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# *The Limits and Implications of the Air-Sea Battle Concept: A Japanese Perspective*

**Masahiro Matsumura**[1]

## Introduction

The world has seen the international distribution of power gradually shifting, driven in great part by China's rise and America's relative decline. Almost continuously for two decades, China has kept double-digit growth rates in defense spending and, consequently, made military build-ups that are unprecedented in modern international history. China has also demonstrated a series of increasingly assertive diplomatic and military actions as related to its irredentist claims to Taiwan, the Senkaku Islands, the Spratly Islands, and the Paracel Islands, among others. Although the regional security order of the East Asia and the Western Pacific appears sufficiently stable, the US and its major regional allies together have to deter and, if necessary, defeat possible China's armed aggression against the territorial status quo. Doing so is a challenge even for the hegemonic US, on the grounds that the aftermath of the 2008 Lehman Shock has

[1] Masahiro Matsumura is Professor of International Politics at St. Andrew's University (Momoyama Gakuin Daigaku) in Osaka. An early draft of this paper was presented at the 6th Defense Forum on Regional Security held in Taipei, Republic of China (Taiwan), sponsored by the ROC Ministry of National Defense, on July 24, 2012. This work is also a result of the University's Research Institute Collaborative Project "Japan's Security in the 21st Century (IV)." The author would like to express great appreciation to three anonymous reviewers who offered helpful comments and candid critiques.


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seriously impaired the health of the US political economy, and that its defense spending is anticipated to undergo one major cut after another, at least, for a decade to come.[2]

For this purpose, the US has developed a new operational concept, known as 'Air-Sea Battle' (ASB), to offset the negative impact of its relative decline on military capability and to maintain effective deterrence and, if necessary, sufficient battle-winning capability vis-à-vis China.[3] As of today, the most in-depth and authoritative analysis on the concept is perhaps *AirSea Battle: A Point-of-Departure Operational Concept* by Jan van Tol1, *et.al*.[4] while a major official report is "AirSea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenge" by the US Department of Defense AirSea Battle Office in May 2013.[5]

Even with less defense spending in acquisition and procurement, the ASB is designed to enable such offsetting by jointly employing air and naval capabilities for cross-service and cross-domain synergy. Thus, the concept aims to counterbalance China's quantitative advantage in its periphery with US qualitative advantage. Yet, how much counterbalancing effect can be achieved remains to be seen, at least until concrete operational plans based on specific operational doctrines are developed. Certainly, the rudimentary idea thereof was already discussed in the process of the 2010 *Quadrennial Defense Review*, but the Pentagon's joint ASB office was set up with a small number of military staffs, only in summer 2011. No major development at conceptual and operational levels has been seen since, at least in the public domain, given that the ASB is an evolving and classified concept.

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[2] *See, Department of Defense, The Quadrennial Defense Review of 2014.*

[3] http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/, accessed on May 7, 2013. It says that the ASB helps "to set the conditions at the operational level to sustain a stable, favorable conventional military balance throughout the Western Pacific region (p.xi)." It does not aim "a rollback of the PLA's military power" nor "containment of China", but advocates "offsetting the PLA's unprovoked and unwarranted military buildup" (p.x). The ASB emulates after the "Air-Land Battle" concept that was designed to outdo the quantitative advantage of Soviet military power in the continental European theatre (pp. 7-8).

[4] *Jan van Tol, et. al. AirSea Battle: A Point-of-Departure Operational Concept* (Washington, D.C.: Center for Strategic and Budgetary Assessment, 2010).

[5] http://www.defense.gov/pubs/asb-ConceptImplementation-Summary-May-2013.pdf, accessed on May 7, 2013.

Consequently, the ASB is in its infancy, involving significant strategic implications and policy utilities. The concept is instrumental in sending strong messages to US allies, assuring them of Washington's defense commitment on the basis of the expected significant enhancement in power projection capability, even if it now exists merely on paper. Such messages are essential to maintain the integrity of the hub-and-spokes system of bilateral alliances between the US and major regional allies. Also, a highly cost-effective approach to joint operation combining air and naval capabilities as well as new guidelines for armaments and force structure, entailing budgeting arms acquisition/procurement and military technology development, can be derived from the concept. Without the guidelines, the services would compete for shrinking resources, optimizing their own organizational interests. They would even make redundant investments in weapon systems that could later be found non-interoperable between the services and, perhaps, even within a service. The Pentagon requires the guidelines to prove to the purse-controlling Congress that ASB capability is attainable even under the growing fiscal constraints, thereby avoiding large defense budget cuts as a central part of the anticipated fiscal austerity.

These two utilities of ASB, however, rest essentially on the assumption that its rudimental doctrinal reasoning is relevant for and consistent with US strategies at strategic levels. Apparently, however, the concept still stands alone at the tactical and operational levels without being sufficiently connected to the strategies. This means that the discussion on the concept has so far failed to explore its implications for US national interests, goals, and priorities at the geo-strategic and geo-economic levels and to the higher security objectives derived from them. Thus, the concept in itself is not instrumental in determining under what condition the US has to begin and end a war with China and for what purpose, although it may be developed into operational plans designed to win certain battles against China. But, these plans may not hold if China's military capability grows significantly faster and/or more than expected or, simply, if China's war plan renders them irrelevant for a victory, defined as the accomplishment of a predetermined political objective which does not require China to win battles.

This paper will identify some major assumptions implicit in ASB as a US response to China's military rise, with a focus on the disjunction between the strategic and operational levels of thinking. Then the study will aim to comprehend some

notable limits and pitfalls of ASB and prescribe necessary remedies. To do that, the study will explore the rationale why China has significantly strengthened its so-called Anti-Access/Area-Denial (or, A2/AD) capability in the context of its overall strategy, and focus on how well the ASB would counter China's A2/AD. Contrarily, the study may identify conditions under which ASB-based operational plans would fail to deter China's aggression or destabilize regional security. The study will be concluded with a policy proposal for the US, Japan and Taiwan, according to optimistic, realistic and pessimistic scenarios. The paper will offer a conceptual and theoretical analysis, while relying on some preceding works based on parametric approaches to Taiwan contingency scenarios. It focuses more on air control and less on sea control, given that the former is prerequisite to the latter in a Taiwan contingency, and thus does not discuss some of supplementary yet important maritime strategic aspects.[6] The focus does not necessarily deny that joint forces, including sailors, marines, or soldiers all have roles to play.

To note, due to its own constitutional constraints, Japan remains incapable of formulating its defense strategy and policy for ASB-based combined offensive operations with the US in a Taiwan contingency, except in rear-area/logistical support and intelligence sharing even though the islands is indispensable to maintaining Japan's crucial south-bound sea lanes of communication. Article 9 of the pacifist constitution, which the US imposed on an occupied Japan after W.W.II, not only requires the country to follow exclusively defensive policy solely aimed to repulse an aggressor but also prohibits the country from exercising the right of collective self-defense.[7] This means that, for example, the country cannot employ its 6 AEGIS destroyers and other counter-A2/AD capabilities unless it is under attack and that it cannot fight hand in hand with US forces outside its own territory, including territorial sea and airspace. Certainly, some of these vessels can be deployed in the vicinity of Okinawa exclusively for the

[6] These official documents include, *inter alia*, Department of Navy, Marine Corps, and Coast Guard, *A Cooperative Strategy of 21st Century Seapower*, October 2007, and, Department of Navy, *Naval Operations Concept 2010*, 2010.

[7] The Abe Administration now plans to change, in summer 2014, the established interpretation of Article 9 in a way to authorize exercising the right of collective self-defense under limited conditions, which it believes it essential to formulate new Guidelines for Bilateral Defense Cooperation. Also, the administration is putting constitutional amendment on national agenda. Yet, should he be successful in this effort, combined offensive operation with the U.S., particularly in a Taiwan contingency, will be extremely difficult. See, *Yomiuri Shimbun*, February 22, 2014; and *Sankei Shimbun* February 22, 2014.

defense of Okinawa, which includes the major US bases, but, as analysed later, China can easily saturate Japanese missile defense capability. The Japan-US mutual security treaty stipulates that Japan provide necessary military bases and facilities on its soil for US forces and that the US defend Japan. This means that Japan is not obligated to defend the US forces outside its territory. Consequently, as of today, there is little discussion in Japan, at least in the public domain, of the implications of US ASB-based operation to Japan's defense planning.

Nonetheless, Japan may likely be trapped in a Taiwan contingency, on the grounds that China may attack the strategically pivotal Okinawa, particularly the US Air Base in Kadena, as a primary A2/AD stronghold in the theatre; the airpower thereof is essential to carry out anti-access function, while the capacity is indispensable to receiving reinforcements and logistical/rear-area support necessary for area-denial function. The dual functions are practically inseparable in this particular theatre. Hence, Japan has to grasp the limits and implications of ASB and, if possible, to coordinate its defense policy with a US ASB-based war plan against China in the defense of Taiwan, even if it cannot cooperate or collaborate with US forces.

Analytically, this paper does not necessarily assume that both the US and China practice a systematic and sequential formulation of grand strategy (or a comprehensive strategy based on the articulation of national interests), defense strategy (or principles of military activities and armament at politico-military levels), military strategy (or principles of military activities and armament at the operational levels), and operational doctrine (or principles of operating armed forces on battlefield). Such a formulation is ideal, which involves good analytical utility. However, China's A2/AD is primarily being formulated at the levels of defense and military strategies, and the ASB at the level of operational doctrine, both of which are not linked closely with the higher levels. Thus, the paper will analyse a disjunction between the two and the higher strategies, and explore if they can be articulated in a coherent manner.

## Chinese Strategy and A2/AD

*Grand and Defense Strategies*

The world is now watchful to see if what China calls its own "peaceful rise" is heading toward predatory regional hegemony. Since Deng Xiaoping started the open policy in the late 1970s, China has followed a grand strategy designed to enhance its relative power through economic growth and development, thereby shrinking the gap with US hegemonic power. China is a beneficiary of interdependence and cooperation that are consequent upon the highly stable international status quo under the U.S. hegemony. In fact, China appears to have long acquiesced to the status quo because it is essential for the country's rise. Despite having made great strides, however, China still lacks the military power sufficient to challenge the US and an adequate economic base to sustain a massive arms race to do so. But this state of affairs does not guarantee peace in the long run, because, after the catch-up phase, China could convert economic and technological power into military capabilities, thereby challenging the status quo. Naturally, the US and Japan would be very concerned if China wants to reemerge as a regional hegemon and to eventually ease the US out of the region. Also, Japan worries if it will be able to continue its reliance on the US as security guarantor within the framework of bilateral alliance or if it will have to be strategically independent to safeguard its national security. If China is indeed a hegemonic aspirant, it will eventually confront the US hegemon and the US-Japan alliance.

However, now that time appears to be on its side, China does not have to challenge US hegemony at all, except when its core interests are in jeopardy. Even without resorting to a hegemonic war with the US, China could pull neighboring countries onto its orbit, as its geo-economic and geo-strategic weight is growing slowly but steadily. A dominant China would be able to exert decisive influence over the policies of these countries not to challenge it while they maintain their respective national sovereignty, as occurred, most typically to Finland vis-à-vis the Soviet Union during the Cold War.

Thus, it is essential to understand China's defense strategy as well as its military capabilities since a major war with the country is still possible, if not probable. The

features of the current defense strategy will be clear when contrasted to the preceding ones, with a focus on how it has evolved out.[8]

With the legacy of the anti-Japanese War and the subsequent Civil War, China followed the so-called "People War" strategy for continental defense against a large scale invasion. It aimed to win a total and protracted war by maintaining support of the population and by drawing the enemy deep into the interior where the population would exhaust them through a mix of mobile and guerrilla warfare.[9]

Having faced growing Soviet military power and its own defeat in the Sino-Vietnamese War of 1979, however, China replaced the first strategy with a strategy of 'People's War under Modern Conditions.' It assumed that a total war with the Soviet Union or with the US was unlikely and aimed to win a local/limited war with modern Soviet armed forces. China needed to defend its borders and major urban centers in northern China from a limited Soviet invasion. China could no longer rely on the first strategy because the Soviet forces could not be dragged deep into the Chinese interior. The shift in strategy relied on technology as opposed to troops and involved troop cuts and professionalization. As well, the shift antiquated the low-tech guerrilla warfare and mass infantry tactics of the People's Liberation Army (PLA), and instead required mastery over mobility, rapid operations, and modern precision weaponry, which may evolve into maritime force projection capability. The shift was made possible by Deng's political-economic reforms based on 'socialism with Chinese characteristics' and the open policy that entailed military and technological investment.

After the first Gulf War in 1991, China turned to the third strategy of 'Local War under High-technology Conditions.' It assumes that local wars are limited in geographic scope, duration, and political objective, and dominated by high-technology weaponry. The wars are conducted to achieve limited political objectives through relatively limited use of force, while military information systems have become increasingly integrated across command, control, computers, communications,

[8] Roger Cliff, Mark Burkles, Michael S. Chase, Derek Eaton, and Kevin L. Pollpeter, *Entering the Dragon's Lair: Chinese Strategies and Their Implications for the United States* (Santa Monica: RAND, 2007), pp.18-23.
[9] Tse-tung Mao, *On Protracted War* (University Press of the Pacific, 2001).

intelligence, surveillance, and reconnaissance (C4ISR). Since 2004, China has prepared for "Informationized Local War."[10]

China will certainly apply the third defense strategy to a possible Sino-US military conflict. The following analysis will discuss which core interest of China, as a primary cause of the conflict, will be most likely challenged and how.

**The Taiwan Issue as a Primary Core Interest**

Today, China holds a grudge against "the century of humiliation" in the age of Western imperialism and colonialism that, according to its own perspective, began from the mid-19th century. It seeks to maintain its territorial integrity which, in and of itself, is totally consistent with international law in general and the Charter of the United Nations in particular. Yet, China's irredentist claims to some areas on its periphery, including Taiwan, the Senkaku Islands, the Spratly Islands, the Paracel Islands, among others, might lead to its military aggression, challenging the status quo or precluding a peaceful territorial change even if necessary. In particular, China enacted the Anti-Secession Law of 2005 that justifies armed attack against Taiwan and even forced unification thereof should Taiwan declare *de jure* independence or should it indefinitely defer unification. In the case of an unprovoked attack by China against Taiwan, US military intervention would be likely since the country is committed to serving as the sole guarantor of Taiwan's security and de facto independence, albeit expressed indirectly by the Taiwan Relations Act. Should Taiwan declare *de jure* independence, such intervention would be uncertain.

Preparing a Sino-US armed conflict, even if a chance appears slim at this point,[11] is necessary given that China firmly regards the Taiwan issue as a primary core interest and that China increasingly sees the legitimacy of its communist regime dependent more and more on the popular sense of nationalism centred on the issue. This is

[10] Roger Cliff, "Anti-Access Measures in Chinese Defense Strategy," a testimony presented before the U.S.-China Economic and Security Review Commission on January 27, 2011, http://www.rand.org/pubs/testimonies/CT354.html, accessed on June 30, 2012.

[11] The prospect will drastically change if Taiwan's domestic politics evolves out toward pro-independence or even toward the complete rejection of unification.

inevitable because the communist ideology is already defunct and because, as the alternative base of legitimation, high economic growth rates will no longer be sustainable as in the past. The unification of Taiwan remains the major unfulfilled China's 'core interests,' while the other two, Tibet and Xinjiang, only have to retained. Certainly, China has a huge landmass and a long border to defend so that its military force structure has not been entirely designed to cope with a Taiwan contingency, but the country has made a large concentration of A2/AD-capable armed forces in the theatre by choice, not by need. These alone will justify a Taiwan contingency as the focus of this paper.

Thus, China's war objective would lie in preventing Taiwan independence at least and unifying Taiwan at most. A war is a mere continuation of politics by other means, and, therefore, winning one is defined as achieving a predetermined political objective.

This means that, as long as it attains such an objective, China can enjoy an ultimate political victory, even if it fails to achieve a limited military victory against the US on battlefield. At minimum, the Chinese communist regime just has to be able to fight to a standstill and pursue a political settlement through negotiation, after achieving a set of limited objectives that the Chinese public could accept as a victory. Furthermore, even if such a settlement should not be accomplished, China could be victorious by successfully forcing the US to shoulder economic burden of war that will lead to debilitation of the US hegemony, and by compelling the US to give up the guarantor role of Taiwan's security. (Certainly, China has to accept the risk of failing to achieve its immediate or mid-term objectives, involving negative economic consequences of starting a war, calling the legitimacy of the regime into question. Yet, China may dare to run the risk out of miscalculation or adventurism driven by domestic politics.) Similarly, the objective would be satisfied by raising potential costs of U.S. intervention that will decisively weaken the resolve of the U.S. public and leadership to intervene; or by winning a quick war solely against Taiwan that will deprive the U.S. of an opportunity to intervene with acceptable costs.

**Military Strategy: A2/AD**

To achieve limited objectives, China can maximize its relative strength and exploit US weaknesses, politically, diplomatically, and/or militarily. China neither has to achieve global military primacy nor possess military capability symmetric force-to-force with the US counterpart. China just has to attain local superiority in the immediate neighboring areas around Taiwan by denying US forces to enter into the theatre and by limiting maneuverability within it, namely, Anti-Access/Area-Denial (A2/AD).[12] Once such superiority is established, the US has to withdraw its forces to more distant locations from China, including naval surface ships operating in waters near China.

Certainly, China will enjoy local superiority if the US does not have enough forces available in the East Asia or if the US were engaged in two wars simultaneously in the Middle East and in East Asia. Similarly, China could attain local superiority by pressing potentially unreliable US allies to either limit or deny US access to forward bases in the theatre. In this light, Japan is China's primary diplomatic and political target, particularly because US bases in Okinawa will surely play a critical role when the country takes military action against China.

China currently has military weaknesses and shortcomings vis-à-vis the technologically superior US, across the board from weapon systems to organizational capability to human resources. Only by employing A2/AD measures, including ground-based, sea-based and airborne ballistic and cruise missiles in combination with cyber, anti-satellite, and electric/electro-magnetic warfare, could China be a US near-peer competitor in the theatre centered on Taiwan.

To achieve a limited military victory, China can take full advantage of specific geographical and political contexts. The country has to avoid direct force-on-force confrontation with the technologically superior US. Instead, China would have to seize the initiative early at the operational level, avoiding the risks of passively waiting for

[12] The US Department of Defense (DoD) defines Anti-Access as "those actions and capabilities, usually long-range, designed to prevent an opposing force from entering an operational area", and Area-Denial as "those actions and capabilities, usually shorter range, designed not to keep an opposing force out, but to limit its freedom of action within the operational area." See, the Department of Defense, *Joint Operational Access Concept*, January12, 2012, p. i.

the US to completely deploy. Also, China would have to use the element of surprising the US by striking at an unexpected time and in an unanticipated place, entailing focused preemptive attacks against vulnerable key-point military targets, including command systems, weapon systems, logistic systems, air bases, ports, and sea lanes of communication, and aircraft carriers.[13] Furthermore, China would have to strike US integrated information systems that are central to collecting, processing, and transmitting electronic data, such as C4ISR systems, computer networks and satellites, given that they are essential for successful execution of high-tech weaponry. With all these measures combined, China could crush US will to resist.

This strategy is very remincient of Soviet thinking during the Cold War. It aims to purse an asymmetrical capability based on mobile precision-guided, land-based ballistic missiles, which is far cheaper than building a 21st-century version of the Imperial Japanese Navy. In fact, China watched the development of these missiles, including US Pershing II missiles and Maneuvering Reentry Vehicles (MaRVs). Erickson and Yang found that, even in 1972, China considered using land-based ballistic missiles to hit targets at sea,[14] and that China incorporated A2/AD thinking and measures very well into its military publications on operational doctrines.[15]

In 2007, Roger Cliff and others noted that anti-access themes were pronounced in Chinese strategies as options available in an armed conflict with the US, although Chinese military publications did not use a term equivalent to anti-access.[16]

To bring the A2/AD thinking into reality, it is essential to construct operational doctrines and to develop, acquire and deploy A2/AD weapons and measures. By examining the variety, quantity, and quality of China's current armaments, it will be possible to grasp its A2/AD capability as embodiment of the thinking.

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[13] Cliff, *et.al, Entering the Dragon's Lair,* pp. 89-93.
[14] Andrew S. Erickson and David D. Yang, "Using the Land to Control the Sea: Chinese Analysts consider the Antiship Ballistic Missile", *Naval War College Review,* Vol. 62, No. 4, 2009, p. 55.
[15] Thomas G. Mahnken, "China's Anti-Access Strategy in Historical and Theoretical Perspective," *Journal of Strategic Studies* 34, no. 3 (2011): pp. 17-320.
[16] Cliff, *et.al, Entering the Dragon's Lair,* p. 17.

*A2/AD Measures and Offensive Capability*

For a more than decade, the US Department of Defense (DoD) has consistently warned of China's large and yet growing capabilities in advanced cruise missiles, short and medium range conventional ballistic missiles, counter-space weapons, and military cyberspace, all of which have considerably enhanced China's A2/AD capabilities. The DoD also argues that China has continuously improved its capabilities in advanced fighter aircraft, limited power projection, integrated air defenses, undersea warfare, nuclear deterrence and strategic strike, improved command and control, and more sophisticated training for air, naval, and land forces,[17] as evidenced by the recent inaugural flight testing of the J-20 stealth fighter and with the launch of the first aircraft carrier for sea trials.[18]

China has built a substantial arsenal of conventional ballistic missiles. In 2009, the DoD estimated that China then possessed 1150 short range ballistic missiles (SRBMs),[19] 80 medium range ballistic missiles (MRBMs), and 40 intermediate range ballistic missiles (IRBMs), while their qualitative improvement was steadily underway. Also, the number of SRBM launchers reached to 250, MRBM to 90, IRBM to 55.[20] This means China has a large number of conventional ballistic missiles with which to strike key military targets like forces, bases and facilities, not only in Taiwan but also in Okinawa from which the US would project air power in case of a Taiwan contingency. Also, it is well known that many of the missiles are loaded on highly mobile transporter-elector-launchers (TELs), rendering them far less susceptible to missile attacks and, therefore, highly survivable.

Revealingly, Shlapak estimated that 150 to 250 SRBMs could cut every runaway at Taiwan's fighter bases and destroy almost all the aircraft parked in the open without

[17] US Department of Defense, *Annual Report to Congress: Military Power of the People's Republic of China,* or, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China,* various years. SRBMs have a range of less than 1,000km, MRBMs 1,000 km to 3,000 km, IRMBs 3,000 km to 5,500 km.

[18] *Annual Report to Congress*, 2012, p. ii.

[19] *Annual Report to Congress,* 2010.

[20] *Annual Report to Congress,* 2009; Ibid.; van Tol, Jan, p. 37.

being protected by a hardened shelter.[21] He also projected that 60 to 200 submunition-equipped SRBMs aimed at operating surfaces would temporarily close most of Taiwan's fighter bases.[22] Similarly, Gons has found that, based on the expected footprint of a submunition-armed DF-15,[23] only 34 of DF-15 are necessary to severely damage or destroy every aircraft parked in the open at the Kadena Air Base (AB) in Okinawa, which has only 15 hardened shelters.[24] If preemptively attacked, the US Air Force (USAF) will not have a chance to destroy most of TELs deployed on mainland China. The limited missile defense as currently deployed would be easily saturated by salvoes of Chinese missiles.

In addition, in 2008, Shlapak assumed that China possessed an unlimited number of precision-guided munitions (PGMs) and 200 cruise missiles that were capable of reaching both Taiwan and Okinawa.[25] In particular, DH-10, which is China's primary land-based land-attack cruise missile (LACM) using terrain contour matching guidance comparable to the US Tomahawk missile, is capable of striking hardened aircraft shelters in the Kadena AB. Shlapak simulated that 20 to 90 percent of all friendly aircraft would be destroyed on the ground in the open.[26]

As Shlapak points out, China's missile forces is approaching a "knock-out-punch" on Taiwan's air bases, and will enable China to gain control of the airspace at least in the first hours of conflict.[27] Accordingly, the operational logic of A2/AD involves a strong impulse to preemptively attack the US forces in Japan, particularly the Kadena AB in Okinawa, which could serve as a primary stronghold to defend Taiwan as well as Japan.

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[21] David A., Shlapak, *et.al, A Question of Balance: Political Context and Military Aspects of the China-Taiwan Dispute* (Santa Monica, RAND, 2009), p. 78.
[22] Ibid., p. 51.
[23] Stephen Gons, "Access Challenges and Implications for Airpower in the Western Pacific," (PhD diss., Pardee RAND Graduate School, 2010), p. 64.
[24] Ibid, p. 70.
[25] Shlapak, p. 55; The DoD estimated that between 50 and 250 DH-10 were already deployed. See, *Annual Report to Congress,* 2008, p. 56.
[26] Shlapak, p. 74.
[27] Ibid, p. 64.

Equally important is China's rapidly growing air power due to a significant modernization of fighters supported by a small number of poorly performing airborne early warning and control (AEW&C) aircraft and the modestly modernized integrated air defense. It is well known that the number of PLA Air Force's (PLAAF's) fourth generation fighters have more than quadrupled over a decade, while that of the second-generation fighters has reduced by two-thirds. The DoD estimated in 2011 that the PLAAF already deployed 490 aircraft, including 330 fighters near Taiwan, which could conduct combat operation against the island without refueling.[28] These include advanced 4th-generation fighters—Russian Su-27 Flanker and domestically produced J-10—armed with PGMs, stand-off air-to-air missile PL-12s, and LACMs. Chinese manned aircraft would be able to deliver them against the opponents' hardened key military targets, most effectively, once air superiority is attained by suppressing Blue air bases/facilities and aircraft with ballistic and cruise missiles.

Ambitiously enough, China is also trying to transform a brown-water navy[29] to a blue-water navy including aircraft carriers. But, due to its fiscal constraints, China cannot easily possess and sustain three or more full-fledged carrier battle groups in the near future. Nor can it readily develop and manufacture advanced aircraft to be put on board that do not need long runways for take-off and that can withstand the stress of landing on a carrier. It will take a long time until it masters how to operate a carrier strike force. To supplement these limits, China is rapidly building effective A2/AD measures against US carrier battle groups, such as missiles, modern torpedoes, and mines. In particular, the inventory of mines now exceeds 50,000.[30] Thus it seems that the development of a blue water fleet and careers does not fit well with China's overall military strategy of A2/AD, which would proceed more fully and rapidly, if without diverting resources to the development. Whether China simply considers the development as a long-term objective or whether it purses a seemingly irrational policy due to some domestic political reasons is beyond the scope of this paper.

[28] *Annual Report to Congress,* 2011, p. 76.
[29] China certainly has a Xia Class ballistic missile nuclear-powered submarine (SSBN) that has apparently never been on an operational deterrence patrol, as well as five poorly-performing Han Class nuclear-powered attack submarines (SSNs). For some details, please look at <http://www.globalsecurity.org>.
[30] *Annual Report to Congress,* 2012, p. 23.

With its A2/AD capability significantly enhanced, China will certainly be more confident of seizing the initiative early in rapid-pace, short-duration operation, while developing a war plan based on a quick victory in an invasion of Taiwan. Since the public averts high casualties, the US will increasingly face a challenge to directly defending Taiwan. Then, it is crucial to examine if the proposed ASB is effective to counter China's A2/AD both in the strategic and operational contexts.

## US Strategy and ASB

### *US Relative Decline and Strategic Options*

With the Cold War over, the US has four options of grand strategy: hegemony, selective engagement, off-shore balancing, and isolationism. Yet, these can be reduced to two for the sake of discussion: hegemony and off-shore balancing.

According to Layne, "hegemony seeks to maintain an imbalance of power in Eurasia in America's favor. Selective engagement ostensibly seeks to maintain a multipolar distribution of power." Despite their conceptual distinction, both neccesitate a "forward US military presence in Eurasia" and similar hegemonic policies opposing the emergence of multi-polarity or of a hegemonic aspirant in Eurasia. Both require the US to fight wars of credibility to preserve its hegemony in which allies depend on the US for their security. In practice and prescription, the differences of the two strategies blur, except the size of military presence and the frequency of armed intervention.[31]

Likewise, off-shore balancing "posits that the only American strategic interest at stake in Eurasia is preventing the emergence of a Eurasian hegemon." Isolationism assumes that "the balance of power in Eurasia is irrelevant to US security, because even a Eurasian hegemon could not threaten the United States." Regardless of their conceptual difference, both are essentially a strategy of burden shifting to the Eurasian

[31] Christopher Layne, *The Peace of Illusion: American Grand Strategy from 1940 to the Present* (Ithaca, Cornell University Press, 2006), pp. 159-160.

balance of power, and, in practice and prescription, only support minimal armed intervention in the landmass, although the definition of "minimal" differs.[32]

The US must make a hard choice between the strategy of hegemony and that of off-shore balancing in the context of its relative hegemonic decline, especially after the post-Lehman Shock fiscal austerity. The strategy of hegemony requires the US to deter China with the continued military presence in the East Asia and the Western Pacific and, if deterrence fails, to defend US allies vis-à-vis China. In contrast, the strategy of off-shore balancing does not seek to maintain global hegemony, instead blocking the rise of a Chinese regional hegemon and keeping US economic, political, and military access to the vital region.

In reality, the two major strategies of hegemony and off-shore balancing vary according to differing levels of will and capability to intervene overseas. In general, the strategy of hegemony is constrained more by the lack of capability, given the strong will. Thus, this strategy may be sustainable if a hegemon can make up its modest decline in capability by revitalizing the alliance to bolster its presence in the theatre. But the strategy is no longer sustainable if the decline of capability is substantial, including the case in which a hegemon seeks to impose its interventionist will and to remain present regardless of the policy preferences of allies and potential adversaries. On the other hand, the strategy of off-shore balancing is driven either by the lack of capability despite the strong will or by the lack of will despite the sufficient capability.

The ASB is only relevant for the strategy of hegemony and has to be rejected if hegemony is unsustainable. During the Cold War, the US followed the strategy of containment designed to maintain global hegemony. But, as exemplified by the Pentagon's *Defense Planning Guidance of 1994* for the fiscal years 1994-1999,[33] however, Layne argues that the strategy of hegemony has turned out to be self-defeating because it has provoked counter-hegemonic balancing by other powers. Because this has led to imperial overstretch involving military entanglement and the weakening of its domestic economic base;[34] the US will have to retract its military power from the East Asia in the near future, and to return there only if a Chinese hegemonic aspirant poses threats. This

[32] Ibid., p. 160.
[33] www.gwu.edu/~nsarchiv/nukevault/ebb245/doc04.pdf (Accessed: May 24, 2013).
[34] Layne, p. 6.

means that the US simply has to be a counter-hegemonic off-shore balancer, not a peace-keeper.

In January 2012, President Obama officially proclaimed the necessity of reducing federal fiscal deficits by decreasing defense spending. Essentially, having faced a growing need of post-Lehman sequestration, the US needs to cut military force structure, strength, procurement and overhead in order to reach the required savings. This involves a trade-off between the levels of US global engagement and saving. The deeper the cuts, the greater the curtailing of or cancelation of expensive, advanced high-tech weapon procurement programs essential to realize ASB-based operation. Yet, Obama also emphasized the need to "deter and defeat aggression," involving countering A2/AD challenge with enhanced power projection capability, implicitly, based on the ASB.[35]

True, a suboptimal ASB-based operation would be possible with legacy platforms and systems that are equipped with advanced C4ISR capabilities, which may only require modest investment and good joint training & exercise. However, such an approach will not be sustainable for a long time because those platforms and systems are the results of Reagan-era military build-ups and now have to be extensively replaced with more advanced thus more expensive ones. This transition will certainly require far larger investment.

Thus, the fiscal feasibility of building an ASB-based military is critically important. Barno, Bensahel and Sharp present four budget cuts scenarios, ranging from $350 billion to $850 billion over the next 10 years. The first scenario assumes spending cuts around $382 billion, aiming at the reposition and reset of the current force structure, which is designed "to preserve the current US defense plans to the greater extent possible in an effort to minimize potential vulnerabilities that could occur by changing those plans too extensively or too rapidly." This scenario enables modernization plans, in which the DoD would purchase high-technology weapons to replace older platforms, lower-technology (but still sophisticated) upgrades to the existing systems, and innovative new technologies. The scenario ensures that the US

[35] The U.S. Department of Defense, *Sustaining U.S. Global Leadership: Priority For 21st Century Defense,* 2012.

military remains capable of addressing a wide range of possible threats around the world."[36] The ASB will be realizable under the first scenario.

The second scenario includes the spending cuts of $502 billion, yet allows for constrained global presence primarily in the Western Pacific, Indian Ocean, Middle East, Arabian Gulf and Mediterranean Basin. The US still has advanced naval and aerial weapon platforms and a sizable expeditionary ground capability to fulfill its global missions, but fewer platforms and troops. This scenario, however, takes greater risks, and accepts longer response times in the other parts of world. The scenario prioritizes modernization and upgrades of the existing outdated weapons, not the acquisition of new high-technology weapons. The risks involved in the second scenario may be significant but acceptable, which barely offers necessary capabilities for the ASB.[37]

The third scenario encompasses the spending cuts of $665 billion, involving substantial near-term risks due to far fewer platforms and troops available, and diminishing single service self-reliance. This scenario reduces the number of next-generation manned aircraft and naval vessels that are central to executing a forward presence strategy across the Pacific and other maritime areas. The scenario does not suffice to fully realize the ASB, and runs unacceptably high risks.[38]

The fourth scenario includes the spending cuts of $ 822 billion, focusing on economy of force and minimizing the burden of defense spending on the US economy. But this scenario only allows for military capability barely sufficient to defend US core interests in a major regional conflict, necessitating the country to shift toward off-shore balancing. This scenario sends a clear message of receding US power and commitment, and may lead to the advent of China's sphere of influence in the maritime East Asian theatre that is demarcated by what China calls the First Island Chain.[39] (The Chain is usually described as a line through the Kurile Islands, Japan's main islands, the Ryuku Islands, Taiwan, the Philippines, and Borneo to Natuna Besar of Indonesia.)

[36] David W. Barno, Nora Bensahel, and Travis Sharp, *Hard Choices: Responsible Defense in an Age of Austerity* (Washington, D.C.: Center for a New American Century, 2011), pp. 13-14
[37] Ibid., pp. 15-17.
[38] Ibid., pp. 17-19.
[39] Ibid., pp. 20-22.

At present, it remains to be seen which of the four budget-cut scenarios will come into reality. Yet, the feasibility of building an ASB-based military will be questioned if the US is at crossroads of choosing between the third and the fourth scenario[40] and, therefore, between hegemony and off-shore balancing. Otherwise, the ASB would be tenable. Thus it deserves examining the major assumptions and basic operational logic of ASB.

*From Deterrence by Denial to Deterrence by Punishment*

As China's A2/AD capability grows, US forward operating survivability will decline in the East Asia and the Western Pacific. The US military, including aircraft carriers in littoral waters, faces a major basing disadvantage, and will be less and less able to operate from effective sanctuaries from enemy attacks. Instead, US forces will have to rely increasingly on longer-range weapons and more survivable platforms. Using these power projection capabilities involve a shift from deterrence by denial vis-à-vis China, based on geographically limited direct defense of Taiwan, to deterrence by punishment, based on the threat of escalation. Thus the ASB aims to "set conditions at the operational level to sustain a stable, favorable conventional military balance", despite the scarcity of survivable US forward bases, for the next ten to twenty years.[41]

The US increasingly requires precision strike capability against China's ground-based war-fighting and war-supporting targets, thereby deterring its escalatory options at the conventional levels. The capability is essential to destroy or at least neutralize China's military's networks, weapons platforms, long-range ISR and strike systems that may deny the freedom of US military action at the beginning of conflict. Then the US will first be able to withstand China's initial attack, limit damage to Blue forces and bases, and seize the initiative in the air, sea, space, and cyber domains.

[40] Kunihiko Miyake, a former Japanese senior diplomat, understands that the recent U.S. emphasis on Asia in the deployment of armed forces is largely symbolic and rhetorical, without reflecting the realities. He points out that, already in 2010-2011, the navy deployed two-thirds of its aircraft carries and amphibious assault ships in the Pacific and the Indian Ocean, despite its recently announced plan of shifting 60% of these vessels to the Pacific by 2020. See, *Sankei Shimbun*, June 14, 2012.

[41] van Tol, p. xi.

*Maintaining Tactical/Operational Superiority by ASB*

The US not only has to reduce the potential effects of China's A2/AD measures but has to strengthen its own strike capabilities to counter these measures as well.[42] How can it do this?

First, the US has to strengthen passive and active defense capabilities against Chinese A2/AD measures. These include missile defense, deployed near critical facilities, against ballistic missiles, ship-borne and land-based cruise missiles, anti-submarine warfare (ASW), mine-sweeping, counter-antisatellite (ASAT) attack, and long-range air defense, while improving C4ISR capability of directing, identifying and attacking mobile time-sensitive targets. To bolster allied capabilities, the US also must strengthen its port defenses, its defenses against covert operation and reduce vulnerability of C4ISR systems, and counter the threat of high-altitude nuclear detonation. Yet, missile defense systems are easily saturated with salvoes of cheaper Chinese SRBMs[43] and ASW operations against modern PLA Navy (PLAN) submarines are not easy due to their lower acoustic signatures, especially in the noisy littoral waters within the First Island Chain.

Second, the US has to bolster its long-range ballistic and cruise missile capabilities against land-based fixed targets on mainland China and its long-range surface-to-air and air-to-air missile capabilities against mobile targets. Also, ASAT capability is necessary because China depends heavily on satellites for wider-area surveillance and communications. To maintain a favorable imbalance of military power, the ASB puts a premium on new, high-tech platforms that enable these strike measures.

Among a variety of the above counter-A2/AD measures, US priorities will go to strengthening its air power so that the country can attain air control in the theatre of operation centred on Taiwan. This would mean that China would be unable to send its

[42] van Tol summarizes the ASBC's substance. At the first stages, it has four distinct lines of operations: (1) withstanding the initial attack and limiting damage to US and allied forces and bases, (2) executing a blinding campaign against PLA battle networks, (3) executing a suppression campaign against PLA long-range ISR and strike systems, and (4) seizing and sustaining the initiative in the air, sea, space and cyber domains. See, van Tol, p.xiii.

[43] Marshall Hoyler, "China's 'ANTIACCESS' Ballistic Missiles and U.S. Active Defense," *Naval War College Review*63, no.4 (Autumn 2010).

advanced manned aircraft to penetrate into the American protected airspace, deliver guided missiles or munitions, and destroy key hardened military targets. This could not be achieved with stand-off missiles during the early phase of conflict.

Certainly, American forces could enhance their survivability through mobility, redundancy, and hardening, such as concrete shelters for aircraft and personnel, redundant operating surfaces, rapid runways repair capabilities, and survivable command and control. Yet, China probably possesses sufficient missile capability to neutralize a significant portion of US air power in theatre, at least at the initial stage of the conflict. Similarly, China's SRBM power could neutralize a significant part of US air power at the Kadena AB in Okinawa. However, Shlapak estimated in 2009 that the total throw weight of China's SRBMs was about 495 tons, or about the amount of explosives carried by fully-loaded 21 B1-B bombers; "[t]his is a potent capability, but no means sufficient to induce Taiwan capitulation and/or enable invasion."[44]

Apparently, the initial salvoes of China's SRBMs would kick into the door for follow-on attacks by its aircraft armed with PGMs, naval forces, and eventually amphibious assault forces for direct invasion of Taiwan and, if necessary, some Japanese islands in its vicinity. It is clear that air control for countering ballistic missiles is a focal point in a Taiwan contingency.

*US Superiority Margin is Narrowing*

Given the flying ranges of aircraft, the US military has to rely on air power projection from the Andersen AB in Guam because China's A2/AD measures can reach afield up to 1,500 km of the mainland, which only makes Guam relatively safe. That is, all the US bases in Japan are not safe, including Kadena, Futenma, Iwakuni, and Misawa. The Misawa AB is the only base that is fully hardened, but it is only 1,000km from China and 2,700 km from Taiwan.

The Andersen-only scenario is highly likely because US aircraft carriers cannot make up for the Taiwan's air force (Republic of China Air Force: ROCAF) capability.

[44] Shlapk, p. 127.

They face a growing threat from China's increasingly accurate land-based anti-ship missiles. Shlapak also estimates that, even without considering attrition, the ROCAF can produce at most 650 sorties per day from its 317 fighters. Should ROCAF capability of generating 100 sorties per day survive China's initial salvoes of missiles, and should 50 fighters on each carrier be assumed to replace lost ROCAF sorties on a one-to-one basis, the US only could make up 550 sorties by all of the eleven carriers it possesses. Even calculating by a factor of two, the US still would have to send five carriers. These options are practically infeasible.[45]

Certainly, the USAF possesses a pronounced qualitative edge over the PLAAF, but faces loss of quantitative superiority and tactical flexibility, primarily due to its serious basing disadvantage. But, the F-22 as well as the still-to-come F-35 only has an aircraft-to-aircraft technological advantage that is meaningful. Gons estimates that Andersen AB can accommodate at most 250 aircraft,[46] and that the base can support four to five squadrons of fighters. A single counter-air mission would require at least two aerial refueling each way, one at most 1800 km from Andersen. The base can support the operation for at most 22 days without a resupply, and with unlimited resupply for three months.[47] The mission needs 3.5 hours transit from Andersen to Taiwan, with 1.25 hours on station, and another 3.5 hours return flight.[48] Gons calculates that there are only 6 F-22 fighters available for combat air patrol (CAP) over Taiwan, around the clock.[49] (Gons also estimates that a force at the Kadena could sustain roughly a double CAP over Taiwan, due to the distance and the necessary transit time thereof.[50])

On the other hand, the PLAAF has 271 Su-27 Flankers and, by 2015, will have 397 advanced 4th-generation fighters (e.g., Su-27, Su-30, and J-11). The PLAN also will have

[45] Ibid., p. 130.
[46] Ibid., p. 81.
[47] Ibid., p. 82.
[48] Ibid., p. 83.
[49] Ibid., p. 84.
[50] Ibid., p. 92.

71 Flankers.[51] The DoD has repored that there are some 490 combat aircraft within unrefueled operational ranges of Taiwan.[52]

The Flanker's combat top radius is 1630 km, sufficient to cover Taiwan without being refueled. This means that the aircraft can penetrate its airspace even from air bases deep in mainland China including 41 dual-use airfields within 930 km of Taiwan.[53] The Su-27 force operates from 12 regional air bases, and could sustain 690 daily sorties, or a continuous CAP of roughly 36 aircraft.[54] The US F-22 force would be severely outnumbered by a factor of six.

The F-22 is stealthy and superior when armed with at most 6 beyond-visual-range (BVR) advanced medium-range air-to-air missiles (ARAAMs), 2 joint direct attack munitions (JDAMS), or 8 guided bomb unit (GBU) small diameter bombs within its internal weapons bay.[55] With 6 F-22s to counter 36 Flankers,[56] the USAF would barely control the sky over Taiwan in relatively equal engagements at long ranges. If outnumbered markedly, however, the control would not be sustainable because US counter-air missions would require a 2,900 km flight from Guam.[57] This is particularly true if the PLA employs decoys and older-generation fighters to exhaust F-22s' BVR missiles on board. While directly threatening F-22s, the PLA could also send two or more regiments of aircraft to attack force enablers, such as USAF ISR/AWACS aircraft and tankers.[58] Consequently, USAF airpower might be driven out of the theatre of operation centred on Taiwan.

[51] Ibid., p. 85.
[52] *Annual Report to Congress,* 2012, p. 24.
[53] Gons, pp. 84-85.
[54] Ibid.,p. 91.
[55] Flankers with the latest radar will be able to detect stealthy aircraft, which makes USAF forces less dominant. See, Ibid., p. 97.
[56] Certainly, this assumes the initial engagement is conducted with 6 F-22s. If the initial contact may involve a greater number of F-22s, such an operation will not be sustainable around the clock.
[57] Ibid., p. 95.
[58] Ibid., p. 104.

**ASB's Limits and Implications**

The US and China today face a stability–instability paradox in which they can safely engage in a minor conflict only at a conventional level. In order to avoid a nuclear war, neither can start a major, direct and full-scale conflict nor allow a minor indirect conflict to escalate into a major conflict. Given the dynamics, therefore, a Taiwan contingency would be fought safely only at the conventional level, without escalating into a major nuclear war.

The ASB is tenable as long as it helps maintain a favorable imbalance of military power, deterring a China that possesses a rapidly growing A2/AD capability. The concept involves employing escalatory responses at the conventional level, but assumes that a Sino-US conflict would not surely escalate into a full-scale nuclear war. This also assumes that the US will be able to keep the conventional edge and thus not need nuclear response against China. Concurrently, the concept assumes that China would be confident of its minimal nuclear deterrence vis-à-vis the American nuclear superiority.

The optimism of deterrence will surely flounder if these assumptions fail to hold. China might undertake a military venture against Taiwan, despite probable US conventional and nuclear retaliation. More specifically, China's employment of A2/AD measures could risk both horizontal and vertical escalation that would broaden the geographic scope and increase the intensity and destructiveness of the conflict. American stand-off and penetrating strikes against targets in mainland China, as well as PLA ASAT systems, have escalation implications.

The US dilemma is inherent in the geographical asymmetry of the East Asia and the Western Pacific in which Taiwan lies close to rising China and far away from the relatively declining United States.[59] The American ability to guarantee Taiwan's security vis-à-vis China is increasingly in question.

[59] The Cuban missile crisis of 1962 is a parallel to a Taiwan contingency. Habana is about 380 km from Miami, while roughly 9,600 km from Moscow. In the crisis, U.S. dominance in the Caribbean posed a conventional threat to Cuba, but the Soviets could only offset the threat with nuclear threat. The security of Cuba as a Soviet outpost depended on the effectiveness of Moscow's extended nuclear deterrence commitment to Habana. Ultimately, the security rests on Soviet asserted willingness to risk nuclear conflagration in defense of its interests. If China's military power continues to grow, the U.S. will not be

When conventional escalatory response is not sufficient, the US has to shift from deterrence based on denial to deterrence based on punishment involving nuclear retaliation. Thus, China's growing A2/AD capabilities are significant because, even if a Sino-US conflict is unlikely, they would increase US inhibitions vis-à-vis a more risk-taking China. The US will be presented with two difficult choices between escalation and non-involvement. The US might back down, rather than dare to retaliate.

Even if the US should possess overwhelming military power, China would not necessarily submit to the US, trapping the two into an escalation spiral. Certainly, the US could try to shape the escalatory dynamics by declaratory policy and force development in order to signal American commitment and preparedness to full-scale retaliation, if necessary. Yet, there is motivational asymmetry and an imbalance of resolve between the US and China, and between US extended nuclear deterrence to Taiwan and China's direct deterrence to prevent US intervention. Taiwan is important for China for substantive and symbolic reasons, while it has no intrinsic value to the US nor to America's own interests. As a PLA general mentioned in 2005, "the US cares more about Los Angeles that Taipei."[60] It remains uncertain if the US would run the risk of defending an ally. (It may be possible to argue for the absolute strategic and ideological values of Taiwan. But, as discussed here, under some strategic and operational conditions, defending Taiwan will cost prohibitively high and practically impossible. Simply put, it can be hardly assumed that the US would care more about Taipei than it would do about L.A.) Alternatively, the US could fight in the East Asian peripheries to retain its credibility vis-à-vis regional allies, arguably part of its own core interests as a global hegemon. With no vital interests at stake, US extended nuclear deterrence would become less and less credible as China's second-strike nuclear deterrent becomes more survivable. The survivability can be significantly enhanced by defeating US missile defense, for example, through mobile ICBMs, SLMBs, multiple independently targetable reentry vehicles (MIRVs), and penetration aids.

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able to rely on a decreasingly credible conventional deterrent in the immediate theater, but only on broader extended deterrent commitments involving more destructive conventional capabilities, tactical nuclear weapons, and ultimately strategic nuclear weapons. See, Shlapak, p. 146.

[60] Patrick Tyler, "As China Threatens Taiwan, It Makes Sure U.S. Listens," *New York Times*, January 24, 1996.

Once the dynamics of A2/AD and counter-A2/AD are engaged, China would probably attack US bases in Guam and even Hawaii, while bringing Japan and South Korea into conflict. Should Japan find US nuclear umbrella largely effective but porous, the US would have to facilitate or at least to acquiesce Japan's acquisitions of supplementary capabilities, including a secure second-strike nuclear deterrent and power projection capabilities of defending its territory and SLOCs. The two countries might choose the reduced but continued presence of US bases in Japan. Furthermore, should the two recognize the umbrella ineffective and find it undesirable to put Japan on China's orbit, they would even make Japan a great power that is strategically independent.

From a Japanese perspective, therefore, ASB works well as long as it successfully deters China's aggression. This depends on if the US can build effective ASB-based capability and if China perceives so. If not, an ASB-based war over Taiwan would likely drive the US to escalate into a nuclear war, which may turn out to be very destabilizing and potentially devastative. Given that the ASB is a US response to China's aggressive A2/AD-focused arms buildups, not *vice versa*, regional strategic environment will not likely change soon. Practically, the consequence will be reduced to the fiscal feasibility that the US faces, now increasingly seriously under the ongoing sequestration. Unless the US come up with an alternative approach or strategy that is less destabilizing,[61] Japan cannot but coordinate its defense policy in a way to enhance ASB's deterrence effect as related to a possible Taiwan contingency.

**A Policy Proposal for the US, Japan and Taiwan**

There exists a high correlation between defense spending and military power, at least in the middle to long term. Certainly, specific military capabilities could greatly vary according to differing levels of technological, organizational, doctrinal

[61] This paper is an assessment of the ASB. A comparative analysis of ASB, "rebalance/pivot", and "offshore control," especially, which one of the three competing approaches is the most relevant approach for the US and Japan, is beyond the scope of this paper, although very important and intriguing. For "rebalance", Phillips C. Saunders, "The Rebalance to Asia: US-China Relations and Regional Security," *Strategic Forums* no. 281 (August 2013). For "offshore control," see, T.X. Hammes, "Offshore Control: A Proposed Strategy for an Unlikely Conflict," *Strategic Forums*, no. 278 (June 2012).

sophistication, but fiscal ability to invest in armament and manpower serves as a rough macro-indicator of a country's middle- and long-term military power.

The optimistic, realistic, and pessimistic scenarios below are constructed according to modest, medium, and large defense spending cuts respectively that the US would face, involving subsequent differing fiscal constraints on investment in armament and manpower. As discussed earlier, the optimistic scenario assumes spending cut of $382 billion for ten years, the realistic one does the cut ranging from $502 billion to $665 billion, and the pessimistic one does the cut of $822 billion. The *Quadrennial Defense Review of 2014* corresponds to the lowest cut level of the realistic scenario.

Japan, thus, needs to focus on military policy coordination with the US and Taiwan. The three cannot formally cooperate and collaborate with one another in military cooperation, given Japan's constitutional constraints and Taiwan's lack of its *de jure* state status and, therefore, formal alliance relationship under international law. But Taiwan is not simply an object. Its survival as a *de facto* political entity, particularly its resiliency not to capitulate against China for an extended period time, is essential for air and sea control in the East and South China Seas and the Western Pacific. The island is indispensable to maintaining US military predominance in the theatre and defending Japan's southbound sea lanes of communication that is essential for its trade, including the imports of oil and gas from the Persian Gulf.

*The Optimistic Scenario*

The US

In this scenario, the US has to take passive and active defense measures to counter China's A2/AD, as long as the US keeps the favorable regional imbalance of military power. This scenario includes the case in which the US should somehow revitalize its hegemony or which China's rise should considerably decelerate, although both seem very unlikely at present. These measures cost least.

The US priority has to be put on building sufficiently hardened shelters for all the 108 F-15s in the Kadena AB and those for 36 Marine F/A-18s in the Iwakuni located on the largest one of Japan's four main islands.

Japan

The priority will go to dispersing the Air Self-Defense Force aircraft across several major civil airports in the Okinawa Islands, rather than hardening the dual-use Japan Air Self-Defense Force (JASDF) Naha Air Base. These airports can receive reinforcements with JASDF aircraft from the Japanese main islands.

Taiwan

First, Taiwan has to further strengthen early strategic and tactical warning capabilities, thereby substantially reducing the potential effects of various Chinese A2/AD measures. This is because even a fairly short warning period should be adequate to allow Taiwan to disperse it helicopters to prepared, hidden operating points and to move some fixed-wing aircraft, away from main operating air bases to highway strips.

Second, Taiwan has to take more passive defense measures, such as camouflage, concealment, and deception to forces, bases, and facilities, and strengthen active defense measures such as surface-to-air missiles and electronic warfare measures/countermeasures.

Third, Taiwan has to further emphasize on the preservation of its air power against PGMs, submunition-armed weapons, and guided weapons. For this purpose, Taiwan has to build more hardened shelters at the air bases and large underground hangers in the mountains such as those already built in Hualian and Taitong, highly redundant or reconstitutable command and control systems, underground storage of and buried distribution systems for fuels, well protected war-reserve stockpiles of SAM radars, launchers, and missiles.[62] These measures will be instrumental in exhausting China's inventory of missiles.

[62] Shlapak, p. 128.

*The Realistic Scenario*

The US

In this scenario, the US has to take force-to-force conventional offensive measures to counter steadily growing and improving China's A2/AD capability, avoiding risks of horizontal and vertical escalation. This approach is relevant as long as the US enjoys a favorable imbalance of military power.

As it is very difficult to achieve local parity in the number of aircraft with the PLAAF in the Andersen base-only scenario, the US must dramatically increase its on-station missile magazine, through sortie-generation or not, thereby possessing a battle-winning air capability. Yet, the US must not externally arm F-22s, depriving the aircraft of stealth as a decisive tactical advantage and instead employing them for cooperative targeting with older, legacy aircraft, such as F-18s and F-15s. F-22s can direct via datalink the legacy aircraft to shoot and guide air-to-air missiles against PLAAF aircraft. This would be made possible by increasing Andersen AB's capacity, centred on development of its Northwest Field, and by deploying maximum-on-ground F-15Cs in addition to F-22s.

Alternatively, as Gons proposes, the US could modify a B-1 bomber, whose radar signature is one fifth of B-52,[63] to carry a large number of BVR missiles. B-1 could be an air-superiority bomber that is hard to be detected, if not stealthy. The bomber would not be vulnerable to PLAAF aircraft armed with long-range missiles - the equivalent of the Russian Vympel R-37 with an effective range of 343 km and Novator R-172 with a range of 457 km. This is because, with the B-1's turning radius of 22 km and a stand-off BVR missile on board, with a range of more than 481 km, the bomber would be able to conduct an out-of-range strike and still dash away from a Flanker's missile.[64] The bomber's performance could be significantly improved by using two stage missiles, a subsonic cruise missile with a supersonic terminal stage, similar to Russian missiles.[65]

[63] Gons, p. 134. US anti-surface capabilities have atrophied some time since the end of the Cold War. Historically, the USAF has allocated spending between fighters and bombers at 2:1 ratio. But, since 2002, the ration has been at 30:1 in favor of fighters. See, Ibid., p. 79.
[64] Ibid., p. 137.
[65] Ibid., p. 146.

With a parametric analysis, Gons calculates that 6 F-22 fighters plus two B-1 bombers can carries 96 to 124 BVR missiles in total, depending on standoff AAM ranges from 370 km to 556 km.[66]

Japan

The existing joint JASDF/JMSDF (Japan Maritime SDF) Air Base at Iwo To, a Japanese solitary island in the Western Pacific, could be further developed, according to the similar rational behind the Andersen-only scenario. Yet, due to its topographic feature, the island neither has a port nor a harbor to carry in fuels and other logistical materials. Based on the bilateral alliance with the US, JASDF fighters could use parts of the expanded Andersen air base or alternative airports in the Marianas, such as on the island of Tinian, for rotational deployment.[67]

Also, Japan would have to cope with a small-scale contingency over the Senkaku Islands, independently or as part of a Taiwan contingency,[68] as demonstrated by the recent report that the SDF has already made an operational plan to recapture the Senkaku from China's invasion forces.[69] This study has shown that there is a high correlation between the capability necessary to defend Taiwan and that to defend Japan, especially Okinawa; the US bases in Okinawa would play critical roles in both. Already, the US has officially announced its observation of Article 5 of the U.S-Japan Mutual Security Treaty that requires the country to help Japan defend the islands against China's aggression. Thus, Japan would have to possess military capability at least sufficient to resist until the US enters the Sino-Japanese battle, such as limited

[66] Ibid., p. 152.
[67] The US and Japan have explored to use bases in the Philippines for combined training between SDF and Marine troops. See, *Sankei Shimbun*, April 28, 2012.
[68] Shibayama contends that, given the operational logic of China's A2/AD, Japan has to put priority on an Okinawa-main-island contingency scenario. He also compares and contrasts six contingency scenarios (Taiwan, the Senkaku islands, the Yaeyama-Miyako islands, the Okinawa main island, the South China Sea, and air battle) in light of the prospect for operational success, the danger of escalation, China's expected military outcome, the availability of China's domestic political exit, and the availability of China's diplomatic exit. He judges that China could prevail at least at the initial phase of the Okinawa contingency scenario and possibly, if not probably, win the battle, without committing significant risks for escalation, because China might prevail thoroughly and find domestic political and diplomatic exits. See, Futoshi Shibayama, "US-China Power Transition and Japan's Hard Power," *Kokusai Anzen Hoshou: The Journal of International Securit,* 39, no. 4 (2012).
[69] *Sankei Shimbun*, May 9, 2012.

amphibious assault capability and joint air and naval capability emulating after the ASB.[70]

Taiwan

Taiwan would have to possess limited, mobile-TEL-based, long-range missile strike capability against key fixed military targets in mainland China, including aircraft in the open, airbases, and other supporting facilities. This is the most cost-effective offensive option against China's A2/AD capability, as the country itself has chosen vis-à-vis the US. This means Taiwan should not further invest in expensive high-tech platforms such as advanced aircraft and naval vessels.

*The Pessimistic Scenario*

The US

With a conspicuous imbalance of conventional military capability in China's favor, it would be very difficult for US military aircraft to penetrate China's airspace under its robust air defense or to dispatch aircraft carriers in the near waters, without committing significant risks. In this scenario, the US also lacks the ability to conduct prompt non-nuclear strikes against critical time-sensitive targets or critical targets situated deep inland, such as mobile launchers. Should it possess the ability, the US would quickly exhaust peacetime inventories of PGMs in a high-intensity war against China.

As Overcash argues, the US would have to abandon or lessen active defense involving heavy logistic requirements because it relies on air superiority over mainland

[70] A Senkaku contingency requires Japan to formulate an operational plan against Chinese aggression alone for a considerable period of time during which the U.S. forces temporarily withdraws from the theater to prepare for a full-scale counter-offensive. See, Matsumura, Masahiro, "Chuugoku No Taitou to Nichibei-Kankei no Tenbou (China's Rise and the Prospect for US-Japan Relations)," *Seiron*, no. 48 (May 2012); Masahiro Matsumura, "An Inquiry into 'the Dynamic Defense Capability' As the Key Concept of Japan's New Defense Strategy: Its Implications and Policy Issues" *Momoyama Hougaku: St Andrew's University Law Review,* no. 9 (2012); Fuse proposes a more drastic buildup of SDF's counter-A2/AD capability, by raising necessary funds through the SDF's all-out restructuring and reorganization. See, Satoru Fuse, "Japan's Anti-Access Defense Strategy," *Kokusai Anzen Hoshou* 39, no. 3 (2011).

China and on active BMD that would be easily saturated with salvoes of China's missiles. Instead, the US would have to focus more on sea/undersea control and the strengthening of battle networks/sensors,[71] employ denial and deception techniques so that it could minimize the accuracy of China's ballistic missile attacks, and use surface-to-air anti-cruise missiles in the theater centered on Taiwan,

Alternatively, the US would be forced to focus on conventional offensive against PLAAF's capability of sortie-generation. This involves counter-attacking China's air bases, such as strike campaigns against the radar/space facilities and ballistic missiles facilities as well as the aircraft and air base infrastructures including runways, fuels, and maintenance. Against these targets, the US could employ F-22s and B-1 bombers loaded with stealthy joint long-range air-to-surface standoff missiles (JASSMs) rather than Tomahawk land-attack missiles (TLAMs). Also, the US could develop and use several hundreds of new MRBMs similar to Pershing II once deployed in Europe in the 1980s, equipped with MIRVed or MaRVed conventional warheads, against China's air bases in Nanjing and Guangzhou military districts. These attacks could be launched from US bases in Guam and other islands in the Marianas.[72] In addition, the US can employ the existing four Ohio Class guided missile submarines (SSGNs) as major platforms, at least until they retire in the mid 2020s. As well, they could convert Virginia-class attack submarines (SSN) into SSGNs.

Without sufficient funds, however, the US would be unable to take the above conventional counter-A2/AD measures and thus fail to deter and, even if necessary, defeat China at the conventional level. Instead, the US would have to rely on nuclear escalatory response or simply back down, finding itself at crossroads of choosing between the strategy of hegemony and that of off-shore balancing. Should the US back down or be perceived to do so, Japan would see the US nuclear umbrella porous and, as the result, partially ineffective even under the strategy of hegemony.

[71] David M. Overcash, "Through the Lens of Operational Art: Countering People's Republic of China (PRC) Aggression in a Limited Conflict using Innovative Ways and Cost-Effective Means to Offset PRC Anti-Access Area Denial (A2AD) Capabilities," (Paper submitted to the Faculty of National War College in partial satisfaction of the requirements of the Joint Military Operations Department, October 25, 2010), p. 7.
[72] Shlapak, p. 133.

Japan

Japan, then, would be compelled to have to fix the porous umbrella by possessing a minimal survivable nuclear deterrent, while concurrently deploying conventional long-range land-attack missiles. This could be readily achieved with US support, including a bilateral nuclear-sharing agreement assuring transfer of tactical nuclear warheads to Japan during wartime or production technology transfer of these warheads. While these warheads could be loaded on land-attack cruise missiles to be launched from JMSDF conventional submarines, the US could lease SSNs and/or SSGNs to Japan, or transfer their nuclear-reactor technologies to the country. Should the US be unwilling to take these concrete measures, Japan would seriously lose its confidence in bilateral alliance, eventually dismantling the alliance. Then Japan would have to become strategically independent with significant nuclear power or to accept being on China's orbit.

Taiwan

To avoid provoking China and alienating the US, Taiwan practically possesses no option to go nuclear. Taiwan would have to possess sufficient military capability against China's direct invasion aiming to achieve the island's capitulation. Yet, the PLAN does not have sufficient sealift and amphibious assault capability to prosecute an outright invasion. With a properly prepared defense, Taiwan could resist effectively against the China's invasion. The PLAN's fleet of amphibious shipping will remain modest relative to the magnitude of requirements for assaulting Taiwan. The 100-ship amphibious Chinese force projected by Shlapak would only be able to transport about a force 31,000 strong at a time in the first 10 to 20 days.[73]

Taiwan would need to build reasonably robust, layered defense even without friendly air superiority, requiring more investment in (i) long-range JASSMs, anti-ship missiles, such as Hsiung Feng, and ASCMs launched from sea, air, and shore, (ii) mines, (iii) shorter-range missiles from helicopters, such as Hellefire, and fixed/mobile launchers against amphibious assault ships, (iv) artillery, rockets, and mortar fire

[73] Shlapak, p. 119.

against tanks, such as tube-launched, optically-tracked, wire command data link, guided missile (TOWs).

At present, the realistic scenario appears most relevant because the balance of power in general and that of military capability in particular will unlikely make a drastic shift in China's favor. But, the pessimistic scenario won't be totally excluded given the evolving uncertainties of the global market economy, the US economy, and its fiscal conditions.[74]

[74] The informed Japanese increasingly see that drastic cuts in U.S. defense spending are very likely. See, *Nikkei Shimbun*, June 16, 2012; and, *Sankei Shimbun*, June 20, 2012.

References

Barnett, Thomas P.M, "Big-War Thinking in a Small-War Era," *China Security*. 6, no. 3, 2010, http://www.chinasecurity.us/index.php?option=com_content&view=article&id=475, accessed: June 30, 2012.

Barno, David W., Nora Bensahel, and Travis Sharp, *Hard Choices: Responsible Defense in an Age of Austerity*. Washington, D.C: Center for a New American Century, 2011.

Bush, Richard C., "Taiwan and East Asian Security," *Orbis* 55, no. 2 (Spring 2012).

Cliff, Roger, Mark Burkles, Michael S. Chase, Derek Eaton, and Kevin L. Pollpeter, *Entering the Dragon's Lair: Chinese Strategies and Their Implications for the United State.* Santa Monica: RAND, 2007.

Cliff, Roger, "Anti-Access Measures in Chinese Defense Strategy," a testimony presented before the US-China Economic and Security Review Commission on January 27, 2011, http://www.rand.org/pubs/testimonies/CT354.html, accessed: June 30, 2012.

Cliff, Roger, *The Development of China's Air Force Capabilities.* Santa Monica, RAND, 2010, http://www.rand.org/pubs/testimonies/CT346.html, accessed: June 30, 2012.

Dobbins, James, David C. Gompert, David A. Shlapak, and Andrew Scobell, "Conflict with China", *Occasional Paper.* Santa Monica: RAND, 2011, http://www.rand.org/pubs/occasional_papers/OP344.html, accessed: June 30, 2012.

Erickson, Andrew S., and David D. Yang, "Using the Land to Control the Sea: Chinese Analysts consider the Antiship Ballistic Missile", *Naval War College Review* 62, no. 4 (2009).

Fuse, Satoru, "Japan's Anti-Access Defense Strategy," Kokusai Anzen Hoshou: The *Journal of International Security* 39, no. 3 (2011).

Gons, Stephen, "Access Challenges and Implications for Airpower in the Western Pacific," PhD diss., Pardee RAND Graduate School, 2010.

Hoyler, Marshall, "China's 'ANTIACCESS' Ballistic Missiles and U.S. Active Defense," *Naval War College Review* 63, no.4 (Autumn 2010).

Huang, Alexander Chieh-Cheng, "A Midterm Assessment of Taiwan's First Quadrennial Defense Review," *Taiwan-U.S. Quarterly Analyses*, no. 4 (February 2011), http://www.brookings.edu/research/papers/2011/02/taiwan-huang, accessed: June 30, 2012.

IISS, "New US military concept marks pivot to sea and air", *IISS Strategic Comments* 18, no. 20 (2012) http://www.iiss.org/publications/strategic-comments/past-issues/volume-18-2012/may/new-us-military-concept-marks-pivot-to-sea-and-air/, accessed: June 30, 2012.

Ito, Kan, *Jimetsu suru Amerika Teikoku: Nihon yo, Dokuritsu seyo* [The US Destroys Itself: Japan Has to Get Independent] Tokyo: Bungeishunjyu, 2012.

Krepinevich, Andrew F., *Why AirSea Battle*?, Washington, D.C, Center for Strategic and Budgetary Assessment, 2010.

Layne, Christopher, *The Peace of Illusion: American Grand Strategy from 1940 to the Present.* Ithaca: Cornell University Press, 2006.

Mahnken, Thomas G., "China's Anti-Access Strategy in Historical and Theoretical Perspective," *Journal of Strategic Studies* 34, no. 3 (2011).

Mao, Tse-tung, On Protracted War, University Press of the Pacific, 2001.

Overcash, David M, "Through the Lens of Operational Art: Countering People's Republic of China (PRC) Aggression in a Limited Conflict using Innovative Ways and Cost-Effective Means to Offset PRC Anti-Access Area Denial (A2AD) Capabilities," Paper submitted to the Faculty of National War College in partial satisfaction of the requirements of the Joint Military Operations Department, October 25, 2010.

Republic of China Ministry of Defense, Quadrennial Defense Review, 2009.

Ross, Robert S, "China's Naval Nationalism," *International Security* 34, no. 2 (2009).

Schanz, Marc V., "AirSea Battle's Turbulent Year," *Air Force Magazine*, October 11, 2011, http://www.airforce-magazine.com/MagazineArchive/Pages/2011/October%202011/1011airsea.aspx, aqccessed: June 30, 2012.

Shibayama, Futoshi, "US-China Power Transition and Japan's Hard Power," Kokusai Anzen Hoshou: *The Journal of International Security* 39, no. 4 (2012).

Shlapak, David A., David T. Orletsky, Toy I. Reid, Murray Scot Tanner, and Barry Wilson, *A Question of Balance: Political Context and Military Aspects of the China-Taiwan Dispute* (Santa Monica: RAND, 2009).

Shwartz, Norton A., "Air-Sea Battle: Promoting Stability in an Ear of Uncertainty," *The American Interests*, February 20, 2012.

Stavridis, James, "A New Air Sea Battle: Integrated Strike Forces," Washington, D.C, National War College, 1992, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA436862, accessed: June 30, 2012.

Tyler, Patrick, "As China Threatens Taiwan, It Makes Sure US Listens," *The New York Times*, January 24, 1996

US Department of Defense, Defense Planning Guideline for FY 1992-1999, 1994, . www.gwu.edu/~nsarchiv/nukevault/ebb245/doc04.pdf (Accessed: May 24, 2013).

----------, *Joint Operational Access Concept*, 2012.

----------, *Sustaining US Global Leadership: Priority For 21st Century Defense*, 2012.

US Department of Navy, Marine Corps, and Coast Guard, *A Cooperative Strategy of 21st Century Seapower*, October 2007.

US Department of Navy, *Naval Operations Concept 2010*, 2010

van Tol, Jan, et. al. *AirSea Battle: A Point-of-Departure Operational Concept*, Washington, D.C.: Center for Strategic and Budgetary Assessment, 2010.

Yang, Andrew N.D, "Mainland China's Military Development and Taiwan's Countermeasures," *Taiwan-U.S. Quarterly Analysis* no. 5 (August 2011), http://www.brookings.edu/research/papers/2011/08/chinas-military-development-yang, accessed: June 30, 2012.

Yoshihara, Toshi, and James R. Holmes, "Can China Defend a 'Core Interest' in the South China Sea?" *The Washington Quarterly* 34, no. 2 (2011).