collocated, trained, and rehearsed together during a command post exercise (CPX), field training exercise (FTX), or in support of a live fire exercise (LFX)?
- Are the joint fires observers and joint terminal attack controllers (JTAC) skilled at calling for and adjusting fires, and are they proficient in working with the S-2, S-3, and airspace clearance NCO to clear airspace, support cross-cueing and monitor full motion video? When was the last time they did so during a LFX?
- Who is responsible for training the mortars?

- When was the last time the fire support teams and forward observers conducted calls for fire for live fire of artillery and mortars? What specific fire missions have been conducted and what is the assessment of the results? Do they understand target coordinate mensuration? Are they proficient in the use of precision targeting software such as Precision Strike Suite for Special Operations Forces (see Chairman Joint Chiefs of Staff Instruction [CJCSI] 3505.01A)?
- When was the last time the company commanders/platoon leaders/scouts conducted calls for fire for live fire of artillery and mortars?
- How many personnel in the battalion or squadron are certified in collateral damage estimation?
- Are all the battalion leaders down to and including fire team leaders trained in the call for fire? Are they familiar with target coordinate mensuration?

FIVE POINTS FOR MAKING FIRE SUPPORT THE COMMANDERS' BUSINESS

- 3-2. There are five points for making fire support the commanders' business—
 - The fires battalion commander is the FSCOORD for the BCT.
 - The FSCOORD partners with the maneuver battalion and the reconnaissance squadron commanders for the professional development of the BCT's fire support teams and fire support officers.
 - Certification programs that include certifying fire support teams and mortar crews, and maintaining the qualifications of joint fires observers.
 - Fire support leader professional development sessions held to facilitate discussions among fire support leaders in the companies or troops, covering the following topics—
 - Fire support's role during "cordon and knock" operations, raids, searches, and fixed site security operations.

• Fire support planning and refinement including the requirements of a target (purpose, location, observer, trigger-communications, and rehearsal), minimum safe distances, and risk estimate distances.

- High-value targets.
- High-value individuals.
- High-payoff targets.
- Company, troop, battalion, squadron, and brigade fire support rehearsals.
- Air-to-ground fires integration in operations including both attack aviation and close air support aircraft.
- Nonlethal engagements.
- Assessments in support of the targeting process.
- Countermortar operations.

• Discussion with the company and troop commanders on a range of topics covering operations at the company or troop level and below, including the proper use of the fire support team, company or troop level input to the targeting process, crater analysis, and air-ground integration.

• Conduct fire planning exercises at the platoon and higher levels to improve the understanding of the complementary effects of direct and indirect fires and their integration into combat operations.

TRAINING EMPHASIS FOR BATTALION AND CAVALRY SQUADRON FIRES CELLS

3-3. Emphasis for training battalion and squadron fires cells includes attaining and sustaining the ability to execute the following overarching tasks—

- **ART 3.1 Decide Surface Targets.** This task includes analyzing the situation relative to the mission, objectives, and capabilities of the BCT and its fire support assets and resources, identifying and nominating specific vulnerabilities, and high-value and high-payoff targets that if influenced, degraded, delayed, disrupted, disabled, or destroyed will accomplish the intent for fires supporting the BCT operation.
- ART 3.2 Detect and Locate Surface Targets. This task includes perceiving objects of military interest (possible targets) and determining the location of targets on the battlefield. Descriptions of target location should be in terms of, for example as grid coordinates and altitude.
- ART 3.3.1.1 Conduct Surface-to-Surface Attack. This task includes using ground-based, indirect fire weapon systems to destroy, suppress, or neutralize enemy equipment (including aircraft on the ground), materiel, personnel, fortifications, and facilities.
- ART 3.3.1.2.1 Request Air-to-Surface Attack. This task includes requesting employment of Army special operations forces, Marine Corps, Navy, and Air Force aircraft and other systems to deliver rocket, cannon, missile fires and bombs on surface targets (see field manual [FM] 3-09.32).
- ART 3.3.1.2.2 Employ Close Air Support. This task includes employing aircraft in preplanned and immediate close air support missions and joint air attack team operations to destroy, delay, disrupt, or suppress targets to support land operations. Close air support requires positive identification, friend or foe and Army procedural or Army positive control of aircraft (see joint publication [JP] 3-09.).
- ART 3.3.1.3 Employ Naval Surface Fires. This task includes employing fires provided by naval surface gun, missile, and electronic warfare systems to support units tasked with achieving the commander's intent (see ATP 3-09.32).

3-4. The battalion or squadron fire support officer and fires cell members [assistant battalion fire support officer, fire support/targeting NCO(s), fire support sergeant, fire support specialist] should be adept at planning, preparing, executing, and assessing fire support for the battalion commander's concept of operation; particularly in—

- Advising the commander and his staff on fire support matters. This includes making recommendations for integrating battalion mortars into the scheme of fires and their movement in the scheme of maneuver.
- Supervising the battalion fires cell.
- Developing the battalion or squadron observation plan.
- Supervising the execution of battalion or squadron/task force targeting (see FM 3-60).
- Ensuring all fire support personnel are properly trained to support battalion operations.
- Ensuring that all joint fires observers are trained and current in accordance with the joint fires observer memorandum of understanding and that joint fires observer personnel are integrated with the Air Force tactical air control party (TACP).
- Preparing and disseminating the fire support execution matrix and/or the fire support plan (see ADP 5-0).
- Coordinating the positioning and movement of fire support assets in the battalion area of operations.
- Conducting bottom up refinement of the BCT fire support plan. For detail, see FM 6-20-40 and FM 6-20-50.
- Directing development of battalion fire support tasks.
- Coordinating with the Air Force TACP on close air support missions and for terminal control personnel. See JP 3-09.3.
- Providing coordination for information engagement or other nonlethal fires related support (see JP 3-09 and FM 3-13).
- Planning, directing, and monitoring the employment of laser designators to support the commander's concept of operation. For detail, see ATP 3-60.1 and JP 3-09.1.

- Translating the commander's intent into Advanced Field Artillery Tactical Data System (AFATDS) guidance.
- Establishing and maintaining communications with the BCT fires cell, adjacent unit fire cells, subordinate unit fire support teams, and battalion mortars.
- Participating in fire support rehearsals.
- Processing requests for additional fire support with the BCT fires cell.
- Providing staff supervision of the field artillery assets attached to or under the operational control (OPCON) of the battalion.
- Disseminating the approved target list and execution matrix to subordinate elements.
- Recommending appropriate changes in the target list and attack guidance when required.

3-5. Duties and responsibilities of BCT battalion fire cell personnel are described in FM 6-20-40, FM 6-20-50, FM 3-90.5, FM 3-21.20, and FM 3-90.61.

FIRE SUPPORT TABLES FOR BATTALION AND SQUADRON FIRES CELLS.

3-6. Gunnery training tasks for command post fires cells of the BCT and those of its subordinate battalions and cavalry squadron are identical and are included in the fire support tables found in training circular (TC) 3-09.8. A summary of these tables is included as part of the discussion for the BCT fire cell in this training circular.

CATS TASKS FOR BATTALION AND CAVALRY SQUADRON FIRES CELLS

3-7. Tables B-1 (Appendix B) provides a summary of Combined Arms Training Strategy (CATS) tasks for the fires cells of the BCT's subordinate battalions and cavalry squadron. The CATS should always be consulted to determine the current tasks.

SECTION II – TRAINING FOR MORTARS

TRAINING EMPHASIS FOR MORTARS

3-8. Mortar platoons are not simply small field artillery batteries that should be trained by field artillerymen. Mortars are integral to the maneuver battalion and company. Mortar units perform a different function on the battlefield, similar to but not the same as field artillery (Standards for mortar crew and squad leaders are found in ATTP 3-21.90).

3-9. Their training and integration should remain at the battalion and company level, not be centralized at the BCT level.

3-10. Perhaps the best way to improve and standardize unit mortar training is to emphasize the need to send mortar unit leaders to attend the Infantry Mortar Leader Course (IMLC) at Fort Benning and to assign IMLC-trained officers to mortar platoons. The IMLC includes instruction on the technical details of mortar gunnery, fire direction center (FDC) procedures, and tactical employment. A graduate of IMLC is fully prepared to supervise a mortar platoon.

3-11. A possible course of action is to have the mortar platoons/sections participate in the fires battalion external evaluation. The BCT's mortar platoon/section evaluations are based on the collective tasks developed by the Infantry School and promulgated in the collective training database. The mortar platoon/section evaluation can occur in conjunction with fire support training for fire support teams (FIST) and fires cells.

3-12. Battalion and squadron mortar platoon/section certification should include-

• Written skill level examination.

- Ammunition handling examination.
- Gunner's examination.
- FDC certification.
- Range control examination.
- Safety checklists.

Note. Certification for mortar crews should include demonstrated proficiency in the use of digital communications equipment.

CATS TASKS FOR MORTARS

3-13. Table B-3 (Appendix B) provides a summary of CATS tasks for BCT mortars. The CATS should always be consulted to determine the current tasks.

SECTION III – TRAINING FOR FIRE SUPPORT PLATOONS

QUESTIONS FOR THE BCT COMMANDER

3-14. Questions for BCT commanders to consider themselves and to ask of their subordinate commanders regarding field artillery guided munitions [for example, 155-mm Excalibur rounds or guided multiple launch rocket system (GMLRS) munitions] training in their respective units include those listed below. <u>The list is intended to stimulate thinking; it is not all inclusive and answers to the questions are not necessarily included within the text of this training circular—</u>

- What are the determining factors in deciding which guided munitions delivery system to use (for example, rules of engagement, commander's guidance, collateral damage estimate, time constraints)?
- Are fire support personnel certified to derive precise coordinates to facilitate the use of coordinate seeking munitions (such as Excalibur) by using target coordinate mensuration tools such as Precision Strike Suite for Special Operations Forces? For detail, see CJCSI 3505.01A.
- Do we have the Digital Point Positioning Data Base imagery required to facilitate using coordinate seeking munitions? Is the imagery current?
- How well defined is the commander's guidance on the use of guided munitions, both air and field artillery delivered?
- What field artillery assets available to the BCT have guided munitions to support you? How many are available?
- What training have the commanders and staffs received on field artillery guided munitions?
- How well do commanders and staffs understand the capabilities and limitations of field artillery and air-delivered guided munitions?
- What products are used to brief capabilities, decide munitions effectiveness, and conduct clearance of fires battle drill?
- What digital communications, if any, are used to link sensor to command post (CP) (shooter)?
- What challenges, if any, occur when employing mortar, field artillery, or air-delivered guided munitions (for example operator certification, air/ground clearance, gun line procedures)?
- How do you execute advanced precision mortar initiative, GMLRS, or Excalibur missions?
- What tactics and techniques do observers use to direct the munitions onto the targets?
- How well does the AFATDS support the execution of these missions? Does your AFATDS link to the Tactical Airspace Integration System to facilitate clearance of airspace?
- What digital issues does battalion or company experience when executing the GMLRS mission?
- What effects does firing the munitions have in an urban environment? Have the rounds fired functioned as designed? What additional training is needed to execute these missions?

TRAINING EMPHASIS FOR FIRE SUPPORT PLATOONS

3-15. Emphasis for training the fire support platoon includes attaining and sustaining the ability to execute the following overarching tasks—

- ART 3.2 Detect and Locate Surface Targets. This task includes perceiving objects of military interest (possible targets) and determining the location of targets on the battlefield. For example, target location is expressed as grid coordinates and altitude. See FM 3-09.12.
- ART 3.3.1.1 Conduct Surface-to-Surface Attack. This task includes using ground-based, indirect fire weapon systems to destroy, suppress, or neutralize enemy equipment (including aircraft on the ground), materiel, personnel, fortifications, and facilities.
- ART 3.3.1.2.1 Request Air-to-Surface Attack. This task includes requesting employment of Army special operations forces, Marine Corps, Navy, and Air Force aircraft and other systems to deliver rocket, cannon, missile fires and bombs on surface targets. See ATP 3-09.32.
- ART 3.3.1.2.2 Employ Close Air Support. This task includes employing aircraft in planned and immediate close air support missions and joint air attack team operations to destroy, delay, disrupt, or suppress targets to support land operations. Close air support requires positive identification, friend or foe and Army procedural or Army positive control of aircraft. See JP 3-09.
- ART 3.3.1.3 Employ Naval Surface Fires. This task includes employing fires provided by naval surface gun, missile, and electronic warfare systems to support units tasked with achieving the commander's intent. See ATP 3-09.32.

3-16. FISTs are now consolidated at the maneuver battalion and reconnaissance squadron level and allocated out to companies or troops based on the maneuver battalion or cavalry squadron commander's concept of the operation. While the company or troop commander is ultimately responsible for integrating fires in support of the scheme of maneuver, there is a fire support team in the battalion fire support platoon which supports each company or troop. The company or troop fire support officer must fully understand the company or troop commander's intent and scheme of maneuver. Based on the company or troop commander's guidance, he integrates fire support into the maneuver plan and presents the plan to the company or troop commander for his approval. A fire support specialist, and radio telephone operator. The fire support team trains to be adept at—

- Planning, preparing, executing, and assessing fire support. See FM 6-20-40 and FM 6-20-50.
- Advising the company commander on fire support, including making recommendations for integrating company mortars into the operation plan (OPLAN)/operation order (OPORD). See ATTP 3-21.90.
- Establishing and maintaining communications with platoon observers, designated fire support assets (for example, fires battalion firing unit, battalion/company mortars), and the battalion or squadron fires cell. For detail see technical manual (TM) 11-5820-890-10-1.
- Ensuring that the fire support plan and/or execution matrix is prepared and disseminated to key personnel.
- Planning, directing, and managing the employment of laser range finders/designators where they will best support the commander's concept of operation. For detail, see ATP 3-60.1 and JP 3-09.1.
- Providing emergency coordination of joint fire support missions in the absence of qualified personnel. For details, see ATP 3-09.32.
- Employing target acquisition devices to accurately locate targets and the communications necessary to forward targets to the AFATDS.
- Providing target refinement; executing planned fires, and requesting fires for their supported company. See ATP 3-09.30.
- Ensuring fire support platoon personnel are able to effectively perform their duties and operate and maintain assigned equipment. For detail see Soldier training publication (STP) 6-13F14-

SM-TG, FM 3-20.21, and the other applicable operator level FMs, STPs, and TMs referred to in TC 3-09.8.

Note. The platoon joint fires observer or, as a last resort, a platoon forward observer may direct close air support in emergencies when no Air Force TACP or JTAC is available. With additional training and certification, the platoon forward observer can qualify as a joint fires observer. See the following discussion on the joint fires observer.

3-17. FM 6-20-40 and FM 6-20-50 describe the duties and responsibilities of each member of the battalion or cavalry squadron fire support platoon (fire support and observer teams).

CONSOLIDATED TRAINING AT THE FIRES BATTALION

3-18. Having all the fire support teams and observers consolidated at the maneuver battalion or cavalry squadron headquarters greatly facilitates fire support training. For operations, the battalion commander can direct that fire support teams and observers be task organized within the battalion based on mission, enemy, terrain and weather, troops and support available, civil considerations (METT-TC) and employed according to an observation plan where they can best acquire targets in support of the operation. There is no perfect solution for the location of FISTs and forward observers within the organization to make them most effective. Alternatives include locating them at the maneuver battalion or cavalry squadron headquarters and headquarters company (HHC) or headquarters and headquarters troop (HHT), at the fires battalion headquarters and headquarters battery (HHB), or at the BCT level with the combat observation and lasing teams (COLT).

3-19. Ownership is not the issue; the fires battalion and all fire support assets are organic to the BCT. Fire support teams exist in order to provide each company accurate, timely, and lethal fires. The issue is ensuring these FIST personnel remain trained and certified to standard while at the same time earning the trust and confidence of the maneuver company or cavalry troop commanders they support. To do this, FIST training must balance both their maneuver and reconnaissance skills with their fire support skills. Experience has shown that maneuver and reconnaissance skills are best trained in the maneuver company or cavalry troop and sustained in the BCT fire support environment led by the senior fire support officer and NCO. Tables of Organization and Equipment typically locate the FIST personnel in a fire support platoon in the maneuver battalion HHC or cavalry squadron HHT. Whether the FISTs are aggregated at the BCT level, fires battalion HHB, or attached to the companies, the key is to facilitate both training and certification.

FIRE SUPPORT TEAM AND CERTIFICATION

3-20. Fire support team certification (see the discussion and observer tables in TC 3-09.8) should be conducted semiannually and include—

- Written skill level examination.
- Seventeen calls for fire (based on skill levels).
- Observation post occupation (dismounted and mounted in the fire support vehicle).
- Land navigation.
- Vehicle navigation.

Note. Certification for FISTs should include demonstrated proficiency in the use of digital communications equipment.

JOINT FIRES OBSERVER

QUESTIONS FOR THE BCT COMMANDER

3-21. Questions for BCT commanders to consider themselves and to ask of the BCT staff and of their subordinate commanders regarding joint fires observer training in their respective units include those listed below. *The list is intended to stimulate thinking: it is not all inclusive and answers to the questions are not necessarily included within the text of this training circular*—

- How many qualified joint fires observers are assigned and where do they serve during daily operations?
- How many close air support missions (combat) have joint fires observers conducted?
- Who is the joint fires observer manager in the unit?
- How is joint fires observer assignment and qualification status briefed to the unit commander for his visibility and guidance?
- What responsibilities in the tactical operations center/command post are joint fires observer qualified Soldiers assigned to and why?
- How is the joint fires observer sustainment training/certification program implemented and prioritized in the training cycle?
- How do the joint fires observers overcome terrain/distance obstacles to communicate with the JTAC? How do forward air controller (airborne) elements facilitate JTAC communications?
- What type of training support package(s) was/were provided to your battalion or company?
- What company grade training was provided at the Captains' Career Course?
- Are we leveraging the joint fires observer mobile training team to maximize the number of JFO trained personnel and forecasting them at least a year out from execution?

3-22. A *joint fires observer* is a trained Service member who can request, adjust, and control surface-tosurface fires, provide targeting information in support of Type 2 and 3 close air support terminal attack controls, and perform autonomous terminal guidance operations (JP 3-09.3). There are three types of terminal attack control (Type 1-3). *Type 1* control is used when the JTAC must visually acquire the attacking aircraft and the target for each attack. *Type 2* control will be used when the JTAC requires control of individual attacks but assesses that either visual acquisition of the attacking aircraft or target at weapons release is not possible or when attacking aircraft are not in a position to acquire the mark/target prior to weapons release/launch. *Type 3* control is used when the JTAC requires the ability to provide clearance for multiple attacks within a single engagement subject to specific attack restrictions. Type 3 control does not require the JTAC to visually acquire the aircraft or the target; however, all targeting data must be coordinated through the supported commander's staff (JP 3-09.3).

Note. Terminal guidance operations are those actions that provide electronic, mechanical, voice or visual communications that provide approaching aircraft and/or weapons additional information regarding a specific target location (JP 3-09).

3-23. The joint fires observer is not an additional Soldier in the BCT, but rather an individual who has received the necessary training and certification for award of the joint fires observer's additional skill identifier. A joint fires observer is not a certified JTAC. However a joint fires observer provides targeting information for the JTAC's or certified forward air controller (airborne)'s terminal control of Types 2 and 3 close air support when either of the following applies—

- The JTAC is not in a position to see the target or the aircraft at weapons release.
- When attacking aircraft are not in a position to acquire the mark or target before releasing or launching their weapons.

3-24. There is no command or support relationship between the JTAC and the joint fires observer unless ordered by the maneuver commander. However, the joint fires observer will not be able to prosecute close air support targets without coordination with the JTAC and/or the Air Force air support operations center.

When a JTAC is unavailable and the tactical risk mandates, an unqualified controller may be used. The joint fires observer will be able to facilitate emergency close air support.

FIRE SUPPORT TABLES FOR OBSERVERS

3-25. Fire support team, combat observation and lasing team, and observer tasks are included in the fire support tables found in TC 3-09.8—

- The Artillery Skills Proficiency Test (ASPT) evaluates the fire support team or combat observation and lasing team member's ability to execute selected fire support related skills. The ASPT provides the brigade fire support officer and maneuver battalion or cavalry squadron commanders a means to evaluate the team member's basic proficiency before participating in LFXs. The ASPT is useful as a guide for identifying team strengths and weaknesses. The unit commander, master gunner, and senior fire support NCO should use ASPT results when structuring the unit's annual gunnery training program. Assessment of all personnel assigned to a fire support team, combat observation and lasing team, or as an observer occurs using the ASPT; Fire support personnel are required to pass the ASPT prior to fire support team or combat observation and lasing team qualification.
- Fire Support Table I includes the basic individual tasks that members of fire support teams and combat observation and lasing teams must master before proceeding to team-level tasks. Once individuals have demonstrated proficiency in the basic skills required to set up and operate the equipment by successfully completing the artillery skills proficiency test, they use those skills to perform the basic tasks listed in Fire Support Table I. Training and evaluation for these crawl-level tasks should occur during weekly unit/team training. A written examination is also used as a diagnostic tool. Sample questions are available on the Fires Knowledge Network, Master Gunner Site for the commander's use in developing an examination.
- Fire Support Table II includes the collective tasks required to occupy a new position and establish fire support operations. Selecting and occupying the observation post and positioning the fire support vehicle in the maneuver formation are critical tasks that share many of the same requirements. The changing face of the operating environment may have an impact on the use and importance of static observation posts, but the tactical consideration in selecting and occupying an observation post also applies to the physical location of the observer in a tactical formation. This training should be included as a situational training exercise (STX) in a field environment.
- Fire Support Table IV includes tasks required for conduct fire missions by fire support teams, combat observation and lasing teams and observer teams. These include requesting and adjusting area fire (voice and digital), registration, and fire for effect. Conducting Fire Support Table IV also includes performing joint fires observer tasks as part of sustainment training to maintain certification. Assess and train these tasks using available simulation such as the Call for Fire Trainer, simulations, or Training Set Fire Support Observation. Simulations provide an opportunity to plan and conduct missions with munitions that may not be live fire because of safety limitations. Train these tasks using all assigned tactical communications, digital entry devices, and day and night vision devices. When training is complete, dismounted observers move to Fire Support Table VI.
- Fire Support Table V trains the mounted fire support team or combat observation and lasing team to integrate indirect and direct fires while on the move. Conducting both Fire Support Table V (practice) and Fire Support Table VI (live fire, day and night) together over a two-day period significantly reduces orientation and setup time. Table V is applicable only for the mounted FIST or COLT and includes as a prerequisite, the requirement to participate in and satisfy the requirements of the individual and crew gunner training for stabilized or unstabilized platforms as described in FM 3-20.21, or FM 3-22.3. The brigade fire support officer or master gunner in the armor or Stryker brigade combat team should maintain the training status of all FISTs and COLTS and record their participation in the BCT gunnery training programs. Each FIST/COLT must maintain qualification on their assigned vehicle-mounted direct fire system as a gate to proceed to combined direct and indirect fire qualification.

• Fire Support Table VI is the qualification table for all FISTs and COLTS in an LFX. The collective tasks in Fire Support Tables II and IV are those evaluated for qualification. Because of the resources required for conducting an artillery LFX it is not feasible to qualify every assigned observer on every type of mission essential task related fire mission or to conducting live fire training for the sole purpose of FIST or COLT qualification. The evaluation of FISTs and COLTs evaluation should take occur as part of multiechelon training during fires battalion platoon and battery training and qualification and during mortar LFXs. The maneuver battalion or cavalry squadron commander (FSCOORD if so directed by the BCT commander) must certify that all assigned FISTs and COLTS are qualified to safely call for and adjust indirect fires. The commander may base his recommendation for certification on the cumulative results of performance during execution of the tasks in Fire Support Tables, I, II and IV for dismounted observers, and on the results of performance during execution of Fire Support Tables I, II, IV, and VI for mounted observers.

CATS TASKS FOR MANEUVER BATTALION, BRIGADE SPECIAL TROOPS BATTALION, AND CAVALRY SQUADRON

3-26. Tables B-2 (Appendix B) provides a summary of Fire support CATS tasks for the BCT's subordinate maneuver battalions, brigade special troops battalion, and cavalry squadron. The CATS should always be consulted to determine the current tasks.

Chapter 4

Training for the BCT's Organic Fires Battalion

This chapter is devoted to training for the brigade combat team's (BCT) organic fires battalion. Section I begins this chapter with a discussion of the training role of the fires battalion commander. Section II describes training for the fires battalion command post (CP) and fire direction center (FDC). Section III describes training for the fires battalion's target acquisition platoon, including its meteorology, survey, and radar sections. Section IV describes training for fires battalion firing batteries, and Section V describes collective field artillery gunnery training. Section VI concludes the chapter with a discussion of fire support training for the fires battalion's forward support company.

SECTION I – THE TRAINING ROLE OF THE FIRES BATTALION COMMANDER

4-1. The fires battalion commander executes a number of critical tasks. He controls all the tactical, sustainment, administrative, and training activities of the fires battalion and directs its employment in accordance with assigned and implied missions. In addition, as the BCT fire support coordinator (FSCOORD) he assists the BCT commander with personnel management and leader development for field artillery Soldiers and leaders within the BCT.

4-2. The fires battalion commander is uniquely aware of professional development needs and timelines for artillerymen; he is able to advise the BCT commander on the assignment of field artillery Soldiers to various developmental jobs. Selected by a Department of the Army (DA) review board, he has experience from a number of previous fire support assignments at battalion and battery level and likely has staff experience at brigade or higher level as well.

4-3. The fires battalion commander is not simply a peer battalion commander within the brigade, but one with a special skill set; he is an expert in Army indirect fires integration and coordination. He brings assets and skill sets to the command that help facilitate fire support training throughout the BCT.

SECTION II – TRAINING FOR THE FIRES BATTALION COMMAND POST AND FIRE DIRECTION CENTER

QUESTIONS FOR THE BCT COMMANDER

4-4. Questions for BCT commanders to consider themselves and to ask of the fires battalion commander and staff regarding fire support training include those listed below. <u>The list is intended to stimulate</u> <u>thinking: it is not all inclusive and answers to the questions are not necessarily included within the text of</u> <u>this training circular</u>.

- What influence do you have on the assignment of fire support personnel throughout the BCT (duties and organization)?
- When was the last time FDC personnel trained digitally with observers?
- Have you practiced sensor to shooter links with all sections in the battalion?
- What is the digital sustainment training plan?
- Are there equipment shortages or deficiencies which prevent digital communication?
- For composite battalion batteries, are all the gun crews certified on both issued cannon systems? Are FDC personnel certified on the FDC procedures for both cannon systems?

- When was the last time your firing battery gun crews participated in a live fire event?
- Are all firing battery gun crews at full strength? Do you have a plan to operate at reduced manning levels?
- Are there enough lieutenants to serve as fire direction officers?
- Do any of the officers act concurrently as fire direction officer and cannon platoon leader?

TRAINING EMPHASIS FOR THE FIRES BATTALION COMMAND POST AND FIRE DIRECTION CENTER

4-5. The fires battalion's headquarters and headquarters battery (HHB) consists of a battery headquarters, battalion command section, S-1, operations and intelligence platoon, communications platoon, S-4, medical platoon, unit ministry team, and a target acquisition platoon. The HHB provides communications support, and mission command for the fires battalion and subordinate, reinforcing, or attached units. The intelligence section with target processing capability, target acquisition platoon, access to tactical unmanned aerial systems for target acquisition, and battle damage assessment constitute a highly lethal reconnaissance-strike capability. The brigade support battalion/forward support company contains all maintenance capability and provides maintenance support, as required.

FIRES BATTALION COMMAND POST

4-6. Mission command facilities for the fires battalion include the battalion command post and two to four subordinate operations centers. The fires battalion CP is comprised of the S-1, S-2, S-3, S-4, S-6, FDC, aid station, elements of the forward support company (brigade support battalion for the Stryker brigade combat team [SBCT]), and the target processing element. Training emphasis for the fires battalion CP should be on the ability to execute the following overarching tasks—

- Army tactical task (ART) 5.1 Execute the Operations Process. This task includes acquiring and sustaining the capability to execute the major mission command activities performed during operations: planning, preparing, executing, and continuously assessing fires battalion operations. See Field Manual (FM) 5-0.
- ART 5.2 Conduct Command Post Operations. This task includes acquiring and sustaining the capability to organize, create or erect, operate, and move the principal facility used by the commander to exercise mission command of fires battalion operations.
- ART 3.1 Decide Surface Targets. This task includes analyzing the situation relative to the mission, objectives, and capabilities of the fires battalion and its ability to support BCT operations with indirect fire. It includes identifying and nominating specific vulnerabilities of the threat and assisting the BCT fires and intelligence cells to identify high-value targets and high-payoff targets that, if attacked with indirect fires from the fires battalion, will accomplish the BCT commander's intent for fires. FM 3-60) and FM 3-09 provide detail.
- ART 6.1.8 Plan Rocket, Artillery, and Mortar Defense. This task includes planning and coordination to protect operational forces and forward operating bases from rocket, artillery, and mortar attack by direct defense and by destroying the enemy's rocket, artillery, and mortar capability. This also includes determining essential requirements to achieve mission accomplishment using rocket, artillery, and mortar defense weapons in a defensive role to deny, sense, warn, intercept, shape, respond, and protect. Rocket, artillery, and mortar defense operations include all forces and activities that support active defense, passive defense, and counterfire operations. See ATP 3-01.60.
- ART 6.1.9 Conduct Rocket, Artillery, and Mortar Defense. This task includes defending an assigned asset, friendly forces, and infrastructure against rocket, artillery, and mortar attack, and conducting rocket artillery and mortar defense to negate such attacks. Rocket, artillery, and mortar defenses destroy attacking enemy rocket artillery and mortars, to nullify or reduce the effectiveness of such attacks. This task also includes detection, discrimination, and tracking of in-flight rockets, artillery, and mortars to support cueing and handoff of targets for engagements and to provide attack warning to Soldiers using available sensors. See ATP 3-01.60, *Counter Rocket, Artillery, and Mortar Operations*.

FIRES BATTALION FIRE DIRECTION CENTER

4-7. The battalion FDC trains to acquire and sustain proficiency (see FM 6-40 and TC 3-09.8) in providing tactical fire planning and fire control through automated information systems with manual backup and communications equipment. Training emphasis for the fires battalion FDC should be on the individual and collective tasks required to—

- Manage the battalion fire direction and fires coordination networks (voice and data).
- Schedule fires units for preplanned fires in coordination with the operations staff officer (S-3), brigade fire support officer, battalion fire support officers, and reinforcing/reinforced units, as required. FM 6-20-40 and FM 6-20-50 provide detail.
- Review the BCT commander's attack guidance and ensure it is applied to fire mission requests.
- Verify battalion elements have the proper guidance and attack criteria entered into digital systems for both current and planned operations, to include fires cells. This will require close coordination with the supported higher headquarters fires cell.
- Execute preplanned fires by fires cells, observers, and reinforced units, as requested.
- Coordinate fire mission processing procedures (data and voice) with fires cells, reinforced/reinforcing units, and targeting/intelligence assets, as required. This may include digital fire mission routing and Advanced Field Artillery Tactical Data System (AFATDS) intervention rules. See technical manuals (TM) 11-7025-297-10-1 through -4.
- Respond to immediate fire requests in the priority established by the BCT commander's attack criteria.
- Confirm the battalion meets the five requirements for accurate predicted fires. See FM 3-09.21 and FM 6-40—
 - Accurate target location and size. See FM 3-09.12.
 - Accurate firing unit locations.
 - Updated weapon and ammunition information.
 - Valid meteorological information. See FM 3-09.15.
 - Accurate computational procedures.
- Determine registration requirements in coordination with the S-3. For detail, see ATP 3-09.30.
- Provide technical fire direction assistance to battery/platoon FDC, as required.
- Coordinate for technical fire direction in case of catastrophic loss of the technical fire direction capability of battery/platoon FDCs.
- Verify that fire missions comply with current fire support coordination measures and rules of engagement. See FM 3-09.
- Assist the S-3 in monitoring ammunition expenditures, to include ammunition lot management, and recommending changes to attack criteria or other tactical fire direction guidance, as required.
- Conduct mutual support unit operations, as required.
- Establish standard procedures for FDC operations in degraded mode.
- Disseminate the BCT commander's guidance for employment of precision munitions (for example Excalibur or precision guidance kit).

CATS TASKS FOR THE FIRES BATTALION COMMAND POST AND FIRE DIRECTION CENTER

4-8. Tables C-1 (Appendix C) provides a summary of Combined Arms Training Strategy (CATS) tasks for the fires battalion command post and fire direction center. The CATS should always be consulted to determine the current tasks.

SECTION III – TRAINING FOR THE FIRES BATTALION TARGET ACQUISITION PLATOON

TRAINING EMPHASIS FOR THE FIRES BATTALION TARGET ACQUISITION PLATOON

4-9. Emphasis for training the fires battalion target acquisition platoon includes attaining and sustaining the ability to execute the following overarching tasks—

- ART 3.2 Detect and Locate Surface Targets. This task includes perceiving objects of military interest (possible targets) and determining the location of targets on the battlefield. Description of target location normally includes grid coordinates and altitude. See FM 3-09.12.
- ART 3.3.3 Conduct Survey Operations in Support of Fires. This task includes use of mechanical or electronic systems to determine dimensional relationships—such as locations, horizontal distances, elevations, directions, and angles—on the earth's surface. See FM 6-2.
- ART 3.3.4 Perform Meteorological Operations in Support of Fires Systems. This task includes using meteorological measuring instruments to determine necessary adjustments to individual weapon firing tables to increase the chances for first round hits, conserve ammunition, achieve surprise, and reduce chances for fratricide. Field artillery meteorological operations involve the determination of current atmospheric conditions. Atmospheric conditions along the trajectory of a projectile or rocket directly affect its accuracy and may cause the projectile or rocket to miss the desired point of impact. See FM 3-09.15.

4-10. The fires battalion HHB's target acquisition platoon provides the fires battalion and the supported higher headquarters with the capability to acquire threat mortar, artillery, and rocket systems, and provide target intelligence and information. See FM 3-09.12.

4-11. This provides the fires battalion an organic counterfire mission processing capability. The target acquisition platoon also adjusts and registers fires with its organic radars. The target acquisition platoon is organized with a platoon headquarters, a Q-36 radar section, and Q-48-50 series lightweight countermortar radars. In addition, the armor and Stryker BCT fires battalions have a Q-37 radar section. The target acquisition platoon also has both a meteorological section and a survey section; the meteorological section provides meteorological data (see FM 3-09.15/MCWP 3-16.5) and the survey section provides survey support (see FM 6-2) to the fires battalion and other units, as required and as time permits.

4-12. Training emphasis for the target acquisition platoon should be on acquiring and sustaining the capability to perform ART 3.2 Detect and Locate Surface Targets. This task includes perceiving an object of possible military interest (detect) and determining the placement of a target on the battlefield (locate). Describing a target location usually involves a six or more digit grid coordinate and an altitude.

Note. The BCT's intelligence cell contributes to the task by training to acquire and sustain the capability to perform ART 2.4.1 Provide Intelligence Support to Targeting (see the discussion for the BCT Intelligence Cell in Chapter 2). Intelligence reparation of the battlefield (IPB) drives intelligence collection and surveillance and reconnaissance planning. These activities support the "detect" function of the targeting process. The detect function is challenging. For example, massed persistent intelligence collection, surveillance, reconnaissance, and target acquisition cued to a powerful decentralized all-source intelligence apparatus [such as Distributed Common Ground System (Army)] may be needed to find moving elusive targets or low contrast enemy targets adept at avoiding detection amidst civilian clutter. FM 3-60 and FM 2-01.3 provide detail.

TRAINING TASKS FOR THE FIRES BATTALION TARGET ACQUISITION PLATOON

METEOROLOGY SECTION TRAINING TASKS

4-13. The target acquisition platoon's meteorological section must acquire and maintain proficiency in those tasks required to perform meteorological operations in support of fire support systems (ART 3.3.4). This includes the ability to use meteorological measuring instruments to determine necessary adjustments to individual weapon firing tables to increase the changes for first round hits, conserve ammunition, achieve surprise, and reduce chances for fratricide. Field artillery meteorological operations involve the determination of current atmospheric conditions, including those along the trajectory of a projectile or rocket that may directly affect its accuracy and may cause the projectile or rocket to miss the desired point of impact.

SURVEY SECTION TRAINING TASKS

4-14. The target acquisition platoon's survey section must acquire and maintain proficiency in conducting survey operations in support of fire support systems (ART 3.3.3). This includes those individual and collective tasks required to use mechanical or electronic systems necessary to determine dimensional relationships, such as locations, horizontal distances, elevations, directions, and angles on the earth's surface.

SURVEY AND METEOROLOGY SECTION TABLES

4-15. The survey and meteorology tables found in TC 3-09.8 provide a standardized tabular format of training and evaluating survey and meteorology sections. These task based tables include individual and collective tasks from the Digital Training Management System. The tables may be integrated into a live fire exercise (LFX) or conducted as standalone evaluated situational training exercises (STX)—

- The Artillery Skills Proficiency Test for Survey and Meteorology Sections evaluates the survey or meteorology crewmember's proficiency to execute selected survey and meteorological skills before he participates in a live fire exercise. It can also be a useful guide for identifying section strengths and weaknesses. The artillery skills proficiency test (ASPT) provides a means to assess all personnel assigned to a survey or meteorology section (regardless of military occupational specialty or grade). The unit commander, master gunner, and survey and meteorology section leaders can use ASPT results when structuring the section's training program.
- Survey and Meteorology Table I includes basic individual tasks that members of the survey or meteorology section must master before proceeding to Survey and Meteorology Table II. Executing these tasks requires an understanding of all survey and meteorological terms and a working knowledge of how the survey or meteorology section supports the overall fires battalion mission. Executing Survey and Meteorology Table I tasks requires using the sections' assigned equipment.
- Survey and Meteorology Table II includes tasks required to occupy a new position and establish survey or meteorology operations. Proficiency in these tasks is required before moving on to subsequent tables. Survey and Meteorology Table II task training normally occurs as an STX in a field environment. At fires battalion level detailed standing operating procedures are required for seamless integration of survey and meteorology data into unit operations. Such data includes priority of survey, level of survey needed, link-up points/times, unit movements, hot times for survey support, gun and target locations, meteorology message times, type of meteorology messages requested, and Navy Operational Global Atmospheric Prediction System availability for meteorology support. The fires battalion must also synchronize survey and meteorology section operations with unit battle rhythm.
- Survey and Meteorology Table III includes tasks required for survey and meteorology planning/coordination within the military decisionmaking process of the BCT (or other fires battalion supported unit). Proficiency in these tasks requires survey and meteorology section

personnel to know and understand the use of doctrinal terms needed to develop the survey and meteorology tabs associated with the fires annex of the BCT operation plan/operation order (OPLAN/OPORD). Assessing the capability of the survey and meteorology sections develop these tabs requires the participation of a portion of the BCT command post (applicable elements of fires and intelligence cells) in a training event or exercise.

- Survey and Meteorology Table IV includes tasks associated with performing survey and meteorological missions (for example establishing an azimuth by simultaneous observation, using the Improved Position and Azimuth Determining System to extend survey control, providing meteorological support, displacing the meteorology section). Training these tasks requires using all assigned tactical equipment and conducted during usual and unusual conditions for all survey and meteorology crewmembers assigned to the section. Evaluations conducted using this table should replicate, as closely as possible, the same training conditions as Survey and Meteorology Table VI (live fire evaluation).
- Survey and Meteorology Table V is for the training and certification of survey and meteorology sections as a gate to qualification in Survey and Meteorology Table VI. For detail on individual and crewmember training on assigned equipment platforms. See FM 3-09.21, FM 3-09.15, and FM 6-2. The unit master gunner is responsible maintaining the training status of all survey and meteorology crewmembers including their record of participation in BCT training programs. To reduce orientation and setup time, schedule Survey and Meteorology Table V (training and certification) and Table VI (qualification) (day and night) to occur together over a two to three day period.
- Survey and Meteorology Table VI is the qualification table for survey and meteorology sections, culminates in an LFX. Section qualification requires the participation of the supported unit's commander and staff and the use of external evaluators. This run level event for survey and meteorological section qualification must include a combination of tasks trained in Survey and Meteorology Tables II through V to demonstrate the capability of the section to establish operations, conduct survey and meteorology planning and coordination, and perform survey and meteorology missions. Section evaluations using Survey and Meteorology Table VI can be conducted as multichelon training during fires battalion platoon and battery training and qualification usually occurs during a scenario-driven training event using a master scenario events list to provide cues and responses. Upon successful completion of Survey and Meteorology Table VI (live fire), the commander may assess the survey and meteorology sections as qualified.

RADAR SECTION TABLES

4-16. Radar section tables (see TC 3-09.8) provide a progressive, gated approach to training to assist commanders in the assessment of training. They provide the means and tasks for "crawl," "walk," "run," training for the radar section chief to use during sergeant's training time (STT) as refresher training, or as a prelude to the evaluation of training.

ARTILLERY SKILLS PROFICIENCY TEST FOR RADAR SECTIONS

Radar SectionTables

4-17. The radar section tables found in TC 3-09.8 provide a standardized tabular format for training and evaluating radar sections. They include both individual and collective tasks from STPs and CATSs, as well as equipment-specific tasks from system TMs. The unit counterfire NCO and master gunner must ensure that the radar training program evaluates, certifies, and qualifies radar sections—

• The Artillery Skills Proficiency Test for Radar Sections evaluates the radar section member's ability to execute selected crew skills prior to LFXs. The ASPT is useful for identifying section strengths and weaknesses. The commander, master gunner, and radar section leader use the results of the evaluation to help structure the unit's annual gunner training program. Section

members are required to pass the artillery skills proficiency test prior to radar section qualification.

- Radar Tables IA and IB include the individual tasks and skills and common tasks for both the AN/TPQ-36 and AN/TPQ-37 sections that all Soldiers must master in order to survive on the battlefield. Training these tasks usually occurs during STT; they are the basic building blocks for radar section training. Evaluation of the Soldier on Radar Table 1A tasks is a routine part of STT and can be evaluated by senior 13Rs (Staff Sergeant or Sergeant First Class) as a gate prior to all other tables.
- **Radar Table II** consists of the skills needed to be proficient on the lightweight countermortar radar and for crewmembers to understand site requirements for correct emplacement of the radar system. Lightweight countermortar radar, operators must be certified if they are to operate the radar successfully. Certification training normally occurs during STT or during a field training exercise (FTX). Individual training takes place at the company and battalion level. The BCT counterfire NCO, assisted by the master gunner, manages and supervises the training.
- **Radar Table III** includes the collective and supporting individual tasks required to emplace and prepare radar equipment for operations, occupy a radar site, reconnoiter a radar position, and march order radar equipment. It can also include tasks based on unit tactical standing operating procedures such as precombat checks and inspections, preparing load plans, preventive maintenance checks, and certification of drivers. Training for these tasks normally occurs in conjunction with training for other elements of the unit during field training exercises, situational training exercises, or during team training.
- **Radar Table IV** includes the collective and supporting individual tasks associated with radar operations such as performing unit maintenance on radar equipment, observing friendly indirect fires, and using the radar to perform surveillance and locate targets. Training these tasks normally occurs in conjunction with training for other elements of the unit during an FTX, STX, or during team training. For detail, see TM 11-5840-355-10 and TM 11-5840-380-10.
- **Radar Table V** is for certification of radar sections to conduct core combat tasks for locating targets in both the hostile and friendly fire modes of operation. These tasks can be conducted in coordination with other elements of the unit during a CALFEX, command field exercise (CFX) or FTX. Radar Table V is identical to Radar Table VI. The embedded training capability on the radar is a useful gage to evaluate training prior to live fire evaluation during Radar Table VI. Certification is required semi-annually for active component radar sections and annually for Army National Guard radar sections.
- **Radar Table VI** is for qualification of radar sections to conduct core combat tasks required for locating targets in both the hostile and friendly fire modes of radar operation during artillery and/or mortar live fire. Radar Table VI training normally occurs in conjunction with a lane training exercises (LTX) or occurs as a standalone evaluated STX. The qualification table for all radar sections is an LFX. Evaluation includes the tasks in Radar Tables II through IV. The commander may base his recommendation for qualification on cumulative performance during execution of Radar Tables II through IV. Qualification is required semi-annually for active component radar sections and annually for Army National Guard radar sections.

CATS TASKS FOR THE FIRES BATTALION TARGET ACQUISITION PLATOON

4-18. Tables C-2 (Appendix C) provides a summary of CATS tasks for the fires battalion target acquisition platoon. The CATS should always be consulted to determine the current tasks.

SECTION IV – TRAINING FOR FIRES BATTALION FIRING BATTERIES

QUESTIONS FOR THE BCT COMMANDER

4-19. Questions for BCT commanders to consider themselves and to ask of the fires battalion commander and staff and of the fires battalion's subordinate battery commanders regarding fire direction include those listed below. *The list is intended to stimulate thinking: it is not all inclusive and answers to the questions are not necessarily included within the text of this training circular*—

- What are the greatest manning challenges for the fire direction systems within your unit?
- What supervisory staffing positions are required in the FDC?
- How does the FDC live-fire qualify? When was the last time it did so?
- How well are operators able to interface with other digital systems to execute fire planning/missions?
- What personnel are filling the various positions in the FDC and are they MOS qualified?
- Is your unit using the latest version of Army Battle Command System and AFATDS software?
- What challenges do new operators have with existing systems in your FDC?
- How adequate is the experience level of your operators with the various shell/fuze combinations to effectively fire missions in theater?
- Are your FDCs training on manual gunnery and do they have the necessary manual equipment?

TRAINING EMPHASIS FOR FIRES BATTALION FIRING BATTERIES

4-20. Emphasis for training fires battalion firing batteries includes attaining and sustaining the ability to execute the following overarching tasks—

- ART 3.3.1 Conduct Fires. This task includes using fires systems against troops, fortifications, materiel, or facilities.
- ART 3.3.1.1 Conduct Surface-to-Surface Attack. This task includes using ground-based, indirect fire weapon systems to destroy, suppress, or neutralize enemy equipment (including aircraft on the ground, materiel, personnel, fortifications, and facilities). For detail, see FM 6-50, and FM 3-09.70.
- **ART 3.3.2 Provide Illumination.** This task includes providing friendly forces scheduled or oncall illumination fires to support night operations or harass the enemy.
- ART 1.8 Employ Obscurants. This task includes using obscurants to conceal friendly positions and screen maneuvering forces from enemy observation. An obscurant is a chemical agent that decreases the level of energy available for the functions of seekers, trackers, and vision enhancement devices. The Appendices A of FM 6-20-40 and FM 6-20-50 provide detail on field artillery delivered obscurants and their employment.
- ART 3.3.5 Conduct Suppression of Enemy Air Defenses. This task includes neutralizing, destroying, or temporarily degrading surface-based enemy tactical air defenses by destructive and disruptive means.
- ART 6.1.9 Conduct Rocket, Artillery and Mortar Defense. This task includes defending an assigned asset, friendly forces, or infrastructure against rocket, artillery, and mortar attacks; conducting rocket, artillery, and mortar defense to mitigate such attacks; and destroying enemy capability to conduct such attacks or reducing the effectiveness of such attacks. Such actions are conducted per the rules of engagement and in such a way as to minimize collateral damage and reduce probability of casualties within adjacent populated areas. This task also includes detection, discrimination, and tracking of in-flight rocket, artillery, and mortars to support cueing and handoff of targets for engagements; and providing attack warning to the Soldier using available sensors.

FOCUS ON COMBINED ARMS

4-21. Nonstandard missions do degrade artillery skills for lack of practice and loss of time on the equipment used to deliver fires. Without knowing the details of the next deployment, artillery skills and Deliver Fires tasks should receive priority for training, starting at section level and working toward collective platoon tasks. Section certification should lead to platoon FTXs and LFXs in time, but one of the weaknesses in this program is the capacity to spread LFXs across the fire support population in the BCT. Fire support teams are fully employed by the maneuver battalions and synchronizing efforts to get forward observers "on the hill" observing field artillery and mortar fires will not always be successful. It is useful for BCT combat observation and lasing teams (COLT) (see Chapter 2) and nonfiring military occupational specialty leaders to rotate as needed for refresher training in observation post duties.

4-22. By the time the maneuver elements start collective LFX lane training, the fires battalion firing platoons should also be achieving a level of proficiency sufficient to begin supporting maneuver lanes with supporting field artillery fires. Deliver Fires tasks should remain the priority effort through the BCT collective training phase, though each platoon should also run through maneuver-centric lanes that culminate in platoon assault LFXs. The BCT mission rehearsal exercise (MRE) at the combat training center should find the fires battalion executing both "deliver field artillery fires" and "maneuver" tasks; and responsible for controlling terrain and populations. At one point during the MRE, one field artillery firing platoon can be providing fires for its sister platoon conducting a movement to contact LFX. The training situation can be a realistic training preamble to a similar scenario executed operationally during a combined ground maneuver and fire support or combined air assault artillery and maneuver raid during the deployment; both conducted simultaneously by the same battery.

4-23. The primary reason the fires battalion will ultimately be able to deliver fires and conduct maneuver operations simultaneously is due to adherence to the fires battalion's own certification standards. Every six months, or if key members of a firing section change positions, the firing section should be retrained and re-certified under the guidance of the platoon leadership and fires battalion master gunner. The command sergeant major and battery first sergeants must remain unyielding in upholding and maintaining the standards set forth in the fires battalion standing operating procedures. Operational synchronization meetings during the deployment can place certification windows on the training calendar well in advance to allow management of training and synchronization with operations. Modifications to training schedules and testing windows should be flexible enough to allow the fires battalion and battery commanders the latitude required for operational reasons, but no firing section outside of its certification window should ever deliver fires unless adequate training, testing, and certification occurs first. This process applies to all elements of the gunnery team under training control of the fires battalion- FDCs, howitzer sections, and those maneuver unit elements designated by the BCT/battalion commander such as COLTs, fire support teams (FIST), and mortars. Not every firing section chief will be able to maintain currency. Some will fail to train and certify a section to standard. The fires battalion training system must allow junior leaders eager to assume greater responsibility to take over those sections, train them, test them, and then to certify them. Whenever operationally feasible, live fire training should culminate the certification process. However, this is obviously dependent upon mission, enemy, troops and support available, terrain and weather, time available, civil considerations (METT-TC).

4-24. When determining a training outline, firing sections should conduct certification training and firing platoons should attain a level of proficiency ahead of maneuver elements. This facilitates incorporating field artillery fires into the maneuver training LFX plan. Synchronizing fire support training with maneuver training reduces risk during actual operations and serves to instill maneuver confidence in the fires battalion's ability to deliver timely, accurate, and devastating fires.

4-25. Observer and mortar training integrated with fires battalion training will likely remain a challenge. Commanders must together determine the best solutions, while maximizing opportunities to combine fires and maneuver training in order to increase the proficiency of combined arms teams. Field artillery training standards must be adhered to while leveraging the experience gained through training repetition in order provide with timely, accurate, all weather Army indirect fires in support of BCT operations.

FIRE DIRECTION CENTER/BATTERY OPERATIONS CENTER/PLATOON OPERATIONS CENTER

4-26. The FDC provides battle command for the firing platoon. The platoon is equipped with the AFATDS computer as the primary digital interface between the battalion command post and the howitzers. In a platoon-based firing battery, the requirement for functional mission command exists at both platoon and battery levels. In the firing platoon, the platoon operations center (POC) meets this requirement. The POC is nothing more than the FDC with added operational responsibilities. The POC is not a separate element and does not require a separate vehicle. Two of the functions of the POC are technical and tactical fire direction, the traditional functions of the FDC. Additional functions of the POC are executing orders from higher headquarters, coordinating sustainment, and all the other operational functions normally performed by a headquarters. See special text (ST) 6-50-20.

Note. The use of FDCs versus POCs is dependent upon the organizational structure and positioning options. Unless specified otherwise FDCs and POCs are used interchangeably in this document.

4-27. Training emphasis for the FDC/battery operations center (BOC)/POC should be on attaining and maintaining proficiency in three very critical functions of the section—

- To ensure that the solution to the gunnery problem is accurate, timely, and satisfies the requirements of the BCT or other supported force for fires.
- To ensure the safety of the data fired by eliminating human error from the gunnery problem.
- To act as the tactical operations center for the battery or platoon.

4-28. Gunnery training tasks for the FDC/BOC/POC are included in the ASPT and fire direction tables found in TC 3-09.8. See the discussion on fire direction tables later in this chapter.

TRAINING CONSIDERATIONS FOR A COMPOSITE FIRES BATTALION

4-29. The BCT's organic fires battalion includes either two firing batteries (16 guns total) or three firing batteries (18 guns total). Some fires battalions; either prior to deployment or while in theater, have been formed into composite cannon fires battalions that field a mix of 105-mm and 155-mm howitzers. This is typically done either to provide a 105-mm battalion with the additional range and munitions capability of a 155-mm howitzer firing platoon or a 155-mm fires battalion with a 105-mm firing platoon's increased air mobility capability. The number of additional howitzers provided varies as does the amount of additional support such as cannon crew and FDC personnel, leadership, communications, computers, security, ammunition management, and maintenance provided.

4-30. Units receiving additional howitzers without personnel have responded by reducing the size of the howitzer crew below that authorized by the table of organization and equipment (TOE) in order to man the additional guns. Similar reallocations occur in the FDCs. Additional training on the new howitzer is necessary to achieve proficiency certification for both crews and FDCs. The additional firing platoons typically consist of only two guns rather than the three or four guns per platoon found in TOE organizations. For example, a Stryker fires battalion may receive four 105-mm howitzers to form two new two-gun platoons. The commander may reduce the size of the crews on the 155-mm howitzers to form and man two additional two-gun platoons with M119A2 105-mm towed howitzers (for a total of eight firing platoons in the fires battalion). Training and manning considerations for the composite battalion include—

- **Cannon Crewmembers.** Reducing the number of crewmembers in each cannon crew can provide enough crewmembers for each gun at the cost of possibly slower responsiveness and increased training burden for two cannon systems. Carefully managing personnel considerations such a leaves and professional development enhances facilitates unit performance.
- **Fire Direction Center Personnel.** To man each of the platoon FDC (fire direction officer, E-5/6 fire direction NCO, plus fire direction specialists) requires managing MOS 13D personnel down to the individual Soldier (command sergeant major and first sergeant involvement is useful). Absent additional lieutenants, the fire direction officer may pull double duty as also the firing

platoon leader. Alternatively, a handpicked fire direction certified NCO may be required to act as fire direction officer. This is particularly important where firing platoons may be operating at separate forward operating bases or combat outposts. All must be thoroughly proficient in the fire direction application of meteorology data, target coordinate mensuration, airspace coordination for clearance of fires, and calls for fire from both ground and aerial observers.

Note. Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3505.01A requires individuals who mensurate coordinates used to support the employment of coordinate-seeking weapons require certification by the National Geospatial-Intelligence Agency (NGA), or certification by an NGA-accredited Service, combatant command or Combat Support Agency program. This is in order to maintain the integrity and reliability of (1) coordinate data in targeting databases, (2) products generated using mensurated coordinates, and (3) coordinate data used to support employment of global positioning system coordinate seeking weapons.

4-31. Fires battalions in theater have also formed additional firing platoons to provide field artillery fire support over an extended area of operations by reducing the number of howitzers in each firing platoon. The additional firing platoons typically consist of only two guns rather than three or four guns per platoon found in TOE organizations. These additional firing platoons encounter many of the same issues noted for a composite cannon fires battalion.

GUNNERY TRAINING TASKS FOR FIRES BATTALION FIRING BATTERIES

HOWITZER SECTION TABLES

4-32. Howitzer section tables found in TC 3-09.8 provides a methodology for training and evaluating individuals and crew/section; tasks required to safely emplace, prepare for firing, fire, and displace all cannon systems in the armor, infantry, and Stryker BCTs. The howitzer tables provide the means and tasks for crawl-walk-run training for the howitzer section chief to use during STT either for refresher training or as a prelude to the evaluation of training. They provide a standardized, tabular format with which to train and evaluate howitzer section tasks. They include both individual and collective tasks from STPs and CATSs as well as equipment-specific tasks from system TMs—

- The Artillery Skills Proficiency Test for Howitzer Sections evaluates the individual howitzer section member's ability to execute selected crew skills; it is useful for assessing section strengths and weaknesses. The commander, master gunner, and battery leaders should use artillery skills proficiency test results when structuring the unit's annual gunnery training program. All howitzer/crew section personnel and any personnel assigned to a howitzer section (regardless of military occupational specialty) will be administered the ASPT. Section members are required to pass the ASPT prior to howitzer section qualification.
- Howitzer Table I contains critical individual tasks and knowledge required to safely operate and fire the howitzer. Proficiency in executing these tasks is required before proceeding to the collective tasks in Howitzer Tables II through VI. Howitzer Table I tasks are the minimum requirement for a certified/qualified crew and will be performed using the organization's assigned weapons system. Soldiers will perform skill-level tasks appropriate for their respective duty positions. For more on howitzer section individual and leader skills see applicable operator level FMs and TMs described in TC 3-09.8.
- Howitzer Table II includes basic crew/section level special tasks critical to the performance of special missions (for example field artillery air assault, airborne operations, and air assault artillery raids). Howitzer Table II tasks include rigging procedures for airmobile operations. Specific rigging procedures must comply with unit tactical standing operating procedures and TM 4-48.11. Units organic to infantry and Stryker BCTs must be proficient in these rigging procedures.
- **Howitzer Table III** includes the collective tasks required for a howitzer section and crew to plan, prepare for, and establish operations. This includes occupying a tactical assembly area,

conducting equipment and weapons inspections, and performing section/crew special tasks critical to the unit's ability to perform the overall mission, but which are unique to certain types of units. It also includes the collective tasks required for a howitzer section to perform an occupation during both day and night conditions. Howitzer Table III tasks will be trained as an STX as a gate prior to the abbreviated procedures trained in Howitzer Table IV. They may also be included in the LTX for Tables IV and V.

- Howitzer Table IV consists of tasks required for the howitzer crew and section to conduct indirect and direct fire using the Fire Support Combined Arms Tactical Trainer simulator where available or by using primers to simulate full-service ammunition. It also includes the tasks for the crew to perform as sustainment training to maintain certification. Howitzer Table IV is designed for the howitzer crew and section to conduct their fire mission including any at my command, when ready, time-on-target, or high-angle missions.
- Howitzer Table V includes all collective tasks in Howitzer Tables II through IV. This table is for certification of howitzer crews and sections in a dry-fire exercise. It includes all qualification tasks included in Howitzer Table VI (qualification) and may be performed using the Fire Support Combined Arms Tactical Trainer simulator where available, or using primers to simulate full-service ammunition. The commander must certify that all assigned cannon crews can safely operate and fire the cannon in dry-fire Howitzer Table V before progressing to live-fire Howitzer Table VI.
- Howitzer Table VI is for live-fire qualification of all cannon crews using full-service ammunition; its execution normally occurs during an LFX. Howitzer Table VI includes high angle adjust-fire and fire-for-effect missions, low angle adjust fire missions, and priority target, out of sector, and direct fire missions. Qualification may also be accomplished during a scenario-driven training event using a master scenario events list to provide cues and responses.

FIRE DIRECTION TABLES

4-33. Gunnery training tasks for the FDC/BOC/POC are included in the artillery skills proficiency test and fire direction tables found in TC 3-09.8. The fire direction ASPT and tables provide a progressive crawl-walk-run methodology for training fire direction personnel that supports the events and tasks described in the combined arms training strategies for the armor, infantry and Stryker BCTs (see Appendix C). The ASPT and tables include both individual and section/crew tasks from FM 6-40 and FM 3-09.70—

- The Artillery Skills Proficiency Test for Fire Direction evaluates the ability of fire direction personnel to execute selected fire support-related skills. It provides the unit commander a means to evaluate the section member's basic proficiency prior to live fire exercises. It can be used for identifying strengths and weaknesses and should be used by the commander, master gunner, and battery leaders when structuring the unit's gunnery training program.
- Fire Direction Table I includes individual and section tasks to support routing training of fire direction personnel. The specific tasks to be trained depend on many factors such as the automated fire control system and version software assigned to the organization; the backup system or procedures required (including degraded mode procedures), the type of unit and the unit's tactical standing operating procedures. The evaluation of tasks in Fire Direction Table I is an ongoing process that should routinely be accomplished during STT. Evaluating proficiency on these tasks is part of semiannual (active component) and annual (Army National Guard) testing of fire direction personnel during the commander's safety certification process. The fire direction chief has overall responsibility for safeguarding and administering the written test. Detailed tasks lists may be found in the appropriate TM [for example TMs 11-7025-297-10-1 through -4].
- Fire Direction Table II includes section tasks for establishing fire direction section operations. Specific tasks to be trained and evaluated depend on the automated fire control system and version software assigned to the organization, the backup procedures required (including degraded mode procedures), type of unit and the unit tactical standing operating procedures. Evaluation of the tasks will routinely be accomplished during STT or during an FTX or

command post exercise (CPX). Testing the proficiency of fire direction personnel in executing these tasks should be included as part of the commander's safety certification process.

- Fire Direction Table III includes the core tasks required for the fire direction elements to compute firing data (also known as fire mission processing). Although specific procedures vary according to the type of mission fired, focus is on the ability to compute firing data for all types of fire missions, and on methods of control, adherence to time standards, and computational accuracies. Fire Direction Table II requires response and input from both howitzers and fire direction centers or that from an active simulation tool. The fire direction chief has overall responsibility for administering and conducting training based on Fire Direction Table I through III, and the units full spectrum operations mission essential task list (FSO METL) and tactical standing operating procedures. Training normally occurs during weekly STT, during digital sustainment training, and takes place during field exercises or other opportunity training. The fire direction chief also has overall responsibility for evaluating training and making recommendations to the commander based on his observation of the fire direction section's proficiency. The intent of Fire Direction Table III training is to develop a fire direction section capable of receiving a fire mission, processing it quickly and accurately, sending it to the firing unit, and subsequently processing the mission-fired report.
- Fire Direction Table IV includes the planning and the mission command tasks that the fire direction section (FDC/BOC/POC) must perform. Fire Direction table IV can be evaluated during a CPX, STX, or LFX.
- Fire Direction Table V enables the commander to establish and maintain safety training and certification for his unit's fire direction personnel; it includes individual and collective tasks from all previous tables (ASPT and Tables I through IV). The commander must certify that all assigned fire direction personnel assigned to his unit can safely compute and transmit fire data in Fire Direction Table V (dry fire) before progressing to Fire Direction Table VI (live fire).
- Fire Direction Table VI is a culmination of all the previous tables; it includes individual and collective tasks from all previous tables (ASPT and Tables I through V) and allows fire direction personnel to perform their duties during a live-fire event. During execution of the table, the commander evaluates the fire direction section's (FDC/BOC/POC) ability to perform its wartime mission in a safe, timely, and accurate manner. Upon successful completion of Fire Direction Table VI (live fire), the commander may assess the fire direction section (FDC/BOC/POC) as qualified.

CATS TASKS FOR FIRES BATTALION FIRING BATTERIES

4-34. Tables C-3 (Appendix C) provides a summary of CATS tasks for fires battalion firing batteries. The CATS should always be consulted to determine the current tasks.

SECTION V - COLLECTIVE FIELD ARTILLERY GUNNERY TRAINING

ARTILLERY TABLES

4-35. After completion of section qualification, artillery units must train sections, teams, and leaders to operate together as a platoon to accomplish collective tasks required to deliver timely and accurate fires. Training of the gunnery team at the platoon level is the first echelon that must integrate the various skills and actions of, observers, delivery sections and fire direction, meteorology, survey and radar sections to achieve safe, timely, and accurate indirect fires. The collective field artillery gunnery tables found in TC 3-09.8 provide for progressive training of teams and sections, culminating in the training, certification, and qualification of the platoon—

- Artillery Table VII trains the cannon platoon to conduct reconnaissance, selection, and occupation of position. The training of this task may be conducted as an LTX, platoon STX, or as multiechelon training during a battery or battalion FTX.
- Artillery Table VIII trains the cannon platoon to plan and conduct a tactical move. The ability of the cannon platoon to move about the battlefield while providing continuous fires in support

of maneuver forces is an historic attribute of field artillery. Artillery Table VIII training normally occurs as a standalone STX, LTX, or as multiechelon training during battery level or higher echelon training events.

- Artillery Table IX trains the cannon platoon to occupy a position area and establish a firing capability under all conditions.
- Artillery Tables X through XII are the culminating tables for the platoon and are the first level at which all elements of the artillery unit combine to deliver timely and accurate fire support for the maneuver force. The tasks in the platoon tables are the platoon level tasks required to deliver fires, but must include support from all sections of the unit that contribute to the gunnery solution including survey, meteorological, radar, fire direction, howitzer and observer sections. All supporting elements have been qualified to participate in the platoon training by completing their respective Table VI. All tasks from previous tables are supporting tasks for the platoon tables. The platoon will then train and certify on the fire missions determined by the commander to support the unit mission essential task list. Table XII, Platoon Qualification may be conducted and evaluated as a platoon LFX or as part of a platoon or battery FTX external evaluation.
- Artillery Tables XIII through XV are for battery level training, certification and qualification. Units organized and equipped to operate at the battery level use the identical tasks executed by the platoons in earlier tables. This training normally occurs during battery LFXs, FTXs, or FTXs (external evaluation). The BCT resources and conducts any external evaluations. The fires battalion commander will certify that all leaders have been safety certified within the past six months and that the battery has demonstrated proficiency on all mission essential task list-related gunnery tasks. He must also certify that all supporting sections (survey, meteorology, radar sections, and observer teams) have qualified on their respective Table VI prior to battery live fire.
- Artillery Tables XVI-XVIII are intended for training, certification and qualification of the fires battalion in conducting battalion level fire missions and to mass fires at the battalion level. The foundation for fires battalion level training and certification is the battery/platoon qualification standards as described in earlier tables and the fires battalion commander's informal evaluation of tasks in Artillery Table XVI. Training with battalion gunnery tables can occur as a battalion LFX or FTX. An external evaluation requires division-level support and oversight. Tasks to be trained and evaluated include the tasks described in all previous tables.

COLLECTIVE GUNNERY TRAINING IN SUPPORT OF COMBINED ARMS TRAINING

4-36. The culminating events for gunnery training in the BCTs are fire coordination exercises (FCX) (see TC 71-5) and CALFEXs. Fires battalions assigned to the BCTs are responsible for both resourcing and supporting the CALFEXs. They must ensure that all subordinate elements have qualified (Tables VI and XII) prior to participating in the CALFEX. Rehearsals for the CALFEX may occur as BCT level FCXs using the Call for Fire Trainer as the supporting simulation.

SECTION VI – FIRE SUPPORT TRAINING FOR THE FIRES BATTALION FORWARD SUPPORT COMPANY

TRAINING EMPHASIS FOR THE FIRES BATTALION FORWARD SUPPORT COMPANY

4-37. The fires battalion executive officer is responsible to the fires battalion commander for overwatching sustainment operations and inserting himself where appropriate to ensure sustainment of the fires battalion. The fires battalion staff should train to become adept at—

• Planning sustainment operations, identifying sustainment requirements for fires battalion operations, and providing these requirements to the forward support company and/or brigade support battalion. This includes developing the sustainment annex to the BCT's field artillery

support plan (typically the fires battalion OPLAN/OPORD); including the required and controlled supply rates for Class V. FM 3-09.21 and FM 4-90 provide details.

• Task organizing sustainment assets for centralized or decentralized control depending on METT-TC, personnel strength and experience, availability of equipment and external support, and capability of the battalion staff to supervise additional sections.

4-38. Fires battalion forward support company personnel should train to become adept at the following in support of fires battalion operations (see FM 4-90)—

- Managing the distribution of supplies.
- Supporting retail fuel operations.
- Supporting all Class V operations.
- Providing field maintenance.

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Appendix A

A Summary of CATS Tasks for Fire Support Training at the Brigade Echelon of the BCT

This appendix contains summaries of fire support tasks for the brigade echelon of the brigade combat team (BCT) contained in the Combined Arms Training Strategies (CATS) for the armor, infantry, and Stryker BCTs. The CATS should always be consulted to determine the current tasks.

FIRE SUPPORT CATS TASKS FOR THE BCT

A-1. Fire support training tasks appear in the CATS for the headquarters of the BCTs.

A-2. Table A-1 contains a summary of fire support CATS tasks for the BCTs (for more information and updates go to the Digital Training Management System [DTMS]).

Note. Chapter 2 of this TC provides a summary of fire support tables for the fires cell from Training Circular (TC) 3-09.8.

Task Group	Events Per Year	Purpose
Establish Fire Support Operations	12	To train the Fires Cell on the tasks required to set-up and establish fire support operations. The Fires Cell demonstrates the ability to perform all tasks required to establish fire support operations IAW table II, TC 3-09.8.
Conduct Fire Planning	12	To train the Fires Cell on fire planning process and those collective tasks required to prepare the plans and orders and fire support documents for the unit.
Execute Fires	12	To train the Fires Cell in the tasks required to synchronize, integrate and adjust the execution of fires to best achieve the commander's intent.
Perform Effects Section Functions	49	To train the Fires Cell in the tasks essential to perform fire support functions.
Conduct Targeting	6	To train the staff in the tasks necessary to conduct the targeting process and to provide the targeting products necessary to accomplish the fire support tasks to support the commander's intent.
Perform ADAM/BAE Cell Functions	1	To train basic individual and staff responsibilities for the ADAM/BAE cell officers and noncommissioned officers.

Table A-1. Fire support CATS tasks for the BCTs

Task Group	Events Per Year	Purpose	
Conduct Air Defense Airspace Management Operations	12	This event is to instruct and refresh the ADAM/BAE personnel in the conduct of critical team and/or soldier tasks that are required to support the cell's mission essential task list execution for their BCT staff responsibility of airspace management focusing on the establishment and sustainment of communications and related Army Battle Command System links, and the required exchange of data to enable planning, preparation and execution of airspace management in support of BCT operations.	
Plan, Coordinate, and Supervise the Fire Support Process	2	Train and sustain the targeting and fire support team in those tasks and processes required to perform targeting, both lethal and non-lethal, in support of BCT operations.	
Provide Fire Support	52	To be written.	
Perform Intelligence Functions	12	Train the brigade Intelligence personnel on the tasks associated with performing duties as part of brigade staff and HHC. Task choice include intelligence, force protection and CP responsibilities. This training provides the foundation for section proficiency in required operational task sets.	
ADAM/BAE - air defense airspace management/brigade element CP - command post HHC - headquarters and headquarters company IAW – in accordance with TC – training circular			

CATS TASKS FOR BCT COMBAT OBSERVATION AND LASING TEAMS

A-3. Training tasks for the BCT combat observation and lasing teams (COLT) appear in the CATS for the headquarters of the BCTs.

Note. Training for the BCT's COLTs is very much like, if not at times identical to, training for maneuver battalion and cavalry squadron fire support teams (FIST). Consequently, the discussion in Chapter 3 on training for the battalion fire support platoons (fire support teams and observers) may be consulted for use in training the BCT's COLTs as well.

A-4. Table A-2 contains a summary of CATS tasks for the BCT's COLTs (for more information and updates go to the DTMS).

Note. Chapter 3 of this TC provides a summary of fire support tables for observers from TC 3-09.8.

Task Group	Events Per Year	Purpose	
Establish Fire Support Operations	10	To train the FIST/COLT team in the tasks required to occupy an observation post and establish fire support operations.	
Conduct Fire Planning	22	To train the FIST teams in the planning, coordination and integration of lethal and non-lethal fires in support of the commander's intent. To train the FIST in the tasks required to conduct fire planning for the company. To qualify all observers to safely call for and adjust indirect fires. To qualify BFIST/Striker-COLT crews in the task to conduct both indirect and direct fires simultaneously.	
Execute Fires	24	To qualify all observers to safely call for and adjust indirect fires. To train the FIST/COLT on the tasks to call for and adjust indirect fires. To qualify BFIST/Striker- COLT crews in the task to conduct both indirect and direct fires simultaneously.	
BCT - brigade combat team BFIST - Bradley fire support team COLT - combat observation and lasing team FIST - fire support team			

Table A-2. CATS tasks for the BCT's FIST/COLTs

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Appendix B

A Summary of CATS Tasks for Fire Support Training in BCT Maneuver Battalions, Cavalry Squadron, and Brigade Special Troops Battalion

This appendix contains summaries of fire support tasks for the brigade combat team's (BCT) maneuver battalions, its cavalry squadron, and its brigade special troops battalion contained in the Combined Arms Training Strategies (CATS) for the armor, infantry, and Stryker BCTs. The CATS should always be consulted to determine the current tasks.

CATS TASKS FOR BATTALION LEVEL FIRES CELLS

MANEUVER BATTALION, CAVALRY SQUADRON, AND SPECIAL TROOPS BATTALION

B-1. Table B-1 contains a summary of fire support CATS tasks for the BCT's subordinate maneuver battalions, cavalry squadron, and brigade special troops battalion fires cells (for more information and updates go to the Digital Training Management System [DTMS]).

Note. Chapter 2 of this TC provides a summary of fire support tables for the fires cell from TC 3-09.8.

Note. The Stryker BCT does not have a brigade special troops battalion.

Task Group	Events Per Year	Purpose
Plan Fire Support - Fires Cell (HHC CAB, HHC BSTB, HHT Reconnaissance)	4	To train the Fires Cell in those tasks necessary to conduct top-down, integrated fire-planning for the supported force.
Prepare for Fire Support - Fires Cell (HHC CAB, HHC BSTB, HHT Reconnaissance)	4	To train the Fires Cell on those tasks required to support preparation for battle to set conditions for synchronized, integrated, and coordinated fires in support of mission execution.
Execute Fire Support – Fires Cell (HHC CAB, HHC BSTB, HHT Reconnaissance)	4	To train and sustain proficiency in the tasks required for the Fires Cell to execute lethal and non-lethal fires in support of battalion operations.
Plan Fire Support - Fires Cell (HHT Armored Cavalry Squadron)	4	To train the Fires Cell on those tasks required to conduct effective top-down, integrated fire-planning for the supported force.
Prepare for Fire Support - Fires Cell (HHT Armored Cavalry Squadron)	4	To train the Fires Cell on those tasks required to support preparation for battle and to set conditions for synchronized, integrated, and coordinated fires in support of mission execution.

Table B-1. Fire support CATS tasks for the BCT's subordinate maneuver battalions, cavalry squadron, and brigade special troops battalion fires cells

Task Group	Events Per Year	Purpose
Execute Fire Support – Fires Cell (HHT Armored Cavalry Squadron)	4	To train and sustain proficiency in the tasks required for the Fires Cell to execute lethal and non-lethal fires in support of squadron operations.
Conduct Fire Planning and Prepare for Operations – Fire Cell (HHT Armored Cavalry Squadron)	2	To train the Fires Cell and Fire Support Platoon in planning, coordinating and integrating lethal and nonlethal fires supporting the commander's intent.
ACR - armored cavalry regiment CAB - combined arms battalion HHT - headquarters and headquarters tro	оор	BSTB - brigade special troops battalion HHC - headquarters and headquarters company

CATS TASKS FOR BATTALION LEVEL FIRE SUPPORT

MANEUVER BATTALION, CAVALRY SQUADRON, AND SPECIAL TROOPS BATTALION

B-2. Table B-2 contains a summary of fire support CATS tasks for the BCT's subordinate maneuver battalions, cavalry squadron, and brigade special troops battalion (for more information and updates go to the DTMS).

Note. Chapter 2 of this TC provides a summary of fire support tables for the fires cell from TC 3-09.8.

Note. The Stryker BCT does not have a brigade special troops battalion.

Та	ble B-2. Fire support	CATS task	(s for the BCT's subordinate maneuver battalions,	
	cavalry squadron, and brigade special troops battalion fire support			
	<u> </u>	•		

Task Group	Events Per Year	Purpose
Plan, Coordinate and Supervise Fire Planning and Execution (HHC SBCT)	4	To train and sustain training of the staff on the tasks required to provide fire support coordination, planning, synchronization and integration for the supported force.
Conduct Fire Planning (HHC SBCT)	12	To train the Fires Support personnel in those tasks necessary to conduct top-down, integrated fire-planning for the supported force.
Prepare for Full Spectrum Operations (HHC SBCT)	12	To train the Fires Cell on those tasks required to support preparation for battle to set conditions for synchronized, integrated and coordinated fires in support of mission execution.
Conduct Targeting (HHC SBCT)	4	To train the COLT teams in the planning, coordination and integration of lethal and non-lethal fires in support of the commander's intent.
Conduct Fire Planning and Prepare for Operations (HHC CAB, HHC I/H/SBCT, & HHT Reconnaissance)	2	To train the Fires Cell on those tasks required to support preparation for battle and to set conditions for synchronized, integrated and coordinated fires in support of mission execution.

A Summary of CATS Tasks for Fire Support Training in BCT Maneuver Battalions, Reconnaissance Squadron, and Brigade Special Troops Battalion

Task Group	Events Per Year	Purpose
Conduct Occupation of the OP - FIST/COLT (HHC CAB, HHC I/SBCT, & HHT Reconnaissance)	2	To train and sustain training of the COLT team in the tasks required to occupy an observation post and establish fire support operations.
Execute Fire Missions (HHC CAB, HHC I/SBCT, & HHT Reconnaissance)	2	To train and qualify the COLT team in the request for and adjustment of all lethal fires.
Conduct Targeting (HHC SBCT)	4	Attain battalion targeting team proficiency in those tasks and processes required to perform targeting in support of battalion operations.
Analyze and Conduct Targeting (HHC CAB, HHC HBCT, & HHT Reconnaissance)	2	To train the targeting working group in the tasks required to execute the targeting; decide, detect, deliver, and assess (D3A) process.
Conduct FIST/COLT Team Operations (HHC CAB, HHC IBCT, & HHT Reconnaissance)	4/16	To qualify the FIST teams in all tasks required to provide accurate and timely joint fires and effects in support of the mission and commander's intent.
Employ Fires (HHC CAB, HHT Armored Cavalry Squadron & HHT Reconnaissance)	2	To train the battalion command group and staff, and company and platoon leaders in the tasks associated with identifying targets and controlling battalion direct and indirect fires and supporting fires.
Execute Targeting Functions (HHC IBCT)	1	To train the battalion staff in the tactics, techniques, and procedures executing targeting functions.
Call for Fire (HHC CAB)	6	Train the steps and procedures required to locate, identify, and call for fire on targets.
Analyze and Conduct Targeting – Squadron (HHT Armored Cavalry Squadron)	2	To train the targeting team in the tasks required to execute the targeting (D3A) process.
ACR - armored cavalry regiment BSTB - brigade special troops battalion COLT - combat observation and lasing te FIST - fire support team HHT - headquarters and headquarters tro SBCT - Stryker brigade combat team	eam Dop	ABCT - armor brigade combat team CAB - combined arms battalion D3A - decide, detect, deliver, and assess HHC - headquarters and headquarters company IBCT - infantry brigade combat team

CATS TASKS FOR MORTARS

B-3. Table B-3 contains a summary of CATS tasks for the BCT's combined arms or infantry battalion, and mortar platoon (for more information and updates go to DTMS).

Note. The CATS for the cavalry squadrons of armor, infantry, and Stryker BCTs do not contain CATS tasks for the squadron mortars. Heavy mortars are included in the tables of organization and equipment (TOE) for the cavalry troops of armor, infantry, and Stryker BCTs as well as infantry companies of the Stryker BCT.

BATTALION MORTAR PLATOON, CAVALRY TROOP, OR INFANTRY COMPANY MORTARS

Table B-3. CATS tasks for the BCT's combined arms or infantry battalion, cavalry troop,
and infantry company mortar platoons

Task Group	Events Per Year	Purpose
Provide Mortar Support	4	To train the platoon on the tasks associated with providing mortar fires in support of battalion combat operations; to attain proficiency, day/night and evaluate performance of tactical tasks associated with providing mortar fires under combat conditions.
Plan and Prepare for Operations (Mortars)	4	To provide training opportunities for the platoon to review and discuss the collective tasks associated with preparing for operations.
Move Tactically-Mortars	2	To attain mortar platoon proficiency in the performance of conducting tactical movement and related tasks, day/night, in a tactical scenario.
Employ Mortars	4	To train and sustain proficiency of the mortar section in the performance of employing mortars to standard under realistic battlefield conditions in a live fire environment.
Protect the Unit-Mortars	4	To provide training opportunities for the unit to review and discuss the collective tasks associated with protecting the unit.

Appendix C

A Summary of CATS Tasks for Fire Support Training in the BCT Fires Battalion

This appendix contains summaries of the fire support tasks for the brigade combat team's (BCT) organic fires battalion contained in the Combined Arms Training Strategies (CATS) for the BCTs. The CATS should always be consulted to determine the current tasks.

CATS TASKS FOR THE FIRES BATTALION COMMAND POST AND FIRE DIRECTION CENTER

C-1. Table C-1 contains a summary of CATS tasks for the BCT's fires battalion, headquarters and headquarters battery (HHB) (for more information and updates go to DTMS).

Note. Chapter 4 of this TC provides a summary of fire direction tables and artillery tables (collective field artillery training) from TC 3-09.8.

Task Group	Events Per Year	Purpose
Conduct Fire Planning and Execution	4	To train the Current Operations elements in those tasks necessary to conduct top-down, integrated fire-planning and execution for the supported force.
Battalion Gunnery Tasks	4	To train and sustain the battalion in the tasks required to deliver safe, timely, and accurate artillery fires.
Direct and Lead the Battalion in Planning for Full Spectrum Operations	4	To train and sustain collective tasks at the battalion staff level under varied conditions, emphasizing staff group and leader tasks, while consuming less resources than required for a CPX.
Direct and Lead Units in Preparation for Full Spectrum Operations	4	Train the battalion commander and staff in command and control tasks associated with the battalion preparation for battle to set conditions for synchronized, integrated, and coordinated fires in support of mission execution.
Conduct Digital Sustainment Training	48	To sustain proficiency on automated/digital tasks and the supporting communications devices, networks, and procedures necessary to support the commander and staff in tasks required to command and control.
Conduct Sustainment Planning and Operations	1	To ensure all leaders and sustainment personnel in the battalion are proficient in the planning, preparation, and execution of sustainment tasks, current doctrine, and BCT and fires battalion tactical standing operating procedures.

Table C-1. CATS tasks for the BCT's fires battalion, HHB

Task Group	Events Per Year	Purpose
Conduct Intelligence Planning	4	To train all staff elements in the basic tasks required to provide targeting and intelligence support for selected combat operations. Able to develop integrated intelligence products, provide input to orders, ISR plan, decision support template, and use all intelligence sources.
Conduct Convoy Operations	2	To train the HHB to be proficient in all collective tasks required to move the battery, react to improvised explosive devices and enemy ambush.
Conduct HHB Operations	4	To train the HHB, internal support elements, and special teams to support the battalion command post (moving, occupation of position, security, and support) during full spectrum operations.
Conduct Battery Sustainment Operations	2	To gain proficiency in all sustainment tasks required to support all elements of the battalion under combat conditions.
Conduct Fires Battalion Operations	6	To train fires battalion leaders and staff on tasks required to synchronize, coordinate, and integrate all direct, and indirect Army indirect fires available to the BCT safely and with maximum effects on the enemy in support of the operation and commander's intent. Emphasis is staff group and leader tasks (the battalion commander and staff will be able to plan, prepare, and execute fire support plans, annexes, and documents in support of the BCT while planning, monitoring, and directing the internal battalion orders in support of the BCT during full spectrum operations).
Battalion Deploy by Air/Land/Sea	1	To train the battalion on all tasks necessary to deploy it and all assigned equipment on short notice for worldwide contingency. Internally, to train unit movement soldiers as key cadre.
Battery Deployment Training	1	To train the battery in deploy tasks associated with conducting deployment from home station to a theater of operations.
Conduct Battery Force Protection Operations	3	To train individuals and special teams in tasks required for local defense and force protection required to survive on the battlefield and to integrate force protection operations as part of battery tactical standing operating procedures; to train special teams and leaders in all unit defense tasks and survivability planning and execution.
Conduct Battery Force Protection Operations	3	To train individuals and special teams in the HHB on tasks required for planning and execution of local defense (includes use of crew served and individual weapons) and survivability operations during combat).
Conduct Meteorological Operations	52	To train the meteorological section in METL tasks required to provide meteorological support to all firing elements of the BCT and to sustain meteorological.

Task Group	Events Per Year	Purpose	
Conduct Artillery Survey Operations	52	To train the survey section in all collective tasks required to provide common grid to all firing elements and target acquisition systems in the BCT area of operations, as directed.	
Conduct Counterfire Radar Tables	52	To train Firefinder radar sections on all individual and section level collective tasks associated with the emplacement, initialization, operation, troubleshooting, and maintenance of the radar.	
Conduct Machinegun Gun Training/Qualification	2	To familiarize and qualify all machine gun teams in the battery.	
Conduct RSOP for Radar Table IV	2	To train and qualify the radar section in tasks required to conduct RSOP (section able to move and occupy new positions in a timely manner).	
March Order for Radar Table V	2	To train and qualify the radar section on the individual and collective tasks required to march order the radar and all associated equipment.	
Perform Surveillance and Locate Targets	2	To train the radar section in the core tasks of performing surveillance and locating targets.	
ABCS - Army Battle Command System CPX - command post exercise HHB - headquarters and headquarters ba METL - mission essential task list	BC FD attery ISI RS	CT - brigade combat team IC - fire direction center R - intelligence, surveillance, and reconnaissance SOP - reconnaissance, selection and occupation of position	

CATS TASKS FOR THE FIRES BATTALION TARGET ACQUISITION PLATOON

C-2. Table C-2 contains a summary of CATS tasks for the BCT's fires battalion, target acquisition platoon (for more information and updates go to DTMS).

Note. Chapter 4 of this TC provides a summary of the survey, meteorology, and radar tables from TC 3-09.8.

Task Group	Events Per Year	Purpose
Mission Command for Target Acquisition Elements	4	To train and sustain the target acquisition platoon HQ on the tasks for mission command and provide support for the elements of the Target Acquisition Platoon.
Conduct Counterfire Radar Tables	52	To train and qualify the Firefinder radar sections on all individual and collective tasks associated with the emplacement, initialization, operations, troubleshooting, and maintenance of the radar.
Perform Surveillance and Locate Target	2	To train the radar section in all tasks required to observe both hostile and friendly fire and to provide the necessary reports of the observation in a timely manner.

Table C-2, CATS tasks	for the BCT's fires	battalion, targ	et acquisition	platoon
		Suttanon, targ	jot doquisition	piacoon

Task Group	Events	Purpose
	Per Year	
March Order Radar	2	To train the radar section on the individual and collective tasks required to march order the radar and all associated equipment.
Conduct RSOP for Radar	2	To train the radar section in the tasks required to move and occupy new positions in a timely manner and to conduct RSOP.
Emplace/Displace a Meteorology Section	2	To train the meteorology section on the tasks required to emplace and displace the section under all conditions.
Conduct Meteorology Operations	52	To train the meteorology section in those METL tasks required to provide meteorological support to all firing elements and to sustain meteorological operations.
Conduct Artillery Survey Operations	52	To train the survey section on all section level collective tasks required to provide common grid for all firing units and target acquisition systems within the BCT area of operations.
Conduct Target Processing and Counterfire Operations	52	To train the target processing team in the tasks to conduct targeting, advise the commander on target acquisition assets, produce the radar deployment order, conduct counterfire planning, and execution, conduct battle damage assessment and conduct planning for tactical unmanned aircraft system integration.
HQ – headquarters METL - mission essential task list RSOP - reconnaissance, selection, and occupation of position		

CATS TASKS FOR FIRES BATTALION FIRING BATTERIES

C-3. Table C-3 contains a summary of CATS tasks for the BCT's fires battalion, firing batteries (for more information and updates go to DTMS).

Note. Chapter 4 of this TC provides a summary of the fire direction, howitzer section, and collective field artillery tables from TC 3-09.8.

Task Group	Events Per Year	Purpose
Conduct Firing Battery Operations	2	To train and sustain proficiency of the battery in all collective METL tasks.
Deliver Fires - Battery	4	To train and qualify the battery on gunnery related METL tasks so that the battery can provide safe, timely, indirect fires in support of BCT operations.
Deliver Fires - Platoon	2	To train and qualify the platoon on Artillery tasks.
Conduct Tactical Maneuver- Battery	3	To train the leaders and drivers of all vehicles in the battery to be proficient in all collective tasks required to conduct convoy operations and tactical moves.
Conduct Digital Sustainment	52	To sustain proficiency on automated digital tasks and supporting communications devices, nets, and procedures necessary to provide mission command and deliver fires.

Table C-3. CATS tasks for the BCT's fires battalion, firing battery

Task Group	Events Per Year	Purpose
Conduct Battery Sustainment Operations	2	To gain proficiency in the sustainment tasks required to support all elements of the battery while operating under combat conditions.
Protect the Force-Battery	2	To train the individuals and special teams in the battery to perform the tasks required for local defense and force protection.
Conduct BOC/POC/FDC Occupation and Setup	2	To train the BOC/POC/FDC on the tasks required to occupy a position, set up and initialize equipment, and establish communications.
Compute Firing Data	2	To train the BOC/POC/FDC to perform all tasks required to determine firing data in a safe, accurate, and timely manner.
Provide Mission Command for Battery/Platoon Operations	3	To train the BOC/POC/FDC to perform all tasks required to provide mission command for subordinate elements.
Conduct BOC/POC/FDC Operations	52	To train the BOC/POC/FDC in individual and section tasks.
Section Training and Qualification	52	To train and qualify howitzer sections on collective and supporting individual tasks required to move, emplace, conduct pre-fire checks, and safely fire the howitzer.
Conduct MG Training/Qualification	2	To train and qualify all howitzer sections on assigned machine guns.
Conduct Direct Fire	2	To train the howitzer sections in direct fire procedures.
Conduct Deliberate Occupation	2	To train the howitzer sections on tasks required to conduct a deliberate occupation of a firing position.
Conduct Operations in Degraded Mode or Unique Conditions	2	To train howitzer section in the tasks in Artillery under unique conditions.
Battery Deployment Training	1	To train the battery in deploy tasks associated with conducting deployment from home station to a theater of operations.
Conduct Convoy Operations	3	To train the leaders and drivers of all vehicles in the battery to be proficient in all collective tasks (including live fire) required to move the battery.
Conduct Force Protection Operations	3	To train the individuals and special teams in the battery to perform the tasks required for local defense and force protection.
Rigging Procedures	4	To train and qualify all howitzer sections on tasks required to rig the howitzer and section equipment for air movement.
Conduct Direct Fire	2	To train the howitzer sections in direct fire procedures.
Towed Howitzer Section Training	52	To train and qualify the howitzer section on all the individual and collective tasks required to operate and fire the howitzer.
Conduct Convoy Operations	3	To train the leaders and drivers of all vehicles in the battery to be proficient in all collective tasks (including live fire) required to move and protect the battery during movement.

Task Group	Events Per Year	Purpose
Conduct Force Protection Operations	2	To train the individuals and special teams in the battery to perform the tasks required for local defense and force protection.
BOC - battery operations center FDC - fire direction center	METL - miss MG - machin	ion essential task list POC - platoon operations center e gun

CATS TASKS FOR THE FIRES BATTALION FORWARD SUPPORT COMPANY

C-4. CATS tasks for the fires battalion's forward support companies are included in the CATS for the forward support companies (fires), brigade support battalion, of armor and infantry BCTs. The Stryker BCT does not have forward support companies; rather the Stryker BCT's brigade support battalion provides support to the Stryker BCTs battalions and cavalry squadron on an area basis.

Glossary

SECTION I – ACRONYMS AND ABBREVIATIONS

ADAM	air defense airspace management
AFATDS	Advanced Field Artillery Tactical Data System
ALO	air liaison officer
ARFORGEN	Army force generation
ART	Army tactical task
ASPT	artillery skills proficiency test
ATP	Army techniques publication
ATTP	Army tactics, techniques, and procedures
ВСТ	brigade combat team
BAE	brigade aviation element
BOC	battery operations center
CALFEX	combined arms live fire exercise
CATS	combined arms training strategy
CBRN	chemical, biological, radiological, nuclear
CFX	command field exercise
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
COLT	combat observation and lasing team
COMEX	communications exercise
СР	command post
СРХ	command post exercise
D3A	decide, detect, deliver, and assess
DA	Department of the Army
DPPDB	Digital Point Positioning Database
DEPEX	deployment exercise
DOD	Department of Defense
FDC	fire direction center
FIST	fire support team
FM	field manual
FMI	field manual-interim
FO	forward observer
FSCOORD	fire support coordinator
FSO METL	full spectrum operations mission essential task list
FTX	field training exercise
GMLRS	guided multiple launch rocket system (munitions)
HHB	headquarters and headquarters battery
ННС	headquarters and headquarters company
HHT	headquarters and headquarters troop

HIMARS	high mobility artillery rocket system
IMLC	Infantry Mortar Leader Course
IPB	intelligence prepartion of the battlefield
ISR	intelligence, surveillance, and reconnaissance
JP	joint publication
JSTARS	Joint Surveillance Target Attack Radar System
JTAC	joint terminal attack controller
LFX	live fire exercise
LOGEX	logistics exercise
LTX	lane training exercise
MCRP	Marine Corps reference publication
MCWP	Marine Corps warfighting publication
MDMP	military decisionmaking process
METL	mission essential task list
METT-TC	mission, enemy, terrain and weather, troops and support available, time available, civil considerations
MLRS	multiple launch rocket system
mm	millimeter
MOS	military occupational specialty
NCO	noncommissioned officer
MRE	mission rehearsal exercise
MTOE	modified table of organization and equipment
NGA	National Geospatial-Intelligence Agency
NCO	noncommissioned officer
OPCON	operational control
OPLAN	operation plan
OPORD	operation order
POC	platoon operations center
SEAD	suppression of enemy air defenses
SINCGARS	single-channel ground and airborne radio system
STAFFEX	staff exercise
ST	special text
STP	Soldier training publication
STT	sergeant's training time
STX	situational training exercise
ТАСР	tactical air control party
ТС	training circular
TEWT	tactical exercise without troops
TM	technical manual
TOE	table of organization and equipment
U.S.	United States

SECTION II – TERMS AND DEFINITIONS

collateral damage

(joint) Unintentional or incidental injury or damage to persons or objects that would not be lawtful military targets in the circumstances ruling at the time. Such damage is not unlawful so long as it is not excessive in light of the overall military advantage anticipated from the attack. (JP 3-60)

counterfire

(joint) Fire intended to dest4roy or neutralize enemy weapons. Includes couterbattery and countermortar fire. (JP 3-09)

command and control warfare

The integrated use of physical attack, electronic warfare, and computer network operations, supported by intelligence to degrade, destroy, and exploit an enemy's or adversary's command and control system or to deny information to it. (FM 1-02)

evaluation

In the training context the process used to measure the demonstrated ability of individuals and units to accomplish specified training objectives. (ADP 7-0)

fires

(joint) The use of weapons systems to create specific lethal or nonlethal effects on a target. (JP 3-09)

fire support officer

(Army) A field artillery officer from company through theater army responsible for either advising the commander or assisting the chief of fires/brigade fire support officer to advise the commander on fire support matters. (FM 3-09) (joint) Senior field artillery officer assigned to Army maneuver battalions and brigades. Advises commander on fire-support matters. (JP 3-09)

fire support team

(Army) A A fire support team (Army) is a field artillery team organic to each maneuver battalion and selected units to plan and coordinate all available company supporting fires, including mortars, field artillery, naval surface fire support and close air support integrationprovided for each maneuver company and selected units to plan and coordinate all supporting fires available to the unit, including mortars, field artillery, naval surface fire support, and close air support integration (JP 3-09.3).

fire support

Fires that directly support land, maritime, amphibious, and special operations forces to engage enmey forces, combat formations, and facilities in pursuit of tactical and operational objectives. (JP 3-09)

forward observer

(joint) An observer operating with front line troops and trained to adjust ground or naval gunfire and pass back battlefield information. In the absence of a forward air controller, the observer may control close air support strikes. (JP 3-09)

full spectrum operations

The Army's operational concept: Army forces combine offensive, defensive, and stability or civil support operations simultaneously as part of an interdependent joint force to seize, retain, and exploit the initiative, accepting proudent risk to create opportunities to achieve decisive results. They employ synchronized action—lethal and nonlethal—proportional to the mission and informed by a thorough understanding of all variables of the operational environment. Mission command that conveys intent and an appreciation of all aspects of the situation guides the adaptive use of Army forces. (FM 1-02)

high-payoff target

(joint) A target whose loss to the enemy will significantly contribute to the success of the friendly course of action. High-payoff targets are those high-value targets that must be acquired and successfully attacked for the success of the friendly commander's mission. (JP 3-60)

high-payoff target list

(joint) A prioritized list of high pay-off targets by phase of the joint operation. (JP 3-60)

high-value individual

A person on interest (friendly, neutral, adversary, or enemy) who must be identified, surveilled, tracked, and influenced through the use of information or fires. (FM 3-60)

high-value target

(joint) A target the enemy commander requires for the successful completion of the mission. The loss of high-value targets would be expected to seriously degrade important enemy functions throughout the friendly commander's area of interest. (JP 3-09)

information engagement

The integrated employment of public affairs to inform U.S. and friendly audiences; psychological operations, combat camera, U.S. Government strategic communication and defense support to public diplomacy, and other means necessary to influence foreign audiences; and leader and Soldier engagements to support both efforts. (FM 1-02)

intelligence preparation of the battlefield/battlespace

A systematic process of analyzing and visualizing the portions of the mission variables of threat/*adversary*, terrain, weather, and civil considerations in a specific area of interest and for a specific mission. By applying intelligence preparation of the battlefield/*battlespace* commanders gain the information necessary to selectively apply and maximize operational effectiveness at critial points in time and space. (FM 2-01.3)

intelligence, reconnaissance, and surveillance plan

An integrated plan for collection of information from all available sources and analysis of that information to produce intelligence to meet requirements. Specifically, a logical plan for transforming priority intelligence requirements into orders or requests to reconnaissance and surveillance assets to collect pertinent information within a required time limit. (FM 1-02)

joint fires

(joint) Fires delivered during the employment of forces from two or more components in coordinated action to produce desired effects in support of a common objective. (JP 3-0)

mission-essential task

A collective task a unit must be able to perform successfully in order to accomplish is doctrinal or directed mission. (ADP 7-0)

mission-essential task list

A compilation of mission essential tasks that an organization must perform successfully to accomplish its doctrinal or directed mission. (ADP 7-0)

multiechelon training

A training technique that allows for the simultaneous training of more than one echelon on different or complementary tasks. (ADP 7-0)

munitions effectiveness assessment

(joint) Conducted concurrently and interactively with battle damage assessment, the assessment of the military force applied in terms of the weapon system and munitions effectiveness to determine and recommend any required changes to the methodology, tactics, weapon system, munitions, fusing, and/or weapon delivery parameters to increase force effectiveness. Munitions effectiveness assessment is primarily the responsibility of operations with required inputs and coordination from the intelligence community. (JP 2-01)

operational theme

The character of the dominant major operation being conducted at any time within a land force commander's area of operations. The operational theme helps convey the nature of the major operation to the force to facilitate common understanding of how the commander broadley intends to operate. (FM 1-02)

reattack recommendation

(joint) An assessment, derived from the results of battle damage assessment and munitions effectiveness assessment, providing the commander systematic advice on reattack of targets and further target selection to achieve objectives. The reattack recommendation considers objective achievement, target, and aimpoint selection, attack timing, tactics, and weapon system and munitions selection. The reattack recommendation is a combined operations and intelligence function. (JP 3-60)

sensitive site

A sensitive site is a geographically limited area with special diplomatic, informational, military, or economic sensitivity to the United States. Examples of sensitive sites include war crimes sites, critical hostile government facilities, areas suspected of containing persons of high rank in a hostile government, document storage areas for enemy classified files, or research and production facilities involving breakthrough technologies. (FM 3-90.15)

target area of interest

The geographical area where high-value targets can be acquired and engaged by friendly forces. Not all target areas of interest will form part of the friendly course of action; only target areas of interest associated with high-payoff targets are of interest to the staff. These are identified during staff planning and wargaming. Target areas of interest differ from engagement areas in degree. Engagement areas plan for the use of all available weapons; target areas of interest might be engaged by a single weapon. (JP 2-01.3).

target coordinate mensuration

The process of measurement of a feature or location on the earth to determine an absolute latitude, longitude, and height. For targeting applications, the errors inherent in both the source for measurement as well as the measurement processes must be understoood and reported. Mensuration tools can employ a variety of techniques to derive coordinates. These may include, but are not limited to, direct read from DPPDB stereo-pairs in stereo or dual mono mode, multi-image geopositioning, or indirect imagery correlation to DPPDB. (CJCSI 3505.01A)

task

A clearly defined and measurable activity accomplished by individuals and organizations. (ADP 7-0)

terminal attack control

(joint) The authority to control the maneuver of and grant weapons release clearance to attacking aircraft. (JP 3-09.3)

time-sensitive target

(joint) A joint force commander designated target requiring immediate response because it is a highly lucrative, fleeting target of opportunity or it poses (or will pose) a danger to friendly forces. (JP 3-60)

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DOCUMENTS NEEDED

These documents must be available to the intended users of this publication.

None

READINGS RECOMMENDED

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Index

В

battalion/squadron fire cell, 1-5 fire support platoon, 3-6 firesupportofficer, 3-3 mortars, 3-4

С

command post ADAM/BAE, 1-6 fires cell, 1-4 intelligence cell, 1-7 tactical air control party, 1-5 targeting board, 1-4 targeting working group, 1-4

E

electronic attack Prophet, 1-9, 1-16

F

fire support air liason officer, 1-5 airspace command and control, 1-6, 2-13 Army aviation, 1-6 brigade fire support officer, 1-2 close air support, 1-5 commanders' business, 3-2 electronic attack, 1-15 FSCOORD, 1-2 graduate level diagnostic, 2-2 intelligence support to targeting, 1-8 joint air attack team, 2-7 mortars, 1-15 role of BCT commander, 1-1

suppression of enemy air defenses, 2-7 sustainment, 1-16 target acquisition, 1-9 training strategy, vii

fires battalion capabilities, 1-14 command post, 1-7, 4-2 description, 1-15 FDC, 4-3 firing batteries, 4-8 target acquisition platoon, 1-12, 4-4

I

intelligencecollection signalintercept, 1-10

Q

questions for the BCT commander, 2-3, 2-6, 2-12, 2-14, 3-1, 3-5, 3-8, 4-1, 4-8

Т

target acquisition COLTs, 1-10 fire support platoon, 1-10 fire support team, 1-9 FIST, 1-10 forward observer, 1-10 joint fires observer, 3-8 joint terminal attack controller, 1-11 military intelligence company, 1-10 targetacquisition directsensorinputstofiresbatt alion, 1-12 training

battalion/BCT, 2-6

battalion/squadron fires cells. 3-2 battery FDC/BOC/POC, 4-10 battery/company/troop, 2-5 BCT ADAM/BAE, 2-13 BCT fires cell. 2-6 BCT FSO METL, 2-3 BCT intelligence cell, 2-11 collective gunnery, 4-13 COLTs, 2-14 commander's guidance, 2-3 composite fires battalion, 4-10 consolidated fire support, 3-7 fire support platoon, 3-6 fire support rehearsals, 2-15 fires battalion CP, 4-2 fires battalion FDC. 4-3 fires battalion firing batteries, 4-8 fires battalion forward support company, 4-14 fires battalion target acquisition platoon, 4-4 full staff, 2-5 functional and integrating cell, 2-4 mortars, 3-4 role of the fires battalion commander, 4-1 section/platoon, 2-5 staff sections. 2-4

U

unmanned aircraft systems, 1-9 This page intentionally left blank.

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By order of the Secretary of the Army:

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