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Tactics, Techniques, and Procedures for

FIELD ARTILLERY TARGET ACQUISITION

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Preface

This publication contains the doctrine, organization, tactics, techniques, and procedures required to manage field artillery target acquisition (TA) organizations, systems, personnel and equipment. It updates information formerly contained in FM 6-121 and incorporates emerging doctrine and information about targeting, the military decision making process (MDMP), new equipment, and Advanced Field Artillery Tactical Data System (AFATDS) considerations as they apply to the functions performed by the targeting officer and the radar section leader.

The material contained in this manual applies to all personnel involved in the targeting and target acquisition process. These personnel include:

- Maneuver commanders and their staffs.
- Field artillery commanders and their staffs.
- Fire support element (FSE personnel).
- Members of division artillery and FA brigade tactical operations centers.
- Personnel assigned to target acquisition batteries, target acquisition detachments, and radar platoons.
- Other personnel involved in the targeting or intelligence processes.

This manual describes current and emerging TA organizations. These organizations include target acquisition batteries and radar platoons of active and reserve components, the corps target acquisition detachment (CTAD), radar platoons of the interim brigade combat team (IBCT) and interim division artillery (IDIVARTY), and the STRIKER platoon. Technical and tactical considerations for employing weapons locating radars are discussed in detail. This includes the AN/TPQ-47 that is currently being developed. New information contained in this manual includes duties and responsibilities for key TA personnel, rehearsals, stability operations and support operations, rotary and fixed wing radar movement procedures, and automated target data processing. The methodology used by weapons locating radars to acquire, track and locate threat weapon systems is also discussed.

Users at different echelons will focus on different chapters and appendices based on their specific mission requirements and operational focus. Chapter 1 discusses targeting, MDMP, and rehearsals from a target acquisition viewpoint. Chapters 2 and 3 provide information about TA organizations and TA personnel duties and responsibilities. Chapter 4 is focused on the technical aspects of employing weapons locating radars and the associated requirements. Chapter 5 discusses tactical employment and management of radar systems. This chapter provides information required for commanders and their staff to effective employ radars in support of military operations. Finally, Chapter 6 discusses stability operations and support operations and associated radar employment considerations. The information in the supporting appendices provides the additional technical

Chapter 1

Targeting, Target Acquisition, and the Military Decision Making Process

This chapter provides an overview of targeting fundamentals, field artillery target acquisition processes, and target acquisition integration into the military decision making process (MDMP). Target acquisition, by nature, is an integral part of the targeting process and requires the interaction among many groups within a given organization. Field artillery target acquisition plays a key role in the targeting process. Without accurate targeting data, indirect fire systems are of limited value. Targeting is a command responsibility that requires the participation of key members of maneuver and field artillery coordinating and special staffs. It is a critical component of the MDMP that focuses battlefield operating systems to achieve the commander's intent. As such, the targeting process focuses on mission requirements. The mission, commander's intent and guidance drive the targeting process. These inputs allow unit personnel to determine the targets to be engaged, how to locate and track the targets, when and how to engage the targets, along with determining if, when, and how target assessment will be accomplished. The methodology used to drive the targeting process is *Decide, Detect, Deliver and Assess (D3A)*. This chapter discusses D3A, the role of field artillery target acquisition (TA) and how TA fits into the MDMP process.

DEFINITION OF TARGETING

Targeting is the part of the military decision making process used to focus battlefield operating systems (BOSs) to achieve the commanders intent. The methodology used to translate the commander's intent into a plan is decide, detect, deliver, and assess. The functions associated with this methodology help the commander decide what to attack, how to acquire those targets, and when those targets are acquired, how to attack them in a way that disrupts, delays or limits the enemy's ability to achieve his objectives. Simply stated, *targeting is the process of selecting targets and matching the appropriate response to them, taking account of operational requirements and capabilities.*

TARGETING METHODOLOGY

Targeting is a combination of intelligence functions, planning, battle command, weaponeering, operational execution and combat assessment (CA). The D3A methodology facilitates the attack of the right target at the right time with the most appropriate asset. Integral to this process is target

tracking. Tracking is essential to the detect and deliver functions. Tracking also impacts the ability to assess a target and implement subsequent reattack decisions. Targeting is a continuous process that maintains pace with the dynamics of an ever-changing battlefield situation. In addition to the enemy situation, the inputs that drive this process come from higher headquarters' plans and orders. Specifically, they are the mission, intent, and specified/implied tasks.

DECIDE

The first and most important step in the targeting process is the decide function. Deciding the targets to be attacked provides the overall focus and sets priorities for intelligence collection and attack planning. Targeting priorities must be set for each phase or critical event of an operation. Successful targeting is directly related to the commander's battle plan. Therefore, the targeting team must understand the unit's mission. This understanding starts with mission analysis. Once the commander and staff complete the mission analysis, the commander issues the restated mission. The restated mission is the starting point for the targeting process.

Key to the decide function is the intelligence preparation of the battlefield (IPB). During this process, situational templates and event templates are developed and used to ascertain suspected enemy locations and movements for targeting purposes. IPB identifies the enemy courses of action (COA) and subsequent high value targets (HVT) are identified from a target value analysis (TVA). HVTs are those targets or assets believed to be essential for the enemy commander to accomplish his mission. As the MDMP continues friendly COAs are developed and wargamed. As a result of wargaming, HVTs whose loss to the enemy will contribute to the success of the friendly plan are identified. These targets are high payoff targets (HPT). Effective engagement of HPTs is essential to the successful execution of the friendly COAs. The inability to acquire or achieve the specified effects against a HPT always requires a reassessment of the friendly COA to make adjustments based on a changed enemy situation.

Several products are developed during the decide phase of targeting. These products are:

- High-payoff target list (HPTL) – a prioritized list of HPTs.
- Intelligence collection plan (ICP) – answers the commander's priority intelligence requirements (PIR) and intelligence requirements (IR). This includes HPT designated as PIR.
- Target selection standards (TSS) – designated target location accuracy, target posture and time requirements that must be met before attacking a target. Targets not meeting TSS requirements are considered target indicators and aren't attacked.
- Attack guidance matrix (AGM) – document addressing which targets will be attacked, how when and the desired effects. The commander approves this product.

In addition, other products are developed or refined during the decide phase. They include, but are not limited to:

- Decision support template (DST).
- Targeting synchronization matrix (TSM).
- Combat assessment (CA) requirements.
- Target nominations – air interdiction (AI), Army Tactical Missile System (ATACMS), electronic warfare (EW) etc.

As a result of the decide function, the targeting team will determine which targets will be acquired and attacked to meet the commander's intent; when and where (time and space) they may be found and by whom; how the targets will be acquired and attacked; assessment requirements; and the synchronization of sensors and attack systems with the scheme of maneuver. This results in the tasking of TA assets. The targeting synchronization matrix identifies targets designated for acquisition by field artillery TA assets.

DETECT

Detect is the next critical function in the targeting process. The detect function translates target priorities developed during the decide function into the ICP and TA tasking contained in the operations order (OPORD). The G2 or S2 is the primary staff section directing the effort to locate and identify HPTs. The collection manager oversees this effort and directs the tasking of acquisition assets against appropriate targets. Since there aren't enough assets to detect all targets, prioritization is essential. Therefore, radar schedules and zones are established to support the detection effort with focus on PIR and HPTs. It is essential that all acquisition assets be used effectively and efficiently. Duplication of effort must be avoided unless it is required to confirm a target. At the division, the analysis and control element (ACE) manages the collection plan to avoid duplication. The analysis and control team (ACT) manages the collection plan at the brigade.

HPTs must be detected in sufficient time to synchronize their attack with the commander's battle plan. Precise taskings must be given to acquisition systems designated to detect a specific target. Mobile targets must be detected and tracked until they are attacked. Further, tracking of mobile targets must be planned in sufficient detail to allow the handoff of a target from one collection asset to another when required. Tracking priorities are based on the commander's concept of the operation and targeting priorities.

Once detected, targets are passed to the fire support element (FSE) for engagement. The FSE passes the target to the appropriate command or asset for execution. HPTs may be passed directly from a sensor to a firing unit when authorized by the maneuver commander. This is accomplished by establishing a sensor-to-shooter link. This is a useful technique for engaging critical targets with a short dwell or target decay time.

Targets and suspected targets may be passed to the targeting team by a number of means. It is essential that the proper information be passed to facilitate analysis and attack. As a minimum, target reports should include: