China's A2AD and Its Geographic Perspective

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Abstract

Washington's and Beijing's access and anti-access strategies are constructed on the basis of two island chains. In order to countervail a rising China, the essence of the U.S. Asia pivot is reviving again the geopolitics of the Western Pacific. The term of A2AD is a Western terminology and its approximation in the Chinese strategic concept is China's active strategic counterattacks on exterior lines (ASCEL) and today China's A2AD capabilities have increased dramatically. China's missile arsenal constitutes severe threats to its neighboring countries, and its surface warships and submarines have frequently penetrated the Ryukyu Islands. Due to its position in the center of the first island chain, Taiwan is of great geostrategic importance. It is the cork that keeps the Chinese naval and air forces bottled up within the China Sea. One simple option for the U.S. and its partner nations to counter Beijing's increasing military strength is to boost their own version of A2AD capability. Taiwan should reshape its force structure with a strategy of asymmetry, combat credibility and resilience, as well as cooperating with the U.S. Asia pivot.

Key words: A2AD, ASCEL, ASBM, island chains, Miyako Strait

I. Introduction

When the People's Liberation Army (PLA) launched threatening war games off Taiwan nearly two decades ago on the eve of a presidential election on this island, the U.S. deployed two aircraft carriers, and China quickly backed down. Things don't seem so one-sided any more. While the U.S. military has been drained by over a decade of costly conflicts in Afghanistan and Iraq, China has developed air, naval and missile capabilities that could undercut U.S. superiority in the Western Pacific. Under the name of anti-access and area denial (A2AD), the PLA's growing array of aircraft, naval and submarine vessels, ballistic and cruise missiles, anti-satellite and cyber war capabilities already enable it to project power beyond its shore. It plans new submarines, larger naval destroyers and transport aircraft that could expand that reach further.

This shift raises questions about whether the U.S. can meet its commitment to maintain a strong presence in the Asia-Pacific for decades—not just a matter of global prestige but one also seen as critical for safeguarding shipping lanes vital for world trade and protecting allies. With its military buildup, China poses an unprecedented threat to Taiwan. China regards Taiwan as part of its territory. While relations between the two, long seen as a potential flash point, have warmed in the past several years, China threat is still Taiwan's biggest security challenge. China's assertion of territorial claims in the East and South China Seas, which it has declared as core interests, has spooked its neighbors and fortified their support for a strong U.S. presence in the region. Even former enemy Vietnam is forging military ties with the U.S. As the PLA has gotten more capable and Beijing has behaved more aggressively, a number of countries are looking at the U.S. as a hedge to make sure they can maintain independence, security and stability.

Amid the rivalry between Washington's and Beijing's access and

anti-access goals in the Western Pacific island chains, Taiwan can play a role due to its position in the center of the first island chain. Geography does not determine the strategic ambitions or policies of a state, but it does condition the choices made by policy makers, presenting both opportunities and constraints (Gray & Sloan, 1999: 2). Geography still matters to Chinese strategists in the twenty-first century. At key moments in the history of China's interaction with other hegemonic powers, Taiwan appears as either a potential bridgehead from which foreign rivals of China may establish themselves close to China's shores and adversely affect China's security or a buffer in China's hands that interposes a territorial layer of security on China's southeastern coast, a symbolic or genuine source of defense against western adversaries. From a geographic perspective, this paper explores Beijing's A2AD contents, capabilities, and threats, and their implications for Taiwan and other neighboring countries in the region.

II. Geopolitical Competition for the Western Pacific

Washington's joint access (U.S. Department of Defense, 2012) or gaining and maintaining access (U.S. Department of the Army and the Department of the Navy, 2012) and Beijing's A2AD are constructed on the basis of two island chains. In order to countervail a rising China, the essence of the U.S. Asia pivot is reviving again the geopolitics of the Western Pacific.

Classical geopolitics paced emphasis on position and derived power—Halford J. Mackinder on the Eurasian heartland and related land power (Mackinder, 1904), Nicholas J. Spykman on the Asian Rimland (Spykman, 2007), and Alfred T. Mahan on the Pacific Ocean and related sea power (Mahan, 2006). Technology has collapsed distance, but it has hardly negated geography. Rather, it has increased the preciousness of disputed territory. As for the strategic challenge

posed to the world by China, Robert Kaplan argues, "we would do well not to focus too single-mindedly on economics and politics. Geography provides a wider lens. The map leads us to the right sorts of questions" (Kaplan, 2009).

Perhaps the most enduring asymmetry in the Sino-American relationship is geographic. The U.S. is an insular power of continental size. It is surrounding by oceans that provide open access to the sea and create significant barriers to distant enemies, and it shares land borders with neighbors that are weak, friendly, or both. China, by contrast, lives in a tough and complicated neighborhood. It borders 14 different countries and its land boundaries have 22,117 km. Moreover, due to its vast size and the location of its frontiers, its outlying territories are home to minority groups alienated from Chinese Han majority (Central Intelligence Agency, 2013). Finally, China is hemmed in across its maritime periphery by island barriers that it does not control and maritime chokepoints that can be monitored and defended by potential opponents (Kaplan, 2012).

For the U.S., isolation does have its drawbacks, including the difficulty of projecting military power overseas across extended lines of communication, as well as the need to sustain a robust forward military presence so that allies abroad remain confident in American security commitments. Nevertheless, isolation also confers crucial benefits. Most importantly, the U.S. is far more secure than most other nations, it is the preferred security partner for countries that fear proximate rivals more than a remote hegemon, and its access to the sea underpins its naval power and dominance of the maritime commons (Montgomery, 2013: 79).

Likewise, China's geography yields a number of advantages. It can sustain military operations along relatively secure interior lines of communication and exploit its strategic depth by locating sensitive targets deep inland. Lord Nelson once joked that "a ship's a fool to

fight a fort." It also benefits from greater magazine depth; that is, it can stockpile far more weapons and munitions than a rival operating its forces far from home. Yet geography has been disadvantageous to China in a number of ways. In particular, the need to keep a wary eye on threatening neighbors and restive minorities has compelled Beijing to remain focused on territorial defense and internal security, and to sustain large ground and paramilitary forces. This, in turn, has inhibited China from extending its influence globally. Meanwhile, island barriers constitute significant obstacles that constrain China's access to the Pacific Ocean and Indian Ocean (Montgomery, 2013: 80). The advantages and disadvantages of maritime-continental competition are shown in the following Table 1.

Table 1. Geography and the Sino-American Strategic Competition

	China	The United States
Relative Geographic Advantages	• Interior lines of communication • Strategic depth • Magazine depth	• Territorial security due to geographic isolation • less threatening to other nations than nearby rivals • open access to the sea
Relative Geographic Disadvantages	• Surrounded by land-power counterweights • Persistent threat of internal unrest in outlying territories • Constrained access to the sea	• Exterior lines of communication • Forward military presence necessary to reassure distant allies and deter adversaries

Source: Montgomery (2013: 79).

From the Chinese geostrategic perspective, China's coastline is quite extensive, but its land-sea orientation was powerfully influenced by the special circumstances of its neighbors; for a time, the sea was viewed as a solid barrier and so was neglected. In modern times, the

sea became a springboard for foreign invaders as the great powers smashed in China's maritime gate.

According to Chinese geostrategist Xu Qi, China is part of what Halford Mackinder termed the Inner or Marginal Crescent on the fringe of the Eurasian landmass, with undoubted geostrategic preponderance on the continent. China's sea areas are linked from south to south and connected to the world's oceans; however, passage in and out of the open ocean is obstructed by two island chains. China's maritime geostrategic posture is thus in a semi-enclosed condition. China's heartland faces the sea; the benefits of economic development are increasingly dependent on the sea, and security threats come from the sea. The U.S. has deployed strong forces in the Western Pacific and has formed a system of military bases on the first and second Island chains with a strategic posture involving Japan and South Korea as the northern anchors, Australia and the Philippines as the southern anchors, and Guam positioned as the forward base (Erickson & Goldstein, 2006: 56–58).

At present, offshore defense is the fundamental guarantee of national maritime security. In the 1970s, Deng Xiaoping promulgated China's strategy of preparation for combat in the offshore area, since the main scope of maritime strategic defense was close in to shore. The distinguishing feature of the maritime strategy put forward on this offshore defense foundation is the realization of national unification, giving a prominent position to the safeguarding of maritime rights and interests, and emphasizing that the navy must be able to respond to a regional war at sea, as well as to neutralize enemy encroachment. As a result, the scope of naval strategic defense should progressively expand. In the direction of the South China Sea, the sea area extends 1,600 nautical miles from mainland China, but the scope of naval strategic defense is still within the first island chain (Erickson & Goldstein, 2006: 60–61).

Open ocean-area defense is an essential shield for long-term national interests. In the future, some maritime powers may employ long-range strike weapons to attack into the depths of China. The vast, unobstructed character of the naval battlefield is favorable for military force concentration, mobility, force projection, and initiating sudden attacks. Future at-sea informationalized warfare has characteristics of noncontact and nonlinearity, and in particular uses advanced informationalized weapons, space weapons, and new-concept weapons, etc. It can involve multidimensional precision attacks in the sea areas beyond the first island chain and threaten important political, economic, and military targets within strategic depth. The maritime security threat comes from the open ocean. This requires the PLA Navy (PLAN) to cast the field vision of its strategic defense to the open ocean and to develop attack capabilities for battle operations on exterior lines, in order to deploy the necessary shield for the long-term development of national interests (Erickson & Goldstein, 2006: 61).

Admiral Liu Huaqing, head of the PLAN from 1982 to 1986, saw control of the waters within its boundaries as the first step in a three-stage strategy to transform the navy into a formidable platform for projecting Chinese power. The next stage, he wrote, involved controlling a second island chain linking the Ogasawara Islands—including Iwo Jima—with Guam and Indonesia, while the third stage focused on ending American dominance throughout the Pacific and Indian oceans, largely by deploying aircraft carriers in the region (Washington Post, 2012). As China builds aircraft carriers, a senior PLAN officer argues, China and the U.S. can make a deal. The U.S. takes Hawaii and the Pacific to the east of it, and China will take the Pacific to the West of Hawaii and the Indian Ocean (Pubby, 2009).

For China, its projection of power is constrained by geography. It is restricted in the South by the Strait of Malacca and the Association of Southeast Asian Nations (ASEAN); in the North, by the Strait of

Korea/Tsushima and Japan and South Korea; and on the East by Taiwan, "the unsinkable aircraft carrier," as Douglas MacArthur called it. There are three barriers encircling and thwarting China:

- The arc from Japan to South Korea—Diego Garcia in the Indian Ocean, forming a zone of forward bases.
- The arc from Guam to Australia.
- The arc from Hawaii-Midway-Aleutian Islands to Alaska (Yoshihara, 2010: 43).

In contrast, the U. S. policy in the Pacific continues to be based on Alfred T. Mahan's perceptions: forward operation bases, positioning assets around chokepoints and SLOCs (Sea Lines of Communication), deploying a navy presence on all seas, and maintaining the capability to intervene at key geostrategic points. For a maritime power, the maritime frontier is, as observed by Homer Lea, one of its enemies (Lea, 2003). Tanguy Struye De Swielande explains further, this translates into a triple line of defense:

- Japan-South Korea-Taiwan-Thailand-Singapore.
- Japan-Guam-Philippines-Australia.
- Alaska/Aleutian Islands-Hawaii-Samoa (Swielande, 2012: 83).

Homer Lea, who is today best known as close advisor to Dr. Sun Yat-Sen during the 1911 Chinese Republican revolution (Kaplan, 2010), insisted on the need to rely on forward operation bases in the form of a triangle. Strategic geometry was the key principle on which much of his thought was based (Riccardelli, 1994). By forming numerous triangles with Guam as the potential center or node, the U.S. is actually executing the vision presented by Lea. Some examples are the Guam-Japan-South Korea, Guam-Darwin-Pearl Harbor, and Guam-Taiwan-Japan triangles (Figure 1) (Swielande, 2012: 84). Moreover, the U.S. strategic security presence at Guam is underpinned by a wider strategic triangle under direct American control, in the shape of Hawaii, Alaska (including Aleutian islands)

and Guam, with Guam playing a particularly important forward apex role for the Western Pacific in the second island chain (Grant, 2013b).

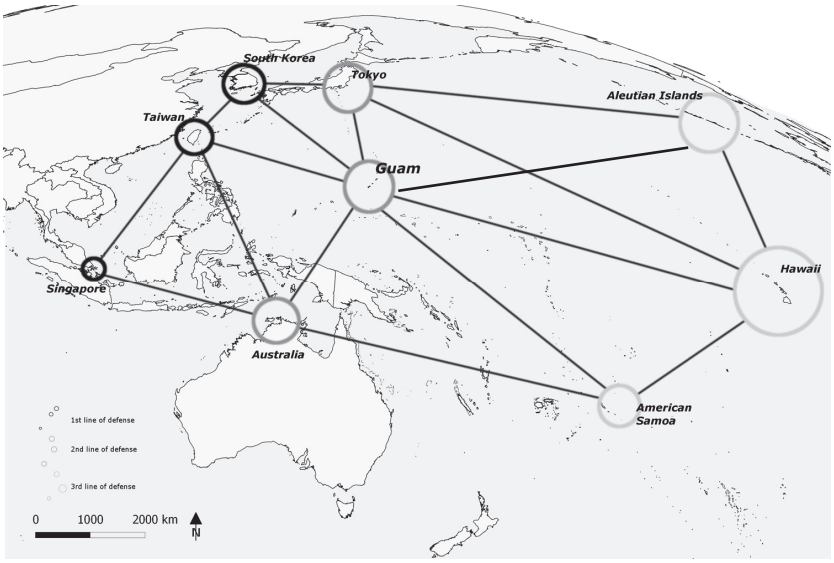

Figure 1. The Triangles in the Pacific Ocean

Source: Swielande (2012: 84).

In the Indian Ocean, the Diego Garcia atoll could fulfill the same purpose as Guam in the Pacific. In October 2002, the U.S. stationed in Djibouti the Combined Joint Task Force—Horn of Africa (CJTF-HOA) to fight terrorism and monitor sea lanes (U.S. Africa Command Blog 2012). In January 2009, the U.S. established Joint Task Force (JTF) 151 to fight piracy (Cragg, 2009). This is a spin-off from the Navy CJTF-150 that was created in 2002 to fight terrorism. The U.S. also has the 5th Fleet (with headquarters in Bahrain) with smaller units and organizations throughout the Gulf States. Like a number of other nations, the U.S. is interested in the island of Socotra (Yemen). Washington has also reinforced its presence in Kenya (Manda Bay and Lamu). In order to dominate the Indian Ocean, there is a necessity to control the Diego Garcia-Seychelles-Mauritius triangle, strategically

located between Asia and Africa. Although Diego Garcia is the only location with American bases on it, there is continuing cooperation between the Seychelles and the U.S. in the fight against piracy. The Seychelles hosts a number of U.S. drones used for monitoring piracy activities in the Indian Ocean. These drones also carry out strike missions against Al Qaeda affiliates in Somalia (Zenko & Welch, 2012). Even in light of these ongoing American initiatives, China and India continue their influence over the Seychelles and Mauritius. New Deldi, which already has perceived these island nations as India's sphere of influence, would not want to be outflanked by China in the region (Pathak, 2009: 89).

Apart from the tensions in the Sino-American rivalries, if there is a serious prospect of an extended security competition with China over the skies and waters of the western Pacific, Taiwan will be pivotal in shaping how it unfolds. Partly this is the consequence of geography. Taiwan is smack in the middle of the first island chain. Tetsuo Kotani conceded that "losing Taiwan to the PLA would be a game changer for Japan and the regional naval balance" (Serchuk, 2013). James Holmes argues further that during World War II, Admiral Ernest King aptly portrayed Formosa as the cork in the bottle of the South China Sea—as a base from which naval and air forces could seal off Imperial Japan's Southern Resources Area. Similarly, Taiwan has long served as a literal and figurative cork in China's bottle, riveting Beijing's attention on the cross-strait stalemate while complicating north-south movement along the Asian seaboard and access to the Western Pacific (Homes, 2010: 295).

Taiwan is important geopolitically. However, facing a rising China, there is a containing or accommodating China debate in the U.S. It translates a supporting or abandoning Taiwan policy dispute in other words. Former Vice Chairman of the Joint Chiefs of Staff, Admiral Bill Owens, suggests the Taiwan Relations Acts (TRA) is

outdated (Owens, 2009). Zbigniew Brzezinski calls Taiwan an endangered species (Brzezinski, 2012). Bruce Gilley describes Taiwan's current trajectory toward Finlandization, which means Taiwan would reposition itself as a neutral power, rather than a U.S. strategic ally (Gilley, 2010). Charles Glaser makes similar arguments in analyzing Sino-American relations from international relations theory. The challenge for the U.S. will come in making adjustments to its policies in situations in which less-than-vital interests such as Taiwan might cause problems and in making sure it does not exaggerate the risks posed by China's growing power and military capabilities (Glaser, 2011).

Denny Roy argues, on the contrary, abandoning Taiwan is completely at odds with the policy of Asia pivot or rebalancing (Roy, 2012). Shelley Rigger further elaborates, phasing out U.S. security assistance to Taiwan would not only undermine vital security architecture in the Asia-Pacific region but also send a chilling message to our democratic allies around the world that American friendship is fickle (Rigger, 2011). Michael Mazza emphasizes that Taiwan isn't a relic of the Cold War. Rather, it is situated at the geographic forefront of the strategic competition that very well may define the 21st century—that between the U.S. and China (Mazza, 2011). John Copper observes, Asia pivot means the U.S. needs to check China's rise. Since the U.S. does not have money to finance a meaningful pivot, Washington has to seek allies. Washington granted Taiwan passport holders the right to enter the U.S. and remain for ninety days without a visa and supported Taiwan's participation in the International Civil Aviation Organization (ICAO). The U.S. moves clearly showed signs of a desire for better relations with Taiwan (Copper, 2013).

Taiwan is even envisioned in China's geography as having geostrategic salience. The commonly accepted vision of Taiwan's strategic relationship to China entails the characterization of Taiwan

as a "protective screen" (屏障, *pingzhang*) for China's southeastern coast and the Taiwan Strait as the crux for defense of the entire coastal region. Taiwan is described as the "strategic gateway of the southeast" (東南的鎖鑰, *dongnan de suoyue*). Taiwan and Hainan together constitute a "pair of eyes" (雙目, *shuangmu*) and, with the Zhoushan islands off the northeast coast of Zhejiang, constitute a strategic "horn" (犄角, *jijiao*) with Taiwan at the center. Taken together, these territories form naturally an advantageous battle array in the shape of the Chinese character pin (品) offering coastal defense sufficient to shield China's six southeastern coastal provinces and cities (Wachman, 2007: 142–143).

Taiwan is seen as controlling a region denoted as the strategic "throat" (咽喉, *yanhou*) of the Western Pacific island chains, as the strongpoint closest to the mainland, and the demarcation of the boundary between the East China Sea (東海, *Donghai*) and South China Sea (南海, *Nanhai*). As such, Taiwan is a defensive outpost protecting the Chinese state, safeguarding China's north-south maritime traffic and the communications hub for China's maritime security region, and defending China's maritime rights and interest and blue territorial base. Once unification is achieved the PLA can again make use of Taiwan's territory, waters, and airspace for military bases in advance of activities in the Pacific oceanic and aerial battlefronts. So, Taiwan is both an asset in the hands of China and a liability in the hands of an adversary. It is described as having the potential to be both a bridge and springboard (橋梁和跳板, *qiaoliang he tiaoban*) (Wachman, 2007: 143).

Beyond protection of China's territory, Taiwan is thought to be of value in protecting vital sea lanes. Once unification is achieved, China's coastal defense can be pushed out eastward 300–500 kilometers, increasing the strategic depth at sea. This would enable the PLAN to widen its scope of operations to encompass the entire

China Sea area, to access the East China Sea and the Yellow Sea from the south, to defend against adversaries entering China's northern maritime area from the north, and to strike back directly at any enemy penetrating the south, and access the Philippine Sea area directly from the west to deal with any enemy. By controlling Taiwan and the Taiwan Strait, Beijing could also thwart the efforts of enemies seeking to blockade China. The PLAN and PLAAF (PLA Air Force) could sweep through the length and breath of the Western Pacific maritime area, cut the American forward strategic chain in the Pacific (前沿戰略鏈環, *qianyan zhanlue lianhuan*), look down and control East Asia (瞰制東亞, *kanzhi dongya*), and control Japan's maritime lifeline to Southeast Asia. Moreover, the Diaoyu (Tiaoyutai, Senkaku) Islands to the north and the waters surrounding it would fall within the range of the PLA's gunfire (Wachman, 2007: 143, 146). It is for reasons of geographic realpolitik that China is determined to incorporate Taiwan into its dominion.

In brief, the island chains in the western Pacific were identified in 1949-1950 as the recently gained "forward defense perimeter" to be maintained for the future. The geopolitical problem for the U.S. is that retention of its forward defense perimeter now comes up against an emerging Chinese drive to achieve maritime penetration of the same perimeter line (Scott, 2012: 617).

III. A2AD and ASCEL

The term of A2AD is a Western construct, and its approximation in the Chinese strategic concept is China's active strategic counterattacks on exterior lines (ASCEL) (積極的戰略外線反擊作戰, *jiji de zhanlue waixian fanji zuozhan*). Both concepts are similar and share many commonalities.

China started to understand the A2AD doctrine in the mid-1980s. Chinese planners began to shift away from planning for a war with

the Soviet Union and began gradually to think about way to modernize the PLA and incorporate new technology and fighting doctrine. The 1991 Persian Gulf War sent shockwaves throughout China's military community and accelerated the PLA's modernization and shifts in strategy. In 1993, then-President Jiang Zemin ordered Chinese military planners to focus on preparing to wage "local wars under high technology conditions" (Office of the Secretary of Defense, 2000: 5). This has been updated in 2004 to "local wars under condition of informationalization" (Rhem, 2005). This would include two components: limited in geographical scope, duration, and political objectives and dominated by high technology weaponry. There are obviously other events, recent or otherwise, that Chinese planners looked at when crafting A2AD (which the Chinese referred to as counter-intervention operations). The wars in Bosnia, Kosovo and the 1995-1996 Taiwan Strait crises, as well as the 2001 Hainan Island incident, were all major factors for China when considering the development of its military strategy. The Taiwan Strait crisis especially holds significant weight, as China at the time had very little in the way of strategic options in countering an American carrier off its coast, a reality that must have been a real spur to develop the DF-21D carrier kill missile (Kazianis, 2012).

The 1997 *Quadrennial Defense Review* (QDR) tangentially expressed the concerns of A2AD, and stated "that if an adversary ultimately faces a conventional war with the U.S., it could also employ asymmetric means to delay or deny U.S. access to critical facilities; disrupt our command, control communication, and intelligence network" (U.S. Department of Defense, 1997: 4). The 2001 QDR identified missiles (both ballistic and cruise) and chemical, biological, radiological, nuclear and explosive (CBRNE) weapons as the greatest anti-access threats, particularly for their ability to deny or delay U.S. military access to overseas bases, airfields, and ports. Other

anti-access threats of concern included advanced air defense systems that could threaten nonstealthy aircraft, and advanced mines, anti-ship cruise missiles (ASCM), and diesel submarines that could threaten the ability of U.S. naval and amphibious forces to operate in littoral waters (U.S. Department of Defense, 2001: 26, 31, 42–43). The 2006 QDR specifically pointed out that "China has the greatest potential to compete militarily with the U.S. and field disruptive military technologies that could over time offset traditional U.S. military advantages absent U.S. counter strategies" (U.S. Department of Defense, 2006: 29). According to 2010 QDR, China is developing and fielding large numbers of advanced medium-range ballistic and cruise missiles, new attack submarines equipped with advanced weapons, increasingly capable long-range air defense systems, electronic warfare and computer network attack capabilities, advanced fighter aircraft, and counter-space systems (U.S. Department of Defense, 2010: 31).

Moreover, in *the Military Power of the People's Republic of China 2004*, it first mentioned the concept of anti-access strategy, and denial and deception (D&D). Beijing sees Washington as principal hurdle to any attempt to use military force to regain Taiwan. China could consider a sea-denial strategy to hold at risk U.S. naval forces approaching the Taiwan Strait. Chinese D&D practices appear to be intended to delay or reduce U.S. diplomatic and military roles in crises (Office of the Secretary of Defense, 2004: 51). Since then, the annual report has monitored China's A2AD developments on year-by-year basis. The Chinese A2AD military strategy includes the following key characteristics:

- It aims to prevent friendly forces entry into a theater of operations and their freedom of action (Krepinevich, Watts, & Work, 2003: 5);
- It is intended to slow deployment of friendly forces and impede

friendly operations (Air-Sea Battle Office, 2013: 2);

- It is contemplated to conduct preemptive attacks designed to inflict severe damage on friendly forces based or operating in the western Pacific theater of operations (Tol, Gunzinger, Krepinevich, & Thomas, 2010: xii);
- It is defensive Air-Sea Battle against offensive Air-Sea Battle (Rubel, 2010: 40);
- It is denial of sea control against assertion of sea control (Turner, 1974: 8), and equivalent to guerrilla warfare at sea;
- It is an asymmetric military strategy (Manke & Christian, 2007).

Whereas the term A2AD is a Western construct, its approximation in the Chinese strategic concept is the PLA's ASCEL. In the U.S. perspective, Beijing's view of active offshore defense includes the more strategic label of ASCEL. The important factor in any Chinese formulation is that defense does not mean defense in U.S. terms. Rather, active defense is best understood as "we will attack when we see an advantage in doing so" (Cole, 2013: 52). The core nature of ASCEL operations is encapsulated by the following three points:

- It is not an operation on the exterior lines at the level of campaign or combat, but an operation conducted at the level of strategy;
- It is not an operation in the phase of strategic counterattack within the three phases of general war (strategic defense, strategic stand-off, strategic counterattack), but is a strategic operation conducted from the very beginning;
- It is a strategically defensive and active self-defense counterattack and a component of the strategy of active defense (Wishik II, 2011: 40).

China's ASCEL operations and A2AD share numerous commonalities, including their strategic level as well as their

integration with overall national military strategy. In addition to these rather general similarities, there are number specific points of commonality. For one, both place special emphasis on striking the enemy in the early stages of a conflict as well as preventing the enemy's approach, development, and power projection within a specific theater. Though China's ASCEL operations are classified as a counterattack, they are carried out from the very beginning of a conflict, emphasize early, active offensive operations conducted as far as possible from China's territory, and can potentially consist of the first shot at the tactical level. In addition, both concepts are decidedly asymmetric in nature and emphasize the defeat of a militarily superior enemy by a weaker side. Furthermore, they both place great emphasis on the naval role. Aerial and long-range strike forces due to the unlikelihood of land invasion and the relevant geographical scope and military targets, namely attacks on overseas military bases, battle platforms and deployment systems. It is also true that both share a common trigger for their activation, namely the perceived harming of China's core interests, territorial integrity and sovereignty. Finally, perhaps most compelling is the fact that they both share a similar geographical scope, namely the area between and immediately surrounding the first and second island chains (Wishik II, 2011: 44).

IV. China's A2AD Threats

The PLA's ASCEL operations and A2AD provide a doctrinal-based starting point for an A2AD assessment, but military capabilities constitute a greater proportion of evidence in support of such as assessment than actual PLA strategic writings, and fill the gaps between rhetoric and reality.

In July-August 1995 and March 1996, concerns about Taiwanese President Lee Teng-hui's measures that Chinese leaders associated with moves toward de jure independence of Taiwan led Beijing to

conduct missile tests and other military exercises near the Strait. To deter further escalation, then U.S. President William Clinton dispatched two carrier strikes groups (CSGs) toward the region in March 1996, later remarking, "When word of crisis breaks out in Washington, it is no accident the first question that comes to everybody's lips is: where is the nearest carrier" (America's Navy, 2013)? In the unfortunate event of a future Sino-U.S. military crisis, however, it is Chinese leaders who would be asking where the nearest U.S. carrier is, albeit for the opposite reason (Erickson, 2010: 5).

Since 1996, China has developed and acquired the technologies that could hold U.S. and allied military platforms and their supporting assets at risk in the western Pacific, and sought to deter an American carrier, a potent symbol of U.S. military might, from plying the edge of Chinese waters once again. In July 2010, Beijing opposed joint U.S.-South Korean military exercises in the Yellow Sea, which were participated in by the carrier USS *George Washington* in response to the March sinking of the South Korean patrol ship Cheonan. Beijing protested so vociferously that the U.S. and South Korea shifted planned maneuvers to the Sea of Japan, east of South Korea (Page, 2010).

At present, China's A2AD strategy is ever more potent. According to *the Military and Security Developments Involving the People's Republic China 2013*, these A2AD capabilities have been dramatically enhanced in the following trends: Firstly, cyberwarfare attacks and other espionage efforts. China has long been accused of engaging in cyber attacks and espionage on US networks, but for the first time the US military directly attributed some of those attacks to the PLA. Secondly, use of space to thwart the US military. In 2012, China conducted 18 space launches to expand its intelligence and surveillance satellites. China is working quickly to improve its capabilities to limit or prevent the use of space-based assets by

adversaries during times of crisis or conflict. Thirdly, development of carrier-killer missiles. China is developing specialized, precision anti-ship ballistic missiles (ASBM) that are capable of hitting US aircraft carriers from a range exceeding 1,500 kilometers. Finally, development of sophisticated ships, planes, and drones. China is developing fourth- and fifth-generation aircraft that incorporate stealth technology. China has also launched its first aircraft carrier. The formation of carrier battle groups will enable the PLAN to conduct comprehensive operations and enhance its long-range operational capabilities. The PLA is investing heavily in a robust program for undersea warfare, developing nuclear-powered attack submarines. China is also interested in expanding its fleet of drones (Office of the Secretary of Defense, 2013: i).

Cyber attacks are new dimension of the ongoing strategic competition between the U.S. and China, although cyberwarfare is nothing new. The PLA revised its doctrine from local wars under high technology conditions to local wars under informationalized conditions in 2004, while the U.S. National Security Agency (NSA) received the mission for Computer Network Attack (CNA)—offensive cyberwarfare—on March 3, 1997, from then Defense Secretary William S. Cohen. The future of warfare is warfare in cyberspace. The primary target of this option is the information infrastructure of an adversary. Such information infrastructures are expected to be primarily computer controlled, operated by the commercial-civilian sector (unprotected), and the primary infrastructure upon which military forces almost totally depend. As a result, information warriors will need to be expert in understanding the virtual world and have extensive knowledge of non-military targets. Military cyberwarriors will be the tooth, and civilians will be the tail in what the military calls the tooth-to-tail—frontline and support—relationship in warfare (Gertz, 2013).

Consider what might happen in a broader U.S.-China conflict. The PLA could conduct major efforts to disable critical U.S. military information systems. Even more ominously, PLA cyberwarriors could turn their attention to strategic attacks on critical infrastructure in America (Blumenthal, 2013). However, "We believe our cyber offense is the best in the world", said General Keith B. Alexander, Director of the NSA and Commander of U.S. Cyber Command (Aftergood, 2013). China's military fears a major cyberattack against its strategic forces and communist leaders also worry about cyberstrikes against infrastructure. A devastating cyberattack on its military or civilian infrastructure is one of Beijing's 16 strategic fears (Pillsbury, 2012: 158-159).

Of perhaps greatest concern, by December 2012, Beijing had a formidable arsenal of 1,100 short-range ballistic missiles (SRBM) deployed to units opposite Taiwan (Office of the Secretary of Defense, 2013: 5), while in 2002 it had only 350 (Office of the Secretary of Defense, 2002: 2). China is also fielding a limited but growing number of conventionally armed, medium-range ballistic missiles (MRBM). As China's ability to deliver accurate fire across the strait grows, it is becoming increasingly difficult and soon may be impossible for Taiwan and the U.S. to protect the island's military and civilian infrastructures from serious damage. China's ability to suppress Taiwan and local U.S. air bases with ballistic and cruise missiles seriously threatens the defense ability to maintain control of the air over the strait. Worst of all, the U.S. can no longer be confident of winning the battle for the air in the air. This represents a dramatic change from the first six-plus decades of the Taiwan-China confrontation (Shlapak, Orletsky, Reid, Tanner, & Wilson, 2009: 126, 131, 139).

An unclassified Defense Intelligence Agency report assessing the state of Taiwan's air defenses raises similar concerns. The report notes

that despite the operational capability of Taiwan's fighter force, these aircraft cannot be used effectively in conflict without adequate airfield protection, especially runways, suggesting a major vulnerability to the island's airpower. Taiwan's ability to protect its aircraft and airfields from missile attacks and rapidly repair damaged runways and taxiways are central issues to consider when examining Taiwan's air defense capability (Defense Intelligence Agency, 2010).

China's missiles also threaten Taiwan's ability to defend itself at sea. William Murray contends that China could sink or severely damage many of Taiwan's warships docked at naval piers with salvos of ballistic missiles. He argues that the Second Artillery's expanding inventory of increasingly accurate SRBM would probably allow Beijing to incapacitate much of Taiwan's navy and to ground or destroy large portions of the air force in a surprise assault and follow-on barrages (Murray, 2008: 24).

Equally troubling is growing evidence that China has turned its attention to Japan, home to some of the largest naval and air bases in the world, e.g., Yokosuka, Sasebo, Kure, Maizuru, Kadena, and Misawa. Beijing has long worried about Tokyo's potential role in a cross-strait confrontation. In particular, Chinese analysts chafe at the apparent American freedom to use the Japanese archipelago as a springboard to intervene in a Taiwan contingency. In the past, China kept silent on what the PLA would do in response to Japanese logistical support of U.S. military operations. Recent PLA publications, in contrast, suggest that the logic of missile coercion against Taiwan could be readily applied to the U.S. forward presence in Japan (Yoshihara, 2010: 40).

Evidence suggests that China's emerging strategy is actually much more ambitious, direct and therefore dangerous for the U.S. One of characteristics for the A2AD strategy is the wide proliferation of long-range ballistic and cruise missile technologies and the

convergence of Chinese military power around a missile-centric, rather than the conventional platform-centric, model of mass-firepower combat. Missiles are cheap, fast, expendable, risk no friendly casualties and, most importantly, are difficult to preempt. Moreover, they do not require air superiority to operate and offer a high, often uninhibited, rate of defense penetration. China can thus use missiles not only to achieve strategic surprise but to dismember U.S. assets on the ground or at sea without putting its own hardware or personnel in harm's way. For this reason, missiles have permeated the PLA's doctrine for every important kind of operation, from denial to blockade, and the PLA officer corps views them more and more as the way to level the playing field against a superior adversary (Pradun, 2011: 11).

In addition to attacking land-based targets, another weapon that warrants discussion is, of course, DF-21D ASBM. Given China's overall inferiority in long-range air and naval power, an ASBM would afford a powerful asymmetric means that could deter the U.S. forces on their way to a zone of conflict near China's littoral borders. However, the ASBM represents more than just a single weapon platform. Rather, it is seen as "a system of systems" and a key step in achieving high-tech and information war capabilities. This is because the ability to launch a land-based ballistic missile at a moving target thousands of kilometers away requires a wide range of support and information technologies far beyond just the missile itself. Certainly, the ASBM is the core component of this system, and the technological demands in maneuvering, guidance, and homing to defeat defenses and find its moving target at sea are formidable. Nonetheless, an effective ASBM would also require the ability to detect, identify, and track the target using some combination of land, sea, air, and space-based surveillance assets. Aside from the immediate software and hardware, all of these functions would have to be highly

integrated, fast reacting, and sufficiently flexible to attack the world's most sophisticated and best defended naval target in the world today—an American CSG (Hagt & Durnin, 2009: 87).

Moreover, the DF-21D would take approximately thirty-five minutes from the detection of the target for the PLA to communicate its location to a relevant C2 center, issue an engagement order (with no delay assumed) to the launcher, and fire the ASBM, and for the missile to travel its full range. During the thirty-five minutes the carrier group could travel thirty-one kilometers, making a circle with a radius of thirty-one kilometers the missile's area of uncertainty and therefore the required seeker footprint for a single missile to find the target (Hoyler, 2010: 93–94). Although no authoritative data on the DF-21D's seeker footprint exist in the open literature, Chinese sources suggest twenty-, forty-, and hundred-kilometer footprints (Hoyler, 2010: 93). Given the missile's high cost, it is unlikely that China would opt for an overly narrow footprint, making a hundred, or perhaps forty, kilometers more credible than twenty. Hence, chances are that each individual ASBM would be able to find its target and, once it does, achieve a virtually assured hit (Pradun, 2011: 25).

The U.S. Navy conceded in December 2010 that DF-21D had reached initial operating capability. Admiral Jonathan Greenert, the Navy's top officer, reveals that the sailors are working out several different options to kill it before it kills them. Some involve convincing the DF-21D that the carrier is in a different place. Others involve masking the electronic emissions of the carrier. Still others are more traditional—like blasting the missile out of the salty air. "You want to spoof them, preclude detection, jam them, shoot them down if possible, get them to termination, confuse it," Greenert said (Ackerman, 2012; Kreisher, 2013).

Although China's anti access—Defensive Air-Sea Battle—capability is impressive, significant holes remain in the PLAAF

modernization. Foremost among these is its small air refueling fleet. China has perhaps eight Il-78 tankers and may have converted up to a dozen H-6 bombers to refueling status (Grant, 2013a: 37). The PLAN continues to exhibit weakness in several areas, including capabilities for sustaining operations by larger formations in distant waters, joint operations with other part of the PLA, antisubmarine warfare (ASW), mine countermeasures (MCM), etc (O'Rourke, 2013: 3–4). Both PLAAF and PLAN have a dependence on foreign suppliers for their propulsion systems and a lack of combat experience.

V. Breakthrough First Island Chain

China's growing interest in the Ryukyu island chain, in particular the southern Sakishimas, has paralleled its own growing capabilities and ambitions. Prior to 2008, there were very few PLAN activities in the Ryukyu region. However, since 2008, particularly in 2013, they have become a regular occurrence.

The year of 2008 is a year of the PLAN shifted from the near-seas navy to the far-seas navy. China builds up its surface warships rapidly and is eager to flex its maritime military muscle (Table 2). In 2005 the PLAN only commissioned 9 modern destroyers and 1 frigate (Ships of the World, 2005: 35–38). In 2008 the PLAN commissioned 13 destroyers, 3 frigates and 1 amphibious transport dock (LPD) (Ships of the World 2008: 30-34), while in 2013 it commissioned 15 destroyers, 14 frigates and 3 LPDs (Ships of the World, 2013: 31-34). In December 2008, in addition to sending warships eastward to break through the first island chains, China dispatched a three-ship flotilla southward to the Gulf of Aden to protect merchant ships from Somali pirate attacks. Since then, the PLAN has rotated its counter-piracy escort flotilla and frequented the Ryukyu region. In comparison, counter-piracy escort is military operations other than war (MOOTW), while break-through the first island chains has more geostrategic implication in the

Washington-Tokyo vs. Beijing competition.

Chinese strategists and scholars have a hot debate on which strategic direction should go first when the PLAN projects its power. Fudan University's Shen Dingli explains, "For the East China Sea, it is more political. China considers we have been invaded by Japan and Japan has stolen our Diaoyu Islands. But for the South China Sea, it is largely about economics" (Keck, 2013). Retired Rear Admiral Yangyi opines, "Facing the enemy's encirclement, economics may act as a vanguard and military power as a rearguard. 'March South' has better served China's long term interests and will face weak neighboring states" (Ta Kung Pao, 2012). Yang further elaborates that China's expansion into the Pacific and Indian Oceans is a prerequisite for the country to call itself a great global power (Sun, 2013).

China's naval presence in the Gulf of Aden has recalled the historical sea trade route that extended coast-wise through the China Sea and the Southeast Asian archipelago to India, Arabia, Africa, and perhaps even Australia some 300 years before the arrival of Captain Cooke. In the 15th century, the Chinese navigator Zheng He made seven trade voyages to the "Western Seas" and established a moment in history when China ruled the seas as both economic and naval power (Neill, 2013). In October 2013, President Xi Jinping was in Malaysia and Indonesia. During his trip in Indonesia, he said in a speech that China and the ASEAN (Association of Southeast Asian Nations) will promote maritime cooperation and build a 21st-century new "maritime Silk Road" (MSR). China tries to promote the MSR to crack the possible American blockades (Denyer, 2013).

However, earlier MSR was used for the import of precious stone, wood and spices but today it will be used for oil and gas, which is directly connected to the energy security of not one but many countries. There is emerging security architecture in the region which has led to an increased arms buildup, and the assertiveness of new

regional powers has complicated the regional military balance, which makes a revival of the MSR looks bleak (Singh, 2013).

Table 2. Chinese Warship Activities in the Vicinity of Japanese Islands

Date	Warship Class	Activity
Oct. 2008	A *Sovremenny*-class destroyer and four other vessels	Passed through the Miyako Strait from the Pacific Ocean after transited the Tsugaru Strait
2 Nov. 2008	Four surface vessels, including a *Luzhou*-class destroyer	Passed through the Miyako Strait on their way to the Pacific Ocean
25 June 2009	A *Luzhou*-class destroyer and four other vessels	Traversed the Miyako Strait
18 March 2010	Six warships, including a *Luzhou*-class destroyer	Passed through the Miyako Strait to the Pacific Ocean
22 April 2010	Ten warships including two *Sovremenny*-class destroyers and two *Kilo*-class submarines	Passed through the Miyako Strait, during which time a Chinese helicopter buzzed a Japanese destroyer
3 July 2010	Two vessels, including a *Luzhou*-class destroyer	Passed through the Miyako Strait
8-9 June 2011	Eleven vessels, including three *Sovremenny*-class destroyers	Transited through the Miyako Strait to the Pacific Ocean. On 22 June, the same eleven vessels transited back to the East China Sea
22 Nov. 2011	Six vessels including a *Luzhou*-class destroyer and a *Luhu*-class destroyer	Passed through the Miyako Strait to the Pacific Ocean. On Dec. 1, five vessels transited back to the East China Sea
2 Feb. 2012	A *Jiangkai II*-class and three *Jiangwei*-class frigates	Passed through the Miyako Strait to the Pacific Ocean. On Feb. 10, the same four vessels transited back to the East China Sea
6 May 2012	Five vessels including two *Luyang I*-class destroyers and two *Jiangkai II*-class frigates	Sailed southeastward in international waters about 650 km southwest of Okinawa

Date	Warship Class	Activity
15 May 2012	Three vessels including two *Jiangkai II*-class frigates and one intelligence collection ship	Passed through the Miyako Strait to the East China Sea. On 29 April, the same vessels transited the Osumi Strait
23 June 2012	Three vessels including a *Luzhou*-class destroyer and a *Jiangwei II*-class frigate	Passed through the Miyako Strait to the East China Sea. On 13 June, the same vessels transited the Osumi Strait
4 Oct. 2012	Seven vessels including two destroyers, two frigates, two submarine rescue ships and one supply ship	Transited through the Miyako Strait to the Pacific Ocean. On 16 October, the same seven vessels transited back to the East China Sea through the Taiwan-Yonaguni Strait
23 Oct. 2012	Three vessels including two destroyers and a frigate	Transited through the Miyako Strait from the Pacific Ocean. These ships entered the Pacific Ocean from southern PLAN bases
28 Nov. 2012	Four vessels including two guided-missile destroyers, and two missile frigates	Passed through the Miyako Strait on their way to the Pacific Ocean. On December 10, the same ships transited back to the East China Sea through the Taiwan-Yonaguni Strait
31 Jan. 2013	Three vessels including a *Luhu*-class destroyer and two *Jiangkai II*-class frigates	Transited through the Miyako Strait to the Pacific Ocean. On 13 February, the same vessels transited back to the East China Sea
2 April 2013	A *Luyang II*-class destroyer and two *Jiangkai II*-class frigates	Sailed westward in international waters about southwest 650 km of Okinawa. On 31 March, the same vessels were spotted sailing eastward in the same waters
16 April 2013	A *Luyang II*-class destroyer and a *Jiangkai II*-class frigate	Passed through the Miyako Strait on their way to the Diaoyu Islands waters
13 May 2013	A *Jiangwei II*-class frigate and a *Jianghu V*-class frigate	Headed westward in international waters about 660 km southwest of Okinawa. On 7 May, the same ships were spotted about 44 km northeast of Yonaguni
27 May 2013	A *Luhu*-class destroyer, a *Liangkai II*-class frigate and a supply ship	Passed through the Miyako Strait and entered the Western Pacific for a training mission

Date	Warship Class	Activity
8 June 2013	A *Luhu*-class destroyer and a *Jiangwei II*-class frigate	Transited through the Osumi Strait. In early June, the same vessels were spotted in international waters about 450 km south of Raso Island
25 July 2013	Two *Luzhou*-class destroyers, two *Liangkai II*-class frigates, and a supply ship	Passed through the Miyako Strait and entered the East China Sea. These ships have accomplished the Sino-Russian joint exercise and on July 14, transited the Soya Strait on their way to the Pacific Ocean to conduct training exercises
21 Aug. 2013	Three vessels including a *Luhu*-class destroyer, a *Jiangkai II*-class frigate and a supply ship	Transited through the Osumi Strait on their way to Hawaii. On October 30, the same vessels transited through the Miyako Strait back to the East China Sea
27 Aug. 2013	Two *Jiangkai II*-class frigates	Passed through the Miyako Strait to the Pacific Ocean. On 9 September, the same vessels transited back to the East China Sea
23 Oct. 2013	Five vessels including two *Luzhou*-class destroyers and three *Liangkai II*-class frigates	Passed through the Miyako Strait to the Pacific Ocean. On 29 October, three ships transited back through the Miyako Strait, and the other two ships were spotted about 44 km northeast of Yonaguni
30 Oct. 2013	A *Luyang I*-class destroyer, a *Jiangkai II*-class frigate, and a supply ship	Were spotted about 610 km southwest of Okinawa. On Oct. 23, the same ships passed through the Bashi Channel between Taiwan and the Philippines
23 Dec. 2013	Three vessels including two *Jiangkai II*-class frigates and a supply ship	Were spotted about 610 km southwest of Okinawa

Source: Japan Ministry of Defense (2008–2013).

China's penetrating through the Miyako Strait is the symbol of national pride and patriotism. In addition to Chinese surface fleet activities, the Japan Maritime Self Defense Force (JMSDF) has tracked several Chinese submarine passages through Japanese straits in recent years (Table 3). Of great concern, on 9 November 2004, a Chinese

Han-class nuclear-powered submarine entered Japanese territorial waters while submerged. The submarine moved through a Corridor between Ishigaki and Miyako islands at around 5:50 a.m., breaching Japanese territorial waters for about two hours. Since the 1990s, the PLAN has been exploring submarine routes that will take vessels to the Pacific between Taiwan and Okinawa (Japan Times, 2004).

Table 3. Chinese Submarine Activities in the Vicinity of Japanese Islands

Date	Submarine Class	Activity
Nov. 2003	Confirmed: *Ming*-class diesel attack submarine	Passes through the Osumi Strait on the surface and flies the PRC flag
Nov. 2004	Confirmed: *Han*-class nuclear attack submarine	Passes submerged through Ishigaki Strait
Oct. 2006	Confirmed: *Song*-class diesel attack submarine	Surfaces within torpedo range of USS *Kitty Hawk* during exercises in the Pacific east of the Japan
Sept. 2008	Unconfirmed: PLAN submarine, unknown class	Passes submerged in Japanese territorial sea in the vicinity of Shikoku and Kyushu islands
Oct. 2008	Unconfirmed: *Han*- and *Song*-class attack submarines	Sit submerged in Japanese exclusive economic zone as USS *George Washington* passes en route to Busan
April 2010	Conformed: two *Kilo*-class Diesel attack submarines	Passes through the Miyako Strait with other vessels
May 2013	Confirmed: *Yuan*-class diesel attack submarine and unknown class	Passes submerged on May 2 in the west of Amami Oshima Island in Kagoshima prefecture; Passes submerged on May 12 in the south of Kume jima Island in Okinawa; Passes submerged on May 19 in the south of Minamidaito jima Island in Okinawa

Sources: Dutton (2009: 7); Burke & Kusumoto (2013).

Peter Dutton argues that the appearance of Chinese submarines in the vicinity of Japanese island have the following strategic

significance: Firstly, scouting: the action could have been a covert mapping exercise. For years the U.S. has been aware that the PLAN has been exploring various submarine routes through which to move its submarines into the central Pacific in the event of regional conflict. Some observers have suggested that relaxations in trade and technology restrictions in the 1990s allowed China to purchase advanced oceanographic mapping systems that enable it to make sophisticated maps of ocean floor. These maps could be very useful to the PLAN submarine force in the event of war. Additionally, the maps could be useful in exploring the seabed for suitable locations to drill and explore for gas and oil. Secondly, signaling: the PLAN has been demonstrating its sea power. It is conceivable that the submarine's submerged passage through Japanese waters was an intentional provocation to demonstrate to Japan and the U.S. the extent of the Chinese sea power and its blue-water capability, and possibly to test the military capabilities of the Japanese. To the U.S., China's message has consistently been that it should refrain from military support of Taiwan. To Japan, China's message may be related to ongoing maritime boundary and resource disputes. Finally, gatekeeping: access and denial of access during an East Asian crisis. In a military crisis over the status of Taiwan, one role for China's potent submarine force would be to support a PLA blockade of the island and to prevent the U.S. and Japan from using the choke points created by Japanese islands to deny Chinese vessels access to and from the Sea of Japan and the East China Sea during the period of crisis (Dutton, 2009: 19, 21-22).

What explains China's increased military activities near the Ryukyus? Beijing's 2012 defense white paper discloses that China's armed forces shall unswervingly implement the military strategy of active defense, guard against and resist aggression, contain separatist forces, safeguard borders and coastal and territorial air security, and

protect national maritime rights and interests and national security interests in outer space and cyber space (PRC's Information Office of the State Council, 2013). China's ability to achieve these objectives is connected to the Ryukyus in various ways. First, Beijing's pledge to defend its land and territorial waters includes the disputed Diaoyu Islands, inevitably generating friction with Japan. Second, the maritime rights it desires to protect involve access to sea lanes, including the vital straits that connect the Ryukyus to the Pacific. Finally, the proximity of the Ryukyus to Taiwan means that should China resort to force to prevent Taiwanese independence, the Ryukyus would likely play a critical operational role. If China aimed to seize the Diaoyu Islands or other islands in the Sakishima chain during a Taiwan crisis, it would be forced to vie for sea control with Japanese and the U.S. forces (Sayers, 2013: 54–55).

One key factor that affects security in the Ryukyu Islands is the PLA's amphibious capabilities. China seeks to project power ashore in Taiwan or various islands of the East China Sea. To date, its capabilities have been concentrated opposite Taiwan. The U.S. Department of Defense reported in 2013, however, that "the PLA is capable of accomplishing various amphibious operations short of a full-scale invasion of Taiwan. With few overt military preparations beyond routine training, China could launch an invasion of small Taiwan-held islands such as Pratas or Itu Aba. A PLA invasion of a medium-sized, better defended offshore island such as Matsu or Jinmen is within China's capabilities" (Office of the Secretary of Defense, 2013: 57). As a result, while China's amphibious assets remain focused on the Taiwan Strait, they appear capable of assaults against small, lightly defended islands, potentially including Miyako, Ishigaki, or Yonaguni (Sayers, 2013: 56).

China's maturing A2AD capability has threatened Taiwan, Japan and the U.S. forces stationed in the Western Pacific. One quick fix for

the U.S. and its partner nations to counter the PLA's powerful military might is to bolster their version of A2AD capability. Taiwan's military has tried to meet China's threat asymmetrically. The tool for Taiwan's denial of access strategy includes the supersonic *Hsiung Feng III* (*Brave Wind III*) anti-ship missile (ASM). The missiles are designed to cruise at a speed of Mach 2 with a range of up to 130 kilometers (Phipps, 2012: 16). The *Hsiung Feng III*-equipped patrol boats stationed in Keelung port will have combat radius easily within the Diaoyu Islands. The U.S. is even developing the Long Range Anti-Ship Missile (LRASM) for its naval and air forces. The LRASM provides the U.S. military with an offensive anti-surface weapon (OASuW) to strike the growing threats from A2AD strategy. Its 500 nautical miles range is crucial to restore the balance of hitting power. The LRASM will have air and surface-launched capability, travel at subsonic speed, and carry a 1,000-pound penetrator and blast-fragmentation warhead (Defense Advanced Research Projects Agency, 2013).

Moreover, a Rand report suggests the U.S. military consider turning China's A2AD doctrines on its head by incorporating a far blockade strategy using land-based ASMs at chokepoints in the first island chain. The report argues that land-based ASMs would not only have a significant effect on China's ability to project power, but it would also vastly expand the set of military problems that the PLA would face should it consider launching a conflict with its neighbors or U.S. allies. Land-based ASMs are so easy to operate and are strategically and tactically mobile. ASMs could be placed in many locations over thousands of miles of island chains, which would dilute the effectiveness of PLA missiles and air forces. If Taiwan and Japan became involved in a conflict with China, ASMs with an effective range of only 100-200 kilometers stationed on the island of Okinawa and northern Taiwan could cover all PLA naval traffic south of Okinawa. The Luzon Strait between the Philippines and Taiwan could

be covered with 100 kilometers range ASMs positioned in Taiwan and the Philippines (Kelly, Atler, Nichols, and Thrall 2013). The spiral competition between access and anti access has intensified in the Western Pacific region since China has become more assertive and aggressive.

VI. Conclusion

While countervailing an emerging China, the essence of the U.S. Asia pivot or rebalancing is reviving again the geopolitics of the Western Pacific. China has a geostrategic preponderance on the continent. However, passage in and out of the open sea is blocked by two island chains. China's maritime geostrategic posture is thus in an easily encircling condition. Although the U.S. has the difficulty of projecting power overseas across extended lines of communication, its policy in the Pacific continues to maintain forward bases, position assets around chokepoints and the SLOCs, deploy a naval presence on all seas, and keep the capability to intervene at key flash points. Thus, in the maritime-continental competition, Taiwan is seen as an unsinkable carrier or a cork in China's bottle by the West, pinning Beijing's attention on the cross-strait stalemate. Taiwan is also seen as a protective screen or the strategic gateway of the southeastern provinces by the Chinese, offering coastal defense for their soft underbelly.

Whereas the term of A2AD is a Western terminology, its approximation in Chinese strategic thinking is the PLA's ASCEL. Nowadays China's A2AD capability is even more lethal than two decades ago, including cyberwarfare, anti-satellite weapons, carrier-killer missiles and the new-generation ships, planes, and drones. Cyber attacks are new dimension of the future warfare and the target is the information infrastructure of an adversary. Military and civilian cyberwarriors will be the tooth and the tail or frontline

and support relationship in warfare. One of characteristics of the A2AD strategy is the wide proliferation of ballistic and cruise missile technologies and the convergence of Chinese military power around a missile-centric, rather than the conventional platform-centric, model of mass-firepower combat. The threats of the PLA's A2AD cover not only Taiwan, but also U.S. military bases on Japan. In addition to attacking land-based targets, the PLA has spared no efforts to develop ASBM capability to hit American aircraft carriers, though it is still a tough task.

The passage of PLAN surface warships and submarines through the Ryukyu island chain also demonstrates the penetration by China's A2AD threats of the first island chain. The year of 2008 is a watershed that the PLAN transformed from a brown-water navy to a blue-water navy. Prior to 2008, there were few PLAN activities in the Ryukyu region. Since 2008, particularly in 2013, the PLA claims it has become a regular training practice. The PLA's increasing Ryukyu activities have shown its strategic intents. Beijing has pledged to defend its land and territorial waters, including the disputed Diaoyu Islands. The maritime rights it desires to protect involve access to sea lanes, including the vital straits that transit the Ryukyus to the Pacific. Finally, should China resort to force to prevent Taiwanese independence, seizing the Diaoyu Islands or other islands in the Sakishima Chain would block possible U.S. or Japanese intervention.

Beijing has bolstered anti-access weaponry to pit against its superior rival. China's enhancing its A2AD capability has not only cast serious impacts and repercussions in the Asia-Pacific region, but also undermined goodwill and confidence-building in the cross-strait relations. One simple option for the U.S. and its partner nations to counter the PLA's increasing military strength is to boost their own version of A2AD capability. The items for Taiwan's anti access arsenal include supersonic ASMs, missile patrol boats, land-attack ballistic

and cruise missiles, submarines, etc. Also, Taiwan should reshape its force structure with a strategy of asymmetry, combat credibility and resilience, as well as cooperating with the U.S. Asia pivot. Taiwan needs self-help and a robust defense and makes contributions to the peace and stability in this region.

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中國反介入與拒止及其地理視野

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摘要

美中介入與反介入戰略是建在兩條島鏈基礎上。為反制崛起中國，美國重返亞洲要點是重建亞太島鏈地緣政治。反介入與區域阻絕是西方術語，中國類似詞語是積極的戰略外線反擊作戰。近來中國導彈對周邊國家構成威脅，水面艦與潛艦頻繁穿越沖繩海域。台灣位居第一島鏈關鍵地緣戰略位置，可將中國海空力量困在第一島鏈。在美國建構自身的反介入與區域阻絕能力同時，台灣需要一支反介入力量並配合美國重返亞洲政策。

關鍵詞：反介入與區域阻絕、積極的戰略外線反擊作戰、反艦彈道導彈、島鏈、宮古海峽