The Air Force's Misconception of Integrated Air and Missile Defense

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Counterair has been the bedrock of theater air operations and is a critical enabler to the continued success of the joint force for decades. According to DOD Joint Publication (JP) 3-01, *Countering Air and Missile Threats*, counterair integrates offensive and defensive operations to attain and maintain the desired degree of control of the air and protection by neutralizing or destroying enemy aircraft and missiles, both before and after launch.[1] However, in the last few years, "IAMD," or integrated air and missile defense, has crept into the lexicon of combatant command operation plans, theater area air defense plans, Air Force instructions, and even USAF doctrine, gradually replacing long established terms such as *air and missile defense* (AMD) and *defensive counterair* (DCA), and inventing new terms such as *IAMD operations* and *IAMD forces*. This terminology is incorrect, and conflating IAMD with or supplanting DCA and AMD could have negative consequences for not only the Air Force, but joint operations writ large.

The Counterair Framework

While often perceived as Air Force-centric, counterair is a joint mission using air and surface assets from all of the services. Counterair is unique because it holds the enemy at risk by dominating the airspace while protecting friendly forces from the effects of enemy air and missile threats. The purpose of offensive counterair (OCA) is to destroy, disrupt, or otherwise neutralize the adversary's air assets (including cruise missiles), ballistic missiles, missile launch platforms, and supporting command and control (C2) networks and structures that enable them—before or after launch—as close to the source as possible. The OCA mission consists of attack operations, the suppression of enemy air defenses (SEAD), fighter sweep, and fighter escort, with the aim of controlling the air and preventing enemy launches of air and missile capabilities. DCA is a protection mission with the objective of destroying or neutralizing the adversary's air and missile assets and their effects when attempting to penetrate friendly airspace. AMD is all active and passive defensive actions

taken against hostile air and ballistic missiles threats.[2] Fundamentally, the USAF conducts DCA with AMD assets.

The integration of OCA and DCA occurs within the air operations center (AOC) and is the responsibility of the joint force air component commander (JFACC), with the JFACC commanding OCA and the area air defense commander (AADC) commanding DCA.[3] Normally, the individual who is designated as the JFACC by the joint force commander will also be designated as the AADC and the airspace control authority, although doctrinally the JFAAC and AADC could be two separate individuals given certain conditions. The AADC's responsibilities are extensive, and the two most important are to establish the integrated air defense system (IADS) and develop the theater area air defense plan (AADP). The IADS is comprised of active and passive AMD capabilities—the two key pieces of DCA of all the services' capabilities available in the theater—and consists of sensors, weapons, intelligence systems, associated personnel, and the C2 systems that integrate them together. The AADP prescribes the integration of active and passive AMD measures and the required C2 to implement the IADS and puts the comprehensive approach to defend against enemy air and missile threats into an executable format. While OCA and DCA are the two elements that comprise counterair, they are not autonomous from each other. This simultaneous offensive and defensive capability provides a credible deterrent to any adversary.

What IAMD Is and What It Is Not

At the joint level, IAMD is an "approach" that is supposed to "synchronize" DCA and OCA attack operations with other missions outside of the counterair framework, specifically homeland defense, global missile defense (cross-geographic combatant command boundaries), global strike when the target is associated with an air or missile threat; and counter-rocket, artillery, and mortar (C-RAM).[4] IAMD is *not* synonymous with counterair, nor is it a mission or an operation. Both the 2012 and 2017 versions of JP 3-01, *Countering Air and Missile Threats*, clarified the separation, and the 2017 version included a diagram attempting to show the relationship between the counterair mission and the IAMD approach. (See figure)[5]

Joint IAMD (separate from Army and Navy IAMD efforts primarily focusing on netting together integrated fire control networks and elevated sensors to counter tactical indirect fires, low and slow unmanned aerial vehicles, and cruise and antiship missiles at the service-level) began as a joint integrating concept (JIC) published in 2004. The JIC envisioned a holistic approach to countering air and missile threats across six broad mission areas: common battlespace awareness and understanding, C2 and battle management, OCA attack operations, active air defense, passive air defense, and joint logistics. It was a concept to support an acquisition strategy to develop new technology and processes and integrate them together to "defend the Homeland and US national interests, protect the Joint force, and enable freedom of action by negating an adversary's ability to achieve adverse effects from their air and missile capabilities" in the 2015 timeframe.[6] Since the JIC was published, these have been narrowed down to OCA attack operations, active air defense, passive air defense, and command, control, communications, computers,

intelligence, and reconnaissance (C4ISR). Coincidentally, these four mission areas were also the operational elements of Joint Theater Missile Defense (JTMD) and included in the 1996 edition of JP 3-01.5, Doctrine for Joint Theater Missile Defense. JP 3-01.5 was retired as a standalone joint publication many years ago, but the four legacy operational elements of JTMD are sometimes referred to today as the "four pillars" of IAMD, although that term has never been included in joint doctrine.[7]

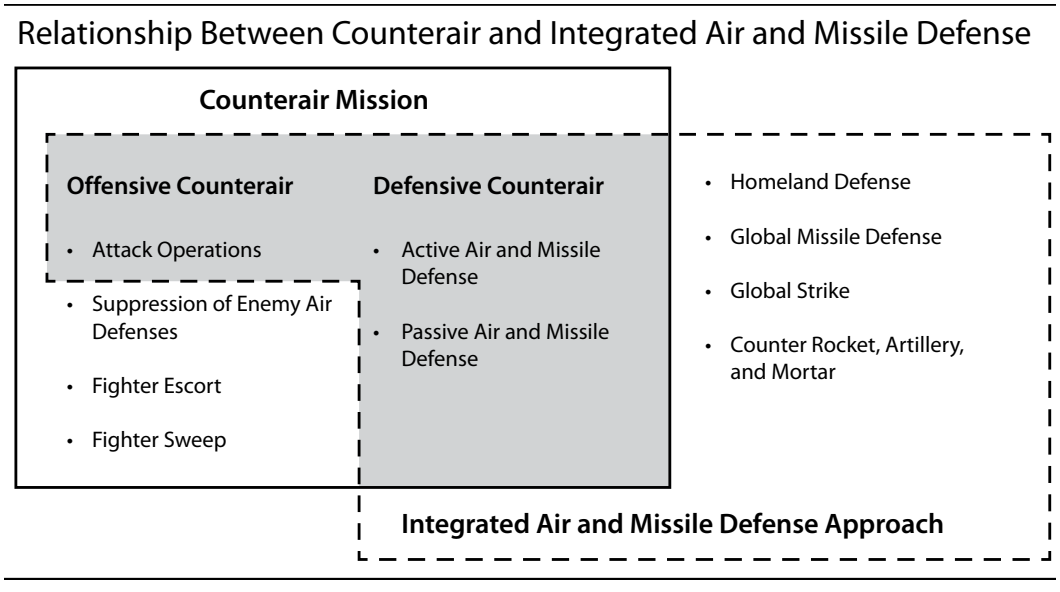

Figure. The relationship between counterair and Integrated Air and Missile Defense. JP 3-01, *Countering Air and Missile Threats*, 21 April 2017, I-3, http://www.dtic.mil/doctrine/new_pubs/jp3_01_20172104.pdf

In the following years, various concept and capabilities documents were developed outlining material requirements to bring joint IAMD to reality. Some of these solutions were a single integrated air picture (SIAP) that allowed battle managers to maintain high situational awareness and direct operations as needed; elevated sensors to overcome line-of-sight limitations, improve surveillance capabilities, and provide cued engagements; integrated fire control (IFC) so weapon systems can develop fire control solutions from nonorganic sensor sources and engage adversary assets remotely; and automated decision aids so commanders could make decisions at a faster rate and gain the advantage over the enemy by controlling the pace of the battle. Most of these were considered "critical" and "necessary" to achieve IAMD in the concept papers. However, none have come to fruition to the level envisioned, if at all.

SIAP has been a holy grail of visualization tools since the Tactical Air Control System/Tactical Air Defense system was launched in 1969.[8] Thirty years later, SIAP was a primary requirement in the joint theater air and missile defense vision—the forerunner to IAMD—to provide commanders with a view of the battlespace to improve coordination and decision making, as well as to permit everyone to understand the situation the same way.[9] However, SIAP proved too costly and technically challenging

and was cancelled by the secretary of defense in 2009. A lesser capability named the Joint Track Management Capability (JTMC) was pursued which greatly relied on the Army's Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) and the Navy's Cooperative Engagement Capability (CEC). However, like SIAP, JTMC never materialized, in part, due to the bleak future of JLENS after one of the aerostats broke free in 2016 and drifted over several states before deflating and falling to the ground.[10] IFC systems and automated decision aids are in development by the Army, as well as the Navy's development of IFC systems that are part of CEC, but are years away from fielding.[11]

The oft-cited 2014 chairman of the Joint Chiefs of Staff's *Joint Integrated Air and Missile Defense: Vision 2020* lays out even more "imperatives," such as incorporating, fusing, exploiting, and leveraging "every bit of information available regardless of source or classification;" and targeting the development, modernization, and fielding of IAMD capabilities to fill gaps while "stressing affordability and interoperability."[12] The problem with these broad strategic vision statements is the vagaries are never translated into action. Like many "vision" documents, IAMD *Vision 2020* contained no resourcing solutions, no direction as to whom is responsible for achieving the broad platitudes, or any strategy to accomplish the objectives. *Vision 2020* articulates the need to invest in new technology, develop the technology into integrated weapons systems, and field these systems that are "melded into a comprehensive joint and combined force capable of preventing an adversary from effectively employing any of its offensive air and missile weapons."[13] However, using the old acquisition adage of you can have it good, cheap, or fast, but not all three, this just can't be done without sacrificing other programs and impacting readiness. Finally, *Vision 2020* stresses IAMD is beyond solely DOD activities, and must include other government agencies, thus making IAMD a national-level approach but lacking a national-level strategy.[14]

Another problem confronting IAMD is the lack of ownership. The Joint Integrated Air and Missile Organization (JIAMDO) plans, coordinates, and oversees joint AMD requirements, operational concepts, and operational "architectures."[15] However, JIAMDO, which is under the Joint Staff Force Structure, Resources, and Assessment (J-8) directorate, is a coordinating authority at best and is not empowered to compel the services or other offices to agree on issues. United States Joint Forces Command (USJFCOM) was the executive agent for joint IAMD; however, this responsibility was not officially passed to another organization when USJFCOM was disestablished in 2011. United States Strategic Command requested and was granted the role as Air and Missile Defense Integrating Authority in 2008, but a few years later asked to be relieved of this responsibility, which was approved in 2015. Finally, technical authority for joint IAMD was passed from JIAMDO to the Missile Defense Agency (MDA) in 2013, but unfortunately the resources to do it were not. The MDA, whose funding has been reduced significantly in the past few years, has little capability to focus on threats other than ballistic missiles, which is only part of IAMD.

In the end, IAMD isn't really very integrated. There is no operational C2 structure for IAMD from C-RAM at the tactical level, through counterair at the theater level, and cross-area of responsibility (AOR) operations and defense of the homeland at the strategic level. Joint IAMD is not a whole—it's merely the sum of its disparate

parts and provides no basis for terms such as *IAMD forces* or *IAMD operations*. With no dedicated IAMD material solutions for integration on the immediate horizon, no singular agency acting as the integrator or executive agent, and no C2 structure that integrates the disparate missions, joint IAMD is rudderless and remains largely a collection of operational concepts, requirements documents, and planning guides. So why is IAMD in joint and Air Force doctrine?

Confusion between Counterair and Integrated Air and Missile Defense

In 2010, the secretary of the Air Force and the chief of staff of the Air Force (CSAF) endorsed a white paper on the relationship between counterair and IAMD.[16] The paper established IAMD as a subset of counterair, using as justification the statement "IAMD is a Joint Requirements Oversight Council (JROC) – approved subset of the counterair mission." The white paper was primarily focused on the need for better cross-combatant command AOR integration, development of better missile warning systems, and development of air-launched ballistic missile interceptor technology. It also instructed the Curtis E. LeMay Center for Doctrine Development and Education to incorporate IAMD into its service doctrine.

IAMD was subsequently incorporated into Air Force Doctrine Annex 3-01, *Counterair Operations*. It states that the IAMD approach is a subset of counterair and cautions that IAMD has the potential to split offensive and defensive activities and fracture unity of command and unity of effort. It therefore instructs "Airmen should always advocate the counterair framework vice IAMD when discussing countering air and missile threats, even in a joint context."[17] It clearly specifies that OCA attack operations are commanded by the JFACC and DCA operations are commanded by the AADC, with the JFACC responsible for the integration of offensive and defensive components of IAMD. However, it also goes further and explains OCA attack operations will be planned and executed within the larger offensive campaign against the adversary targets and conducted simultaneously with suppression of enemy air defenses (SEAD), fighter sweep, and fighter escort operations.

However, the original statement above implying that the JROC approved IAMD as a subset of the counterair mission is elusive and, so far, unverifiable whether it was specifically contained in a JROC memorandum or another JROC-approved document. Joint doctrine does not recognize IAMD as a subset of counterair, nor does any other service's doctrine, and the Air Force's position may be a loose interpretation of the 2008 *IAMD Operational Concept*. This concept was approved by the JROC and was heavily focused on OCA attack operations and DCA, and less on the tactical level and missions beyond the AOR. There are three reasons why it is not in the best interest of the Air Force to consider IAMD as a subset of counterair.

First, IAMD serves no operational purpose within the theater-level counterair construct. As mentioned earlier, OCA attack operations will be conducted and integrated simultaneously with the other elements of OCA as part of the JFACC's counterair campaign. Viewing IAMD apart from counterair misses the broader operational approach envisioned by the JFC, and the JFACC's staff will need to plan for that. Even though the AOC is the C2 center for theater counterair operations, it will

still be the JFACC's C2 center for certain missions beyond the theater such as global strike or cross-AOR operations. If there is an air or missile threat emanating from another AOR, the theater commander at risk will be designated the supported commander and that AOC will coordinate with the supporting AOCs to synchronize operations. If the cross-AOR threat is deemed significant, persistent, or more than just air and missile defense, a joint operations area crossing AOR boundaries may be established with clear C2 structure and supported/supporting relationships specified in the establishing directive. The IAMD approach does nothing at the theater level that isn't already being accomplished through the counterair framework.

Second, by putting a fence around IAMD at the theater level and saying IAMD is a subset of counterair, the Air Force has confused planners, operators, and those assigned to AOCs, and has led to doctrinally incorrect instructions within its own service. Air Force Instruction 13-01AOC (Volume 3), *Operational Procedures–Air Operations Center*, states IAMD is the responsibility of the defensive operations team, which has "oversight of the overall coordination of global, IAMD for the theater, and execution of theater operations."[18] Since the IAMD approach includes OCA attack operations, this gives the impression the defensive operations team, and the AADC, are responsible for OCA attack operations. This is incorrect. Doctrinally, the defensive operations team is responsible for AMD within the theater, not IAMD, and the AADC, through the defensive operations team, makes targeting recommendations to the JFACC for OCA attack. Courseware within the 505th Command and Control Wing, teaching AOC operations to personnel assigned to AOCs, teaches "(t)he IAMD Cell is responsible for the execution of IAMD within the Counterair framework."[19] This also implies the IAMD cell executes OCA attack operations. Finally, Air Force Tactics, Techniques, and Procedures (TTP) 3-1.AOC erroneously quotes JP 3-01 as stating "IAMD is the application of the counterair framework at the theater level." It is incorrect since IAMD does not include SEAD, fighter sweep, and fighter escort—the other parts of the counterair framework and not part of IAMD. The application of the counterair framework at the theater level is simply counterair.

In 2015, *Air & Space Power Journal* published an article suggesting, among other things, the "I" in IAMD is made possible by C2, and described how the Air Force major command commander, as the JFACC, relied on the AOCs in the theater for "IAMD operations."[20] That's technically correct, but it's factually wrong. The AOC does exercise C2 over the theater-level missions that are enveloped under the IAMD approach, but it's because they are counterair missions, not because they are part of the IAMD approach. AOCs were developed before the inception of IAMD to plan and execute the C2 of counterair operations within the theater and oversee AMD in the theater.[21] The "I" is implied within the Air Force and joint definition of AMD.

The 2012 version of JP 3-01 stated the geographic combatant commander is responsible for IAMD within the theater. This may have been misinterpreted or assumed to be a mission that the JFACC would have responsibility for, but no mention was made in the publication that this could be operationally delegated to any component commander. The 2017 edition of JP 3-01, just as Air Force doctrine, is very clear that the JFACC commands OCA, the AADC commands DCA, and the JFACC is responsible for the integration of the two. Since IAMD is not a mission or operation, JP 3-01 does not address the command or authority of IAMD, only that the integration

of the offensive and defensive counterair components of IAMD is the responsibility of the JFACC.[22]

Third, IAMD is too broad to plan for in the joint planning and execution community. Current CCMD operation plans (OPLANS) consistently use opaque and inaccurate terms such as *IAMD operations* and *IAMD forces*, usually in an IAMD appendix to the operations annex. However, the focus of these appendices is always on theater-level AMD. If OCA attack operations are discussed, it's for the purpose of pointing out the coordination required with the offensive operations team. C4ISR systems are also discussed, but these are systems that were developed for support of overall counterair operations, not IAMD. Due to the multiple missions that are under the broad concept of IAMD, the logistics planners who develop the time-phased force and deployment data, the TPFDD, will need more granularity on what types of forces should be planned for to support an OPLAN. *IAMD forces* and *IAMD operations* would encompass C-RAM, air defense artillery batteries, multiple launch rocket systems, squadrons of fighter aircraft, ships, and on and on—many of them multimission platforms. These are vague and obfuscated terms of reference and serve no purpose in an environment where specificity of types of capabilities and gaps are needed to develop plans that execute operations. This propagates inaccurate and confusing planning and execution documents with statements, such as "IAMD of the DAL," when discussing how assets on the defended asset list will be protected, "conduct IAMD with DCA in support of the JFC" when describing a line of effort to support the JFC's operational approach, and identify the theater AADC as the "supported component commander" when describing the air component's authority level.[23] Merely telling the JFC the joint force will conduct or is conducting IAMD operations does not convey a picture useful in supporting the JFC's operational approach.

The bottom line is AMD is already integrated at the theater level through the AOC. Putting an "I" in front of AMD serves no purpose in Air Force doctrine. More importantly, it has the potential to split offensive and defensive activities and fracture unity of command and unity of effort. AOC directors, deputy directors, and IAMD cell members will dutifully say IAMD is a subset of counterair in Air Force doctrine, but seldom if ever follow up with "but Airmen should always advocate the counterair framework vice IAMD when discussing countering air and missile threats."[24]

Moving Forward

IAMD is a valuable term for developing acquisition strategies for air and missile defense systems. "Integrated air and missile defense" is a clear, albeit bumper sticker, umbrella phrase that easily points out to even those unfamiliar with military operations what our objectives are when procuring weapons and C2 systems. But integration is a continuous process and one that we have been doing for many years and will continue to do as more and better technology and processes evolve. IAMD is not a condition that can be achieved in the sense that we achieve air superiority; nor can it be conducted like DCA or OCA are conducted.

It's in the best interest of the Air Force to stress the primacy of counterair. This needs to come from the top of the Air Force leadership. The following are some suggested actions the Air Force could take:

- Delete "theater-level IAMD" from Air Force doctrine since it's redundant to the current discussion of counterair contained in the Air Force Doctrine Annex 3-01 and confuses the separation of counterair and IAMD. Air Force doctrine should instead focus on how C2 of theater-level air and missile defense operations should be integrated with missions beyond the theater that impact the JFC and/or JFACC operations.
- Review Air Force instructions and TTP to ensure terminology is consistent with Air Force and joint doctrine. It is clear there is confusion in Air Force instructions between IAMD and AMD in the theater—that without the "I" in front, AMD somehow is not integrated—but AMD is much more accurate since it is specifically defined as all active and passive defensive actions taken against hostile air and ballistic missiles threats, instead of the broad definition of IAMD.[25]
- Review current Air Force training curriculum to ensure that personnel understand the integration of the two halves of counterair, the responsibilities of the JFACC and AADC, and how DCA is commanded and controlled. There are too many invented definitions and a consistent misunderstanding of what IAMD is, and its relationship to counterair.
- Develop TTPs for split operations when the JFAAC and AADC are not collocated. Hawaii's emergency management agency is developing preparedness plans for their islands in case of a North Korea missile attack due to the concern that so much key military infrastructure is based in their state that it could make them a target for hostilities.[26] A key component of passive AMD is the dispersal of assets. This dispersal could include CCMD and component leadership and headquarters, but we seldom exercise this level of continuity of operations if C2 centers have to transfer responsibilities to other commands and locations. It's a common assumption the JFAAC will always be dual-hatted as the AADC and operate at the theater AOC. However, with the range and proliferation of ballistic and cruise missiles, theater AOCs are vulnerable to attack which could negatively impact the ability to conduct JFAAC and AADC responsibilities at the same location. With the expanding missile capabilities of adversaries in the Pacific and Europe, JFACC responsibilities could relocate to the continental United States if the AOC cannot be defended, while the Army air and missile defense command commander or the Navy component commander could assume the duties of the AADC, and remain in theater.
- Finally, the CSAF should consider sending a "personal for" message to AOC directors and deputy directors emphasizing the primacy of the counterair framework as opposed to the IAMD approach. This message should emphasize to them that, in their course of duties at the AOC, they should always advocate the counterair framework versus IAMD when discussing countering air and

missile threats, or otherwise risk splitting offensive and defensive activities and fracture the unity of command and unity of effort.

If the Air Force believes that IAMD has the potential to fracture the unity of command of counterair, then it's a problem largely of its own making. Counterair is at the core of the USAF's existence, yet it has incrementally allowed IAMD to take the place of counterair in both lexicon and practice. *IAMD* is a good term to use for acquisition programs of systems that will provide the commander greater visualization tools and battle management aids to allow quicker decisions and quicker action, but the integration of air and missile defense has been a continual process and the reason that the Air Force developed AOCs. The USAF needs to be at the forefront of the intellectual discussion of counterair and IAMD, but it is not. At least it is not now. ✪

Notes

1. Joint Publication (JP) 3-01, *Countering Air and Missile Threats*, 21 April 2017, I-3, http://www.dtic.mil/doctrine/new_pubs/jp3_01_20172104.pdf.
2. Ibid. Pages I-4 through I-7 include the definitions for offensive counterair (OCA), defensive counterair (DCA), and air and missile defense (AMD).
3. Ibid., II–9.
4. Ibid., I–1.
5. Ibid., I–12.
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13. Ibid.
14. Ibid., 1, 3.
15. The Joint Staff, "Department of Defense Fiscal Year (FY) 2017 Request for Additional Appropriations," March 2017, 13, http://comptroller.defense.gov/Portals/45/Documents/defbudget/FY2017/budget_justification/pdfs/2017MarchAmended/03_RDT_and_E/TJS_FY17_RDTE_ABS.pdf.
16. The Office of the Secretary of the Air Force, and Chief of Staff, United States Air Force (USAF), "Integrating Air and Missile Defense: Incorporating Ballistic Missile Defense within the Counterair Framework," 3 June 2010.

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18. Air Force Instruction 13-1 AOC 3, *Operational Procedures—Air Operations Center (AOC),* 2 November 2011 (incorporating change 1, 18 May 2012), http://static.e-publishing.af.mil/production/1/af_a3_5/publication/afi13-1aocv3/afi13-1aocv3.pdf.

19. "AOC Initial Qualification Training Student Guide," 505th Training Squadron, Hurlburt Field, FL, 16.

20. Kenneth R. Dorner, Maj William B. Harman, and Maj Jason M. Teague, "Back to the Future," *Air & Space Power Journal* (*ASPJ*) 29, no. 1 (January–February 2015): 61, http://www.airuniversity.af.mil/Portals/10/ASPJ/journals/Volume-29_Issue-1/ASPJ-Jan-Feb-2015.pdf. This article attempts to explain the Pacific Air Forces "IAMD strategy," building on three vignettes from World War II, the Cold War, and post–Cold War, and focusing on DCA and OCA attack operations. However, what the authors posit as "IAMD"—whether in the historical examples or PACAF's current strategy—are merely the normal plans and operations that combatant commands and their components have been conducting for a long time, such as working with allies and partners, hardening bases, dispersing assets when needed, preparing defense plans, and integrating new service capabilities such as the AOC, Aegis ships, and Patriot defense system; into the overall command and control structure of their theater plans. In the Spring 2017 issue of *ASPJ*, an article was published stating "counter-AMD" is a construct "broken into two primary areas: OCA and DCA" (Maj Dillon R. Patterson, "Defeating the Threat of Small Unmanned Aerial Systems"). This is also incorrect since neither the Air Force or joint doctrine uses "counter-AMD," and OCA and DCA are obviously the missions of counterair. "Counter-AMD" would likely be considered suppression of enemy air defenses.

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22. JP 3-01, *Countering Air and Missile Threats*, II-9.

23. Personal observations from Chairman of the Joint Chiefs of Staff exercises.

24. USAF, *Annex 3-01 Counterair Operations.*

25. Ibid.

26. "Hawaii Rolling Out Preparedness Plan for North Korean Missile Attack," 21 July 2017, https://www.washingtonpost.com/news/morning-mix/wp/2017/07/21/hawaii-rolling-out-civil-defense-plan-for-north-korean-missile-attack/?utm_term=.5adb8f0e05bf.

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