ARB Support to the JAM-GC

By MAJ Tom McCarthy

"We must think anew, act anew. We must disenthrall ourselves from the past and then we shall save our country."[1]
-Abraham Lincoln

In 2009, the United States released the Air-Sea Battle Concept to counter the rising anti-access/area denial (A2/AD) threat posed by potential global competitors.[2] Despite the joint and multi-domain approach to counter A2/AD put forth in the concept, in practice, it led to a predominantly Naval and Air Force solution. The maritime nature of the United States Pacific Command (PACOM) area of responsibility, the intuitive evolution of AirLand Battle to contend with a maritime power, and the U.S. Army's preoccupation with wars in Iraq and Afghanistan led to the almost complete exclusion of land forces from the concept. In 2015, the Department of Defense leadership recognized the risk assumed due to this self-imposed limitation, ordered a revision to the concept, and renamed it the Joint Concept for Access and Maneuver in the Global Commons (JAM-GC). This revision to Air-Sea Battle Concept provides an excellent opportunity for new and creative approaches to the A2/AD challenge that incorporate the broad range of capabilities of Army Aviation within the joint force.

Army Aviation attack/reconnaissance assets provide capabilities that enable the cross-domain synergy that is foundational to JAM-GC and allows the joint force commander to present the enemy with multiple dilemmas to effectively achieve operational and strategic objectives. To properly discuss Army Aviation's role in JAM-GC, the discussion is broken down into six subtopics.

1. The strategy adopted by the People's Republic of China (PRC) will be used for this analysis to clearly frame the problem in the context of a near-peer competitor that currently presents the most complex A2/AD challenge.
2. The hierarchy of concepts encompassed by the overarching Joint Operational Access Concept (JOAC) in order to provide doctrinal context for this discussion.
3. The capabilities of Army Aviation attack/reconnaissance assets will be explored to provide background from which to assess the feasibility of employment.
4. A capability analysis and historical case studies will demonstrate Army Aviation capabilities that can support the JAM-GC concept.
5. To test the robustness of this thesis, the most likely counterargument that Army Aviation would simply duplicate capabilities already provided by the United States Marine Corps (USMC) and Naval Aviation is examined.
6. Finally, in closing, I will offer recommendations to Joint and Army planners for Army Aviation participation as the JAM-GC is developed and refined.

Anti-Access / Area Denial

Anti-access/area denial is a multilayered strategy consisting of two distinct but complementary efforts with the goal of preventing the United States from achieving its operational and strategic objectives. The anti-access effort "refers to those actions and capabilities, usually long range, designed to prevent an opposing force from entering an operational area."[3] The area denial effort "refers to those actions and capabilities, usually of shorter range, designed not to keep an opposing force out, but to limit its freedom of action within the operational area."[4] A broad spectrum of potential American adversaries, from non-state actors to near-peer competitors, have adopted some form of this strategy.[5] The gamut of A2/AD threats around the globe prohibit a one size fits all answer but the conclusions and recommendations drawn from the PRC threat can be scaled, refined, or serve as a starting point for further analysis against the spectrum of potential adversaries.

Two key capabilities that the PRC has developed to achieve an anti-access effort are long range precision strike and counter space weapons. Medium and intermediate range ballistic missiles (MRBM/IRBM), land attack cruise missiles (LACM), and anti-ship cruise missiles (ASCM) provide the bulk of the PRCs long-range precision strike capability. Reference the map on the following page for a graphical depiction of ranges. Chinese submarines and fighter/strike aircraft can extend the range of

LACM/ASCMs out to an estimated 2,100 nautical miles (nm). [6]

The Chinese have developed counter space capabilities and have tested anti-satellite missiles and, potentially, an anti-satellite satellite.[7] These technologies threaten the American Global Positioning System (GPS) and other systems reliant on the GPS such as communications, beyond line of sight, and unmanned aircraft system (UAS) operations.

To achieve the area denial effort, the PRC has developed a robust integrated air and missile defense system (IADS); precision guided rockets, artillery, missiles, and mortars (G-RAMM); and a large fleet of fast attack missile boats. The IADS extends out to 300 nautical miles (nm) from the Chinese coast and consists of early warning systems, fighter aircraft, and several surface-to-air missile (SAM) systems.[8] The PRC air defense artillery systems span the spectrum from the upgraded S-400 system with an effective range out to 200 nm[9] to the QW-1 family of man portable air defense systems with ranges out to 5 kilometers (km).[10] The PRC's current fourth generation fighters have a combat radius up to 750 nm and in development stealthy fifth-generation fighters could extend that range out to 1,000 nm.[11] China's KJ-2000 and KJ-500 early warning aircraft provide a "detection range well beyond [China's] borders."[12]

The PRC currently fields over 1,200 short range ballistic missiles with ranges less than 1,000 km, multiple rocket launchers with ranges out to 220 km, and over 7,900 artillery pieces with varying degrees of precision munition capability.[13]

The PRC's fast attack boat fleet comprises approximately 86 vessels, most of which are the Houbei-class missile boat, supplemented by 20 of the new and larger Jiangdao-class corvettes.[14] The majority of fast attack missile boats and all of the Jiangdao-class corvettes armament include ASCMs and SAMs.[15]

Doctrine and Capabilities

The JOAC is the overarching concept for addressing operational access in the context of the future operating environment defined by the Capstone Concept for Joint Operations.[16] The concept addresses how the U.S. will achieve operational access, defined as "the ability to project military force into an operational area with sufficient freedom of action to accomplish the mission."[17] It is a warfighting concept that addresses opposed access against multi-domain A2/AD challenges. Fundamental to the JOAC is the requirement for a greater level of integration across services at lower echelons than the joint force has operated at in the past. This central idea is termed cross-domain synergy and defined as the "complementary vice merely additive employment of capabilities in different domains such that each enhances the effectiveness and compensates for the vulnerabilities of the others—to establish superiority in some combination of domains that will provide the freedom of action required by the mission."[18] Underneath this broad concept for how the joint force will achieve operational access are eleven operational access precepts. The following five precepts are most relevant to the analysis:

- **Consider a variety of basing options.**
- **Seize the initiative by deploying and operating on multiple, independent lines of operations (LOO).**
- **Exploit advantages in one or more domains to disrupt enemy A2/AD capabilities in others.**
- **Disrupt enemy reconnaissance and surveillance efforts while protecting friendly efforts.**
- **Create pockets or corridors of local domain superiority to penetrate the enemy's defenses and maintain them as required to accomplish the mission.**[19]

Nested within this overarching JOAC are supporting concepts that deal with more

specific facets of overcoming the broad spectrum of A2/AD challenges. The Joint Concept for Entry Operations and JAM-GC are examples of two of these nested concepts. This outline provides the doctrinal framework for the following analysis.

Army Aviation Attack/Reconnaissance Assets in the JAM-GC

The JOAC breaks down gaining and maintaining operational access into two inextricably linked tasks: the combat task of overcoming the enemies A2/AD capability through the employment of combat power and the logistical task of the movement and support of that combat power.[20] Basing is critical to the logistical task of supporting combat power in the JAM-GC concept. Against the Chinese A2/AD threat, large mature land bases are at risk and the distances from these established bases to the objective area would be prohibitive for helicopter operations. There are several sea basing options for the AH-64D/E that would enable the movement required to extend the operational reach of Army Aviation and provide the logistical support necessary to sustain combat operations. To conduct maintenance in support of long duration operations, an Apache unit would require the maintenance capabilities found on larger ships such as amphibious assault ships, aircraft carriers, and potentially the Navy's mobile landing platform ship. Army Aviation units have proofed this concept and successfully trained and operated from most of these platforms for short durations, participating in major maritime training exercises such as the Rim of the Pacific Exercise.[21] As the situation permits, Apaches can also use traditional forward land basing options.

To further extend the operational reach and station time of the Apache, the Army relies upon forward arming and refueling points (FARP). In the maritime domain, smaller ships such as cruisers and destroyer could serve as FARPs. This construct would allow the larger, more vulnerable ships to maintain standoff from threat weapon systems while the smaller, less vulnerable surface combatants provide FARPs closer to the operational area. Alternatively, the aircraft could use conventional land-based FARPs such as the forward area refueling equipment system delivered by CH-47s or established facilities at tactical assembly areas, forward operating bases, or captured airfields.

While conducting its combat tasks, Army Aviation is dependent upon the precepts of JOAC and the cross-domain synergy achieved through support from multiple capabilities within all the services. Army aviation operations will be reliant upon and integrated into joint suppression of enemy air defenses (JSEAD), counter early warning, electronic warfare/jamming, and counter air operations.

The limiting factor for Army Aviation operations is crossing the vast ocean distances to reach the PRC's territory. Since PRC anti-access weapons systems put the joint force at risk well outside the range of Army Aviation, creating initial pockets or corridors of access to get within the operational range of the AH-64 will be a joint effort. Army Aviation can support the joint force in defeating and disrupting PRC anti-access capability once limited access is established through the use of traditional attack, reconnaissance, and security in support of land forces conducting raids or interdiction attacks; intelligence, surveillance, and reconnaissance (ISR) in support of joint targeting and maneuver; and the destruction of early warning systems and mobile missile launchers.

A traditional use of Army Aviation would be conducting reconnaissance, security, and attack operations in support of Special Operations Forces (SOF) or conventional forces conducting land counter A2/AD operations. History has shown from World War II to the landings at Inchon that major amphibious operation will include Army forces alongside the USMC. Army Aviation may be the correct choice to provide support if Army forces are used ashore because of their habitual direct support relationship.

The long-range precision strike capability of the PRC is dependent upon accurate ISR to provide targeting data. The PRC's mobile missile launchers also add complexity to the joint force's targeting challenge. The AH-64D/E can conduct reconnaissance to acquire mobile launchers and early warning systems to provide targeting data for other platforms, destroy them with organic fires, or enable the joint force to bypass the threat. The AH-64D/E provides several unique capabilities distinct from fixed-wing aircraft. Their maneuverability and ability to fly nap-of-the-earth allow them to mask behind terrain and utilize cover and concealment increasing survivability and complicating detection. Their proximity to the ground and ability to hover enables them to observe under some forms of overhead cover and concealment and acquire targets and indicators that fixed wing aircraft would be unable to perform due to altitude and airspeed. The AH-64's fire control radar

and radio frequency interferometer can provide detailed ISR of the battlefield. The Apache also provides a different type of persistence in the objective area than other platforms. Based upon the threat, availability and security of holding areas and tactical assembly areas, and the availability of FARPs, helicopters may be able to provide greater persistence closer to the objective area. Another consideration for planners when trying to achieve cross-domain synergy is weaponeering. In a high-intensity conflict, precision munitions will be a precious commodity and should be reserved for targets that are difficult to close with. At varying levels of risk, the same levels of precision and target effects is achievable with Army Aviation assets. Using the right platform and the right munition against the right target will vastly improve combat power and effectiveness.

In the event the PRC degrades GPS satellites, the Apache can laser designate for organic weapons to destroy targets thereby mitigating some risk from the loss of satellite guidance. Planners should expect improbable UAS operations beyond line-of-sight (LOS) if space assets are degraded or the electromagnetic spectrum contested. In such circumstances, level of interoperability (LOI) 4* control from the Apache would extend the operational reach of UAS beyond LOS of the UAS ground control stations, significantly increasing their effectiveness.

The AH-64D/E provides capabilities for the detection and destruction of mobile launch and early warning systems that complement other platforms and methods. The cross-domain synergy achieved forces the enemy to either spread its resources and defend against multiple threats or assume risk in a given domain. As disruption and destruction challenges the enemy's focus, more joint force assets will be able to gain access to the operational area compounding the problem for the enemy.

Task Force Normandy and the opening shots of Operation Desert Storm is an excellent historical case study of AH-64s operating within a cross-domain framework against an A2/AD capability. Joint planners determined that the Apache's armament, radar-evading nap-of-the-earth flight profile, and ability

to confirm battle damage assessment provided the best option to destroy the Iraqi radar.[22] Teamed with Air Force CH-53s for navigation, Task Force Normandy Apaches, modified with external fuel tanks to achieve the required range of over 700 nautical miles, destroyed the radar systems to open an air corridor for coalition air forces to conduct strikes against the Iraqi command and control infrastructure.[23] The success of this mission enabled the coalition air campaign that devastated Iraqi forces. This vignette provides an excellent example of creative and successful cross-domain synergy to achieve an operational objective.

The general concepts for operations against PRC G-RAMM and IADS would be similar to that of countering mobile missile launchers and early warning radars. The additional capability that the Apache would provide the joint force against the PRC area denial threat is protection from the PRC's fast attack missile boats. The Apache has demonstrated success in acquiring and destroying fast attack boats and operating against their infrared and radar SAM systems.[24] The Apache's sensors, survivability systems, armament, and most importantly, maneuverability, make it an excellent platform for acquiring and destroying small fast attack missile boats at standoff ranges from U.S. Naval surface combatants. Again, in the vein of cross-domain synergy, assuming this mission with the Apache would free up other joint force platforms to conduct mission sets more appropriate to their respective strengths.

As with any military concept, it is important to understand the risk that planners assume when utilizing Army Aviation attack/reconnaissance assets in the JAM-GC concept. The most catastrophic risk to the mission is that Army or AH-64D/E stakeholders attempt to make the mission fit the Apache rather than select the correct platform for the mission. This reasoning is antithetical to cross-domain synergy and becomes more likely when constrained resources breed inter-service rivalry and the perceived or real requirements to justify expensive platforms. As discussed earlier, the Apache is one platform among many that provide complementary and supporting capabilities when utilized within a cross-domain synergy framework in a fluid operating environment against an evolving threat. When used in isolation or used in the wrong mission sets, the outcome can be catastrophic. The 2003 Battle of An Najaf during Operation Iraqi Freedom provides a glaring example of this. Poor planning, ISR, SEAD, and integration with joint enablers, led to mission failure and for a time cast the future of Army Aviation into doubt.[25]

The most catastrophic threat to the force under this concept is the isolation of Army AH-64D/Es tasked against the anti-access threat. Penetrations of the A2/AD defenses place assets at risk of operating beyond their support structure. If AH-64D/Es are isolated from their logistics support they will become not mission capable due to fuel, armament, and maintenance requirements. The Apache's survivability will also be at risk if isolated from the joint enablers that provide the cross-domain synergy.

Counterargument

The most obvious counterargument against utilizing Apaches in the JAM-GC concept is that Naval and USMC Aviation, particularly the AH-1Z Viper attack helicopter, already provide these capabilities. Naysayers would argue that

* LOI 4 - Control of UAS flight path and payloads

the decision to incorporate Apaches stems from an inter-service rivalry to be included in the Department of Defense's Pacific Pivot rather than from a valid operational need. However, the Apache provides many unique capabilities and has vastly different sensor, targeting, armament, performance, and survivability characteristics than the Viper. Second, one of the precepts of JOAC is the ability to operate along concurrent LOOs. Incorporating Apaches with the cross-domain synergy approach provides more combat power to the joint force and enables multiple LOOs across a larger area. In a resource-constrained environment, the aviation assets available to the joint force are finite and to underutilize any would cause the joint force to assume unnecessary risk.

Conclusion and Recommendations

The employment of Army Aviation attack/reconnaissance assets in the JAM-GC concept enables cross-domain synergy that greatly increases the combat power of the joint force against the A2/AD challenge posed by nations such as the PRC. New and creative thinking will provide the joint force with additional options and capabilities while at the same time adding complexity to the dilemmas faced by the enemy. This analysis provides examples, insights, and frameworks for the employment of Army Aviation attack/reconnaissance assets and its inclusion in the broad JAM-GC. These will need further analysis and refinement by operational planners to meet the demands of an evolving and wide-ranging threat and operating environment.

Two recommendations can be drawn from this analysis. First, joint planners should include United States Army Aviation attack/reconnaissance assets in the JAM-GC. This guidance will drive the doctrinal framework that will enable the Army to create new or amend existing mission essential, collective, and individual tasks in support of the concept. In turn, this will drive the training and resourcing of combat aviation brigades (CAB) regionally aligned with the PACOM. Army Aviation lacks the institutional experience associated with maritime operations and there will be inherent doctrinal, training, and materiel friction, some of which can only be resolved through experience and repetition. The Army must resource these CABs to conduct maritime operations training and their training cycles synchronized with naval units and exercises.

Second, Army Aviation attack/reconnaissance company and troop headquarters are not manned for independent operations. They rely heavily on the battalion/squadron's primary and special staff for planning long-duration operations. Army Aviation leadership should consider staffing the company and troop headquarters to provide this lower echelon with the organic capacity to operate independent from the parent headquarters as part of a joint team across a large operational area to better achieve cross-domain synergy.

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Acronym Reference

A2/AD - anti-access/area denial
ASB - aviation support battalion
ASCM - anti-ship cruise missile
CAB - combat aviation brigade
FARP - forward arming and refueling point
GPS - Global Positioning System
G-RAMM - guided rockets, artillery, missiles, and mortars
ISR - intelligence, surveillance, & reconnaissance
JAM-GC - Joint Concept for Access and Maneuver in the Global Commons
JOAC - Joint Operational Access Concept
JSEAD - joint suppression of enemy air defenses
LACM - land attack cruise missile
LOO - lines of operation
LOI - level of interoperability
LOS - line-of-sight
MRBM/IRBM - medium and intermediate range ballistic missiles
NM - nautical miles
PACOM - Pacific Command
PRC - People's Republic of China
SAM - surface-to-air missile
SOF - Special Operations Forces
UAS - unmanned aircraft system
USMC - United States Marine Corps