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MASTER OF MILITARY STUDIES

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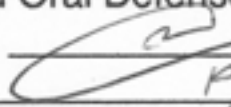
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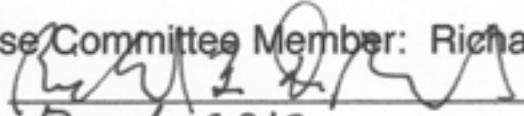
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Executive Summary

Title: Assessing Maritime Aspects of the AirSea Battle Concept

Author: Lieutenant Commander Adam D. Wieder, United States Navy

Thesis: The AirSea Battle Concept will not maintain the current maritime power balance in the Western Pacific against current and future People's Republic of China (PRC) anti-access / area-denial (A2/AD) capabilities employed in a war of attrition strategic framework.

Discussion:

With the release of the Department of Defense (DoD) strategic guidance, the U.S. officially declared its turn to the Asia-Pacific. The DoD intends to use the AirSea Battle Concept—under the umbrella of Joint Operational Access Concept—to deter and ultimately defeat growing PRC A2/AD capabilities. AirSea Battle proposes a rollback of PRC geo-strategic advantage within the First Island Chain followed by a prolonged campaign to attrit PRC capabilities.

The PRC strategy reflects its foundations in Sunzi and Mao Tse-tung, calling for a strategic defensive and prolonged campaign that will shift the power balance. This will lead to a decisive counter offensive. The types of A2/AD capabilities developed in the PRC buildup (i.e. anti-ship ballistic missiles, advanced anti-ship cruise missiles) directly support this strategy.

When viewed against the PRC strategy, AirSea Battle presents several faulty assumptions and does not address some specific U.S. and allied maritime weaknesses. Furthermore, Joint Operational Access Concept and AirSea Battle fail to address the potential interactions as part of a whole-of-government approach required to stop PRC aggression.

Conclusion:

Planners working on AirSea Battle Concept must reassess PRC strategy, refresh the planning assumptions, and reevaluate the proposed ways and means for gaining operational access under the threat of PRC A2/AD. The recently formed AirSea Battle Office must face the challenge of turning the AirSea Battle Concept into a working strategy that utilizes realistic resources.

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Preface

My first exposure to the AirSea Battle Concept occurred while I worked on the planning staff at the U.S. SEVENTH Fleet. At first glance I sensed that AirSea Battle was not a complete concept, and required some further analysis. I chose to use time at Marine Corps University to further develop my own analysis of the concept in detail.

This paper focuses on the problems of AirSea Battle when compared to the People's Republic of China strategy available through published unclassified works. I fully understand work on the AirSea Battle Concept continues within the Department of Defense. However this paper addresses the overarching unclassified foundational concepts.

I hope the analysis provided in this paper sparks discussion and further study among the planners involved in the Joint Operational Access Concept and AirSea Battle Concept. To quote General Eisenhower, "Plans are nothing; planning is everything."¹ In that vane, may this work contribute to the planning process.

Acknowledgements

First and foremost, thank you to my family, who have endured the late hours working in the office to develop this paper. I would also like to thank my MMS Mentor, Dr. Adam C. Cobb for his help and guidance in shaping the content and arguments contained herein. Finally, I owe a debt of gratitude to my friends and fellow planners at the U.S. SEVENTH Fleet for your frank discussions and questioning attitudes that aided in developing my views on this topic. Thank you.

¹ Dwight D. Eisenhower, BrainyQuote.com, Xplore Inc, 2012. <http://www.brainyquote.com/quotes/quotes/d/dwightdei149111.html> (accessed March 22, 2012).

Introduction

The People's Republic of China (PRC) verges on becoming a global power that may soon rival the United States. In the last three years, the PRC has demonstrated an increasing aggressiveness throughout the Western Pacific region. Prominent incidents include the Chinese shadowing of a Philippine oil exploration ship in March 2011² and a row over a Chinese trawler captain arrested by the Japanese in the Senkakus in September 2010.³ The People's Liberation Army Navy (PLAN) is developing anti-access (A2) and area-denial (AD) capabilities meant to secure PRC interests around the Western Pacific against outside interference by the U.S. and its allies. In 2010 the Center for Strategic and Budgetary Assessments (CSBA) proposed an operational concept, called AirSea Battle Concept, to counter an A2/AD threat and "set the conditions at the operational level to sustain a stable, favorable conventional military balance throughout the Western Pacific region."⁴ In its development AirSea Battle centered on the assessment that in hostilities the PRC would conduct a rapid preemptive attack to knock back U.S. and allied forces in order to consolidate power in

2 Two Chinese patrol vessels shadowed a Philippine oil exploration ship within the Spratly Islands and ordered the ship to leave the area. At the time of the incident the Philippine ship was sailing within Philippine claimed territorial waters. Joyce Pangco Panares, "Manila Protests, Beijing Defends, Spratlys Incident," *Manila Standard Today*, March 5, 2011, <http://www.manilastandardtoday.com/insideNews.htm?f=2011/march/5/news1.isx&d=2011/march/5> (accessed December 16, 2011).

3 On September 7, 2010 a Chinese fishing trawler intentionally rammed two Japanese Coast Guard vessels operating in territorial waters near the Senkakus/Daioyu Islands. The trawler captain was detained and arrested, but later released under political pressure from Beijing. Sourabh Gupta, "China-Japan Trawler Incident: Reviewing the Dispute Over Senkaku/Daioyu Waters," *East Asia Forum*, December 6, 2010, <http://www.eastasiaforum.org/2010/12/06/china-japan-trawler-incident-review-of-legalities-understandings-and-practices-in-disputed-senkakudaioyu-waters/> (accessed December 16, 2011).

4 Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), xi.

a strategic defense. This bodes the question, is there an alternative assessment and would that significantly change the AirSea Battle Concept? Recent writings and speeches from PRC and PLA officials indicate that the PRC may conduct attrition warfare, potentially absorbing initial strikes, to wear down U.S. and allied forces in preparation for a decisive counterattack. The AirSea Battle Concept will not maintain the current maritime power balance in the Western Pacific against current and future PRC A2/AD capabilities employed in a war of attrition strategic framework. This study seeks to evaluate AirSea Battle as applied against PRC A2/AD capabilities in light of certain Chinese strategic texts, and gain insight for revising the Air Sea Battle concept to counter the most likely Chinese strategy in order to provide a solid foundation for future operational planning in the Western Pacific.

Definitions

Joint doctrine normally provides a common lexicon to ensure consistency in communication. However, several relevant terms are either not in the joint dictionary or have slightly varying definitions depending on the source. For clarity, below are key terms with a corresponding definitions as they will be used in this paper:

Anti-Access (A2) - Actions, both political and operational, to prevent forces from deploying to the theater, limit positions within theater for effective operations, or impel forces to operate farther from the locus of conflict than desired.⁵ In general and in comparison to area-denial actions, anti-access refers to measures that are longer in range. According to the Joint Operational Access Concept, operational anti-access

⁵ Adapted from Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 6; and Roger Cliff and others, *Entering the Dragon's Lair: The Implications of Chinese Antiaccess Strategies*, (Santa Monica, CA: Rand, 2007), iii.

actions “tend to target forces approaching by air and sea predominately, but also can target the cyber, space and other forces that support them.”⁶

Area-Denial (AD) - Actions and capabilities to prevent forces successfully deployed from effectively conducting operations within the theater, thus limiting freedom of action.⁷ Area-denial targets forces in all domains—air, sea, land, cyber, space, etc.⁸

Concept - A verbal or graphic statement, in a broad outline, that allows for consideration of forces and capabilities beyond current program of record assets.⁹ This paper discusses two specific concepts, the Joint Operational Access Concept and the AirSea Battle Concept. Joint Operational Access and AirSea Battle Concepts propose a vision for joint actions and capabilities that assist in shaping the development of doctrinally founded operational plans, acquisitions and programs of record, and tactics, techniques and procedures (TTPs).

Operational Access - The ability to project military force into an operational area with sufficient freedom of action to accomplish the mission.¹⁰ Regarding the Western

⁶ U.S. Department of Defense, *Joint Operational Access Concept* (Arlington, VA: Department of Defense, January 17, 2012), 6, http://www.defense.gov/pubs/pdfs/JOAC_Jan%202012_Signed.pdf (accessed January 20, 2012).

⁷ Adapted from Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 6; and U.S. Department of Defense, *Joint Operational Access Concept* (Arlington, VA: Department of Defense, January 17, 2012), 6, http://www.defense.gov/pubs/pdfs/JOAC_Jan%202012_Signed.pdf (accessed January 20, 2012).

⁸ U.S. Department of Defense, *Joint Operational Access Concept* (Arlington, VA: Department of Defense, January 17, 2012), 6, http://www.defense.gov/pubs/pdfs/JOAC_Jan%202012_Signed.pdf (accessed January 20, 2012).

⁹ Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), 49.

¹⁰ U.S. Department of Defense, *Joint Operational Access Concept* (Arlington, VA: Department of Defense, January 17, 2012), 6, http://www.defense.gov/pubs/pdfs/JOAC_Jan%202012_Signed.pdf (accessed January 20, 2012).

Pacific, the U.S. must counter PRC A2/AD actions and capabilities to maintain operational access within the First Island Chain. Operational access, as provided by the joint force, does not stand alone, but rather serves the broader strategic goal of *assured access*, “the unhindered national use of the global commons and select sovereign territory, waters, airspace and cyberspace.”¹¹

First and Second Island Chains are two prominent island chains that provide notional subdivisions of the Western Pacific region. Both island chains factor into

strategic and

operational

considerations for the

PRC, U.S., Japan,

and other regional

nations. Figure 1

depicts the generally

accepted

interpretations of the

First and Second

Island Chains. Jiang

Hong and Wei

Yuejiang offer an

alternative Chinese perception that extends the First Island Chain out to Diego Garcia.



Figure 1: First & Second Island Chains

Source: Created with use of Google, Google Maps, <http://maps.google.com>, and information from Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 51.

¹¹ U.S. Department of Defense, *Joint Operational Access Concept* (Arlington, VA: Department of Defense, January 17, 2012), i, http://www.defense.gov/pubs/pdfs/JOAC_Jan%202012_Signed.pdf (accessed January 20, 2012).

As Dr. Yoshihara states, the fact that the PRC chooses an island commonly used by U.S. logistic and strategic forces strongly intimates PRC's fear of encirclement.¹² Regardless of interpretation the First Island Chain encompasses all the waters surrounding Mainland China, including the Yellow Sea, East China Sea (ECS) and South China Sea (SCS).

U.S. Strategy

On January 5, 2012, Secretary of Defense Leon Panetta signed a strategic guidance document for the Department of Defense (DoD). In his cover letter the SecDef indicated that the Joint Force of the future “will have global presence emphasizing the Asia-Pacific and the Middle East.”¹³ With this emphasis he stressed a need to “recalibrate... capabilities and make selective additional investments to succeed” in ten primary mission areas.¹⁴ According to the document, the U.S. will continue to be able to deter and defeat aggression, project power despite anti-access/area denial challenges, and operate effectively in cyberspace and space. These concepts deserve specific consideration in this paper in light of the subordinate concepts of Joint Operational Access Concept and AirSea Battle Concept.¹⁵

Although the PRC is not specifically mentioned within the Joint Operational Access Concept, when taken with the strategic guidance signed days before, the ultimate objective is a concept that provides a working solution to the challenge of PRC

¹² Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 51.

¹³ U.S. Department of Defense, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* (Arlington, VA: Department of Defense, January 5, 2012), cover letter.

¹⁴ DoD, *Priorities for 21st Century Defense*, 4.

¹⁵ DoD, *Priorities for 21st Century Defense*, 4-5.

A2/AD capabilities. Near-term PRC technological improvements in air, sea, space and cyber will nullify the U.S. technological advantage demonstrated in the “shock and awe” approaches so successful in U.S. post-Cold War conflicts. The Joint Operational Access Concept presents a larger framework concept centered on an idea of “*cross-domain synergy*—the complementary vice merely additive employment of capabilities...—to establish superiority in some combination of domains that will provide the freedom of action required by the mission.”¹⁶ This concept with its subordinate concepts, such as AirSea Battle, aim to forestall the shrinking technological and tactical advantages enjoyed by practiced and battle-tested U.S. forces. The Department of the Navy and Department of the Air Force propose to gain the required operational access through the subordinate AirSea Battle Concept.

AirSea Battle

Written before the Joint Operational Access Concept, the AirSea Battle Concept began with an eye toward the Western Pacific, and offered a “concept designed to maintain a stable military balance in the WPTO [Western Pacific Theater of Operations], one that offsets the PLA’s rapidly improving A2/AD capabilities.”¹⁷ The Navy and Air Force will continue to refine AirSea Battle as an operational level concept nested under the strategic guidance and Joint Operational Access Concept. AirSea Battle seeks to provide a combatant commander (i.e. Commander, U.S. Pacific Command) the capabilities to deter, or if necessary, defeat an adversary employing sophisticated A2/

¹⁶ U.S. Department of Defense, *Joint Operational Access Concept* (Arlington, VA: Department of Defense, January 17, 2012), ii, http://www.defense.gov/pubs/pdfs/JOAC_Jan%202012_Signed.pdf (accessed January 20, 2012).

¹⁷ Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), ix.

AD capabilities by increasing interoperability between the naval and air forces through operational, organizational, technological, and other means.¹⁸

As with any planning effort, AirSea Battle uses planning factors and assumptions to frame the problem presented by PRC A2/AD capabilities. Planners must later validate these factors and assumptions by either a greater understanding of the adversary or the environment. The planning assumptions largely follow contemporary assessments of PRC strategy and political-military discussions with regional U.S. allies. For example, Japan's cooperation with U.S. forces to actively monitor PLA forces signal deeper agreements of support in a conflict. Likewise, Australia's recent decision to base U.S. Marines indicates similar dedication to active support of U.S. forces. However, several other assumptions bear further consideration. First, AirSea Battle assumes that "[t]he United States will not initiate hostilities, and thus China would initially gain the strategic and operational initiative."¹⁹ In later discussion of PRC strategy consider the possibility that China will not overtly initiate hostilities. Next, AirSea Battle assumes "[n]either US nor Chinese territory will be accorded sanctuary status."²⁰ Operationally, this means that PRC Mainland strikes (MLS) will be authorized upon initiation of hostilities. Consider the implications of MLS by U.S. forces in light of the PRC's use of the *three warfares*

¹⁸ U.S. Department of Defense, *Joint Operational Access Concept* (Arlington, VA: Department of Defense, January 17, 2012), 4, http://www.defense.gov/pubs/pdfs/JOAC_Jan%202012_Signed.pdf (accessed January 20, 2012).

¹⁹ Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), 50.

²⁰ CSBA, *AirSea Battle*, 51.

concept,²¹ particularly media warfare and legal warfare, in the international community. Lastly, AirSea Battle assumes “[a] prolonged war would favor the United States.”²² Again, in later discussion of PRC strategy consider the strategic advantages to a prolonged war, which side would benefit? Nevertheless, AirSea Battle uses these assumptions to frame the problems for its two stage operational concept.

The operational design of the AirSea Battle centers on deterring and ultimately defeating the PLA center of gravity, its A2/AD battle networks. The conventional warfare-based concept features two stages, each with four lines of operation (LOOs). Although organized sequentially, the authors of the AirSea Battle do not envision a clean separation between stages. “Some follow-on operations would simply be continuations of those already ongoing...[and] certain second-stage operations may be conducted while first-stage operations are underway.”²³ This more fluid concept of lines of operation reflect a desire to engage the adversary in multiple domains in concert with the remaining elements of national power—DIME.

Actions within the first stage use an integrated approach to rollback the PRC geo-strategic advantage within the First Island Chain. The four LOOs detailed in chapter three of the AirSea Battle concept are as follows: withstanding the initial attack, executing a blinding campaign, executing a missile-suppression campaign, and seizing

²¹ The Chinese concept of “three warfares” (san zhong zhanfa—三种战法) refer specifically to psychological warfare, media warfare, and legal warfare (or *lawfare*). Details in Annex B. Source: U.S. Department of Defense. *Military and Security Developments Involving the People's Republic of China*. (Arlington, VA: Department of Defense, 2011), 26.

²² Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), 51.

²³ CSBA, *AirSea Battle*, 53.

and sustaining the initiative.²⁴ According to AirSea Battle, the outbreak of hostilities will commence with the PLA flexing A2/AD capabilities in the form of ballistic missile and long-range air-launched missile strikes against key U.S. and allied facilities. The withstanding the initial attack LOO focuses on minimizing damage to bases and air assets in theater.²⁵ U.S. forces support critical alliances with active and passive integrated air and missile defense (IAMD) capabilities. Following the initial attack, tasks in the blinding campaign and the missile suppression campaign will work in tandem to deny PRC intelligence, surveillance and reconnaissance (ISR), destroy PLA command and control (C2) through the use of kinetic and non-kinetic attacks across multiple domains (i.e. air, sea, land, space and cyber).²⁶ AirSea Battle assesses PLA ISR as a critical vulnerability essential to concept success.²⁷ The final LOO, seizing and sustaining the initiative, concentrates actions across the maritime warfighting functions of Air, Strike, Anti-Surface Warfare (ASUW), Anti-Submarine Warfare (ASW) and ISR, and regains the initiative in the air, sea, space and cyber domains. AirSea Battle's evolutionary approach leverages U.S. deep-striking capability to create and exploit weaknesses in the PRC A2/AD. Meanwhile, ASW and ASUW actions attrit PLA A2/AD threats to deny PLAN surface forces access to the ECS and SCS, and to allow U.S. and allied operational access within the First Island Chain. On the whole, the first stage of AirSea Battle describes an evolutionary step in the "shock and awe" force-on-force

²⁴ Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), 53.

²⁵ CSBA, *AirSea Battle*, 55.

²⁶ CSBA, *AirSea Battle*, 64.

²⁷ CSBA, *AirSea Battle*, 56.

approach that is still heavily reliant on air and naval power to include “sustained standoff and penetrating strikes.”²⁸ These LOOs also require significant time and effort—a prolonged campaign—as well as weapons and tactics²⁹ not currently in use, to set conditions for follow-on multidimensional operations.

Second stage actions focus on sustaining a prolonged campaign both within the theater and beyond. Because of the buildup and sustainment required, AirSea Battle structures the stages such that several actions of second-stage LOOs may begin in the first stage, however their priority would increase during this stage.³⁰ The four LOOs in stage two are executing a protracted campaign, ramping up industrial production, conducting “distant blockade” operations, and sustaining operational logistics.³¹ At this point in AirSea Battle the U.S. continues building combat power in theater through deployments and coalition building. Strikes to seize the initiative described in the first stage continue as required. However, AirSea Battle authors recognize the limited U.S. capacity in precision guided and other defensive munitions. They indicate that the “US defense industrial base would undertake surge operations to replace expended

²⁸ Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), 68.

²⁹ The ASW campaign will require a sub-launched mining capability not currently in U.S. inventory. The ASUW campaign will require a stand-off air-launched Anti-Ship Cruise Missile (ASCM) to replace the AGM-84 Harpoon currently in U.S. inventory. AirSea Battle also proposes the development of tactics for USAF ASUW ‘hunter-killer’ groups. Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), 71.

³⁰ CSBA, *AirSea Battle*, 74.

³¹ CSBA, *AirSea Battle*, 53.

ordnance.”³² A prolonged campaign with an emphasis on industrial production of war materials puts the U.S. industrial base in direct competition with the PRC industrial base. Success in this sort of competition depends on resources as well as the political and economic will of the countries involved. The third LOO, “distant blockade” operations, positions U.S. and allied forces along trade routes outside the First Island Chain (e.g. the Straits of Malacca, Indian Ocean). These forces aim to disrupt or severely restrict the flow of PRC trade and resources, crippling the PRC industrial capacity. The success of a distant blockade may be the only pathway for the U.S. to compete with the PRC industrial capacity. Simultaneously, the U.S. must ensure its own sustainment capabilities through operational logistics. Even if U.S. and allied forces succeed in degrading PRC A2/AD capabilities, the PRC will maintain a geographic advantage over the extended lines of communication required by U.S. forces.

Following the operational concept discussion the AirSea Battle authors from Center for Strategic and Budgetary Assessments provide twenty-one suggestions on “how to close the gap between programmed capabilities and AirSea Battle operational requirements.”³³ As seen in Annex A, AirSea Battle organizes the suggestions into three broad categories, operational, organizational and technological/material. There are several insightful suggestions that require additional study and seek to find present-day or near-term fiscally responsible solutions to achieve AirSea Battle effectiveness. However, portions of the list of suggestions read like—pardon the pun—a Chinese menu of programs and projects within the Navy and Air Force that are seeking funding.

³² Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), 74.

³³ CSBA, *AirSea Battle*, 81.

Nevertheless, the Department of Defense is advancing the AirSea Battle concept with the formation of an Air-Sea Battle Office (ASBO) that “is charged with gaining familiarity with a vast number of capabilities and potential responses already available in the military, and matching them with threats.”³⁴ In today’s political environment there may be resistance to linking the current version of AirSea Battle with a specific adversary. However, the SecDef’s strategic guidance places and emphasis on the A2/AD threat in the Asia-Pacific, and the Joint Operational Access Concept with the support of AirSea Battle, proposes a potential counter the A2/AD threat posed by PRC strategy.

PRC Strategy

As the PRC continues its rise on the global stage Chinese strategic actions have taken a decided turn toward the sea. In a July 2007 article for *Qiushi*, the journal of the Central Committee of the Communist Party of China, “PLA Navy commander Wu Shengli proclaims that China is an ‘oceanic nation,’ endowed by nature with a long coastline, many islands, and jurisdiction over a massive sea area. Admiral Wu calls on Chinese citizens to raise their collective consciousness of the seas, bringing about ‘the great revitalization of the Chinese nation.’”³⁵ There are two potential explanations for this maritime shift. First, the PRC adopted a mix of eastern and western strategic thought (i.e. Sunzi, Mao Tse-tung and Alfred T. Mahan). Supporting this explanation, James R. Holmes of the U.S. Naval War College notes “China has imported certain

³⁴ Christopher P. Cavas, “Air-Sea Battle Office a Nexus of Networking,” *Defense News*, November 9, 2011, <http://www.defensenews.com/story.php?c=AIR&s=TOP&i=8201708> (accessed December 17, 2011).

³⁵ Wu Shengli and Hu Yanlin, “Building a Powerful People’s Navy that Meets the Requirements of the Historical Mission for Our Army,” *Qiushi* 14, (July 16, 2007), FBIS-CPP20070716710027, quoted in Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China’s Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 18.

Mahanian ideas that fit China's unique needs and circumstances, and that it has fused these ideas into its overall strategy.”³⁶ A second explanation poses that a natural expansion for resources drove the PRC into building a stronger maritime posture. A previous paper argues that “China bases its strategy on the practical needs of a great nation undergoing a ‘peaceful development’ supported by concepts from the Chinese military classics.”³⁷ Here ‘peaceful development’ refers to the PRC’s term for their rise to global prominence. Recent PRC maritime actions and activities may support a Mahanian viewpoint. However, viewing the PRC’s maritime actions and activities considering their economic needs, resource requirements, contemporary strategic writings and historical references, supports the second, more practical, argument.

As the PRC increases global influence through modernization and economic growth, their strategy focuses on protecting its flow of commerce and resources. In *China’s National Defense in 2010*, the PRC inextricably ties economic development with national defense to “realize the unified goal of building a prosperous country and a strong military.”³⁸ Economically, this means expanding its industrial capacity for both internal consumption and foreign trade. Using trade exports as an indicator, the PRC continues to expand its industrial base steadily increasing production of exportable goods ranging from ships, boats and electrical machinery to apparel and footwear.³⁹

³⁶ James R. Holmes, “What Makes China ‘Mahanian’?” *The Diplomat*, November 18, 2011, <http://the-diplomat.com/flashpoints-blog/2011/11/18/what-makes-china-mahanian/> (accessed January 18, 2012).

³⁷ Adam D. Wieder, “Chinese Strategy: A Turn to Mahan or a Practical Approach?” (elective paper, Marine Corps University, February 15, 2012), 1.

³⁸ Information Office of the State Council of the People’s Republic of China, *China’s National Defense in 2010* (Beijing, China: Information Office of the State Council, March 31, 2011), 3, http://www.china.org.cn/government/whitepaper/node_7114675.htm (accessed February 10, 2012).

³⁹ The US-China Business Council, *US-China Trade Statistics and China’s World Trade Statistics*, <https://www.uschina.org/statistics/tradetable.html> (accessed on January 22, 2012).

These pursuits result in an expanding need for resources. The PRC's sovereignty claims in the energy-rich South China Sea and East China Sea provide potential for future development. The PRC also seeks resources by diplomacy and investments in the Middle East, Africa and Latin America. According to estimates in a recent study by the Heritage Foundation, an American think-tank, China spent nearly half of its investments abroad on the Middle East, Africa and the Americas (U.S. not included).⁴⁰ Once secured the PRC must protect the movement of these resources along with other trade. PRC leaders see the freedom of movement for commerce within the First Island Chain as a matter of utmost importance, quite possibly critical to regime survival for the Chinese Communist Party.⁴¹ Altogether these factors provide the foundational need for a clear maritime strategy backed by strong naval power.

The core of PRC maritime security strategy rests within the Harmonious Oceans policy. The policy blends military and law enforcement operations with economic and environmental considerations "to maintain peace and sustainable development of the oceans."⁴² This policy dovetails with the national defense white paper, which calls for a modernized PLA to "safeguard national sovereignty, security and interests of national development."⁴³ Taken together, these documents illuminate the purpose behind the

⁴⁰ Heritage Foundation report quoted in *The Economist*, "The Chinese in Africa: Trying to Pull Together," *The Economist*, April 20, 2011, <http://www.economist.com/node/18586448> (accessed January 22, 2012).

⁴¹ Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 19-20.

⁴² Yang Mingjie, "Sailing on a Harmonious Sea: A Chinese Perspective," *China US Focus*, May 26, 2011, <http://www.chinausfocus.com/peace-security/sailing-on-a-harmonious-sea-a-chinese-perspective/> (accessed on January 20, 2012).

⁴³ Information Office of the State Council of the People's Republic of China, *China's National Defense in 2010* (Beijing, China: Information Office of the State Council, March 31, 2011), 6, http://www.china.org.cn/government/whitepaper/node_7114675.htm (accessed February 10, 2012).

rapid growth in PRC A2/AD capabilities, the specifics of which will be discussed later. Additionally, the defense white paper and Harmonious Oceans policy frame a hybrid strategy that engages the direct operational and tactical capabilities of the PLAN with the indirect methods PRCs other maritime security agencies—Maritime Safety Administration, China Customs, Chinese Coast Guard, China Marine Surveillance, and Fisheries Law Enforcement Command. This direct and indirect approach hearkens back to the theories of Sunzi and Mao Tse-tung.

China's 2010 National Defense white paper states, "China pursues a national defense policy which is defensive in nature."⁴⁴ However, in a pre-conflict environment current assessments of this and other Chinese strategic writings indicate that Mao Tse-tung's "strategic defensive" will form the foundation for PLA military plans at the operational and tactical level. Mao draws heavily from Sunzi, in the geo-spatial nature of warfare and that warfare is conducted from a position of relative weakness. The Chinese find this particularly relevant in a Western Pacific with significant U.S. strength and presence. Mao's writings also provide the genesis of modern PRC A2/AD tactics and the corresponding need for A2/AD capabilities. One distinct difference between Mao and Sunzi rest in the intended length of war. The "strategic defensive" advocates a prolonged war; "uphold the strategy of protracted war...[leading to] campaigns of quick decision."⁴⁵ The view of a prolonged strategy taken in concert with the geo-spatial

⁴⁴ Information Office of the State Council of the People's Republic of China, *China's National Defense in 2010* (Beijing, China: Information Office of the State Council, March 31, 2011), 5, http://www.china.org.cn/government/whitepaper/node_7114675.htm (accessed February 10, 2012).

⁴⁵ Mao Tse-tung, *Problems of Strategy in China's Revolutionary War*, Transcribed by Maoist Documentation Project, Marxist.org, 2004, http://www.marxists.org/reference/archive/mao/selected-works/volume-1/mswv1_12.htm (accessed January 22, 2012).

aspect of “strategic defensive” presents the First Island Chain as both a defensive and ultimately an offensive asset.

With the PRC’s maritime emphasis, Mao’s “strategic defensive” becomes “offshore active defense,” with key components being search and destroy the enemy, shift the power balance, change the strategic situation and ultimately conduct a strategic counter offensive.⁴⁶ Dr. Yoshihara states that, “[a] PLA that exploits the mainland’s vast strategic depth can compel enemy forces to enter the combat range of its weaponry, accepting battle on China’s political, geographic and military terms.”⁴⁷ In execution “offshore active defense” uses PLA A2/AD capabilities to seek out and attack enemy weaknesses with a combination of direct and indirect attacks bent on wearing down the adversary. True to Sunzi the PRC will attempt to shift the power balance in the region by breaking the alliances of the adversary. In a future U.S.-China conflict chief among those alliances would be Japan, South Korea and Australia. Once the adversary suffers attrition of forces and weakening of alliances the PRC would execute an acutely timed and decisive counter offensive. Mao called this a “campaign of quick decision.”⁴⁸ The end state leaves the PRC with naval power and sea control beyond the First Island Chain.

⁴⁶ Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China’s Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 25.

⁴⁷ Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China’s Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 75.

⁴⁸ Mao Tse-tung, *Problems of Strategy in China’s Revolutionary War*, Transcribed by Maoist Documentation Project, Marxist.org, 2004, http://www.marxists.org/reference/archive/mao/selected-works/volume-1/mswv1_12.htm (accessed January 22, 2012).

PRC A2/AD Capabilities

China continues to grow the PLA's A2/AD capabilities to support the current national defense strategy. PLA currently possesses several unique capabilities that deserve consideration in light of U.S. capabilities and the AirSea Battle concept. A frequently used term for these advanced weapons is "assassin's mace" (shashoujian), which "covers a wide array of technologies that might afford an inferior military an advantage in conflict with a superior military power."⁴⁹ The term could be equated to the Western idiom "silver bullet." The Second Artillery Corps of the PLA (2PLA) maintains the ballistic missile inventory of the PRC, including the Dong Feng-21D (DF-21D), Anti-Ship Ballistic Missile (ASBM). The PLAN operates several diesel submarines and surface combatants that carry new anti-ship cruise missiles (ASCMs), including the SS-N-22 *Sunburn* and SS-N-27 *Sizzler*. Below is a brief description for each system.

2PLA can launch the DF-21D Anti-Ship Ballistic Missile from hide-sites interior to mainland China to attack adversary capital ships offshore. There is much discussion, and no firm answers, on the specific technical details of the ASBM. Debate also continues over the cueing systems and guidance accuracy. Nevertheless, according to available assessments, the DF-21 family of missiles can engage targets at ranges up to 1700 km, and potentially out to 2500 km. The maneuvering reentry vehicle (MaRV) guides itself to the target. A missile of this nature provides the PRC with effects at all levels of war. Tactically, it forces the adversary to expend valuable missiles in defense of maritime assets. While the ASBM does not enjoy perfect coverage of the contested

⁴⁹ The New Atlantis, "The Assassin's Mace: China's Growing Military Might," *The New Atlantis: A Journal of Technology & Society*, no. 6 (Summer 2004), <http://www.thenewatlantis.com/publications/the-assassins-mace> (accessed January 14, 2012).

area; operationally, the enemy commander must consider the risks of entering the vulnerability arc of the missile. Therefore, this risk assessment may limit freedom of action and maneuver. Finally, strategically, the missile will raise the perceived cost of intervention, and may cause political indecision that would delay or deter military response.⁵⁰

The PLAN maintains an aggressive acquisitions program focused on countering U.S. surface forces with direct attack capabilities. The PRC indigenously produces several platforms and weapons systems, while others are imported from Russia.

The latest equipment delivered to China by Russia are four... Sovremennyy-class destroyers featuring 3M-80E Moskit (SS-N-22 Sunburn) supersonic anti-ship missiles, two... Varshavyanka (Kilo)-class diesel-electric attack and two... Amur (improved Kilo)-class submarines with Club-C anti-ship missile systems [SS-N-27 Sizzler] built at the Admiralty Shipyard in St. Petersburg.⁵¹

The SS-N-22 and SS-N-27 missile systems provide the PLAN with a long-range anti-surface capability that is particularly challenging to the U.S. Navy's AEGIS weapon system found on U.S. cruisers and destroyers as well as multiple allied naval platforms (e.g. Japanese Maritime Self Defense Force *Kongo*-class destroyers). These missile systems are part of a PRC layered approach to counter the AEGIS capability that also includes the ASBM and saturation attacks with air-launched ASCMs. In this case the PRC intends to defeat the waning U.S. technological advantage with sheer numbers; a

⁵⁰ Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 103-104.

⁵¹ Security-risk.com, "China: PLA's Manifold Capability Building," *Security-risk.com*, April 30, 2008, <http://www.security-risks.com/security-issues-south-asia/china-in-south-asia/china-:-mahan-drives-navy-270.html> (accessed January 20, 2012).

barrage of ballistic missiles and ASCMs will overwhelm AEGIS protection of higher value targets (i.e. the aircraft carrier).

What are the operational impacts of these PLA A2/AD capabilities? The systems mentioned above target units within the Navy's primary warfighting force, the carrier strike group. A successful attack on the centerpiece of the strike group, the carrier, will significantly reduce the U.S. combat power in the theater and send a strong message to the U.S. and allies. Chinese Naval Aeronautical Engineering Institute simulations produced a 95% penetration rate for the ASBM into the carrier strike group.⁵² Whether the PLAN's anti-AEGIS methodology is effective or not, countering it requires the expenditure of numerous missiles from a finite supply both within the strike group and in the theater as a whole. Operational resupply of these missiles will challenge the logistics chain, and require force reductions during replenishment.⁵³

The aforementioned A2/AD systems provide a sample of the growing military technology the PRC is developing. Along with the ASBMs and ASCMs aimed at U.S. naval power, the PRC possesses numerous, similar systems focused on U.S. and allied shore installations, fixed facilities and air power. Ultimately, the PRC A2/AD capabilities presented here will accomplish their titled mission, limit the operational access of the force.

⁵² Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 118.

⁵³ Additionally, AEGIS ships use the Vertical Launch System (VLS) to store and fire missiles. Currently there is no viable method for at-sea replenishment of VLS missiles. This process requires specialized equipment and port facilities. Rearming would effectively take affected AEGIS ships out of action for a period of time to include pier-side and transit times.

Analysis

Both U.S. and PRC strategies intend on conducting a prolonged war, but each have differing rationale for the protracted conflict. Authors of *AirSea Battle* assess, “[t]he overall Chinese strategy appears designed to inflict substantial losses on US forces in a very short period of time... [then] once this is accomplished, China would assume the strategic defense.”⁵⁴ Therefore *AirSea Battle* focuses on denying the PRC a quick victory. In contrast, the PRC strategy, which is defensive in nature, intends to absorb any initial attack, commence a protracted war of attrition in preparation for a final decisive counter offensive. From a maritime perspective, James R. Holmes argues that the PLAN “would let the US Navy overextend itself while whittling away with weaponry like antiship ballistic missiles, diesel subs, fast attack craft, and land-based tactical aircraft.”⁵⁵ These two contrasting strategies and may result in one of two outcomes. First, because both nations indicate they will not initiate hostilities, the U.S. and China deploy the brink of heightened tensions and await the commencement of hostilities by the other side. Or, second, the U.S. plays into China’s war of attrition by strategic defense, and may gain the initiative only to lose the war in a decisive counter attack, when the U.S. industrial base is exhausted and U.S. public and allied support is waning.

Conducting strikes into mainland China may cause complications in gaining legitimacy in the international forum. If aggressive actions drive execution of *AirSea Battle*, then U.S. forces will conduct long-range strikes as part of blinding PRC A2/AD

⁵⁴ Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), xii.

⁵⁵ James R. Holmes, “What Makes China ‘Mahanian’?” *The Diplomat*, November 18, 2011, <http://the-diplomat.com/flashpoints-blog/2011/11/18/what-makes-china-mahanian/> (accessed January 18, 2012).

battle networks and seizing the initiative. Additionally, there will be a strong desire to disable critical nodes within the ASBM firing chain. The PRC understands this aspect of U.S. tactics and if joint forces can find these targets it may require strikes into the interior of China, a significant escalation with political repercussions.⁵⁶ Collateral damage or preemptive strikes will strengthen the PRC's diplomatic position. MLS will be rich for the PRC's use of the *lawfare* and media aspects of the "three warfares."

PRC's growing A2/AD capabilities fit into Chinese Maoist operational and tactical theories by focusing on attacking weakness with strength. AirSea Battle does not completely address several key U.S. deficiencies. U.S. and Japanese surface forces suffer from a lack of effective long-range ASUW capabilities; a critical offensive ability when facing PLAN units. Furthermore, surface forces are particularly vulnerable to PLAN multi-axis and multidimensional attacks (i.e. ASCM, and torpedo). Arming ships with this capability allows the extension of maritime superiority when air power becomes resource constrained. In another deficient area, U.S. and allied forces struggle with a capability and capacity gap in Missile Defense against the PLA ballistic missile inventory. The PRC's ability to conduct multi-domain attack, especially in space and cyber pose a significant threat to C2 and communication networks. On this last point, AirSea Battle addresses the need for airborne relay or surge command, control and communication (C3) networks, but the current budget-constrained environment requires more emphasis on operational and organizational solutions.

Finally, AirSea Battle takes an evolutionary step beyond "shock and awe" in order to counter the PRC A2/AD threat through conventional means. From antiquity to the

⁵⁶ Toshi Yoshihara and James R. Holmes, *Red Star Over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, Maryland: Naval Institute Press, 2010), 123.

foundation of the PRC with Mao Tse-tung, China has practiced hybrid warfare, combining conventional warfare with irregular warfare. This is best described by Mr. Hoffman in his paper on hybrid wars. He references a germane Chinese writing on unrestricted warfare.

In *Unrestricted Warfare*, future Great Captains must master the ability to ‘combine’ all of the resources of war at their disposal and use them as a means to prosecute the war. These resources must include information warfare, financial warfare, trade warfare, and other entirely new forms of war.⁵⁷

Using this perspective AirSea Battle is not suited to face unrestricted–hybrid–warfare. As written by CSBA, the concept focuses primarily on conventional means and lacks the interagency plug-ins necessary to wield all elements of national power. Understanding assessed PRC strategy as previously discussed, all element of national power will be required to gain operational access within the theater.

Conclusion

The PRC is a rising global power with a growing capability to affect U.S. and allied presence within the First Island Chain. The Center for Strategic and Budgetary Assessment proposed the AirSea Battle concept to maintain the military power balance in the Western Pacific. However, AirSea Battle as written will not achieve its desired end state. Overall, AirSea Battle reflects sound operational design, but requires further assessment of the adversary to improve the assumptions and planning factors. It must also address integration points with other government agencies to capitalize on the use of all elements of national power. With the January release of the new National Defense

⁵⁷ Frank G. Hoffman, *Conflict in the 21st Century: The Rise of Hybrid Wars* (Arlington, VA: Potomac Institute for Policy Studies, 2007), 23.

Strategic Guidance and the overarching Joint Operational Access Concept, the ASBO will continue the revision of AirSea Battle.

In conclusion there are two critical points that require consideration in future versions of the AirSea Battle. First, to borrow an adage from Sunzi, “Ultimate excellence lies not in winning every battle, but in defeating the enemy without ever fighting.”⁵⁸ A U.S.-China conflict leading to open war would rapidly approach, and possibly exceed, the devastation and casualties experience by the U.S. in World War II. The U.S. must achieve objectives through shaping and deterrence short of hostilities. Second, the PRC A2/AD threat poses such a challenge that the U.S. must increase the development of partnerships and alliances along the First and Second Island Chains. Investments now will pay dividends in gaining operational access for any potential conflict. Additionally, diplomatic inroads will turn the international legitimacy problem back on an aggressive PRC.

⁵⁸ Sun-tzu, *The Art of War*, trans. John Minford, (New York, NY: Viking, 2002), 14.

Annex A

Candidate AirSea Battle “Piece-Parts”

21 Suggestions to Close the Gap

Operational¹

The following initiatives exploit or increase US operational advantages and opportunities and mitigate US vulnerabilities and risks at the operational level of war.

1. Initiatives on Mitigating the Missile Threat to Guam and Other Selected Bases:

- a. The Air Force should selectively harden facilities on Guam and some additional sites in order to complicate PLA targeting challenges. Due to the considerable expense involved with hardening, a comprehensive effort is impractical. Moreover, hardening by itself would be insufficient to ensure continued base operations in the face of large PLA missile inventories. Thus hardening plans should be considered only within the context of an integrated effort, as described earlier in this report, for defending US and allied forward bases.
- b. The Air Force should refurbish smaller bases at locations such as Tinian, Saipan and Palau sufficiently to support bare-base air operations if Anderson AFB on Guam is not available. This would require stockpiling petrol, oil, and lubricants (POL) and munitions, and other items to enable bare-bones aircraft sortie generation. Running undersea fuel pipelines between Guam, Tinian and Saipan should be studied as a potential way of reducing the need to stockpile fuel on the satellite bases or resupply them using vulnerable tankers.
- c. The Air Force should increase its rapid runway repair capacity at Guam and its satellite bases.
- d. The Navy should harden its Guam port facilities (especially those used for fuel transfer from tankers) to the extent possible, recognizing that such assets are inherently fragile. Basic construction and repair materials sufficient to support post-attack recovery efforts should be prepositioned on the island.
- e. The Air Force and the Navy, in conjunction with Army ground-based missile defenders, should develop and routinely exercise joint plans for integrated ground-, air-, and sea-based missile defense of US bases in the WPTO. Similar plans should be developed and exercised with Japanese BMD forces to defend targets in Japan and create and maintain allied BMD interoperability.
- f. The Air Force and Navy should jointly assess potential tactical air-based BMD systems such as the Air-Launched Hit-to-Kill (ALHK) concept, directed-energy defenses, and associated doctrine and tactics. With respect to the former, both manned and unmanned launch platforms should be explored. Navy versions

¹ Excerpt from Chapter 4 > Candidate AirSea Battle “Piece-Parts” in Center for Strategic and Budgetary Assessments, and Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, DC: U.S. Center for Strategic and Budgetary Assessments, 2010), 81-91.

should be capable of operating from carriers. If the joint assessment concludes the capability has promise, the Air Force and Navy should jointly develop and field it.

2. Initiatives on Correcting the PLA-US Imbalance in Long-Range Strike for Time-Sensitive Targets:

- a. The Air Force and Navy should invest in a long-range strike capability against time-sensitive targets. US military forces in the WPTO confront a Chinese military that relies very heavily on short-, medium-, and intermediate-range ballistic and cruise missiles, all with very short flight times. Ballistic missiles are also both difficult and costly to defend against. Thus the imposition of similar defensive requirements on the PLA could impose similar costs. Moreover, in this case the asymmetry in potential fixed targets would work to US advantage, in that while the PLA would have only a relatively small number of US targets to attack (e.g., forward bases), US forces could hold a much larger target set at risk.
- b. The Navy should consider investing in conventionally-armed, relatively short-range sea-based IRBMs to further complicate PLA planning.¹²⁶ Depending on missile technical characteristics, both submarines and surface ships (not necessarily combatants) could serve as potential firing platforms.¹²⁷ Ballistic missile striking power should be distributed across a large number of platforms similar to the way Tomahawk land-attack cruise missiles distributed Navy strike power that had previously been concentrated in a small number of aircraft carriers. An ASBM variant should also be considered.

3. Initiatives on Finding and Attacking High-Value Mobile Assets:

- a. The Air Force and Navy should develop and field long-range next-generation low-observable air platforms, both unmanned and manned/optionally manned. The Navy variants should be capable of operating from carriers.
- b. The Air Force and Navy should jointly develop various payloads for these platforms, including precision-guided strike weapons, ISR sensors, advanced air-to-air missiles, decoys of various kinds, electronic attack systems and, eventually, directed-energy weapons.

4. Initiatives on Developing and Fielding Greater Penetrating and Stand-off Long-Range Precision-Strike Capabilities and Capacities:

- a. The Air Force and Navy should jointly develop a long-range precision-strike family of systems that consists of ISR, airborne electronic attack, and strike assets. Against potent A2/AD battle networks, synergistic employment of such systems would be a prerequisite for degrading an adversary's IADS, ISR, and C2 networks. In particular, penetrating, persistent airborne electronic attack platforms would increase the survivability of stand-off munitions and penetrating aircraft striking fixed and mobile targets in contested airspace.
- b. The Air Force should develop a survivable multi-mission, long-range persistent strike platform as part of the above family of systems. The platform, unmanned, manned, or optionally manned, should have on-board surveillance and self-

defense capabilities to enable autonomous operations against fixed and mobile targets in degraded C2 environments.

- c. The Navy should expedite developing, experimenting with, and fielding a carrier-based UCAS system designed to operate either independently or in conjunction with manned platforms.
- d. The Air Force and Navy should jointly develop future-generation stealthy long-range land-attack cruise missiles capable of carrying a wide variety of payloads to replace today's Tomahawk (TLAM) and Air-Launched Cruise Missiles (ALCM).
- e. The Air Force and Navy should alter the current ratio (roughly 20:1) of planned investments in short-range strike relative to long-range strike to favor long-range strike.

5. Initiatives on Enhancing Maritime Strike Capacity:

- a. The Air Force should equip many of its large long-range platforms and train their crews (if manned), in conjunction with the Navy, for maritime strike missions, including direct support of naval units conducting missions such as MIO and blockade enforcement.
- b. The Air Force and Navy should develop the necessary joint C2 mechanisms and tactics to enable Air Force platforms to target and engage hostile surface targets in conjunction with Navy ISR and targeting systems, including maritime patrol aircraft.
- c. The Air Force and Navy should jointly develop a long-range anti-ship missile that can be employed from manned and unmanned air platforms as well as from ships and submarines.
- d. The Air Force and Navy should routinely conduct joint maritime strike mission planning, training and exercises.

6. Initiatives on Regenerating Airborne Offensive Mining Capacity:

- a. The Air Force should equip its stealthy large long-range/long-endurance platforms with an offensive mine-laying capability and train its crews (if manned), in conjunction with the Navy, for offensive mine laying missions within the PLA's A2/AD umbrella.
- b. The Air Force and Navy should routinely conduct joint offensive mining planning, training and exercises.

7. Initiative on Enhancing Intelligence Preparation of the Undersea Battlespace:

The Navy, in conjunction with other government agencies with responsibility for oceanographic and hydrographic research, should put increased emphasis on sustained peacetime intelligence preparation of the undersea battlespace, to include recurrent mapping of undersea arrays as well as offshore energy and telecommunications infrastructure in areas of interest.

8. Initiatives on Increasing Escorts:

- a. The Navy should examine options for increasing the numbers and combat capability of lower-end warships suitable for SLOC protection and MIO missions.

- b. The Navy should invest in sufficient Maritime Patrol Aircraft (MPA) to support robust SLOC protection and MIO operations as well as their primary ASW and surface surveillance missions in the WPTO.

9. Initiative on Enhancing Counter-Space Capabilities:

The Air Force should lead a joint assessment of the technical and operational requirements for rapid counter-space operations against PLA space systems.

Organizational

The following are candidate initiatives with organizational implications for both the Air Force and Navy. Not surprisingly, many of these are closely associated with command and control, communications, and ISR issues, both intra- and inter-Service. Importantly, some of these involve issues closely intertwined with deep Service culture norms, and thus could entail changes that could prove especially difficult to implement.

10. Initiatives on Dealing with Degradation of Space-Based C2, Communications and ISR Capabilities and Capacities:

- a. The Air Force and Navy should rigorously train for and recurrently conduct exercises that simulate operations under conditions of lost or degraded space capabilities and capacities. Such “week without space” exercises, emulating the fleet-wide “Smallpipe” exercises of Cold War days, while no doubt quite painful given today’s high dependence on space systems, are a prerequisite for demonstrating to the PLA and other potential adversaries the ability of US military forces to cope with the loss or degradation of space assets. Such exercises should also test deploying of back-up capabilities to demonstrate C2 and ISR surge capacity. If sufficiently robust, such demonstrations could reduce PLA incentives to strike US space systems.
- b. The Air Force and Navy should develop protocols, techniques and procedures for responding to denied or degraded communications environments. These should allow for graceful, tiered reduction of contemporary huge bandwidth consumption.
- c. The Air Force and Navy should assess the operational viability of future penetrating UAVs that rely on secure C2. Based on the joint assessment, they should develop and field technologies to enable unmanned or optionally manned aerial vehicles to continue to operate at extended-range in degraded C2 environments.

11. Initiatives on Future Standardization and Interoperability of Data Links, Data Structures and C2 and ISR Infrastructure:

- a. The Air Force and Navy should jointly assess the technical and operational requirements for future generation data links, data structures, and associated information infrastructure.
- b. The Air Force and Navy should jointly develop and field fully compatible and interoperable ISR and PED (processing, exploitation, dissemination) architectures.

12. Initiatives on Convergence of the Air Operations Center (AOC) and Maritime Operations Center (MOC) Constructs:

- a. The Air Force and Navy should jointly assess how AOCs and MOCs can achieve adequate connectivity in the near-term to maintain a common operating picture in support of dual-Service operations.
- b. The Air Force and Navy should jointly assess whether and how AOCs and MOCs in the future could be integrated, in whole or in part, to support dual-Service and multi-Service operations.
- c. The Air Force and Navy should jointly assess whether and how AOC functions could be carried out from Navy ships if required.

13. Initiative on Dual-Service Operations Specialization:

The Air Force and Navy should establish a dual-Service professional career specialization and train a cadre of officers focused on serving on staffs and eventually as commanders of joint aerospace-maritime task forces. These officers would serve multiple tours in both Services, acquire a thorough understanding of both Air Force and Navy forces and missions as well as integrated aerospace-maritime operations, and would normally be assigned to such operational task forces, AOCs/MOCs and associated training assignments for most of their careers.

Technological/Materiel

The following are proposed initiatives concerning mainly technological or materiel matters.

14. Initiatives on Electronic Warfare:

- a. The Air Force and Navy should significantly increase emphasis on and investment in cross-Service EW capability and capacity, including coordination on investments in low observables and long-range penetrating and stand-off EA-capable platforms (manned and/or unmanned).
- b. The Air Force and Navy should develop and field in quantity obscurants, decoys, and false target generators for both offensive and defensive missions, and make it clear that they are widely deployed and effective.
- c. The Air Force and Navy should increase the emphasis on realistic electronic warfare training in major exercises.

15. Initiatives on High-Capacity Airborne C3 Relay Networks:

- a. The Air Force should lead a joint Air Force-Navy assessment of the operational requirements, technical characteristics, and required components of wide-area airborne networks that could back up or replace lost functionality or capacity in C3-degraded environments.
- b. Based on that assessment, the Air Force and Navy should jointly develop and field the components of such networks, and jointly develop the protocols and tactics required to deploy them rapidly when required.

- c. The Air Force and Navy should routinely conduct training exercises involving deploying and operating these networks, to include short-notice drills as well as incorporating “week without space” drills into larger exercises.

16. Initiative on Reducing Reliance on GPS:

The Air Force and Navy should jointly continue developing and fielding capabilities that provide complementary or back up functionality in the event of loss or severe GPS system degradation in precision navigation and timing, and guidance of precision guided weapons.

17. Initiatives on Directed-Energy Weapons (DEW) Systems:

- a. The Air Force and Navy should increase research and development in DEW systems for land- and sea-based point defense against missiles.
- b. If and when DEW systems become cost-effective, the Air Force and Navy should field them.

18. Initiatives on Extended-Range Unmanned Undersea Vehicles (UUV):

- a. The Navy should continue to develop and field long-range/endurance UUVs for multiple missions germane to intelligence preparation of the undersea battlespace, including deploying leave-behind surveillance sensor arrays; near-land and harbor-monitoring missions; oceanographic research support; monitoring undersea infrastructure; and ASW tracking.
- b. The Navy should develop and field in significant numbers smart mobile mines capable of autonomous movement to programmed locations over extended distances. Such mines should be deployable by submarines and stealthy Air Force bombers.

19. Initiatives on Increasing Warship Ordnance Payloads:

- a. The Navy should continue its efforts to develop and field the capability to rearm surface ship VLS cells at sea.
- b. The Navy should plan to replace the Ohio-class SSGNs upon the end of their expected service lives (late 2020s) with a follow-on SSGN class with similar or greater payload capacity.
- c. The Navy should require future flights of Virginia-class SSNs to incorporate Multi-Mission Payload Modules.
- d. The Navy should continue to assess the technical requirements for, and operational implications of, developing and fielding new kinds of submarine payload modules of various kinds to increase undersea strike capacity.
- e. The Navy should require future submarine designs to incorporate an at-sea rearming capability.

20. Initiatives on Increasing Global Precision-Guided Munitions Inventories

- a. The Air Force and Navy should assess on a continuing basis projected munitions demands based on evolving future security environment trends and realistic PGM expenditure rates.

- b. Based on such assessment(s), the Air Force and Navy should stockpile these munitions in sufficient quantities to execute an AirSea Battle campaign and/or maintain adequate PGM surge production capacity for accommodating unexpectedly high expenditure rates (see Other Issues below).

21. Initiative on Sustaining Adequate Aerial Refueling Capacity

The Air Force should invest in sufficient air tanker force structure to meet the likely combined Air Force and Navy refueling demands during large-scale sustained combat operations, taking into account the great WPTO distances and the likelihood that forward bases would be unavailable for use for extended periods.

Annex B

“Three Warfares”

The Chinese concept of “three warfares” (san zhong zhanfa—三种战法) refers specifically to psychological warfare, media warfare, and legal warfare. It reflects China’s desire to effectively exploit these force enablers in the run up to and during hostilities. During military training and exercises, PLA troops employ the “three warfares” to undermine the spirit and ideological commitment of the adversary. In essence, it is a non-military tool used to advance or catalyze a military objective.

Psychological Warfare seeks to undermine an enemy’s ability to conduct combat operations through operations aimed at deterring, shocking, and demoralizing enemy military personnel and supporting civilian populations.

Media Warfare is aimed at influencing domestic and international public opinion to build support for China’s military actions and dissuade an adversary from pursuing actions contrary to China’s interests.

Legal Warfare uses international and domestic law to claim the legal high ground or assert Chinese interests. It can be employed to hamstring an adversary’s operational freedom and shape the operational space. Legal warfare is also intended to build international support and manage possible political repercussions of China’s military actions. China has attempted to employ legal warfare in the maritime domain and in international airspace in pursuit of a security buffer zone.

In 2003, the CCP Central Committee and the CMC endorsed the “three warfares” concept, reflecting China’s recognition that as a global actor, it will benefit from learning to effectively utilize the tools of public opinion, messaging, and influence. China likely hopes to employ these three concepts in unison, particularly during the early stages of a crisis, as they have a tendency to bolster one another.

Source: U.S. Department of Defense. *Military and Security Developments Involving the People’s Republic of China*. Arlington, VA: Department of Defense, 2011, 26.

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