The Point Defense Paradox: Sustaining Airpower in Contested Distributed Operations

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As global tensions escalate and U.S. military planners prepare for potential high-end conflict with China in the Indo-Pacific or Russia in Europe, the need for credible air and missile defense has become urgent. Wargames and threat assessments increasingly highlight the likelihood of early strikes on dispersed forward bases, where the survivability of the United States Air Force units may depend on their ability to defend austere locations against unmanned systems, loitering munitions, and precision missiles. In this evolving battlespace, air defense capabilities must adapt to counter emerging threats.

The Air Force faces a fundamental doctrinal contradiction: while pursuing distributed operations through Agile Combat Employment (ACE) to enhance survivability against peer competitors, it lacks the organic air and missile defense (AMD) capabilities needed to protect these dispersed forces.[1] This absence of organic protection creates a strategic mismatch. With the Department of the Air Force requesting $538 million for ACE in FY2025, including $400 million specifically for theater setting and mission-ready Airmen, the urgency of resolving this doctrinal gap has never been greater.[2]

This analysis explores how current doctrine fails to address this tension, advocates for an integrated joint force approach rather than relying solely on organic capabilities, and demonstrates how unresolved point defense challenges fundamentally undermine the ACE operational concept.

Historical Parallels: Lessons from Past Defensive Transformations

The current doctrinal crisis echoes historical moments when military forces faced revolutionary changes in threat environments. During World War II, the emergence of strategic bombing forced nations to develop integrated air defense systems that transcended traditional service boundaries. The Soviet Union's PVO Strany (National Air Defense Forces) exemplified successful adaptation, creating an independent service branch that unified radar networks, interceptor aircraft, and surface-to-air missiles under single command.[3] This institutional solution emerged

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[1] In doctrinal terms, "organic" AMD refers to capabilities that are permanently assigned to, controlled by, and operated within the Air Force, rather than relying on external joint partners like the Army or Navy.

[2] Luke A. Nicastro, *Defense Primer: Agile Combat Employment (ACE) Concept*, Congressional Research Service, June 24, 2024.

[3] Soviet Union. Strategic Air Defense Forces (PVO Strany).” *Digital National Security Archive (DNSA): Glossary Records (unstructured)*, 1901. Print.

from recognizing that effective air defense required capabilities beyond what any single service could provide, a lesson directly applicable to today's ACE challenge.

Similarly, the Cold War's Distant Early Warning (DEW) Line demonstrated both the necessity and complexity of distributed defense.[4] Stretching across 3,000 miles of Arctic territory, the DEW Line required unprecedented coordination between military services, civilian contractors, and allied nations. Its success depended not on technological superiority alone but on doctrinal frameworks that enabled autonomous operations at remote sites while maintaining integrated command structures.

The Ukraine conflict provides contemporary validation of these historical lessons. Ukrainian forces successfully implemented distributed operations with organic air defense through pre-delegated engagement authorities and standardized engagement criteria, demonstrating that doctrinal innovation can overcome technological limitations. However, this required the doctrinal flexibility that current USAF publications have not yet embraced.[5]

The Doctrinal Contradiction: Distribution Without Protection

Air Force Doctrine Note (AFDN) 1-21 establishes ACE through five core elements: posture, command and control, movement and maneuver, protection, and sustainment.[6] Each element theoretically enables distributed operations, yet the protection element exposes the fundamental contradiction. While AFDN 1-21 acknowledges that protection requires "integration of both passive and active defenses to counter threats in domains such as ground, sea, air, space, and cyberspace," the Air Force lacks organic capabilities to provide such comprehensive defense across multiple dispersed locations.[7]

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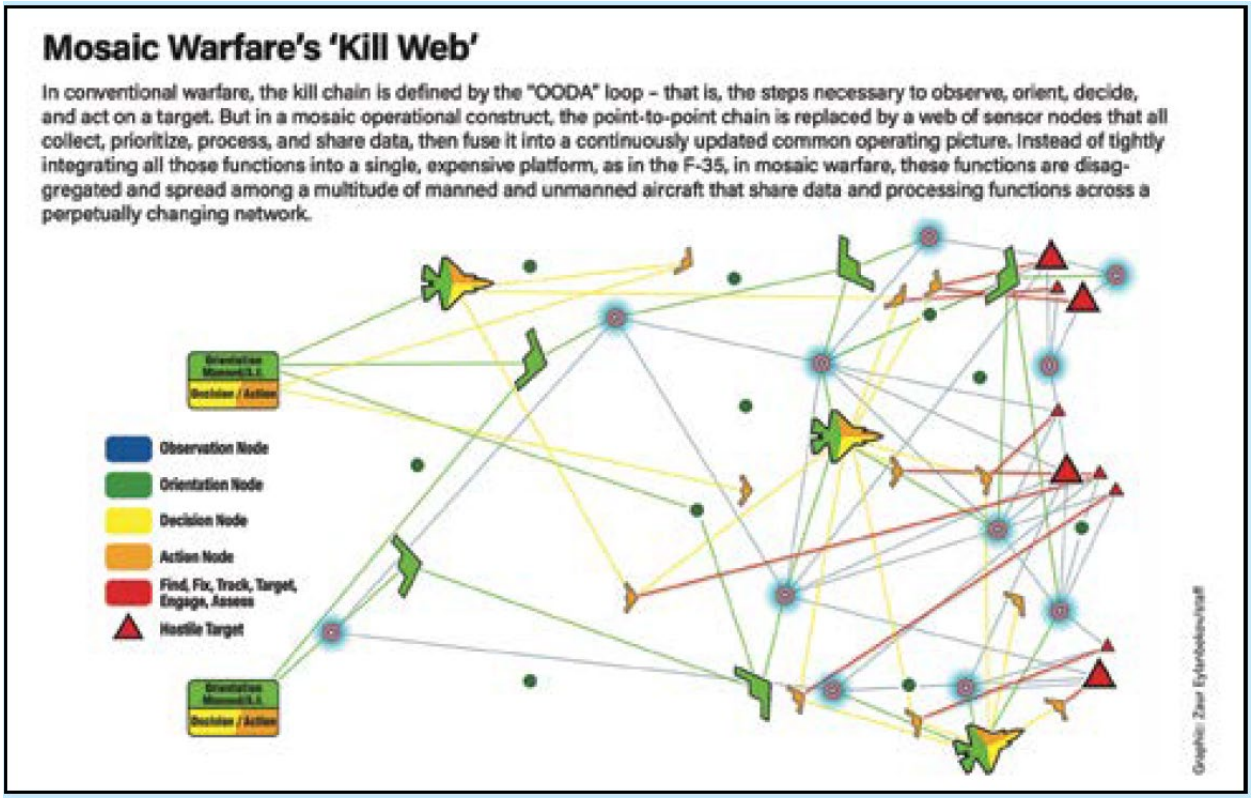
[4] James Louis Isemann, “To Detect, to Deter, to Defend: The Distant Early Warning (DEW) Line and Early Cold War Defense Policy, 1953–1957” (PhD diss., ProQuest Dissertations & Theses, 2009).
[5] United States Air Force, A Primer on Doctrine, October 8, 2020, https://www.doctrine.af.mil/.
[6] Air Force Doctrine Note1-21: Agile Combat Employment, August 23, 2022, https://www.doctrine.af.mil/.
[7] Ibid., 9.



(Graphic by Zaur Eylanbekov, courtesy of *Air & Space Magazine*)

The complexity of this protection challenge becomes even more apparent when examining the 'kill web' concept that underpins modern distributed warfare theory. As illustrated in the mosaic warfare doctrine,[8] the kill web envisions a perpetually changing network of observation, orientation, decision, and action nodes operating across multiple domains. In this construct, traditional linear kill chains are replaced by a web of sensor nodes that all collect, prioritize, process, and share data, then fuse it into a continuously updated common operating picture. Each node, whether an F-35 functioning as a sensor platform, a distributed ground, based radar, or a space-based ISR asset, represents both a capability enabler and a vulnerability requiring protection.

This networked approach fundamentally transforms the defensive calculus. Traditional point defense doctrine protects discrete, high-value installations with layered coverage, but the kill web's distributed architecture exponentially expands defensive requirements—from protecting a handful of major bases to securing dozens or hundreds of nodes with varying criticality. Current AMD doctrine, predicated on static defense of "limited areas," cannot scale to this challenge.[9]

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[8] Hagardt, Benjamin Buzz., 2024. "Artificial Intelligence and Agile Combat Employment," *Military Review* 104 (3): 108-119. https://www.proquest.com/trade-journals/artificial-intelligence-agile-combat-employment/docview/3062727647/se-2.

[9] Air Force Doctrine Publication 3-01: Counterair Operations, June 15, 2023.

The kill web thus embodies ACE's central paradox: the distributed operations that enhance survivability create defensive requirements that existing doctrine cannot meet. Without organic AMD capabilities tailored to this model, the Air Force risks creating a brittle network where the loss of undefended nodes cascades through the system.

This contradiction manifests starkly when examining ACE's "hub-and-spoke" operational model, where enduring locations serve as hubs for multiple contingency sites including civilian airports and austere airstrips.[10] Traditional point defense doctrine envisions "missions conducted for the protection of a limited area, normally in defense of friendly forces and installations."[11] This static, area-focused approach fundamentally conflicts with ACE's requirement for rapid movement between locations with, as AFDN 1-21 describes, "varying levels of capacity and support."[12]

The Pacific theater exemplifies this doctrinal tension. PACAF has been implementing ACE since 2014 to address Chinese missile threats to traditional strongholds like Kadena Air Base and Andersen Air Force Base. The 2022 removal of two F15C/D squadrons from Kadena demonstrated the Air Force's acknowledgment of base vulnerability to Chinese long-range missiles, yet doctrine provides no coherent framework for protecting distributed replacement operations. As AFDP 3-01 acknowledges, "the bulk, if not all, joint surface-to-air capabilities are employed by other services," creating dependence on systems the Air Force neither controls nor can guarantee will be available at ACE locations.

The Emerging Threat Challenge

Current doctrine, grounded in what the primer describes as "time-tested military principles and validated concepts," was developed primarily for traditional aircraft and ballistic missile threats.[13] However, emerging capabilities create vulnerabilities that existing frameworks cannot counter. Small unmanned aircraft systems penetrate traditional defenses through low radar signatures and swarming tactics, while loitering munitions provide adversaries with precision strike capabilities against dispersed locations. AFDP 3-01 acknowledges that "an emerging threat to airbase operations arises from the proliferation of low, slow, and small UAS" which "pose a unique challenge to conventional DCA capabilities," yet provides insufficient guidance for integrating counter, sUAS capabilities within ACE operations.[14]

Joint Integration Versus Operational Agility: Addressing the False Choice

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[10] Air Force Doctrine Note1-21: Agile Combat Employment, August 23, 2022.
[11] Air Force Doctrine Publication 3-01: Counterair Operations, June 15, 2023.
[12] Force Doctrine Note1-21: Agile Combat Employment, August 23, 2022.
[13] United States Air Force, A Primer on Doctrine, October 8, 2020, https://www.doctrine.af.mil/.
[14] Air Force Doctrine Publication 3-01: Counterair Operations, June 15, 2023, 13-14.

The Air Force's doctrinal challenge reflects a deeper tension between what the primer identifies as "integration" versus mere "synchronization."[15] While synchronization involves "deconfliction in time and space between different units," true integration requires "the arrangement of military forces and their actions to create a force that operates by engaging as a whole."[16] Current AMD doctrine achieves synchronization at best, coordinating fire control measures and airspace deconfliction, but fails to achieve the integration ACE demands.

ACE's movement and maneuver element emphasizes rapid repositioning to predetermined, dispersed locations and back to enduring bases, yet joint AMD systems require extensive setup time incompatible with this operational tempo. Army Patriot batteries need 30-60 minutes for emplacement and calibration, while THAAD systems require even longer. These timelines assume trained crews, prepared sites, and uncontested movement, luxuries unavailable during ACE operations at austere locations.[17]

The resource allocation challenge compounds this tension. Traditional air defense prioritizes protecting high-value assets through layered, overlapping coverage. ACE doctrine accepts risk by design, trading concentration for dispersion. With China possessing thousands of ballistic and cruise missiles capable of reaching targets throughout the Second Island Chain, the mathematics of comprehensive defense become impossible. As doctrine emphasizes achieving "the right force, not just equal shares of the force," the Air Force must acknowledge that no achievable quantity of joint AMD assets can provide adequate coverage for truly distributed operations.[18]

Henry Kissinger's strategic insight about defensive systems remains relevant: defensive capabilities must enhance rather than constrain operational flexibility.[19] Current doctrine fails this test by forcing ACE operations to conform to joint AMD limitations rather than adapting defensive employment to operational requirements. This creates a false choice between robust defense and operational agility, a choice that guarantees failure against peer competitors.

Command and Control in Degraded Environments: The Sustainment Challenge

The most critical doctrinal gap emerges in ACE's command and control element, which must function across what AFDN 1-21 acknowledges as potentially degraded communications environments. The doctrine emphasizes "redundant and resilient C2 methods" and alignment with Joint All Domain Command and Control (JADC2), yet provides no framework for autonomous AMD engagement authorities essential for distributed operations. [20]

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[15] United States Air Force, A Primer on Doctrine, October 8, 2020, https://www.doctrine.af.mil/.
[16] Ibid.
[17] Zoya Lynne Kidd, *Shared Leadership for Multi-Capable Airmen in an Agile Combat Employment* (PhD diss., ProQuest Dissertations & Theses, 2023).
[18] Air Force Doctrine Publication 3-01: Counterair Operations, June 15, 2023, 21-22.
[19] Henry Kissinger, Nuclear Weapons and Foreign Policy (New York: Harper, 1957), 200- 225.
[20] Air Force Doctrine Publication 3-01: Counterair Operations, June 15, 2023, 8.

During Cope North 2022, operations spanning "seven islands and ten airfields" demonstrated the practical impossibility of maintaining centralized AMD control across Pacific distances. [21] Each location required different defensive arrangements, from U.S. military installations to allied nation territories, however, no guidance exists for delegating engagement authorities or establishing autonomous defensive protocols.[22]

The sustainment element further complicates point defense integration. AFDN 1-21 prioritizes "aircraft sortie generation" while acknowledging requirements for base operating support including maintenance, logistics, and medical functions.[23] However, sustaining AMD systems at multiple dispersed locations exponentially increases logistical demands. A single Patriot battery requires specialized maintenance personnel, secure communications, and continuous resupply of interceptors, resources that strain even well, established bases.

The Northwest Field example illustrates operational reality. Described as "a truly austere airfield carved out of the jungle" with "minimal markings, minimal lighting, and no permanent aircraft or airfield control," Northwest Field represents the type of location ACE envisions for distributed operations.[24] As outlined in other sections, current doctrine does not provide guidance for establishing or sustaining AMD coverage at such sites.

Recent exercises illuminate this challenge. Exercise REFORPAC 2025, planned to involve nearly 300 aircraft across 25 locations, will test the Air Force's ability to sustain distributed operations.[25] Yet even this massive effort cannot demonstrate viable AMD coverage across all operating locations, exposing the fundamental mismatch between ACE's operational vision and defensive reality.

Operational-Level Implications: Beyond Tactical Solutions

The primer establishes that doctrine should address "synergy, not segregation," warning against "carving up the operational environment" in ways that hinder overall effectiveness.[26] Yet current point defense doctrine does precisely this, treating AMD as a tactical problem rather than recognizing its operational and strategic implications for the Pacific theater.

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[21] Ian D. Richardson, "Protecting ACE: Air Defense and Agile Combat Employment," *Joint Force Quarterly* 117 (2025): 51–57.
[22] Ibid.
[23] Air Force Doctrine Publication 3-01: Counterair Operations, June 15, 2023.
[24] Air Force Doctrine Note1-21: Agile Combat Employment, August 23, 2022.
[25] Pacific Air Forces Public Affairs. "REFORPAC 2025: High-Powered International Team Ready to Conduct Air Force's Largest Pacific Contingency-Response Exercise." Pacific Air Forces, July 8, 2025. https://www.pacaf.af.mil/News/Article-Display/Article/4209076/reforpac-2025-high-powered-international-team-ready-to-conduct-air-forces-largest-pacific-contingency-response-exercise.
[26] United States Air Force, A Primer on Doctrine, October 8, 2020, https://www.doctrine.af.mil/.

Modern conflicts demonstrate how point defense extends beyond military installations. In Ukraine, over 40% of energy infrastructure suffered systematic attack, revealing adversaries' recognition that civilian facilities enable military operations.[27] Pacific ACE operations depend entirely on civilian infrastructure, commercial airports, fuel supplies, and communications networks across allied nations from Palau to Japan. Current doctrine provides no framework for integrating civilian infrastructure defense into operational planning. This gap could be addressed through reference to Joint Publication 3-28 (Defense Support of Civil Authorities) or Joint Publication 3-07 (Stability Operations), which offer precedent for doctrinal inclusion.

The cost asymmetry of modern threats compounds these challenges. While interceptors cost millions per shot, adversaries deploy drones costing thousands and loitering munitions priced like automobiles. This economic equation becomes unsustainable when defending dozens of ACE locations across thousands of miles. Traditional attrition models assume defensive systems can be replenished, but Pacific distances and Chinese anti-access capabilities may prevent resupply of forward AMD sites.

The Pacific theater's unique geography creates additional considerations. When Chinese DF-21D and DF-26 missiles can range targets from mainland China to Guam (approximately 1,900 miles) and potentially Hawaii (3,800 miles), the defensive problem transcends tactical point defense.[28] Current doctrine provides no framework for theater, wide defensive prioritization or accepting calculated risks at some locations to ensure protection of others.

Critical Infrastructure Integration: The recent Point Defense Advisory represents progress but requires expansion beyond air base defense. Doctrine must establish frameworks for prioritizing defensive resources across military and civilian infrastructure, acknowledging that modern targeting makes this distinction operationally meaningless.

Authority and Responsibility: Bridging Service Doctrine in Pacific Operations

The most significant doctrinal revision required involves bridging service, specific doctrine to create coherent operational frameworks. Current Air Force doctrine assumes Army and Navy AMD capabilities will be available but provides no mechanisms for ensuring this availability aligns with ACE operational requirements.

AFDN 1-21 envisions ACE operations across multiple service areas of responsibility but provides no doctrine for coordinating AMD protection across service boundaries. Recent Pacific exercises demonstrate this challenge through operations spanning Navy, controlled waters, Army,

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[27] Iryna Nikolaieva and Wendy Zwijnenburg, *Risks and Impacts from Attacks on Energy Infrastructure in Ukraine*, Environment & Conflict Alert Ukraine (Utrecht, Netherlands: PAX, December 21, 2022).

[28] Cipperley, Ben. *In the Era of Great Power Competition, the US Needs to Step Up Its Game*. Diplomat (Rozelle, N.S.W.), 2018.

defended installations, Air Force, operated airfields, and sovereign allied territories. Each domain brings different authorities, capabilities, and limitations that current doctrine fails to integrate.

The trilateral nature of Pacific operations further complicates requirements. Cope North exercises involve U.S. Air Force, Royal Australian Air Force, and Japan Air Self, Defense Force units operating together, with observers from eight additional nations. Each participant brings different AMD capabilities and engagement authorities, yet doctrine provides no framework for integrated employment.

The Air Force Force Generation (AFFORGEN) model and Air Task Forces (ATFs) represent attempts to create more integrated, deployable units prepared for ACE operations.[29] However, these organizational innovations cannot overcome fundamental doctrinal gaps in AMD integration. ATFs may deploy as cohesive teams, but without organic defensive capabilities or guaranteed joint support, they remain vulnerable at dispersed locations.

Recommendations for Doctrinal Evolution

Resolving the contradiction between ACE and current AMD doctrine requires more than incremental reform. As the doctrinal primer notes, effective doctrine should be grounded in "critical analysis and the lessons of operations," not driven by rapidly shifting policies, budget battles, or the allure of emerging technologies.[30] Current point defense doctrine fails this standard by preserving service equities rather than confronting operational realities.

The Air Force must undertake a comprehensive doctrinal evolution to ensure ACE can be executed credibly in contested environments. First, the service needs to invest in mobile, rapidly deployable AMD systems tailored specifically for ACE. These organic capabilities—such as counter-UAS platforms, directed energy weapons, and electronic warfare systems—should align with Multi-Capable Airmen training and the small team employment model. Without such systems, the Air Force remains dependent on joint partners whose availability cannot match ACE's pace or geographic breadth.

Second, joint doctrine—particularly Air Force Doctrine Publication 3-01 and Joint Publication 3-01—must evolve from acknowledging joint dependencies to formalizing concrete integration mechanisms. This includes pre-coordinated support packages that specify which AMD assets are available for ACE missions, standardized request procedures operable even in degraded communications, and clearly defined triggers for AMD augmentation at contingency locations. Assuming joint support without binding coordination mechanisms constitutes doctrinal malpractice in the context of peer competition.

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[29] Ian D. Richardson, "Protecting ACE: Air Defense and Agile Combat Employment," *Joint Force Quarterly* 117 (2025): 51–57.
[30] United States Air Force, A Primer on Doctrine, October 8, 2020, https://www.doctrine.af.mil/.

Third, new frameworks must address the lack of distributed engagement authorities. While doctrine often states *what* to do, it falls short of specifying *how* to do it—particularly under distributed operational conditions. Building on lessons from Ukraine, where pre-delegated authorities have enabled agile responses, U.S. doctrine must empower tactical-level commanders with engagement authority, while maintaining operational-level oversight. Current centralized control models are incompatible with ACE's need for autonomous operations at austere and dispersed locations.

Fourth, the Air Force must replace static defense planning with dynamic, adaptive planning tools that adjust AMD coverage in real time based on shifting threats, mission priorities, and theater-wide asset availability. Rigid defense postures based on fixed geometries cannot withstand the maneuver-based, technologically enabled threats posed by peer adversaries. Leveraging machine learning and artificial intelligence, technologies already proven in commercial logistics, could revolutionize AMD responsiveness in support of ACE.

The Air Force must choose: build organic AMD capabilities or reform joint frameworks to guarantee support. The current assumption of joint availability, without structure or self-sufficiency, is unsustainable.

Historical precedent supports bold action. The very birth of the Air Force arose from recognizing that airpower required independent doctrine and institutional structure. The current ACE-AMD contradiction may similarly demand transformative thinking about how to defend distributed forces in a modern threat environment.

While initiatives such as the Pacific Deterrence Initiative and European Deterrence Initiative signal strategic recognition of ACE's importance, resourcing without reform only reinforces flawed concepts. Congressional oversight, such as the Senate Armed Services Committee's reporting requirement on ACE, offers a critical opportunity to confront and resolve these doctrinal contradictions.

Conclusion

The fundamental question—whether the Air Force should rely solely on organic AMD capabilities or focus on integrated joint approaches—presents a false dichotomy. The service requires both. Organic AMD provides a baseline defense that enables ACE operations to begin and persist, while robust joint integration ensures layered and resilient defense when available. Current doctrine fails by assuming joint support without building mechanisms to ensure it, and by neglecting the organic capabilities needed for operational autonomy.

The FY2025 $538 million ACE investment reflects institutional commitment, but without corresponding doctrinal modernization, that investment risks enabling an operationally hollow

concept.[31] As emerging threats grow and the tyranny of distance in the Pacific theater intensifies, the Air Force must move beyond marginal adjustments. It must embrace transformative change, developing capabilities, restructuring joint relationships, and designing adaptive, agile frameworks that make ACE defensible. Only then can point defense become a force-multiplier rather than a doctrinal liability.

[31] Luke A. Nicastro, *Defense Primer: Agile Combat Employment (ACE) Concept*, Congressional Research Service, June 24, 2024.