Air and Missile Defense Training Roadmap

For Intelligence Professionals

CW2(P) Adrian F. Cabrera

10TH Army Air and Missile Defense Command (AAMDC)
Abstract

Air and Missile Defense (AMD) faces an increasingly capable and prolific threat and a growing demand for Joint Force and Combined capabilities. The integrated operational network is heavily dependent on intelligence synchronization to enable mission command. Intelligence support to AMD requires a keen understanding of the operational and tactical threat to analyze and interpret information of intelligence value, including the technological capabilities and employment of advanced weapon systems. However, entry level intelligence training does not meet the requirements to support the AMD mission.

Therefore, it is imperative for intelligence professionals to receive comprehensive training in AMD operations, threat models and capabilities. In an effort to streamline training requirements necessary for intelligence professionals working in the AMD arena, the intelligence community is encouraged to utilize the AMD Intelligence Training Roadmap (see Figure 1). The Intelligence Training Roadmap defines the knowledge base requirements, provides an advanced level curriculum and streamlines the planning process to enable specific training requirements for intelligence professionals assigned to AMD units.
Current trends in global security indicate an increasingly capable and prolific air and missile threat to U.S. forces, Allies and partnered forces. The result is a growing demand for air and missile defense AMD capability. In an effort to meet this demand, the U.S. and its partners have begun transition to the Joint Integrated Air and Missile Defense (IAMD) platform of operations. IAMD employs unified action with a full range of capabilities to deter adversarial attack. Accordingly, integrated Air Defense is heavily dependent on intelligence synchronization to precede a situational understanding that enables mission command. The operational environment is extremely complex and requires a developed understanding to better determine, analyze and interpret information of intelligence value. Consideration for the counterair threat is given very little coverage at the U.S. Army Intelligence Center of Excellence (ICoE). Without institutional training, the AMD intelligence Soldier is not capable of meeting current demands, and requires additional specialized training to establish a baseline skill set.

The AMD community offers various opportunities for training; however, without proper research and planning, training can become redundant or ineffective. There is no “one-step” agency that provides a training curriculum for the AMD intelligence Soldier. In order to maximize the effectiveness of AMD training, the organization must develop a strategy that includes training plans and identification of roles and responsibilities to build required knowledge and skills. The purpose of this document is to assist AMD organizations in defining the training requirements necessary for intelligence professionals working in an AMD environment.

The Army Air and Missile Defense Command (AAMDC) is the Army’s operational lead and primary contribution to IAMD. IAMD comprises Joint and combined forces capabilities, including defensive, passive, offensive, kinetic, non-kinetic (e.g., cyber warfare, directed energy, and electronic attack) in unified counter-air operations. The purpose for IAMD is to deter the
adversary from attack and additionally attain and maintain air superiority and protection prior to launch and after the commencement of hostilities⁶.

Intelligence professionals provide direct support to the commander and staff in all matters of the intelligence process. Intelligence support to air and missile defense requires a keen understanding of the potential adversary, including the operational environment, enemy intent and readiness status and threat system capabilities. The potential adversary is continually developing and improving sophisticated technical and operational countermeasures designed to defeat air and missile defense systems. Consequently, ballistic missiles are becoming more flexible, mobile, survivable, and reliable, while also increasing in range and accuracy. Air and missile defense systems require consistent, reliable and accurate indications and warnings (I&W) in order to maintain effectiveness. Intelligence synchronization and cross coordination is essential at multiple echelons⁷. Intelligence professionals without specific AMD skills and abilities provide little support to a Commander’s decision making process, potentially stalling the Operations Process⁸.

The AAMDC and subordinate commands are consistently engaged in multiple missions, maintaining continuous presence in potentially volatile locations with diverse threat actors across the globe. Limited assets require deliberate planning and training to fully maximize intelligence support to AMD systems and capabilities⁹. The intelligence professional conducts information preparation of the operational environment and manages functions within the military decision making process to support the air defense mission¹⁰.

**Establishing a Baseline**
The AMD mission requires the intelligence professional to assume a working level aptitude, also known as a knowledge baseline. The baseline comprises three core competencies associated with the AMD fight, to include the strategic environment, science and technology, and the tactical threat.

Strategic level training provides the scope and direction necessary to analyze the broad aspects of the operational environment. This type of training must include an overview of the history and evolution of ballistic missile weapons systems and ballistic missile defense (BMD), as well as the geopolitical, legal and other international considerations associated our own national defense and the defense of our allies.

Science and technology covers the technical aspect of BMD architecture as well as the capabilities of individual weapon systems. From an analytical perspective, it is important for the intelligence professional to understand BMD architecture in order to discern the enemy threat. Learning weapon system capabilities will convey to the intelligence professional the extent of this threat. This type of training should include the basics of infrared theory and radar theory and their respective application to sensors, the different type of orbits and ballistic trajectories, the
categories of ballistic missile ranges, the components of a ballistic missile and the three phases of flight, and the difference between theater and homeland BMD system engagement scenarios.

Threat environment training focuses specifically on the theater of operations the intelligence professional is expected to support. This type of training includes the disposition of enemy forces and their lines of communication, individual weapon systems and associated support equipment, weapon system capabilities during all phases of flight, and the fire doctrine and associated tactics, techniques and procedures.

**AMD Training Roadmap for Intelligence Professionals**

The AMD Training Roadmap for Intelligence Professionals (Table 1) illustrates a useful method to streamline the planning process, with a composite of coursework based on two levels of curriculum. The Roadmap identifies key roles within the organization, matching those roles with corresponding courses best suited to fulfill the curriculum requirement.
Based on this information and taking into account the unique environment of the combatant command, the training planner/organizer may determine which courses should be allocated to different groups or individuals\textsuperscript{11}. The Core Curriculum prepares the intelligence professional with a knowledge baseline, to include subject course matter in the strategic environment, science and technology and the tactical threat. Table 2 provides course descriptions to the Core Curriculum.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC320-Ballistic Missile Intelligence Analysis Course</td>
<td>This is a 5 day course supported by the Foundry Training Program, with training provided by USASMDC/ARSTRAT. This course focuses on the strategic and operational aspect of ballistic missile intelligence analysis. The outcome is designed to familiarize the student with ballistic missile technologies and the issues faced by the Department of Defense and the Intelligence community (IC) in analyzing ballistic missile programs, as well as policy issues in implementing a ballistic missile defense program.</td>
</tr>
<tr>
<td>STRATCOM-MD-220-Missile Defense Staff Basic Course</td>
<td>This is a 2½ day course, with training provided by USSTRATCOM/JFCC-IMD. This course focuses on the strategic and operational aspect of missile defense, from the staff-level perspective. Registration for the course is available via the Joint Knowledge Online (JKO) November, 2014 catalog.</td>
</tr>
<tr>
<td>STRATCOM-MD-210-Missile Defense Orientation Course</td>
<td>This is a 1 day familiarization course recommended for those who need a basic level of Ballistic Missile Defense (BMD) knowledge and understanding. Training is provided by USSTRATCOM/JFCC-IMD and focuses on the strategic-level aspect of missile defense operations.</td>
</tr>
<tr>
<td>J3OP-US849-Missile Defense Overview</td>
<td>This is a 6 hour ATRRS course, with training focused on the strategic and operational aspect of missile defense. The individual will learn how history, law, and treaties have influenced the development of missile defense, about the missile defense mission and its programs, current and potential missile threats, the concept of layered defense, the fundamentals of ballistics and trajectories, missile systems and sensors, future missile systems, and Command and Control as it relates to missile defense. Registration for the course is available via the Joint Knowledge Online (JKO) November, 2014 catalog.</td>
</tr>
<tr>
<td>IC319-Ballistic Missile Threat Immersion</td>
<td>This is a 4 day course (can be tailored as needed) supported by the Foundry Training Program, with training provided by MSIC. This course focuses on the operational and tactical aspect of ballistic missile intelligence analysis. The outcome is designed to provide the student with a fundamental understanding of ballistic missiles, rockets and their operations; an introduction to the national-level intelligence agencies associated with ballistic missile and rocket analysis; and techniques for conducting real-time operational ballistic missile intelligence analysis.</td>
</tr>
</tbody>
</table>

Table 2. Air and Missile Defense Training for Intelligence Professionals; Recommended Courses: Core Curriculum.
The Advanced Curriculum is designed to support intelligence synchronization, with subject course matter in missile defense planning, information collection and joint targeting operations. Table 3 provides course descriptions to the Advanced Curriculum.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISR303-Information Collection (ISR) TOPOFF MTT</td>
<td>This is a 3 day course supported by the Foundry Training Program, with training provided by TRADOC/G2. Upon successful completion of this course, each student will be able to demonstrate a working knowledge of non-organic ISR capabilities, and the Information Collection synchronization (ISR) process.</td>
</tr>
<tr>
<td>IC307-National Reconnaissance Office Capabilities MTT</td>
<td>This is a 1-3 day course supported by the Foundry Training Program, with training provided by the National Reconnaissance Office. This training event is intended to increase intelligence personnel awareness of national overhead intelligence capabilities.</td>
</tr>
<tr>
<td>J30P-US1145-JFC 100 Module 5. Joint Operation Planning</td>
<td>This is a 2 hour ATRRS course, with training focused on the strategic and operational aspect of missile defense. Upon successful completion of this course module, the learner will be able to identify the basic tenets of operational-level planning; describe each step of the joint operation planning process, deliberate planning, campaign plans and contingency plans; and define the steps in the crisis action planning process. Registration for the course is available via the Joint Knowledge Online (JKO) November, 2014 catalog.</td>
</tr>
<tr>
<td>STRATCOM-MD-250-Missile Defense Planner Course</td>
<td>This is a 3½ day course, with training provided by USSTRATCOM/JFCC-IMD. This course focuses on the operational-level aspect of missile defense planning. Registration for the course is available via the Joint Knowledge Online (JKO) November, 2014 catalog. Training is provided by USSTRATCOM/JFCC-IMD and focuses on the operational-level aspect of missile defense planning.</td>
</tr>
<tr>
<td>STRATCOM-MD-304-Missile Defense Executive Seminar</td>
<td>This is a 4 hour course, with training provided by USSTRATCOM/JFCC-IMD. This course focuses on the strategic and operational-level aspect of missile defense. Instruction is designed for executives who participate in or need to understand missile defense and is an expanded version of the two hour seminar.</td>
</tr>
</tbody>
</table>

Table 3. Air and Missile Defense Training for Intelligence Professionals; Recommended Courses: Advanced Curriculum.

Current Training Opportunities

The AMD community offers plenty of training opportunities; however, the access to training is not equivalent throughout every combatant command, so it is important to conduct extensive research. The U.S. Strategic Command (USSTRATCOM) Joint Functional Component Command for Integrated Missile Defense (JFCC-IMD) conducts Joint BMD training through a variety of venues, including online. The registration for courses is available via the Joint
Knowledge Online (JKO) website via https://jkodirect.jten.mil/. The JKO catalog, published November 2014, offers several web-based courses in air and missile defense operations and ballistic missile defense planning. The Foundry training program offers two courses specifically designed for intelligence professionals in AMD, including the Ballistic Missile Threat Immersion Course and the Ballistic Missile Intelligence Analysis Course. The Ballistic Missile Threat Immersion Course is provided by the Missile and Space Intelligence Center (MSIC) and the Ballistic Missile Intelligence Analysis Course is provided by the U.S. Army Space and Missile Defense Command (USAMDC).

**Final Thoughts**

In December 2014, the G2, 32D AAMDC hosted the first annual G2 AAMDC Intelligence Summit attended by various elements of the AMD intelligence community, to include the 263rd Army Air and Missile Defense Command (AAMDC), the 94th Army Air and Missiles Defense Command (AAMDC) and the 10th Army Air and Missile Defense Command (AAMDC). On the topic of training, participants concluded that the high-demand for “operationalized” intelligence requires a structured strategy for implementation. Air defense units remain in high states of readiness for rapid deployment and rely heavily on their intelligence teams to prepare them for combat; however, well over 95% of intelligence personnel arriving to an AAMDC Headquarters or ADA BDE or BN S2 Sections are serving with Air Defense units for the first time. The AMD community offers multiple courses but without proper research and planning, training can become redundant or ineffective. Therefore, the intelligence community is encouraged to utilize the AMD Training Roadmap to assist in guiding their skills.
References

32D Army Air and Missile Defense Command (AAMD). "AAMDC G2 Intelligence Summit 2014."

Bell, William F. "Have Adversary Missiles Become a Revolution in Military Affairs?" Air & Space

Defense Science Board. Terms of Reference - Defense Science Board Study on Defense
Strategies for Advanced Ballistic and Cruise Missile Threats. Study on Defense Strategies,


Department of Defense. "Joint Knowledge Online Catalog." Suffolk: Department of Defense,
November 2014.

Department of the Army. "Fires." ADRP 3-09, C1. Washington: Department of the Army,
February 8, 2013.

Department of the Army. "Foundry 2.0." July 2014 Catalog. Washington, DC: Department of the
Army, July 2014.

Department of the Army. "Intelligence." ADRP 2-0. Washington, DC: Department of the Army,
August 2012.

Department of the Army. "The Operations Process." ADRP 5-0. Washington: Department of the
Army, May 2012.

Department of the Army. "Unified Land Operations." ADRP 3-0. Washington: Department of the
Army, May 2012.


---


4 Department of Defense, Countering Air and Missile Threats. (Washington: Department of the Army 2012).


6 Department of Defense, Countering Air and Missile Threats. (Washington: Department of the Army 2012).


8 Department of the Army, *ADRP 5-0.* (Washington: Department of the Army 2012).
9 Ibid.
10 Department of the Army, ADRP 2-0. (Washington, DC: Department of the Army 2012).
11 Herold, Rebecca, Managing an Information Security and Privacy Awareness and Training Program. (Boca Raton: Taylor and Francis Group, LLC 2011) 148.