ARMY, MARINE CORPS, NAVY, AIR FORCE

JAOC/ AAMDC

MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES FOR JOINT AIR OPERATIONS CENTER AND ARMY AIR AND MISSILE DEFENSE COMMAND COORDINATION

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MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES

FOREWORD

This publication has been prepared under our direction for use by our respective commands and other commands as appropriate.

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PREFACE

1. Purpose

This publication will assist the joint force commander (JFC), joint force air component commander (JFACC), joint force land component commander (JFLCC), commander Army forces (COMARFOR), and their staffs to establish effective coordination and integration between the joint air operations center (JAOC) and the Army Air and Missile Defense Command (AAMDC). It addresses organization, functions and responsibilities, command and control (C2), and connectivity between the JAOC and AAMDC, and clarifies the interaction of the two organizations within joint counterair operations. This publication will provide readers with a common frame of reference in order to facilitate effective coordination and working relationships between the JAOC and AAMDC.

2. Scope

This publication is the result of a 1997 Army-Air Force Warfighter Conference tasking. It documents the tactics, techniques, and procedures (TTP) that the JAOC and AAMDC use to counter air and missile threats. This publication also includes functions and responsibilities of the battlefield coordination detachment (BCD) as the principal liaison element between the Army forces (ARFOR) and the JFACC. This multi-Service tactics, techniques, and procedures (MTTP) specifically addresses integration between the JAOC and AAMDC; however, some of the principles, relationships, and processes described may apply in other circumstances, such as when the Navy is designated JFACC, area air defense commander (AADC), or airspace control authority (ACA).

3. Applicability

The TTP described in this publication apply to Army and Air Force elements of a joint force. This publication uses approved joint and Service doctrine and terminology as its foundation. The publication identifies methodologies to employ existing Service command and control systems in order to facilitate air-ground operations.

4. Implementation Plan

Participating Service command offices of primary responsibility (OPRs) will review this publication, validate the information and, where appropriate, reference and incorporate it in Service manuals, regulations, and curricula as follows:

Army. Upon approval and authentication, this publication incorporates the procedures contained herein into the US Army Doctrine and Training Literature Program as directed by the Commander, US Army Training and Doctrine Command (TRADOC). Distribution is in accordance with applicable directives and the Initial Distribution Number (IDN) listed on the authentication page.

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5. User Information

a. TRADOC, Headquarters Air Force Doctrine Center (AFDC), and the Air Land Sea Application (ALSA) Center developed this publication with the joint participation of the approving Service commands. ALSA will review and update this publication as necessary.

b. This publication reflects current joint and Service doctrine, command and control organizations, facilities, personnel, responsibilities, and procedures. Changes in Service protocol, appropriately reflected in joint and Service publications, will likewise be incorporated in revisions to this document.

c. We encourage recommended changes for improving this publication. Key your comments to the specific page and paragraph and provide a rationale for each recommendation. Send comments and recommendations directly to—

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EXECUTIVE SUMMARY

JAOC/AAMDC

Multi-Service Tactics, Techniques, and Procedures for Joint Air Operations Center (JAOC) and Army Air and Missile Defense Command (AAMDC) Coordination

General

This publication documents one aspect of air and missile defense operations: the tactics, techniques, and procedures necessary to coordinate the operations of the JAOC (when established by a commander Air Force forces [COMAFFOR] designated as JFACC) and AAMDC.

The AAMDC is a fully integrated, multifunctional air and missile defense organization. Its primary purpose is to perform theater-level air defense and joint theater missile defense planning, integration, coordination, and execution (not including attack operations) functions for the COMARFOR. The AAMDC commander serves as the theater Army air and missile defense coordinator (TAAMDCOORD) to the ARFOR and as deputy area air defense commander (DAADC) to the AADC for air defense.

As the Army's principal liaison to the JFACC, the US Army BCD is also addressed, with regard to coordination with the JAOC and AAMDC. This publication is intended to provide a template for establishing effective coordination and working relationships.

Chapters

Chapter I provides an overview of concepts and organizations related to air and missile defense as it pertains to coordination between the JAOC and AAMDC. Key terminology, functional responsibilities, organizations, and command and control structures are discussed in order to provide the tactical warfighter with a common frame of reference.

Chapter II provides the warfighter with an overview of defensive counterair (DCA) operations. It addresses passive air defense early warning issues, other passive air defense measures, and active air defense. Early warning responsibilities, processes, and systems are discussed. This chapter also covers the defended asset list (DAL) and the coordination board (reprioritization board).

Chapter III provides the warfighter with an overview of offensive counterair (OCA) operations. It focuses on OCA attack operations against missile target sets (such as C2 nodes, forward operating bases, transload operations, launchers, missile stocks, and transportation infrastructure) and the related coordination that occurs among the JAOC, AAMDC, and BCD.

Chapter IV provides the warfighter with an overview of intelligence as it relates to air and missile defense planning and execution. Essential aspects of theater missile

intelligence preparation of the battlespace (TM IPB) are discussed, as well as the intelligence support responsibilities and processes of the JAOC and AAMDC.

Chapter V discusses information exchange systems and processes in order to familiarize the warfighter with connectivity between the JAOC and AAMDC. It also describes the C2 architecture between the JAOC, AAMDC, and other critical nodes.

Appendices

Appendix A provides specific information on AAMDC liaison responsibilities and requirements. Appendix B is a detailed checklist for integration of counterair (CA) operations between the JAOC, AAMDC, and BCD. Appendix C provides the reader with an overview of the deep operations coordination cell (DOCC) and its role with regard to the JAOC and AAMDC. Appendix D provides report formats for issuing orders, tracking readiness of Patriot units, the availability of missiles, and the status of engagements. Appendix E provides a recommended methodology for critical asset lists/defended asset list development.

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Chapter I
CONCEPT AND ORGANIZATION

1. Introduction

    a. Background.

        (1) As seen during the 1991 Persian Gulf War, United States (US) forces are not immune to air and missile threats. The growing diversity of these threats and the rapid and continuing proliferation of advanced weapons and technology complicate the attainment of air superiority and protection of friendly forces and vital interests. Effectively countering these ever-increasing threats requires a more responsive, flexible, and integrated defense. To this end, the Services have undertaken initiatives to improve their capabilities and interoperability. This publication is one of those efforts.

        (2) The purpose of the joint counterair mission is to attain a desired degree of air superiority to allow freedom of action and protect the joint force (JP 3-01). To execute this mission, joint force commanders (JFCs) integrate the capabilities of each component to conduct offensive and defensive operations. Operations may employ aircraft, surface-to-air missiles (SAMs), surface-to-surface missiles (SSMs), artillery, special operations forces (SOF), and information operations (JP 3-01). The JFC apportions the components' capabilities and/or forces and determines appropriate command relationships between designated subordinates. Operations in an established theater may employ large numbers of air, land, and naval forces whose commanders cooperate and coordinate to defeat air and missile threats. The level of cooperation and coordination will determine the efficiency of operations and their degree of success.

    b. Terminology. The following terms are used throughout this publication and are discussed here in order to clarify subsequent use of the terms.

        (1) Joint Air Operations Center (JAOC). A JAOC is a jointly staffed facility established for planning, directing, and executing joint air operations in support of the JFC's operation or campaign objectives. (JP 1-02)

        (2) Counterair (CA). CA is a mission that integrates offensive and defensive operations to attain and maintain a desired degree of air superiority. CA missions are designed to destroy or negate enemy aircraft and missiles, both before and after launch. (JP 1-02)

        (3) Offensive Counterair (OCA). OCA operations destroy, disrupt, or neutralize enemy aircraft, missiles, launch platforms, and the supporting structures and systems. (JP 1-02)

        (4) Defensive Counterair (DCA). DCA is all defensive measures designed to detect, identify, intercept, and destroy or negate enemy forces attempting to attack or penetrate the friendly air environment. (JP 1-02)

        (5) Air Defense (AD). AD comprises all defensive measures designed to destroy attacking enemy aircraft or missiles in the Earth's envelope of atmosphere, or to nullify or reduce the effectiveness of such attack. (JP 1-02)

(6) Theater Missile (TM). A TM is a missile that may be a ballistic missile, a cruise missile (CM), or an air-to-surface missile (ASM) (not including short-range, non-nuclear, direct-fire missiles, bombs, or rockets, such as Maverick, or wire-guided missiles), whose target is within a given theater of operation. (JP 1-02)

(7) Joint Theater Missile Defense (JTMD). The integration of joint force capabilities to destroy enemy TMs in flight or prior to launch or otherwise disrupt the enemy's TM operations through an appropriate mix of mutually supportive passive missile defense; active missile defense; attack operations, and supporting command, control, communications, computers, and intelligence measures. (JP 1-02)

c.   Command Relationships.

(1) Levels of Authority.

(a) Combatant Command (command authority) (COCOM). COCOM is nontransferable command authority established by title 10 ("Armed Forces"), United States Code, section 164, exercised only by commanders of unified or specified combatant commands unless otherwise directed by the President or the Secretary of Defense.. COCOM cannot be delegated and is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. COCOM should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate JFCs and Service and/or functional component commanders. COCOM provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions. Operational control is inherent in COCOM. (JP 1-02)

(b) Operational Control (OPCON). OPCON is command authority that may be exercised by commanders at any echelon at or below the level of combatant command. OPCON is inherent in COCOM and may be delegated within the command. (JP 1-02) OPCON normally provides full authority to organize commands and forces and to employ them as the commander in OPCON considers necessary to accomplish the mission. It does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training.

(c) Tactical Control (TACON). TACON is command authority over assigned or attached forces or commands, or military capability or forces made available for tasking that is limited to the detailed direction and control of movements or maneuvers within the operational area necessary to accomplish missions or tasks assigned. TACON is inherent in OPCON. TACON may be delegated to, and exercised at any level at or below, the level of combatant command. (JP 1-02)

(d) Direct Support (DS). DS is a mission requiring a force to support another specific force and authorizing it to answer directly to the supported force's request for assistance. (JP 1-02)

(e) Administrative Control (ADCON). ADCON is the direction or exercise of authority over subordinate or other organizations with respect to administration and support, including organization of Service forces, control of resources and equipment, personnel management, unit logistics, individual and unit training, readiness,

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mobilization, demobilization, discipline, and other matters not included in the operational missions of the subordinate or other organization. (JP 1-02)

(2) Multinational Operations. Because each theater and each country is unique, this publication does not address multinational effects on JAOC/AAMDC coordination procedures. However, multinational operations require special considerations and emphasis to ensure unity of effort with other national forces. Even within formal alliances, varying national interests must be identified and considered. Differences in doctrine, training, equipment, and organization require consideration when coordinating for multinational interoperability.

2. Functional Commanders

a. Joint Force Air Component Commander (JFACC). The JFC will normally designate a JFACC, responsible for integrating the capabilities and command and control (C2) of joint air assets. The JFC defines the JFACC's authority and responsibilities, which may include, but are not limited to, planning, coordinating, allocating, and tasking for CA operations based on the JFC's concept of operations and air apportionment decisions. The functions and responsibilities of the JFACC, airspace control authority (ACA), and area air defense commander (AADC) must be integrated in order to unite joint air operations with joint airspace control and joint air defense operations in support of the JFC's campaign. These functions include developing, coordinating, and publishing airspace control procedures, operating the airspace control system, and integrating the joint force air defense effort. When the JFC designates a JFACC, the JFACC normally assumes the AADC and ACA responsibilities since air defense and airspace control are an integral part of joint air operations. When the situation dictates, the JFC may assign separate AADC and/or ACA. In those joint operations where separate commanders are required and designated, close coordination is essential for unity of effort, prevention of fratricide, and deconfliction of joint air operations (JP 3-30). For detailed information on JFACC functions and responsibilities, see JP 3-01 and JP 3-30.

b. AADC. Within a unified command, subordinate unified command, or joint task force (JTF), the commander will assign overall responsibility for AD to a single commander. Normally, this will be the component commander with the preponderance of AD capability and command, control, and communications (C3) capability to plan and execute integrated AD operations. Representation from the other components involved will be provided, as appropriate, to the AADC's headquarters. (JP 1-02) The JFC establishes and the AADC develops and implements theater and/or joint operations area (JOA)-wide defense priorities through promulgation of a joint area air defense plan (AADP). The AADC establishes weapons control procedures and measures for all DCA weapons systems and forces (JP 3-01). Regardless of the command relationships established, all active air defense forces are subject to the rules of engagement (ROE), airspace and weapons control measures, and fire control orders established by the AADC and approved by the JFC. For detailed discussion of the duties and responsibilities of the AADC, see JP 3-30.

c. ACA. The ACA is designated to assume overall responsibility for the operation of the airspace control system in the airspace control area. (JP 1-02) The ACA develops policies and procedures for airspace control and incorporates them into an airspace control plan (ACP). The ACP is implemented through the airspace control order (ACO). All forces affecting joint air operations are subject to the ACO. The flow of air traffic that the JFACC requires to execute an effective air campaign significantly influences the ACP, as do the

needs of the JFLCC's scheme of maneuver. The AADP and the ACP are developed jointly to ensure their integration.

3. Component Commanders

a. Commander Air Force Forces (COMAFFOR). The COMAFFOR exercises ADCON and normally exercises OPCON of all Air Force forces in theater on behalf of the JFC. The COMAFFOR uses an Air Force air and space operations center (AFAOC) as the focal point of operational-level C2 for air operations. If the COMAFFOR is designated as the JFACC, the AOC will be augmented with appropriate representatives from other participating Services to become a JAOC.

b. Commander Army Forces (COMARFOR). As the commander responsible for all Army forces in theater, the COMARFOR may serve as the JFLCC. A COMARFOR is normally an Army Service component command (ASCC) or corps commander, depending on the theater and size of Army forces involved. Army-level commands and above are often referred to as echelons above corps (EAC). The COMARFOR establishes a tactical operations center (TOC) to control combat operations and deploys a battlefield coordination detachment (BCD) to the JAOC to effect coordination and liaison with the JAOC. The COMARFOR also deploys an AAMDC to conduct split-based operations in order to fully plan, coordinate, integrate, and synchronize Army air and missile defense (AMD) operations with the theater CA plan within the designated area of operations (AO). See Figure I-1.
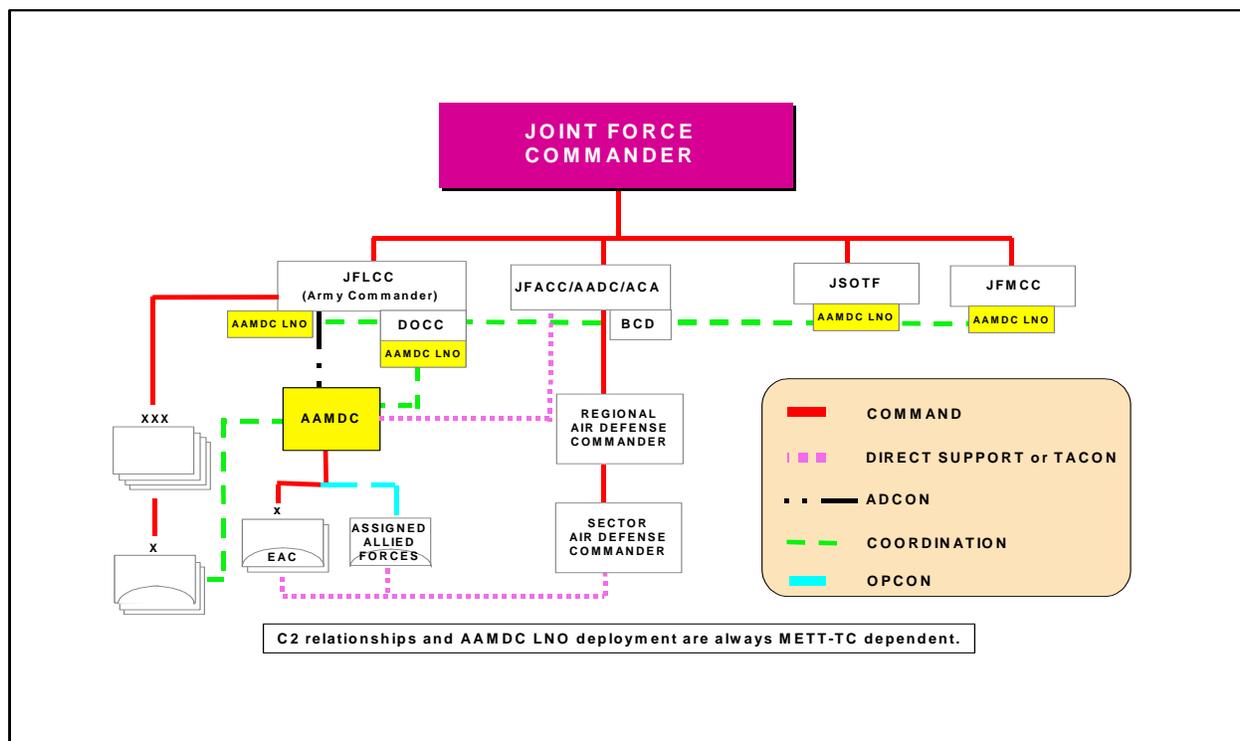

Figure I-1. Theater Command and Control Relationships

c.   Army Forces (ARFOR) Staff. The ARFOR staff follows the general staff concept of G-1 (personnel), G-2 (intelligence), G-3 (operations/plans), and G-4 (logistics). Key staff elements within the G-2 and G-3 directorates that affect AD operations are the air defense element (ADE), the analysis and control element (ACE), and the deep operations coordination cell (DOCC).

(1) ADE. The ADE is a small permanent-party staff element within the ARFOR G-3 responsible for daily planning and coordination of AMD operations. During contingencies, the ADE facilitates integration of the AAMDC into ARFOR operations. The ADE, with AAMDC augmentation, may serve as the AAMDC LNO team to the ARFOR headquarters, but normally in AAMDC split-based operations, the AAMDC tactical command post (TAC) deploys to the ARFOR location. In the absence of the AAMDC, the senior ADA commander as the theater Army air and missile defense coordinator (TAAMDCOORD), BCD AD section, and ADE work to integrate corps and EAC air defense artillery (ADA) assets into theater DCA operations.

(2) ACE. The ACE manages the collection of intelligence, produces all-source intelligence, provides technical control of intelligence and electronic warfare (IEW), and disseminates intelligence and targeting data. An ACE supports the commander at each command echelon to execute battle command and plan future missions across the range of military operations. The ACE centralizes analysis and collection management under OPCON of the G-2 and provides balance to all-source analysis products and synergy to counterintelligence (CI), human intelligence (HUMINT), imagery intelligence (IMINT), and signals intelligence (SIGINT) operations. At theater army level, the ACE works closely with the theater joint intelligence center (JIC) to support the intelligence requirements of the theater army commander and subordinates. The AAMDC G-2 coordinates continuously with the ACE and participates in the analysis and laydown of the TM threat; it also provides enemy TM updates to support ACE production requirements, as necessary.

(3) DOCC. The ARFOR conducts operations throughout the AO and may establish a DOCC to facilitate integration of all operations against targets deep in the ARFOR's battlespace. Deep operations enable commanders at each level to shape their battlespace, set operational tempo (OPTEMPO), set the conditions for success, and protect the force. The DOCC integrates all operational-level fires in the AO and coordinates JAOC-related activities through the BCD. See Appendix C for more detailed information on DOCC functions and responsibilities in support of attack operations. An AAMDC LNO team works with the DOCC to assist information flow and situational awareness (SA) for attack operations against TMs.

d.   Commander Navy Forces (COMNAVFOR). If the COMNAVFOR is designated the JFACC, joint air operations functions may be performed from more than one ship and would likely be conducted where workspace is at a premium. Therefore, sea-based JFACC operations may require the usual BCD and AAMDC liaison functions to be split accordingly. Because JFACC responsibilities may transition to another component, joint air operations planning must contain provisions to effect a transition.

(1) Navy Forces (NAVFOR) C2 Structure. The basic warfighting structure within the NAVFOR and Marine forces (MARFOR) afloat is spelled out in Navy Warfare Publication (NWP) 3-56, *Composite Warfare Commander's Manual*. The officer in tactical command (OTC) is overall responsible for successfully accomplishing the force's mission. The OTC may delegate certain defensive aspects to the composite warfare commander

(CWC), but retains responsibility for mission objectives—sea control, power projection, etc. The ADC within the Navy C2 structure works for the CWC when assigned, or the OTC when not assigned. The ADC may be designated as the AADC or the JOA may be subdivided into several regions with corresponding regional air defense commanders (RADCs) responsible to the AADC for their regions. In a configuration employing RADCs, the AADC may serve as both the AADC and one of the RADCs. See Figure I-2.
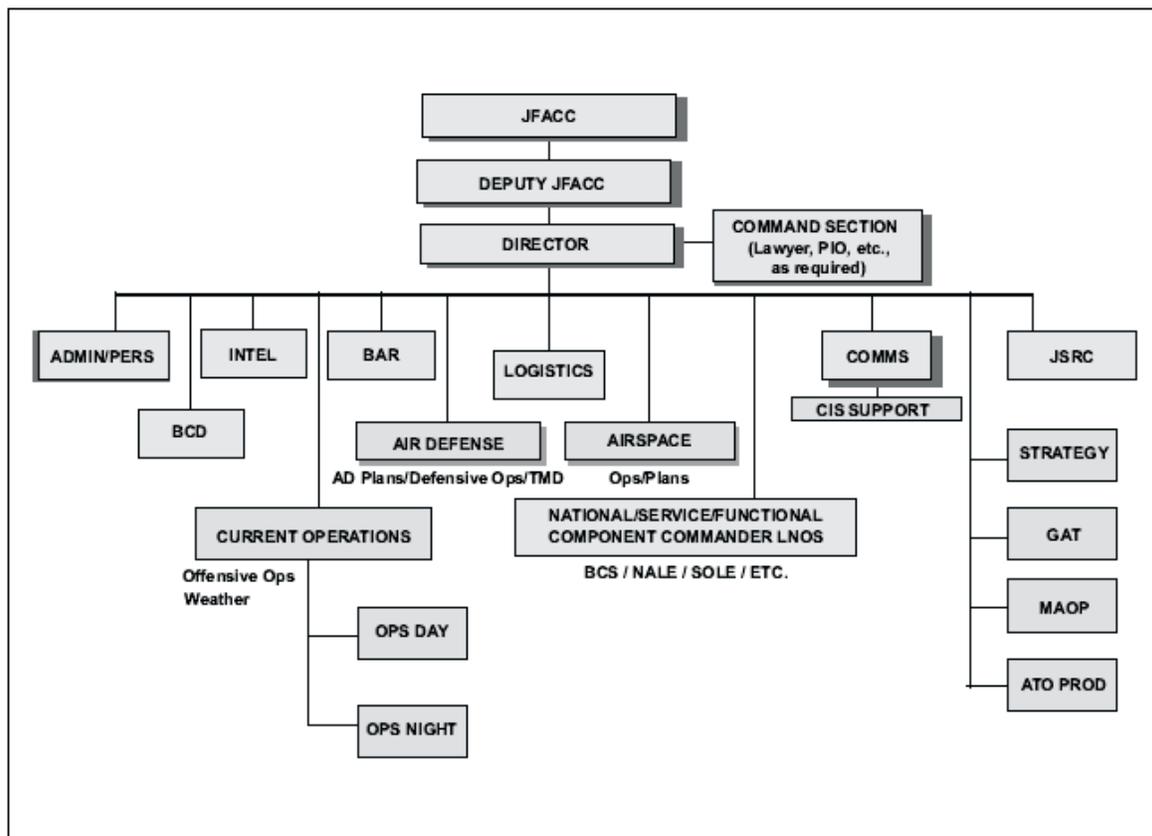
Figure I-2. Sea-based JFACC Organization

    (2) Liaison. While automation and digitization are making battle management easier, combat operations still require LNOs to facilitate efficient integration of joint forces. Therefore, if sufficient personnel are available, the AADC may place LNOs on the staffs of the commander, joint task force (CJTF), JFACC, joint force maritime component commander (JFMCC), JFLCC/ARFOR, and MARFOR. The JFACC, JFMCC, JFLCC/ARFOR, and MARFOR have LNOs on the AADC staff. The LNOs coordinate details of the AADP with their respective staffs. It is important to recognize that LNOs work directly for their respective parent component or unit commander and represent that commander to the unit or commander to which they are temporarily assigned.

    (3) Platform. The platform of choice for the sea-based JFACC is a numbered fleet commander's command ship. If equipped with an Area Air Defense Command System

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(AADCS), the AADC will normally be collocated with the JFACC using the AADCS as a planning tool for area air defense. The BCD and AAMDC send LNO teams to the JFACC to assist planning and coordination of OCA and DCA operations. These teams consist of approximately twelve BCD and five AAMDC personnel. The BCD/AAMDC LNO team is equipped with an Air and Missile Defense Workstation (AMDWS), which requires an air defense system integrator (ADSI) with forward area air defense (FAAD) datalink (FDL) capability. The BCD team and AAMDC LNOs also require access to Secure Internet Protocol Router Network (SIPRNET) lines and secure telephones. If the sea-based JFACC is embarked onboard an aircraft carrier (CV/CVN), the commanding officer (CO) on an Aegis cruiser will normally be assigned as the AADC. Ten BCD and two AAMDC personnel collocate with the JFACC on the CV. The BCD AD section (two personnel) and three AAMDC personnel will locate with the AADC.

(4) Transition to Ashore Operations. The BCD and AAMDC discharge their inherent responsibilities and integrate follow-on forces as they arrive in theater. Each command's remaining personnel link up with their respective attached units—BCD personnel link up with the JAOC ashore and AAMDC personnel link up with the appropriate headquarters (AADC and ARFOR). Depending on the JFC's guidance, team members may shift functions to the land-based headquarters gradually or all at once. Maintaining AAMDC or BCD LNOs with the JFMCC after AADC functions transition ashore may be necessary for continued synchronization of operations.

4. Joint Air Operations Center

a. The JAOC is structured to operate as a fully integrated facility and is staffed to meet all of the JFACC's responsibilities. JFACC organizations may differ based on the specific requirements and operations of the area of responsibility (AOR) or JOA. When a USAF AOC is available, it is the core of the JAOC, which will generally reflect the same basic organization and layout as an AOC. Products and responsibilities are the same regardless of organization. The JAOC staff should be organized and manned to reflect the composition of the joint force. The JFACC/JAOC organization (using the USAF AOC [AFAOC]as a model) is shown in Figure I-3.
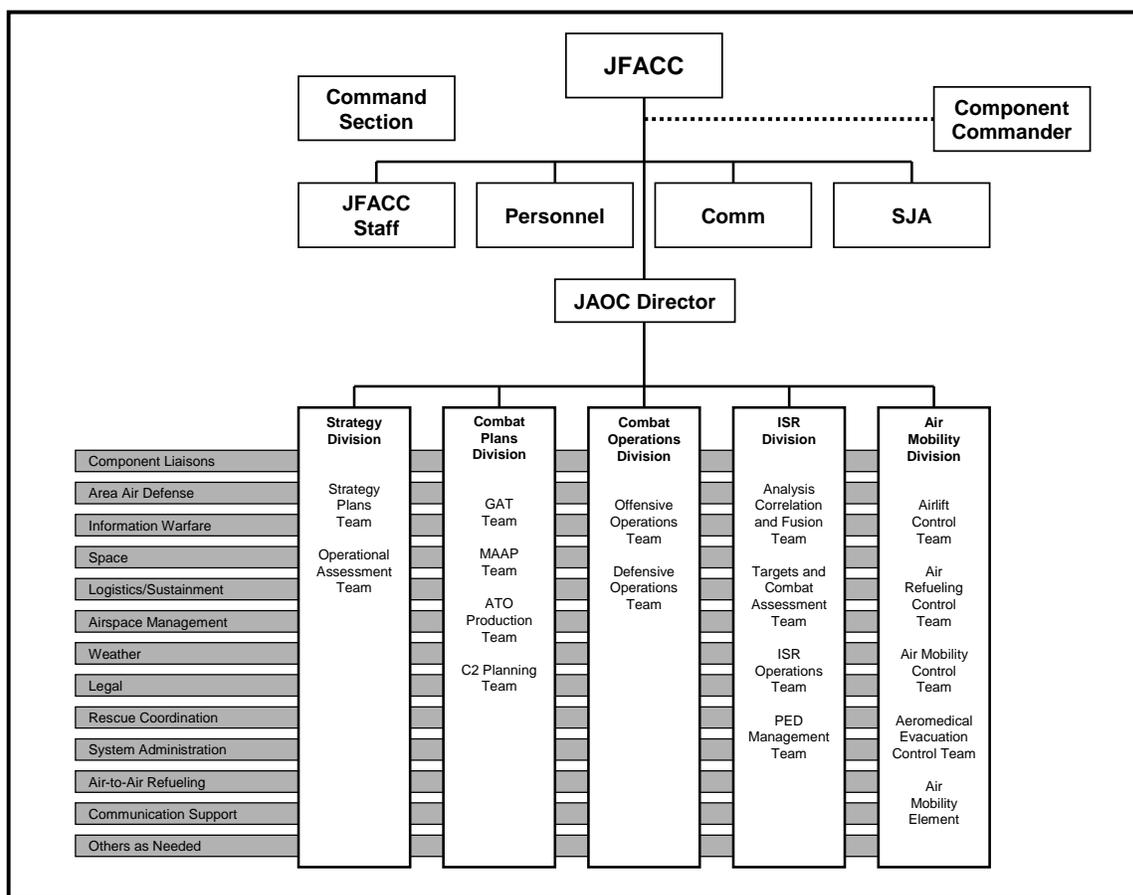
Figure I-3. JFACC Staff and JAOC Organization (USAF)

b.   The JAOC director assists the JFACC in exercising OPCON/TACON over assigned or attached forces and in planning and conducting joint air operations. The USAF AOC organization includes an AOC director, five divisions—strategy; combat plans; combat operations; and intelligence, surveillance, and reconnaissance (ISR); air mobility—and multiple support/specialty teams. Each division integrates numerous disciplines in a cross-functional team approach to planning and execution. For more information on organization and employment of a JAOC, see JP 3-30, *Command and Control of Joint Air Operations*. For detailed discussion of the organization of the USAF AOC, refer to Air Force Instruction (AFI) 13-1AOC Volume 3.

c.   Divisions and Core Teams.

(1) Strategy Division. The strategy division develops, refines, disseminates, and assesses the progress of the JFACC's strategy. The two core teams associated with this division are the strategy plans team and the operational assessment team. Key functions of the strategy division that affect joint CA include:

(a) Serving as the JFACC's focal point for overall development and coordination of the joint air operations plan (JAOP) in support of the JFC's theater campaign.

(b) Translating higher headquarters and JFACC guidance, as expressed in the air operations directive (AOD), into target sets for planning and executing the air tasking order (ATO).

(c) Serving as the JFACC's focal point for generating apportionment recommendations for the JFC.

(d) Monitoring and assessing the JAOP's progress and providing overall operational-level combat assessment of JFC objectives.

(2) Combat Plans Division. The combat plans division is responsible for the JAOC's near-term operations planning function. This division develops detailed plans for applying resources based on JFACC-approved guidance from the strategy division. These plans include apportionment and tasking instructions for assigned and attached forces, which are accomplished through the ATO. The combat plans division transmits the ATO to the combat operations division and other forces for execution. The combat plans division plans and coordinates the employment of CA C2 systems assigned, attached, or in direct support to the COMAFFOR or JFACC. Key functions of the combat plans division that affect joint CA include:

(a) Determining the optimal combination of target, platform, weapon, and timing for missions included in the ATO.

(b) Ensuring air tasking supports the overall JTF campaign.

(c) Generating special instructions (SPINS), joint intelligence prioritized target list (JIPTL), master air attack plan (MAAP), ACP, and AADP. Also distributing the operations task link (OPTASKLINK) when published by the joint interface control officer (JICO), and for generating the tactical operational data (TACOPDAT).

(3) Combat Operations Division. The combat operations division ensures the JFACC objectives are met and that the JFACC and AOC director are informed of the current battlespace situation, in order to make timely, relevant decisions. Key functions of the combat operations division include:

(a) Providing centralized C2 for theater airspace operations under command of the JFC.

(b) Retargeting or retasking JFACC assets to respond to changes in the friendly or enemy situation.

(c) Monitoring status of AD assets and retasking, repositioning, or changing weapons status to respond to battlespace changes.

(d) Monitoring and managing the status of the TACS and acting as the central C2 authority.

(e) Monitoring execution of the current ATO and ACO and providing situation updates to the JFACC.

(f) Providing attack indications and warnings and near-real-time (NRT) all-source intelligence updates.

(g) Continuously validating ATO targets in accordance with current guidance, ROE, battle damage assessment (BDA), and threat picture.

(h) Accomplishing theater missile defense (TMD) operations to include passive defense, active defense, and CA operations as needed.

(4) Air Mobility Division. The air mobility division plans, coordinates, tasks, and executes the air mobility mission. Key functions that affect joint CA operations are planning, tasking, and scheduling aerial refueling and sustainment.

(5) ISR Division. The ISR division is responsible, in conjunction with the combat plans and combat operations divisions, for planning and executing airborne ISR operations and providing combat ISR support to aerospace planning, execution, and assessment. Major process inputs include the component target nomination list, JFC guidance, JIPTL, joint intelligence estimate, air estimate of the situation, JAOP, AOD, AADP, ACO, intelligence preparation of the battlespace (IPB), priority intelligence requirements (PIRs), no-strike target list, and joint/master collection requirements list. ISR personnel in the strategy division provide initial detailed research and analysis of the operational environment, conduct continuous IPB, and ensure ISR assets are focused to support theater operations. ISR personnel in the combat plans division integrate intelligence into ATO planning and combat assessment, provide all-source threat analysis for targeting, friendly centers-of-gravity (COG) analysis, and report current situation/threat activity for adjusting combat plans. ISR personnel in the combat operations division support execution of an ATO by monitoring ongoing intelligence operations and responding to the fluid battlespace situation by providing attack indications and warnings, and NRT all-source intelligence.

d. Specialty Teams. Specialty team personnel are integrated throughout the JAOC to assist with air assessment, planning, and execution. Specialty teams that directly affect joint CA operations are discussed below.

(1) Air Defense Planning Team. The combat plans division sometimes includes a formal air defense planning team. The team plans and coordinates the employment of air and ground AD C2 systems assigned to COMAFFOR or the JFACC. As the focal point for the effective integration of all C3 systems into the joint TACS, this team of fully qualified operators represents the C2 systems assigned or available to the JFACC. The size and composition of the team may be tailored to the operational environment. Air defense planning officers:

(a) Develop, coordinate, and promulgate the AADP, concept of operations (CONOPS), and AD ROE upon approval of the AADC or JFC.

(b) Develop, coordinate, and negotiate agency-to-agency agreements and maintain liaison with host nations, allies, and Service components on all matters relating to C2 and employment of AD forces and resources.

(c) Plan, in coordination with other planning teams, the employment of specific AD resources, including fighters, missiles, and C2 systems and platforms.

(d) Develop, coordinate, and promulgate theater datalink tasking documents, including TACOPDAT and OPTASKLINK.

(e) Incorporate host nation, allied, and other Service component inputs to the C2 portions of the ATO, SPINS, and datalink tasking documents.

(f) Monitor system and facility status, capabilities, and mission tasking, and advise combat operations in the best possible adjustments of AOR, sector boundaries, and resource allocations.

(g) Coordinate with JAOC systems control (SYSCON) and the TACS directorate to develop a comprehensive communications plan with the required frequency management and appropriate support to communications and information systems. This plan must be coordinated through the JTF J-6 staff to update and deconflict the theater communications architecture.

(2) Space Support Team. The space support team serves as a force enabler to the JAOC. This team enhances the command, control, communications, computers, and intelligence (C4I) network and provides initial launch detection and warning dissemination for passive defense. Space forces can provide cueing against airborne targets for DCA and aid in ground target detection, nomination, and prosecution of OCA operations.

5. Key JAOC Products

Two key JAOC products relevant to CA operations are the ATO with associated ACO and the AADP.

a. ATO. ATO development is an iterative process that begins with receipt of objectives and guidance from the strategy division. An ATO normally covers a 24-hour period and three or more ATOs are at some stage at any given time (development, execution, or assessment). The guidance, apportionment, and targeting (GAT) team develops and performs initial weaponeering of targets. The MAAP team completes the weaponeering and places assets against targets, integrating other component requirements and support operations into the ATO. The ATO/ACO production team performs the technical production and dissemination of the ATO. The combat operations division executes and changes the current ATO as necessary. The strategy division's operational assessment team monitors and assesses the effectiveness of current operations to influence the development of future ATOs. Tasks and targets identified, prioritized, and nominated for inclusion in the ATO must support the JFC's overall campaign priorities within the capabilities of available resources.

b. AADP. Starting with deliberate planning and continuing through execution, planners at the JAOC assess the situation and identify assets required to accomplish the commander's objectives. The AADC—with the support of Service or functional component commanders and the JFC's approval—develops, integrates, and distributes the joint AADP. Based on the JFC's AD priorities, the AADC builds an AADP designed to optimize the joint force's AD capabilities. Factors affecting AADP development include: available forces, support that units can provide one another, and the need to create a multi-layered defense-in-depth (the ability to engage the enemy as far from its target as possible and to continue to engage until the target is destroyed).

c. Collaborative planning begins by ensuring components provide representatives to the AADC staff to provide specific weapon system expertise as well as broader mission expertise for plan development. Involvement early in the process will ensure an integrated, joint AADP. It is vital to develop and coordinate the AADP in concert with the ROE and C2 architecture in order to avoid critical disconnects or conflicts. RADCs and component AD experts (e.g. the AAMDC) collaboratively review the plan, develop exact positioning and defense design information, identify issues, and provide input and feedback to the AADC staff. The planners finalize, obtain JFC approval, and distribute the joint AADP. RADCs may refine details and, collaboratively with their components, supplement the plan. Because CA and airspace control and management are inherently related, the AADP and

ACP should be developed in tandem to avoid conflict. The AADP should address the following areas:

    (1) Prioritized defended asset list (DAL).

    (2) Sensor employment.

    (3) Identification procedures.

    (4) Engagement procedures.

    (5) Airspace control measures.

    (6) Weapons control measures.

    (7) Weapons system employment.

    (8) Tactical interface—e.g., tactical digital information link (TADIL) design.

    (9) Dissemination of early warning.

6. Liaisons to the JAOC

Representing their respective commanders, senior component LNOs perform duties throughout the JAOC to facilitate competent integration. Typical LNOs/LNO teams include the special operations liaison element (SOLE), Marine LNO (MARLO), Army BCD, and naval and amphibious liaison element (NALE). In addition, an AAMDC LNO team (see Appendix A) may deploy to the JAOC when the AAMDC main (operations and intelligence sections) and JAOC are not collocated.

a. SOLE. The SOLE coordinates all theater SOF efforts and assets in support of the JAOP. SOF can provide critical and timely surveillance and reconnaissance information on deployed enemy operations, as well as the means to destroy targets. To prevent fratricide, all Services must coordinate with the SOLE prior to engaging targets in current or known former SOF operating areas.

b. MARLO. The senior Marine Corps air combat element representative in the JAOC, the MARLO is responsible for effective presentation and adjudication of MARFOR aviation and targeting issues that the JFACC controls or affects. The MARLO's element to the JAOC may consist of an assistant combat operations officer, fighter duty officer, joint search and rescue liaison, electronic combat representative, airspace representative, air defense representative, Marine air ground task force (MAGTF) LNO, BCD LNO, senior Marine planner, Marine aviation planner, strategy officer, Marine AD planner, and Marine airspace management planner. US Marine Corps (USMC) Warfighting Publication (MCWP) 3-25.4, *Marine Tactical Air Command and Control (TACC) Handbook*, provides a more detailed discussion of Marine LNO duties in the JAOC.

c. BCD. The BCD is the ARFOR's liaison to the JAOC to plan, coordinate, and deconflict air operations. The ARFOR can tailor the BCD to support contingency operations as required.

    (1) The BCD is organized into a headquarters element and six sections: operations, AD, plans, intelligence, airspace management, and airlift. See Figure I-4.

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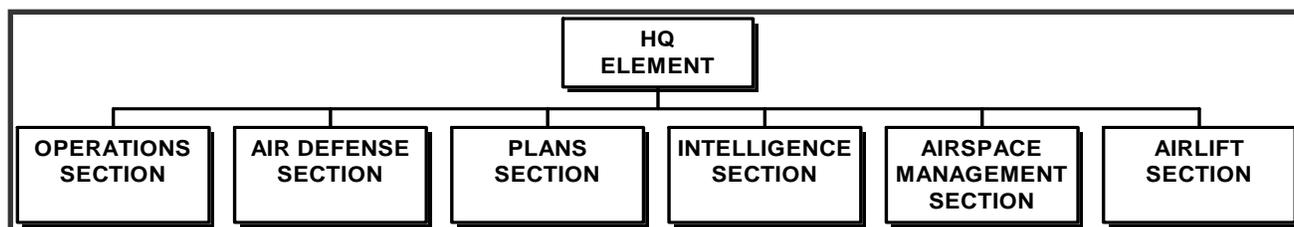
Figure I-4. BCD Organization

(2) The BCD ensures that the JFACC is aware of the COMARFOR's intent, scheme of maneuver, and concept of operations in the ARFOR AO. The BCD monitors and interprets the ARFOR battle for the JAOC staff and eases planning, coordination, and execution of the following functions: battle command, AD, TMD, intelligence, airspace management, airlift, command and control warfare, and firepower means.

(3) The BCD passes ARFOR operational data and operational support requirements—including close air support (CAS), air interdiction (AI), ISR, and joint suppression of enemy air defenses (J-SEAD)—from the COMARFOR to the JFACC and participating multinational forces. The BCD does not participate directly in the ARFOR command estimate or decision-making process, but does communicate the COMARFOR's decisions and interests to the JFACC. To facilitate this process, the BCD provides ARFOR staff elements information on all battlefield operating systems and functions. The COMARFOR may delegate decision-making authority for specific events or situations to the BCD commander. FM 3-09.13, *Battlefield Coordination Detachment (BCD),* provides a more detailed discussion of BCD functions and operations. The BCD supports the JAOC by:

(a) Operations Section.

• Coordinating with the senior offensive duty officer (SODO), senior air defense officer (SADO), SOLE, MARLO, NALE, AAMDC, and others, as required.

• Monitoring execution of the current ATO in regard to sorties planned against land force nominated targets.

• Coordinating with the ARFOR TOC, DOCC, TMD cell (for TM targets), and JAOC combat operations division on canceled, diverted, or re-roled missions planned against ARFOR targets.

• Interpreting the enemy and friendly ground forces situation (maintaining current situation map) for the JAOC. Informing the JAOC combat operations division of significant changes in operations, objectives, and priorities.

• Coordinating firing of immediate Army Tactical Cruise Missile System (ATACMS) missions with JAOC combat operations section and BCD airspace management section.

• Coordinating changes to the fire support coordination line (FSCL) and other fire support coordinating measures (FSCMs) with the JFACC staff.

- Deconflicting proposed ATO mission changes beyond the FSCL with friendly forces (e.g. SOF) forward of the forward line of own troops (FLOT) and with restrictive FSCMs (protected and restricted targets).

(b) Air Defense Section.

- Coordinating ARFOR input to the AADP with the ARFOR air defense element (ADE) in the operations section when the AAMDC is not in theater.

- Coordinating with the AAMDC/ARFOR ADE and ADA brigade headquarters for the following: locations of ADA assets, engagement reporting, ADA weapons engagement zones, identification friend or foe (IFF)/selective identification feature (SIF) procedures, and receipt of ADA annexes to operations plans (OPLANs)/operations orders (OPORDs).

- Advising the AADC on Army AD matters appropriate to deconfliction of air support to ground operations.

- Coordinating with the control and reporting center (CRC) for the following: ADA unit status, changes in AD warning (ADW), weapons control status (WCS), ROE, identification procedures, and early warning/tactical ballistic missile (TBM) alert procedures.

- Advising the SADO of Army AD status to include placement of ADA weapons in DS of ground forces (in concert with the AAMDC when it is in theater).

- Coordinating with the AAMDC/ARFOR TMD cell for TBM alert dissemination procedures.

- Synchronizing operations with the AAMDC and assisting senior AAMDC personnel at the JAOC as required.

(c) Plans Section.

- Obtaining from the ARFOR G3 air and plans section, as appropriate, the following: OPLANs, OPORDs, overlays, and 24-96 hour projections of the COMARFOR concept of operation, targeting priorities, and target nominations for air interdiction (AI), CAS, reconnaissance, electronic warfare (EW), and psychological operations (PSYOP).

- Providing to the COMARFOR and staff the concept of operations and weight of effort for CAS and AI target priorities, reconnaissance, EW, battle status, and nuclear weapons employment information from the JAOC.

- Coordinating planned ATACMS missions with the JAOC combat plans division and the BCD airspace management section.

- Ensuring COMARFOR target nominations are submitted within established guidelines for the ATO planning cycle.

- Ensuring COMARFOR target nominations are deconflicted throughout the ATO planning process.

(d) Intelligence Section.

- Relaying real-time significant intelligence information received by the following: the Joint Surveillance Target Attack Radar System (JSTARS), Guardrail, U-2, unmanned aerial vehicles (UAV), and other collection platforms.

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- Coordinating emerging target information with the ARFOR TOC, validating them for immediate diverts, and keeping the operations section informed about the targets.

- Interpreting the enemy ground forces situation (maintaining current enemy situation map) and informing the operation and plans sections of apparent changes in enemy operations, objectives, and priorities.

(e) Airspace Management Section.

- Coordinating airspace management for preplanned and immediate ATACMS missions.

- Integrating and deconflicting ARFOR airspace requirements with the JAOC airspace management section.

- Coordinating ARFOR airspace use requirements with the JAOC airspace management section.

- Integrating ARFOR airspace user activities with the JAOC airspace plans.

- Representing COMARFOR interests in the development and approval of airspace control measures and restrictions published in the ACO.

- Advising the ACA and BCD commander on the impact of joint airspace control measures or restrictions on the conduct of the ground battle.

- Coordinating COMARFOR requests for airspace control measures (ACMs) and restrictions, to include EW requirements.

(f) Airlift Section.

- Maintaining situational awareness of all airlift and airlift support requests that affect ARFOR operations.

- Briefing the airlift coordination cell (ALCC) and staff on COMARFOR objectives, concept of operations, and airlift requirements.

- Coordinating immediate airlift requests to support ARFOR operations.

- Coordinating with the director of mobility forces (DIRMOBFOR) on locations of drop zones, pick-up zones, and landing zones to include the planned activities and control procedures used.

d.   NALE. The NALE consists of personnel from the maritime components (USN and USMC) who support the JAOC in integrating naval air, naval fires, and amphibious operations into the theater air campaign. The NALE is also the point of contact in the JAOC for the exchange of current intelligence/operational data with the maritime components. Navy liaisons to an established shore-based JFACC are critical to the integration of navy assets. It is necessary to utilize deploying staff as the senior liaison/supporting personnel to ensure effective coordination. Depending on mission, enemy, terrain and weather, time, troops and support available and civil considerations (METT-TC), LNOs should include Tomahawk land-attack missile (TLAM), air wing, or surface warfare personnel.

7. Army Air and Missile Defense Command (AAMDC)

The AAMDC is the Army's operational lead for Army theater air and missile defense. The AAMDC is a fully integrated AMD organization that is entirely mobile. The AAMDC maintains its own organic C4I systems and shelters within the Air and Missile Defense Planning and Control System (AMDPCS), which forms the foundation of the AAMDC TOC. However, the AAMDC does require external connectivity support as part of an integrated, joint C4 system. Normally, the AAMDC conducts split-based operations in support of the JFACC or AADC and the COMARFOR (or JFLCC if designated). The AAMDC collocates the AAMDC main (operations and intelligence sections) with the JAOC, and the AAMDC TAC (administration and logistics sections with operations/intelligence situational awareness) with the ARFOR headquarters. However, based on METT-TC the AAMDC has the flexibility and agility to organize itself in a variety of ways to successfully support and execute the higher headquarters' AMD guidance, intent, and concept of operations.

a. AAMDC Commander.

(1) The commanding general of the AAMDC has two roles common to every ADA commander—commander of all assigned ADA forces and AMD coordinator for the COMARFOR. The AAMDC commander may be appointed as a deputy area air defense commander (DAADC). These three roles reflect the total theater involvement of the AAMDC. METT-TC determines the commander's location and role during each phase of a contingency operation. Table I-1 depicts a snapshot of the AAMDC commander's roles. These roles are interrelated and span across all the operational elements of JTMD. Many of the tasks under each role may also fall under other roles based on the dynamic nature and requirements of JTMD operations.

Table I-1. Theater Roles of the AAMDC Commander

Theater Air and Missile Defense (TAMD)	Senior ADA Commander	Theater Army Air and Missile Defense Coordinator (TAAMDCOORD)	Deputy Area Air Defense Commander (DAADC)
C4I	Single POC for Army AMD in theater	Synchronizes missile defense operations Develops and maintains TAMD IPB/situation template Provides LNOs to higher elements and provides JTAMD C2 nodes Accepts LNOs from lower elements and components	Integrates Army AMD in theater Integrates two levels of modernized Patriot force Provides LNOs (ADAFCO) to CRC/TAOC/Aegis Integrates AMD communications (data/voice)
Active Defense	Conducts AMD operational-level planning Conducts defense design/operational-level planning Recommends DAL Commands all EAC Patriot units	Develops AMD Annex for ARFOR/JFLCC	Chairs coordination board (reprioritization board) Recommends CAL/DAL with CVT methodology Assists with AADP development Issues SAM tactical order (STO) Advises on coalition AMD integration
Passive Defense	Plans for recovery and reconstitution	POC for operational protection (OP) Plans and synchronizes all OP tasks Disseminates early warning Provides vulnerability analysis/NBC reporting	Assists in theater early warning
AO		Assists in target definition Makes ISR recommendations Input to target nomination process	Assists in target definition Makes ISR recommendations Input to target nomination process

(2) After considering factors of METT-TC, JFC and AADC will determine whether a DAADC should be designated. This designation formalizes the relationship between the land-based AMD assets dedicated to theater level missions and the AADC and helps to ensure fully integrated and synchronized counterair operations. The DAADC performs integration and parallel planning to ensure efficient coordination and rapid response to the AADC's counterair requirements. The DAADC ensures the Army land forces' contribution to the counterair fight is properly planned, synchronized, and executed. The AAMDC as the senior Army air defense element in support of the AADC/DAADC requirements is the primary interface at the JAOC for all land-based active air defense operations.

(3) Although the AAMDC commander may serve as a "deputy" AADC, the DAADC would not assume the role of the AADC if the AADC were incapacitated. Not a true deputy

commander, the DAADC's primary responsibilities are to assist the AADC in planning, coordinating, integrating, and synchronizing land-based AMD operations. Neither the AAMDC commander nor his staff has the tactical, technical, or procedural expertise and capability to perform all of the functions of an AADC in a joint environment. The DAADC and the AAMDC support the AADC/DAADC relationship by providing the following support to the AADC:

(a) Integrate land-based AMD into theater DCA operations.

(b) Advise the AADC regarding ROE, weapons control status, weapons control procedures, states of readiness/alert, fire control orders, airspace control measures, and air defense warnings.

(c) Assist the AADC with AADP development.

(d) Advise the AADC regarding land-based AMD operations and capabilities.

   b. AAMDC Staff.

   (1) Figure I-5 depicts the organizational structure of the AAMDC.
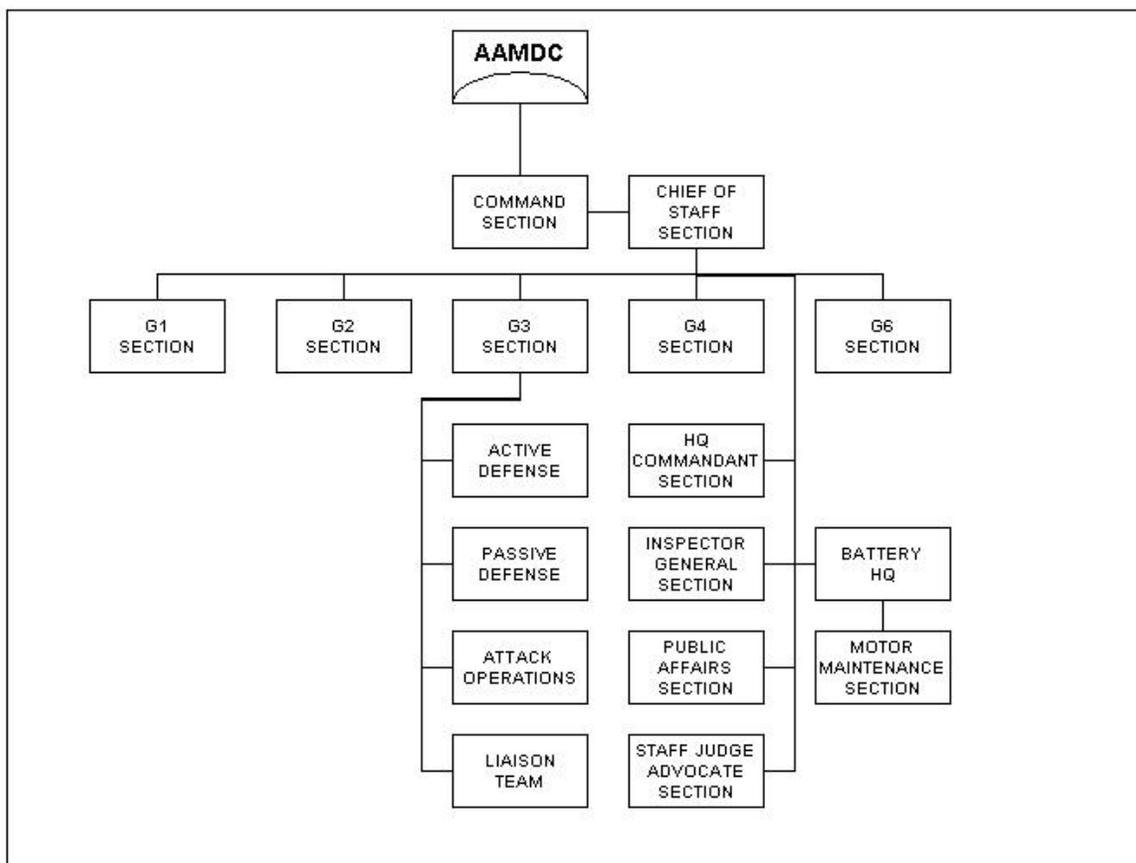
Figure I-5. AAMDC Organizational Structure

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(2) The AAMDC executes Army AMD operations through the TOC, which includes all staff sections and the AMDPCS equipment. Pertinent sections are addressed below:

(a) Command Section. The command section exercises C2 of the AAMDC and subordinate units and ensures that functions pertaining to the overall operation of the AAMDC are planned, coordinated, and executed. The command section also performs battle management functions and oversees the planning, initial entry, and combat operations for AMD functions.

(b) Chief of Staff Section. The chief of staff section directs and coordinates the activities of the subordinate staff—to include the special staff, public affairs (PA) section, chaplain, inspector general (IG), and staff judge advocate (SJA)—and ensures that assigned tasks are promptly and efficiently completed.

(c) Intelligence Section. The intelligence section is the focal point for all military intelligence and counterintelligence; it assists the G-3 in operations security and provides theater AMD intelligence support to Army component forces and other joint/multinational forces as required. It is responsible for intelligence production, dissemination, and support activities; development, refinement, and validation of the IPB; assistance to the commander in identifying PIRs; development and refinement of the TM intelligence estimate and request for ISR collection; processing of requests for information (RFIs); analysis of intelligence reports and messages; development of target recommendations; and keeping the commander informed of intelligence capabilities and limitations and their potential impact on operations. The section also acquires, maintains, and monitors intelligence systems; determines intelligence communication requirements; assists in the development of physical security plans, operational plans, and operational security measures; and coordinates intelligence and security drills.

(d) Operations Section. The operations section coordinates, integrates, and synchronizes all AAMDC operations. It directs the emplacement of the TOC and monitors the operational status, location, and engagement capabilities of land-based AMD units. The operations section coordinates unit movements and maintains situational awareness of the theater AMD battle. Although normally the AAMDC does not have C2 of any attack operations or passive defense forces, the operations section monitors aspects of their operations capabilities that may impact AAMDC operations. To facilitate AMD operations, it establishes and maintains LNOs at major theater and ARFOR C2 nodes. For example, in the event of a missile launch, the operations section receives launch and TBM impact points, disseminates early warning, and after intelligence analysis, may nominate targeting of the enemy's associated TM infrastructure to include suspected hide sites, countermobility, and support facilities, to the JAOC. The operations section prepares the AMD annex to the ARFOR's OPLAN/OPORD and develops plans to support future operations. It also integrates TM-related time-sensitive and planned ATO target missions and assists in developing the theater AADP.

(e) Communications-Electronics (CE) Section. The CE section provides data and voice communications and information systems planning, coordination, and support to the AAMDC. As required, it provides support to joint, multinational, and external organizations.

(f) Staff Judge Advocate (SJA) Section. The SJA section advises the AAMDC commander on military, domestic, and foreign laws; laws relating to armed conflict; and theater ROE issues.

c. Tactical Operations Center (TOC). The AAMDC performs a traditional C2 mission for Army theater AD forces and integrates the operational elements of TAMD for Army forces to effectively support counterair operations. When the AAMDC deploys into theater, the TOC plans, integrates, coordinates, and synchronizes Army TAMD operations. The TOC consists of five functional areas or cells that operate under the direction of a battle captain. These cells derived from the AAMDC staff sections are shown in Figure I-6. Three of the cells in the AAMDC TOC perform current TAMD operations: active defense, passive defense, and attack operations. The configuration of the TOC can be changed based on METT-TC.
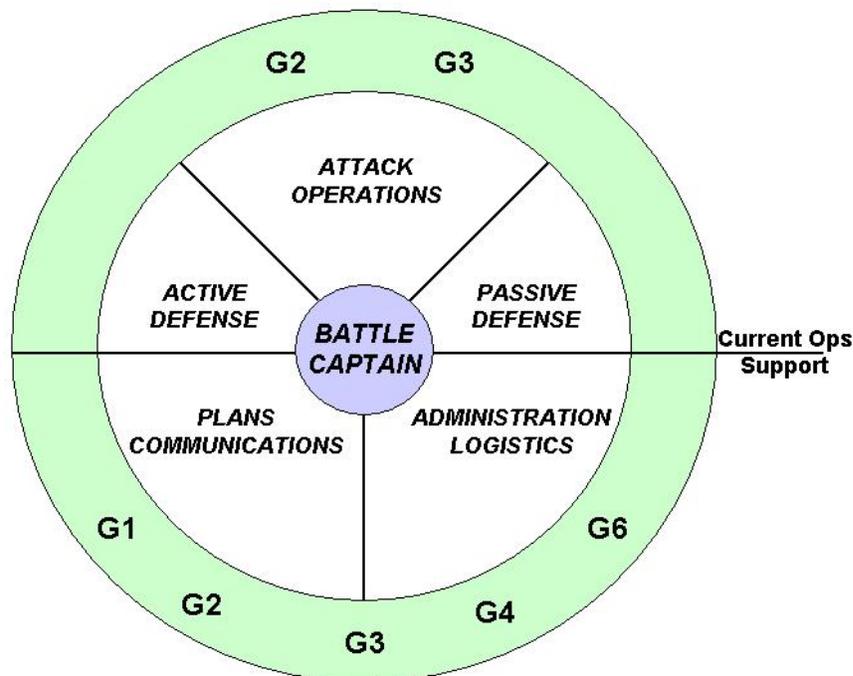

Figure I-6. AAMDC Functional Cells

(1) Operations.

(a) Battle Captain. The battle captain is the focal point of TOC operations and ensures that the TOC is properly configured and that all systems are operable. The battle captain synchronizes the planning and execution of operations and ensures that intelligence, active defense, passive defense, attack operations, logistics, and administrative support operations are fully coordinated. During operations, he assesses enemy TM launch information, verifies alerts, characterizes missile launches, determines launch and impact points, maintains air situational awareness, and confirms that warnings are passed to affected friendly units. Throughout the battle, he maintains contact with external AAMDC LNOs to exchange information on the status of operations and TM events.

(b) Active Defense Cell. The active defense cell coordinates Army active AD operations throughout the JOA. The cell displays air and missile track information from ADA and joint sensors and the locations and coverage of AMD units. During operations, it monitors the friendly and enemy air and missile situations. When the enemy launches

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missiles, the cell passes the TM launch information to the attack operations and passive defense cells.

(c) Passive Defense Cell. The passive defense cell develops and provides an early warning architecture and disseminates early warning to affected ARFOR units and, if required, the local populace. Through the use of IPB, imagery, and displays, it determines which friendly areas are fully protected, partially protected, and unprotected, and provides this information to battle planners. The cell also monitors the friendly ground situation, warns friendly forces of enemy activity, and conducts TM vulnerability assessments for the ARFOR or JFLCC and the JFACC as necessary.

(d) Attack Operations Cell. The attack operations cell supports ARFOR deep operations and joint force OCA attack operations through analysis and targeting focused specifically against the TM threat. Analysis includes such actions as developing TM information requirements (IRs), building operational patterns and profiles, identifying trigger events, analyzing launch events, conducting countermobility analysis, and identifying information operations (IO) warfare vulnerabilities. Targeting actions include nominating attack strategies and submitting target nominations and mission requests to the JAOC. These validated TM nominations are normally developed in conjunction with the JAOC for immediate or preplanned execution. The BCD will coordinate with the DOCC for TM targets in the ARFOR AO.

(e) G-3 Plans/Communications Cell. The G-3 plans/communications cell performs a variety of planning and communications support activities. These support activities include assisting in the development of OPLANs and OPORDs, determining communications and data link requirements, and maintaining communications equipment (including the TOC LAN).

(f) Administration/Logistics Cell. The admin/log cell monitors and advises the commander on the status of logistics functions.

(2) Operational Element Integration.

(a) Coordinating and integrating the TAMD operational elements of attack operations, active defense, passive defense, and C4I is essential in order to counter the TM/weapons of mass destruction (WMD) threat. AAMDC TTP to successfully destroy or nullify the threat capability require:

- Prehostility IPB.

- Analysis of firing patterns.

- Observation of developed named areas of interest (NAIs) by influencing the ISR collection plan.

- Nomination of targets that deny the threat's ability to weaponize WMD, disrupt C2, destroy TM infrastructure, and deny the threat underground facilities (UGF) and other hide sites.

- Establishment of ISR and attack operations kill boxes once pattern analysis confirms threat tactics.

- Deployment of Patriot early to the most critical assets to protect the sortie generation rate and time-phased force and deployment data (TPFDD) flow.

•   Conducting vulnerability analyses and maximizing passive defense measures at undefended assets.

(b) Execution of the TTP listed above provide the greatest chance of success in defeating the TBM/WMD threat and contribute to the JFC's freedom to maneuver and retention of the initiative. Figure I-7 depicts the coordination and integration of the TAMD operational elements necessary to defeat the TM threat.
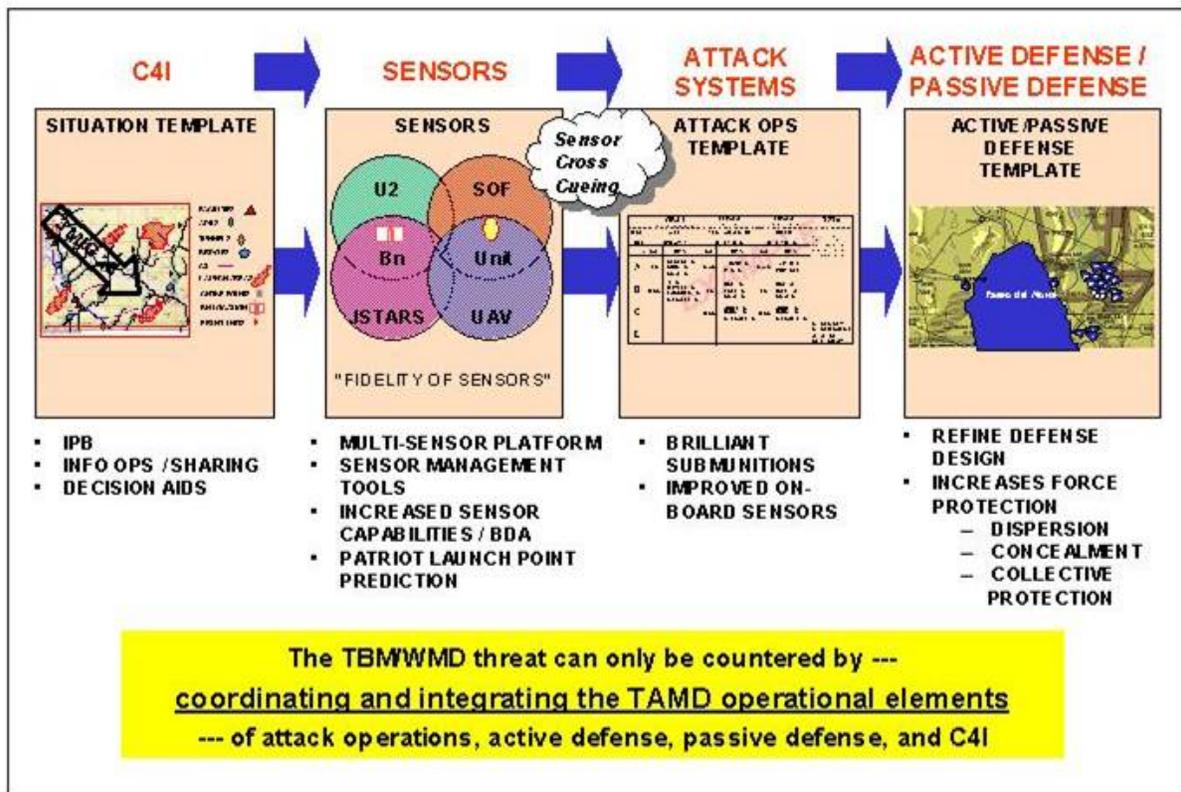

Figure I-7. Operational Element Integration

(3) Coordination. The deployment of LNOs or coordination teams is a key element for successful integration of AAMDC operations. Based on METT-TC, the AAMDC may deploy LNOs or coordination teams to all major theater elements and CA C2 nodes, to include the joint force headquarters, the JFACC (JAOC), JFLCC or ARFOR headquarters, JFMCC, JSOTF, DOCC, and allies as necessary to coordinate and integrate Army AMD operations.

d.   Support of CA Operations by Force Projection Stage.

(1) Mobilization/Predeployment. The situation may require that a mobilization/predeployment stage be initiated. The ARFOR uses the AAMDC to plan, coordinate, deconflict, and execute AMD within the assigned AO and supports CA operations according to the AADC's guidance. The AAMDC establishes communications with the ARFOR staff and other units, organizations, and agencies as required, and sends liaisons as necessary. Although planning is a continuous process, the AAMDC works in coordination with the COMARFOR and his staff to convert the command's concept plan

(CONPLAN) to an OPLAN. The AAMDC analyzes, assesses, participates in the decision making process, and assists in developing the OPORD. The AAMDC uses automated planning capabilities to develop the AMD annexes to the ARFOR's plan and to synchronize them with the combatant commander, AADC, and other components' OPLANs. Planning cells within the AAMDC conduct detailed planning and assessment for entry and follow-on operations. During the mobilization/predeployment stage, numerous concurrent planning and execution activities continue. The ARFOR and AADC may both use the AAMDC to validate possible TM threat scenarios and OPLANs. The TM IPB serves as the basis for determining the most effective deployment strategy, developing the ARFOR's intelligence plan, and appropriately mixing weapons, sensors, and capabilities to counter the anticipated TM and air threat for each phase of the operation. During the mobilization/predeployment stage, the AAMDC:

> (a) Coordinates with the designated AADC (participates in JFACC crisis action planning (CAP) as required).

> (b) Conducts AD and TM IPB in conjunction with theater and national agencies.

> (c) Synchronizes joint theater air and missile defense (JTAMD) planning.

> (d) Plans and integrates Army contributions into JTAMD operations.

> (e) Assesses AD architecture and recommends changes as needed.

> (f) Develops force packages for subsequent force projection stages.

> (g) Assesses unit readiness.

> (h) Plans LNO team deployment as required.

> (i) Plans communication and multi-TADIL network architecture.

> (j) Assesses passive defense capabilities.

> (k) Plans follow-on AD operations.

> (l) Plans for logistics support operations (sustainment requirements).

> (m) Plans for movement.

(2) Deployment/Entry. The AAMDC normally deploys to the theater in direct support of the AADC; normally this includes the TOC, command group, LNO teams, and essential staff sections. Upon arrival in theater, the AAMDC establishes connectivity through the Army's C4I architecture and joint interfaces as required and establishes linkages to joint, multinational, and national C4I systems. The AAMDC represents the ARFOR or JFLCC during joint planning with the designated AADC on AMD issues. Once in theater, AAMDC monitors enemy activities using all available intelligence sources. The AAMDC continuously processes and reviews intelligence information, collects BDA, and assesses the enemy situation. The AAMDC deploys LNO teams as required. During the deployment/entry stage, the AAMDC:

> (a) Establishes liaison.

> (b) Coordinates with the AADC as required.

> (c) Participates in JFLCC J-3 or ARFOR G-3 planning by providing CA input to the air operations plan.

(d) Integrates intelligence from deployed sensors to provide the ARFOR/JFLCC situational awareness.

(e) Refines the TM IPB picture and requirements.

(f) Analyzes criticality, vulnerability (and recuperability), and threat (CVT).

(g) Recommends changes to improve passive defense.

(h) Monitors operational security (OPSEC).

(i) Monitors friendly and enemy air operations.

(j) Recommends AMD architecture designs.

(k) Recommends AMD priorities in coordination with maneuver plans.

(l) Executes logistics support functions.

(m) Coordinates and implements AD attack warning procedures.

(n) Assists in coordinating TM targets and targeting priorities.

(o) Provides theater CA expertise.

(p) Monitors ADA unit locations and status.

(3) Operations. The AAMDC supports the joint force by providing effective land-based active AD to protect the JFC's priority assets. The AAMDC assists in implementing passive defense measures throughout the AO and recommends TM attack strategy to the ARFOR and JFACC staff for planning and coordinating preplanned and immediate missions. The AAMDC plans, coordinates, monitors, deconflicts, and sustains Army AMD operations and recommends adjustments to the DAL. During the operations stage the AAMDC:

(a) Serves as the TAAMDCOORD to the ARFOR or JFLCC.

(b) Serves as DAADC if designated.

(c) Integrates Army AMD operations and contributes to CA operations.

(d) Conducts split-based operations in support of the JFACC and the ARFOR or JFLCC if designated.

(e) Monitors theater-wide combat service support (CSS) for ADA units, including allocation of missile and repair parts to corps and EAC ADA brigades according to the JFC's priorities.

(f) Warns of attacks according to warning release criteria.

(g) Supports the ARFOR/JFLCC by processing and disseminating TM intelligence to EAC, corps, and division C2 nodes. The AAMDC intelligence section:

- Provides accurate air and ground situational awareness and the latest information on those activities and vulnerabilities.

- Receives TM track updates throughout flight.

- Cues active defense units for engagement of TMs.

- Warns units of possible TM impact.

I-24

- Assesses vulnerability continuously.
- Synchronizes countermeasures with attack operations.
- Disseminates TM impact information for analysis and warning.

(4) Postconflict/Redeployment. Postconflict/redeployment operations generally occur after the deployed force has accomplished its primary mission. Reconstitution activities support redeployment. Some forces capable of conducting AMD operations maintain an alert or ready status during this state and ARFOR AD elements may remain behind for stability operations. During the postconflict/redeployment stage, the AAMDC:

(a) Consolidates forces for redeployment and reconstitutes remaining AMD forces to a full readiness capability.

(b) Requests theater sensors and intelligence sources in sufficient numbers to provide continuous—though possibly reduced—early warning and intelligence coverage during postconflict stability operations.

(c) Recommends to the JFACC, COMARFOR/JFLCC, and JFC the size, composition, and mission guidelines for stay-behind forces.

8. Conclusion

Countering the AMD threat is a challenge that can only be mastered with thorough knowledge of component forces and their contributions to the mission. This chapter identified key organizations involved and their respective structures and operational methods. The remainder of this publication focuses on improving coordination of CA operations.

Chapter II
DEFENSIVE COUNTERAIR (DCA)

1. Introduction

DCA is all defensive measures designed to detect, identify, intercept, and destroy or negate enemy forces attempting to attack or penetrate the friendly air environment. Encompassing both active and passive air defense, DCA provides a secure area from which all elements of the joint force can operate effectively. This chapter addresses passive air defense early warning issues, other passive air defense measures, and active air defense.

2. Passive Air Defense

a. Early Warning. Component commanders ensure timely dissemination of attack warnings. General warnings indicate that attacks are imminent or have occurred. Specific warnings indicate which units or areas are in danger of attack or impact.

(1) Responsibilities.

(a) The JAOC specifically assigns TMD alert and warning duties, usually within the defensive operations section. A TMD voice warning net may be set up to provide timely warning of missile attacks as a backup to electronic means and for agencies without other means of rapid dissemination (AFI 13-1AOC V3).

(b) Timely, accurate intelligence supports attack warning. The JAOC and AAMDC coordinate IPB and use all sources—primarily imagery, SIGINT, and measurement and signature intelligence (MASINT), to assess vulnerability of the joint force and to maintain situational awareness. JAOC and AAMDC intelligence personnel assess the vulnerability of friendly areas and identify those that have adequate protection, those that have limited protection, and those that have inadequate protection.

(c) The JAOC and AAMDC review and assess the TBM warning architecture to ensure that it is completely operational and effective throughout the JOA using routine end-to-end testing and verification of the alerts and warning architecture and procedures. Coordination may be required with US Strategic Command (USSTRATCOM).

(2) Process.

(a) In support of the JFC and in coordination with the components of the joint force, the JFACC and AAMDC develop an early warning architecture, which includes detection measures, communications nodes, and warning notifications. C4I systems provide coordination and confirmation of detected threats, threat reporting, JOA warning, and warning to affected units.

(b) Once an early warning notification reaches the theater via Integrated Broadcast System (IBS) and/or satellite communications (SATCOM) verbal reporting net, diverse communications paths support notification to theater units. Active participants utilize a formal warning communications net; other theater components may also monitor this formal warning net.

(c) The AAMDC monitors and displays the friendly ground situation and warns affected ARFOR units of TM activity. In addition to voice warning systems, the AAMDC

establishes Pager Alert Warning System (PAWS) architecture, a pager distribution plan, and pager coverage areas. The PAWS augments the TBM voice early warning system.

(d) The JAOC relays TBM warning by data and voice through a variety of tactical data processors and dedicated missile warning nets. Alternate means are used to notify units that are not equipped with similar equipment. For example, the JAOC normally relays TBM warning via theater battle management core system (TBMCS) message alerts to ensure that units with TBMCS terminals throughout the theater receive the data. The JAOC uses alternate means to notify units that are not equipped with TBMCS terminals. The JAOC also relays data via the public address system to ensure that JAOC personnel, component LNOs, and duty officers advise units to confirm their receipt of the TBM warning.

(e) Theater early warning standards will be included in the AADP. TBM voice early warning format and procedures should include:

- Launch time.

- Launch point in latitude/longitude and/or geographic reference (GEOREF). Ensure all units understand what reference system is used.

- Predicted impact point in latitude/longitude and/or GEOREF.

- Azimuth.

- Vicinity, if available (city/base/complex or area/assets at risk).

- Predicted impact time.

(3) Systems.

(a) The space systems/theater event system (TES) provides theater warning of space-detected TM launches as quickly as possible. Once a launch is detected, the data is immediately transmitted globally using the IBS, which includes tactical related applications (TRAP) tactical data dissemination system (TDDS) and tactical information broadcast service (TIBS). The theater can expedite receipt of warning data and improve their situational awareness by filtering IBS data to events applicable to them. Tactical receive equipment (TRE), which varies in size, capability, and compatibility, receives the IBS data. The JFC must assess the availability of TRE throughout the JOA for compatibility and sufficiency. After the TES element transmits the TBM data, verbal notification follows on the first detect, first report (FDFR) net, and on additional nets if available in theater. The Missile Warning Center (MWC) located at Cheyenne Mountain controls the verbal reporting net and coordinates with theaters for reporting content and protocol. The FDFR net can be activated from locations other than the MWC. Theaters also coordinate with MWC for access to the FDFR reporting net, which confirms and amplifies the IBS message.

(b) The JAOC/AAMDC may process and display TBM-specific data on a Global Command and Control System (GCCS) common operational picture (COP) and/or the Processing Display Subsystem Migration (PDS-M). The PDS-M has capabilities similar to the Worldwide Origin Threat System (WOTS).

(c) The GCCS COP can provide a theater picture to all users with accounts on the COP, regardless of geographic location. GCCS must include the TBM module to

ensure that it can receive and process TBM data. PDS-M helps correlate multiple IBS reports associated with a single TBM launch.

(d) The theater TADIL architecture (TADIL-A, -B, and –J) normally supports dissemination of warning of air-breathing threats (ABTs).

b. Other Than Early Warning. Passive defense reduces the potential effects of air and missile attack by providing maximum protection while complicating the enemy's targeting process. Commanders at all levels are responsible for passive defense, which encompasses all measures, other than active air defense, taken to minimize the effectiveness of hostile air actions. For example, the AAMDC conducts vulnerability analyses and assessments of critical assets in conjunction with other Service components and then provides passive defense recommendations to the AADC and COMARFOR or JFLCC if designated. These measures include:

(1) Hardening and dispersing equipment and facilities.

(2) Rapidly recovering/repairing facilities and equipment.

(3) Efficiently removing mines and unexploded ordnance.

(4) Using counter-nuclear/biological/chemical equipment and facilities.

(5) Ensuring sufficient assets are available to provide redundant systems/equipment capabilities.

(6) Establishing systems to alert, warn, and provide all-clear notifications.

(7) Using camouflage, concealment, and deception.

(8) Implementing effective operational security (OPSEC), communications security (COMSEC), and emissions control (EMCON) security.

3. Active Air Defense

Active air defense is direct action taken to nullify or reduce the effectiveness of hostile air or missile threats against friendly forces or assets. It includes the use of aircraft, AD weapons, electronic warfare, and other available weapons. Integrated employment of air-to-air and surface-to-air defense systems through coordinated detection, identification, assessment, interception, and engagement of enemy forces is necessary to blunt enemy attacks and to protect friendly forces. Active air defense is conducted in close coordination with passive air defense operations to minimize the effectiveness of enemy systems that penetrate friendly air defenses.

a. Active Air Defense Planning.

(1) Defended Asset List. Active defense operations are designed to protect selected assets and forces from attack based upon the JFC's critical asset list (CAL). These assets are covered by different types of defense design (area or point) and are subject to AADC-established weapons control procedures. The JFC, in coordination with components and coalition forces, develops the CAL and issues guidance for protecting assets by phase. Components and coalition forces submit prioritized CAL nominations to the JFC, including detailed requirements and justifications for the defense of each asset. Defense laydown may be accomplished using automated planning tools (e.g. Joint Defensive Planner [JDP] and AADCS) if available. A manual system, CVT methodology, is detailed in Appendix E.

Together, the JFACC and AADC staffs arbitrate competing demands to coalesce all priorities into the JFC-approved DAL.

(2) Coordination Board (Reprioritization Board). As required (by METT-TC), the AAMDC may establish or participate in coordination boards (reprioritization boards) to recommend changes to AMD priorities on the DAL and adjustments to the defense design during the course of operations. The board uses an objective process that quantifies the level of importance of each asset based on selected criteria. The board also assigns weights to the criteria based on the JFC's guidance, intent, and center of gravity (COG) concerns. The board forwards its recommendations to the component commanders and the AADC; the JFC is the ultimate approval authority for the recommendations. The AADC may designate the AAMDC commander, in the DAADC capacity, to chair the joint coordination board (reprioritization board). Factors involved in developing a prioritized DAL by phases of the operation include:

(a) Anticipated enemy capabilities.

(b) Friendly concept of operations and decision points.

(c) Anticipated degree of air superiority/supremacy.

(d) Political considerations.

(e) Degree of protection required.

(f) Time phased force deployment data (TPFDD).

(g) CVT of specific assets. See Appendix E for detailed discussion of CVT methodology.

b. Active Air Defense Operations. The inherent ability for air and missile threats to cross component AOs makes CA operations a joint endeavor. Each Service brings unique systems and capabilities to the fight. The effective use of all forces requires the establishment and understanding of the published ROE and ACO. The AADC assists the JFC in establishing and implementing these rules; the component and supporting commanders ensure compliance with these rules.

(1) Types of Operations.

(a) Area air defense operations defend a broad area using a combination of weapons systems (e.g. aircraft and ASMs).

(b) Point defense operations protect a limited area, normally in defense of the vital elements of forces and installations, based on priority. For example, SAM units provide point defense when positioned to protect an airfield.

(c) Self-defense operations allow friendly units to defend themselves against direct attacks or threats of attack through the use of organic weapons and systems. The right to self-defense is inherent in all ROE and weapons control procedures.

(2) Responsibilities. The JFC's designated AADC is responsible for integrating all DCA efforts in the theater. With the support of Service and functional component commanders, the AADC develops the AADP to meet the JFC's objectives and guidance. Component commanders provide the AADC with surface, air, and sea-based active AD capabilities and forces to implement the AADP. When deployed, the AAMDC provides the ARFOR input to the AADP and commands the ARFOR EAC AMD forces made available to

the AADC. Table II-1 lists the C2 nodes responsible for each critical action required to support DCA operations.

Table II-1. Critical AD Ops Responsibilities

C2 Node	Operations for Which Responsible	Legend
President/Secretary of Defense	a	a. Approve/disseminate all ROE. b. Approve/disseminate all ROE (if delegated). c. Disseminate selected ROE. d. Request changes to ROE. e. Establish AD warning conditions. f. Disseminate AD warning conditions. g. Declare/disseminate weapons control orders/weapons control status (WCO/WCS). h. Declare/disseminate WCO/WCS if delegated. i. Disseminate WCO/WCS. j. Establish/disseminate airspace control methods/measures. k. Disseminate airspace control methods/measures. l. Disseminate fire control orders. m. Develop/disseminate ACP. n. Approve ACP. o. Develop/disseminate ADP. p. Approve ADP. q. Develop/disseminate ATO and ACO. r. Disseminate ATO and ACO. s. Implement changes to ATO and ACO.
JFC/Staff	b, d, n, r	
AADC	b, d, e, f, g, j, m, q, r	
ARFOR	c, d, f, i, k, o, r	
NAVFOR	c, d, f, i, k, o, r	
MARFOR	c, d, f, i, k, o, r	
BCD	c, d, f ,i, k, m, o (will not develop the ADP), r	
RADC/SADC	c, d, e, h, i, k, l, r, s	
AAMDC	c, d, f, i, k, l, o, r, s	
ADA Brigade Headquarters	c, d, f, i, k, l, r, s	
AWACS	c, d, f, i, k, l, s	
CRC	c, d, f, i, k, l, s	
E2C Hawkeye	c, d, f, i, k, l, s	
Patriot Battalion	c, d, f, i, k, l, r, s	
Navy Area/Point Defense Ships	d, s	

(3) Organization. The AADC executes DCA operations through subordinate C2 nodes, such as the CRC and the Airborne Warning and Control System (AWACS)/E-2C Hawkeye airborne early warning (AEW). The AADC, in coordination with component commanders, normally decentralizes execution to RADCs or sector air defense commanders (SADCs). The number of regions and sectors varies depending on geographical, political, and operational factors. For example, the AADC may recommend that an Aegis cruiser perform RADC duties for the maritime region of the JOA.

(4) Resource Allocation. The JFACC allocates aircraft to perform the DCA mission based on the JFC's apportionment decision and distributes missions to each RADC. RADCs in turn may distribute missions to subordinate SADCs, depending on expected threat actions within their respective sectors. The controlling agency is responsible for executing the DCA mission through the coordination, control, and integration of aircraft and SAM systems under their direction.

(5) Coordination. RADCs and SADCs coordinate AD actions between regions and sectors, evaluate the results of engagements within their regions or sectors, and forward observations and results of engagements to the AADC (through the JAOC or SADO). The RADCs/SADCs request—or direct, when authorized—changes to AD warning and weapons control status commensurate with the threat. When required, they request additional assets.

(6) Execution. DCA operations use both positive and procedural controls.

(a) Positive Control. Positive control utilizes sensors, IFF, digital data links; and radio nets to track and identify friendly, hostile, and unknown air tracks. In the absence of positive control, procedural means permit the safe passage of friendly aircraft and enable the effective use of weapons.

(b) Procedural Control. The AADC implements procedural airspace control, which relies upon techniques such as segmenting airspace by volume and time. Controls include ACMs, which optimize airspace use, protect friendly units, and prevent fratricide. These ACMs are disseminated in the ACO.

(c) Engagement zones. A weapons engagement zone (WEZ) is a defined volume of airspace within which a particular weapon system is normally responsible for engaging air threats; it can be activated to delegate identification and engagement authority or may be used for a specific threat. The AADC may establish fighter engagement zones (FEZ) and missile engagement zones (MEZ). Depending on the tactical situation, the AADC may find it necessary to activate a joint engagement zone (JEZ) where all air and ground defense systems operate simultaneously in the same airspace. Coordinated with the ACA, engagement zones are included in the ACO and SPINS.

(d) SAMs. ROE and weapons control procedures determine engagements. The ADA fire control officer (ADAFCO) at the CRC monitors digital engagement activity for compliance with existing guidance. Normally, TBM engagement authority is decentralized to the shooter while engagement authority for all other air threats is normally decentralized only to the RADC/SADC level.

(e) TACOPDAT Message. To execute the AADP, the AADC periodically publishes a TACOPDAT message to establish AD responsibilities in a tactical area or to provide supplementary AD orders to an AOR. The TACOPDAT identifies units with AD missions and specifies roles, missions, and duties.

c. Army Active AD Operations. Army active AD contributes to joint theater CA operations. Its theater objectives are to preserve combat power, to gain the initiative, and to support offensive operations.

(1) Organization. Normally integrated with the CRC for fire control, the EAC and corps ADA brigades and their Patriot units are all data linked. If the link is inoperative, units revert to established lost-data link communications procedures. Short-range air defense (SHORAD) units (e.g. Avenger units) normally operate under procedural controls for engagements. Corps ADA (Patriot and SHORAD) units provide coverage for their associated maneuver commander's AMD priorities and protect against fixed and rotary wing aircraft, UAVs, TBMs, and CMs. However, EAC units (Patriot and SHORAD) are normally made available to the AADC for defense of the JFC's critical assets.

(2) Responsibilities.

(a) JFLCC/COMARFOR. Within the assigned AO, the JFLCC/COMARFOR prioritizes assets requiring protection according to the JFC's objectives and guidance for inclusion in the joint CAL. The AAMDC protects CAL assets by commanding and employing the EAC ADA brigades and coordinating corps ADA brigades into theater DCA planning and operations. The JFLCC/COMARFOR, through the AAMDC, ensures integration with the joint and/or multinational force while planning for AMD operations within the assigned JOA. In support of the overall campaign and within capabilities, the AAMDC provides expertise and necessary AMD forces to protect theater assets, such as airbases, logistics facilities, seaports, geopolitical assets, and maneuver forces in assembly areas, as directed by the JFC. Overall, the AAMDC coordinates, integrates, and synchronizes all Army AMD operations in support of the AADC's theater AADP.

(b) TAAMDCOORD. When deployed, the commander of the AAMDC becomes the TAAMDCOORD for the JFLCC/COMARFOR and is therefore responsible to the commander for integrating ARFOR assets into joint CA operations. As a special staff officer to the JFLCC/COMARFOR, the TAAMDCOORD participates in operational staff planning and with staff assistance (J-2/G-2 and J-3/G-3), develops an AMD annex for the JFLCC/ARFOR OPLAN/OPORD and provides input to the AADP. The TAAMDCOORD coordinates with the corps ADA brigades to ensure their AMD priorities are synchronized with the overall DCA effort. The AAMDC commander may also be designated as a DAADC, further formalizing his relationship with the AADC and CA operations. See Chapter I for discussion of the DAADC.

(3) Coordination. The AAMDC coordinates and synchronizes AMD operations through a command relationship (DS or TACON) with the AADC. The AAMDC assists the AADC in integrating Army active AD operations with DCA operations and in developing and executing plans for disseminating cueing information for engagement operations. Although the BCD is the primary agency responsible to the JFLCC/ARFOR for coordinating operations inside the JAOC, when the AAMDC is deployed it will assume full responsibility for Army AMD coordination within the JAOC. The AAMDC and BCD AD section synchronize their activities and exchange information on the following: active AD system locations, engagement capabilities, task organization, mission and priorities, operational status, planned movement, missile availability, and engagements. For additional details on information exchange among the AAMDC, AADC, and BCD, see Table V-1 (Information Exchange Matrix). Appendix B provides a checklist for JAOC/BCD/AAMDC coordination. Reporting requirements are detailed in Appendix D.

4. Conclusion

The AADC is responsible for integrating all CA efforts in theater. The commander of the AAMDC, serving as TAAMDCOORD/DAADC, facilitates the integration of ARFOR AMD assets into the overall DCA system through direct coordination with the AADC. This joint relationship improves integration and synchronization of DCA resources and the joint force's effectiveness in countering air and missile threats.

Chapter III
OFFENSIVE COUNTERAIR (OCA)

1. Background

OCA operations are operations to destroy, disrupt, or neutralize enemy aircraft, missiles, launch platforms, and their supporting structures and systems both before and after launch, but as close to their source as possible. OCA operations range throughout enemy territory and are generally conducted at the initiative of friendly forces. OCA includes attack operations, fighter sweep, escort, and suppression of enemy air defenses (SEAD). OCA attack operations are conducted in support of the OCA mission against surface targets that contribute to the enemy's air power capabilities. The objective of attack operations is to prevent the hostile use of aircraft and missile forces by attacking targets such as missile launch sites, airfields, naval vessels, C2 nodes, munitions stockpiles, and supporting infrastructure. Fixed or rotary wing aircraft, surface-to-surface weapons, SOF, or ground forces may perform attack operations. This chapter focuses on OCA attack operations against missile target sets (such as C2 nodes, forward operating bases, transload operations, launchers, missile stocks, and transportation infrastructure) and the coordination that occurs among the JAOC, the AAMDC, and the BCD.

2. Objectives

The preferred method for countering enemy TM operations is to attack and destroy or disrupt TMs prior to launch. To succeed, preemptive operations require a robust and continuous IPB effort with dedicated collection resources. Additionally, time-sensitive operations, which require the full support of the JAOC combat operations division, will occur.

3. Organization

The JAOC, AAMDC, BCD, ARFOR TOC, and the joint targeting coordination board (JTCB) are the key C2 nodes involved in attack operations. Figure III-1 illustrates the attack operations process flow.
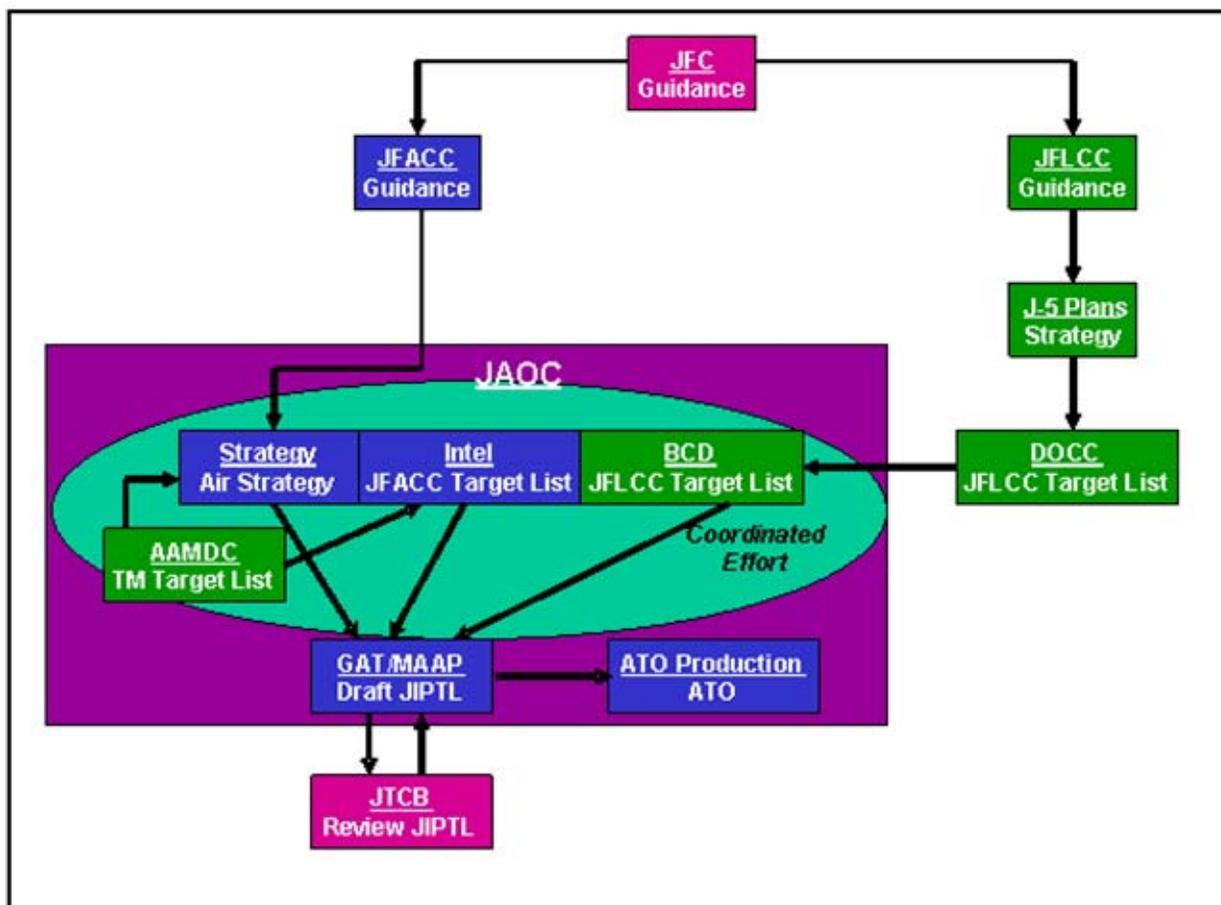
Figure III-1. Attack Operations Process Flow

a. JAOC. Within the JAOC, the key organizations involved in attack operations for the JFACC (beyond the five principle divisions) may include the time sensitive target (TST) cell and TMD cell. The JFACC normally delegates execution authority to the chief of combat operations (CCO), who relies on the SODO, TST cell chief, TMD cell chief, SADO, and ISR coordinator for functional area expertise. In certain scenarios, execution authority may be further delegated to the CRC; however, the CRC's ability to conduct and coordinate TM target analysis is limited.

b. AAMDC. The AAMDC supports attack operations by performing critical planning, analysis, tracking, and TM target development in conjunction with the JAOC and by having LNOs at key C2 nodes, such as the DOCC and JSOTF. Normally, the AAMDC intelligence and attack operations sections are collocated with the JAOC. To achieve preemptive attacks, the AAMDC intelligence section and the JAOC ISR division must continuously share targeting intelligence. Although both organizations perform many of the same IPB functions, differences in analysis, methodologies, sensors, and perspectives can create synergies and a better overall picture of enemy TM activity. Exchange of target intelligence early in the planning and execution process is essential to achieving effective joint attack operations. The AAMDC attack operations section submits all TM target

nominations directly to the JAOC for inclusion as JFACC nominated targets. The BCD and AAMDC DOCC LNO team will normally have visibility of these nominations. The BCD is responsible for deconflicting any JAOC target nominations within the ARFOR AO with the DOCC.   See Figure III-2 for AAMDC support to targeting.
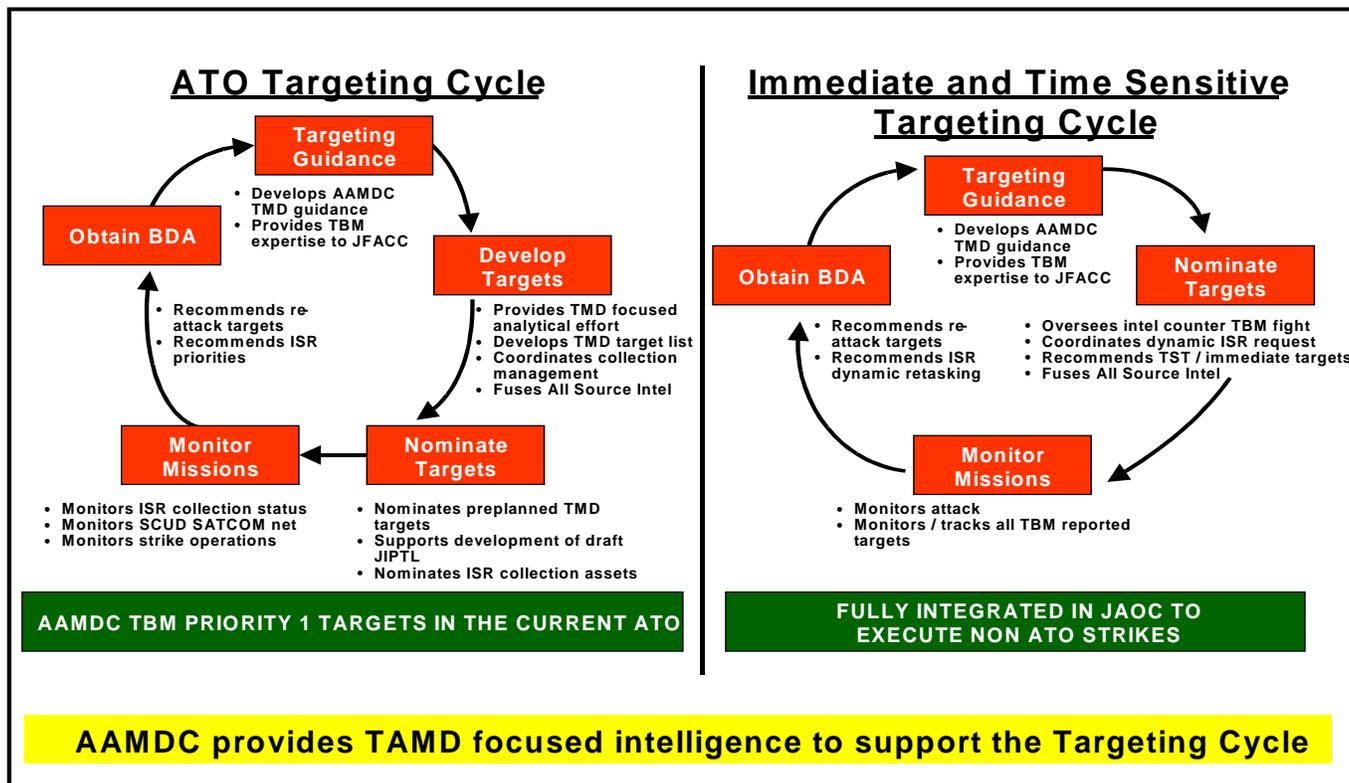

Figure III-2. AAMDC Support of Attack Operations

c.   BCD. As the COMARFOR's liaison element within the JAOC, the BCD is responsible for synchronizing and coordinating attack operations between the ARFOR and the JFACC, AADC, or ACA. The BCD is also responsible for coordination between the JAOC and ARFOR DOCC on all TM-related targets. To effect this coordination, the BCD normally must: expedite target confirmation, deconflict airspace requirements, coordinate through the DOCC for JFACC-requested ATACMs or Multiple Launch Rocket System (MLRS) missions, and process preplanned air support requests from the DOCC.   The agency or Service component nominating a target outside of the ARFOR AO is responsible for deconflicting and clearing ARFOR fires into that target area. The BCD will provide the requesting agency or Service component with the target airspace hazard (TAH) information.

d.   ARFOR TOC. Within the ARFOR TOC, the key organizations involved in attack operations for the ARFOR are the DOCC, G-3 plans, and G-2 ACE. The DOCC is responsible to the ARFOR commander and G-3 for planning, preparing, integrating, and coordinating all operations in the ARFOR's deep battlespace. The DOCC fire support element (FSE) is normally the responsible execution authority for all ATACMs and deep MLRS fire missions. G-3 plans is responsible for developing ARFOR input to the joint

attack strategy, and through the DOCC, for integrating associated attack operations into the overall ARFOR plan. The G-2/ACE provides intelligence support to all TOC operations and is responsible for planning employment of ARFOR collection assets and for submitting PIR beyond organic capabilities into the joint force collection management system. The AAMDC LNO team collocated with the DOCC, assists in TM attack operations. For more information on the DOCC, see Appendix C.

e. JTCB. The JTCB constitutes a significant part of the coordination effort between the components, allowing for visibility of targeting lists and overall coordination of theater-level targeting efforts. A jointly produced TM attack strategy and associated target priorities help reduce confusion and conflict for the JTCB and speed JIPTL development. The JFACC, in coordination with other component commanders, develops apportionment recommendations and forwards them to the JFC for approval, often through the JTCB. The JFACC establishes a planning cycle that includes development of the daily JIPTL.

4. Key Activities

Because attack operations are not limited to current operations, planners must integrate them into all aspects of campaign planning and execution. Therefore, all ROE, collection plans, fire plans, ATOs, and ACOs must be designed with adequate flexibility to respond to near-real time (NRT) target detection, identification, and prosecution. Because of its resident expertise and sole focus on TMs, the AAMDC has a strong role in the TM IPB development, attack strategy, and target development processes.

a. IPB. IPB provides the foundation for all attack operations activities, from development of a strategy and associated targets for the conduct of operations, through real-time intelligence support and combat assessment of operations. TM IPB requires a robust interoperable C4I architecture between the joint, functional, and Service component intelligence organizations; it also requires that these components consistently collaborate on current intelligence analysis and assessments. Chapter IV discusses intelligence coordination activities in detail. For a more detailed discussion of TM IPB, collection management, and targeting in support of TM attack operations, see FM 3-01.51/NTTP 3-01.13/AFTTP(I) 3-2.24, *Multi-Service Procedures for Joint Theater Missile Target Development* and FM 3-01.16/MCRP 2-12.1A/NTTP 2.01.2/AFTTP(I) 3-2.36, *Multi-Service Tactics, Techniques, and Procedures for Theater Missile Defense Intelligence Preparation of the Battlespace.*

b. Strategy Development. Developing strategy for the attack of TMs requires a joint effort between operations and intelligence personnel at the JTF and component levels, and it must be an integral part of the JFC's overall campaign strategy. Planners develop a TM attack strategy based on the JFC's objectives and guidance as well as known intelligence. The approved strategy drives IPB, collection management, and target development. While attacking emerging threats may be part of the overall strategy, it must focus on planned attack operations that will disrupt and if possible defeat the enemy's ability to conduct and sustain TM launch operations.

(1) Guidelines. An effective TM attack strategy should employ the following guidelines:

(a) Plan for continuous engagement of the entire TM target system. Continuous engagement of TMs is necessary to deprive the adversary of the initiative. Attacking the entire target system simultaneously prevents enemy TM forces from

conducting unimpeded operations and forces them to change their operating patterns to regain the initiative. Potentially, this creates further opportunities for exploitation by exposing TM vulnerabilities.

(b) Orient on the TM vulnerabilities and decisive points as developed through the IPB process.

(c) Fuse all TM activity information into predictive intelligence. Because TM information is highly perishable, the collection strategy and sensor distribution plan must support these requirements and be considered part of the overall strategy.

(d) Define phasing, timing, and desired effects for each phase of the operations in accordance with the campaign objectives and guidance. For example, the initial phase of the operation may focus on immediately reducing TM launches, while later phases concentrate on destroying the enemy's ability to reconstitute TM infrastructure in the future. The strategy must also define what "success" means for each operational phase, based on combat assessment results.

(e) Align target priorities with collection assets and attack resources.

(2) Responsibilities. Strategy development begins with the JFC's guidance. Component commanders augment the guidance with details and instructions and disseminate it to their respective staffs, agencies, and subordinate commands. Development of an effective TM attack strategy requires collaboration among all components' strategic and operational planners and joint and coalition forces. Planners of resources from outside the theater of operations, such as space and national assets, must also participate.

(a) JAOC. The JAOC strategy plans team is responsible for developing the air strategy in support of JFACC guidance and the JFC's overall campaign plan. The team articulates this strategy as part of the JAOP and AOD. OCA attack operations against elements of the TM target system are an integral part of the overall air strategy.

(b) AAMDC. The AAMDC provides input to strategy development in the form of a thorough TM IPB and knowledge of enemy activities, doctrine, capabilities, and limitations.

c. Target Processing. After a strategy is conceived, component planners must determine what combination of operations and targets will achieve the desired end state. Countering TMs means engaging known targets and building flexibility into collection and attack plans in order to respond to anticipated or unexpected targets of opportunity. Preplanned TM target selection, nomination, and approval follow the same procedures as any other target; however, the source of nominations may vary.

(1) Target Development.

(a) During the target development process, intelligence analysts at the JAOC and AAMDC must collaborate. Collaborating before actual target nominations are submitted:

- Improves the quality of analysis.
- Prevents unnecessary target duplication.
- Provides the opportunity to discuss priorities in support of the strategy.

- Coordinates surveillance area requests.
- Minimizes redundancies.
- Creates synergy in TM target development.

(b) Early and continuous TM IPB collaboration can expedite the JIPTL process by establishing a common TM intelligence picture to support and justify target nominations. The AAMDC team in the JAOC can facilitate this collaboration and provide additional information on TM-related targets as required.

(2) Target Nomination Process. After a TM target has been developed, it is submitted to the JAOC for input into the draft JIPTL and for discussion during the guidance, apportionment, and targeting (GAT) meeting. The AAMDC submits TM targets, developed by the AAMDC in conjunction with the ISR targeting team through JAOC channels. Special consideration must be given to targets close to, but outside the ARFOR AOR for potential collateral effects (e.g. downwind hazards). The BCD must coordinate targets in the ARFOR AOR with the ARFOR DOCC. The JTCB receives the JIPTL for JFC approval. Once approved, the JIPTL goes to the MAAP team for inclusion in the ATO. The DOCC is responsible for coordinating all ARFOR deep operations and targets within the assigned AO that might affect ARFOR operations. The BCD will coordinate TM targets in the ARFOR AOR, developed by the AAMDC, with the DOCC, as shown in Figure III-3.
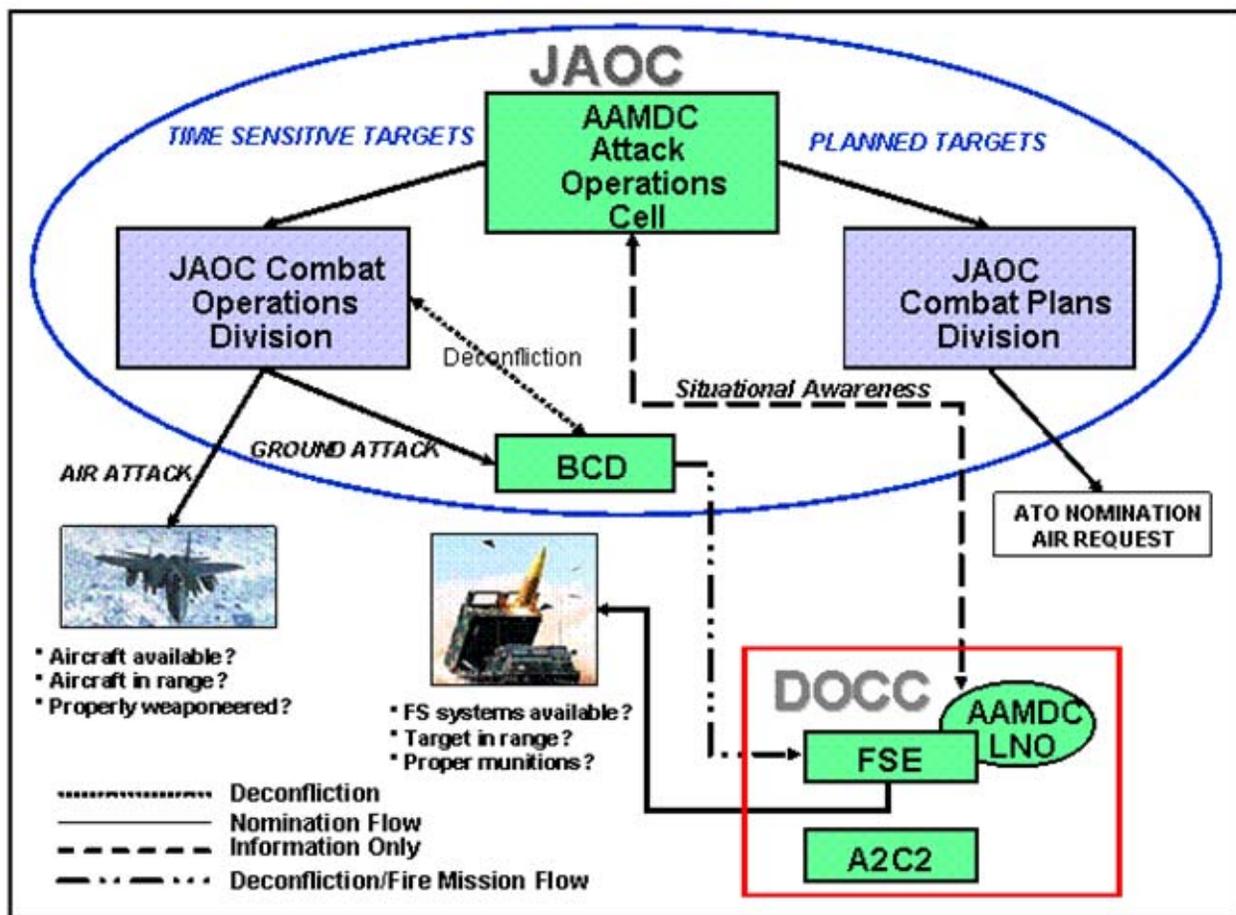
Figure III-3. Target Nomination Process—AAMDC Collocated with JAOC

(3) Execution. Vigilance is the key to successfully executing TM attack operations. Operators must immediately recognize TM activity indicators; they must then analyze the TM activity and make a targeting decision before the potential target is lost. To expedite targeting decisions, it is essential that pre-established procedures between the JAOC, AAMDC, BCD, and DOCC be in place. The situation may dictate that collection assets be rapidly redirected to confirm the target or track movements until attack assets engage the target.

(a) JAOC Combat Operations Division. The JAOC combat operations division is responsible for execution of the OCA attack plan. Within combat operations, TMD, TST, and ISR personnel work closely with the AAMDC to develop TM target nominations. The SODO/CCO approves confirmed target nominations, determines if target prosecution should continue, and which assets are appropriate. The JFC may have allocated external assets to the JFACC. The components' LNOs apprise the SODO of external asset availability. If the SODO selects a joint air asset, the JAOC forwards the attack order. If the SODO recommends use of an ARFOR asset, the BCD coordinates with the DOCC and airspace management personnel in the JAOC.

(b) The AAMDC intelligence and attack operations sections continuously monitor the battlespace to locate and identify TM targets for nomination to the CCO. Collaboration with other agencies may be necessary to confirm the target.

d.   Combat Assessment. Combat assessment is determining the overall effectiveness of force employment during military operations. It consists of three major components: battle damage, munitions effects, and re-attack potential. Like strategy, combat assessment should focus on desired effects based on the JFC's objectives and intent and must be planned and integrated into all operations. It is used to update the TM IPB and to adjust attack strategies to compensate for changes to enemy operating patterns or to take advantage of vulnerabilities created by the loss of critical systems. Without effective combat assessment, TM intelligence and the associated attack strategy become obsolete.

(1) JAOC. The strategy division's operational assessment team is responsible for integrating combat assessment requirements into plans and providing assessment results to the strategy plans team, combat plans division, and combat operations division.

(2) ARFOR TOC. In the ARFOR TOC, the ACE assesses battle damage. The G-3 assesses munitions effectiveness, and the G-2 and G-3 jointly develop the re-attack recommendation. The AAMDC G-2 section may assist the ACE with the TM target system's combat assessment.

5. Conclusion

Although not a separate mission area, attack operations against enemy TM forces are a challenge to the joint force as a whole. The complexity of joint operations when combined with the elusive nature of the TM target system requires trained and knowledgeable operators and analysts at all levels. Preemptive attack operations cannot be achieved without a robust, vigilant, continuous, and collaborative TM IPB effort. Joint forces must work diligently to integrate and synchronize attack operations and must strive to streamline decision making.

Chapter IV
INTELLIGENCE

1. Background

The AAMDC includes a robust TMD IPB capability, which interacts with the JAOC and provides additional IPB support to joint air operations. Warfighters within the AAMDC must possess detailed knowledge of intelligence processes and organizations in order to effectively integrate with the JAOC and support the fight. Efficient, focused intelligence is the foundation and an enabler for all other operations. It supports NRT collaborative planning, and the shared situational awareness necessary to effectively synchronize operations.

2. Intelligence Preparation of the Battlespace

a. IPB is an analytical methodology that reduces uncertainties about the enemy, the environment, and the terrain for all types of operations. It builds an extensive database for each potential area in which a unit may operate. After analyzing the database, intelligence presents the impact of the enemy, the environment, and the terrain on operations in graphic and text form. IPB is a continuous process whose four iterative and parallel steps are:

(1) Define the battlespace.

(2) Describe the battlespace's effects.

(3) Evaluate the adversary.

(4) Determine the adversary's courses of action (COAs).

b. IPB is categorized as joint, component, or TM.

(1) Joint IPB (JIPB). JIPB is the analytical process used to produce intelligence assessments, estimates, and other support products that enable the JFC staff to visualize the full spectrum of threat capabilities and COAs across all dimensions of the battlespace. JP 2-01.3, *Joint Intelligence Preparation of the Battlespace*, delineates the principles for conducting JIPB.

(2) Component IPB. Functional and Service components conduct IPB to support the planning and execution of their assigned missions. Each tailors IPB to provide the intelligence required to support operations. Ideally those efforts contribute to the overall JIPB.

(3) TM IPB. TM IPB is the continuous application of IPB methodology against missile target sets in a specific geographical area. It must integrate with all joint and component intelligence operations.

(a) A well-developed TM IPB provides the intelligence necessary to determine likely TM COA and associated COA branches and sequels. It also describes the environment in which friendly operations and planning must occur. TM IPB efforts support all of the TMD operational elements.

(b) TM IPB differs from other air-, land-, or sea-focused IPB. For example, while an operational level ground IPB generally concentrates on maneuver forces in defensive positions or moving forward, TM IPB focuses on dispersed ground activities in the enemy's rear area. Likewise, an air-focused IPB may center on intelligence required to achieve air superiority and to conduct air interdiction and strategic attack. TM IPB is an integral part of that effort, focusing on analyzing and correlating the who (units), what (equipment), when (timing), where (infrastructure), why (objectives), and how (operations) of an enemy TM force.

(c) TM IPB must begin before hostilities commence to determine the enemy's ability and willingness to employ specific TMs and WMD. A thorough understanding of the enemy's tactics, targeting, priorities, and technical data greatly facilitates operational planning. All intelligence organizations, from component to theater and national, should collaborate on the prehostilities IPB effort. Figure IV-1 illustrates how various IPB efforts contribute to the TM IPB process. FM 3-01.51/NTTP 3-01.13/AFTTP(I) 3-2.24, *Multi-Service Procedures for Joint Theater Missile Target Development* and FM 3-01.16/MCWP 2-12.1A/NTTP 2-01.2/AFTTP(I) 3-2.36, *Multi-Service Tactics, Techniques, and Procedures for Theater Missile Defense Intelligence Preparation of the Battlespace* provide a more in-depth discussion of the relationship among TM IPB, collection operations, and target development.
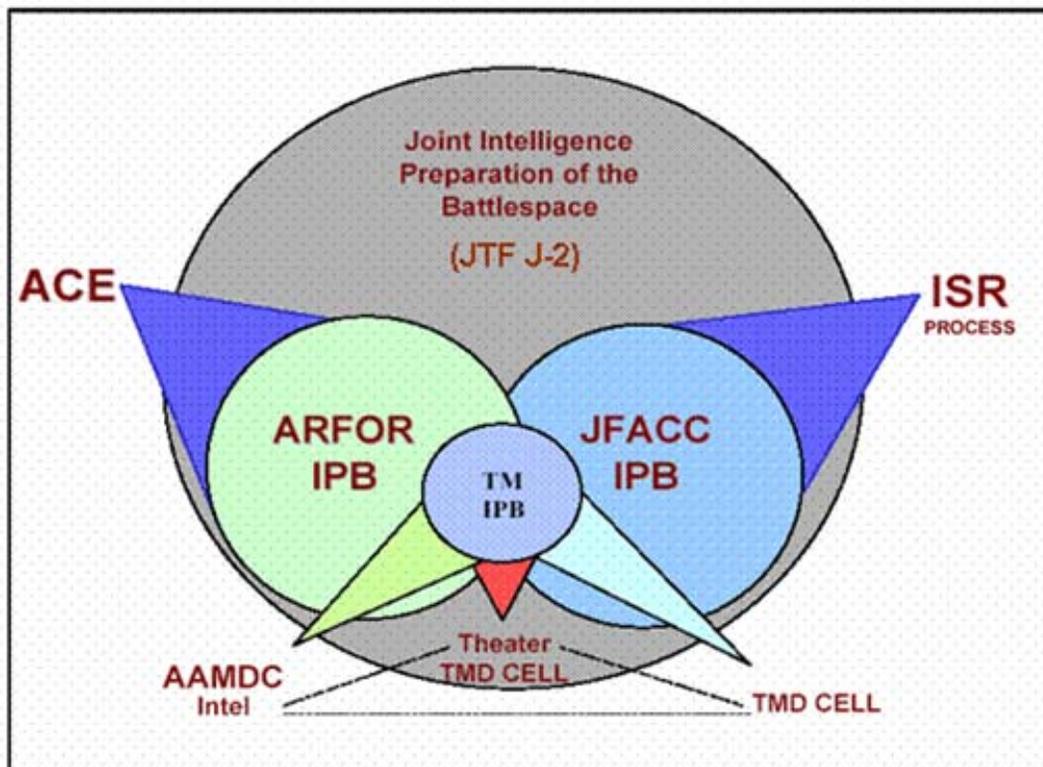
Figure IV-1. Categories of IPB

3. Collection Management Process

a. Collection managers use PIRs to begin the collection management process. There are six collection management functions that are managed under two headings: collection requirement management (CRM) and collection operations management (COM). The six steps outlined in Figure IV-2 depict how collection managers participate in formulating collection requirements, submit those requirements through appropriate channels to the collectors, and monitor/manage/track all activities to satisfy those requirements.

(1) CRM. CRM prioritizes competing RFIs based on JFC guidance and objectives and keeps the collection strategy synchronized with the overall campaign (Figure IV-2, Steps 1 and 6).

(2) COM. COM develops the collection plan, tasks collectors, disseminates results, evaluates ongoing operations (Figure IV-2, Steps 2 through 5), and assists CRM in keeping the strategy updated (Figure IV-2, Step 6).

STEP 6: UPDATE COLLECTION PLANNING

Eliminate satisfied requirements
Redirect assets to unsatisfied requirements
Cross-cue assets to catch targets of opportunity
Maintain synchronization
Add new requirements

STEP 1: DEVELOP REQUIREMENT

Participate in staff wargaming
Analyze requirements: Record Validate
                                       Consolidate Prioritize
Develop SIR sets

STEP 5: EVALUATE REPORTING

Monitor and maintain synchronization
Correlate reports to requirements
Screen reports
Provide feedback to collectors and exploiters

COLLECTION REQUIREMENTS MANAGEMENT (CRM)

STEP 2: DEVELOP COLLECTION PLAN

Evaluate resources
Develop collection strategy
        Select resources
        Synchronize collection to SIRs
Develop SOR sets
Prioritize SORs for collection assets

STEP 4: DISSEMINATE

Arrange direct dissemination
Determine perishability
Determine how much to disseminate
Identify media for dissemination
Disseminate

COLLECTION OPERATION MANAGEMENT (COM)

COLLECTORS

STEP 3: TASK OR REQUEST COLLECTION

Determine tasking or request mechanism
Execute and implement
Collect and exploit

Figure IV-2. Collection Management Functions and Process

b. Steps 1 and 2 of Figure IV-2 are the most critical, because they determine how PIRs are translated into specific information requirements (SIR) and then into specific orders and requests (SOR) for transmission to collectors. Table IV-1 indicates the information required to make IRs complete and precise. Note: in completing the "why" portion of the TM IR request, it is important to include in the justification that it supports force protection requirements.

Table IV-1. PIR Information Requirements (IR)

WHAT	Activity or indicator. Also include accuracy required for targetable data.
WHERE	Named area of interest (NAI) or target area of interest (TAI) location.
WHEN	Time the indicator is expected to occur.
WHY	Justification for requesting the information.
WHO	Who needs the results.
LTIOV	The latest time that the intelligence is of value.
MEDIA	The desired format for the information (e.g. report, briefing, multimedia, verbal, direct feed).

4. Collection Strategy Development

a.   The four key characteristics of a good collection strategy are: redundancy, mix, cross-cueing, and integration.

b.   Dynamic retasking refers to changing a sensor's collection focus while it is actively engaged in supporting collection requirements established prior to its current mission. Events in the battlespace and/or changes in JFC priorities/guidance may drive retasking. The value of the collections lost as a result of dynamic retasking must be compared with the value of the new intelligence gained.

c.   Dynamic retasking may require that the platform hosting the sensor be moved to within collection/sensing range of the new collection area. For airborne assets, this means changing the area in which the host aircraft is flying. The flexibility to move airborne assets may be constrained by self-protection and airspace deconfliction issues. For example, UAVs are vulnerable to the same air defense threats as manned aircraft and therefore require the same IPB considerations when determining safe flight routes. In some cases, sensors may be redirected or retasked without changing the location or flight path of the host. Some host platforms cannot be moved quickly, or at all. Cross-cueing and dynamic retasking require collection managers to maintain sensor situational awareness (knowledge of the locations, targets, capabilities, ranges, and other operating characteristics of sensors).

5. Collection Management Focus

a.   Collection management processes for peacetime, crisis, and conflict do not differ greatly. However, the level of conflict will change the focus of the collection management effort and the number/types of ISR assets made available for collection tasking.

b.   When dealing with a mobile threat, the classic intelligence functions of collection, situational awareness, analysis and production, and target development must be compressed in time, level of detail of analysis, coordination, and decision making. Figure IV-3 shows the cognitive hierarchy associated with these tasks.
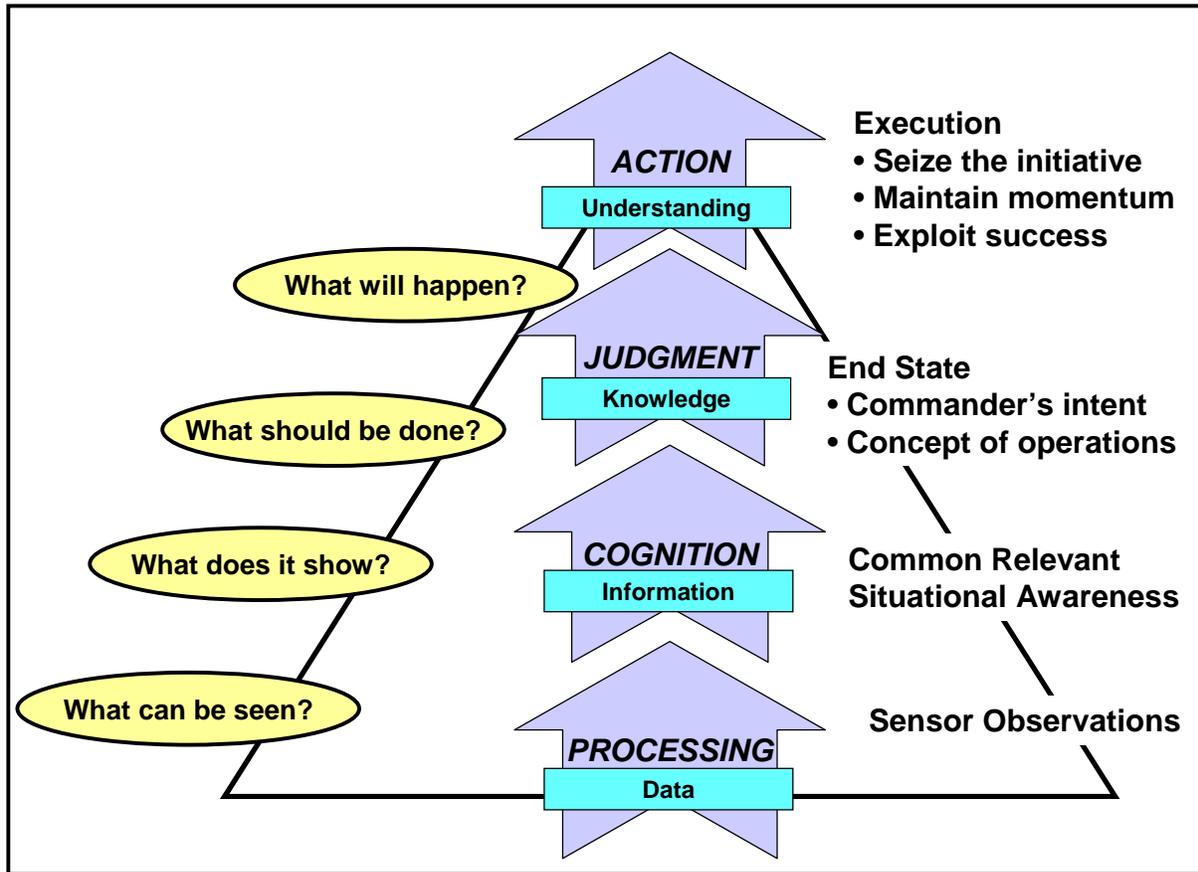
Figure IV-3. Cognitive Hierarchy Associated with ISR Tasks

    c.   In order to be effective, the planned wartime collection architecture must be exercised during peacetime. Figure IV-4 illustrates the complexity of collections and intelligence information pathways that exist in support of operations during crisis or conflict. The dashed line in Figure IV-4 indicates a requirement for coordination. The solid, bi-directional arrows indicate interaction (requirements development, coordination, and communication), and the solid arrows indicate a tasking or passing of information or requirements.
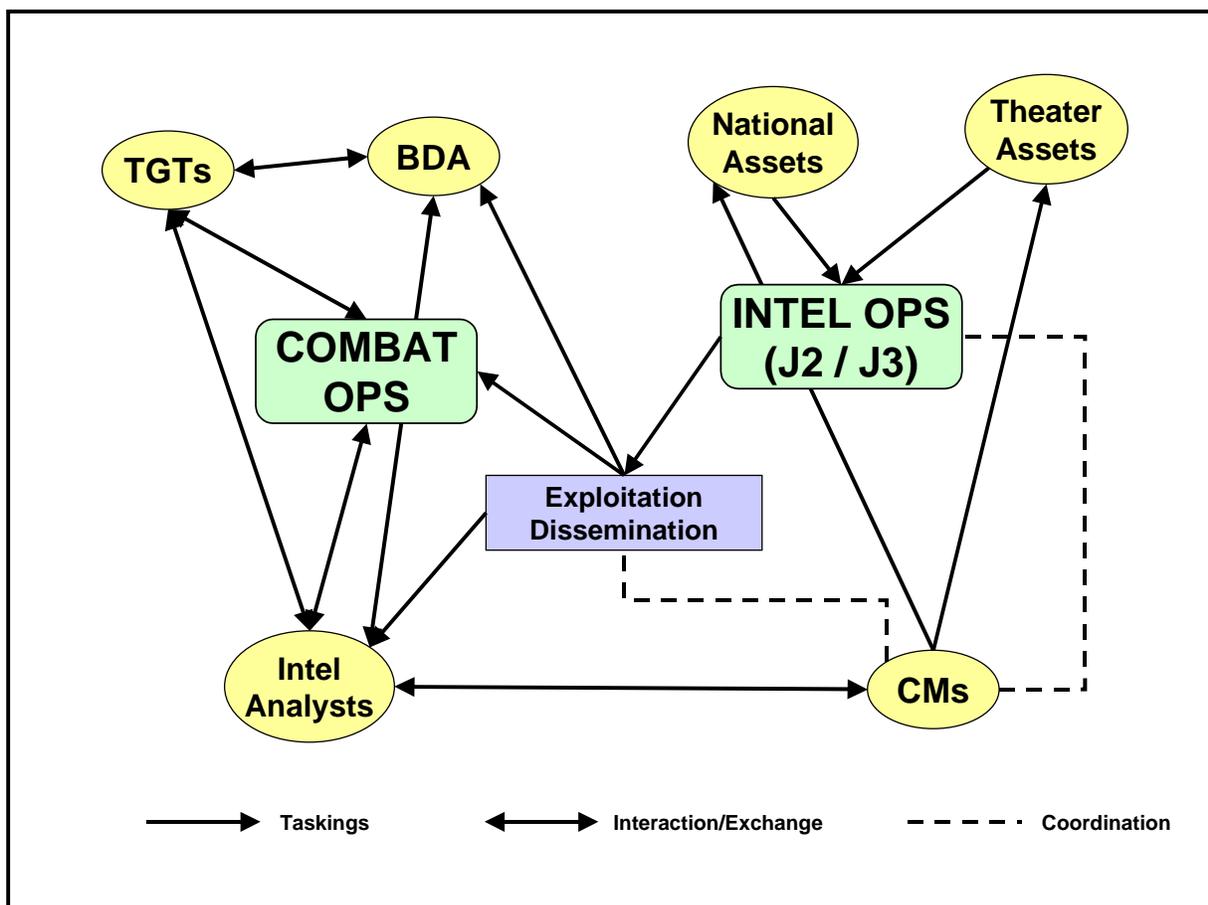
Figure IV-4. CM Relationships

d. Continuous coordination is critical among collection managers, intelligence analysts, personnel involved in combat assessment, targeteers, and the operational decision makers to ensure that all of the information gaps are identified and covered.

e. In addition to understanding the collection management process, it is equally important to understand ISR capabilities and limitations. FM 3-01.51/NTTP 3-01.13/AFTTP(I) 3-2.24, *Multi-Service Procedures for Joint Theater Missile Target Development* contains information on sensor considerations to aid in the development of a collection strategy.

f. NRT intelligence collection is the key to turning IPB templates developed during peacetime into a credible TM intelligence picture. Figure IV-5 depicts the collection management decision-making process in support of JTMTD.

g. How well the TM IPB and collection management processes are harmonized will determine the quality of predictive intelligence and whether target nominations can be produced and executed within the short window of opportunity presented by TMs.

```
VARIOUS          →  LAUNCH DETECTION,        ANALYZE FOR        ←  INTERNAL
COLLECTION          EYES-ON REPORT           TM ACTIVITY           ANALYSIS,
SOURCES                                                             MTI OF
                                                                    KNOWN SITE
```

IS ADDITIONAL SENSOR NEEDED TO CONFIRM TARGET?

PASS COORDINATES TO COLLECTIONS FOR IMMEDIATE SENSOR RETASKING

NOMINATE AS TST
PASS COORDINATES TO OPS

RECEIVE COLLECTION RESULTS

COORDINATE WITH COLLECTIONS FOR FOLLOW-UP BDA

TMD ACTIVITY

NO TMD ACTIVITY

RECEIVE STRIKE RESULTS

PASS INFORMATION TO TM INTEL CELL

CONTINUE ANALYSIS

Figure IV-5. Collection Management Decision-Making Process

6. Intelligence Support

a. JFC. The theater JIC supports the JFC by establishing intelligence collection priorities IAW JFC guidance. The JIC assists in integrating theater and national collection assets. The JIC conducts JIPB to support the development of strategic and operational campaign plans in the joint operations center (JOC). The JFC's theater AMD specialists assist the JIC with related IPB issues. Figure IV-6 details the key intelligence entities involved in TM IPB.
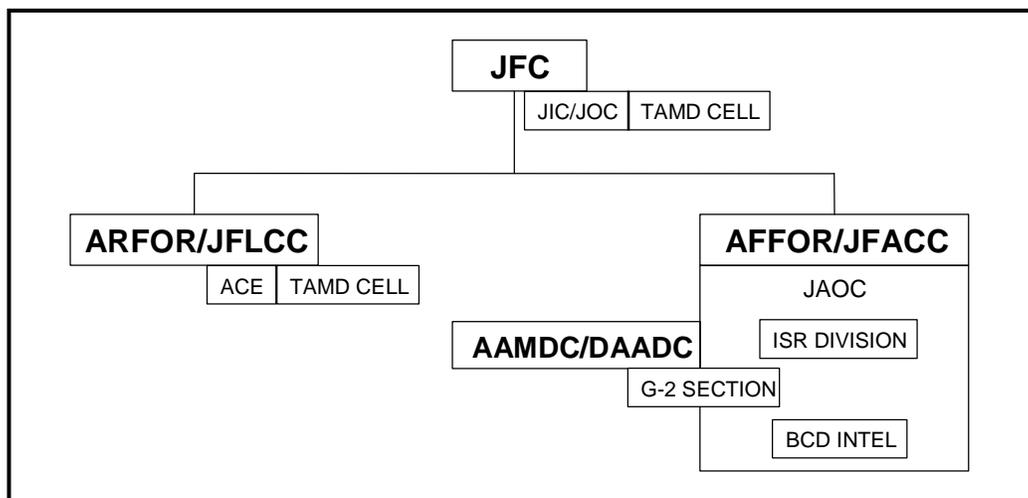
Figure IV-6. Intelligence Agencies and Cells Involved in TM IPB

    b.   JAOC. The ISR division personnel are placed throughout the JAOC to ensure timely analysis of data and tailoring of intelligence. ISR personnel provide intelligence products and analysis to the various JAOC sections, using tools to analyze and disseminate relevant information.

        (1) A terminal within the JAOC defensive operations section receives the TES data, launch information from other sources, and early warning information from the JFC TMD cell and continental United States (CONUS)-controlled assets. Intelligence functions performed by or in support of TMD include target nominations and coordination of intelligence collection requirements.

        (2) Preplanned TM-related targeting is generally limited to fixed sites such as missile launch locations, weapons storage depots, and lines of communications (LOCs). Therefore, implementing the approved TM attack strategy depends largely on current intelligence operations to acquire, classify, identify, and nominate targets for attack. The JFC J-2 and subordinate intelligence entities work together to construct a comprehensive collection strategy in support of the overall campaign and to establish collection priorities. To ensure that the highest priorities are met first, the collection plan is adjusted as the intelligence picture matures. To synchronize analysis efforts, the ISR team collaborates and coordinates TM intelligence actions with the AAMDC intelligence section, the ACE, and the JFC J-2.

        (3) Intelligence collection plans based on TM IPB analysis include monitoring NAIs and TAIs for enemy TM activity associated with designated high-payoff targets. Reports of TM activity may come from diverse sources, including IBS, electronic intelligence (ELINT), communications intelligence (COMINT), HUMINT, ISR aircraft, SOF teams, national sensors, or other intelligence entities. The JAOC uses data from these sources to conduct NRT analysis. Based on known enemy TTP, JAOC and AAMDC personnel use area limitation tools, such as generic area limitation environment (GALE), to analyze possible launch, hide, or transload locations and other infrastructure targets. Analysts can also use GALE or similar systems to determine the most likely evasion and escape routes for

transporter-erector-launchers (TELs)—information that is helpful in orienting attack assets or redirecting collection assets.

(4) The JAOC ISR division uses incoming intelligence to update the order of battle (OB). Analysts collaborate with other intelligence entities to provide the most accurate TM intelligence picture possible. All available intelligence is processed, correlated, fused, and analyzed to positively identify the target. If necessary, to quickly classify and identify fleeting targets, ISR personnel will coordinate to redirect or dynamically retask ISR assets based on JFC-established priorities. For example, if a missile launch from an unexpected location is detected, ISR personnel may coordinate for retasking of the JSTARS, UAVs, or other assets to find and fix the launcher and track its movements. Whenever dynamic retasking occurs, other intelligence entities are informed to maintain the viability of the overall collection effort, and they may also obtain information regarding threats to friendly forces. All players must maintain situational awareness of the larger battlespace.

   c. ARFOR.

(1) As the focal point of all ARFOR intelligence operations, the ACE receives information from other intelligence entities and coordinates with the DOCC during the target development phase. The ACE also disseminates intelligence products to subordinate Army organizations. The ACE collection manager is responsible for forwarding to the JFC J-2 collection manager all RFI that cannot be internally satisfied.

(2) The AAMDC G-2 section will normally collocate in the AAMDC main at the JAOC and will assist both the JAOC and the ACE in the TM portion of the IPB effort by providing the results of their analysis. The AAMDC G-2 will use redundant communications to maintain connectivity with the JAOC and ACE such as All Source Analysis System (ASAS), SIPRNET email and web pages, and secure telephone. When the AAMDC is DS or TACON to the JFACC, the G-2 fully integrates TM analysts into the battle rhythm of the JAOC ISR division and will process requests for collection through the JAOC. When there is not a command relationship with the JFACC, the AAMDC G-2 processes requests for collection through the ACE collection manager.

(3) The AAMDC's attack operations and G-2 sections continuously monitor enemy operations for TM activity. The target development process begins with the identification of suspect TM activity from any intelligence source. The AAMDC sections analyze intelligence, similar and parallel to functions of the JAOC TMD duty officer, and collaborate with the JAOC and the JFC TMD cells to classify and identify elements of the TM target system. This early and continuous collaboration helps to expedite the entire attack operations process. Targets that meet the approved TM attack criteria are nominated to the JAOC and/or DOCC for attack based on the AAMDC's command relationship with the JFACC and ARFOR. For target prosecution and execution activities, see Chapter III (OCA).

7. Collaboration and Integration

   a. Rationale. Collaboration is efficient and improves the quality of analysis and perspective.

(1) While the JAOC and AAMDC receive common intelligence data, differences in analyst training, experience, focus, and procedures affect the analysis product. Therefore, collaboration enhances the overall quality of the TM intelligence picture.

(2) A collaborative TM IPB provides a common, agreed-upon perspective of the enemy situation from which to create strategies and plans. Separate IPB analyses may produce divergent TM intelligence estimates, which in turn may complicate development of an effective joint TM attack strategy.

(3) Inefficient use of scarce ISR collection assets is the primary danger in using a non-collaborative process. Collaboration also facilitates redirecting of resources to confirm TM targets and avoids unnecessary duplication of ISR requests.

b. Collaboration requires the following:

(1) Templates. Collaborative IPB establishes a common framework for strategic and operational planning prior to deploying forces into a theater. Therefore, TM analysts should agree on the OB and doctrinal templates based on known enemy TTP and operating patterns.

(2) Intelligence Connectivity. TM analysts should maintain intelligence connectivity via video teleconference (VTC), whiteboard, or chat room mechanisms and/or exchange of intelligence liaisons.

(3) Meetings. TM analysts should conduct frequent and regular TM intelligence meetings in order to:

(a) Review, share, and synchronize TM intelligence.

(b) Present requirements to the collection management process.

(c) Identify common coverage requirements and intelligence needs in order to reduce redundancy, increase efficiency, and enhance the probability of collection.

(4) Attack Criteria. To expedite the decision-making process when targets are acquired and confirmed, each element within the TM target system should be identified and its relative priority and criteria for attack should be established. These priorities and criteria should be specified in the attack guidance matrix (AGM) of the AOD (created by the strategy division). This process should also specify indications and warnings (trigger criteria) for initiating targeting battle drills. These criteria must correspond to the approved TM attack strategy developed in support of the overall campaign.

(5) Battle Drills. A battle drill is a set of steps or standard procedures performed in response to a suspected enemy activity. Army staffs commonly use them to respond to high-payoff targets of opportunity. Established trigger criteria serve as catalysts for initiating battle drills against TM targets. Analysts in theater should establish battle drill procedures that include collaboration with other intelligence entities, specifying when collaboration should occur and what information is exchanged. Battle drills should also address dissemination of intelligence derived from dynamic retasking. Collaboration during targeting battle drills builds situational awareness and quickens the analytical process and improves its quality.

(6) Integration. Data from national surveillance and reconnaissance systems are fed into the theater surveillance networks via special communications links. However, because national systems are limited, requests for their use must be channeled through higher headquarters.

8. Challenges

a.   The proliferation of TMs, coupled with WMD, make TMs a particularly difficult and dangerous threat. A fully integrated JAOC and AAMDC TM IPB team is a key element in defeating this threat. Currently, not all ISR and database systems are interoperable. Collaborative tools, such as chat functions, can help operators exchange information. Additionally, TM IPB is resource and manpower intensive and must begin in peacetime if it is to effectively produce preemptive TM target nominations during combat. It requires analysts who know enemy OB and capabilities, geopolitical influences, and intelligence systems and processes.

b.   ISR is a key enabler for the planning and execution of all operations, including actions against TMs. Main aspects of ISR are IPB, collection management, and intelligence support. The ISR architecture and the procedures embedded in component operations and training programs will determine the degree of synergy in intelligence operations in the JAOC and AAMDC.

Chapter V
INFORMATION EXCHANGE SYSTEMS AND PROCESSES

1. Background

Counterair operations use existing joint and Service command, control, communications, and computers (C4) systems and resources to ensure integration with other operational functions and to optimize the use of scarce resources. The established C4 architecture links passive air defense, active air defense, and OCA attack operations to provide timely assessment of the threat—to include IPB; rapid dissemination of tactical warnings; and mission assignment, targeting data, and poststrike assessments—to the appropriate element. For the purposes of this chapter, the following definitions apply:

a. Coordination. Coordination refers to formal actions taken between agents to facilitate planning, execution, and when necessary, approval of operations.

b. Synchronization. Synchronization is to work in unison and to coexist in action.

c. Collaboration. Collaboration is the intellectual cooperation between agencies, either distributed or collocated.

d. Information Exchange. Information exchange is the act of sharing information to assist in the decision-making process.

2. Connectivity Between the JAOC and AAMDC

The JAOC and AAMDC are connected through various means, from direct hardware workstations to collaboration among their respective staff elements. A number of hardware/software systems function as conduits for the flow of information. Examples are the ASAS, the Integrated Battlespace Intelligence System (IBIS), the Advanced Field Artillery Tactical Data System (AFATDS), the AMDWS, the ADSI, theater battle management core system (TBMCS), and the Joint Defensive Planner (JDP).

3. Connectivity Between C2 Nodes

Figures V-1 and V-2 depict the basic connectivity—in terms of coordination, synchronization, collaboration, or exchange of information—that exists between C2 nodes. Because specific communications, automation, and collaborative techniques vary by theater and the composition of the joint force, they are neither prescriptive nor all-inclusive.
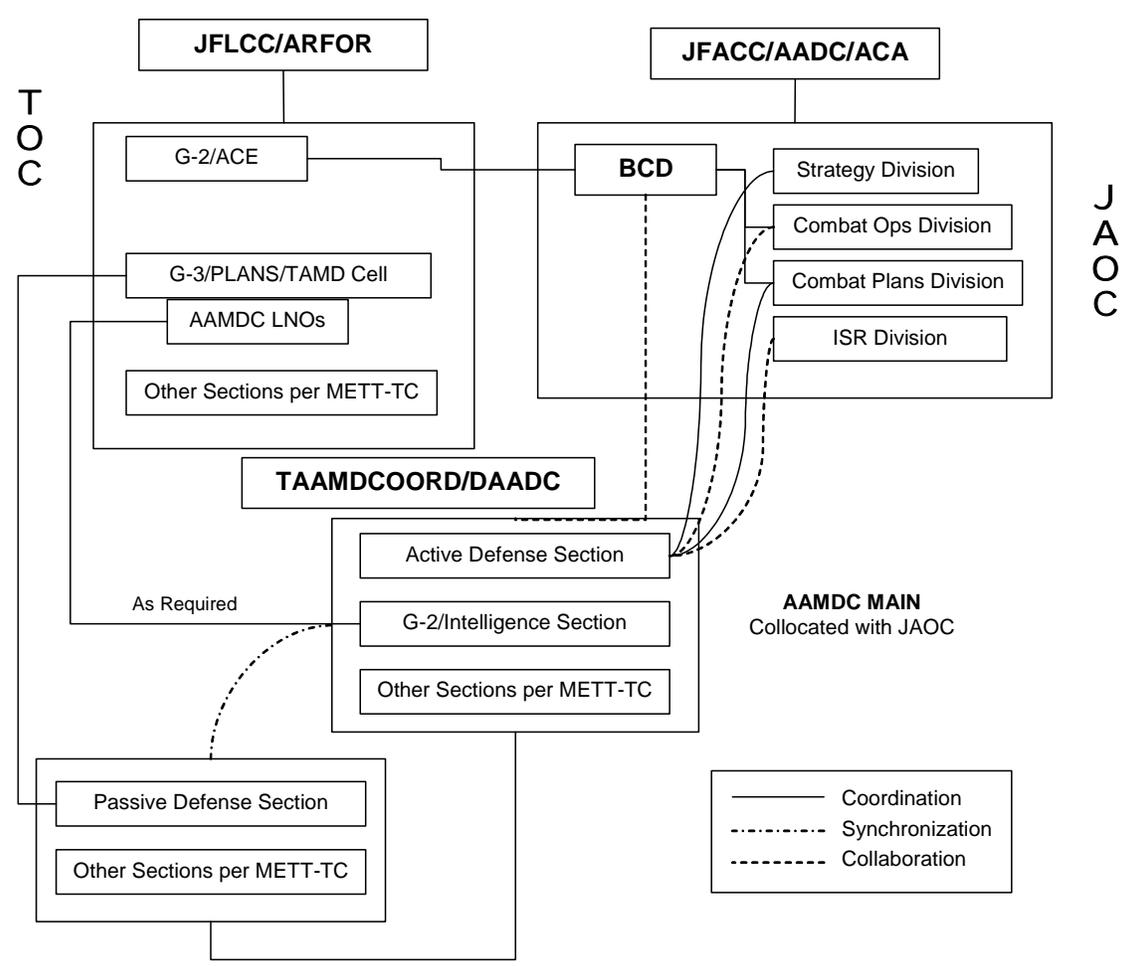
Figure V-1. Active and Passive Defense Connectivity

```
        JFLCC/ARFOR                          JFACC/AADC/ACA

  T
  O    ┌──────────────────────┐      ┌──────────────────────────────────┐
  C    │    G-2/ACE            │      │  BCD   ┌──── Strategy Division ──┐│    J
       │                       │      │        │    Combat Ops Division  ││    A
       │    G-3/DOCC           │      │        │    Combat Plans Division ││    O
       │    AAM DC LNOs        │      │        └── ISR Division          ││    C
       │    Other Sections per │      └──────────────────────────────────┘
       │    METT-TC            │
       └──────────────────────┘

            TAAMDCOORD/DAADC

       ┌──────────────────────────────┐
       │  Attack Operations Section    │
  As Required                          │      AAMDC MAIN
       │  G-2/Intelligence Section     │   Collocated with JAOC
       │  Other Sections per METT-TC   │
       └──────────────────────────────┘
```

————	Coordination
·—·—·—·	Synchronization
- - - -	Collaboration
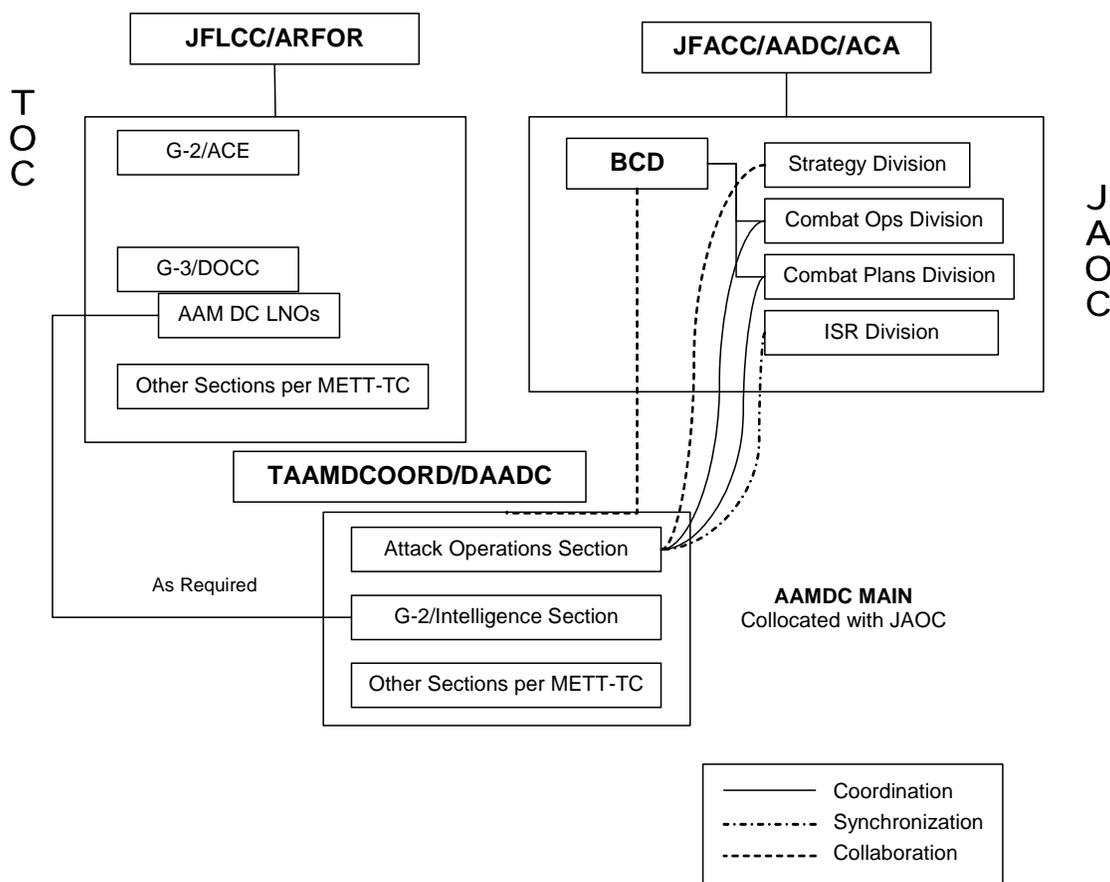
Figure V-2. Attack Operations Connectivity

a. Active Air Defense.

(1) Coordination. The AAMDC coordinates with the AADC and JFLCC/ARFOR staff to integrate all air defense operations and corps ADA unit requirements into operational plans. The AAMDC integrates Army and other coalition land-based air defense resources into theater DCA operations.

(2) Synchronization. The AAMDC Main coexists with the BCD, which represents the ARFOR. The BCD AD section and the AAMDC synchronize staffing and coordination processes with other JAOC sections to avoid duplication and to ensure unity of effort and information exchange on their respective areas of expertise. The BCD focuses on overall aspects of the JFLCC/ARFOR operations while the AAMDC focuses on all joint theater air and missile defense aspects/operations.

(3) Collaboration. Collaboration between the JAOC and AAMDC planners aids in establishing the coordination board (reprioritization board), developing the CAL/DAL, and in planning defensive coverage.

b. Passive Air Defense.

(1) Coordination. The principal passive air defense issues that require coordination are early warning architecture design and implementation. The AAMDC develops the

JFLCC/ARFOR early warning architecture and disseminates launch warnings to subordinate forces. The AAMDC coordinates these activities with the AADC staff. The Defense Support Program (DSP) satellites, Space-Based Infrared System (SBIRS) satellites, and other tactical events systems provide early warning information to appropriate ground stations for dissemination to operations centers. When a launch warning occurs, each agency verifies that the other has the relevant information and then disseminates alert and warning messages to affected subordinate forces.

(2) Synchronization and Collaboration. Synchronization and collaboration are the same for passive defense as they are for active defense.

c. OCA Attack Operations Coordination. The JAOC's combat operations division and the ARFOR's DOCC are responsible for coordinating attack operations. The BCD facilitates the exchange of target nominations—planned or immediate—between them. The BCD also coordinates airspace requirements to support target engagements within the ARFOR AO. The AAMDC also coordinates with JAOC divisions on attack operations issues. The G-2 ACE coordinates collection requirements with the JFC J-2 and the JAOC ISR division as required to support NRT target intelligence requirements.

(1) Information Exchange. The AAMDC includes subject-matter experts (SME) on enemy TM capabilities, limitations, doctrine, and TTP. As such, it can provide additional information to the JAOC as necessary to support decision making, planning, and strategy development.

(2) Collaboration. Intelligence collaboration in support of attack operations goes beyond TM IPB to sharing of NRT target intelligence between TM analysts in the JAOC and the AAMDC's intelligence section. NRT collaboration is essential to quickly identifying and classifying potential TM targets. It ensures that all available information is correlated, that limited collection resources are used efficiently, and that operational decision makers have the best available analysis.

4. Activities and Exchanges

a. The architecture and systems available in theater determine the means available for exchanging and coordinating information. Tables V-1 and V-2 list types of activities by operational element and the means of exchange, for information exchange and intelligence exchange, respectively.

b. The joint interface control officer (JICO) is responsible for managing the multidatalink network. Interface control specialists assigned to the AAMDC and JAOC collaborate with each other for unit requirements and may be assigned additional duties to support the JFC interface networks.

Table V-1. Information Exchange

OPERATIONAL ELEMENT	TYPE OF ACTIVITY	TYPE OF EXCHANGE	FROM	TO	PUSH/ PULL	FREQUENCY	FORMAT (S Series Messages)
ACTIVE	Patriot Unit Locations	Info Exchange	AAMDC Active Defense	AAMDC LNOs, BCD AD, JAOC AD Cell	Push	As needed	S507L or MS Office
ACTIVE	Engagement Reports	Info Exchange	AAMDC Active Defense	AAMDC LNOs, BCD AD, JAOC AD Cell	Push	NLT 1 hour after missile event	S302 Freetext or MS Office
ACTIVE	Hostile, Friendly, Unknown ID Criteria	Coordination	AAMDC Active Defense	AAMDC LNOs, BCD AD	Push	Deployment and as required	S302 Freetext or MS Office
ACTIVE	AD annexes to OPLANs and OPORDs	Info Exchange	AAMDC Active Defense	AAMDC LNOs, BCD AD	Push	Deployment and as required	S302 Freetext or MS Office
ACTIVE	AD Tactical Operations Data	Info Exchange	AAMDC Active Defense	AAMDC LNOs, BCD AD	Push	Deployment and as required	S302 Freetext or MS Office
ACTIVE	ADA Unit Status (SAMSTATREP)	Info Exchange	AAMDC Active Defense	AAMDC LNOs, BCD AD, JAOC AD Cell	Push	Per SOP	S302 Freetext or MS Office
ACTIVE	AD Warning	Info Exchange	AAMDC Active Defense	AAMDC LNOs, BCD AD, JAOC AD Cell	Both	During launch events	Voice
ACTIVE	Weapons Control Status	Coordination	AAMDC Active Defense	AAMDC LNOs, BCD AD	Push	Per SPINs, as required	S302 Freetext or MS Office
ACTIVE	ROE	Coordination	AAMDC Active Defense	AAMDC LNOs, BCD AD	Push	Per ATO	S302 Freetext or MS Office
ACTIVE	AD Battlefield Geometry	Info Exchange	AAMDC Active Defense	AAMDC LNOs, BCD AD	Push	Deployment and as required	S201 Battlefield Geometry
ACTIVE	JAOC Tactical Operational Data	Info Exchange	AAMDC Active Defense	AAMDC LNOs, BCD AD	Push	Deployment and as required	S302 Freetext or MS Office
ACTIVE	AADC Intent	Coordination	AAMDC Plans	AAMDC Active Defense and BCD AD	Push	Deployment and as required	S302 Freetext or MS Office
ACTIVE	Airspace Control Plan	Coordination	AAMDC Active Defense	AAMDC LNOs, BCD AD	Push	Deployment and as required	S302 Freetext or MS Office
PASSIVE	USAF Engagement Reports	Info Exchange	AAMDC Active Defense	BCD AD	Push	Per numbered Air Force (NAF) SOP	PowerPoint/ MS Office
PASSIVE	TMD Early Warning Matrix	Info Exchange	AAMDC Passive Defense	BCD AD	Both	Deployment and as required	S302 Freetext or MS Office
ACTIVE/ PASSIVE	JAOC Area Air Defense Plan	Info Exchange	AAMDC Plans	AAMDC Active and	Push	Deployment and as required	S302 Freetext or MS Office

OPERATIONAL ELEMENT	*TYPE OF ACTIVITY*	*TYPE OF EXCHANGE*	*FROM*	*TO*	*PUSH/ PULL*	*FREQUENCY*	*FORMAT (S Series Messages)*
				Passive Defense, BCD AD			
PASSIVE	JAOC TMD SOP	Info Exchange	AAMDC Passive Defense	BCD AD	Push	Deployment and as required	S302 Freetext or MS Office
PASSIVE	Army TMD SOP	Info Exchange	AAMDC Passive Defense	AAMDC LNO Team and BCD AD, JAOC AD Cell	Push	Deployment and as required	S302 Freetext or MS Office
ATTACK OPS	Initial IPB	Collaboration	JAOC ISR	AAMDC G-2	Both	As required	N/A
ATTACK OPS	NRT Intelligence Analysis	Collaboration	JAOC ISR	AAMDC G-2	Both	As required	N/A
ATTACK OPS	Target Nomination	Collaboration	AAMDC Attack Ops	JAOC Combat Plans and Ops	Both	As required	N/A
ATTACK OPS	Target Coordination	Info Exchange	JAOC Combat Plans and Ops	BCD	Both	As required	N/A

Table V-2. Intelligence Exchange Matrix.

TYPE OF ACTIVITY	TYPE EXCHANGE	FROM	TO	PUSH/ PULL	FREQUENCY	FORMAT
JTMD/AD Intelligence Summary (INTSUM)	Info Exchange	AAMDC Intel	ISR Team, BCD Intel, AAMDC LNOs	Push	12 Hours	PowerPoint
JTMD/AD INTSUM	Info Exchange	ISR Team	AAMDC Intel	Push	12 Hours	PowerPoint
IPB Database	Info Exchange	AAMDC Intel	ISR Team, BCD Intel	Both	Deployment, as required	IPB Database
IRs	Info Exchange	AAMDC Intel	ISR Team, ACE, BCD Intel	Push	When generated	S302 Freetext
IRs	Info Exchange	ISR Team	BCD Intel, ACE, AAMDC Intel	Push	When generated	S302 Freetext
Collection Requests	Info Exchange	AAMDC Intel	ISR Team, BCD Intel	Push	Daily (scheduled), when generated	S302 Freetext or MS Office
Collection Requests	Info Exchange	ISR Team	AAMDC Intel	Push	Daily (scheduled), when generated	S302 Freetext
Imagery Analysis Report	Coordination	ISR Team	AAMDC Intel	Pull	When requested	S302 Freetext
Countermobility Mission Requests	Coordination	AAMDC Attack Ops	BCD, ISR Team	Push	When Requested	AFATDS
Countermobility Mission Requests	Coordination	BCD, ISR Team	AAMDC Attack Ops	Push	When Requested	
Countermobility Mission Requests	Info Exchange	BCD, ISR Team	AAMDC Attack Ops	Push	When Requested	S302 Freetext
Intel Reports (INTREP/ SALUTE)	Info Exchange	AAMDC Plans	ISR Team, BCD Intel, AAMDC LNOs	Push	When produced	
INTREP/SALUTE	Info Exchange	ISR	AAMDC Plans, BCD Intel	Push	When produced	
Target Development Coordination	Coordination	AAMDC Attack Ops	ISR Team, BCD Intel, AAMDC LNO Team	Both	As needed	
Combat Assessments	Info Exchange	ISR	AAMDC Plans	Both	As needed	S302 Freetext

Appendix A

AAMDC LNO RESPONSIBILITIES AND REQUIREMENTS

1. Responsibilities

a. Although the AAMDC main (operations and intelligence sections) normally deploys to the JAOC location, there may be instances, based on METT-TC, when the AAMDC may only deploy an LNO team to the JAOC. For example, during a period of increased tensions in an AO, the AAMDC may only need to send an initial coordination element (ICE) of planners and specialists to assist the AADC and JAOC operations. At other times, METT-TC may dictate collocation of the AAMDC main with the ARFOR headquarters. The AAMDC is a highly flexible and tailorable organization. AAMDC LNOs also may deploy to other major C2 nodes such as the JFLCC/ARFOR, JFMCC, joint special operations task force (JSOTF), DOCC, and coalition headquarters. LNOs provide a direct link to the AAMDC to integrate theater AMD operations.

b. AAMDC LNOs at the JAOC:

(1) Report all DAL changes and proposed DAL changes immediately to the AAMDC TOC.

(2) Keep the AADC informed of all AAMDC changes/proposed changes to the DAL and ground-based portions of the area air defense plan.

(3) Report all AAMDC/AADC integration issues to the AAMDC TOC.

(4) Coordinate and inform the AAMDC TOC of all changes to the SAM Tactical Order (STO).

(5) Report to the AAMDC TOC and attempt to resolve any CRC integration issues.

(6) Report to the AAMDC TOC, AADC, or SADO any air defense/aircraft fratricide incidents.

(7) Serve as the AAMDC representative at the JTCB.

(8) Report to the AAMDC TOC any changes resulting from the JTCB.

(9) Report to the AAMDC any AADC proposed changes to the AADP.

(10) Report to the AAMDC TOC any airspace control measure (ACM) changes.

(11) Report to the AAMDC TOC any changes to attack asset status/availability.

(12) Conduct integration, parallel planning, efficient coordination, and rapid response to the JFACC/AADC's AMD needs.

(13) Conduct/assist with the coordination board (reprioritization board) as needed.

(14) Operate the AMDWS.

(15) Report to attack operations the denial/non-firing of an AAMDC-nominated TST.

(16) Report to the AAMDC any fratricide based on an AAMDC-nominated target.

(17) Report to the AAMDC TOC any changes to FSCMs.

(18)   Report to attack operations any AAMDC target prioritization issues in the joint guidance, apportionment, and targeting (JGAT).

(19)   Report to attack operations any AAMDC target prioritization issues in the JPITL.

(20)   Report to attack operations any issues or lack of AAMDC target prioritization in the MAAP.

(21)   Track all AAMDC-nominated targets and TSTs.

(22)   Operate the automated deep operations coordination system (ADOCS).

(23)   Know why AAMDC targets were nominated.

(24)   Track and report BDA of TMD targets to AAMDC attack operations.

(25)   Inform AAMDC attack operations of TMD targets nominated by other units/organizations.

(26)   Attend the JGAT.

2. Requirements

a.   Personnel. Based on METT-TC, the AAMDC tailors the LNO team assigned to support the JFACC and the AADC in JAOC operations. The LNO team may:

(1) Consist of 8 to 16 personnel.

(2) Integrate and coordinate with the BCD and JAOC strategy, combat plans, combat operations, and ISR divisions.

(3) Require workspace in or in close proximity to the JAOC.

(4) Require billeting and food support from the JAOC.

b.   Equipment. The AAMDC LNO team deploys with an AMDWS and other automation equipment, to include classified and laptop computers.

c.   Communications. At a minimum, the AAMDC LNO team requires the following communications support from the JAOC:

(1) SIPRNET access (six connections with internet protocol addresses).

(2) Three defense switched network (DSN) drops.

(3) Three tactical phones' hardwire connections (KY-68).

(4) TIBS, TDDS, and FAAD data link (FDL) feeds for the AMDWS.

(5) Access to secure fax.

(6) Access on the local area network (LAN) to a secure, classified printer.

(7) Access to ADOCS and InfoWorkspace (IWS).

Appendix B

COORDINATION CHECKLIST

The AAMDC and BCD are the COMARFOR's representatives at the JAOC. The JAOC, BCD, and AAMDC use the checklist below to integrate resources for effective CA operations. It is a baseline for coordination and may be expanded based on METT-TC.

AREA	ACTION REQUIRED	JAOC	BCD	AAMDC
C4	Establish predeployment contact with counterparts.			
C4	Establish contact with counterparts when in theater; deploy LNOs.			
C4	Confirm hardware/software systems and versions for compatibility (configuration management).			
C4	Establish integrated space, surface, and airborne early warning data reception in AAMDC/JAOC.			
C4	Coordinate data link/communications connectivity among components and coalition forces.			
C4	Ensure C2 agencies have theater OPTASKLINK, TACOPDAT, satellite access request, plain-language addresses, and COMSEC callout message prior to deployment.			
C4	JAOC JICO cell develop coordination mechanisms and procedures with component operations centers.			
C4	Develop TADIL procedures and theater network architecture.			
C4	Develop theater AADP.			
C4	Develop and update IFF plan.			
C4	Establish voice and data connectivity with counterpart.			
INTEL	Develop and share JTMD INTSUM.			
INTEL	Coordinate and share requests for information (RFI) among components.			
INTEL	Share initial and recurring IPB products.			
INTEL	Reconcile imagery reports between JAOC and AAMDC to create common database.			
INTEL	Share countermobility target sets.			
INTEL	Share no-strike information.			
INTEL	Collaborate intel effort as indicators and warnings appear; discuss potential targets with counterpart.			
INTEL	AAMDC/JFACC planners build a coherent, integrated TM collection plan that balances resource allocation in consonance with JFC guidance/objectives.			
INTEL	AAMDC/JFACC planners coordinate with J-2 on			

AREA	ACTION REQUIRED	JAOC	BCD	AAMDC
	procedures for integrating national ISR assets into the collection plan.			
INTEL	Focus poststrike combat assessment on enemy TM force capability and predictive COA analysis vice BDA tallies.			
INTEL	Share combat assessment/BDA information.			
PASSIVE DEFENSE	Coordinate early warning architecture (data and voice) with USSTRATCOM.			
PASSIVE DEFENSE	Develop/update theater passive defense SOPs; share component/coalition passive defense SOPs.			
PASSIVE DEFENSE	AAMDC distributes Army TMD SOP to AADC and BCD AD section.			
PASSIVE DEFENSE	Verify TRE access and compatibility for ADSI, AMDWS, GCCS, and/or WOTS.			
PASSIVE DEFENSE	Verify TBM modules loaded into GCCS.			
PASSIVE DEFENSE	Establish accounts/users of GCCS common operational picture (COP).			
PASSIVE DEFENSE	Modify/restrict TDDS/TIBS data for theater.			
PASSIVE DEFENSE	Establish SATCOM voice connectivity for voice reporting net.			
PASSIVE DEFENSE	Develop/coordinate/distribute voice reporting templates.			
PASSIVE DEFENSE	Establish/coordinate area of interest for ALERT/JTAGS.			
PASSIVE DEFENSE	Conduct theater-wide test/rehearsal of early warning systems.			
PASSIVE DEFENSE	Develop/modify secondary notification procedures to theater units using TBMCS, public address systems, radio, pagers, and so forth.			
ACTIVE DEFENSE	Publish AADC intentions and priorities.			
ACTIVE DEFENSE	Develop and update ROE.			
ACTIVE DEFENSE	CRC passes AD warning and weapons control status to ADAFCO at CRC.			
ACTIVE DEFENSE	AAMDC updates and shares AD battlefield geometry with AADC and BCD AD section.			
ACTIVE DEFENSE	JAOC develops and disseminates TACOPDAT and OPTASKLINK.			
ACTIVE DEFENSE	JAOC/CRC in coordination with AAMDC develops/issues STO to Patriot units (ADAFCO at CRC has authority to issue real-time STO changes based on METT-TC).			
ACTIVE DEFENSE	BCD AD section distributes SHORAD engagement reports to AADC and AAMDC.			
ACTIVE DEFENSE	AAMDC distributes Patriot engagement reports to AADC and BCD AD section.			
ACTIVE	JAOC relays engagement reports to BCD AD			

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AREA	ACTION REQUIRED	JAOC	BCD	AAMDC
DEFENSE	section and AAMDC.			
ACTIVE DEFENSE	AAMDC distributes Patriot unit laydown to AADC and BCD AD section.			
ACTIVE DEFENSE	Develop/update/disseminate high-value airborne assets (HVAA) plan.			
ACTIVE DEFENSE	Distribute changes to the ACP, AADP, and ACO.			
ATTACK OPS	Review JFC guidance on attack operations coordination, deconfliction, and synchronization between components.			
ATTACK OPS	Component commanders coordinate and publish clear, precise attack operations guidance.			
ATTACK OPS	JFC and component staffs develop an effects-based TM targeting strategy including objectives, tasks, and measures of merit.			
ATTACK OPS	AAMDC/JFACC planners build a coherent, integrated TM attack operations plan that balances resource allocation in consonance with JFC guidance/objectives.			
ATTACK OPS	Prior to hostilities, JAOC/AAMDC team (strategists, analysts, targeteers, TMD/TST cell, ISR SMEs, etc.) establishes and executes procedures for sharing NRT information.			
ATTACK OPS	BCD deconflicts airspace requirements between JAOC and DOCC.			
ATTACK OPS	BCD coordinates between components for TST prosecution within the ARFOR AO or when ARFOR attack assets are used.			
ATTACK OPS	Develop TM TST criteria IAW JFC guidance.			
ATTACK OPS	BCD provides platoon and target airspace hazard data to the requesting agency or Service component when ATACMS assets are used. The requesting agency or Service component must deconflict airspace and clear targets outside of the ARFOR AO.			
ATTACK OPS	BCD coordinates collection assets retaskings from ACE.			
ATTACK OPS	Identify assets available for TM TST execution.			

Appendix C

DEEP OPERATIONS COORDINATION CELL

1. Overview

a. Deep attacks support the JFC's mission, intent, and overall campaign plan using fires, maneuver, and leadership at all echelons. Deep attacks are typically shaping operations directed against enemy forces and functions beyond the close battle. Effective deep attacks support the decisive operation by affecting enemy capabilities and forces or by influencing enemy decisions.

b. Affecting the enemy through attack or threat of attack, deep operations expand the battlefield in space and time to the full extent of friendly capabilities. They allow commanders the freedom of action to exploit speed, range, lethality, and versatility of modern land-based systems to accomplish the mission. They also enable commanders at each level to shape the battlespace, set the operational tempo, set the conditions for success, and protect the force. Synchronizing deep operations with other land battle activities is imperative to ensure effective employment of combat power at the decisive point in the battle.

c. The G-3 is responsible to the COMARFOR for executing deep operations and normally establishes a DOCC to facilitate integration and coordination. The DOCC is a centralized cell responsible for planning, coordinating, synchronizing, and executing deep operations, including airspace coordination, target acquisition and deconfliction, and establishment of FSCMs within the ARFOR's assigned AO. These functions are performed simultaneously and continuously using the decide, detect, deliver, and assess (D3A) targeting methodology (Figure C-1). A DOCC may exist at each echelon of command—army, corps, and division—as necessary to effectively coordinate operations. The DOCC does not create a separate command post; rather, it brings together within the TOC staff elements that are involved with deep operations. The accomplishment of DOCC functions is enhanced through the use of automated decision aid tools, shared databases, automated situational awareness, and electronically linked workstations. The senior ARFOR DOCC establishes coordination with the JAOC through the BCD.
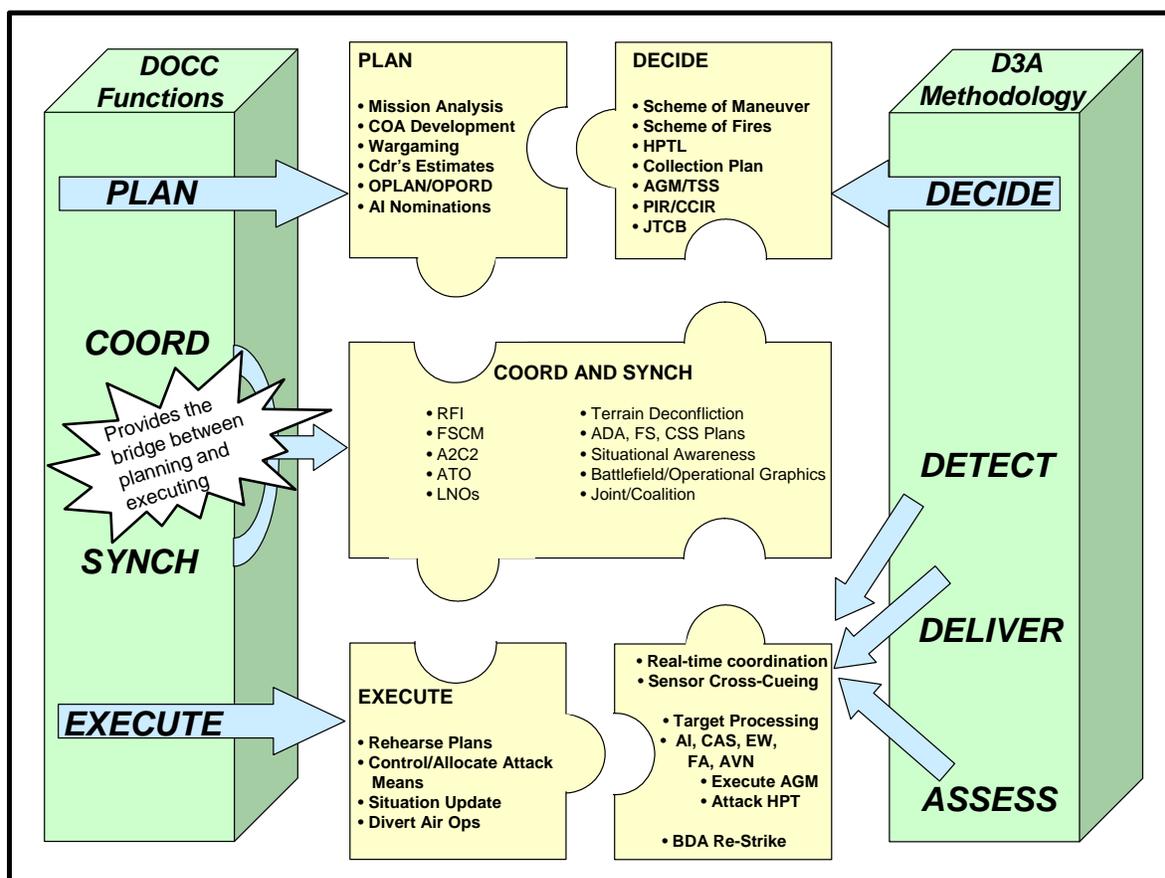
Figure C-1. DOCC Targeting Methodology

2. Organization and Function

Currently, the DOCC has no standard modified table of organization and equipment (MTOE). If a continuous need for coordination exists and the complexity of the contingency requires, the commander may establish a permanent DOCC or assemble members on a case-by-case basis. The DOCC consists of an officer-in-charge (OIC) and other staff members as indicated.

a. OIC. The COMARFOR designates the DOCC OIC, who is normally the chief of staff, the fire support coordinator (FSCOORD), or another key individual involved in deep operations. Responsible to the commander for implementing all plans, the OIC's primary functions include:

(1) Overseeing the planning, coordination, synchronization, and execution of deep operations.

(2) Recommending the commander's guidance for fires, target priorities, and high payoff target (HPT) lists for the deep battle developed during the planning cycle.

C-2

(3) Maintaining a continuous dialogue and situational awareness of integrated operations and coordinating the use of deep attack assets within the assigned AO, including Army aviation, artillery, EW, long-range surveillance units (LRSUs), SOF, USAF, USN, USMC, and other attached or available attack assets.

(4) Approving the deep lethal attack guidance and monitoring execution of the plan.

(5) Tracking and executing approved immediate ATACMs fire missions and fire plans and SEAD.

(6) Coordinating with all fire support LNOs to facilitate timely fire mission processing.

(7) Coordinating target attacks with major subordinate commands (MSCs).

b. DOCC Staff Members. The DOCC OIC will organize permanent and temporary staff members, as required, from the following sections or staff elements, to ensure 24-hour coverage of operations and future planning requirements.

(1) Targeting team.

(2) Main FSE.

(3) Intelligence.

(4) ADE or AAMDC.

(5) Army airspace command and control (A2C2) cell.

(6) Information operations.

(7) Field artillery operations.

(8) Air liaison officer.

(9) Army aviation element.

(10) NALE.

(11) Special operations command and control element (SOCCE).

(12) SJA.

(13) Engineers.

3. Attack Operations

The DOCC develops and submits a consolidated target list (CTL)—listing all targets the ARFOR wants struck in support of operations within the assigned AO—for integration into the JIPTL used to develop the ATO. The DOCC incorporates targets intended to defeat the enemy's ability to conduct and sustain TM launch operations and prioritizes them according to the commander's guidance. See FM 3-09.13 for detailed information on the AAMDC/BCD/DOCC interface during TM attack operations.

a. Preplanned Target Development. While the ACE and DOCC are responsible, respectively, for intelligence and deep operations for the entire AO, the AAMDC intelligence and targeting personnel focus solely on enemy TM operations. The AAMDC normally has a command relationship with the JFACC and its attack operations section works with the JAOC ISR and combat plans divisions to develop targets to support the

attack strategy. The AAMDC submits these targets directly to the JAOC. If this relationship does not exist, the AAMDC works with the ACE and the DOCC to develop targets. The DOCC receives nominated preplanned targets for incorporation into the CTL and submits them through the BCD to the JAOC. When the AAMDC is not in theater, ACE and DOCC targeting personnel develop TM-related targets along with all other targets.

b. Immediate Target Nomination. The TM target system consists of many elements, some fixed and many mobile. Mobile targets may present themselves for only short periods of time that limit preplanned targeting operations. Immediate targets may be anticipated or unanticipated. ATACMS TM targets currently can only be engaged when they are stationary.

(1) Anticipated targets may be included in preplanned target development or placed on call for response when the target appears and the location is fixed. Unanticipated targets normally require an attack decision. When the window of opportunity to attack is relatively short, anticipated or unanticipated targets may be referred to as TSTs. TSTs require an immediate response because they pose a clear and present danger to friendly forces or are highly lucrative fleeting targets of opportunity.

(2) The AAMDC attack operations and intelligence personnel continuously monitor enemy TM activity. Confirmed immediate targets—anticipated, unanticipated, or TSTs— that meet the established attack guidance are nominated for attack by submission directly to the JAOC. The BCD will coordinate targets that fall in the ARFOR AOR with the DOCC.

c. Immediate Target Prosecution. The DOCC, in consultation with the commander or G-3, if required, prosecutes immediate target nominations. If the target meets established criteria (timeliness of target intelligence, accuracy of the reporting source and target location, range to target, etc.) and assets are available to strike, the DOCC will approve the request for fire (RFF) and coordinate as necessary to execute the mission. Coordination will depend on the attack asset being employed, but normally includes notifying other components and deconflicting airspace. JAOC coordination is accomplished through the BCD. The AAMDC is available to articulate TM targets. If an ATACMS is selected as the appropriate attack asset, the DOCC will coordinate the activation of restricted operations zones (ROZs) around the launch and target areas within the ARFOR AO. Targets located outside of the ARFOR AO must be deconflicted and the fires cleared by the agency or Service component requesting the target attack. The BCD will provide the requesting agency or Service component with the target airspace hazard (TAH) information.

d. Target Handoff. If the DOCC determines that it cannot strike an immediate target—anticipated, unanticipated, or TST—it will notify the requestor and the BCD. If the target is an ARFOR priority, the DOCC will request the BCD submit the target nomination to the JAOC operations division for immediate attack. The DOCC then coordinates battlespace deconfliction. The AAMDC provides additional target information, such as imagery, as required.

Appendix D

REPORTS

1. Overview

Army ADA units use the reports in this appendix to issue orders and track the readiness of Patriot units, the availability of missiles, and the status of engagements. When the AAMDC is deployed in theater, AAMDC personnel normally brief Patriot status to the AADC daily and as required. The BCD maintains current copies of the reports, which are readily available to the JAOC. Standard reports are:

    a. SAM Tactical Order (STO).

    b. SAM Status Report (SAMSTATREP).

2. SAM Tactical Orders (STOs)

STOs consolidate tactical orders and information received from higher headquarters. The senior ADA element in theater generates the STO in coordination with the JAOC/CRC. Derived from the ATO and the tactical situation, this report is issued at 0001 Zulu (Z) hours daily and immediately following any change to the STO. When completed, the report is classified SECRET. Guidance for completing the STO follows.

    a. In the preamble preceding Line 1a: Insert the originating organization (e.g. 32d AAMDC) in the "this is" line and insert the organization the STO is being sent to in the "for" line. Fill in the STO number (numbering restarts daily at 0001Z) and the name of the operation or exercise.

    b. Line 1:

        (1) Line 1a: Enter the current date time group (DTG) using Zulu time.

        (2) Line 1b: Enter the effective DTG of the STO using Zulu time.

    c. Line 2:

        (1) Line 2a: Enter organization that has identification (ID) authority for each type of threat.

        (2) Line 2b: Enter organization that has engagement authority (EA) for each type of threat.

        (3) Line 2c: Enter organization that has emission control authority (EMCON) for the AMD unit.

    d. Line 3: Enter weapons control status (WCS) for each threat by checking only one block in either line 3a, 3b, or 3c.

    e. Line 4: Enter air defense warning (ADW) for each threat by checking only one block in either line 4a, 4b, or 4c.

    f. Line 5: When higher headquarters retransmits the STO to subordinate units, specify the alert states (AS) for each particular unit.

g.   Remarks: The remarks section is used for additional amplifying information, to include but not limited to, SIF code information, WCS clarification, vulnerability periods, and maintenance information.

SECRET WHEN FILLED IN

THIS IS:			FOR:	
STO #			OPERATION/EXERCISE:	
LINE 1a	CURRENT DTG:			
LINE 1b	EFFECTIVE DTG:			
LINE 2	(1) FW	(2) TBM	(3) ARM	(4) CM	(5) UAV	(6) RW		
LINE 2a IDA				
LINE 2b EA				
LINE 2c EMCON AUTHORITY				
LINE 3	WEAPONS CONTROL STATUS (CHECK ONE)			
	(1) FW	(2) TBM	(3) ARM	(4) CM	(5) UAV	(6) RW		
(3a) HOLD				
(3b) TIGHT				
(3c) FREE				
LINE 4	AIR DEFENSE WARNING (CHECK ONE)			
	(1) FW	(2) TBM	(3) ARM	(4) CM	(5) UAV	(6) RW		
(4a) WHITE				
(4b) YELLOW				
(4c) RED				
LINE 5	ALERT STATE			
	1	2	3	4	5	6	7	0
LINE 5a								
LINE 5b								
LINE 5c								
LINE 5d								
LINE 5e								
LINE 5f								
REMARKS:				
UNIT INITIALS				SECRET WHEN FILLED IN

Figure D-1. SAM TACTICAL ORDER

3. SAM Status Report (SAMSTATREP)

a.   The SAMSTATREP gives the commander a snapshot of a unit's ability to execute current and future AMD operations while alerting logistics personnel to the status of ammunition and equipment serviceability. Subordinate units will initiate SAMSTATREPs to report system condition and the unit's ability to conduct the ABT/TBM mission. SAMSTATREPs will be sent daily from the battery to higher higher headquarters at 0001Z. SAMSTATREPs will also be sent at any time there is a change in the reportable information, upon assumption of a new Alert State, and upon completion of any Ready for Action Drill. The SAMSTATREP becomes SECRET when filled in.

b.   Procedures for completing the SAMSTATREP.

(1) Effective DTG: Indicate the current date and time (Zulu).

(2) BDE/BN: Indicate the brigade and battalion using the report (e.g. 11th BDE, 5-52 ADA).

(3) STATUS R/A/G: Indicate the battery in top portion of box and overall status of that unit below it. Fill the box with the appropriate color (red, amber, or green).

(4) UNIT TYPE: Indicate if unit is PAC2 or PAC3.

(5) ALERT STATE: Indicate the directed Alert State from the STO under the column marked "DIR" and the unit's current Alert State under the column marked "CUR."

(6) DEFENDED ASSET: Indicate the name(s) and location(s) of a unit's defended asset(s).

(7) LOCATION: Indicate unit's current grid coordinate.

(8) ETRO: If unit is amber or red, indicate the estimated time of return to operations (ETRO). ETROs are mandatory for units with system NMC conditions and must be reported with a DTG rather than an estimate in days, hours, or minutes.

(9) PTL and STL: Indicate unit's current primary target line and secondary target line in degrees.

(10)   MISSILES: Indicate the number of missiles by type under the appropriate column. Indicate how many are operational and how many are non-operational. In the bottom half of the column, indicate the total number of missiles of that type. Under the column marked "total" indicate the total number of missiles the unit has in inventory.

(11)   LS: Indicate the number of launchers on hand and the number of operational launchers in the unit.

(12)   SYSTEM FAULT: Indicate the status of PATRIOT system equipment. The DATA brevity codes below will be used to provide information on degraded and NMC equipment. The letter code will be followed by DEG or NMC and any amplifying data necessary. Letter codes are as follows:

(a) A: Antenna Mast Group (AMG)

(b) B: Engagement Control Station (ECS)

(c) C: Communications Relay Group (CRG)

(d) E: Electric Power Plant (EPP)/Electric Power Unit (EPU)

            (e) F: Forklift

            (f) G: Guided Missile Transporter (GMT)

            (g) I: Information Coordination Central (ICC)

            (h) J: Launching Station Test Set (LSTS)

            (i) K: Identification Friend or Foe (IFF)

            (j) L: LS

            (k) M: Missile

            (l) R: Radar Set (RS)

    (13)   Routing: Indicate unit and initials of individual(s) passing information.

SAMSTAT REPORT
SECRET
(WHEN FILLED IN)

EFFECTIVE DTG: _____

BDE/BN:

STATUS	UNIT TYPE	ALERT STATE	DEFENDED ASSET	LOCATION	ETRO	PTL	STL	MISSILES											LS		TOTAL	SYSTEM FAULT DATA
R/A/G		CUR / DIR						GEM OP	GEM INOP	GEM+ OP	GEM+ INOP	PAC2 OP	PAC2 INOP	PAC3 OP	PAC3 INOP				OP	OH		A-AMG B-BCS C-CRG E-EP/PEPU F-Forklift G-GMT H-ICC J-LSTS K-IFF L-LS M-Missile R-RS

UNIT: TOTAL
UNIT: TOTAL
UNIT: TOTAL
UNIT: TOTAL
UNIT: TOTAL
UNIT: TOTAL

CURRENT ACO
CURRENT SPINS

SECRET
(WHEN FILLED IN)

ROUTING
UNIT
INITIALS

Figure D-2. SAMSTATREP

Appendix E

CAL/DAL-CVT METHODOLOGY

1. Overview

This appendix provides a recommended methodology for critical asset list (CAL)/defended asset list (DAL) development through the use of criticality, vulnerability, and threat (CVT) assessment of potential assets to be defended.

2. Background

a. The JFC establishes guidance and objectives for joint theater missile defense (JTMD). This guidance should be reflected in appropriate operation plans and their annexes. The JFC must define and implement a methodology for JTMD activities. Assessment of a given threat and risk analysis will provide the basis for integration of the appropriate joint theater missile defense capability into the force package to ensure synchronization. The JFC's concept of operations should include prioritization of US and multinational forces; critical assets; and areas of vital interest or political importance that should be protected from TM attack. The J-5 develops a prioritized list of assets to be defended from theater missile attack during various stages of the operation and coordinates the list with the J-3 before approval by the JFC. Active air defense operations defend only what is most important or critical due to resource limitations and accept some risk should the enemy attack lower priority assets that are not directly defended. (JP 3-01.5)

b. The JFC, with input from the components, establishes JTMD priorities based on the campaign plan. The JFC, or if delegated the AADC, tasks components to develop detailed priorities. The components conduct COA analysis to prioritize their defended assets by phase. The AAMDC is involved in this process by assisting the ARFOR and AADC in planning and coordination of the DAL. The AAMDC commander provides mission analysis and COAs to defend the JFC's priorities based on criticality, vulnerability, recuperability, and threat (CVRT). Factors of METT-TC must be considered as a part of this analysis. The JFC or AADC with the components goes through an arbitration process to coalesce all priorities into a single list (FM 3-01.12, *Army Theater Missile Defense Operations*).

c. The DAL is a prioritized listing of assets by phase and is included in the OPLAN and AADP. As required by METT-TC, the AAMDC may establish or participate in coordination boards (reprioritization boards) to recommend changes to AMD priorities on the DAL and adjustments to the defense design during the course of operations. The board uses an objective process that quantifies the level of importance of each asset based on selected criteria. Criteria are weighted based on consideration of the JFC's guidance and intent and his COG concerns. The board forwards recommendations to the respective component commanders and the AADC; recommendations are ultimately approved by the JFC. The AADC may designate the AAMDC commander, in his capacity as the DAADC, to chair the joint coordination board (reprioritization board) (FM 3-01.94, *Army Air and Missile Defense Command Operations*).

3. Definitions

a. CAL. The CAL is developed by the J-5. The CAL is developed during the deliberate planning process IAW Joint Operations Planning and Execution System (JOPES) Volume I. The CAL is a prioritized list of critical assets, identified by phase, with component input, coordinated with the J-3 and approved by the JFC or combatant commander.

b. DAL. The DAL is the product from the process of applying the CVT methodology, AMD resources, and defense design to the CAL while identifying risk. It identifies the prioritized assets from the CAL to be actually defended with the resources available. See Figure E-1.
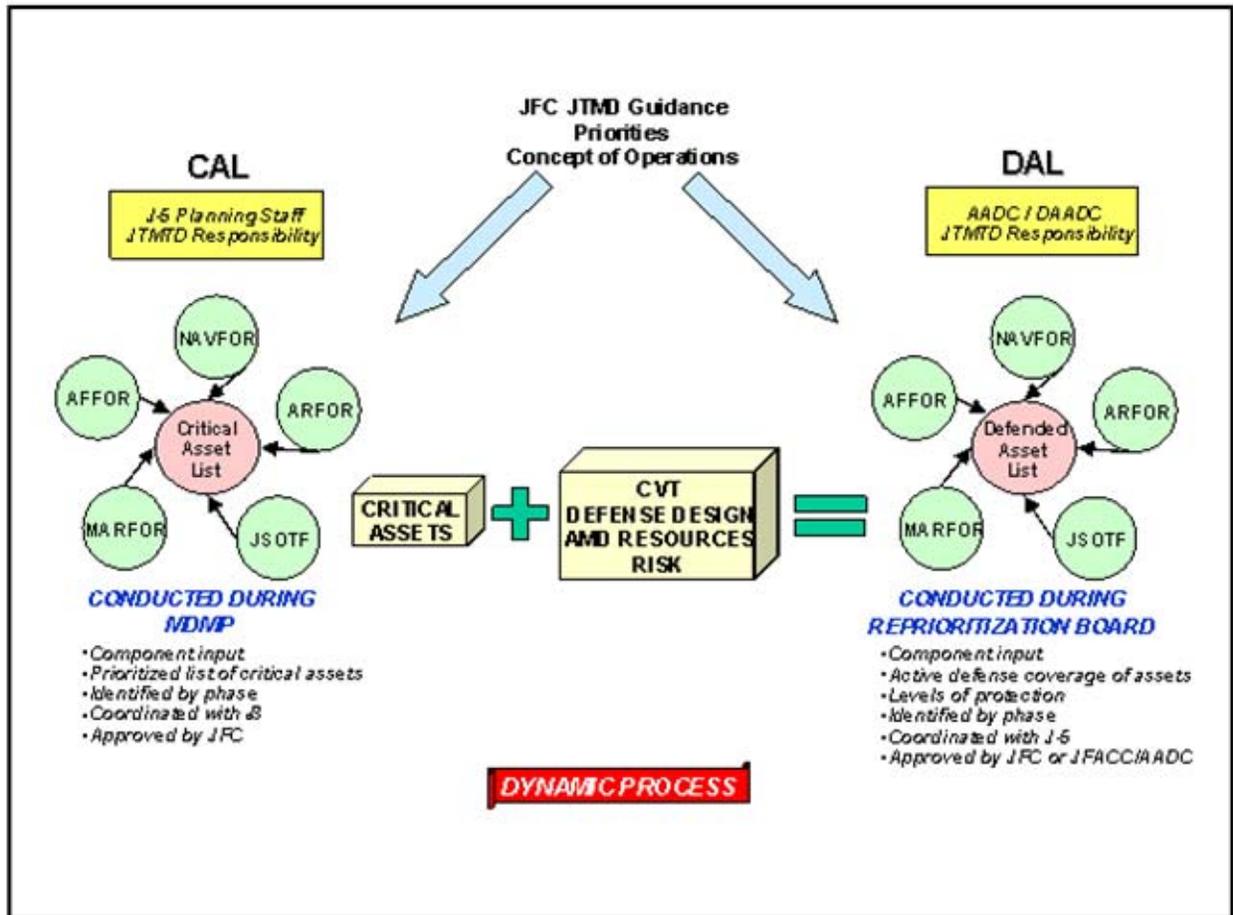
Figure E-1. Defended Asset List (DAL) Process

c. Reprioritization Board. The coordination board (reprioritization board) develops COAs for adjustments to the DAL. The DAADC normally chairs the coordination board (reprioritization board) for the AADC. Normally, the board is comprised of component representatives who have the authority to make decisions to the board on behalf of their component commanders. During the coordination board (reprioritization board), the AAMDC staff will brief to the board the status of the enemy TM threat, friendly concept of the operation, active air defense coverage, and units/capabilities deploying into theater. After discussion, and with component input, the board will develop a recommendation that

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the DAADC will pass to the AADC for approval and forwarding to the JFC for final approval. The board looks 48 to 96 hours into the future to allow sufficient time for execution of board decisions.

    d. Criteria (CVT). Definitions for the criteria (criticality, vulnerability, and threat) were derived from FM 3-01, *US Army Air and Missile Defense Operations.* However, a joint component review of CVRT in the Korean theater of operations where this methodology is used recommended including recuperability as a subset of vulnerability and eliminating recuperability as a separate criterion for the Korean theater of operations. This decision was based on information obtained from the Peninsula Intelligence Estimate (PIE). As a result, CVRT was changed to CVT and has been used in numerous joint exercises, validating the process.

    (1) Criticality. Criticality is the degree to which an asset or force is essential to mission accomplishment. Determination of the criticality of an asset or force is made by assessing the impact on the conduct of the operation that would result from damage to the asset or force. The degree of criticality is based on whether damage to the asset or force prevents, seriously interferes with, or causes only limited interference with the execution of the plan.

    (2) Vulnerability. Vulnerability consists of two parts: susceptibility to damage if attacked and recuperability. Susceptibility to damage is further subdivided into two parts: hardness and dispersion. Consideration should be given to the asset or force's hardness and its ability to disperse or displace to another position. Recuperability is the degree to which an asset or force can recover from inflicted damage in terms of time, equipment, and available manpower to continue its mission.

    (3) Threat. Threat is the probability that an asset or force will be targeted for surveillance or attack by enemy air. The use of threat information to develop AMD priorities is a reverse IPB process—what we expect enemy air to detect and attack, based on IPB. Targeting information provided by intelligence estimates, past enemy surveillance and attack methods, and enemy doctrine is useful in evaluating AMD priorities. To determine the relative importance of assets and forces, the commander considers certain characteristics, which make an asset or force a lucrative target for the enemy. In effect, this is reverse target value analysis.

4. Scope

    CVT is an objective process that quantifies level of importance based on selected criteria. When conducting a CVT assessment, one must consider intelligence, air operations, ground combat operations, maritime operations, and support operations. Each asset must be evaluated against defined criteria and the criteria must be weighted based on consideration of JFC's intent, concept of operations, and COG concerns. For example, the following weights could be used to define the JFC's COG or critical event: "Criticality x 3, Threat x 2, and Vulnerability x 2." Note that when priorities are phased, assets must be reevaluated IAW critical events.

5. Worksheets

    The purpose of the CVT methodology worksheets is to quantify to the degree possible the relative value of the various assets. The intent is to minimize subjectivity and maximize objectivity. There are two worksheets: the component asset data worksheet and

the component CAL summary worksheet. Fill out the asset data sheet for each asset being proposed for inclusion on the CAL/DAL. The component CAL summary sheet is a rank ordering of the component's assets based on the established criteria for each phase.

    a. Component Asset Data Worksheet (Figure E-2).

        (1) Provide proposed defended asset (name and mission, e.g. "Biggs Army Airfield, APOD").

            (a) Suggested CAL/DAL assets include but are not limited to: airbases, ports, SPODs, APODs, C2 nodes, communication centers, assembly and holding areas, civilian/political sites, logistics bases, and critical component assets.

            (b) This is a combined (multinational) CAL/DAL (US/coalition). Components should include coalition assets.

        (2) Provide an 8-digit grid coordinate and latitude/longitude coordinate for center of mass of the asset. If possible, give radius size of the asset, which will be used in planning the defense design.

        (3) Provide name of location for each asset being submitted.

        (4) Describe the assets functions/missions. Based on your component's view, describe the asset's importance to the theater plan. Provide the supporting information needed such as:

            (a) Airbase: Number of aircraft arriving or in place (type; number; C-dates aircraft are expected to be at airbase; mission roles; and type of munitions the aircraft is carrying, such as precision guided munitions).

            (b) Navy ports: First C-date of operations, capabilities of port, short tons being delivered through port.

            (c) SPODs: First C-date of operations, capabilities of port, amount of cargo arriving/leaving, and start of peak flow.

            (d) APODs: First C-date of operations, capabilities of port, amount of cargo arriving/leaving, and start of peak flow.

            (e) C2 nodes: First C-date of operations, capabilities, and occupying headquarters.

            (f) Communications centers: First C-date of operations, capabilities, occupying Signal unit, and type of equipment at location.

            (g) Assembly/holding areas: First C-date of operations and peak of flow.

            (h) Civilian/Political sites: Political importance.

            (i) Logistics bases: First C-date of operations; peak of flow; type and quantity of stored supply, Class I through Class X.

            (j) Critical component assets: First C-date of operations, reasons of importance, and peak of flow or critical time.

            (k) Other assets: First C-date of operations, start of peak flow, and reason of importance.

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(l) All assets: Other like/similar assets, mission capabilities and roles, and other pertinent information.

(5) Provide numerical values according to criteria sheets for each C-day block/time period.

b.   Component CAL Summary Worksheet (Figure E-3). Fill in the numerical values for each C-day block and rank order assets.

6. Explanation of Rated Criteria

a.   Criticality. Criticality is rated 1-10; higher is more critical, defined as "the degree to which the asset is essential to the execution of the JFC's theater campaign plan."

Table E-1. Criticality

VALUE	CRITERIA
10	Loss of asset would stop JFC OPLAN execution.
8	Loss of asset would endanger JFC OPLAN execution.
6	Loss of asset would cause a major change in JFC OPLAN.
4	Loss of asset would delay the execution of the next JFC OPLAN phase.
2	Loss of asset would cause a shift of missions/assets to another location.
ADD 0.5 if asset is JFC COG for Phase I, II, or III.	
ADD 0.5 if asset is a noncombatant evacuation operation (NEO) Relocation Center, aerial port of embarkation (APOE), or sea port of embarkation (SPOE).	

b.   Vulnerability. Vulnerability consists of two parts, susceptibility to damage if attacked and recuperability of force's capabilities. Susceptibility to damage is further divided into two areas: asset/force hardness and dispersion/displacement to another location. Susceptibility to damage adds up to a maximum total of 6 points. Recuperability consists of two parts: time that an asset can recover from an enemy attack and ability to replicate a capability/unit lost to enemy attack. Recuperability of force's capabilities adds up to a maximum of 4 points total. Susceptibility and recuperability add up to a total of no more than 10 points.

(1) Susceptibility to damage if attacked is defined as an asset's/force's degree of hardness and dispersion/displacement to another location. Also consider the asset's/force's own organic air defense capability.

Table E-2. Asset/Force Hardness

VALUE	CRITERIA
3	< 29% of facilities hardened
2	30% - 74% of facilities hardened
1	> 75% of facilities hardened

Table E-3. Asset/Force Dispersion/Displacement

VALUE	CRITERIA
3	< 29% of facilities dispersed
2	30% - 74% of facilities dispersed
1	> 75% of facilities dispersed

(2) Recuperability is divided into two parts: time that an asset can recover its infrastructure from an enemy attack and ability to replicate a capability/unit lost to enemy attack.

Table E-4. Time for Assets to Recover Infrastructure After Enemy Attack

VALUE	CRITERIA
2.0	Closure > 7 days or permanent closure
1.5	Temporary closure 1 – 7 days
1.0	75% - 100% mission degraded for > 1 day
0.5	25% - 74% mission degraded for > 1 day

Table E-5. Ability to Replicate a Capability/Unit Lost from Enemy Attack

VALUE	CRITERIA
2.0	25% replication of capability/unit
1.5	26% - 75% replication of capability/unit
0.5	100% replication of capability/unit

c.   Threat. Threat is divided into two parts: probability of enemy attack and probability of an asset being targeted for surveillance by the enemy. Each part has a value no greater than 5 and a combined total no greater than 10. Higher is more probable to be attacked, defined as "the degree to which the enemy will target a specific asset." Given all JFC assets, what is the likelihood of the enemy targeting this specific location? Requires assessment of enemy COAs. Components will use the JIPB as their initial guideline for their threat assessments. Probability of enemy surveillance is based on the assumption that enemy forces will be able to have surveillance by HUMINT and SIGINT and ability for an asset to be detected by IMINT, ELINT, foreign instrumentation signals intelligence (FISINT), and MASINT.

Table E-6. Probability of Enemy Attack

VALUE	CRITERIA
5	High probability of attack
3	Moderate probability of attack
1	Low probability of attack

Table E-7. Probability of Enemy Surveillance

VALUE	CRITERIA
5	High probability of detection
3	Moderate probability of detection
1	Low probability of detection

CVT Methodology Worksheet – Component Asset Data

Component:_____ Phone:_____ POC:_____
Asset Number #_____
Proposed Defended Asset:_____
8 Digit Grid Coordinate (MGRS):_____
LAT_____ LONG:_____
Name of Location:_____
Description of Function and Mission:

_____
_____
_____
_____
_____
_____

Numerical Values (Use criteria info from main document)

CVT Point Assessment	VALUE
1. Criticality (Total 10 pts).	_____
2. Vulnerability (Total 10 pts):	N/A
a. Susceptibility to Damage (Total 6 pts):	N/A
1) Hardness (3 pts).	_____
2) Dispersion/Displacement (3 pts).	_____
b. Recuperability (Total 4 pts):	N/A
1) Time to recover (2 pts).	_____
2) Replicate capability (2 pts.)	_____
3. Threat (Total 10 pts):	N/A
a. Probability of Enemy Attack (5 pts):	_____
b. Probability of Enemy Surveillance (5 pts):	_____
4. Overall Total:	T=_____

Figure E-2. Component Asset Data Worksheet

CVT Methodology Worksheet – Component CAL Summary

Component:_____

Time Period:_____   C-Date:_____

Rank Ordered TMD Priority List

PRIORITY	ASSET	C	V	T	TOTAL

C = Criticality
V = Vulnerability
T = Threat
Total = Sum of C, V, T Columns CVT

Figure E-3. Component CAL Summary Worksheet

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GLOSSARY

A

A2C2	Army airspace command and control
AADC	area air defense commander
AADCS	Area Air Defense Command System
AADP	area air defense plan
AAMDC	Army Air and Missile Defense Command
ABT	air-breathing threat
ACA	airspace control authority
ACE	analysis and control element
ACM	airspace control measure
ACO	airspace control order
ACP	airspace control plan
AD	air defense
ADA	air defense artillery
ADAFCO	air defense artillery fire control officer
ADC	air defense commander
ADCON	administrative control
AFDD	Air Force Doctrine Document
ADE	air defense element
ADOCS	automated deep operations coordination system
ADSI	air defense system integrator
ADW	air defense warning
AEW	airborne early warning
AFAOC	Air Force air and space operations center
AFATDS	Advanced Field Artillery Tactical Data System
AFDC	Air Force Doctrine Center
AFFOR	Air Force forces
AFI	Air Force Instruction
AFTTP(I)	Air Force Tactics, Techniques, and Procedures (Interservice)
AGM	attack guidance matrix
AI	air interdiction
ALCC	airlift coordination cell
ALERT	Air Force Attack and Early Warning to Theater
ALSA	Air Land Sea Application
AMD	air and missile defense
AMDPCS	Air and Missile Defense Planning and Control System

AMDWS	Air and Missile Defense Workstation
AMG	antenna mast group
AO	area of operations
AOC	aerospace operations center (JP 1-02);
AOD	air operations directive
AOR	area of responsibility
APOD	aerial port of debarkation
APOE	aerial port of embarkation
ARFOR	Army forces
ARM	anti-radiation missile
AS	alert state
ASAS	All-Source Analysis System
ASCC	Army Service component command
ASM	air-to-surface missile
ATACMS	Army Tactical Cruise Missile System
ATO	air tasking order
AVN	aviation
AWACS	Airborne Warning and Control System

B

BCD	battlefield coordination detachment
BDA	battle damage assessment
BDE	brigade
BN	battalion

C

C2	command and control
C3	command, control, and communications
C4	command, control, communications, and computers
C4I	command, control, communications, computers, and intelligence
CA	counterair
CAL	critical asset list
CAP	crisis action planning
CAS	close air support
CCIR	commander's critical information requirements
CCO	chief of combat operations
CE	communications-electronics
CI	counterintelligence
CJTF	commander, joint task force
CM	cruise missile

CO	commanding officer
COA	course of action
COCOM	combatant command (command authority)
COG	center of gravity
COM	collection operations management
COMAFFOR	commander, Air Force forces
COMARFOR	commander, Army forces
COMINT	communications intelligence
COMNAVFOR	commander, Navy forces
COMSEC	communications security
CONOPS	concept of operations
CONPLAN	concept plan
CONUS	continental United States
COP	common operational picture
CRC	control and reporting center
CRG	communications relay group
CRM	collection requirement management
CSS	combat service support
CTL	consolidated target list
CV/CVN	aircraft carrier
CVT	criticality, vulnerability, and threat
CVRT	criticality, vulnerability, recuperability, and threat
CWC	composite warfare commander

D

D3A	decide, detect, deliver, and assess
DAADC	deputy area air defense commander
DAL	defended asset list
DCA	defensive counterair
DEG	degraded
DIRMOBFOR	director of mobility forces
DOCC	deep operations coordination cell
DOD	Department of Defense
DS	direct support
DSN	defense switched network
DSP	Defense Support Program
DTG	date time group

E

EA	engagement authority

EAC	echelons above corps (Army)
ELINT	electronic intelligence
ECS	engagement control station
EMCON	emissions control
ETRO	estimated time of return to operations
EW	electronic warfare

F

FA	field artillery
FAAD	forward area air defense
FDFR	first detect, first report
FDL	FAAD datalink
FEZ	fighter engagement zone
FISINT	foreign instrumentation signals intelligence
FLOT	forward line of own troops
FM	Field Manual
FS	fire support
FSCL	fire support coordination line
FSCM	fire support coordinating measure
FSCOORD	fire support coordinator
FSE	fire support element
FW	fixed wing

G

GALE	generic area limitation environment
GAT	guidance, apportionment, and targeting
GCCS	Global Command and Control System
GEOREF	geographic reference

H

HPT	high payoff target
HPTL	high payoff target list
HQ	headquarters
HUMINT	human intelligence
HVAA	high-value airborne assets

I

IAW	in accordance with
IBIS	Integrated Battlespace Intelligence System
IBS	Integrated Broadcast System

ICE	initial coordination element
ID	identification
IDA	identification authority
IDN	Initial Distribution Number
IEW	intelligence and electronic warfare
IFF	identification friend or foe
IG	Inspector General
IMINT	imagery intelligence
INTREP	intelligence report
INTSUM	intelligence summary
IO	information operations
IPB	intelligence preparation of the battlespace
IR	information requirement
ISR	intelligence, surveillance, and reconnaissance
IWS	InfoWorkspace

J

JAOC	joint air operations center
JAOP	joint air operations plan
JDP	Joint Defensive Planner
JEZ	joint engagement zone
JFACC	joint force air component commander
JFC	joint force commander
JFLCC	joint force land component commander
JFMCC	joint force maritime component commander
JGAT	joint guidance, apportionment, and targeting
JIC	joint intelligence center
JICO	joint interface control officer
JIPB	joint intelligence preparation of the battlespace
JIPTL	joint intelligence prioritized target list
JOA	joint operations area
JOC	joint operations center
JOPES	joint operation planning and execution system
JP	joint publication
J-SEAD	joint suppression of enemy air defense
JSOTF	joint special operations task force
JSRC	joint search and rescue center
JSTARS	Joint Surveillance Target Attack Radar System
JTAGS	Joint Tactical Ground Station
JTAMD	joint theater air and missile defense

JTCB	joint targeting coordination board
JTF	joint task force
JTMD	joint theater missile defense
JTMTD	joint theater missile target development

L

LAN	local area network
LNO	liaison officer
LOC	line of communication
LRSU	long-range surveillance unit
LS	launching station
LTIOV	latest time that the intelligence is of value

M

MAAP	master air attack plan
MAGTF	Marine air-ground task force
MAOP	
MARFOR	Marine forces
MARLO	Marine liaison officer
MASINT	measurement and signature intelligence
MCCDC	Marine Corps Combat Development Command
MCPDS	Marine Corps Publication Distribution System
MCRP	Marine Corps Reference Publication
MCWP	Marine Corps Warfighting Publication
MDMP	military decision making process
METT-T	mission, enemy, terrain and weather, troops and support available—time available
METT-TC	mission, enemy, terrain and weather, time, troops and support available, and civil considerations
MEZ	missile engagement zone
MGRS	military grid reference system
MILSTRIP	military standard requisitioning and issue procedure
MLRS	Multiple Launch Rocket System
MSC	major subordinate command
MTI	moving target indicator
MTOE	modified table of organization and equipment
MTTP	multi-Service tactics, techniques, and procedures
MWC	missile warning center [NORAD]

N

NAF	Numbered Air Force
NAI	named area of interest
NALE	naval and amphibious liaison element
NAVFOR	Navy forces
NBC	nuclear, biological, and chemical
NEO	noncombatant evacuation operations
NLT	not later than
NMC	non-mission capable
NRT	near-real-time
NTTP	Navy tactics, techniques, and procedures
NWCD	Navy Warfare Development Command
NWP	Navy Warfare Publication

O

OB	order of battle
OCA	offensive counterair
OIC	officer in charge
OP	operational protection
OPCON	operational control
OPLAN	operations plan
OPORD	operations order
OPR	office of primary responsibility
OPSEC	operational security
OPTASKLINK	operations task link
OPTEMPO	operational tempo
OTC	officer in tactical command

P

PAC2	Patriot anti-tactical missile capability-2
PAC3	Patriot anti-tactical missile capability-3
PA	Public Affairs
PAWS	Pager Alert Warning System
PDS-M	Processing Display Subsystem Migration
PIR	priority intelligence requirement
PSYOP	psychological operations
PTL	primary target line

R

RADC	regional air defense commander
RFI	request for information
RFF	request for fire
ROE	rules of engagement
ROZ	restricted operations zone
RW	rotary wing

S

SA	situational awareness
SADC	sector air defense commander
SADO	senior air defense officer
SALUTE	Size, activity, location, unit identification, time and date, and equipment
SAM	surface-to-air missile
SAMSTATREP	SAM status report
SATCOM	satellite communications
SBIRS	Space-Based Infrared System
SEAD	suppression of enemy air defenses
SHORAD	short-range air defense
SIF	selective identification feature
SIGINT	signals intelligence
SIPRNET	secure internet protocol router network
SIR	specific information requirements
SJA	staff judge advocate
SME	subject matter expert
SOCCE	special operations command and control element
SOF	special operations forces
SOLE	special operations liaison element
SOP	standard operating procedure
SOR	specific orders and requests
SPINS	special instructions
SPOD	sea port of debarkation
SPOE	sea port of embarkation
SSM	surface-to-surface missile
STL	secondary target line
STO	SAM tactical order
SYSCON	systems control

T

TAAMDCOORD	theater Army air and missile defense coordinator
TAC	tactical command post (Army)
TACC	tactical air command and control (USMC)
TACON	tactical control
TACOPDAT	tactical operational data
TACS	theater air control system
TADIL	tactical digital information link
TAH	target airspace hazard
TAI	target area of interest
TAMD	theater air and missile defense
TBM	tactical ballistic missile
TBMCS	theater battle management core system
TDDS	tactical data dissemination system
TEL	transporter-erector-launcher
TES	theater event system
TGT	target
TIBS	tactical information broadcast service
TLAM	Tomahawk land-attack missile
TM	theater missile
TM IPB	theater missile intelligence preparation of the battlespace
TMD	theater missile defense
TOC	tactical operations center
TPFDD	time-phased force and deployment data
TRADOC	US Army Training and Doctrine Command
TRAP	tactical related applications
TRE	tactical receive equipment
TSS	target selection standards
TST	time sensitive target
TTP	tactics, techniques, and procedures

U

UAV	unmanned aerial vehicle
UGF	underground facilities
US	United States
USA	United States Army
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy

USSTRATCOM   United States Strategic Command

W

WCO   weapons control order
WCS   weapons control status
WMD   weapons of mass destruction
WEZ   weapon engagement zone
WOTS   Worldwide Origin Threat System

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