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ARMY AIR AND MISSILE DEFENSE COMMAND OPERATIONS

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Army Air and Missile Defense Command Operations

Contents

Preface

This field manual (FM) is a doctrinal guide to Army Air and Missile Defense Command (AAMDC) operations. It is intended for use by the AAMDC commander and his staff as well as the commanders and staffs of Army, joint, and multinational elements that interact with the AAMDC in the conduct of theater air and missile defense operations.

The manual includes chapters on the AAMDC mission, roles and organization; command and control relationships; operations; support; and communications. Also included are appendices that describe the AAMDC equipment and provide a formatted sample air and missile defense (AMD) annex. The sample AMD annex is included to assist AAMDC planners in developing the AMD annex to the operations plan. The equipment appendix shows the physical layout of the AAMDC tactical operations center (TOC) and describes the air and missile defense planning and control system (AMDPCS), the integrated system of hardware and software within the TOC used to plan and execute the AAMDC mission.

This publication implements the following international standardization agreement (ISA):

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

Chapter 1

Overview: Army Air and Missile Defense Command

This chapter provides a concise overview of the Army Air and Missile Defense Command (AAMDC) including its mission, roles, and organization. It includes an operational overview that describes the AAMDC's command and control (C^2) structure, theater C^2 relationships and concept of operations; a support overview that describes how the AAMDC supports theater air and missile defense (TAMD) operations; and a communications overview that summarizes the AAMDC's communications requirements and command, control, communications, computers, and intelligence (C^4I) architecture.

MISSION

1-1. The air defense artillery (ADA) mission is to protect the force and selected geopolitical assets from aerial attack, missile attack, and surveillance. This protection is normally provided within a joint theater and requires that Army TAMD systems be integrated with joint TAMD systems and that operations be closely coordinated.

1-2. The AAMDC mission is to strategically deploy combat ready air defense artillery units and perform theater air and missile defense planning, coordination, integration, and execution in support of the commander-in-chief's (CINC's) priorities. In performing this mission, the AAMDC ensures that the Army's contribution to the TAMD fight is seamlessly integrated, coordinated, and synchronized with other Army, joint, and multinational units, and supports the joint force commander's intent.

ROLES

1-3. The AAMDC is the Army's operational lead for Army theater air and missile defense. In wartime, the AAMDC deploys into the theater of operations in support of the Army forces (ARFOR) commander or, if designated, the joint forces land component commander (JFLCC), ensuring that Army TAMD operations are properly coordinated and integrated with those of joint and multinational forces. In peacetime, the AAMDC ensures Army echelons above corps (EAC) ADA forces are properly trained and ready to support TAMD operations. The AAMDC plans and executes a variety of training activities, exercises, and simulations to ensure force readiness. It also coordinates with joint and multinational partners to develop procedures for combined TAMD operations, interoperability, and training. See Figure 1-1 on the following page for a functional comparison with the ADA brigade headquarters.

AAMDC	EAC ADA BDE
• C^2 headquarters tailored for joint operations	• C^2 headquarters tailored for Army operations
• Performs theater level AMD planning, coordination, and synchronization	• Executes tactical level engagement and force operations
• Conducts all operational elements of TAMD	• Conducts active, passive and C^4I elements
• Commands and controls EAC ADA brigades and serves as TAAMDCOORD and DAADC when directed	• Commands and controls ADA battalions and task forces
• Provides liaison teams to key C^2 nodes throughout the theater	• Limited liaison team capability
• No organic signal capability	• May have organic signal capability
• Limited logistics readiness center capability	• Robust logistics readiness center capability

Figure 1-1. Functional Comparison

ORGANIZATION

1-4. The AAMDC is a multicomponent organization of active and reserve component intelligence, fire support, aviation, chemical, air defense, special forces, signal, and logistic personnel melded into an effective TAMD team. A second AAMDC is authorized and will consist of all reserve component personnel. Although not part of the AAMDC table of organization and equipment, civilian contractor personnel may be required to augment the AAMDC for operational and technical support. The organizational structure of the AAMDC is shown in Figure 1-2. It consists of a command section and twelve subordinate sections: the Chief of Staff, G1 (Personnel), G2 (Intelligence), G3 (Operations), G4 (Logistics), G6 (Communications/Electronics), Headquarters Commandant, Inspector General (IG), Public Affairs, Staff Judge Advocate (SJA), Battery Headquarters, and Motor Maintenance sections.

AAMDC FUNCTIONS

1-5. The major functions of the command section and its subordinate staff are summarized below:

1-6. The **Command Section** exercises C^2 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 air and missile defense functions.

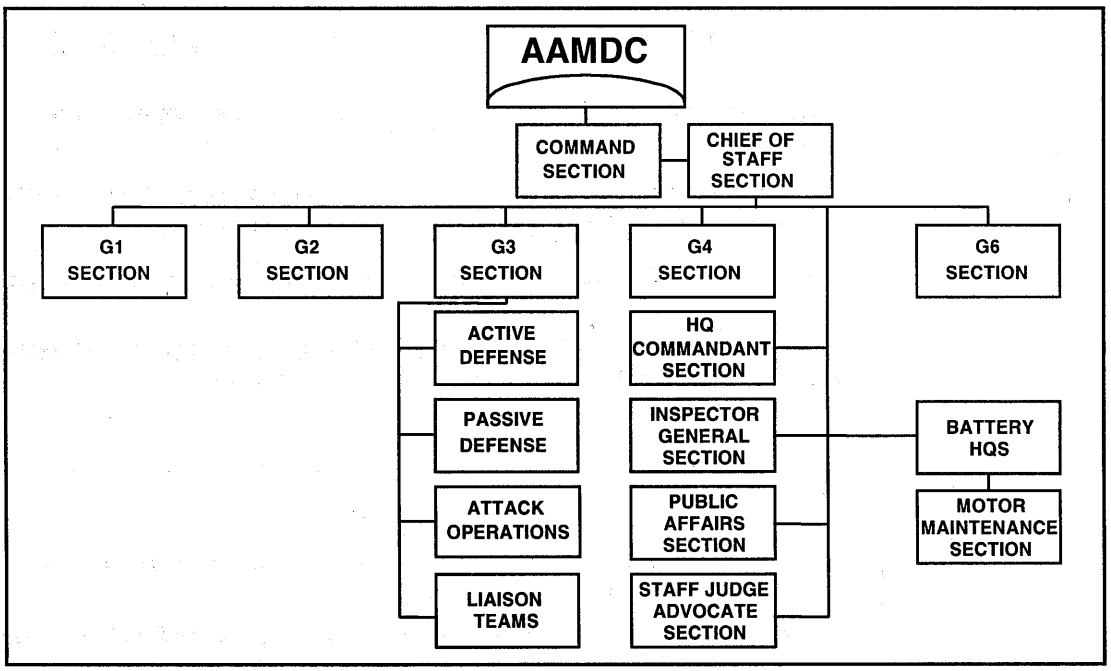

Figure 1-2. AAMDC Organizational Structure

1-7. The **Chief of Staff Section** directs and coordinates the activities of the subordinate staff (to include the special staff, Public Affairs Section, Chaplain, IG, and SJA) and ensures assigned tasks are promptly and efficiently completed.

1-8. The **Personnel Section** is responsible for personnel administration and manpower management and is the focal point for all personnel-related matters and services. It advises and assists the commander in management of personnel records and reports, personnel replacements, discipline, morale, and welfare.

1-9. The **Intelligence Section** is the focal point for all military intelligence and counterintelligence, assists the G3 in operations security, and provides TAMD intelligence support to Army component forces and other joint/multinational forces as required. It is responsible for the following intelligence production, dissemination, and support activities: developing, refining and validating the intelligence preparation of the battlespace (IPB); assisting the commander in identifying priority intelligence requirements (PIRs); developing and refining the intelligence estimate; processing requests for information (RFIs); analyzing intelligence reports and messages; developing target recommendations; and keeping the commander informed of intelligence capabilities and limitations and their potential impact on operations. The section is also responsible for acquiring, maintaining, and monitoring intelligence systems; determining intelligence communication requirements; assisting in the development of physical security plans, operational plans, and operational security measures; and coordinating intelligence and security drills.

1-10. The **Operations Section** is responsible for coordinating, integrating and synchronizing all current and future AAMDC operations. It directs the emplacement of the tactical operations center (TOC) and monitors the operational status, location and engagement capabilities of land-based active air defense units. The section coordinates unit movements and maintains situational awareness of the TAMD battle. Although normally the AAMDC does not have C^2 of any attack operations (field artillery or aviation) or passive defense forces (chemical), the operations section monitors aspects of their operations/capabilities that may impact AAMDC operations. (For instance, the operations section monitors the location and status of all decontamination units/sites available to support AAMDC forces). It also establishes and maintains liaison officers at major theater and ARFOR or JFLCC C^2 nodes to facilitate the conduct of air and missile defense operations. For example, in the event a missile is launched, the operations section receives missile launch and TBM impact points, disseminates early warning, and after analysis passes targeting recommendations on the enemy's launch platforms and associated infrastructure to the deep operations coordination cell (DOCC). The operations section prepares the AMD annex to the ARFOR or JFLCC's operations plan/operations order (OPLAN/OPORD). It also develops plans to support future operations, assists integration of TMD time sensitive and planned air tasking order (ATO) target missions, and assists in the development of the theater air defense plan. The section also ensures that all forces assigned to the AAMDC are trained and oversees force modernization initiatives.

1-11. The **Logistics Section** is responsible for coordinating the supply, maintenance, transportation and services for the command. It determines current and future ADA supply needs, recommends logistical allocations and priorities, and assists the operations section in preparing plans for service support. The section also monitors equipment readiness and unique ADA classes of supply (Class V and IX). It also prepares the movement annex to OPLANs/OPORDs, coordinates and schedules transportation operations and advises units on current transport requirements and movement restrictions.

1-12. The **Communications/Electronics (C/E) Section** provides data and voice communications, information systems planning, coordination and support to the AAMDC as well as joint, multinational and external organizations as required.

1-13. The **Headquarters Battery (Battery HQ Section)** provides the full range of personnel management and administrative support for the battery. It provides the administrative link when requesting replacements, reporting casualties, and conducting personnel actions.

1-14. The **Motor Maintenance Section** provides maintenance support and expertise on all assigned equipment and ensures required services are performed. It requests repair and replacement items and monitors the automated inventory management system for status and availability of projected repair parts.

1-15. The **Headquarters Commandant Section** exercises operational control over soldiers assigned to the headquarters. It provides for headquarters security, food service, quartering, medical support, field-

sanitation, and supply for headquarters personnel. It also arranges for the reception and integration of augmentees to support the AAMDC mission.

1-16. The **Inspector General (IG) Section** advises the commander on the overall welfare and state of discipline of the command. It integrates the commander's organizational inspection program, conducts inspections and investigations, and assists the commander in determining the state of the discipline, efficiency, morale, training, and readiness within the command.

1-17. The **Public Affairs Section** plans and supervises the command's public affairs program. It advises and informs the commander of the public affairs impacts and implications of planned or implemented operations. It serves as the command's spokesman for all communication with the external media, monitors media and public opinion, and evaluates the effectiveness of public affairs plans and operations.

1-18. The **Staff Judge Advocate Section** provides legal advice to the commander on military, domestic, and foreign laws as well as those relating to armed conflict. It also provides legal services for the command, supervises the administration of military justice, and ensures that the rights of individuals are protected and the interests of justice are served.

OPERATIONS

1-19. Theater air and missile defense operations encompass all activities focused on the identification, integration, and employment of forces supported by theater and national capabilities to detect, identify, classify, locate, track, discriminate, minimize the effects of and destroy air and theater missile threats (to include large-caliber rockets). The preferred method to counter the air and theater missile threat is to destroy or disrupt operations prior to launch. The next most desired option is to intercept and destroy the threat in flight. TAMD must also apply measures to reduce vulnerability and minimize damage in the event attack operations and active defense measures are ineffective.

COMMAND AND CONTROL

1-20. The AAMDC commander is responsible for planning, coordinating, and integrating TAMD operations for the ARFOR commander or, if designated, the JFLCC, and ensuring these operations are properly executed. He accomplishes these functions through the following activities:

- Commands EAC ADA forces and oversees operational level planning to support brigade operations, ensuring that the brigades are postured to protect theater forces and assets. He also facilitates the force projection of the brigades and resolves brigade support issues.
- Serves as the theater Army air and missile defense coordinator (TAAMDCOORD) and acts as a special staff officer to the ARFOR/JFLCC commander. The TAAMDCOORD ensures Army TAMD is integrated with counterair operations at the theater level.
- Supports the JFACC, area air defense commander (AADC), and airspace control authority (ACA) by serving as a deputy area air

defense commander (DAADC) and ensuring that the Army's contribution to the joint TAMD fight is planned, coordinated, and synchronized with the JFACC/AADC/ACA concept of operations.

- Shares, through his G2 and attack operations elements, IPB information with the DOCC.
- Provides TAMD target nominations to the DOCC for immediate targeting, time-sensitive targets, and the ATO process.
- Exercises either operational control or tactical control (or as determined by the JFC) of assigned multinational forces.
- Coordinates with the corps ADA brigades to ensure that their respective operations are integrated and synchronized with the theater air defense plan.
- Disseminates, through his passive defense element, early warning to affected ARFOR units and, when requested, to joint and multinational units or the populace in the ARFOR area of operations.
- Deploys liaison officers (LNOs) to critical theater and ARFOR C^2 nodes. The LNOs provide the essential coordination needed to prosecute the TAMD fight efficiently. They keep TAMD commanders and staffs apprised of the status of TAMD operations and recommend appropriate courses of action relative to air and missile events. They also serve as subject matter experts on the capabilities of the AAMDC and its subordinate ADA forces.

OPERATIONAL CONCEPT

1-21. An AAMDC can operate throughout the full range of military operations. During peacetime the AAMDCs are based in the continental United States (CONUS) and are organized for rapid deployment during force projection operations to plan and conduct theater air and missile defense for the ARFOR commander. During contingency missions the AAMDC will plan, recommend, and task organize force requirements based on mission, enemy, terrain and weather, troops, time available, and civil considerations (METT-TC). The force requirements may be resourced from both active and reserve components.

1-22. The AAMDC must train to meet air and missile defense operational requirements. This training includes developing and practicing tactics, techniques, and procedures with joint and multinational forces. The AAMDC provides unity of command and commonality of purpose for all EAC ADA brigades by establishing the EAC ADA brigade training guidance and enforcing applicable standards. The AAMDC also coordinates with other services and multinational forces on TAMD matters.

1-23. The AAMDC plans, coordinates, integrates, and synchronizes Army theater air and missile defense operations by horizontally and vertically receiving, analyzing, integrating, and disseminating TAMD information. The AAMDC integrates the four operational elements of Army TAMD (passive defense, active defense, attack operations, and C^4I) to protect contingency, forward-deployed, and reinforcing forces as well as designated assets from

the joint force commander's (JFC) defended asset list (DAL). The AAMDC executes its mission using an integrated system of hardware and software located in the TOC. This system, known as the air and missile defense planning and control system (AMDPCS), includes the computers, communications, and other equipment necessary to plan, coordinate, and monitor the execution of TAMD for the ARFOR or, if designated, the JFLCC. Also, dedicated liaison teams deploy to selected major theater and ARFOR/JFLCC elements to assist in execution of the mission.

1-24. The commanding general (CG) of the AAMDC performs three critical roles during TAMD operations. The CG commands the AAMDC and its subordinate EAC ADA brigades, performs the functions of the TAAMDCOORD for the ARFOR commander (or JFLCC), and performs the functions of the DAADC for the AADC. The AAMDC normally collocates with the ARFOR/JFLCC headquarters, but dependent on METT-TC, may collocate with the joint air operations center (JAOC). The location of the commander and his role is also dependent on METT-TC.

SUPPORT

1-25. Support operations ensure that adequate resources are available to support the AAMDC mission throughout all operational phases. Support includes sustainment, prioritization, and reconstitution.

SUSTAINMENT

1-26. AAMDC sustainment operations involve both planning and oversight activities that are performed primarily by the G1 and G4 staffs. These activities focus on how, when, and where to accomplish the sustainment functions of *manning, arming, fueling, fixing, moving, and sustaining soldiers and their systems*:

- *Manning* ensures the AAMDC and its subordinate units are staffed with the right number and types of personnel to perform the mission.
- *Arming* ensures the right mix and quantity of AMD missiles (Patriot, Theater High Altitude Area Defense [THAAD], etc.) are available at the time and place needed.
- *Fueling* ensures sufficient quantities of petroleum, oils and lubricants (POL) are available to support current and planned AMD operations.
- *Fixing* ensures critical AMD materiel and equipment are operational and failed systems are quickly restored to operational status.
- *Moving* ensures adequate transportation resources (vehicles, control procedures, plans) are available to support operations. With AMD units normally dispersed at great distances throughout the depth of the area of operations, "moving" missiles (cross-leveling) and delivering repair parts become critical sustainment functions.
- *Sustaining soldiers* ensures personnel services, health services, field services, quality of life, and general supply support are adequate.

PRIORITIZATION

1-27. The AAMDC commander may establish support priorities by phase of the operation or change priorities during operations to ensure that combat support (CS) or combat service support (CSS) are provided in accordance with their relative importance to accomplishing the mission. Changes by phase to the DAL or reprioritization of critical assets on the DAL will normally affect support priorities and require continual assessment by the staff. The G1 and G4 staffs will ensure these priorities are implemented in accordance with the commander's intent.

RECONSTITUTION

1-28. Reconstitution operations are conducted to restore the AAMDC and/or its supporting forces to a desired level of combat effectiveness commensurate with mission requirements and available resources. They are implemented when combat effectiveness has been degraded as a result of enemy activity or other battlefield environmental factors. Because of the limited AMD assets available for the critical force protection mission, the AAMDC will normally provide guidance and direction to theater-wide AMD reconstitution efforts to ensure forces are available to provide active defense of priority assets on the JFC's DAL. Reconstitution operations include regeneration and reorganization. Regeneration involves rebuilding the unit through large-scale replacement of personnel, equipment, and supplies, including the reestablishment or replacement of essential C^2 personnel and equipment and the conduct of mission-essential training. Reorganization involves the shifting of internal resources within the unit to increase its level of combat effectiveness. The AAMDC will assist the EAC ADA brigades in regeneration and reorganization decisions and provide support and assistance in executing either mission. Given the severely limited amount of AMD-specific equipment worldwide, the likelihood of complete regeneration of units is small. Most reconstitution operations will be a combination of regeneration and reorganization.

COMMUNICATIONS

1-29. The AAMDC must establish and maintain communications at the theater level with the ARFOR, joint forces, and multinational elements. It must also establish and maintain a robust internal communications system. These communication linkages are required to support a variety of critical activities including:

- Command and control
- Operational and tactical planning
- Liaison (coordination)
- Alerting/early warning
- Intelligence
- Situational awareness/surveillance
- Administration and logistics

REQUIREMENTS

1-30. The AAMDC C4I system for TAMD must be sufficiently interoperable to respond to the needs of the ARFOR, joint, and multinational commands and also link passive air defense, active air defense, and attack operations elements in order to plan, coordinate, and integrate forces to accomplish the TAMD mission. C4I resources detect, identify, and track threats to warn and cue defensive assets as well as provide accurate launch and impact points. These resources should be capable of rapidly exchanging information, interfacing with components, displaying a common operational picture, and allowing distributive/collaborative planning. The information flow should support the chain of command and be as complete, secure, and as near real time as possible.

1-31. New C4I functions, equipment, and procedures may be required to accommodate the changing characteristics and signatures associated with the rapidly evolving air and missile threat. These C4I capabilities and procedures should be integrated with existing and planned C4I systems as requirements are developed. At a minimum, capabilities should match the following joint theater air and missile defense (JTAMD) requirements:

- Passive defense measures require providing threat identification and discrimination (conventional or nuclear, biological, and chemical), detecting launches, predicting the impact points, providing timely warning to units at risk, alerting chemical and medical units and civil defense forces, and reducing target effectiveness.
- Active defense requires early detection of airborne launch platforms and missiles in flight to permit cueing, acquisition, tracking, classification, discrimination, identification and destruction in flight.
- Attack operations require accurate location of launch platforms and support systems, timely transmission of targeting data to attack systems, and accurate combat assessment.

1-32. Intelligence plays a critical role in planning, deploying, employing, and sustaining TAMD operations. The effectiveness of TAMD operations requires the timely collection, analysis, production, and dissemination of reliable and accurate intelligence on enemy capabilities and activities. The intelligence system is vital to the decision making cycle and must support the status, assessment, planning, warning, and IPB functions as well as target prioritization recommendations. The AAMDC intelligence system must accommodate a variety of component, joint, and multinational systems.

ARCHITECTURE

1-33. The AAMDC C4I infrastructure needs interoperable systems that facilitate the conduct of TAMD operations against a diverse threat array. These systems should be connected to commanders at appropriate decision and execution levels to integrate forces and missions. The systems expedite C^2 functions through rapid, reliable, flexible, and secure exchange of information throughout the chain of command and across the joint warfighting community. The C4I architecture provides the timely intelligence and operational information needed to plan, employ, coordinate,

integrate, execute, and sustain AAMDC participation in joint air and missile defense operations.

Chapter 2

Command and Control

The focus of this chapter is the AAMDC's command and support relationships with all components and subordinate units. The roles of the commanding general of the AAMDC as senior Army ADA commander, theater Army air and missile defense coordinator (TAAMDCOORD), and deputy area air defense commander (DAADC) reflect the theater command and control structure. Coordination and liaison are essential to effective air and missile defense.

ROLES OF AAMDC COMMANDER

2-1. The commanding general of the AAMDC has the two roles common to every ADA commander. He is both the commander of the ADA forces assigned to him, and the air and missile defense coordinator for the Army commander he supports. In addition he may be appointed the DAADC. These three roles reflect the total theater involvement of the AAMDC. Figure 2-1 shows these relationships.

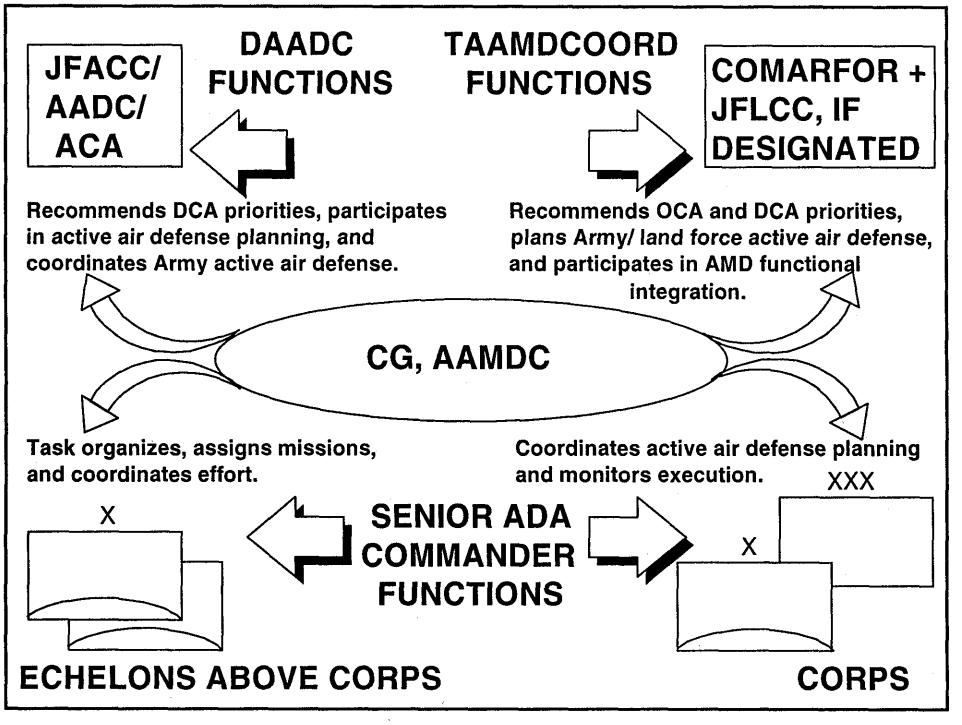

Figure 2-1. Senior ADA Commander, TAAMDCOORD and DAADC Relationships

SENIOR ADA COMMANDER

2-2. The commanding general of the AAMDC is the Army proponent for the air and missile defense combat function. He has total responsibility for active air and missile defense planning within the Army forces and when assigned for the entire land force. The CG, AAMDC develops the air and missile defense annex to the ARFOR OPLAN for protection of the priorities of the Army forces commander, the JFLCC, if appointed, and the joint force commander. The commander ensures that organic, assigned, and supporting ADA units accomplish air and missile defense objectives in support of the Army force commander's, JFLCC's, if appointed, and joint force commander's concept of operations. These responsibilities include recommending air and missile defense missions for the other members of the combined arms team and integrating these missions with those of the other components and the AADC.

2-3. The Army commander's requirement to provide air and missile defense to the force is no different than the requirement to provide maneuver, fire support, or logistics. The Army forces commander must ensure that forces at all levels have adequate air and missile defense and must reinforce those defenses when necessary. Additionally, the Army forces commander is required to provide air and missile defense to selected geopolitical assets. The AAMDC is the Army forces commander's primary air and missile defense resource and means to accomplish the above missions. The AAMDC performs the majority of operational level air and missile defense missions, while corps and divisional ADA units accomplish the majority of the tactical level air and missile defense missions.

THEATER ARMY AIR AND MISSILE DEFENSE COORDINATOR

2-4. The AAMDC commander is the TAAMDCOORD for the Army forces commander. As such, he is an integral member of the ARFOR or JFLCC's staff planning team. The CG, AAMDC and his representatives in the Army forces command post plan air and missile defense operations to support the Army forces commander's, JFLCC's, if appointed, and joint force commander's concept of the operation.

2-5. The TAAMDCOORD, with input from the G2, assesses the air and missile threat. He recommends air and missile threats to the fire support coordinator (FSCOORD) for incorporation into the deep attack plan. The TAAMDCOORD recommends active, passive, and other combined arms measures in the air and missile defense estimate. The TAAMDCOORD recommends air and missile threats as OCA and DCA priorities to the COMARFOR/JFLCC, who in turn reviews and forwards these recommendations to the JFACC/AADC. After staff coordination and approval of the air and missile defense estimate, the TAAMDCOORD develops the air and missile defense annex to the Army operations plan. Appendix B provides a more detailed description of the air and missile defense annex.

2-6. The TAAMDCOORD also coordinates with higher and lower air and missile defense elements as well as with adjacent units. Coordination ensures vertical and horizontal integration of air and missile defense operations throughout the battlefield. The TAAMDCOORD coordinates with

the joint force commander, component commanders, and area air defense commander (AADC) at the theater and joint level. He also coordinates with the lower echelons such as corps or equivalent units. The TAAMDCOORD also coordinates air and missile defense with multinational forces.

2-7. The complementary relationship between the roles of the CG, AAMDC as senior ADA commander and TAAMDCOORD is evident. Coordination with the AADC and others is further explained in the following paragraphs.

DEPUTY AREA AIR DEFENSE COMMANDER

2-8. After considering the factors of METT-TC, the joint force commander (JFC) and AADC will determine whether a DAADC should be designated. Normally, the commander of the AAMDC assumes the role of the DAADC because the AADC needs a strong advocate for land-based air and missile defense and because the AAMDC has the necessary personnel and equipment to support the DAADC mission. This designation formalizes the relationship between the land-based air and missile defense assets dedicated to theater level missions and the AADC, and helps to ensure fully integrated and synchronized air and missile defense operations.

2-9. The DAADC, and the robust AAMDC liaison team that supports the AADC/DAADC relationship, provide the following support to the AADC:

- Integrate land-based air and missile defense into theater defensive counterair operations.
- Advise the AADC regarding rules of engagement (ROE) [weapon control status, weapon control procedures, states of readiness/emission, fire control orders (FCOs), etc.], airspace control measures (ACMs), weapon control measures, and air defense warnings (ADWs).
- Assist the AADC with the air defense plan development.
- Advise the AADC on matters regarding land-based air and missile defense operations and capabilities.

2-10. Although the AAMDC commander may serve as a "deputy" AADC, the DAADC normally would not assume the role of the AADC if the AADC were incapacitated. The DAADC is not a true deputy commander in that sense. The DAADC's primary responsibilities are to assist the AADC in planning, coordinating, integrating, and synchronizing land-based air and missile defense 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.

THEATER COMMAND AND SUPPORT RELATIONSHIPS

2-11. This section is based on Joint Publication 3-01, *Joint Doctrine for Countering Air and Missile Threats*. It illustrates that the AAMDC not only will have a command relationship with the Army forces commander, but also will have a support relationship with the AADC and may even have a

command relationship with the AADC and JFLCC. Theater command and control relationships are shown in Figure 2-2.

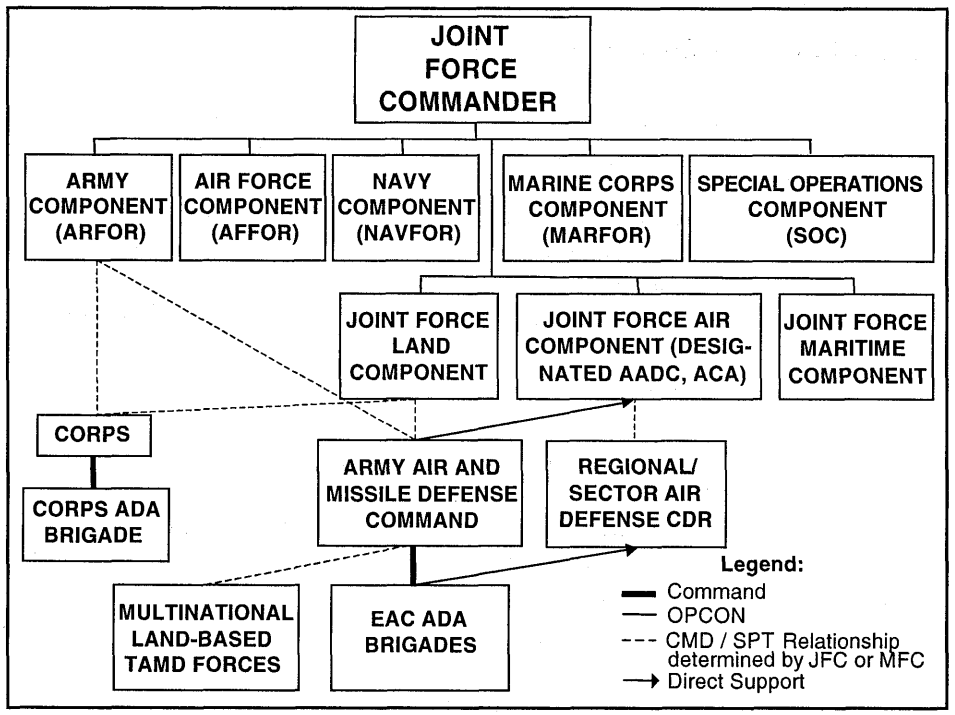

Figure 2-2. Example of Theater Command and Control Relationships

JOINT FORCES

2-12. Joint doctrine provides a great deal of flexibility in establishing command and support relationships. The JFC in one theater may establish entirely different command and support relationships in his theater than another JFC based on the factors of METT-TC.

Joint Force Commander

2-13. The JFC provides authoritative direction to subordinate commanders on objectives, priorities, missions, and apportionment of joint capabilities and forces. This includes establishing priorities for countering air and missile threats for the theater or joint operations area (JOA). The JFC normally exercises control of joint counterair through the joint force air component commander. The JFC normally designates the JFACC as the supported commander for theater/JOA-wide counterair operations. The JFC establishes and the AADC implements theater/JOA-wide defense priorities through promulgation of a joint air defense plan. The JFC normally designates an airspace control authority (ACA), who has overall responsibility for establishing and operating the airspace control system. The JFC may apportion component capabilities to the JFACC or AADC for counterair missions. The JFC also determines the most appropriate command authority over forces made available. Typically for OCA, land forces are in direct

support. Normally for DCA, surface-based forces are provided in direct support also.

Joint Force Air Component Commander

2-14. The JFC will normally designate a joint force air component commander (JFACC) to integrate the capabilities and assign command and control of joint air assets. Normally, the JFACC is the service component commander having the preponderance of air assets and the capability to plan, task, and control joint air operations. The need for a JFACC is based on the JFC's overall mission, concept of operations, missions and tasks assigned to subordinate commanders, forces available, duration and nature of joint air operations desired, and degree of unity of command and control of joint air operations required. The responsibilities of the JFACC, AADC, and ACA are interrelated and normally should be assigned to one individual.

2-15. Since the attainment of air superiority is normally an area of responsibility (AOR)/JOA-wide priority, the JFC normally designates the JFACC as the supported commander for theater/JOA-wide counterair operations. If an AADC is not appointed, the AAMDC would be in direct support of the JFACC.

2-16. The JFC assigns the JFACC's authority and responsibilities. They normally include, but are not limited to, joint counterair planning, coordinating, allocating, and tasking based on the JFC's concept of operations and air apportionment decision. Other responsibilities of the JFACC relating to joint counterair operations include the following:

- Develop, coordinate, and integrate the joint counterair plan with the operations of the other components for JFC approval.
- Make an air apportionment recommendation to the JFC, after consulting with the other component commanders.
- Provide centralized direction for allocating and tasking joint counterair capabilities and forces made available by the JFC.
- Perform the duties of the AADC when directed by the JFC.
- Perform duties of the ACA when directed by the JFC.
- Provide information operations (IO) warfare strategies to neutralize enemy air and missile threats and protect friendly air and missile capabilities.

Area Air Defense Commander

2-17. The JFC normally assigns overall responsibility for DCA operations to a single commander designated as the AADC. Normally, the AADC is the component commander with the preponderance of air defense capability and command, control, communications, computers, and intelligence (C^4I) capability to plan, coordinate, and execute integrated air defense operations. The JFC will also define the support relationship between the AADC and supporting commanders; however, the AADC is normally the supported commander for theater/JOA-wide DCA operations. The AAMDC is normally

in direct support of the AADC. Components will provide representatives, as appropriate, to the AADC's headquarters to provide specific weapon systems expertise as well as broader mission expertise. The AADC, with the support of the service or functional component commanders, develops, integrates, and distributes a JFC-approved joint air defense plan. As the supported commander for theater/JOA-wide DCA, the AADC establishes weapon control procedures and measures for all DCA weapons systems and forces. However, this does not restrict commander authority to take those immediate actions required to defend their forces from a hostile act or demonstrated hostile intent. Primary responsibilities of the AADC include the following:

- Develop, integrate, and distribute a JFC-approved joint air defense plan.
- Develop and execute, in coordination with the joint force J2, J3, and J6, a detailed plan to disseminate timely air and missile warning and cueing information to components, forces, allies, coalition partners, and civil authorities, as appropriate.
- Develop and implement identification and engagement procedures that are appropriate to air and missile threats.
- Ensure timely and accurate track reporting among participating units to provide a consistent common operational picture.
- Perform duties of the ACA when directed by the JFC.
- Establish sectors or regions, as appropriate, to enhance decentralized execution of DCA operations.

Airspace Control Authority

2-18. The JFC normally designates an ACA who has overall responsibility for establishing and operating the airspace control system. The ACA also develops policies and procedures for airspace control that are incorporated into an airspace control plan (ACP) and promulgated throughout the theater. A key responsibility of the ACA is to provide the flexibility needed within the airspace control system to meet contingency situations that necessitate rapid employment of forces. The ACA coordinates through the ACP the use of airspace, including integration with the host nation and deconfliction of user requirements. The ACA must be able to rapidly implement airspace control measures in the dynamic counterair environment to enhance freedom of action of components while preventing fratricide. The ACP is implemented through the airspace control order (ACO). All forces affecting joint air operations are subject to the ACO. However, this centralized direction by the ACA does not imply OPCON or tactical control (TACON) over any asset.

Component Commanders

2-19. The JFC may apportion component capabilities and forces to the JFACC or AADC to support theater/JOA-wide counterair missions. The JFC determines the most appropriate command authority over forces made available to conduct defensive and offensive counterair. Typically for OCA, land forces are in direct support but still under command of their component

commanders. However, regardless of the command and control relationship, the AAMDC normally supports OCA operations through the DOCC. Normally, for forces made available to the AADC for DCA, surface-based forces are in direct support also. Regardless of the command or support relationship, all active defense forces made available are subject to the ROE, airspace, weapon control measures, and fire control orders established by the AADC and approved by the JFC. As the supported commander for theater/JOA-wide DCA, the AADC will be granted the necessary command authority to deconflict and control engagements and to exercise real-time battle management.

2-20. The AAMDC is normally under the command of the Army forces commander. If a JFLCC is designated, the AAMDC may be OPCON or TACON to the JFLCC.

2-21. The CG, AAMDC commands all echelon above corps ADA forces. These are normally brigade-size units. The AAMDC may also have other forces assigned or attached under its command. Corps and divisional ADA units are under the command of the echelon maneuver force commander and do not fall under the command of the AAMDC. However, since the CG, AAMDC is also the TAAMDCOORD, there is a strong coordination relationship.

MULTINATIONAL CONSIDERATIONS

2-22. Most joint operations are conducted within the context of an alliance or coalition. However, each multinational operation is unique. The international situation, along with the perspectives, motives, and values of each ally or coalition member, may vary. The JFC should evaluate key considerations and differences involved in planning, coordinating, and conducting counterair operations in a multinational environment. Agreement on threats and a clearly defined, responsive, and interoperable C^2 structure are crucial to effective multinational operations. The JFC must be prepared to negotiate with multinational partners when planning and developing ROE, airspace control measures, weapon control measures, and other appropriate areas. All critical forces and geopolitical areas should receive adequate protection from air and missile threats. Sharing intelligence and warning information is also vital to ensuring unity of effort.

2-23. The AAMDC is the largest organization of its kind for land-based air and missile defense. It is the ideal choice to conduct coordination with multinational land-based partners. It is also the logical choice for command and control of such forces if made available. Therefore, multinational EAC air defense forces may be OPCON or TACON (or as determined by the Multinational Force Commander) to the AAMDC.

COORDINATION AND LIAISON

2-24. The AAMDC conducts extensive coordination and liaison with external Army and joint agencies. Figure 2-3 on the following page shows the key roles of the TAAMDCOORD, DAADC, and liaison teams (sometimes referred to as coordination teams) in this robust effort.

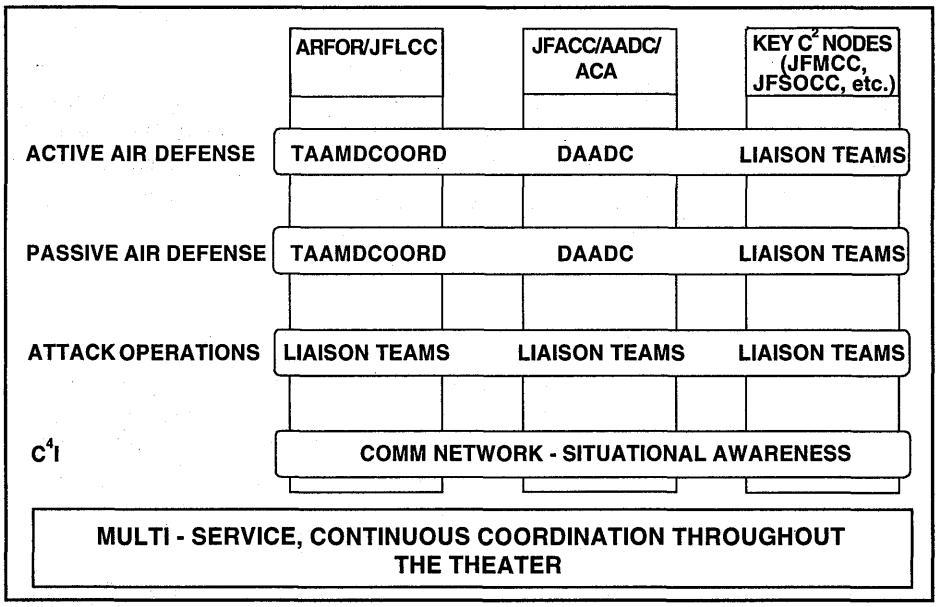

Figure 2-3. Coordinating the Air and Missile Fight

JOINT FORCE COMMANDER

2-25. The AAMDC provides situational awareness to the JFC primarily on the missile threat, but also includes the total air threat against land forces. At the joint targeting coordination board (JTCB), the AAMDC brings a TMD focus to the process. The AAMDC recommends priority adjustments based on METT-TC. Usually the CG, AAMDC is the personal representative of the Army forces commander at the JTCB concerning TMD issues.

ARMY FORCES COMMANDER/JOINT FORCE LAND COMPONENT COMMANDER

2-26. The TAAMDCOORD integrates ARFOR/JFLCC air and missile defense operations. The AAMDC is the key force protection provider. The AAMDC integrates with the battlefield coordination detachment (BCD), which is the ARFOR liaison to the service component commander designated as the JFACC, in order to synchronize operations.

2-27. At the deep operations coordination center (DOCC) (and when necessary at the analysis and control element (ACE) based on METT-TC), the AAMDC liaison teams assist with the air and missile IPB and bring an air and missile focus to deep operations. The AAMDC nominates TAMD targets for prosecution either within the air tasking order (ATO) cycle or as a time sensitive target. The AAMDC DOCC LNOs assist in the target nomination process, provide the AAMDC with non-TMD deep targets of interest, inform the AAMDC of the availability of Army attack assets, and monitor the status of the target nomination request.

JOINT FORCE AIR COMPONENT COMMANDER/AREA AIR DEFENSE COMMANDER

2-28. The DAADC function is the coordination mechanism for the JFACC/AADC. The DAADC performs integration and parallel planning to ensure efficient coordination and rapid response to the JFACC's/AADC's air

and missile defense needs. The DAADC ensures the Army's/land forces' contribution to the joint air and missile defense fight is properly planned, synchronized, and executed. Normally, the AAMDC sends a robust LNO team to support the AADC and DAADC requirements. As the senior Army air defense element at the AADC's location, the AAMDC LNO team is the primary interface at the JAOC for all land-based active air defense force operations.

JOINT FORCE MARITIME COMPONENT COMMANDER

2-29. A liaison team from AAMDC deploys to the joint force maritime component commander (JFMCC) to coordinate airspace control measures, logistical requirements, and DCA missions. If a JFMCC is not appointed, the AAMDC will send the LNOs to the commander naval forces and/or marine forces.

JOINT FORCE SPECIAL OPERATIONS COMPONENT COMMANDER

2-30. The AAMDC provides the joint force special operations component commander (JFSOCC) with the TAMD IPB, intelligence reports, air defense locations, and rules of engagements and theater missile (TM) target nominations. The team also shares special operations forces (SOF) restricted fire areas, non-AMD related intelligence products, and enemy air defense locations.

SUBORDINATE ADA BRIGADES

2-31. EAC ADA brigades send a liaison team to the AAMDC to coordinate future operations and planning. This facilitates force protection throughout all phases of the operation. The brigades are able to monitor theater requirements as well as resolve support issues. This liaison provides the bridge to the operational level of air and missile defense warfare.

CORPS AND DIVISIONAL ADA UNITS

2-32. Although the AAMDC does not send an LNO team to corps ADA brigades, the corps ADA brigade may send LNOs to the AAMDC. If there are no corps ADA LNOs at the AAMDC, the active defense section of the AAMDC and the corps air defense element (CADE) ensure TAMD coordination.

MULTINATIONAL UNITS

2-33. Multinational units may send LNOs to the AAMDC in order to integrate in the joint integrated air defense system. Based on releasability and disclosure requirements, multinational LNOs may be located in a separate area away from daily TOC operations.

Chapter 3

Operations

This chapter describes AAMDC TAMD operations and how these operations are planned and executed by the AAMDC staff sections and cells within the tactical operations center (TOC). It also describes the responsibilities of the liaison officers (LNOs) that the AAMDC deploys to critical joint and Army C^2 nodes to facilitate coordination of TAMD operations.

TOC OPERATIONS

3-1. The AAMDC not only performs a traditional C^2 mission for Army theater air defense forces but also integrates the operational elements of TMD for the Army forces. When the AAMDC deploys into a 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 are derived from the AAMDC staff sections as shown in Figure 3-1. Three of these cells, the active defense (AD), passive defense (PD), and attack operations (AO) cells, perform current TAMD operations.

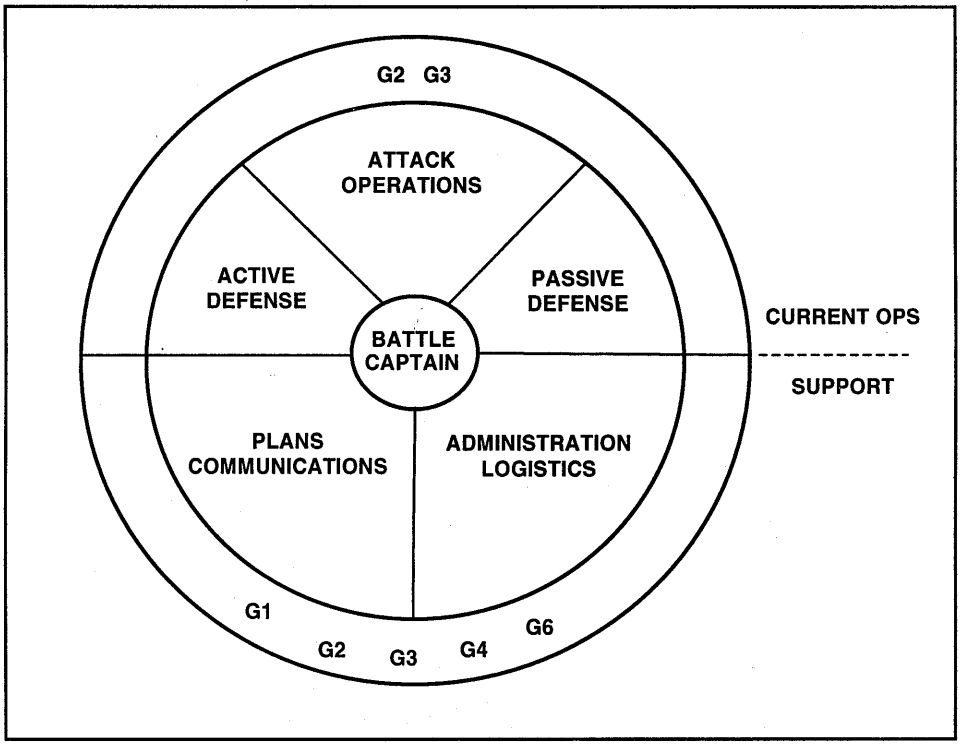

Figure 3-1. TOC Functional Cells and Composition

3-2. The other two cells—the plans/communications and administrative/logistics cells—are composite support cells formed from the AAMDC staff. The plans/communications cell performs operations and communications planning to support the three current operations cells. The administrative/logistics cell provides support for all current and future operations.

3-3. The TOC, shown in Figure 3-2, is 100 percent mobile with its own organic C4I systems and shelters. The TOC contains an integrated system of hardware and software known as the air and missile defense planning and control system (AMDPCS), which is used to conduct TAMD operations and execute the AAMDC mission. The configuration of the TOC can be changed if necessary to satisfy the requirements of the mission, enemy, terrain and weather, troops, time available and civil considerations (METT-TC).

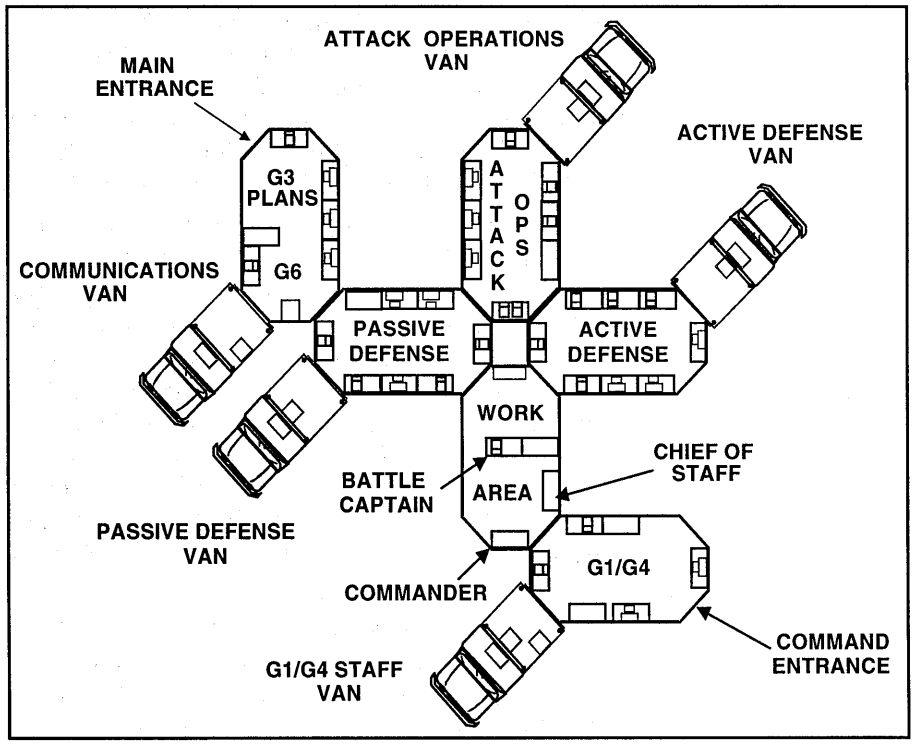

Figure 3-2. TOC Configuration

3-4. TOC operations are summarized below by functional cell and described in more detail later in the chapter under each TMD operational element:

- The **Battle Captain** is the focal point of TOC operations. He ensures that the TOC is properly configured and that all systems are operable. He 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 LNOs to exchange information on the status of operations and TM events.

- The **Active Defense cell** coordinates Army active air defense operations throughout the joint operations area. The cell displays air and missile track information from ADA and joint sensors and the locations and coverages of AMD units. During operations, it monitors the friendly and enemy air and missile situations. When enemy missiles are launched, the cell passes the TM launch information to the attack operations and passive defense cells.
- 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 displays and monitors the friendly ground situation, warns friendly forces of enemy activity, and conducts TM vulnerability assessments for the ARFOR or JFLCC.
- The **Attack Operations cell** supports ARFOR deep operations and joint force offensive counterair (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. These validated TM nominations are normally forwarded electronically to the DOCC for immediate or preplanned execution.
- The **G3 Plans/Communications cell** performs a variety of planning and communications support activities. These activities include assisting in developing OPLANs and OPORDs, determining communications and data link requirements, and maintaining the communications equipment, including the TOC LAN.
- The **Administration/Logistics (Admin/Log) cell** monitors and advises the commander on the status of logistics functions.

ACTIVE DEFENSE

3-5. Active air defense functions are performed primarily in the active defense and G3 plans cells, with support from the G2 staff. These functions include:

- Developing the TAMD intelligence preparation of the battlespace (IPB).
- Planning AMD operations.
- Monitoring and coordinating AMD operations.

These functions focus on force operations—the AAMDC does not directly execute engagement operations, which are the responsibility of the ADA brigades, battalions and batteries.

INTELLIGENCE PREPARATION OF THE BATTLESPACE

3-6. IPB is accomplished by the G2 staff. It is a systematic and continuous process of analyzing enemy air and missile forces as well as the battlefield environment to determine the most probable enemy courses of action (COAs). IPB allows the AAMDC commander and intelligence staff to assess enemy capabilities and intentions and predict when and where the enemy will strike and what assets he will use.

3-7. The IPB process is comprised of four steps: (1) defining the battlefield environment, (2) describing the battlefield's effects, (3) evaluating the threat, and (4) determining threat COAs. The active air defense portion of the IPB process is described below.

Battlefield Environment

3-8. To focus the command's initial intelligence collection efforts and determine intelligence deficiencies, the staff must define the battlefield environment. This involves identifying characteristics of the battlefield that will influence enemy and friendly operations. The staff must develop a broad understanding of battlefield terrain and climatology, the geopolitical environment, and a basic understanding of the enemy's air and missile capabilities. Of particular interest to active air defense planners are:

- The location and type of assets to be defended.
- The location, size, and capabilities of enemy air and missile forces.
- The disposition and capabilities of friendly AMD forces.
- Geopolitical/other constraints that affect active air defense operations.

The staff obtains this and other pertinent information from intelligence reports (for example, the theater intelligence estimate, intelligence summaries, and spot intelligence reports) available via digital sources.

Battlefield Effects

3-9. The staff conducts terrain and weather analyses to understand how these factors will affect friendly and enemy operations:

- By analyzing terrain characteristics (for example, elevation, ground slope, road accessibility, vegetation, overhead cover, and soil trafficability), the staff can determine the most likely locations of enemy TM activity and the avenues of approach for enemy air and cruise missile (CM) threats. Automated workstations within the TOC contain terrain databases that can be used in these analyses.
- By analyzing regional climatological factors and current weather reports, the staff gains insights into how the region's weather will

affect operations and how seasonal variations in weather patterns may change potential launch areas and tactics. Of particular interest to active defense cell planners are the effects of weather on the enemy's employment of TMs and aircraft and the impacts on active air defense sensors and systems.

Threat Evaluation

3-10. In evaluating the threat, the staff examines the enemy's air and missile capabilities, doctrinal organization, and tactics, techniques and procedures likely to be employed in combat operations. Using threat models and doctrinal templates, the staff systematically analyzes the threat, including the enemy's order of battle, and develops a set of general COAs that the enemy is likely to pursue.

Threat COAs

3-11. Each COA is then evaluated and prioritized based on the staff's understanding of enemy doctrine, the battlefield environment, and the enemy's likely objectives. The intent is to replicate the set of specific COAs the enemy is considering and determine which COA he is most likely to pursue.

PLANNING

3-12. Planning for active air defense operations involves analyzing the mission, performing a defense laydown, assigning missions to subordinate brigades, and performing follow up coordination to ensure that forces and selected geopolitical assets remain adequately protected.

3-13. Planners first review the assigned mission and identify the critical assets to be protected. The assets are identified in the JFC-approved defended asset list (DAL). The DAL is a prioritized listing of assets by phase and is included in the OPLAN and air defense plan. The enemy situation is appraised by reviewing the IPB and recent intelligence information to confirm COAs and determine the types and numbers of missiles and aircraft the enemy is likely to employ, the locations of launch sites, and the ranges of these sites from the assets to be defended. Planners must also review the composition and disposition of the AMD resources available to protect critical assets.

3-14. After analyzing the mission, a defense laydown is performed to determine if available AMD resources can adequately protect critical assets. This is accomplished through the use of automated planning tools. The locations of enemy launch sites, protected assets, and AMD unit locations are plotted and the automated tools used to determine if the required surveillance and engagement coverages and levels of protection can be achieved. If required coverages or levels of protection cannot be achieved with available AMD resources, additional resources must be requested from the ARFOR commander or he must be advised of the risk to forces or assets.

3-15. Planners task-organize the EAC ADA brigades and then assign specific assets to the brigades for protection. The brigades then perform more

detailed planning to determine which subordinate battalions and task forces will cover the assets. Throughout operations, active air defense planners coordinate with the brigades to ensure AMD resources are sufficient to accomplish the mission and coverages are weighted in accordance with the JFC's priorities.

3-16. As required (by METT-TC) the AAMDC may establish or participate in re-prioritization 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 center-of-gravity concerns. Board recommendations are forwarded to the respective component commanders and the AADC, and are ultimately approved by the JFC. The AADC may designate the AAMDC commander (in his capacity as the DAADC) to chair the joint re-prioritization board.

MONITORING

3-17. The monitoring effort involves several functions:

- Monitoring enemy air and missile activities.
- Monitoring friendly air and missile operations including the status and defensive posture of AMD units.
- Providing critical active air defense information to the battle captain, LNOs, subordinate units, and other cells within the AAMDC.

3-18. Active defense cell personnel monitor enemy air and missile activity by observing situation displays and processing reports of air and missile events. The AMD displays provide a comprehensive, near-real-time picture of the air situation, displaying tracks from a variety of joint and Army sources. The reports provide information on track locations, identification, classification, the number of missiles launched, launch and predicted impact areas, and estimated impact times.

3-19. Active defense cell personnel monitor friendly air and missile operations by observing situation displays and processing tactical orders, reports, and information from higher headquarters, adjacent and subordinate units, and LNOs. The active defense cell AMD displays show the operational control measures currently in effect, unit positions, coverages, and primary target lines (PTLs). The reports from subordinate units (normally received digitally) include the commander's narrative summary, situation reports, and engagement reports. Collectively, these reports provide an updated, comprehensive picture of TAMD operations that includes:

- Unit locations.
- Unit state of readiness.
- Number and type of missiles available.
- Summary of recent activities/operations.
- Summary of anticipated activities/plans.

- Number of air and missile threats engaged, destroyed, and types.
- Number and type of missiles fired.
- Number of targets unsuccessfully engaged.

3-20. All of this information is continuously reviewed and assessed by active defense cell personnel. TM launch events and significant red air movements are immediately reported digitally to the battle captain and other cells in the AAMDC. Active defense cell personnel also coordinate with subordinate unit LNOs as required to adjust AMD coverages in accordance with the AMD plan or guidance from the battle captain.

ATTACK OPERATIONS

3-21. The AAMDC supports TM attack operations through the critical planning, analysis, tracking, and development of TM targets by its G2 analysis section and through its attack operations cell and by nominating attack strategies and submitting TM attack mission requests. LNOs at key TMD nodes (DOCC, ACE, BCD/JAOC, and JFSOCC) also provide additional TMD attack operations expertise. TM attack operations functions are performed primarily in the attack operations and G2/G3 Plans cells. These functions are:

- Conducting IPB.
- Planning TM attack operations.
- Nominating TM targets and requesting TM attack missions for immediate or preplanned execution.

INTELLIGENCE PREPARATION OF THE BATTLESPACE

3-22. The IPB process described in the previous section applies also to attack operations; however, the focus is on the TM threat and infrastructure. This process must support early detection and tracking of air and missile elements including infrastructure. Early tracking supports preemptive attack operations and facilitates locating hide-and logistical support sites.

Battlefield Environment

3-23. In evaluating the battle area, the staff must consider:

- The disposition, composition, and capabilities of the enemy's air and TM force.
- The areas the enemy may use to support launch-, hide-, and transload-site operations and forward operating base (FOB) operations.
- The locations of fixed air and theater ballistic missile (TBM) sites, and possible mobile TBM sites.
- The types of missiles and warheads used by the enemy.

- The disposition and capabilities of joint and Army attack operations forces.

Battlefield Effects

3-24. In assessing effects of the battlefield, the staff considers how terrain factors and existing road networks might affect the movement of launcher and support vehicles or impact resupply and transload activities. They assess how changes in the weather may change potential operating areas or otherwise affect the conduct of enemy air and TM operations. They also assess the impact of terrain and weather on joint and Army attack operations and capabilities.

Threat Evaluation

3-25. In evaluating the threat, the staff analyzes the enemy order of battle (EOB), performs mobility and temporal analyses, and examines TM doctrine and tactics with the goal of developing doctrinal templates and identifying high value targets.

- In analyzing the EOB, the staff looks at the organizational structure of air and missile units including such data as the number of transporter-erector launchers (TELs) or mobile erector launchers (MELs); transloading assets and capabilities; transportation assets and capabilities; the types (and numbers) of missiles and warheads; and the accuracy of the missiles. They also examine the command structure, equipment condition and status, and the level of experience and training of enemy troops.
- In assessing mobility, the staff looks at terrain and other mobility limitations that affect deployment and launch of aircraft and TMs. They also examine the operational ranges of launch units and support vehicles and the doctrinal distances between firing sites, hide sites, transload sites, FOBs, battalion-size support bases, and missile support bases.
- With respect to temporal analyses, the staff examines how the battlefield environment and other factors affect the tempo and sustainability of air and TM operations. They also determine typical transload times, missile checkout times, launch countdown timelines, and rates of fire.
- With respect to doctrine and tactics, the staff assesses how the enemy is likely to conduct air and TM launch operations, how the C^4I and logistic infrastructures are used to support these operations, and how they may be exploited to disrupt air and TM operations.

Threat COAs

3-26. In this phase, the staff compiles and integrates the information gathered in the previous phases to determine the most likely enemy COA, identify high priority targets, and lay the groundwork for intelligence collection requirements. After considering the previous analyses of weather,

terrain, enemy capabilities, doctrine, tactics and infrastructure, the staff identifies the most likely COAs. They also examine air and TM vulnerabilities and decisive points and determine which high value targets (HVTs) are likely to become high payoff targets (HPTs). Using doctrinal templates, they assess where the various elements of the air and TM infrastructure (airbases, FOBs, transload sites, hide sites, and launch sites) are likely to be located. These become named areas of interest and drive intelligence collection requirements.

PLANNING

3-27. The AAMDC has a strong supporting role in TAMD IPB attack strategy development, and the target development process. The attack operations cell in coordination with AAMDC intelligence personnel and the ACE provide detailed target intelligence to the DOCC and recommend TM attack strategy and plans. AAMDC intelligence personnel assist the ACE in the TM portion of the IPB effort by providing dedicated analysts and subject matter experts.

3-28. The AAMDC G2 may deploy to the ACE a liaison team equipped with the necessary equipment to establish connectivity to intelligence resources. If deployed, the LNO team collects information for the AAMDC and passes information requirements to the ACE collection manager. Recommendations for collection support for TAMD IPB are made to the ACE for incorporation in the joint force collection strategy.

3-29. The G2 analysis section supports the attack operations cell by analyzing launch events, conducting countermobility analyses, refining and validating the IPB, nominating deliberate targets 72-96 hours out, analyzing post-launch events, building tracking profiles, and disseminating intelligence products and reports for the ARFOR commander or JFLCC.

3-30. The AAMDC G2 leverages all intelligence sources to develop a comprehensive TM intelligence picture. AAMDC G2 personnel may establish intelligence collaboration efforts with their intelligence counterparts at the JAOC through digital and voice means or the AAMDC LNO team deployed to support the DAADC and AADC. TM analysts in the AAMDC G2 section and the JAOC may collaborate in AMD IPB development and share near-real-time target intelligence. Intelligence collaboration between component TMD nodes ensures that all available TM information is fused, limited collection resources are efficiently used, and operational level decision-makers have the best analysis available.

3-31. At the Joint Task Force (JTF) level, the JFC issues targeting guidance and priorities to establish how air- and surface-delivered fires will be used to accomplish his objectives. When established, the joint targeting coordination board (JTCB) assists the JFC in providing targeting guidance and priorities for the campaign. The AAMDC commander should be a member of the JTCB to provide a TM focus to the process. The JFACC Staff at the JAOC is heavily involved in the JFC's campaign through the production and execution of the Air Tasking Order (ATO). The ATO ultimately assigns aircraft and weapons against targets and runs for a theater-specific time period, usually 24 hours. The length of the ATO development cycle is also theater-specific, but usually ranges between 48- and 96-hours. The ARFOR DOCC is

responsible for coordinating ARFOR deep operations and targeting outside the ARFOR AO with the ATO planners at the JAOC. Targets identified for attack by the AAMDC G2 and attack operations section are nominated to the DOCC for prosecution, either as preplanned targets or immediate targets.

3-32. Preplanned targets are targets with lengthy dwell times that can be engaged via assets on the Air Tasking Order (ATO). Preplanned targets include TBM production and storage facilities, SSM garrisons, stationary FOBs, communications nodes, and countermobility targets such as bridges and mining chokepoints. These verified nominations are submitted to the DOCC for inclusion in the ARFOR candidate target list (CTL). The CTL represents targets recommended for attack which support the ARFOR plan within the JFC's overall campaign plan. The CTL is passed to the Army BCD for coordination and deconfliction and then submitted to the JAOC. The master air attack planning (MAAP) team in the combat plans division of the JAOC takes the ARFOR CTL and combines and prioritizes it with the nominations on the other components' CTLs to produce the joint integrated prioritized target list (JIPTL). The JIPTL is the basis for the ATO.

3-33. Early and continuous IPB collaboration may expedite the JIPTL process by establishing a common TM intelligence picture to support and justify target nominations. 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 strategy, coordinates surveillance area requests, minimizes redundancies, and creates a synergy in TM target development.

3-34. Potential TSTs should be determined during the planning process. This enables target nomination and early selection of primary attack means, which will significantly reduce the time from detection to attack. Ideally attack means are given ROE for attack of targets in their area, which allows them to engage immediately on detection and identification of the TST.

EXECUTION

3-35. While preplanned targets are an integral part of an overall TM attack strategy, immediate targeting is also essential to the successful conduct of TM attack operations. TM IPB does not stop after planning. It is a systematic, continuous process of analyzing the threat and environment. Through this analysis, target areas are refined and collections are focused so that ultimately, short dwell or immediate targets become identifiable and engageable. Immediate targets—those that must be attacked inside the normal ATO planning cycle—are also submitted to the DOCC via a request and nominations process similar to that used for preplanned targets. Examples of immediate targets are mobile FOBs, missile transload sites, TEL hide sites, and launch sites. When identified by the AAMDC, these targets are forwarded to the DOCC fire support element (FSE), which processes the request. If the request is approved and the target is serviceable with Army assets, it is forwarded to the BCD for airspace clearance and to the executing unit for attack. If not serviceable by Army assets, the request is forwarded to the BCD, which then passes it to the execution cell in the combat operations division of the JAOC for tasking to available aircraft.

3-36. The AAMDC may have attack operations LNOs deployed at the DOCC and the BCD/JAOC to facilitate TMD attack operations and keep the attack operations cell informed of the status of target nominations and all available attack assets. See Figure 3-3 for TM attack operations connectivity.

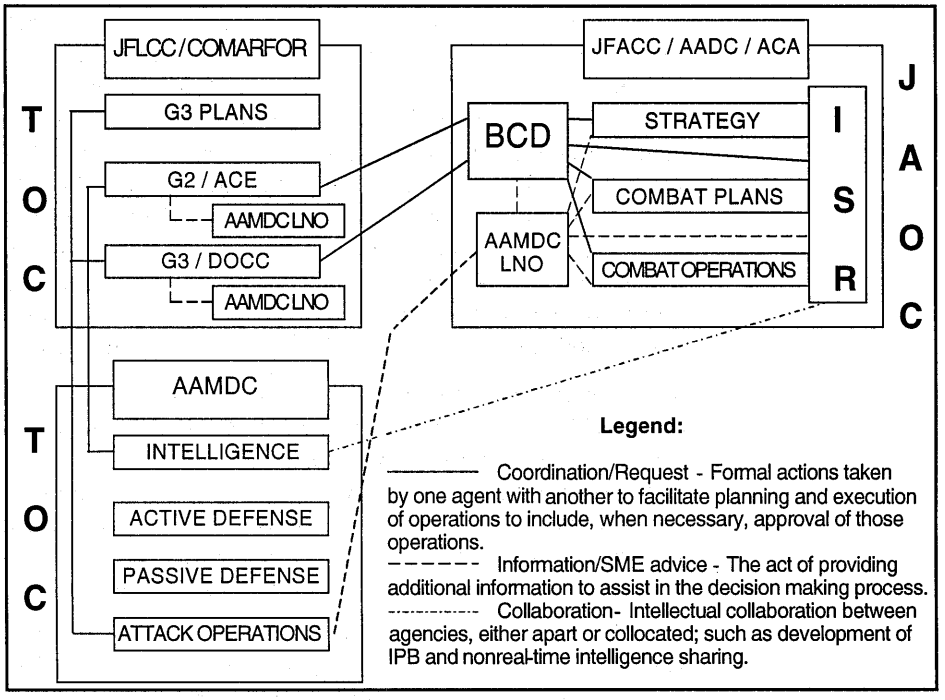

Figure 3-3. Attack Operations Connectivity

PASSIVE DEFENSE

3-37. Passive air defense functions are performed primarily in the passive defense cell. These functions are planning and executing passive air defense operations.

PLANNING

3-38. The passive defense cell plans, coordinates, and executes passive air defense warning operations for the ARFOR to minimize the effectiveness of attacking aircraft, missiles, and threat surveillance . The passive defense cell normally plans and coordinates operations 72 hours in advance. Passive defense cell plans are created with a firm understanding of the TAMD IPB, while passive defense cell planners assist the AAMDC G2 with developing nuclear, biological and chemical (NBC) intelligence. The passive defense cell contributes to the development of the AMD plan and plans for a warning architecture that can disseminate both general and specific warnings to the force. General warnings indicate that attacks are imminent or have occurred, while specific warnings signify that only certain units or areas are in danger of attack.

3-39. The passive defense cell must develop and maintain an accurate, coherent, tactical picture of friendly land forces to ensure that these forces can be quickly warned if a TM or air threat is launched or an NBC event occurs. Information technology displays and supporting databases provide the exact locations and the identity of friendly forces. These databases are updated at frequent intervals from various joint sources. Using these databases, the passive defense cell can maintain an accurate friendly picture that includes virtually all of the Army, joint, and multinational forces that the AAMDC must warn.

3-40. Concurrently with developing the friendly picture, passive defense cell planners must decide how air, missile, and NBC warnings will be disseminated. Communications means and procedures will vary with the theater of operations. Warning will normally be transmitted by data and voice for redundancy. Planners may elect to use existing communications capabilities in the theater to facilitate warning of attack—specifically, the air defense early warning architecture—or use an alternative means such as a pager alert warning system.

3-41. A pager alert warning system may expand the existing data warning architecture, distribute warning directly to the lowest levels of the force, and allow flexibility in warning only affected units. If a pager alert warning system is used, the passive defense cell, after a thorough analysis based on METT-TC, recommends which units will receive the pagers in a pager distribution plan. If the number of available pagers is insufficient to equip all units, the passive defense cell planners will recommend alternate methods of warning the units without pagers.

3-42. The passive defense cell must also conduct vulnerability analyses within the ARFOR/JFLCC area of responsibility to ensure personnel and equipment will survive an air, missile or NBC attack with minimum casualties and damage. Analyses will focus on weapons of mass destruction (WMD). In conducting vulnerability analyses, planners must consider a number of factors including hardening, redundancy, dispersal, civil authority training, and NBC defense. Passive defense planners will ensure that AMD forces are aware of the locations of engineer support units, chemical decontamination units, medical facilities, and host nation and other support facilities to assist recovery and reconstitution efforts. In order to advise the commander in a timely manner, passive defense cell planners will have information systems to quickly produce vulnerability analyses against various threat courses of action or scenarios.

3-43. Passive defense cell planners will ensure their passive air defense procedures and plans are current and relevant to the theater in which the AAMDC is deployed. They will also assist in developing theater procedures and plans and share information and expertise with other component passive defense cells. Planners may also be called upon to assist in development of theater deception plans.

EXECUTION

3-44. The passive defense cell tracks friendly forces and monitors ARFOR or JFLCC ground and TAMD operations to assist it in performing its primary function of disseminating warnings to the force. The cell also monitors the DAL and active air defense operations conducted to protect priority assets. Reports of enemy air activity and TM launches are provided digitally by several joint sources in near real time to information workstations within the cell. The workstations display the air and missile activity including the number of missiles launched, launch locations, and predicted impact areas and times.

3-45. Other workstations receive reports of NBC events and display the type of event, type of burst or agent, area of contamination, downwind hazard, and the units affected. The cell has the ability to predict ground effects of WMD from identified incoming TMs and pass that information immediately to affected units. Passive defense cell personnel also can receive joint force information, intelligence information, and weather data to aid in current operational decisions.

3-46. The passive defense cell disseminates general and specific warnings based on receipt of the above information. This is shown in Figure 3-4.

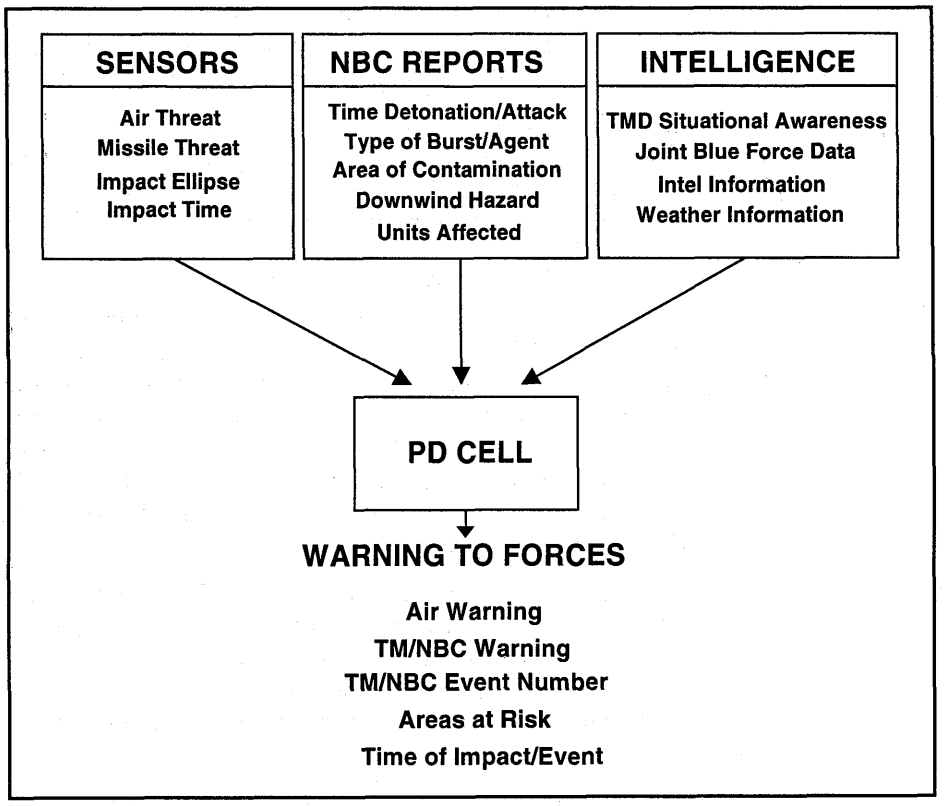

Figure 3-4. Warning Process

LIAISON OFFICER OPERATIONS

3-47. Liaison teams, commonly referred to as coordination teams, are essential in joint and multinational TAMD operations. They facilitate understanding, coordination, synchronization, and mission accomplishment. Liaison personnel must be familiar with the staff and operational organizations, doctrine, and procedures of the headquarters or element with which they will work as well as being subject matter experts on ARFOR and AAMDC air and missile defense capabilities. AAMDC liaison requirements are fulfilled through dedicated liaison personnel and information technology systems.

3-48. AAMDC liaison teams may deploy to all major theater C^2 headquarters including the JFLCC, JFACC/AADC, JFMCC, and JFSOCC, and to the ARFOR elements of the DOCC, BCD, and ACE. In particular, the AAMDC normally deploys a robust liaison team to the AADC location to support the DAADC and the AADC and to integrate with the JAOC and BCD. The liaison team is led by a senior ADA officer when the DAADC is not present and may consist of active air defense, attack operations, and IPB experienced personnel to execute 24-hour TAMD operations. Liaison team equipment and support requirements are listed in Figure A-9.

FORCE PROJECTION OPERATIONS

3-49. Force projection operations usually begin as a rapid response to a crisis somewhere in the world. Deployed forces, communication facilities, and geopolitical assets will need protection from air surveillance and from air and missile attack. AMD forces must be lethal, modular, versatile, and tactically and strategically mobile to accomplish the mission.

MOBILIZATION AND PREDEPLOYMENT

3-50. Military forces are mobilized in response to a situation requiring military intervention. Rapid mobilization of the reserve component piece of the AAMDC is critical during this stage and must be planned and rehearsed in advance. During mobilization and predeployment, the ARFOR (or JFLCC) uses the AAMDC to plan, coordinate, deconflict, and execute TAMD within the assigned AO. The AAMDC establishes communications with and sends liaisons to the ARFOR or JFLCC staff and other units, organizations, and agencies as required. Normally, the AAMDC sends an initial coordination element (ICE) of planners and logistics personnel into theater to start planning and coordination. The ICE is followed by a larger advance party to continue planning and lay the groundwork for the deployment and reception of the main body and the TOC equipment.

3-51. Although planning is an ongoing process, the AAMDC works in coordination with the ARFOR or JFLCC commander and his staff to convert the command's contingency plan (CONPLAN) to an OPLAN. The AAMDC conducts analysis and assessment activities, participates in the decision-making process, and assists in the development of the operations order. The AAMDC uses automated planning capabilities to develop the air and missile defense annex to the ARFOR's/JFLCC's plan and synchronizes it with the

joint force and other component OPLAN(s). Planning cells within the AAMDC will conduct detailed planning and assessment activities for entry and follow-on operations.

3-52. During the mobilization and predeployment stage, numerous concurrent activities for planning and execution will continue. The ARFOR or JFLCC uses the AAMDC to validate possible air and missile threat scenarios and COAs. The IPB serves as the basis for determining the most effective deployment strategy, development of the ARFOR's/JFLCC's intelligence plan, and the appropriate mix of weapons, sensors, and capabilities to counter the anticipated TM and air threat for each phase of the operation. During this stage, the AAMDC:

- Conducts air and missile IPB.
- Participates in TAMD planning.
- Plans ARFOR/JFLCC TAMD operations.
- Assesses AMD architecture and recommends changes as needed.
- Develops force packages for subsequent force projection stages.
- Assesses unit readiness status.
- Plans deployment of LNO teams as required.
- Plans communications and multi-tactical digital information link (TADIL) network architecture.
- Assesses passive defense capabilities.
- Plans for follow-on TAMD operations.
- Plans for logistic support operations (sustainment requirements).
- Plans for movement.

DEPLOYMENT AND ENTRY OPERATIONS

3-53. Deployment and entry operations are characterized by rapid deployment of forces into the theater of operations. As part of the Army's initial force projection capability, the AAMDC is deployed to the theater under the command of the ARFOR or the operational control of the JFLCC. This force will include 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 establish linkages to joint, multinational, and national C^4I systems.

3-54. The AAMDC represents the ARFOR or JFLCC during joint planning on TAMD issues. The AAMDC monitors enemy activities using intelligence provided by available national and theater intelligence sources. The AAMDC continuously processes and reviews intelligence information, collects battle damage assessment (BDA), and assesses the enemy situation. LNO teams continue to deploy as required. During this stage, the AAMDC:

- Participates in the JFLCC J3/J5 or ARFOR G3 planning cell by providing TAMD input to plans.

- Integrates intelligence from deployed sensors to provide the ARFOR or JFLCC situational awareness.
- Refines the air and missile IPB picture and requirements.
- Conducts criticality, vulnerability, recuperability, and threat (CVRT) analysis.
- Recommends changes to improve passive defense.
- Monitors operations security (OPSEC).
- Monitors friendly and enemy air operations.
- Recommends AMD architecture designs.
- Recommends AMD priorities in coordination with operational maneuver plans.
- Executes logistic support functions.
- Coordinates with the JFACC/AADC/ACA and other components as required.
- Coordinates and implements AMD early warning procedures.
- Assists in coordination of TM targets and targeting priorities.
- Provides theater AMD expertise.
- Monitors ADA unit locations and status.
- Task organizes and assigns missions to EAC ADA brigades as required.

OPERATIONS

3-55. The AAMDC supports the ARFOR or JFLCC by providing effective land-based active air defense to protect maneuver forces and the JFC's priority assets. The AAMDC assists in implementing passive air defense measures throughout the AO and provides attack strategy recommendations to the ARFOR and JFACC staffs for planning and coordinating of preplanned and immediate missions. The AAMDC plans, coordinates, monitors, integrates, and sustains Army TAMD operations and recommends adjustments to the DAL. During this stage, the AAMDC:

- Provides the TAAMDCOORD to the ARFOR or JFLCC.
- Integrates Army TAMD operations.
- Provides the Deputy AADC when designated by the JFC or AADC.
- Provides an LNO team to support the DAADC and AADC and other LNO teams to support other theater C2 nodes and ARFOR elements.
- Monitors theater-wide combat service support (CSS) for ADA units including allocation of missile and repair parts to EAC and corps ADA brigades according to the ARFOR or JFLCC, and JFC priorities.
- Provides early warning according to warning release criteria.

- Supports the ARFOR or JFLCC by processing and disseminating TAMD information to EAC, corps, and division C^2 nodes.
- Establishes or assists in establishing a re-prioritization board to recommend changes to the DAL and the defense design to the COMARFOR and/or the AADC.

REDEPLOYMENT

3-56. Postconflict and redeployment operations generally take place after cessation of hostilities and accomplishment of the primary mission by the deployed force. Reconstitution activities support the redeployment. The AAMDC task organizes active air defense forces based on reassessed JFC and ARFOR priorities and the DAL. AMD forces may maintain an alert or ready status during this stage to protect the force. Additionally, AAMDC may make recommendations on AMD elements to remain behind for stability and support operations. During this stage, the AAMDC:

- Consolidates forces for redeployment and reconstitutes remaining air and missile defense forces to a full readiness capability.
- Requests theater sensors and intelligence resources in sufficient quantities to provide continuous (though possibly reduced) early warning and intelligence coverage during postconflict operations.
- Recommends the size, composition, and mission guidelines for stay behind forces to the ARFOR or JFLCC commander.

DEMOBILIZATION

3-57. Because of the AAMDC's unique composition of active component and reserve component personnel, demobilization for reserve component personnel must be planned in advance. The AAMDC establishes procedures, actions, and responsibilities to meet demobilization requirements. Lessons learned must be captured before demobilization is completed.

Chapter 4

Support

This chapter describes the roles and functions of the AAMDC's key support staff. This staff includes the G1 and G4 sections, and other support elements such as the special staff and the headquarters and headquarters battery (HHB).

OVERVIEW

4-1. In order for the AAMDC to efficiently perform its mission, a number of critical support functions must be performed. These support functions include personnel management, logistic management, special staff functions, and battery headquarters administration.

PERSONNEL SECTION

4-2. The personnel section (G1) is responsible for personnel administration and manpower management and is the focal point for all personnel-related matters. It ensures that the AAMDC and subordinate elements are manned at levels sufficient to accomplish their mission, provides health and personnel service support, and performs headquarters management functions. The section uses automated systems and personnel databases to support operations. The organizational structure is shown in Figure 4-1.

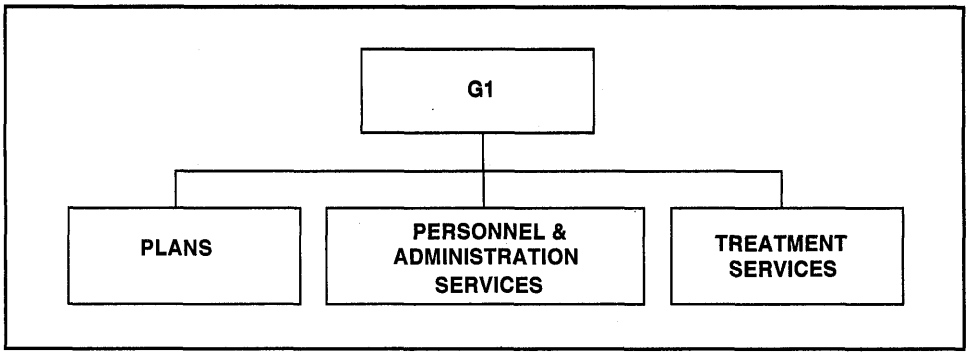

Figure 4-1. G1 Organization

OPERATIONS

4-3. To ensure the AAMDC is adequately manned, the G1 monitors, collects, and assesses information affecting soldier readiness and continually monitors and analyzes personnel strength using information technology systems. It also projects future requirements and develops plans to maintain strength.

4-4. To maintain personnel strength, the G1 actively manages personnel replacement. This involves:

- Receiving, accounting, processing, and delivering personnel.

- Advising the commander and staff on matters concerning individual replacements and the operation of the replacement system.
- Preparing estimates for personnel replacement requirements based on estimated casualties, nonbattle losses, and foreseeable administrative losses.
- Requesting and allocating individual replacements according to G3 priorities.
- Integrating the personnel replacement plan with the equipment replacement plan from the G4 and with the operations plan from the G3.
- Coordinating and monitoring readiness processing and movement support.
- Planning and coordinating policies for personnel determined unfit for combat duty.

4-5. The G1 also manages casualty operations. This involves casualty reporting, notification, and assistance; line-of-duty determination; reporting of status of remains; and casualty mail coordination.

Health and Personnel Service Support

4-6. The G1 provides a variety of health and personnel support services. These include:

- Staff planning and supervision of morale support activities, community and family support activities, quality of life programs, medical treatment support, and awards programs.
- Personnel service support, including finance, record-keeping, postal services, religious support, legal services, and command information.
- Assessment of the status of morale and recommendation of programs to enhance morale.

Headquarters Management

4-7. The G1 performs several headquarters management tasks including managing the organization and administration of the headquarters, recommending manpower allocation and coordinating and supervising movement and administrative support.

Other Tasks

4-8. The G1 plans and supervises:

- Administrative support for military and civilian personnel that includes leaves, passes, counseling, and personal affairs.
- Administrative support for augmentees (multinational forces, foreign nationals, civilian contractors, civilian internees).

- Administration of discipline and law and order, that includes absence without leave, desertion, courts martial offenses, requests for transfers, awards and punishments, and disposition of stragglers.

LOGISTICS SECTION

4-9. The logistics section (G4) is responsible for coordinating the logistic integration of supply, maintenance, transportation, and services for the command. The section uses automated systems and logistic databases to support operations. The organizational structure is shown in Figure 4-2.

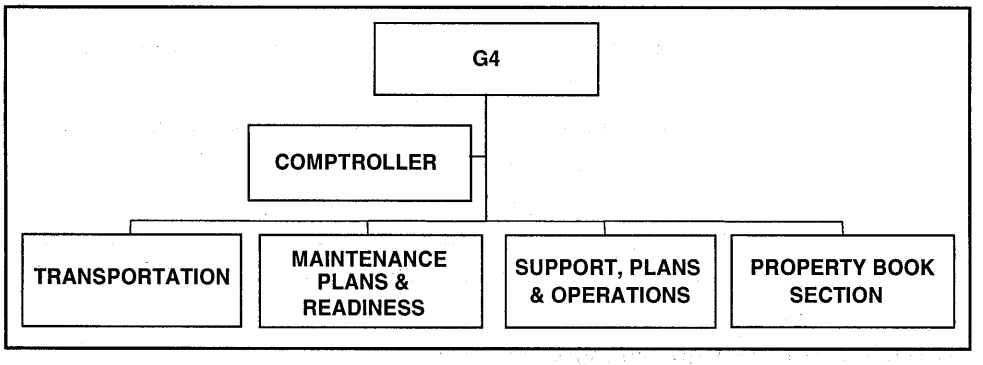

Figure 4-2. G4 Organization

OPERATIONS

4-10. The G4 develops the logistic plan to support operations and coordinates with the G3 and G1 to equip replacement personnel and units. The G4 provides the overall input on logistic requirements (less medical) to the theater support command. Current G4 structure does not support a logistic readiness center or logistic support operation functions and must be augmented to execute this mission.

4-11. The G4 section keeps track of the locations and numbers of ADA missiles (by type through total army asset visibility systems) and coordinates directly with the active defense cell to monitor current numbers. It also coordinates with supporting unit commanders on current and future support capability of those units and performs other tasks including:

- Performing logistic preparation of the battlespace (in coordination with the support command).
- Recommending information requirements to the G2.
- Recommending command policy for collection and disposal of excess property and salvage.
- Providing assessment of the threat's logistic capability based on G4 analysis of information provided the G2.

Supply

4-12. The G4 performs a variety of supply-related activities including:

- Determining, in conjunction with the support units and G3, the supply requirements (less medical).
- Coordinating all classes of supply, except class VIII (medical), with the theater support command.
- Coordinating the requisition, acquisition, and storage of supplies and equipment and the maintenance of materiel records.
- Ensuring that accountability and security of supplies and equipment are adequate.
- Calculating and recommending to the G3 basic and prescribed loads and assisting the G3 in determining the required supply rates.
- Coordinating and monitoring the collection and distribution of excess, surplus, and salvage supplies and equipment.
- Tracking of high priority missile parts on a case by case basis.

Maintenance

4-13. The G4 section monitors and analyzes the equipment readiness status and determines maintenance workload requirements with the theater support command and subordinate units. The section also coordinates maintenance, equipment recovery, and evacuation timelines.

Transportation

4-14. The G4 section coordinates with the G3 to support strategic movements and conducts operational planning to support movement control and mode and terminal operations. The G4 section also performs the function of unit movement officer (UMO) for the AAMDC and intermediate UMO for subordinate units. It also coordinates with the G1 and G3 on transporting replacement personnel and enemy prisoners of war.

Services

4-15. The G4 coordinates a variety of services including:

- Construction of facilities and installations.
- Field sanitation, food preparation, water purification, mortuary affairs, aerial delivery, laundry, shower, and clothing repair.
- Transportation, storage, handling, and disposal of hazardous materials and waste.

Other Tasks

4-16. The G4 section performs the property book function for the AAMDC. It also has staff planning and supervision responsibilities over:

- Coordination with the resource management officer and finance officer in financial matters.
- Identification of requirements and restrictions for using local civilians, EPWs, and civilian internees and detainees in logistic support operations.
- Battlefield procurement and contracting.

SPECIAL STAFF SECTIONS

4-17. The special staff sections include the headquarters commandant, inspector general, public affairs, and staff judge advocate. These sections are described below.

HEADQUARTERS COMMANDANT

4-18. The headquarters commandant section has operational control over soldiers assigned to the AAMDC who are not assigned or attached to subordinate commands. This includes responsibility for the following areas and activities:

- Local headquarters security, to include construction of defensive positions.
- Arrangement and movement of the headquarters.
- Training and morale activity for headquarters personnel.
- Food service, quartering, medical support, field sanitation, and supply for headquarters personnel.
- Reception and accommodation of visitors.
- Motor transportation organic to or allocated for use by the headquarters.
- Maintenance of equipment organic to or allocated for use by the headquarters.

INSPECTOR GENERAL

4-19. The inspector general (IG) section is responsible for advising the commander on the overall welfare and state of discipline of the command. Specific responsibilities include:

- Integrating the commander's organizational inspection program.
- Conducting inspections, surveys, and studies as the commander requires and monitoring corrective actions.
- Receiving allegations and conducting investigations and inquiries.
- Monitoring and informing the commander of trends, both positive and negative, in all activities.
- Determining the command's discipline, efficiency, economy, morale, training, and readiness.

- Assisting soldiers, family members, and others who seek help with Army-related problems.
- Providing the commander with a continuous, objective, and impartial assessment of the command's operational and administrative effectiveness.

PUBLIC AFFAIRS

4-20. The public affairs section is responsible for understanding and fulfilling the information needs of soldiers and the public. Specific responsibilities include:

- Planning and supervising a command public affairs program.
- Advising and informing the commander of the public affairs impact and implications of planned or implemented operations.
- Serving as the command's spokesman for all communication with the external media.
- Assessing the information requirements and expectation of the Army and public, monitoring media and public opinion, and evaluating the effectiveness of public affair plans and operations.
- Facilitating media efforts to cover operations by expediting the flow of complete, accurate, and timely information.
- Developing, disseminating, educating, and training the command on policies and procedures for protecting against release of information detrimental to the mission, national security, or personal privacy.

STAFF JUDGE ADVOCATE

4-21. The staff judge advocate (SJA) section is responsible for advising the command on all matters affecting the morale, good order, and discipline of the command. Specific responsibilities include:

- Providing legal advice to the commander on military law, foreign and international law, the law of armed conflict (Geneva and Hague Conventions), rules of engagement and warfare, and other treaties.
- Supervising the administration of military justice.
- Ensuring that criminal law matters are handled in a manner that ensures the rights of individuals are protected and the interests of justice are served.
- Coordinating with representatives of the Army trial defense service to provide trial defense counsel to represent soldiers and with representatives of the Army trial judiciary to provide military judges for general and special courts martial.

HEADQUARTERS AND HEADQUARTERS BATTERY

4-22. The battery headquarters provides administrative, supply, food service, and maintenance support to the headquarters. This includes but is not limited to processing leaves and personnel actions; equipping soldiers with appropriate uniforms and supplies; feeding soldiers in both garrison and in the field; and maintaining assigned vehicles, weapons, communications items, and other required equipment. The organizational structure of the HHB is shown in Figure 4-3.

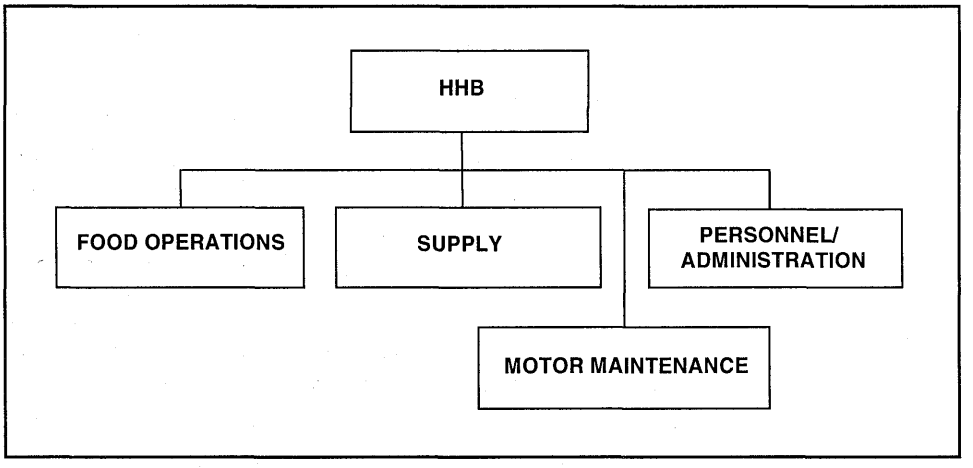

Figure 4-3. HHB Organization

OPERATIONS

4-23. The commander and the first sergeant are responsible for the health, welfare, and training of soldiers assigned or attached to the battery. The commander exercises nonjudicial punishment over personnel assigned or attached unless reserved by the AAMDC commander. The battery commander works for the chief of staff and the commanding general and maintains close ties to each staff section to deconflict training requirements and mission support activities. The first sergeant works for the battery commander, but coordinates closely with the command sergeant major and other staff sergeants major. All other members of the battery headquarters work for the battery commander and the first sergeant.

Chapter 5

Communications

This chapter focuses on the various communications systems and media the AAMDC must establish, operate, and maintain in order to accomplish its TAMD mission. It describes the mission, responsibilities, functions and organizational structure of the G6 section, as well as theater communication equipment and support requirements.

OVERVIEW

5-1. The AAMDC requires robust communications systems to conduct TAMD operations and execute its mission. These systems, which include both internal and external communications, allow the AAMDC to effectively plan, conduct, coordinate, and synchronize TAMD operations with Army, joint and multinational forces. These systems facilitate the exchange of C4I information and allow TAMD operations to be performed in a timely and efficient manner.

MISSION

5-2. The mission of the G6 section is to plan, organize, develop, coordinate, and maintain mission-essential communications. This facilitates interoperability with ARFOR, joint and multinational elements in support of a coherent TAMD.

RESPONSIBILITIES

5-3. The G6 has numerous responsibilities to fulfill in order to execute AAMDC C4I requirements. These include basic G6 responsibilities described in FMs 24-1 and 101-5 as well as the following AAMDC-related responsibilities. The G6:

- Determines requirements and recommends methods to provide internal and external communications to support AAMDC operational requirements.
- Coordinates with the supporting communications infrastructure as necessary to provide data and communications support to the AAMDC.
- Monitors the allocation and resourcing of theater-specific communications requirements for joint and combined integrated air and missile defense systems.
- Monitors the allocation, distribution, and use of communications security (COMSEC) equipment devices and the implementation of signal operating instructions (SOI) within the AAMDC.
- Coordinates frequency allocations and assignments for the AAMDC.

- Consolidates and coordinates theater ADA unit planning and participation in the theater multitactical digital information link (multi-TADIL) architecture (for example, the TADIL-J/A/B network).
- Plans and coordinates communications operations, including preparation of the signal annex to standing operating procedures (SOPs), OPORDs, and plans.
- Oversees implementation of automated information systems (AIS) in support of the AAMDC information systems security program.
- Coordinates with the theater signal command/brigade a reachback capability to the sustaining base, in theater tactical voice and data communications, and access to commercial circuits.
- Coordinates with the senior Army G6/J6 theater service component and the joint command control communications (JCCC) cell for C^4I network support for any joint exercise or operation.

FUNCTIONS AND ORGANIZATIONAL STRUCTURE

5-4. Functions of the G6 section are communications planning, communications operations, and automation management and information systems security. The organizational structure of the G6 is shown in Figure 5-1.

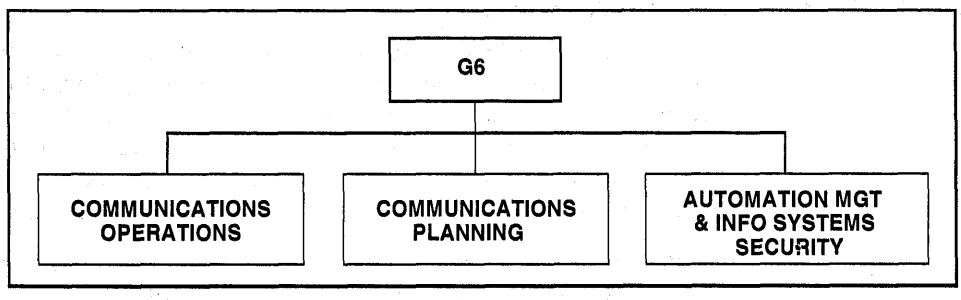

Figure 5-1. G6 Organization

COMMUNICATIONS PLANNING

5-5. G6 planning begins with the commander's estimate of the situation, objectives, and overall concept of operations. It also takes into consideration METT-TC and any existing in-theater communications architectures. The G6 plans and coordinates with the Army G6/J6 theater service components, the JCCC, and the designated joint interface control officer (JICO) to submit common user or dedicated voice and data requirements.

5-6. The G6 section reviews the mission and operations order, ensures current internal communications will allow execution of TAMD operations within the TOC, and plans external communications to meet the METT-TC aspects of the overall TAMD mission. The force projection operations cycle (see Chapter 3), may allow time to make adjustments to internal communications requirements such as software upgrades, power conversion, and terrain database uploads, and thus allow the TOC to be fully mission

capable upon arrival in theater. The G6 ensures AAMDC field standing operating procedures (FSOPs) provide basic information on TOC emplacement, internal communications procedures, and external communications requirements.

5-7. Overall planning responsibilities of the G6 are to:

- Plan C^4I integration of US ADA forces and any assigned or attached joint and multinational forces as part of the integrated air defense system (IADS).
- Oversee planning of the Army multi-TADIL network design requirements. Coordinate the integration of the Army TADILs into the joint TADIL network.
- Review and update Army TAMD communications support plans for appropriate supported CINC exercises and contingencies at the component and joint level.
- Coordinate integration of new/emerging technologies within the AMDPCS-based AAMDC TOC.
- Advise the AAMDC commander on related signal doctrine and initiatives pertaining to EAC and joint and multinational level TAMD connectivity.

COMMUNICATIONS OPERATIONS

5-8. To support AAMDC operations, AAMDC communications are established and maintained using all available media, including tactical service component, sustaining base, strategic, commercially-leased, multinational, and host nation communications. The required communications must support high-speed data systems with massive data storage, retrieval, and dissemination capabilities. The following types of information are exchanged:

- Situational Awareness (SA)—consisting of an air picture, ground picture, and alerting and early warning.
- Command and Control (C^2)—consisting of command, operational control, and tactical control. Although a part of C^2, engagement operations are not executed by the AAMDC. The AAMDC focuses on TAMD force operations.
- Operations and Intelligence (O&I)—consisting of coordination, orders, reports, static intelligence, dynamic intelligence, and targeting information.
- Administrative/Logistics (A/L)—consisting of sustaining information, personnel and unit information, supply, and status reports.

5-9. Overall operational responsibilities of the G6 are to:

- Manage access to the sustaining base; to operational and strategic information networks; and to baseline distributed information services required to support AAMDC and subordinate units within the theater area common user system (ACUS) architecture, and in the future, within the framework of the Army warfighter information

network (WIN). This includes engaging in information assurance throughout its battlespace to support TAMD current operations.

- Manage ADA information network support interfaces with joint and multinational forces, and host nation support interfaces to provide seamless telecommunications support for sharing releasable common information within the battlespace.
- Provide guidance to subordinate units and supporting signal elements on ADA-supported communications systems and network priorities of effort for installation and restoration, frequency coordination, deconfliction, and reporting. In the absence of an Army component representative or when required, provide representation to the JCCC cell.
- Make available personnel to serve as Army interface control officers (ICOs) to assist in a theater JICO support cell that would activate and collocate under authority of the AADC. At least three personnel should be trained and available to support 24-hour JICO cell operations.
- Manage the AAMDC COMSEC account. This includes acting as the distribution authority for COMSEC material received from Army, joint and multinational activities required by subordinate ADA activities.
- Promulgate, publish, and distribute SOIs for use by theater ADA activities (AD brigades, battalions, batteries and detachments) that use radio frequencies and call signs required for strategic and tactical radio operations.

AUTOMATION MANAGEMENT AND INFORMATION SYSTEMS SECURITY

5-10. Automation management and information systems security functions require proper planning, established procedural safeguards, and continual oversight from the G6 section. The G6:

- Oversees baseline configuration management of required automation systems for AAMDC headquarters and EAC ADA units. AAMDC's promulgation of C^4I standards for equipment and software requirements and equipment configurations must be consistent with that of the theater's, in order to support a seamless architecture and facilitate a transition to a rapid unit task reorganization should one be required.
- Supervises the AAMDC AIS security program. The focus is on protection of the AAMDC's portion of the defense information infrastructure (DII) and includes unclassified and classified local area networks as well as protection of standalone workstations.
- Supervises the AAMDC information modernization management plan (IMMP). The IMMP's framework entails identifying automation technical requirements; identifying current capabilities, including interoperability and shortfalls; identifying and analyzing evolving information system technologies for near-, mid-, and far-term

applications; and recommending automation solutions to resolve shortfalls and enhance interoperability.

THEATER COMMUNICATIONS EQUIPMENT AND SUPPORT

5-11. The AAMDC maintains organic subscriber equipment for common and dedicated ("dial-and-hold") voice and data support, acquires evolving technology and systems, and tasks for signal equipment in accordance with its contingency missions. The AAMDC requires external signal support connectivity to a network-centric C^4I joint theater communications system to provide vertical and horizontal connectivity with Army, joint, and multinational elements for joint or combined operations. The AAMDC may require external signal support connectivity to support subordinate ADA elements as well.

INTERNAL COMMUNICATIONS

5-12. Internal communications consist of various types of equipment including radios, telephones, data devices, and digital information processors. This equipment is an integral part of the TOC (AMDPCS) and enables the AAMDC staff to access and exchange critical information from unclassified and classified voice and data networks. The equipment, with few exceptions, is DII-COE compliant and utilizes approved protocols. The Army common hardware/software (telephones, headsets, radios, antennas, computer system hardware, software, databases, applications, and local area network equipment) is organic to the AAMDC. To improve battle command situational awareness, newly developed equipment and information technology are integrated into TOC operations, often on an experimental or evaluative basis. The G6 manages emplacement and maintenance of internal TOC communications and information systems.

EXTERNAL COMMUNICATIONS

5-13. External communications consist of assigned, attached, or supporting communications systems external to the AAMDC TOC. This includes any assigned or attached signal battalion, tactical satellite communications, commercial communications as well as theater networks such as the ACUS, joint multi-TADIL networks and voice networks required to support the joint multi-TADIL networks.

TACTICAL SIGNAL SUPPORT

5-14. The AAMDC requires theater-level tactical signal support consisting of multichannel voice, high-speed data, video, and imagery to assigned and attached ADA brigades and active air defense units. Signal support for the AAMDC will be provided by theater signal forces. Supporting theater signal infrastructure will provide the assured access and speed of service requirements associated with AAMDC C^4 operations. These forces must accommodate a mix of switching and long-haul transmission-capable systems/modular packages, and must be capable of providing a bandwidth on demand to support critical information exchange requirements, including the

common operational picture, video teleconferencing, and automated decision support.

TACTICAL SATELLITE

5-15. To support beyond-line-of-sight (BLOS) operations, the AAMDC requires a single-channel tactical satellite (TACSAT) system to operate as a dedicated voice C^2 and AMD Coordination Net with deployed AMD units throughout the AOR (see Fig 5-2). The AAMDC is the net control station (NCS) for this net. This net is essential during early entry and subsequent

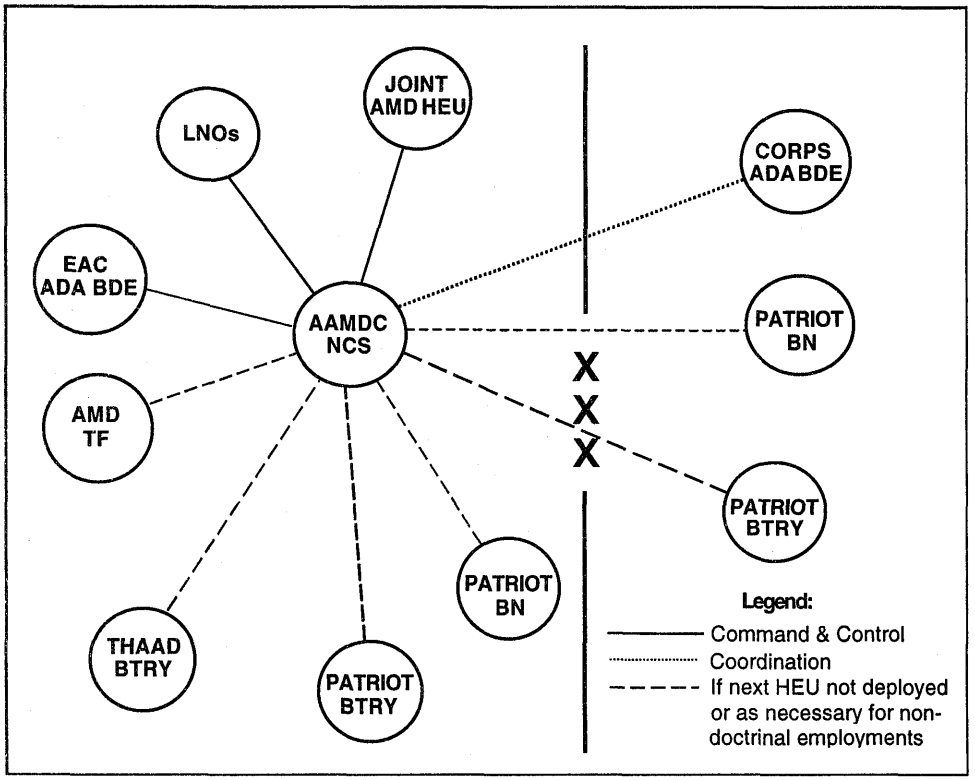

Figure 5-2. AAMDC C^2 and Coordination Net

phases of an operation to transmit critical operational information to AMD units, logistical support locations, and joint C^4I facilities. The TACSAT will provide the required communications connectivity to units and facilities deployed throughout the geographical area of operations. Past battlefield experience has demonstrated that the early deployment of AMD forces into a theater results in AMD communications requirements that exceed the capability of the supporting signal forces and results in degraded mission defense posture. The deployments in these theaters exceed the normal doctrinal distances for current organic communication relay capabilities and are in areas that have limited ACUS or austere commercial backbone support, thereby preventing line-of-sight communications and data systems from assured connectivity. In addition to ADA TACSAT being a critical link during early phases of a deployment, single channel TACSAT is required to

support sustainment operations in theaters where a reduced US and multinational force presence has resulted in severely reduced communications support and degraded ADA C^2. TACSAT radios will be required as an organic resource to the ADA brigades, battalions, and batteries. Each Patriot battery will require a terminal for use in early entry operations or for designated master battery operations as part of a mission-tailored AMD Task Force.

TACTICAL FM

5-16. The AAMDC operates a command operations very high frequency-frequency modulation single channel ground and airborne radio system (VHF-FM SINCGARS) radio net during periods of mobility, initial site emplacement and when terrestrial-based communications are threatened or are inoperative. Because the AAMDC is a theater echelon unit, only a minimum number of radios are required. Because the individual operational cells may be required to move separately, separate radios will be needed where indicated. Participants in the net are shown in Figure 5-3.

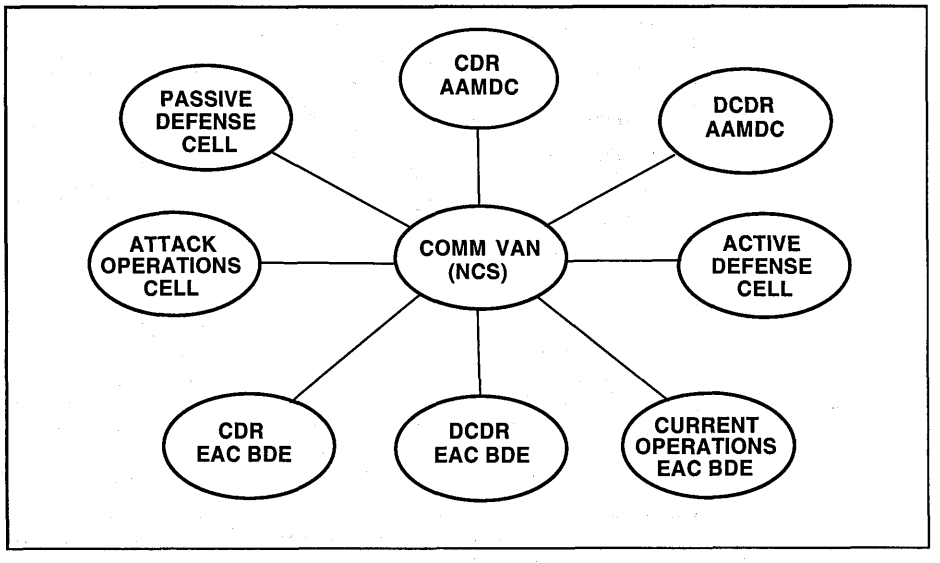

Figure 5-3. AAMDC Command Operations Radio Net

5-17. The AAMDC operates an admin-log VHF-FM SINCGARS radio net during periods of mobility, initial site emplacement and when terrestrial based communications are threatened or are inoperative. The primary purpose of this net is to facilitate logistical support for the AAMDC, subordinate AD brigade (and battalions), and to meet the needs of the HHB AAMDC. Participants in the net are shown in Figure 5-4 on the following page.

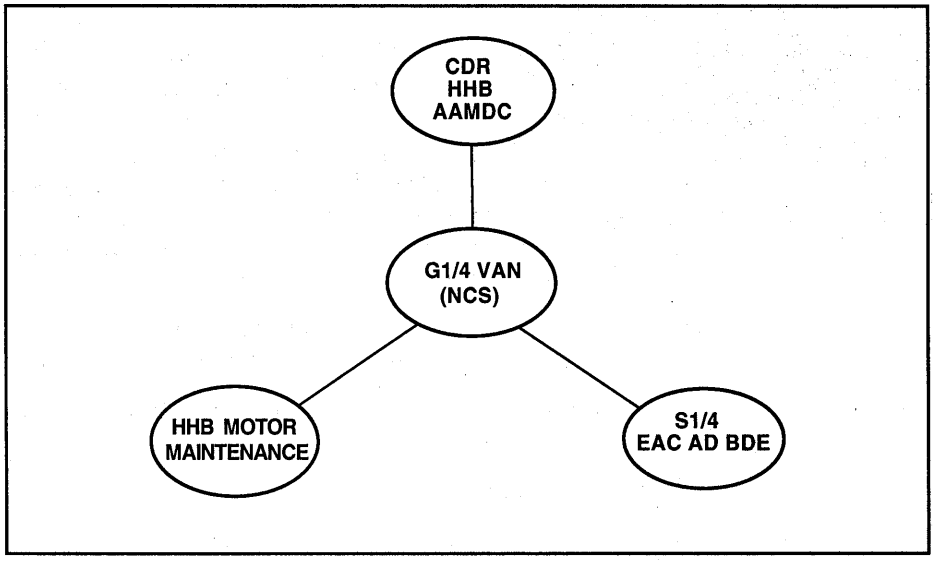

Figure 5-4. AAMDC Admin-Log Radio Net

COMMERCIAL SYSTEMS

5-18. To support operational requirements for external intertheater and intratheater communications sustaining base support, the AAMDC requires voice and data (wide and narrow band) access to commercial long-distance service as well as a tie-in to a host nation's communications infrastructure.

5-19. The AAMDC operates with specialized leased communications and emerging technologies such as use of the net trunking radio system, cellular phones, and/or international maritime satellite (INMARSAT) terminal.

5-20. Normally, a T-1 connection (1.544 megahertz bandwidth telecommunications channel) or larger will be required for secret internet protocol router network (SIPRNET) connectivity into a theater of operations. The senior Army G6/J6 component in theater validates AAMDC technical requirements, while the JCCC coordinates with the theater signal command (TSC) for signal support and availability. Pre-positioned and non-organic on-site signal units/modular packages are OPCON to the TSC's joint systems control (JSYSCON) for technical direction and reporting, as the AAMDC does not have the resources nor the management functions to plan or engineer these additional assets into the external networks.

THEATER NETWORKS

5-21. Theater networks are characterized by a broad-based set of joint users who access database information from multiple sources via an information network grid (for example, an interconnected set of networks and systems for information services). The network-centric grid system consists of sensor grids (for example, grids from space-, air-, sea-, and ground-based sensors generating battlespace awareness); engagement grids (for example, grids of air-, sea-, and ground-based shooters exploiting battlespace awareness); and an information grid currently comprised of multiple-force ACUS communication systems. In the future, it will also consist of WIN component system threads supporting computational and/or control nodes that

synchronize live combat power and simulations for battlespace awareness. The AAMDC must be able to access the network-centric grid system through a variety of "push" or "pull" operations by its four operational elements. There may also be an operational benefit to using the emerging broadcast systems such as the global broadcast system (GBS), which might be used as a large throughput communications system to either "pull" large databases or facilitate wide-area dissemination of critical, time-sensitive information such as TBM early warnings.

5-22. Guiding principles for AAMDC connectivity to the theater are that its communications and automated information systems be:

- Sufficiently flexible to accommodate expansion of TAMD-phased operations.
- Joint and multinational capable.
- Robust, redundant, and real-time.
- Supported with data integrity and security.
- Accessible and sustainable for increased velocity of information or high data infrastructure capacity.
- Supported with a comprehensive and wide-ranging backplane (backbone network).

5-23. An example of an existing "smart-push" information feed is the intelligence broadcast service (IBS). The IBS will subsume the tactical information broadcast service (TIBS), the tactical receive equipment and related applications data dissemination system (TDDS), the tactical reconnaissance intelligence exchange system (TRIXS) and several other legacy systems with the fielding of the joint tactical terminal (JTT) radio. The JTT is presently used in the attack operations cell for IPB and in the current operations cell for situational awareness, launch data, and predictive analysis. An example of an existing "intelligent- pull" feed is the logistic and sustainment data requested from a database by various units and users. Both "push" and "pull" information feeds are representative of the spectrum of available information exchange/automated decision sources that support theater operations.

AAMDC AREA COMMON USER SYSTEM SERVICE REQUIREMENTS

5-24. Figure 5-5 on the following page shows AAMDC ACUS service requirements within a theater. Information entries correlate with the previously discussed general categories of information: situational awareness, C^2, operations and intelligence, and administrative/logistics. The AAMDC C^2 and support systems include both communications and automation systems for access to intertheater and/or intratheater common-user services. The AAMDC's connectivity into the theater communications system relies on the ACUS. The ACUS, primary provider for the Army EAC ADA community, assures AAMDC users access to theater level network switching, gateway access, and redundancy to robustly support TAMD operations. AAMDC users own and operate the requisite subscriber terminals that connect to external information systems. Automated data systems and terminals use the various means of connectivity to support all

facets of planning and operations. Appendix A describes the automated systems that rely on connectivity to other external and internal systems or terminals.

COMPONENT	ELEMENTS	INFORMATION
JFC	CJTF Staff LNOs	SA, C2, O&I, A/L
JFLCC/ARFOR	JFLCC Staff DOCC ACE BCD EAC ADA Brigades Corps ADA Bde/CADE LNOs	SA, C2, O&I, A/L
JFACC/AADC/ACA/AFFOR	JAOC, C2 Ships, TACC RADC/SADC JICO LNOs	SA, C2, O&I
JFMCC/NAVFOR/MARFOR	JFMCC Staff RADC/SADC LNOs	SA, C2, O&I
JFSOCC/JSOTF	JFSOCC Staff LNOs	SA, C2, O&I

Figure 5-5. ACUS Service Requirements for AAMDC

JOINT MULTI-TADIL ARCHITECTURE

5-25. Operationally, the single most important network to the AAMDC is the multi-TADIL network, sometimes referred to as the joint data network (JDN). It is used almost exclusively for distributing air picture data and C^2 data such as real-time tracks, unit status information, engagement status, and engagement operations orders among joint service TAMD systems and C^2 level nodes. While the net has a JCS mandate to migrate to a total TADIL-J network, several participants continue to utilize TADIL-A/Link 11A and TADIL-B/Link 11B. However, until all participants have TADIL-J capability, non TADIL-J units may enter the network using TADIL-A and/or TADIL-B. When all joint TAMD systems are connected via TADIL-J, coalition forces may continue to use legacy systems. For this reason, and for continuity of operations, the legacy capabilities of TADIL A and TADIL B will be retained.

5-26. Figure 5-6 illustrates a typical JDN architecture, with primary and alternative links/paths. TADIL-A and TADIL-B links are generally for systems not yet TADIL-J (JTIDS) capable and for back-up or secondary network contingencies. The serial TADIL-J is used to exchange data in TADIL-J format over long-haul media such as ACUS, cable, or satellite. Currently, serial TADIL-J provides a limited capability for theater data exchange until a JTIDS range extension (JRE) capability becomes available. JRE will provide extended range connectivity between Army, joint, and multinational units within a theater of operations. It will enable TADIL-J

information to be exchanged over distances greater than 30 km or over lesser distances in areas where the line-of-sight is restricted by mountains, vegetation, buildings, or other terrain features (natural or manmade).

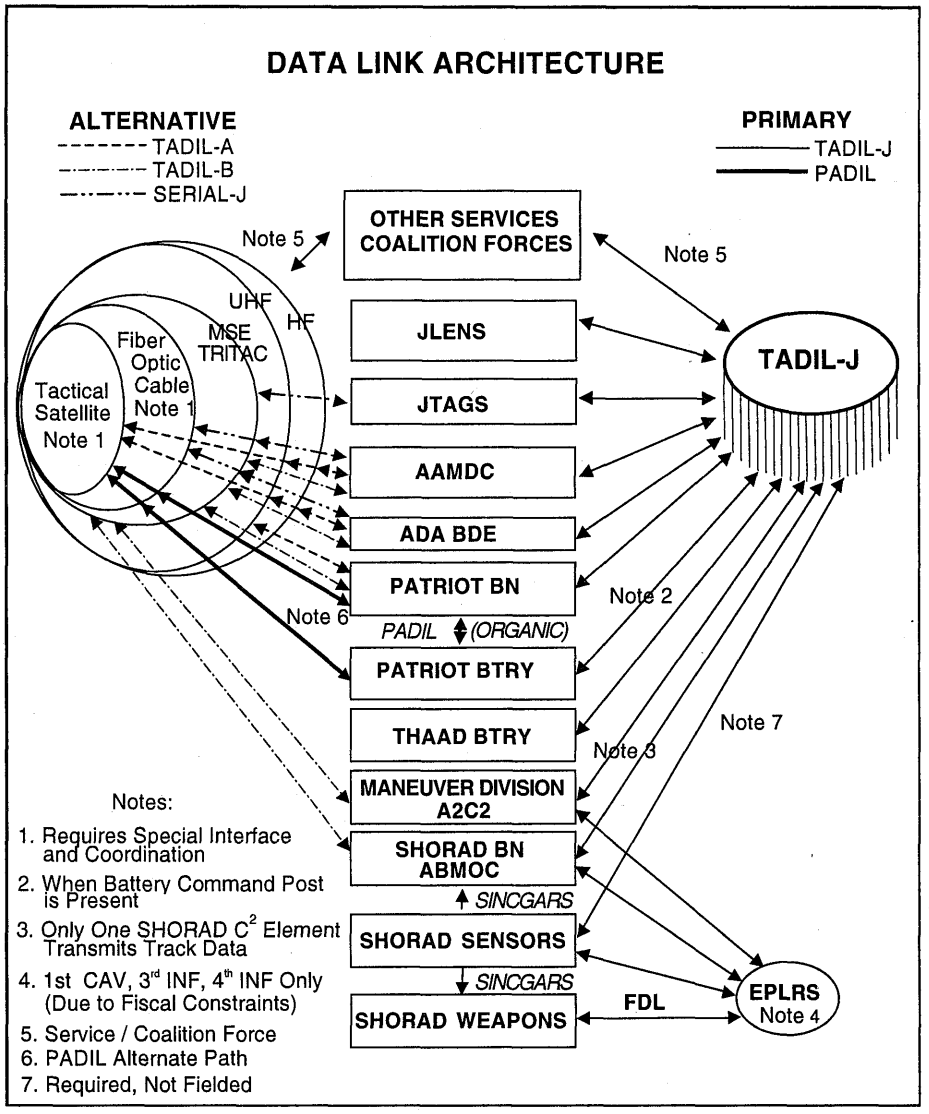

Figure 5-6. Typical Multi-TADIL Architecture/Joint Data Network

5-27. The CJCS Manual 6120.01B, Joint Multi-Tactical Digital Information Link (TADIL) Operating Procedures (JMTOP), mandates an operational requirement for several supporting, servicing, and overhead voice networks for TADIL participants in the JDN. These nets are used to oversee JDN operations, manage and control the net, and ensure air picture quality. Two of these nets—the air defense command and control net (ADCCN) and the track supervision net (TSN)—are often single channel TACSAT based because of the requirement to communicate BLOS. A third—the data coordination net (DCN)—is a voice network that operates via dial-and-hold circuits over the ACUS.

5-28. The ADCCN, illustrated in Figure 5-7, is used to disseminate changes to the area air defense plan. This includes changes to tactical operational data (TACOPDAT) defined positions, responsibilities or status. Examples of information passed over the ADCCN are missile engagement zone activation or deactivation, cross-boundary engagements, voice reporting of alert status or weapon release conditions, changes to surveillance areas or track production areas, etc.

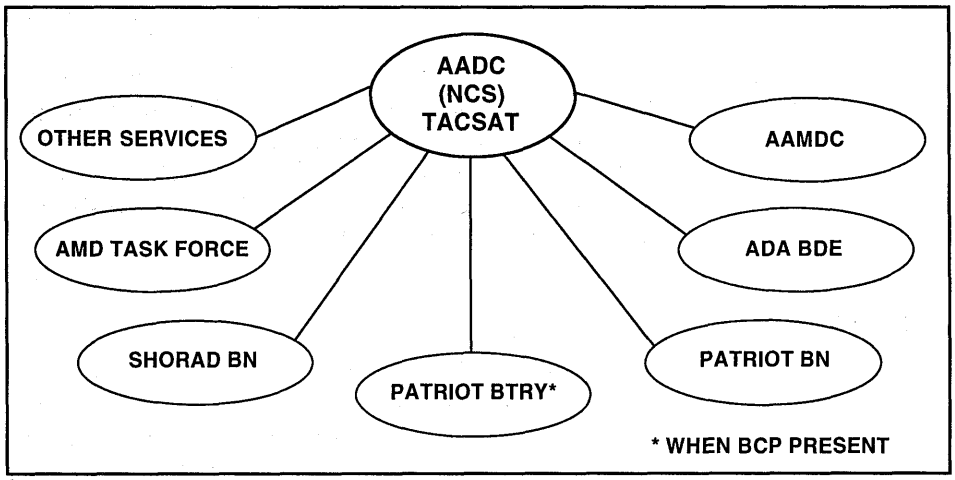

Figure 5-7. Army AMD Participants in the ADCCN

5-29. The TSN, illustrated in Figure 5-8, is used by the track data coordinator (TDC) to ensure all data on the interface is promptly reported, reported in the correct location, reported by only one unit, and that the reported data is correct. The TSN should be monitored by all units that input track data to the joint interface.

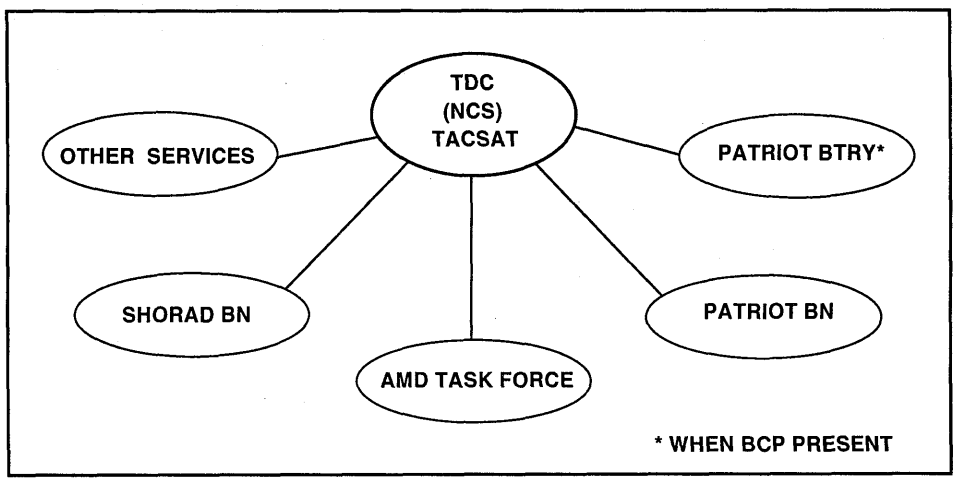

Figure 5-8. Army AMD Participants in the TSN

5-30. The DCN is used by the ICO to manage and coordinate the multi-TADIL interface. The DCN is established over telephone circuits and

connects the ICO or his representative with participants from the following Army AMD organizations: AAMDC G6; ADA brigades; Patriot and SHORAD battalions, AMD task forces; and THAAD batteries.

5-31. The joint tactical information distribution system (JTIDS) Class 2 radio (the Army uses the AN/GSQ 240 Class 2M model) is a computerized radio developed to provide joint forces with a high-speed, high-volume information transfer system, with characteristics especially suited to TAMD operations. It requires a separate computer to initialize and monitor its operation, and a separate information processing system to drive and interpret its outgoing and incoming information. The AAMDC uses its JTIDS radio primarily to monitor the air picture from the JDN. The AAMDC plays a key role in the JDN's planning. The JDN must be coordinated, planned, and designed in advance of implementation. The Army ICO, residing in the G6 staff, coordinates with Army AMD units, the Army AMD network design facility (NDF), and the JICO to plan the network design.

SUMMARY

5-32. C^4I for the AAMDC mission must be accomplished using existing joint and service C^4I systems and resources efficiently to ensure integration with other operational functions and to optimize scarce resources. The C^4I system enables and integrates TAMD operations. It provides timely threat assessment, tactical warning, mission assignment, targeting data, and post-strike assessment. TAMD C^4I capabilities must support the principles of centralized planning, decentralized execution, and coordinated efforts by forces assigned TAMD tasks. There is an absolute requirement for vertical and horizontal technical and procedural interoperability, both from a joint and multinational aspect. AAMDC relies on supporting theater signal infrastructure to provide assured access and speed of service requirements associated with AAMDC C^4 operations. The G6 is the focal point for properly planning, coordinating, and overseeing the integration of requested services into the AAMDC network-centric portion in theater.

Appendix A

Equipment

This appendix describes the equipment used in the AAMDC tactical operations center to plan and execute the AAMDC mission. The equipment consists of an integrated system of hardware and software collectively known as the air and missile defense planning and control system (AMDPCS). The AMDPCS includes shelters, computers, and communication equipment, and is supported by a variety of ancillary equipment.

TOC LAYOUT

A-1. The TOC is modular in configuration, comprised of six octagonal, quick erect, soft-walled shelters and five high-mobility multipurpose-wheeled vehicles (HMMWVs) as shown in Figure A-1. The AMDPCS equipment needed to plan and execute the AAMDC mission is distributed throughout the TOC's operational cells. The configuration of the TOC can be changed if necessary to satisfy the requirements of METT-TC.

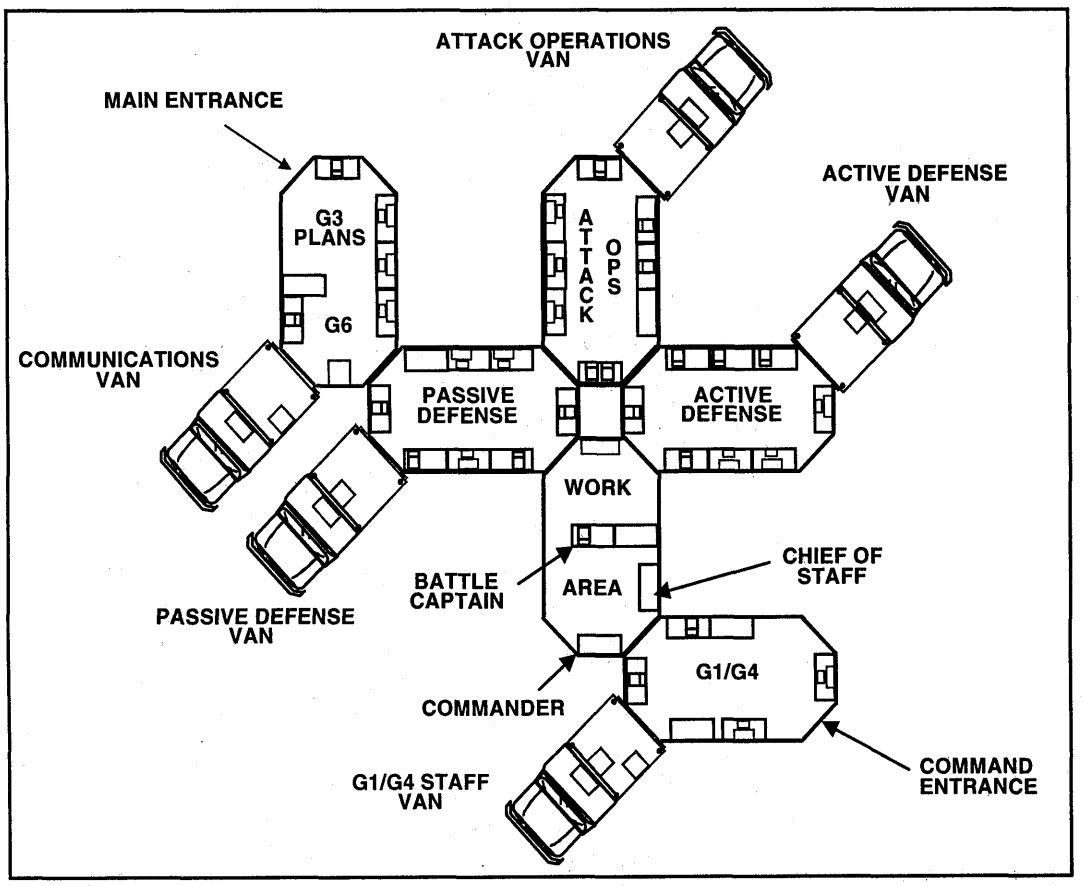

Figure A-1. Layout of TOC

ACTIVE DEFENSE CELL

A-2. The active defense cell and its automated equipment are shown in Figure A-2. This equipment consists of two air defense systems integrator (ADSI) workstations, an air and missile defense workstation (AMDWS), a global command and control system-Army (GCCS-A) and laptop computers.

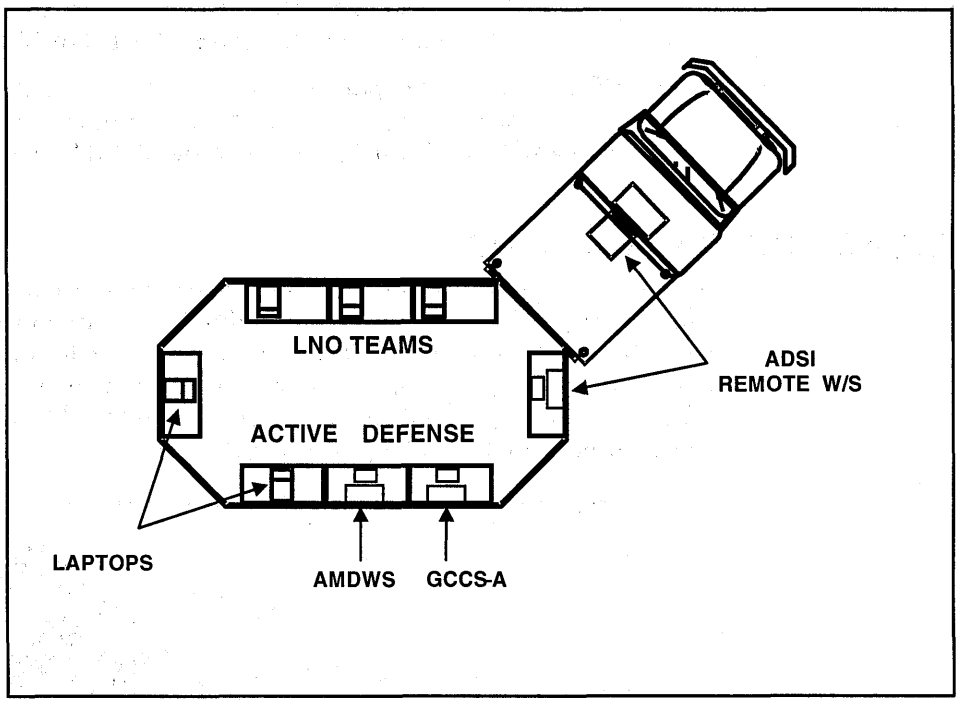

Figure A-2. Layout of Active Defense Cell

This equipment is described below:

- The ADSI is a suite of automated communications equipment capable of receiving and transmitting messages in a variety of TADIL formats. This enables the ADSI to exchange air picture and other tactical information with joint and Army systems. The ADSI also receives intelligence information via the tactical information broadcast system (TIBS) and the tactical receive equipment and related applications data dissemination system (TDDS). This tactical and intelligence information is displayed on the ADSI tactical display and passed to other processors through a serial connection within the TOC, including the AMDWS. TIBS/TDDS data is passed to the AMDWS through the local area network (LAN).
- The AMDWS is the primary tool for monitoring and managing AMD operations. It receives air situational awareness from the ADSI, and ground situation and intelligence information from the maneuver control system (MCS), all source analysis system remote work station (ASAS RWS) and other sources. The AMDWS maintains a comprehensive database of the tactical situation and also provides mission-planning capabilities to overlay sensor coverage, weapons

coverage, airspace control measures, threat locations, and planned unit positions.

- The GCCS-A receives air and missile situational awareness, joint friendly force information, intelligence information, and weather data from a variety of sources. The cell uses this information to keep track of the TM situation and the locations of friendly forces so the forces can quickly be warned in the event of a TM or NBC attack.
- The laptop computers are used for both operational and administrative purposes and provide connectivity via the SIPRNET to AAMDC staff and LNOs and other SIPRNET users.

ATTACK OPERATIONS CELL

A-3. The attack operations cell and its automated equipment are shown in Figure A-3. This equipment includes the automated deep operations coordination system (ADOCS), the advanced field artillery tactical data system (AFATDS), the all source analysis system remote workstation (ASAS RWS), the generic area limitation environment (GALE), the joint services workstation (JSWS), and laptop computers.

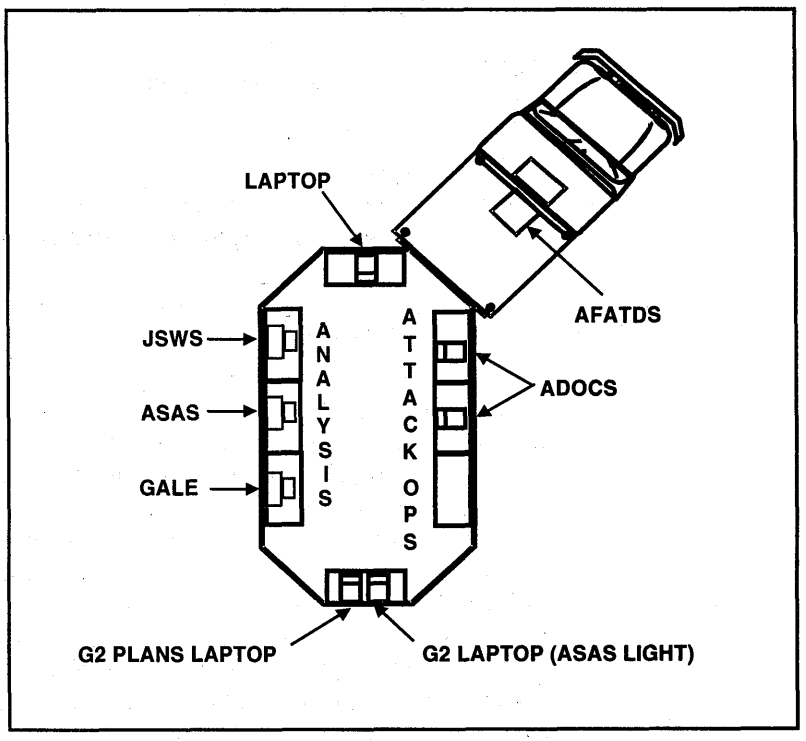

Figure A-3. Layout of Attack Operations Cell

This equipment is described below:

- The ADOCS is an integrated set of automated tools used for mission planning, coordination, analysis, and data management. It displays a

variety of data including friendly and enemy unit locations, air corridors, restricted fire areas, and operational graphics. It is used to submit TM target nominations to the DOCC and provide friendly artillery and fire support coordination measure (FSCM) situational awareness to the attack operations cell and LNOs.

- The AFATDS is an automated workstation that displays friendly artillery database information and facilitates management of fire support operations by processing fire mission requests and air support mission requests. It is used to submit TM target nominations to the DOCC and provide friendly artillery and FSCM situational awareness to the attack operations cell and LNOs.
- The ASAS RWS receives and correlates data from strategic and tactical intelligence sensors and sources. This data includes electronic, signal, imagery, and human intelligence. The RWS displays the enemy and friendly situations and includes tools that can be used to perform IPB, situation and event analysis, and target planning.
- The GALE is an automated workstation that contains a comprehensive terrain database. It is capable of analyzing terrain and predicting the most probable locations of enemy launch areas, forward operating bases, hide sites, and support areas. It is also capable of modeling the movement of enemy mobile launch platforms and predicting where they are going, what roads they will be using and the time required to reach their destinations.
- The JSWS is an automated workstation that receives surveillance imagery from the joint surveillance and target attack radar system (JSTARS) platforms that are imaging fixed targets or tracking enemy mobile launch platforms. The JSWS displays this imagery, enabling the operator to provide accurate targeting information, including fixed and mobile target locations, speed, target classification, and direction of movement.
- The laptop computers are used for operational, administrative, and intelligence information dissemination purposes and provide connectivity via the SIPRNET to AAMDC staff and LNOs and other SIPRNET users.

PASSIVE DEFENSE CELL

A-4. The passive defense cell and automated equipment within the cell are shown in Figure A-4. This equipment includes not only the passive defense equipment but also equipment belonging to the G2 current operations section. The passive defense equipment includes the global command and control system-Army (GCCS-A), the joint warning and reporting network (JWARN), the maneuver control system (MCS), the worldwide origin and threat system (WOTS), and laptop computers. The G2 equipment includes the ASAS RWS and the airborne broadcast intelligence system (ABIS).

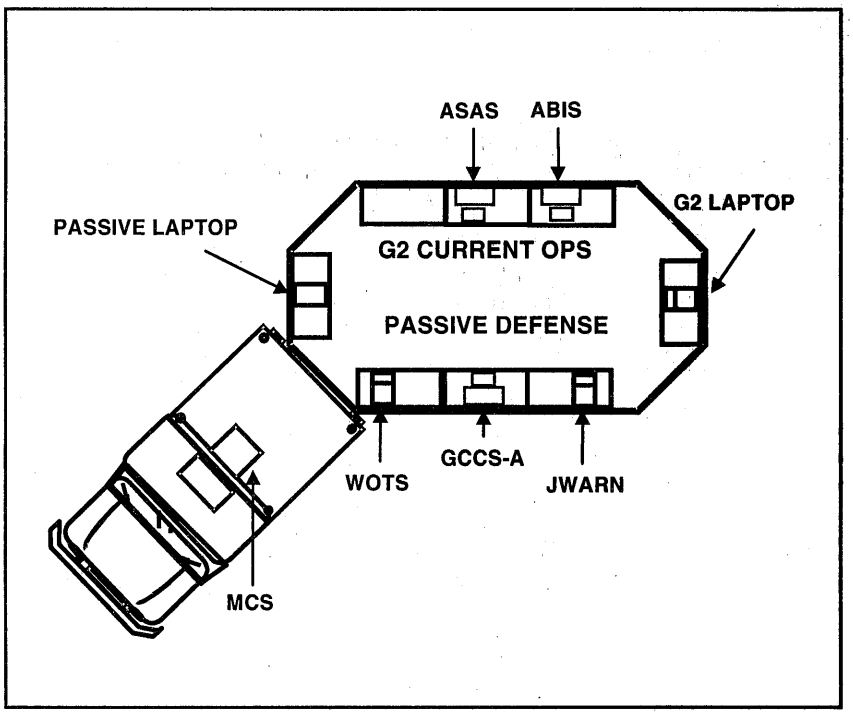

Figure A-4. Layout of Passive Defense Cell

This equipment is described below:

- The GCCS-A receives air and missile situational awareness, joint friendly force information, intelligence information, and weather data from a variety of sources. The cell uses this information to keep track of the TM situation and the locations of friendly forces so the forces can quickly be warned in the event of a TM or NBC attack.
- The JWARN is an automated workstation linked via tactical communications to NBC detection devices in the theater. It provides comprehensive NBC warning, reporting, and analysis capabilities and can display the type of event, time of the event, type of burst/agent, area of contamination, downwind hazard, and units affected.
- The WOTS receives reports of TM launches from theater and national intelligence sources. It correlates these reports and displays event numbers, the numbers of missiles launched, the predicted impact ellipses, and the estimated impact times.
- The MCS provides incoming missile warning information and a comprehensive view of friendly forces information. It forwards ground situation and intelligence information to the AMDWS. It is used in the PD cell primarily as a backup to the GCCS-A, JWARN and WOTS systems.
- The passive defense laptop computer hosts software that can be used to predict the ground effects of a TM warhead burst and also determine which friendly units will be affected by NBC agents.

Another laptop is used for operational and administrative purposes and has SIPRNET connectivity.

- The ASAS RWS receives and correlates data from strategic and tactical intelligence sensors and sources, and includes tools that can be used in IPB, situation/event analysis, and target planning. See AO cell discussion in paragraph A-3.
- The ABIS provides a three-dimensional picture of the battlespace that includes real-time, multispectral high-resolution intelligence imagery, threat following, and threat displays. It provides a detailed picture of the enemy situation, the location of enemy launch sites and ellipses of impact points. The system also provides a simultaneous display of up to three digital maps and/or imagery products.

G3 PLANS AND COMMUNICATIONS CELL

A-5. The G3 plans and communications cell and its automated equipment are shown in Figure A-5. This equipment includes the ADSI, the AMDWS, the commander's analysis and planning system (CAPS), the contingency theater automated planning system (CTAPS) and two laptop computers.

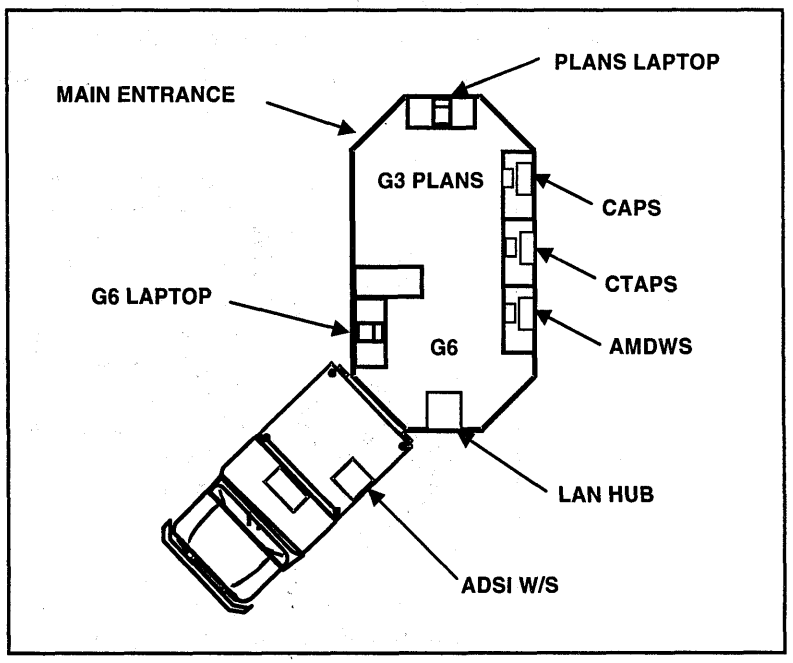

Figure A-5. Layout of G3 Plans and Communications Cell

This equipment is described below:

- The ADSI provides timely air and ground pictures for use in planning current and future operations. See description in paragraph A-2.
- The CAPS is an automated system used to plan and optimize defenses. It is capable of modeling defensive coverages and running

iterative attack scenarios to determine if coverages and levels of protection are satisfactory. With added software it can also exchange overlays and other information with joint systems. CAPS will eventually be replaced by the joint defense planner.

- The CTAPS is an automated system used to receive the air tasking order (ATO), airspace control order (ACO), and special instructions directly from the JFACC staff. It allows the G3 cell to maintain ATOs/ACOs and interact with joint force planning. CTAPS will eventually be replaced by the theater battle management core systems (TBMCS). The ATO and ACO will be received from TBMCS by AMDWS.
- The laptop computers are used for both operational and administrative purposes and provide connectivity via the SIPRNET to AAMDC staff and LNOs and other SIPRNET users.

PERSONNEL AND LOGISTICS CELL

A-6. The personnel and logistics cell and its automated equipment are shown in Figure A-6. This equipment currently includes two AMDWS and two laptop computers. Also shown are two global combat support systems-Army (GCSS-As), which will eventually replace the AMDWS.

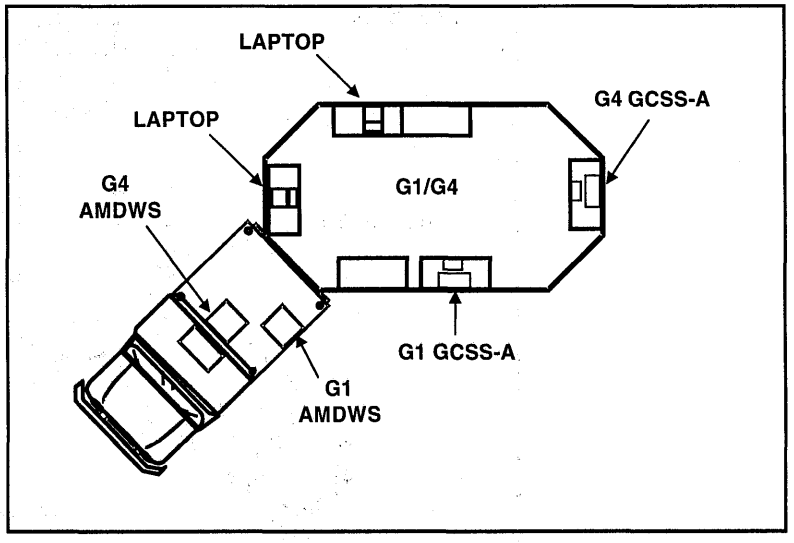

Figure A-6. Layout of Personnel and Logistics Cell

This equipment is described below:

- The AMDWS is used by the G1/G4 cell to manage personnel and logistics functions. It provides an automated rollup for submitting personnel reports, unit reports, and daily summaries.
- The GCSS-A is an automated system that provides timely situational awareness and force projection information to allow the G1/G4 staff to support current and future operations. It is capable of rapidly

collecting, storing, analyzing, and disseminating critical personnel, logistics, medical, and financial information and is used in planning and decision-making activities.

- The laptop computers are used for operational, administrative, and logistics purposes and provide connectivity via the SIPRNET to AAMDC staff and LNOs and other SIPRNET users.

COMMAND GROUP

A-7. The command group work area is shown in Figure A-7. It contains workspace and facilities for the AAMDC commander, the chief of staff, and the battle captain.

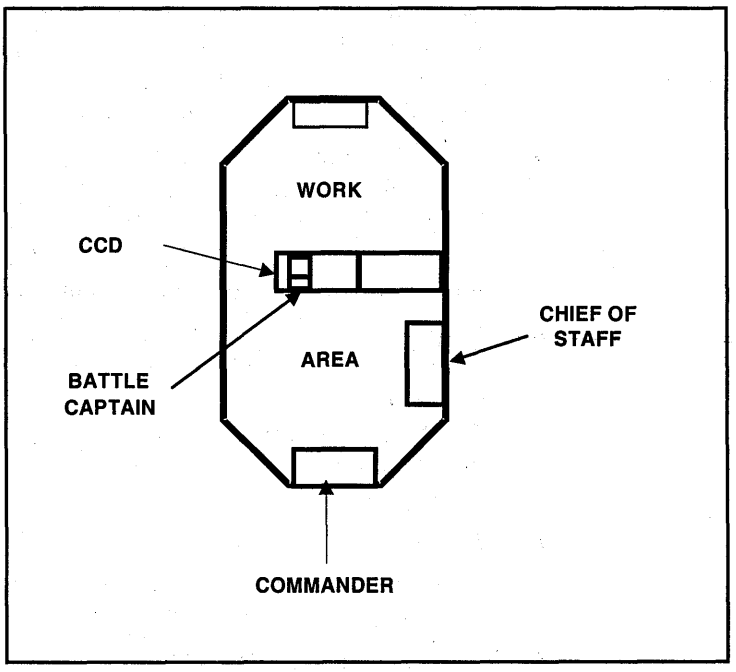

Figure A-7. Layout of Command Group Work Area

The battle captain's workstation includes the central communications display (CCD), which is used to direct and coordinate AAMDC operations. The CCD is linked via the LAN to other workstations within the TOC. It allows the battle captain to selectively view other displays including the ADOCS, GALE, ADSI, AMDWS, ASAS RWS, and MCS. It also allows him to communicate with operators of other displays to facilitate coordination of TOC operations.

COMMUNICATIONS EQUIPMENT

A-8. The following communications equipment is included in the AMDPCS:

- Digital Small Switch (DSS). The DSS is a 16-port digital switch that allows integrated service telephones to intercommunicate within the AMDPCS. This reconfigurable function facilitates voice

communications by conferencing between system operators and the battle and assistant battle captains. It can also incorporate commercial lines, radios, and external communications equipment and may be operated up to and including the SECRET level.

- Integrated Services Telephone (IST). The IST allows users to connect to a complete array of communications systems (radio nets and commercial telephone systems) and other AMDPCS equipment operators. Each phone is equipped with connectors for two push-to-talk (PTT) headsets or handsets. They include 40 preset lines and include functions such as call hold, call transfer, and ringer/headset volume.
- TSEC/KY-68 Digital Secure Voice Terminal (DSVT). The ruggedized terminal is used for encrypting/decrypting voice traffic and provides secure digitized data traffic. It includes a push-to-talk handset and operates as a full duplex voice/data subscriber terminal and is switch selectable for 16 or 32 kilobytes per second.
- MDA-38 DSVT Interface Box. The MDA-38 is an eight-channel, digital, non-secure voice terminal emulator that interfaces MSE and TRI-TAC circuits to the DSS switch. It allows IST users on the DSS switch to talk to users on MSE/TRI-TAC networks without having to switch to a different type of telephone terminal.
- Patch Panels. The communications patch panel (CPP) allows routing of external and internal signals and provides flexibility in configuring interconnections between equipment and routing around line failures. The DSS patch panel complements the CPP by allowing four and two wire circuits such as radios and telephone lines to be directly interfaced to the DSS.
- Line Termination Unit (LTU). The LTU can provide up to 18 channels and is utilized as a multiplexer/demultiplexer. It functions in support of receiver/transmitter MSE communications.
- UHF SATCOM Radio. The radios are used for satellite and line-of-sight communications operating the 225- to 400-megahertz UHF band. It provides data and secure/nonsecure voice capability.
- AN/GRC-138 Transceiver. The AN/GRC-138 receiver/transmitter is a high frequency/very high frequency (HF/VHF) system that operates with a frequency 1.6 to 60 megahertz. The built-in modem allows 2400 or 300 bytes per second (data communication.
- TSEC/KY-99 Trunk Encryption Device. The TSEC/KY-99 provides the secure voice for and is collocated with selected UHF SATCOM radios.
- Digital Nonsecure Voice Telephone (DNVT). The DNVT is a ruggedized unsecure data and voice field telephone that interfaces with MSE.
- Secure Telephone Unit (STU) III. The STU III provides a secure voice and data telephone capability between commercial networks. It

operates over most existing telephone networks and has selectable specific modes of secure operation.

- AN/GSQ-240 JTIDS 2M Terminal/Antenna. JTIDS is the primary interface means for radio frequency (RF) TADIL-J information to be received from and transmitted into the joint data network (JDN). The terminal utilizes embedded crypto to process secure digital data information such as situational awareness, friendly force management, and targeting information. It operates in the bandwidth from 960 to 1215 megahertz.

TACTICAL TELEPHONES

A-9. Tactical telephone users are shown in Figure A-8. These users may be physically located in the TOC or in a fixed facility in the vicinity of the TOC.

USER	INSTRUMENT	USER	INSTRUMENT
CG, 32d AADCOM	DNVT MSRT (Vehicle)	Entry Control Point (TOC)	DNVT
DCG, 32d AADCOM	DNVT	G4	DNVT
Chief of Staff	DNVT	G4 Log Officer	DNVT
Deputy Chief of Staff	DNVT	G6	DNVT
SGS	DNVT	G6 Help Desk	DNVT
HQs Commandant	DNVT	CRC1 ADI Data (TOC)	ADI
PAO	DNVT	CRC1 ADI (TOC Comms Van)	DSVT (KY-68)
SJA/IG	DNVT	CRC1 ADI (TOC Comms Van)	DSVT (KY-68)
G1	DNVT	EAC Bde LNOs	DNVT
G2	DNVT	THAAD LNO (TOC)	DNVT
G2 Analysis Chief	DNVT	Corps ADA Bde LNO (TOC)	DNVT
G2 Current Ops	DNVT	Theater Spt Cmd LNO (TOC)	DNVT
G3	DSVT (KY-68)	Allied/Multinational LNO (TOC)	DNVT
G3	DNVT	Allied/Multinational LNO (TOC)	DNVT
G3 Ops/Battle Cpt	DNVT	Allied/Multinational LNO (TOC)	DNVT
G3 Plans Officer	DNVT	LNO Spare	DNVT
Active Defense	DNVT	Spare	DNVT
Attack Operations	DNVT	Spare	DNVT
Passive Defense	DNVT		

Figure A-8. Tactical Telephone Users

LNO EQUIPMENT AND SUPPORT

A-10. Figure A-9 shows the equipment used by LNOs. It also summarizes LNO support requirements.

LNO EQUIPMENT	LCC	ACC (AOC/BCD)	MCC	JSOTF	DOCC	ACE	MULTINATIONAL
AMDWS	1	1	1				*
ADOCS (WITH LAN CARD)		1		1	1		*
AFATDS		1		1	1		
LAPTOP (WITH LAN CARD)	1	2	1	1		1 INTERNAL	1
STU-III PHONE	1	2	1	1	1	1	1
KY-68 PHONE	1	1	1	1	1	1	*
COLOR PRINTER (WITH LAN CARD)		1		1			*
B&W PRINTER (WITH LAN CARD)							*
10 PORT HUB		1					*
5 PORT HUB		1		1			*
PAGER	1	1	1	1	1	1	*
FAX (CLASSIFIED)		1					*
SC TACSAT	1	1	1	1	1	1	1
REQUIRED SUPPORT	**LCC**	**ACC (AOC/BCD)**	**MCC**	**JSOTF**	**DOCC**	**ACE**	**MULTINATIONAL**
SIPRNET (CONNECTION/IP ADDRESSES)	2	5	3	2	1	1	*
NIPRNET (CONNECTION/IP ADDRESSES)		3		1			1
DSN DROPS	1	2	1	1	1	1	1
KY-68 CRYPTO/ HARDWARE CONNECTION	1	1	1	1	1	1	*
TIBS, TDDS, FDL FEEDS	1	1	1				*
GCCS-K (TACIMS) (KOREA ONLY)	1	1**	1	2**	1**		*

Notes:
* If an LNO team is required at a multinational headquarters, LNO equipment/requirements will be METT-TC dependent and tailored for that specific mission.
** In Korea the ADOCS will require a GCCS-K (RELROK) connection.

Figure A-9. LNO Equipment and Support Requirements

ANCILLARY EQUIPMENT

A-11. Ancillary equipment, shown in Figure A-10, includes three HMMWV support vehicles, a communications security (COMSEC) van, two deployable rapid assembly shelters (DRASH) utilities shelter transporter (UST) trailers, two 35 kilowatt power generators, and eight equipment storage containers.

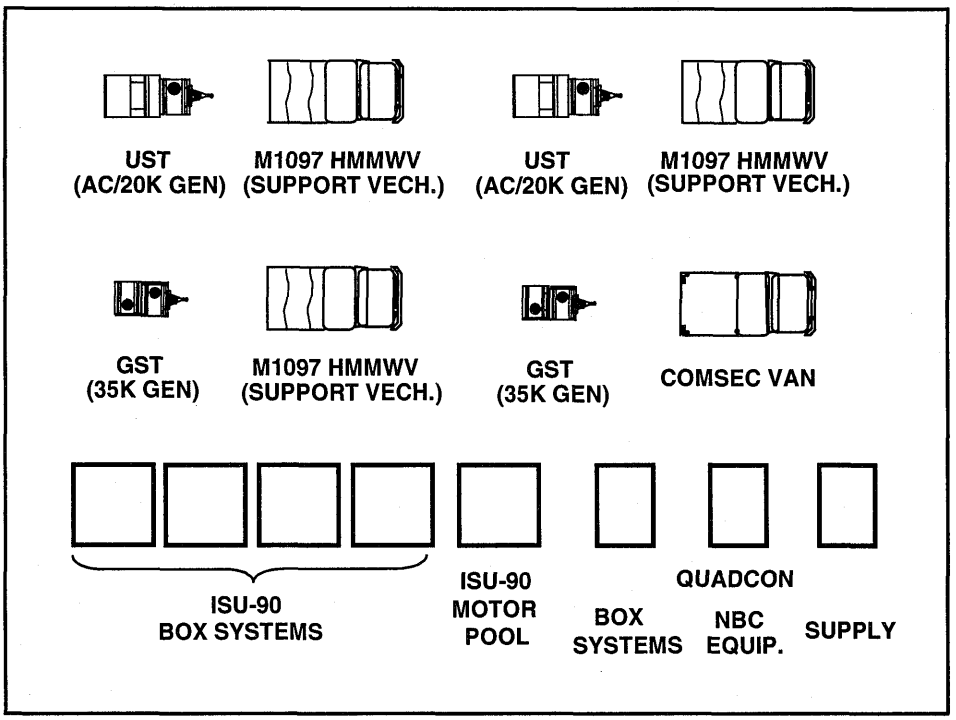

Figure A-10. AAMDC Ancillary Equipment

This equipment is described below:

- The HMMWV support vehicles are used to transport the UST trailers, power generators, and other support equipment. The UST trailers each contain an integrated environmental control unit (ECU), electrical generator and power panel. When deployed, the ECU provides air-conditioning/heating for the AMDPCS shelters. The cargo area at the rear of each UST trailer is used to transport the DRASH shelters.
- The COMSEC van is used for secure storage and to transport one of the 35 kilowatt generators.
- The 35 kilowatt generators, along with the 20 kilowatt generators on the UST trailers, provide the electrical power required to run the AMDPCS during operations.
- The storage containers are used to store a variety of equipment and supplies required to support AAMDC operations. The containers are air lifted into the theater of operations and transported to the operational site using nonorganic transportation facilities.

Appendix B

Air and Missile Defense Annex (Sample)

This appendix provides a sample outline for an Army level AMD annex with related appendices. The sample is formatted as it will normally appear when used by AMD planners.

ANNEX ___(AIR AND MISSILE DEFENSE) TO OPERATIONS ORDER NO ___

References: Maps, charts, datum, and other relevant documents.

Time Zone Used throughout the Order:

1. SITUATION. Thoroughly describe the operational environment in which the major operation will be conducted. Include tactical information for early phases of the operation.

2. MISSION. Describe the Army TAMD mission in terms of the objective that must be accomplished and its aim or purpose. Provide an overview of the mission of integrated TAMD operations in support of the JFC or JFLCC.

3. EXECUTION. Provide a statement, in general terms, of the commander's vision of TAMD mission accomplishment.

a. CONCEPT OF OPERATIONS. Describe the commander's vision of how the TAMD mission will be accomplished for all phases of the operation, to include the intent for the execution of operations for each of the four TMD operational elements. Discuss defense of critical assets, sensors, active defense, attack operations, passive defense, and areas of responsibility for each phase of the operation.

b. TASKS TO SUBORDINATE UNITS. Provide the tasks for each phase of the operation in a subparagraph for units supporting TMD operations.

4. SERVICE SUPPORT. Provide operational support instructions that are of primary interest to the elements being supported. Refer to the basic OPLAN.

5. COMMAND AND SIGNAL. Provide information concerning command post locations, succession of command, and liaison requirements. State, in broad terms, the primary links for synchronizing and integrating TAMD operations.

Figure B-1. Outline of Air and Missile Defense Annex

APPENDIX 1. INTELLIGENCE

1. SITUATION. Describe the situation in terms of enemy air and theater missile forces, and friendly units available for TAMD operations.

2. MISSION. Describe the mission of intelligence operations.

3. EXECUTION.

a. AREAS OF OPERATION. Identify specific features of the environment or activities within it that may influence available courses of action or the commander's decisions. Focus on the characteristics that will influence the TAMD mission.

b. ENEMY SITUATION. Describe the enemy air and theater missile (TM) situation. Include disposition, composition and strength, air and TM weapon capabilities, recent and present significant activities, and peculiarities and weaknesses regarding enemy air and TM forces.

c. ENEMY CAPABILITIES. Provide a determination of threat air and TM force capabilities, enemy courses of action (COAs), and doctrinal principles and tactics, techniques, and procedures threat forces prefer to employ.

d. DOCTRINAL TEMPLATE. The doctrinal template illustrates the deployment pattern and disposition preferred by the threat's normal tactics when not constrained by the effects of the battlefield environment.

e. NAMED AREAS OF INTEREST (NAIs). NAIs are points or areas where enemy activity (or lack of activity) confirm or deny enemy COAs.

f. PRIORITY INTELLIGENCE REQUIREMENTS (PIRs). PIRs are information requirements compiled by the commander regarding enemy COAs or capabilities that could significantly impact on the commander's decisions and/or identify critical intelligence gaps.

4. SERVICE SUPPORT. See basic AMD Annex and OPLAN.

5. COMMAND AND SIGNAL. Provide information concerning command post (CP) locations, succession of command, and liaison requirements.

TAB A. Doctrinal template.

TAB B. NAIs.

Figure B-1. Outline of Air and Missile Defense Annex (continued)

APPENDIX 2. ATTACK OPERATIONS

1. SITUATION. Describe the situation in terms of enemy TM and air forces and capabilities and friendly units available for TAMD attack operations.

2. MISSION. Describe the mission of attack operations-capable forces.

3. EXECUTION.

a. CONCEPT OF OPERATIONS. Describe the operational concept for each of the phases of the operation. Include attack operations guidance and targeting priorities for the AAMDC commander, land component commander and the joint force commander.

b. AIR SUPPORT. Provide information on the employment and availability of air assets for attack operations. Describe the procedures for quick reaction use of Army aviation, Air Force, Navy and Marine assets to attack TELs and/or other short dwell-time targets of opportunity.

c. FIELD ARTILLERY. List artillery assets capable of engaging TMD targets to include unit designation and type and number of munitions available. Include unit location and launch authority if available.

d. ARMY AVIATION. List available assets.

e. NAVAL SUPPORT. Provide naval TMD task organization and the coordination procedures for employment of Naval assets.

f. ELECTRONIC WARFARE. Describe the establishment and coordination of EW priorities. Details are provided in the information operations (IO) warfare appendix.

g. COORDINATING INSTRUCTIONS. Provide the locations of the fire support coordination line (FSCL), coordinated fire line (CFL), engagement boxes, restricted fire areas (RFAs), and no-fire areas (NFAs). Describe the targeting plan and the assignment of targeting numbers. List the high priority targets. Provide target selection standards including range, target location errors (TLEs), and attack guidance for preemptive strikes. Provide information on ROE and on procedures for sensor-to-shooter links and target deconfliction to allow components to rapidly engage targets. Provide ATO cycle and targeting battle rhythm.

h. REPORTING INSTRUCTIONS. Provide reporting instructions for attack operation-capable units, SOF and coordination teams.

4. SERVICE SUPPORT. See basic AMD Annex and OPLAN.

5. COMMAND AND SIGNAL. Designate the authority for prioritizing, coordinating, and deconflicting attack operations by area of operation. Provide locations for the AAMDC, DOCC, JFACC and SOF units. Provide any code words used to signal TBM activities. Provide procedures for alerting the force and transmission of launch point calculations to attack operations forces.

Figure B-1. Outline of Air and Missile Defense Annex (continued)

APPENDIX 3. ACTIVE DEFENSE

1. SITUATION. Describe the situation in terms of enemy air and TM forces and capabilities and friendly units available to conduct TAMD operations.

2. MISSION. Describe the mission of integrated active defense operations in support of the maneuver forces.

3. EXECUTION. Include a description of the concept of operations and coordinating instructions.

a. CONCEPT OF OPERATIONS. State the plan for the early deployment of active defense units to defend the force and high priority, critical assets (from the defended asset list). Develop a time-phased plan for disposition of active defense assets as they arrive in theater, and as defended forces arrive in theater. Describe procedures for airspace control and coordination between the joint force staff, JFACC, AADC, ACA, ARFOR, AAMDC, and EAC and Corps ADA brigades. Describe procedures for tactical control of fire control elements. Develop these procedures in accordance with procedural rules developed by the AADC and joint force staff coordinator. Specify the deployment and employment of counter-RSTA procedures.

b. COORDINATING INSTRUCTIONS. Describe the role of the AAMDC in coordinating, reconciling, and monitoring active defense functions in accordance with the established ROE as promulgated in the air defense plan. Provide reporting instructions for missioned active defense units.

4. SERVICE SUPPORT. See the basic AMD annex and OPLAN.

5. COMMAND AND SIGNAL. Designate the authority for prioritizing, coordinating, and deconflicting active defense operations. Designate responsibility for coordination and execution of the TAMD active air defense plan. Provide locations for ADA brigade TOCs, joint force staff, AADC, and AAMDC. Provide for integration of Corps assets. Provide any code words used to signal air and theater missile activities. Provide procedures for transmission of cueing information to active defense forces. Designate reporting communications circuits.

TAB A. TMD priorities.

Figure B-1. Outline of Air and Missile Defense Annex (continued)

APPENDIX 4. PASSIVE DEFENSE

1. SITUATION. Describe the situation in terms of enemy air and TM forces and capabilities and friendly vulnerability to air and TM attack.

2. MISSION. Describe the mission of passive defense operations.

3. EXECUTION. Describe how Army units will apply passive defense measures to warn the force, reduce targeting effectiveness, enhance personnel and equipment survivability, and recover and reconstitute if attacked. Provide a vulnerability analysis and delineate measures forces should take to enhance survivability. Specify recovery and reconstitution measures to be taken by Army units in theater. Describe procedures for warning the force of enemy air and TM attack. Provide the commander's philosophy on selective warning versus risk. Describe the procedures for providing alert messages and early warning (refined alert) messages.

4. SERVICE SUPPORT. See basic AMD annex and OPLAN.

5. COMMAND AND SIGNAL. See basic AMD annex. Describe the theater warning nets.

TAB A. Warning devices.

Figure B-1. Outline of Air and Missile Defense Annex (continued)

APPENDIX 5. COMMUNICATIONS

1. SITUATION. Describe the situation in terms of enemy air and TM forces and capabilities and friendly vulnerability to air and TM attack.

2. MISSION. State, in broad terms, the primary communications links used for synchronizing and integrating AMD operations.

3. EXECUTION. Describe the communications links and nets that facilitate communications for each phase of the operation. Communications with higher and lower echelon units are described as well as connectivity to various nets and sensors. Describe voice and data networks and links for early warning, communications with higher and lower echelon units, joint communications, and communications with other service components, LNOs, and the BCD.

4. SERVICE SUPPORT. See basic AMD annex and OPLAN.

5. COMMAND AND SIGNAL. See the basic AMD annex.

TAB A. MSE/TRITAC network.

TAB B. FM nets.

TAB C. Antenna farm.

TAB D. Communications diagrams.

TAB E. Early warning net.

TAB F. LNO net.

Figure B-1. Outline of Air and Missile Defense Annex (continued)

APPENDIX 6. INFORMATION OPERATIONS (IO) WARFARE

1. SITUATION. Describe the situation in terms of enemy air and TM forces and capabilities and friendly vulnerability to air and TM attack.

2. MISSION. Describe the IO warfare mission as it affects TAMD operations.

3. EXECUTION. Describe the employment of IO warfare measures including C2 protection and destruction or interference with enemy air and TM C3I. Describe the plans for accomplishing C2 protection through operations security (OPSEC), signal security (SIGSEC), computer security (COMPUSEC), deception, and camouflage and concealment.

a. OPSEC. Describe how the enemy will be denied timely information acquisition and identification of friendly forces. Include communications security, signature reduction, and physical security measures.

b. SIGSEC. Describe the actions that must be taken to manage communications emissions over time in a manner that reduces the enemy's ability to detect and locate C2 nodes.

c. COMPUSEC. Describe the measures that must be taken to protect friendly electronic data processing systems from infiltration, viruses, etc.

d. DECEPTION. Describe actions that must be taken to mislead the enemy, such as falsifying the indicators used by the enemy to discern friendly intentions, capabilities, or dispositions.

e. COVER AND CONCEALMENT. Describe cover and concealment measures that must be taken to counter the enemy's targeting effectiveness, making soldiers, units, vehicles, aircraft, weapons systems, positions and installations difficult to locate, strike and destroy.

4. SERVICE SUPPORT. See the basic AMD annex and OPLAN.

5. COMMAND AND SIGNAL. See the basic AMD annex.

Figure B-1. Outline of Air and Missile Defense Annex (continued)

Glossary

A^2C^2	Army airspace command and control
AADC	area air defense commander
AAMDC	Army air and missile defense command
AAW	anti-air warfare
ABCS	Army battle command system
ABIS	airborne broadcast intelligence system
ABMOC	air battle management operations center
ACA	airspace control authority
ACC	air component commander
ACE	analysis and control element
ACM	airspace control measure
ACO	airspace control order
ACP	airspace control plan
active air defense	direct defensive action taken to destroy, nullify, or reduce the effectiveness of hostile air and missile threats against friendly forces and assets. It includes the use of aircraft, air defense weapons, electronic warfare, and other available weapons (JP 1-02)
active defense	operations that protect selected assets and forces from attack by destroying TM airborne launch platforms and/or TMs in flight. Active defense also includes those actions that mitigate the effectiveness of targeting and delivery systems through EW against remote or onboard guidance systems (JP 1-02)
ACUS	area common user system
AD	active defense
ADA	air defense artillery
ADAFCO	air defense artillery fire control officer
ADCCN	air defense command and control net
ADDS	Army data distribution system
ADE	air defense element
ADOCS	automated deep operations coordination system
ADSI	air defense systems integrator
ADW	air defense warning

AFATDS	advanced field artillery tactical data system
AFFOR	Air Force forces
AI	area of interest
air and missile defense	as normally used, the term is synonymous with theater air and missile defense (see entry). However, the term can also be used in a broader context to apply to any integrated joint force operations conducted to destroy air and missile threats in flight or prior to launch regardless of whether the operations occur in an established theater. The term can also be used in a narrower context to apply to ADA operations (or active defense operations) conducted to destroy air and missile threats in flight (USAADASCH)
air and missile defense planning and control system	a standardized, digitized element of equipment in the AAMDC and brigade tactical operations centers (TOCs). The AMDPCS consists of an integrated system of hardware and software required to plan and execute the AAMDC and brigade missions. It includes vehicles, shelters, computers, communication, and ancillary equipment (USAADASCH)
air defense	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)
airspace control authority	the commander designated to assume overall responsibility for the operation of the airspace control system in the airspace control area. Also called ACA (JP 1-02)
airspace control order	an order implementing the airspace control plan that provides the details of the approved requests for airspace control measures. It is published either as part of the air tasking order or as a separate document. Also called ACO (JP 1-02)
airspace control plan	the document approved by the joint force commander that provides specific planning guidance and procedures for the airspace control system for the joint force area of responsibility/joint operations area. Also called ACP (JP 1-02)
air superiority	that degree of dominance in the air battle of one force over another which permits the conduct of operations by the former and its related land, sea and air forces at a given time and place without prohibitive interference by the opposing force (JP 1-02)
air supremacy	that degree of air superiority wherein the opposing air force is incapable of effective interference (JP 1-02)
air tasking order	a method used to task and disseminate to components, subordinate units, and command and control agencies those projected sorties/capabilities/forces to targets and specific missions. Normally provides specific instructions to include call signs, targets, controlling agencies, etc., as well as general instructions. Also called ATO (JP 1-02)
AIS	automated information system

A/L	administration/logistics
ALO	air liaison officer
AMD	air and missile defense
AMDCOORD	air and missile defense coordinator
AMDPCS	air and missile defense planning and control system
AMDWS	air and missile defense work station
antiradiation missile	a missile that homes passively on a radiation source (JP 3-01)
AO	area of operation; attack operations
AOC	air operations center
AOP	air operations plan
AOR	area of responsibility
APOD	air ports of debarkation
area air defense commander	within a unified command, subordinate unified command, or joint task force, the commander will assign overall responsibility for air defense to a single commander. Normally, this will be the component commander with the preponderance of air defense capability and the command, control, and communications capability to plan and execute integrated air defense operations. Representation from the other components involved will be provided, as appropriate, to the area air defense commander's headquarters. Also called AADC (JP 1-02)
area of operations	an operational area defined by the joint force commander for land and naval forces. Areas of operations do not typically encompass the entire operational area of the joint force commander, but should be large enough for component commanders to accomplish their missions and protect their forces (JP 1-02)
ARFOR	Army forces
ARSOF	Army special operations force
ASAS	all source analysis system
ASCC	Army service component commander
ASM	air-to-surface missile
ATDL	Army tactical data link
ATMD	Army theater missile defense
ATO	air tasking order
attack operations	offensive actions intended to destroy and disrupt enemy TM capabilities before, during, and after launch. The objective of these operations is to prevent the launch of TMs by attacking each

element of the overall system, including such actions as destroying launch platforms, RSTA platforms, C^2 nodes, and missile stocks and infrastructure (JP 3-01.5)

AWACS airborne warning and control system

BAS battlefield automated system

BCD battlefield coordination detachment

BDA battle damage assessment

BDE brigade

BLOS beyond line-of-sight

BM ballistic missile

BN battalion

BPS bytes per second

C^2 command and control

C^2W command and control warfare

C^3 command, control, and communications

C^3I command, control, communications and intelligence

C4I the command, control, communications, computers and intelligence (C^4I) system links passive defense, active defense, and attack operations to provide timely assessment of the threat (to include IPB); rapid dissemination of tactical warning; and mission assignment, targeting data, and post-strike assessment to the appropriate JTMD element. For each operational element, the C^4I system must provide rapid communications among intelligence assets, the fusion and decision-making facilities, warning systems, and weapon systems, to include a capability for rapid coordination with supporting combatant commanders (JP 3-05.1)

C^4ISR command, control, communications, computers, intelligence, surveillance and reconnaissance

CADE corps air defense element

CAPS commander's analysis and planning system

CAS close air support

CCD central communications display

CCIR commander's critical information requirements

C/E communications/electronics

CFL coordinated fire line

CG commanding general

CIC	combat intelligence cell
CINC	commander in chief
CJTF	commander joint task force
CM	cruise missile
CNR	combat net radio
COA	course of action
COMARFOR	commander of Army forces
COMINT	communications intelligence
common operational picture	the force disposition and planning/amplifying data from each consistent tactical picture (CTP) is combined with any additional information produced by the CINC (e.g., commander's intent, battle plans, projection overlays, etc.) at the CINC-designated COP correlation site to form the common operational picture. This provides the CINC with a complete description of his AOR that can be accessed by appropriate GCCS users worldwide. Also called COP (JTAMDO Battle Management Concept for Joint Theater Air and Missile Defense Operations, 14 March 1998)
COMPUSEC	computer security
COMSEC	communications security
consistent tactical picture	a computer-generated display of the current tactical situation in near-real-time that is consistent among users. Consistency is achieved because the information used in the development of the CTP is shared among users over a standard transmission mechanism (Link-16/TADIL J), with standardized message sets (J-series messages), utilizing standardized data elements derived from the DOD Core Data Model. Shared data is then displayed using the standardized military symbology from MIL-STD 2525A. Also called CTP (JTAMDO Battle Management Concept for Joint Theater Air and Missile Defense Operations, 14 March 1998)
COORD	coordination
coordination team	a term synonymous with liaison team (See liaison team)
COP	common operational picture
CONPLAN	contingency plan
CONUS	continental United States
counterair	a mission which integrates offensive and defensive operations to attain and maintain a desired degree of air superiority. Counterair missions are designed to destroy or negate enemy aircraft and missiles, both before and after launch (JP 1-02)
CP	command post
CPP	communications patch panel

CRC	control and reporting center
CRE	control and reporting element
CS	combat support
CSS	combat service support
CTAPS	contingency theater automated planning system
CTL	candidate target list
CTOC	corps tactical operations center
CVRT	criticality, vulnerability, recuperability, and threat
DAADC	deputy area air defense commander
DAL	defended asset list
DCA	defensive counterair
DCDR	deputy commander
DCG	deputy commanding general
DCN	data coordination net
deep operations coordination cell	an Army organization frequently used at division, corps and Army levels that serves as the center for focusing and integrating the planning, coordination, synchronization, and execution functions for deep operations. Working with the BCD and other coordination elements (e.g., AAMDC), the deep operations coordination cell (DOCC) will plan and coordinate, as appropriate, the use of fires, combined arms maneuver, SOF, and Army airspace command and control (A^2C^2) in support of Army deep maneuver operations (JP 3-09)
defensive counterair	all defensive measures designed to detect, identify, intercept and destroy or negate enemy forces attempting to attack or penetrate the friendly air environment. Also called DCA (JP 1-02)
DII	defense information infrastructure
direct support	a mission requiring a force to support another specific force and authorizing it to answer directly the supported force's request for assistance. Also called DS (JP 1-02)
DISNET	defense secure network
DNVT	digital nonsecure voice terminal
DOCC	deep operations coordination cell
DP	decision point
DRASH	deployable rapid assembly shelter
DSCS	defense satellite communications system

DSP	defense support program
DSS	digital small switch
DSVT	digital secure voice terminal
EAC	echelons above corps
ECCM	electronic counter-countermeasure
ECU	environmental control unit
EEFI	essential elements of friendly information
ELINT	electronic intelligence
EMCON	emission control
EO	electro-optical
EOB	enemy order of battle
EPLRS	enhanced position location reporting system
EPW	enemy prisoner of war
EW	electronic warfare
FAA	forward assembly areas
FAAD	forward area air defense
FCO	fire control order
FDC	fire direction center
FDDM	fire direction data manager
FDL	FAAD data link
FFIR	friendly forces information requirements
fire support coordination line	a fire support coordination measure that is established and adjusted by appropriate land or amphibious force commanders within their boundaries in consultation with superior, subordinate, supporting and affected commanders. Fire support coordination lines (FSCLs) facilitate the expeditious attack of surface targets of opportunity beyond the coordinating measure. An FSCL does not divide an area of operations by defining a boundary between close and deep operations or a zone for close air support. The FSCL applies to all fires of air, land, and sea-based weapon systems using any type of ammunition. Forces attacking targets beyond an FSCL must inform all affected commanders in sufficient time to allow necessary reaction to avoid fratricide. Supporting elements attacking targets beyond the FSCL must ensure that the attack will not produce adverse effects on, or to the rear of, the line. Short of an FSCL, all air-to-ground and surface-to-surface attack operations are controlled by the appropriate land or amphibious

force commander. The FSCL should follow well-defined terrain features. Coordination of attacks beyond the FSCL is especially critical to commanders of air, land, and special operations forces. In exceptional circumstances, the inability to conduct this coordination will not preclude the attack of targets beyond the FSCL. However, failure to do so may increase the risk of fratricide and could waste limited resources (JP 1-02)

FM frequency modulation

FOB forward operating base

FSCOORD fire support coordinator

FSCL fire support coordination line

FSCM fire support coordination measure

FSE fire support element

FSOP field standing operating procedure

GALE generic area limitation environment

GBS global broadcast system

GCCS global command and control system

GCCS-A global command and control system-Army

GCCS-K global command and control system-Korea

GCSS global combat support system

GPS global positioning system

GSM ground station module

HE high explosive

HF high frequency

HHB headquarters and headquarters battery

high-payoff target a target whose loss to the enemy will significantly contribute to the success of a friendly course of action. High-payoff targets are those high-value targets, identified through wargaming, which must be acquired and successfully attacked for the success of the friendly commander's mission. Also called HPT (JP 1-02)

high-value target a target the enemy commander requires for the successful completion of the mission. The loss of high-value targets would be expected to seriously degrade important enemy functions throughout the friendly commander's area of interest. Also called HVT (JP 1-02)

HMMWV high mobility multipurpose wheeled vehicle

HN	host nation
HPT	high-payoff target
HPTL	high-payoff target list
HQ	headquarters
HUMINT	human intelligence
HVT	high-value target
IADS	integrated air defense system
IBS	integrated broadcast service
ICAC²	integrated combat airspace command and control
ICC	information and coordination central
ICE	initial coordination element
ICO	interface control officer
IEW	intelligence and electronic warfare
IFF	identification, friend or foe
IG	inspector general
IJMS	interim JTIDS message system
IMINT	imagery intelligence
IMMP	information management modernization plan
INMARSAT	international maritime satellite
intelligence preparation of the battlespace	an analytical methodology employed to reduce uncertainties concerning the enemy, environment, and terrain for all types of operations. Intelligence preparation of the battlespace builds an extensive database for each potential area in which a unit may be required to operate. The database is then analyzed in detail to determine the impact of the enemy, environment and terrain on operations and presents it in graphic form. Intelligence preparation of the battlespace is a continuing process. Also called IPB (JP 1-02)
IPAWS	interim pager alert warning system
IPB	intelligence preparation of the battlespace
IR	information requirement
ISR	intelligence, surveillance, reconnaissance
IST	integrated services telephone
ISYSCON	integrated system control
JAOC	joint air operations center

JCCC	joint command control communications
JDISS	joint deployable intelligence support system
JDN	joint data network
JFACC	joint force air component commander
JFC	joint force commander
JFLCC	joint force land component commander
JFMCC	joint force maritime component commander
JFSOCC	joint forces special operations component commander
JIADS	joint integrated air defense system
JICO	joint interface control officer
JIPTL	joint integrated prioritized target list
JLENS	joint land attack cruise missile elevated netted sensor system
JMTOP	joint multi-TADIL operating procedures
JNDF	joint network design facility
JNSC	joint network support cell
JOA	joint operations area
joint force air component commander	the joint force air component commander (JFACC) derives authority from the joint force commander who has the authority to exercise operational control, assign missions, direct coordination among subordinate commanders, redirect and organize forces to ensure unity of effort in the accomplishment of the overall mission. The joint force commander will normally designate a joint force air component commander. The joint force air component commander's responsibilities will be assigned by the joint force commander (normally these would include, but not be limited to, planning coordination, allocation, and tasking based on the joint force commander's apportionment decision). Using the joint force commander's guidance and authority, and in coordination with other service component commanders and other assigned or supporting commanders, the joint force air component commander will recommend to the joint force commander apportionment of air sorties to various missions or geographic areas (JP 1-02)
joint force commander	a general term applied to a combatant commander, subunified commander or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force. Also called JFC (JP 1-02)
joint force land component commander	the commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of land forces, planning and coordinating land operations, or accomplishing such operational missions as may be

assigned. The joint force land component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. The joint force land component commander will normally be the commander with the preponderance of land forces and the requisite command and control capabilities. Also called JFLCC (JP 1-02)

joint force maritime component commander — the commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of maritime forces and assets, planning and coordinating maritime operations, or accomplishing such operational missions as may be assigned. The joint force maritime component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. The joint force maritime component commander will normally be the commander with the preponderance of maritime forces and the requisite command and control capabilities. Also called JFMCC (JP 1-02)

joint force special operations component commander — the commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of special operations forces and assets, planning and coordinating special operations, or accomplishing such operational missions as may be assigned. The joint force special operations component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. The joint force special operations component commander will normally be the commander with the preponderance of special operations forces and the requisite command and control capabilities. Also called JFSOCC (JP 1-02)

joint integrated prioritized target list — a prioritized list of targets and associated data approved by a joint force commander, and maintained by a joint task force. Targets and priorities are derived from the recommendations of components in conjunction with their proposed operations supporting the joint force commander's objectives and guidance. Also called JIPTL (JP 1-02)

joint network design facility — the facility designated by appropriate authority to develop the network design for a specified joint exercise (USAADASCH)

joint operations area — an area of land, sea, and airspace, defined by a geographic combatant commander or subordinate unified commander, in which a joint force commander (normally a joint task force commander) conducts military operations to accomplish a specific mission. Joint operations areas are particularly useful when operations are limited in scope and geographic area or when operations are to be conducted on the boundaries between theaters (JP 1-02)

joint targeting coordination board — a group formed by the joint force commander to accomplish broad targeting oversight functions that may include, but are not limited

to, coordinating target information, providing targeting guidance and priorities, and preparing and/or refining joint target lists. The board is normally comprised of representatives from the joint force staff, all components, and if required, component subordinate units. Also called JTCB (JP 1-02)

joint theater missile defense — the integration of joint force capabilities to destroy enemy theater missiles in flight or prior to launch or to otherwise disrupt the enemy's theater missile 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. Enemy theater missiles are those that are aimed at targets outside the continental United States. Also called JTMD (JP 1-02)

JP — joint publication

JRE — JTIDS range extension; joint range extension

JSOTF — joint special operations task force

JSTARS — joint surveillance and target attack radar system

JSWS — joint services workstation

JSYSCON — joint systems control

JTAMD — joint theater air and missile defense

JTCB — joint targeting coordination board

JTAGS — joint tactical ground station

JTIDS — joint tactical information distribution system

JTMD — joint theater missile defense

JWARN — joint warning and reporting network

KB/S — kilobytes per second

KW — kilowatts

LAN — local area network

LCC — land component commander

LCS — launcher control station

liaison team — a team of officers and/or enlisted personnel dispatched from one element of a military force to another to maintain close and continuous communication, thus ensuring mutual understanding and unity of purpose and action between elements. Liaison teams ensure that senior commanders remain aware of the tactical situation by providing them with exceptional, critical and routine information, verifying the information, and clarifying operational questions. Also called coordination team (FM 101-5)

LNO	liaison officer
LOC	lines of communications
LOS	line-of-sight
LTU	line termination unit
MARFOR	Marine forces
master air attack plan	a plan that contains key information that forms the foundation of the joint air tasking order. Also called the air employment plan or joint air tasking order shell. Information which may be included: joint force commander guidance, joint force air component commander guidance, support plans, component requests, target update requests, availability of capabilities/forces, target information from target lists, aircraft allocation, etc. Also called MAAP (JP 1-02)
MCC	maritime component commander
MCS	maneuver control system
MDCOORD	missile defense coordinator
MEL	mobile erector launcher
MEP	minimum engagement package
METT-TC	mission, enemy, terrain and weather, troops, time available, and civil considerations
MFC	multinational force commander
MHz	megahertz
MI	military intelligence
mobile erector launcher	a towed launch vehicle capable of transporting a TBM to a tactical location and elevating and launching the missile. A mobile erector launcher requires external ancillary equipment to support launch operations. Also called MEL (USAADASCH)
MOPP	mission oriented protective posture
MSE	mobile subscriber equipment
MSRT	mobile subscriber radio terminal
MSTS	multiple source tactical system
MTI	moving target indicator
MTW	major theater war
NAI	named areas of interest
NAVFOR	Navy forces

NBC nuclear, biological and chemical

NBCRS NBC reconnaissance system

NCA national command authority

NCS net control station

NDF network design facility

NIPRNET nonclassified internet protocol router network

O & I operations and intelligence

OB order of battle

OCA offensive counterair

OCOKA observation and field of fire, cover and concealment, obstacles, key terrain, and avenues of approach

offensive counterair offensive 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. Offensive counterair operations range throughout enemy territory and are generally conducted at the initiative of friendly forces. These operations include attack operations, fighter sweep, escort, and suppression of enemy air defenses. Also called OCA (JP 1-02)

offensive counterair attack operations offensive action in support of the offensive counterair 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, command and control nodes, munitions stockpiles, and supporting infrastructure. Attack operations may be performed by fixed or rotary wing aircraft, surface-to-surface weapons, special operations forces, or ground forces. Also called OCA attack ops (JP 1-02)

OPCON operational control

operational control transferable command authority that may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in combatant command (command authority). Operational control may be delegated and is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force

commanders and Service and/or functional component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions. Operational control does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. Also called OPCON (JP 1-02)

OPFAC operational facility

OPLAN operation plan

OPNS operations

OPORD operation order

OPSEC operational security

OPTEMPO operational tempo

PADIL Patriot digital information link

PAO public affairs office

passive air defense all measures, other than active air defense, taken to minimize the effectiveness of hostile air and missile threats against friendly forces and assets. These measures include camouflage, concealment, deception, dispersion, reconstitution, redundancy, detection and warning systems, and the use of protective construction (JP 1-02)

passive defense operations that provide essential individual and collective protection for friendly forces, population centers, and critical assets. The principal measures used to accomplish passive defense are tactical warning, reducing targeting effectiveness, reducing vulnerability, and recovery and reconstitution (JP 3-01.5)

PD passive defense

PGIP/T predicted ground impact point/time

PIR priority intelligence requirement

POL petroleum, oils and lubricants

positive control a method of airspace control that relies on positive identification, tracking and direction of aircraft within an airspace, conducted with electronic means by an agency having the responsibility and authority therein (JP 1-02)

procedural control a method of airspace control that relies on a combination of previously agreed and promulgated orders and procedures (JP 1-02)

PTL primary target line

PTT	push-to-talk
RADC	regional air defense commander
RCS	radar cross section
RECCE	reconnaissance
RELROK	releasable to Republic of Korea
RF	radio frequency
RFI	request for information
ROE	rules of engagement
RSTA	reconnaissance, surveillance and target acquisition
rules of engagement	directives issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered. Also called ROE (JP 1-02)
RWS	remote workstation
SA	situational awareness
SADC	sector air defense commander
SAM	surface-to-air missile
SATCOM	satellite communications
serial TADIL J	protocol and/or equipment that allows TADIL J data to be transmitted over a serial (RS 232) communications interface (USAADASCH)
SHORAD	short-range air defense
SFOD	special forces operational detachment
SIGINT	signals intelligence
SIGO	signal officer
SIGSEC	signal security
SINCGARS	single-channel ground and airborne radio system
SIPRNET	secret internet protocol router network
SJA	staff judge advocate
SME	subject matter expert
SOCCE	special operations command and control element
SOCOORD	special operations coordinator
SOE	states of emission
SOF	special operations force

SOI	signal operating instructions
SOP	standing operating procedures
SOR	states of readiness
SPOD	seaport of debarkation
STAMIS	standard Army management information system
STU	secure telephone unit
SUCCESS	synthesized UHF computer controlled subsystem
TAAMDCOORD	theater army air and missile defense coordinator
TAC	tactical
TACC	tactical air command center
TACDAR	tactical data and reporting
TACIMS	theater automated command and control information management system
TACON	tactical control
TACS	theater air control system
TACSAT	tactical satellite
tactical control	command authority over assigned or attached forces or commands, or military capability or forces made available for tasking, that is limited to the detailed and, usually, local direction and control of movements or maneuvers necessary to accomplish missions or tasks assigned. Tactical control is inherent in operational control. Tactical control may be delegated to, and exercised at any level at or below the level of combatant command. Also called TACON (JP 1-02)
tactical operations center	a subelement of a headquarters command post with staff elements (AAMDC, brigades, and battalions). A tactical operations center (TOC) consists of a physical grouping of the staff elements concerned with current and future tactical operations and tactical support. A key standardized, digitized element of equipment in the AAMDC and brigade TOCs is the air and missile defense planning and control system (AMDPCS) (FM 44-100)
TADIL	tactical digital information link
TAI	target areas of interest
TAOC	tactical air operations center
TBM	theater ballistic missile
TBMCS	theater battle management core systems
TCS	tactical control station

TDC	track data coordinator
TDDS	TRAP data dissemination system
TDS	tactical data system
TEL	transporter erector launcher
TERS	tactical event reporting system
TF	task force
THAAD	theater high altitude area defense
theater air and missile defense	the integration of joint force capabilities to destroy air or theater missile threats in flight or prior to launch or to otherwise disrupt the enemy's air and theater missile operations through an appropriate mix of offensive counterair (OCA) and defensive counterair (DCA) operations consisting of mutually supportive passive air defense; active air defense; attack operations; and supporting command, control, communications, computers and intelligence (C^4I) measures (USAADASCH)
theater missile	a missile, which may be a ballistic missile, a cruise missile, or an air-to-surface missile (not including short-range, nonnuclear, direct fire missiles, bombs, or rockets such as Maverick or wire-guided missiles), whose target is within a given theater of operation. Also called TM (JP 1-02)
TIBS	tactical information broadcast service
TM	theater missile
TMD	theater missile defense
TOC	tactical operations center
transporter erector launcher	a self-propelled launch vehicle capable of transporting a TBM to a tactical location and elevating and launching the missile. A TEL contains all ancillary equipment needed to support launch operations (USAADASCH)
TRAP	tactical receive equipment and related applications
TRITAC	triservice tactical communications
TRIXS	tactical reconnaissance intelligence exchange system
TSC	theater signal command
TSN	track supervision net
TST	time sensitive target
TV	television
UAV	unmanned aerial vehicle
UAV-SR	unmanned aerial vehicle-short range

UHF	ultrahigh frequency
UMO	unit movement officer
USAADASCH	United States Army Air Defense Artillery School
UST	utilities shelter transporter
UTM	universal transverse mercator
VHF	very high frequency
VTC	video teleconference
warfighter information network-tactical	an Army Force XXI tactical telecommunications system consisting of infrastructure and network components from the maneuver battalion to the theater rear boundary. The network provides command, control, communications, computers, intelligence, surveillance, and reconnaissance (C^4ISR) capabilities that are mobile, secure, survivable, seamless, and capable of supporting multimedia tactical information systems. The network's capability to support unit task reorganization and real-time retasking of battlefield support elements is a vital enabler for Army 2010 and Beyond operational concepts. The network will allow all Army commanders and other communications network users at all echelons to exchange information internal and external to the theater from wired or wireless telephones, computers (Internet-like capability) or from video terminals. Also called WIN-T (Warfighter Information Network–Tactical (WIN-T) Operational Requirements Document (ORD), 23 Aug 1999)
WMD	weapons of mass destruction
WOTS	worldwide origin and threat system

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