Alliance Requirements Roadmap: How Do Partners Counter A2/AD?

Compendium of Commissioned Working Papers
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About This Publication

This publication is a compendium of working papers commissioned by CNAS as part of its Alliance Requirements Roadmap project. These papers were presented at a conference CNAS hosted in December 2015 entitled, "Alliance Requirements Roadmap: How Do Partners Counter A2/AD?" This publication is in conjunction with CNAS' Alliance Requirements Roadmap paper series. These working papers were foundational to the analysis in CNAS' report, "Dynamic Balance: An Alliance Requirements Roadmap for the Asia-Pacific Region."

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These are working papers and appear here in their original, unedited format. The views expressed in this compendium are not a reflection of CNAS' views and are the authors' alone. They are solely responsible for any errors in fact, analysis, or omission.

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The Asia-Pacific Security Program seeks to inform the exercise of U.S. leadership in Asia by analyzing how the United States can rebalance its priorities; shape a rules-based regional order; modernize traditional alliances; build the capacity of new partners; and strengthen multilateral institutions and respect for the rule of law. From exploring rising maritime tensions in the region, to crafting ways to renew key alliances and partnerships, to articulating strategies to extend and enhance America's influences, the program leverages the diverse experience and background of its team, deep relationships in the region and in Washington, and CNAS' convening power to shape and elevate the conversation on U.S. policy across a changing Asia.

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Table of Contents

A2/AD and "Presence at Sea (PAS)" Challenges from an Allied Perspective

Dr. Narushige Michishita

Broadly, there are four areas in which China's A2/AD poses challenges to Japan: the Senkaku Islands; Taiwan; the South China Sea; and US-China long-term peacetime competition. This paper will focus on Taiwan and the Senkaku Islands – one wartime and one peacetime challenges – in which China's growing A2/AD capabilities pose threats to Japan's national security in the short to mid run, and discuss some of possible measures that Tokyo is taking or can take to deal with them.

When one discusses the A2/AD, "A2" is generally defined as strategies to prevent US forces entry into a theater of operations, while "AD" operations aim to prevent their freedom of action in the narrower confines of the area under an enemy's direct control.[1] In other words, the A2/AD constitutes a set of strategies used in wartime to frustrate adversary's military operations.

In order to understand the comprehensive picture of China's strategy, however, we must understand not only how China is strengthening the A2/AD capabilities for wartime operations but also how China is developing and using capabilities to expand its "presence at sea (PAS)" operations in order to prevail in long-term peacetime competition with the United States, Japan, and other countries in the region.

Wartime A2/AD Challenge: Taiwan Contingency

The most important wartime A2/AD challenge would arise from a Taiwan contingency. If a war breaks out between China and Taiwan, Japan will be asked to provide critical main operating bases and logistic support to the US forces fighting for Taiwan. Moreover, now that Japan can exercise the right of collective self-defense, the SDF could be asked to undertake important combat missions to protect US strike forces, especially aircraft carrier battle groups (CVBGs). China will most certainly attempt to neutralize Japan and, if that fails, destroy Japanese defense forces involved in the operations.

Japan's Role

Japan's wartime missions in the war across the Taiwan Strait would look very much like the ones which Japan was assigned to undertake during the Cold War in a hypothetical US-Soviet conflict in the Western Pacific. They will include protecting US bases in Japan, blockading important chokepoint straits along the Southwestern (or Ryukyu) Island chain, and defending sea lanes in the Western Pacific. The most important objective of these missions will be to provide secure operating bases for US air assets and safe passages to and at striking positions for the US CVBGs.

Militarily, what Japan is required to do is relatively simple. First, the SDF will provide air defense against China's ballistic missile and cruise missile strikes against US bases in Japan. Japan has already

[1] Andrew Krepinevich, Barry Watts, and Robert Work, *Meeting the Anti-Access and Area-Denial Challenge* (Center for Strategic and Budgetary Assessments, 2003), pp. 4-5.

deployed sea-based SM-3 Block IA interceptors as well as land-based Patriot PAC-3 interceptors, and plans to deploy SM-3 Block IIA interceptors under the current Mid-Term Defense Plan.

The SDF is also enhancing its base defense capabilities by deploying Type-11 short-range surface-to-air missiles (a.k.a. Base Air Defense SAM) with cruise missile defense capability. In addition, the Japanese Ministry of Defense is currently developing Type-03 medium-range surface-to-air missiles and air-to-ship missiles (XASM-3) both with cruise missile defense capability.

Second, Japan is slowly starting its plan to develop defense capabilities deployed on the Southwestern Islands. In this context, the SDF is deploying a coast observation unit on the island of Yonaguni and area security units on some islands as first responders. The "Amphibious Rapid Deployment Brigade" will also be created to provide support to island chain defense operations. Also, two fighter squadrons will be deployed in the Naha Air Base, and the 9th Air Wing will be created.

Moreover, if Japan chooses to, it can deploy Type-12 surface-to-ship missile or its variant - currently under development with the expected range of over 150 kilometers - in the Southwestern Islands in order to stop Chinese surface vessels from advancing into the Western Pacific. In an ideal scenario, this would provide a competitive strategy option to Japan by forcing China to divert its important A2/AD capabilities away from other high-value targets such as US bases in Japan and US CVBGs.

It remains a matter of debate whether it would be realistic and rewarding to turn the Southwestern Islands into a fortified defense line, however. For one, it might be politically difficult to make a decision to heavily fortify some of these islands so that they can survive China's initial concentrated strikes. In terms of population, there were about 1,454 in the Miyako Island, 1,738 in the Ishigaki Island, 333 in the Iriomote Island, and 139 in the Yonaguni Island according to the most recent census conducted in 2010.[2] For another, even if fortification is possible, it might still be difficult to use the Southwestern Islands as a line of defense effectively.

Finally, the SDF can undertake sea-lane defense missions as it did during the Cold War. The goal of the sea-lane defense would be to support US offensive operations by making it possible for the US CVBGs to navigate to the striking positions safely. The SDF would conduct anti-submarine operations while maintaining air superiority where possible. It was recently reported that the US Navy and the Maritime Self-Defense Force were now operating the sound surveillance system (SOSUS) from Okinawa together.[3]

If China's anti-ship ballistic missiles prove to be effective, fleet ballistic missile defense might be added to the traditional Cold War mission list. Even if China's anti-ship ballistic missiles are not effective, the United States and Japan might take precautions to cope with them, diverting important assets and resources away from homeland defense requirements.

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[2] 沖縄県企画部統計課「平成22 年国勢調査確報値　沖縄県の人口、世帯、住居（人口等基本集計による市町村別人口、世帯、住居等）」平成２３年１０月２８日、7頁。

[3]「日米で中国潜水艦監視網 沖縄拠点、太平洋カバー」Kyodo News, September 9, 2015, https://www.youtube.com/watch?v=hbYy9p1bbO0&feature=youtu.be.

There are both good news and bad news when the current strategic environment in the Western Pacific is compared with that of the Cold War era. The first good news is geographic. During the Cold War, the Kuril Islands offered the Soviet Union a useful natural barrier separating the Western Pacific from the Sea of Okhotsk. However, Japan controls the Southwestern Island chain this time. Japan has an option to use it as a natural barrier. Better yet, Japan might be able to offer naturally protected good striking positions to US forces and/or take measures to help US forces conceal their locations.

Second, while the Soviet Union was a sophisticated military superpower with the ability to wage a global nuclear war. Today, China is growing but still inferior to the United States and Japan in terms of conventional capabilities and does not have strategic nuclear capability comparable to the Soviet Union's.

There is bad news, however. First, while the only exits Soviet fleets had for advancing to the Western Pacific were the three straits of Soya (La Perouse), Tsugaru, and Tsushima, China's fleets have at least nine to eleven locations that could be used to do the same. In other words, Japan and the United States have an advantage in their control of the Southwestern Islands, but the configuration of this island chain is not too favorable.

Second, China's economic performance is superior to the Soviet Union's. The Soviet economy collapsed as a result of the arms race that it locked itself into with the United States. However, the same might not happen between China on the one hand and the United States and Japan on the other. According to the Stockholm International Peace Research Institute (SIPRI), Chinese defense spending grew by a remarkable 167 per cent from 2005 to 2014. During the same period, the US and Japanese defense spending decreased by 0.4 and 3.7 per cent respectively.

China's "Kinetic" and "Soft" A2/AD Capabilities

If war breaks out across the Taiwan Strait, China will attempt to prevent Japan from helping the United States with both "kinetic" and "soft" A2/AD capabilities. First, the kinetic means would be used to deny effective use of military bases in Japan and employment of the SDF forces in support of US forces. Key military facilities in the Southwestern Islands and Okinawa as well as Japanese defense forces operating in the theater will become targets.

Second and probably more importantly, China will use "soft" A2/AD capabilities to prevent Japan from making a political decision to provide necessary support to US forces fighting for Taiwan. China will threaten to attack Japanese cities especially those in Okinawa and declare that the threat would become real if Japan decided to let the Americans use bases in Japan and to commit the SDF to the operations to defend Taiwan. The base use issue will be particularly difficult because the United States would have to obtain an advance approval from the Japanese government to use its bases in Japan for combat operations overseas.

Specialists tend to focus on China's kinetic A2/AD capabilities, but its soft (although it relies on threat of kinetic force) A2/AD capabilities are likely to become a more serious and difficult challenge to Japan in the real world.

Peacetime A2/AD Challenge to the Senkaku Islands

Like the United States has been conducting the "freedom of navigation (FON)" operations in different parts of the world since during the Cold War, China has been conducting its PAS operations in the recent years. While China has refrained from using kinetic force to assert its "sovereignty" over the Senkaku Islands, it has been using visible and continued physical presence as a means of enhancing its claim over the islands. Now that the US president has made his country's defense commitment to the Senkakus clear, China's optimal strategy seems to have become one of staying the course that is to keep conducting the PAS operations in the Senkaku Islands area.

The Senkaku Islands are constituted by five major islands - Uotsuri-shima, Kita-kojima, Minami-kojima, Taisho-tou, and Kuba-shima. In 2012, the Japanese government acquired ownership of the first three at the price of $26 million. Of the other two, Taisho-tou has been owned by the government since the Meiji period and Kuba-shima is still owned by a private Japanese citizen.

The Japanese government formally incorporated the Senkaku Islands in 1895. From 1956 through 1978, US forces actively used two of the islands - Taisho-tou and Kuba-shima - as gunnery ranges named Sekibi Sho Range and Kobi Sho Range respectively, and the United States still maintains the right under the US-Japan agreement of 1972 to use them for military purposes.

The Chinese government never protested against the use of these ranges by the US forces. It began claiming the islands - which it calls Diaoyu - only in 1971, three years after a survey conducted with the support of the then UN Economic Commission for Asia and the Far East suggested possible oil reserves in the East China Sea. In 1992, China enacted a law concerning its territorial sea, designating the Senkaku Islands to be Chinese.

China's "Presence at Sea" Operations

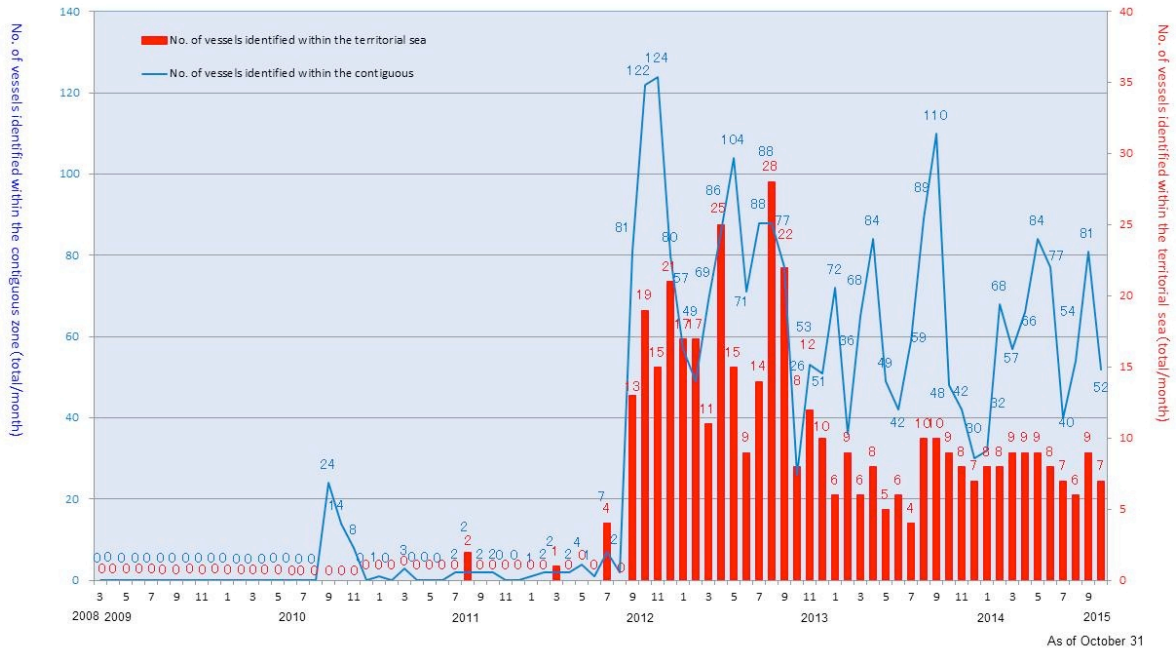
Since September 2012 when the Japanese government purchased the ownership of three of the five Senkaku Islands, China has had its government vessels as well as fishing boats constantly operate in the areas surrounding the Senkaku Islands in an attempt to undermine Japan's hold on the Senkaku Islands and back up China's territorial claims over them.

Chinese government vessels have operated in contiguous zones around the Senkaku Islands almost daily except on stormy days. Between September 2012 and November 2015, Chinese government vessels entered Japanese territorial waters 2622 ship times, or about 67 ship times per month on average. They also entered Japan's territorial waters around the Senkaku Islands 417 ship times, or about 10 ship times per month on average, in the same period.[4]

[4] 海上保安庁「中国公船等による尖閣諸島周辺の接続水域内入域及び領海侵入隻数（日毎）（平成２４年９月以降）」http://www.kaiho.mlit.go.jp/mission/senkaku/senkaku.html。MOFA, "Trends in Chinese Government and Other Vessels in the Waters Surrounding the Senkaku Islands, and Japan's Response- Records of Intrusions of Chinese Government and Other Vessels into Japan's Territorial Sea," November 5, 2015, http://www.mofa.go.jp/region/page23e_000021.html.

According to the Japan Coast Guard (JCG), about five Chinese government vessels regularly operate in the Senkaku Islands areas.[5] In 2014, Chinese government vessels remained inside the contiguous zones around the Senkaku Islands for 43 days, marking the longest time of continuous operation in the area.[6] Moreover, the number of Chinese fishing boats entering Japan's territorial waters has increased from eight times in 2011 to 39 times in 2012, 88 times in 2013, and 208 times in 2014.[7]

Figure: Activities of Chinese Government Vessels near the Senkaku Islands



Source: MOFA, "Trends in Chinese Government and Other Vessels in the Waters Surrounding the Senkaku Islands, and Japan's Response: Records of Intrusions of Chinese Government and Other Vessels into Japan's Territorial Sea," November 5, 2015 (http://www.mofa.go.jp/region/page23e_000021.html).

Japan's Response

In response, the JCG has formulated a plan to maintain robust patrol forces in the Senkaku Islands area. It aims to maintain five ships on patrol on the regular basis. In order to achieve this goal, the JCG plans to assign two 4,000-ton Tsugaru-class large patrol vessels each equipped with one helicopter and a 40 mm machinegun equipped and ten 1,500-ton large patrol vessels each equipped with a 20 mm machinegun to the Senkaku mission by the end of FY2015.[8]

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[5] 海上保安庁「戦略的海上保安体制の構築」p. II-8-1, http://www.mlit.go.jp/common/001032583.pdf.
[6] 警察庁警備局「治安の回顧と展望（平成26年版）」49頁（https://www.npa.go.jp/keibi/biki/kaiko_to_tenbou/H26/honbun.pdf）。
[7] Japan Coast Guard, *Japan Coast Guard Annual Report 2015* (Japanese), p. 17.
[8] 海上保安庁「平成２７年度　海上保安庁関係予算概要」2015年1月、4頁。『防衛ニュース』2015年4月4日（http://thutmose.blog.jp/archives/26372568.html）。

In addition, the JCG has begun to acquire 180-ton law enforcement patrol boats in FY2014, and nine of them will be introduced eventually.[9] It will also acquire three Dassault Falcon 2000LXS long-range aircraft by the end of FY2019.[10]

Sizing Up the "Presence at Sea" Operations?

There are concerns that China might further increase the frequency and the size of it maritime presence in the Senkaku area. In June 2015, it was reported that the China Coast Guard had decided to construct a large base in the city of Wenzhou in the Zhejiang province, which could accommodate up to six 10,000-ton-class large patrol vessels, aircraft, and training facilities. Objective of this construction was declared to be to strengthen China's ability to maintain patrol vessels near the Senkaku Islands.[11] Wenzhou is 370 km away from the Senkaku Islands, closer to the Senkakus than Okinawa is, which is approximately 410 km away.

In addition, China has recently started operating the world's largest coast guard ship – "Zhongguo Haijing (中国海警) 2901" - with the displacement of 12,000 tons and equipped with a 76 mm gun and Z-8 helicopter.[12] JCG's Shikishima-class patrol vessel, with the displacement of 9,300 tons and designed to protect ships transporting plutonium from Europe to Japan, was replace by this Chinese ship as the world's largest coast guard vessel.

It is not clear yet how China might use this ship, but an article in China's *People's Daily* has made an ominous suggestion in July. It said:

China's new generation of the 12,000 ton coast guard ship is designed to be used for law enforcement at sea and preventing foreign vessels from getting closer to our ship. The design of the main body of this vessel is up to military standard.
It has the power to smash into a vessel weighing more than 20,000 tons and will not cause any damage to itself when confronting a vessel weighing under [sic] 9000 tons. It can also destroy a 5000 ton ship and sink it to the sea floor.[13]

Zhongguo Haijing 2901 is currently operating from Shanghai, but it might be redeployed to Wenzhou later.[14]

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9 「海保28年度予算概算要求―離島・遠方の対応力強化」『海上保安新聞』2015/09/08。
10 「海上保安庁、尖閣諸島周辺海域の監視体制強化…新型ジェット機や巡視船を導入」『レスポンス』2015年8月31日、http://response.jp/article/2015/08/31/259003.html。
11 金順姫「中国、尖閣監視の大型基地を計画　沿岸部の温州に」『朝日新聞』2015年6月13日。
12 『読売新聞』2015年9月6日。
13 Jiaxin Li, "China's New Generation of Coast Guard Ship is Powerful," *People's Daily Online*, July 29, 2015, http://en.people.cn/n/2015/0729/c90000-8927696.html#.
14 "ZHONG GUO HAI JING 2901 - Patrol Vessel; ZHONG GUO HAI JING 2901 - IMO 9756016 - Details and current position," *Vessel Finder*, https://www.vesselfinder.com/vessels/ZHONGGUOHAIJING-2901-IMO-9756016-MMSI-413456060, accessed on December 5, 2015; and Ryan D. Martinson, "East Asian Security in the Age of the Chinese Mega-Cutter," Center for International Maritime Security, July 3, 2015, http://cimsec.org/eastasiansecurityagechinesemegacutter/16974.

There are at least two different ways in which China can use this ship. First, it can decide to further extend the number of days on which Chinese government vessels continuously operate in the Senkaku Islands area. If the ship can extend the duration of Chinese patrol vessels' continuous operation in the vicinity of the Senkaku Islands, it might be able to strengthen its sovereignty claim over them.

Second, China can decide to use the ship to drive JCG vessels away from the Senkaku Islands area. If it happens, Sino-Japanese tension over the Senkaku Islands will be reignited. Now that China possessed the biggest patrol ship in the world, its leaders might get exposed to criticism from hardliners if they failed to use the new ship to properly protect China's "rights" over the Senkaku Islands.[15]

[15] The Chinese use the term "rights protection" operations to mean "a great fleet of ships charged with advancing Beijing's claims to waters and islands hundreds of miles away from the mainland coast...." Ryan D. Martinson, "East Asian Security in the Age of the Chinese Mega-Cutter," Center for International Maritime Security, July 3, 2015, http://cimsec.org/eastasiansecurityagechinesemegacutter/16974.

Japan's Approach to Partner Capacity Building In Southeast Asia and the Indo-Pacific

Hideshi Tokuchi

"Proactive contribution to peace" is one of the basic principles enshrined in Japan's national security and defense policy. Capacity building support is one of the valuable instruments in the implementation of this principle. The Ministry of Defense of Japan (MoD) has been engaged in this activity, particularly focused on Southeast Asia. As this business is in its early stage, there is wide room for development and for cooperation with the US and other partners.

This paper focuses on Southeast Asia as a matter of immediate necessity. The capacity building support to that region will provide useful input to further support to the entire Indo-Pacific.

1. Importance of Southeast Asia

Southeast Asia has a lot of meaning for the peace and prosperity of Japan.

First, Southeast Asia, which was known for its poverty in the twentieth century, is a great engine of economic growth in today's world. The stability and prosperity of the region is critically important.

Second, Japan and the regional countries share common security interests in a wide range of issues including natural disaster management and stable and rules-based maritime order.

Third, the ASEAN members are building their mutual relationship upon the common values such as democracy, human rights and rule of law. They and Japan share these values and can strengthen their relationship, capitalizing on these ideas.

Fourth, diversity certainly features in Southeast Asia. The region is diverse in many senses. This unique nature of this region makes a difference in forging energy necessary to survive and prosper in today's world. Japan, a much more homogeneous nation, has much to learn from this point.

Fifth, Southeast Asia is important from the view-point of sea traffic. Our international trade depends much on sea transport and we have key stakes in the peace and stability of maritime domain particularly in the Indo-Pacific region. Geopolitical significance of the South China Sea as an integral part of world sea transport is clear in everyone's eyes, as it occupies the critical location of sea lines of communication from the Indian Ocean to the Pacific Ocean.

Sixth, the depth of the South China Sea, more than 1,000m in average, adds a strategic importance when we address the issues of Chinese submarine operations. A Japanese expert draws an analogy between the Sea of Okhotsk in the Cold War era and the South China Sea in today's world. Seventh, a good catch of fishery resources from the South China Sea, which is around 10% of the world total, is a proof of importance of this area for the food security of Asia including Japan.

2. Current trends of Southeast Asia

Each ASEAN member is small, but unity of ASEAN gives strength to each of them. Helping ASEAN enhance its unity makes a lot of sense to all of us. And, we need to consider the following trends of this region in order to promote our security cooperation with them, supporting the unity.

First, not only Asia-Pacific nations such as the US, Japan, Australia, India and China but also European countries such as the UK, France and Germany look to this region. Such an increasing attention adds a voice to the regional countries. It is important to capitalize on this trend in order to achieve the regional stability.

Second, ASEAN has been striving to enhance its unity and strength by improving its members' respective capabilities to address common security agenda. ADMM emphasizes non-traditional security agenda such as HA/DR. Maritime security should be dealt with in this context as well.

Third, China's influence in this region will be limited. We see democracy and other political values expanding and rooted in Southeast Asia. It is hard to imagine that China will accept those values. These values rather give the US and Japan more leverage for cooperative and friendly relations.

Fourth, domestic instability still lingers in many of the regional countries. In order for them to be able to address external challenges, internal stability is prerequisite.

3. Japan's capacity building support to Southeast Asian countries

Next, I would like to discuss MoD's capacity building support to those countries, as the basis of the discussion on the future orientation.

a. Purposes and significance

The purpose of MoD's efforts is to help achieve regional stability and improve global security environment by human resources development and technical assistance.

According to MoD, these efforts have the following significance. First, supported countries will be able to join international efforts toward the improvement of security environment. Second, such efforts will contribute to the enhancement of overall relations between those countries and Japan. Third, such efforts will strengthen Japan's cooperative relations with other supporting countries. And fourth, such efforts will enhance their trust in the Defense Forces and in Japan as a whole.

b. Japan's capacity building support to Southeast Asians

MoD's assistance includes long-term and short-term dispatches, and invitation programs. The long-term dispatch is to give lectures and practical training. The short-term dispatch is to conduct seminars and to give lectures. Invitation programs are to provide opportunities to view facilities and to undergo training.

These efforts include civil engineering support to Cambodia; underwater medicine, aviation safety, international aviation law, peace-keeping and HA/DR support to Vietnam; oceanography,

international aviation law and marine charting support to Indonesia; underwater medicine, aviation meteorology and HA/DR support to Myanmar; and airlift training support to the Philippines.

4. Japan-US cooperation on capacity building support to Southeast Asian countries

Here, I would suggest the following five principles in order to promote our cooperation: First, we need to join our efforts to support the littoral states of the South China Sea in their capacity building for maritime security. Second, we must respect and support the unity of ASEAN. Third, we need to involve other partners, such as Australia, New Zealand and NATO countries in our efforts. Fourth, a whole-of-government approach is must. And fifth, we need to help ASEAN members establish their domestic stability.

First, capacity building support to the littoral states. They need to raise their awareness of the situations in the South China Sea. This is urgent, and information sharing is just a first step. They need to enhance respective maritime security capabilities.

History of the South China Sea shows that China often capitalizes on a power vacuum. China's expansion to the Paracel and Spratly Islands is historically related to the French and the former Soviet withdrawal from this region. The lesson is "Do not to create a power vacuum". Thus, the US Navy's FONOPS are much appreciated. In the long run, the littoral states must assume larger responsibility. Here, there is a huge opportunity for the US and Japan to cooperate to help them enhance their capabilities. They are weak, and some of them are inward-looking. They have a big challenge even in the awareness of the situations.

But first, those littoral states must establish their own concepts, philosophies, goals, priorities and specific programs of their force developments and share these fundamentals with us. Otherwise, we will never know whether our assistance is effective and relevant to the situation or not. We may even have to discuss with them how to formulate those fundamentals. Assistance providers like us must work out a common strategy. This is not just a matter of selling a single weapon. Entire capabilities of respective assistance recipients are to be addressed.
For this purpose, we need to encourage them enhance transparency in their plans, programs and in their policy processes. In doing so, we need to know who plan what and how, and also we need to know who are the right persons as our counterparts. Here, the US and Japan has another room for collaboration beginning with information sharing on these matters.

I would like to add one more point. There is a difference of situations between the South China Sea and the East China Sea, although both of them are exposed to China's unilateral attempts to try to alter the status quo by force.

In the East China Sea, Chinese public vessels frequently intrude into the Japanese territorial waters around the Senkaku islands. China also challenges the status quo of the air domain by unilaterally announcing Air Defense Identification Zone in November 2013, which covers the Senkaku Islands as if they were Chinese territorial islands and attempts to force others to abide by Chinese regulations.

In the South China Sea, China has been expanding its unilateral and coercive actions in even more assertive and destabilizing manners. Not only China's land reclamation activity is rapid and massive, but also the Chinese are more violent over there.

Where does that difference come from? First of all, Japan's expanding capabilities, both the Coast Guard and the Defense Forces, offer key deterrent. On top of that, US forward-deployed military presence in Northeast Asia supported by our robust alliance constitutes an anchor.
Second, we need to support the unity of ASEAN. Unity of ASEAN helps ASEAN obtain strength and it will lead to the stability of the entire region. We must oppose any attempts to undermine the unity. Such attempts will certainly militate against the regional stability and the US policy of rebalancing toward the Asia-Pacific. Thus, we must not only provide support to the littoral states but also obtain understanding and support to those efforts from continental ASEAN countries such as Laos, a land-locked country and the next chair country of ASEAN, and also Cambodia.

Third, we need to involve other partners. Japan and the US must pursue trilateral and multilateral cooperation in international activities including capacity building support. Australia, New Zealand, and NATO members such as the UK, Germany and France are increasingly interested in this region. We should unite our efforts with them and establish appropriate division of labor multilaterally.

Regarding European countries, I would argue that we need to draw their greater attention to the security environment of East Asia and to share the notion of indivisibility of international security. We must not tolerate any attempts to try to alter the status quo by force or coercion. If this principle was ignored in East Asia and you acquiesced in it, you could not say no to other actions of the same nature in East Europe, either. Hence, the world community must stand together against the Russian behaviors in East Europe and the Chinese behaviors in East Asia with a single voice, and thus the US and Japan together must work on the Europeans to be much more attentive to the security situations in East Asia.

Fourth, a whole-of-government approach is must. Capacity building is not only for the military. Maritime security especially in "gray zone" scenarios involves other agencies, law-enforcement in particular. It is important to strengthen law-enforcement capability so that a tension may not easily escalate to an all-out military contingency.

Fifth and finally, domestic stability of the regional countries. Those which are occupied with domestic instability cannot afford the energy to address external challenges. Thus, international cooperation to help fix those internal problems, e.g. the peace process of Mindanao in the Philippines, will contribute to their greater attention to maritime security issues. In addition, roles of the military of these countries should be reviewed. The military should be able to focus on external challenges much more by delegating internal security roles to other relevant agencies.

5. Conclusion

For the long-term stability of Southeast Asia, capacity building support, particularly for the improvement of the maritime security capability of the littoral states around the South China Sea is needed. There is huge room for cooperation between the US and Japan for this effort, and we must

involve other like-minded countries to generate synergy and to undergird the rules-based international order.

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Roles, Missions and Capabilities of the Japan Self Defense Force

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How the Japan Self Defense Forces have contributed to sustaining and expanding the US-Japan Alliance

This year marks the sixty-fifth anniversary of the signing of the original US-Japan Security Treaty. It was signed on September 8, 1951, the same day as the signing of the peace treaty between Japan and the US. Japan and the US have maintained an alliance for over sixty-five years in the postwar period. Its core relationship is an asymmetrical cooperation between the US Armed Forces' activities and land and facility supplied by Japan[16]. The relationship between the US Armed Forces and the Japan Self-Defense Force (JSDF) is also a core element in the US-Japan alliance. Most JSDF personnel believe that the JSDF's performance has greatly contributed to sustaining and expanding the alliance. However, no one has laid out just how the JSDF has contributed to the US-Japan alliance. In this context, this paper reviews the changes in the US Armed Forces and the JSDF missions under the alliance as the international security environment developed, the history of how the JSDF contributed to developing the US-Japan alliance and possible developments in JSDF missions and the required capabilities in the future.

The US containment strategy was revised several times during the Cold-War era[17]. Despite these changes of strategy, the US held fast to its vision for stronger JSDF that could to maintain the military balance in the Far East region. As the JSDF gradually developed, it played larger role in the US deterrent strategy through several independent missions: the Japan Ground Self-Defense Force (JGSDF) acted as a strategic counter balance to the threat of the Soviet Union's ground forces; the Japan Maritime Self-Defense Force (JMSDF) prepared to interdict the Soviet Far Eastern Fleet deployment into the open Pacific; and the Japan Air Self-Defense Force (JASDF) conducted actual missions, aircraft intercept operations (scrambling) against territorial violations by the Soviet Union's air and naval forces. Under the first US-Japan defense cooperation guidelines established in 1978[18], the JSDF resumed US-Japan bilateral studies, joint exercises, and trainings. However, the JSDF performance became less effective as a deterrent power in the late 1980's as its technological capabilities fell behind developments in the Soviet Union armed forces[19].

Since the end of the Cold-war, the strategic roles of the US and Japan have become unclear because of the marked decline of Russian armed forces activities in the Far East region. The revised National Defense Program Outline of 1995 stated that current capabilities of the JSDF should be maintained

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[16] Yumi Hiwatari, "Strategy for beyond Japan's exclusive defense policy" Mineruba-shobo, (April, 2010) p.110
[17] John Lewis Gaddis, "Strategies of Containment: A Critical Appraisal of Postwar American National Security Policy during the Cold War," Oxford University Press (1982)
[18] James J. Przystup, "The U.S.-Japan Alliance: Review of the Guidelines for Defense Cooperation" Center for Strategic Research Institute for National Strategic Studies, National Defense University, (March 2015) Strategic Perspectives 18, p.6-7
[19] For instance, in the late 1980's, Tu-22 middle-range bombers (Backfire) of the Far East Soviet Union armed forces equipped K-22 Air-to-Surface missile with 600 km shoot-range. This highly capable weapon system was intended to reduce the military effectiveness of scrambles as a deterrent power.

to avoid a power vacuum in the Asia-Pacific region, however constitutional limits on their missions still prevented them from planning and exercising new missions. The US-Japan Security Declaration of 1996 and the second revised US-Japan Defense Cooperation Guidelines of 1997 re-defined the JSDF's primary role as defending the Japanese mainland, while pointing to more direct cooperation between the US Armed Forces and the JSDF. The US Armed Forces were authorized to deploy to JSDF facilities and use civilian airports or ports under "situations in areas surrounding Japan" that critically impacted Japanese security. The JSDF was authorized to provide logistic support for the US Armed Forces in rear areas. This new framework suggested developing the concept of US-Japan joint operations plans and promoting US-Japan joint exercises and more intensified trainings.

The simultaneous terrorist attacks against the US in 2001 drastically changed the international security environment. As a quick response, Government of Japan decided to deploy JMSDF tankers to the Indian Ocean in the same year. It was very controversial at the time, but was later as a new law approved by the Diet. In 2005, the US-Japan Security Consultative Committee declared the US-Japan common strategic goal as being global peace and stability. Its joint statement pointed out that roles of the US Armed Forces and the JSDF include not only defending nations, but also maintaining regional order and cooperating internationally for global peace and stability.

The JSDF was given new missions: direct transportation or supply support for the US Armed Forces, force protection support for US bases in Japan, and JMSDF fuel supply support in the Indian Ocean. Reconstruction support missions for Iraq and anti-piracy activities drastically expanded the JSDF's international operations capabilities. In addition, tight US-Japan cooperation for Ballistic Missile Defense (BMD) and 2011 East Japan great earthquake's disaster relief operations rapidly promoted bilateral operational coordination activities. However, most of the JSDF could not still provide a wide enough range of missions. The third revision of the US-Japan Defense Cooperation Guidelines in 2015 more clearly expands and develops missions and capabilities for US-Japan joint operations.

The strategic environment surrounding Japan has drastically changed

With the major confrontation between the US and the Soviet Union during the Cold-War era, the US-Japan alliance strengthened to counter the Soviet Union's real threatas a communist adversary. This confrontation ended, following dynamic international power politics, with collapse of the Soviet Union. However, the end of the Cold-war did not bring international peace. Today, everybody knows that it has brought continuing and sometimes expanding threats[20]. Many regional conflicts occurred in the 1990's, very similar to the Iraq and Afghan Wars related to international terrorist activities following 2001. In the 2010's, a rising China and resurgent Russia constitute the third security wave in the Post-Cold-war era[21].
International power politics have been rapidly moving toward multi-polarization.

Certainly, the largest transition in the Indo-Pacific security environment has been China's rise. China's apparent political intention to be the strongest regional power and rapidly expanding

[20] L. Gaddis, "Toward the Post-Cold War World" Foreign Affairs (Spring 1991) p.108
[21] Defense Strategy Committee Report, "International Environment in 2010 and national security of Japan" National Institute of Defense Studies, p.4

A2/AD capabilities causes serious concerns in this region. The second concern has been that of North Korean nuclear aspirations, demonstrated by their fourth ballistic missile firing-test in early February of 2016. Finally, there is the revival of Russian power, including military activities in the Far East. The third concern is resurgent Russia. Russia steadily promotes reforms to strengthen its armed forces. Russian political intention to be an ambitious polar power, changing US power, points instability in this region[22].

Japan's relative national power definitely declined. Since 1968, Japan had the second largest GDP of any country, until it was surpassed by China in 2010. Due in part to economic stagnation over the past twenty years, Japan's sovereign debt stands at 200 % of its GDP. However, despite these financial constraints, the Abe Administration has initiated reforms of Japanese national security. First, the National Security Committee was established in 2013. Second, the new National Security Strategy was published, in addition to a revision of the Defense Program Outline and the Mid-term Defense Build-up Program. Furthermore, the Abe Administration changed official interpretation of the Japanese constitution to permit collective self-defense, and passed legislations concerning collective self-defense last year. All these reforms had been politically impossible for the past seventy years. By finally undertaking them, Japanese security has faced with a major turning point[23].

How roles of the JSDF have changed, or not

The first US-Japan Guidelines for Defense Cooperation was established in 1978. This guideline covered only the beginning of US-Japan joint exercises and trainings, and US-Japan bilateral studies. The second US-Japan Guidelines for Defense cooperation in 1997 stepped up cooperation to prepare for US-Japan joint operations in future contingencies on the Korean Peninsula. But there were many restrictions – the JSDF played a logistical and rear-area support role - due to the collective self-defense interpretation of the time. The third US-Japan Guidelines for Defense Cooperation of 2015 definitely expands the roles of the JSDF. Theoretically, the JSDF can play any roles in the South China Sea issue, contingencies on the Korean Peninsula issue, cyber and space issues, etc.

The US Department of Defense's third offset strategy appears to orient the long-term national-security strategy of the US toward, "dealing with fiscal issues while rebuilding an offensive strategy centered on force projection capability (in the form of nuclear-deterrent and global-strike capabilities) to maintain military superiority.[24]"
Japan, as an allied partner, should highly concern for changing US strategy under the current rebalancing strategy because of future role sharing of the JSDF in the US-Japan alliance. In other words, the US is clearly aware of the necessity of military superiority recovery in the Indo-Pacific region. The US core military strength, resting on its nuclear capability, is its ability to project power globally. The roles of the JSDF, as a deterrent power, have basically not changed, but missions

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[22] US national security experts also point out that the US should be more concerned about the revitalization of Russia.
[23] For instance, when contingency occurs on the Korean Peninsula in the future, JSDF will conduct None-combatant Evacuation Operations as the first time in this region.
[24] In November 2014, Defense Secretary Charles Timothy "Chuck" Hegel announced the concept of the Defense Innovation Initiative related to the 3rd off-set strategy. He added that this concept should be developed as the future 3rd off-set strategy.

should shift toward developing military effectiveness under the process of the US recovering its military superiority. Capabilities related to the expanding missions of the JSDF should also be developed.

In this context, the Defense Program Outlines and the Mid-term Defense Build-up Programs should be revised soon because expanding missions of the JSDF with sufficient capabilities requires a financial guarantee. From the short-term perspective, the JSDF should be required to prepare substantially for contingencies on the Korean Peninsula as one of expanding missions. During the Cold-war era, the JSDF only played their roles as a deterrent power against the potential threat of the Soviet Union armed forces. Currently, international power politics have been rapidly moving toward multi-polarization. Again, under these uncertain circumstances, there are seriously concerning issues: a rising China, resurgent Russia, un-predictable North Korea and extremely unstable Middle East. And again, roles of the JSDF as a deterrent power are still important. Moreover, the roles of the JSDF have regionally and globally expanded with certain military effectiveness. The JSDF has been already given global responsibilities in 2015 Japan's security reform. The JSDF has to prepare for its future roles in the international arena.

How the JSDF should develop joint operations capabilities

The JSDF has resumed developing its joint operational capabilities under the revision of domestic laws in 2006.[25] This year of 2016 is the tenth anniversary of the beginning of the JSDF joint operations. The joint operations have become key elements of all JSDF operations. However, the JSDF does not have a permanent Joint Task Force or Joint Headquarters. As part of its mid- to long- term agenda, the JSDF should establish a new command and control structure, such as permanent joint headquarters, which will be able to effectively conduct joint operations. In addition, the JSDF has to prepare for substantial joint doctrine similar to that of foreign military organizations to prepare for future contingencies.

The final goal is combined operations between the US Armed Forces and the JSDF, and both forces should be completely synchronized[26]. Synchronizing operations between the US Armed Forces and the JSDF is extremely difficult because they have different level of operational readiness and weapons systems. However, the only way to conduct effective joint and combined operations is to practice – to plan together, then conduct exercises together. Originally, the initial doctrine and training of the JGSDF, JMSDF and JASDF were based on the doctrine and training of the separate American services in the 1950's, before joint doctrine was established in the 1990's. Service to service relationships persisted between the US Armed Forces and the JSDF, and that inhabited the development of joint doctrine in Japan. However, the joint operations of the US Armed Forces demonstrated that both joint and combined capability can be developed. These experiences clearly indicate that it is not so difficult to conduct combined operations between the US Armed Forces and the JSDF. It simply requires effort from both parties.

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[25] Ministry of Defense, "2015 Defense White Paper – Defense of Japan" Nikkei Press (July 2015) p.408

[26] In the US military technical terms, "joint" refers to operations of more than one service with the same armed forces. "Combined" refers to operations with the forces of another country.

Joint and combined exercises and trainings between the US Armed Forces and the JSDF are excellent opportunities to develop the JSDF joint operations capabilities. Promotion of joint exercises and trainings is a significant way to not only improve of all-around joint operations capabilities within the new operational environment, but also improve interoperability conductive to joint and combined US-Japan operations. The JSDF just began to prepare for joint operations in 2006. The US Armed Forces began joint operations in 1986, but the US Armed Forces' concerned personnel are still not satisfied with their current level of development. The JSDF has to positively plan for and conduct US-Japan joint and combined exercises and trainings to develop its joint operations capabilities, and these efforts are the best tools with which to develop the all-around joint operations capabilities of the JSDF.

The new missions and capabilities of the JGSDF

A part of its short-term agenda, the JGSDF should realign its joint command and control structure. The Ground Force Command Headquarters should be established on schedule. In the mid- to long-term, the focus of the JGSDF's missions and capabilities should be shifted from the north to the southern-western sector. The JGSDF has to pay attention to the Chinese potential threat. Simultaneously, the JGSDF should maintain certain level of readiness as a deterrent power against Far Eastern Russian armed forces. The JGSDF will be assigned new missions: southern-western islands defense and force protection for bases or camps, including US bases in Japan.

For conducting new missions in the future, the JGSDF should promote these critical agendas: establishment of the Ground Force Command Headquarters, reform of mobile divisions and brigades, establishment of an amphibious regiment, and reform of the Ground Force Research Headquarters.[27] As a practical process, the JGSDF should promote amphibious operational capabilities and special force capabilities. Simultaneously, the JGSDF seeks out more robust peace keeping operations in the future. Their goal is to be a more compact and functional organization with high operational readiness.

The revision of the US-Japan Defense Cooperation Guidelines of 2015 will certainly expand and develop missions and capabilities for the JGSDF. In addition, Japan's new security legislations will definitely affect future the JGSDF international activities. For instance, the JGSDF will protect foreign armed forces during their overseas missions. Therefore, the JGSDF has to prepare for the new rule of engagement and new types of training. Sufficient education and training is the best way to have all-around operations capabilities in international activities with these new risks. The JGSDF has to maintain at least a basic capability across the ground warfare spectrum. It does not mean to have major formations in entire areas, but it has to develop the research and development, the doctrine, and a basic maneuver unit, so that it can keep up with warfare development, and be ready to deal with the very uncertain future.

[27] The Mid-term Defense Build-up Program of 2013 encouraged to quickly develop amphibious operations capabilities. The JGSDF procures V-22 and AAV7 to develop their amphibious operations capabilities in FY2015.

The new missions and capabilities of the JMSDF

Currently, the JMSDF is tasked with responding in concert with the US Navy to any armed attack or other hostile actions against Japan. Moreover, the relationship between the US Navy and the JMSDF, as well as relationships with other countries' navies effectively function to maintain peace and stability of maritime security in the Indo-Pacific region. A strong relationship between the US Navy and the JMSDF becomes an international common asset, not only for regional security, but also for international security. Currently, the JMSDF is mainly responsible for sea-control, including Anti-Submarine Warfare, Anti-Air Warfare, and Anti-Surface Warfare. However, the JMSDF will face new challenges because as certain state actors are re-emerging through the US national power is gradually declining.

The US traditional deterrent power through the US Navy has been more necessary than ever. The US Navy makes great efforts to conduct missions for the US re-balancing policies under severe financial constrains. In the short-term, the JMSDF missions with the US Navy will encompass BMD, international counter terrorism, and continuous early-warning and surveillance over surrounding maritime waters. Furthermore, the JMSDF should positively participate in international activities, such as the anti-piracy campaigns in the Middle East, and in exercises aimed at fostering a favorable international security environment. In the mid- to long-term, the JMSDF should seek out practical missions through extended deterrence discussions.

For the past two decades, the US Navy mainly focused on none-state actors' activities, including international terrorist attacks. The US Navy has been a part of the overall US operational focus on the wars in the Middle East – its carrier battle-groups have deployed there to supply aircraft sorties; its special forces have been heavily committed there. Today, the US Navy's assets are focused in the Indo-Pacific region, in preparation for threats from re-emerging traditional state actors. In other words, the US Navy continues to serve as a lynchpin for peace and stability in this region. The JMSDF should conduct sea control missions together with the US Navy on every level: international, regional, and within Japan's territorial waters. There are indispensable tasks for the JMSDF to perform during peacetime and as contingency measures. Nevertheless, the JMSDF weapon systems should gradually be developed.

The new missions and capabilities of the JASDF

Historically, the essential day-to-day mission of the JASDF has consisted of scrambles against violations of Japan's territorial airspace during peacetime by Russia and China. However, the changes in the international security environment discussed above make it necessary for the JASDF to reconsider its role and defense posture, both during peacetime and wartime. This high level of activity to intercept probing Russian and Chinese aircraft has left few flying hours for exercising more complex missions that would be required in future crisis and combat. The recent rapid development of military technology, in addition to the new security environment makes uncertain the effectiveness of the JASDF's scrambles. This paper earlier discussed the development of Soviet armed forces capabilities that undercut the effectiveness of the JASDF in the 1980's. In the near future, the JASDF will be called upon to undertake more complex missions for which its pilots will be unprepared, since their missions so far have not required honed combat capabilities. For this

reason, the JASDF must consider shifting its mission focus from scrambles to all-around air operations, including cyber, space, and drones operations, even under continued financial constrains.

What is more, in the short-term, the JASDF should promote US-Japan joint and combined exercises and trainings to develop US-Japan combined air operational capabilities. In the future, the missions of the JASDF will require highly qualified combat capabilities to counter the A2/AD threat from China. US-Japan joint exercises and trainings are the best opportunities for the JASDF to rapidly develop its air power performance. Most of those exercises will be held in overseas training airspace and bases. High-intensity training can only be conducted in large air training areas that are not available in Japan. The JASDF should continue to prepare for overseas deployment, in Guam, Alaska, and Australia.

In the mid- to long-term, the JASDF should promote procurement of manned aircraft with stealth, link, and situation awareness functions. Promotion of interoperability conducive to joint US-Japan air operations is critical to conducting missions in future contingencies. There are two steps necessary to achieve this goal: one is to pursue interoperability in airborne operations, and the other is to pursue bilateral cooperation in weapons systems development. In the near future, the JASDF missions will encompass BMD, international counter terrorism, and continuous early-warning and surveillance. However, the most important mission is to provide strong air superiority in any future contingency as a deterrent power with high-performance air weapon systems. The JASDF should also seek out practical missions through extended deterrence discussions.

Conclusion

The Government of Japan established the JSDF in 1954, and the JSDF has gradually developed to play roles and conduct missions similar to those of the armed forces of other countries. There is speculation that the current government may propose a change of the Japanese constitution to allow wider range of missions for the JSDF. This would be a very controversial initiative. But in the practical terms, the roles and missions of the JSDF have already been expanding. The most important task for the JSDF has been to prepare for the defense of Japan in any contingency. A turning point may be upon us. The JSDF now has the prospect of conducting fuller range of military operations both homeland and abroad.

In fact, Japanese three services, the JGSDF, the JMSDF, and the JASDF have developed for the past over sixty years as a defense organization. Looking back the history of the JSDF, the US armed forces' strong supports for establishment and development of the JSDF were indispensable. And it is probable that the roles and missions of the JSDF will more expand in the future. In this context, the JSDF has to maintain and develop more effectively relationships with the US armed forces and friendly countries. The JSDF is primarily assigned as the defense of Japan, but expanding regional and international missions of the JSDF should be dealt with allied or friendly countries' armed forces. Moreover, it is clearly required that the JSDF should do own thinking about the missions it will need to do in the future, and to figure out what equipment, training, and legal authorities it needs.

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Avoiding the Charge of the Light Brigade: Going Around the A2/AD Challenge

Col Michael W. "Starbaby" Pietrucha, USAF

Cannon to right of them, Cannon to left of them,
Cannon in front of them, Volleyed and thundered;
Stormed at with shot and shell, Boldly they rode and well,
Into the jaws of Death, Into the mouth of hell,
Rode the six hundred.
-Alfred, Lord Tennyson, *Charge of the Light Brigade*

C'est magnifique, mais ce n'est pas la guerre: c'est de la folie

- Marshal Pierre François Joseph Bosquet, observing the Light Brigade

The Charge of the Light Brigade is a classic example of the subordination of military skill in favor of courage and stubbornness, seasoned with a generous measure of poor leadership and a dash of sheer chaos. The Charge of the Light Brigade involved an unsupported light cavalry charge directed against the wrong objective at the conclusion of the Battle of Balaclava, which the Russians had already lost. While the diminished brigade successfully reached the (wrong) Russian guns and slaughtered the gunners, the only objective that they secured was to ensure that they could retreat at no hazard from the artillery fire they had just attacked through. This is an illustration on the tactical scale of the DoD's current vision for dealing with the so-called anti-access/area denial (A2/AD) environment. The current view of dealing with a generic A2/AD environment is unnecessarily focused on a tech-heavy widget-on-widget battle fought at the tactical level, devoid of military objectives and with limited support from allied nations. A2/AD is a defensive strategy, focused on an intention to deprive American forces, particularly air and naval forces, of their preferred method of warfighting. They key to overcoming this strategy is to work around it – shunning the hyperactive, close-range, quick-kill strategy that underpins AirSea Battle and the Third Offset, and doing something else entirely, enhanced by favorable geography and a long-standing alliance structure. Otherwise we risk repeating the Light Brigade's experience on a grander scale – meaningless tactical victories gained at unacceptably high cost.

Reality-Basing A2/AD

The description of the A2/AD challenge is an American creation, not a Chinese or Russian one. The Chinese equivalent developed from a "counter-intervention" doctrine that followed closely behind the success of DESERT STORM and was originally designed to prevent US intervention in a conflict between the PRC and Taiwan. This basic doctrine has driven Chinese military development for almost a quarter century. Like AirLand Battle doctrine of the 1980s, Chinese counter-intervention doctrine is focused specifically on the United States and the capabilities demonstrated against Iraq in 1991. It is the equivalent of the Second Offset Strategy, which was focused on blunting the Soviet threat in Europe. The TRADOC planners who initially developed and then sold AirLand Battle to the rest of DoD started knowing who they would fight and where. They had a deep understanding of Soviet warfighting preferences, along with the relevant terrain, prevailing climate and weather, training methodologies and logistical capabilities of the adversary.

Chinese military planners had the same basic methodology, enhanced by the fact that the US has spent so long resting on its laurels and is still prepared to place its bets on the same basic technologies (stealth and precision) highlighted in the Gulf War, using the same techniques. China's fundamental focus revolves around a credible and flexible missile threat to US bases in the region, matched with an advanced counterair and countermaritime architecture intended to offer a dense, mobile and flexible threat to the remnants of US forces capable of projecting power against the mainland. Their solution to the threat posed by US power projection capabilities is to simultaneously combine a robust defense of near battlespace combined with an attack on the basing and logistical structure upon which US forces depend.

China is not the only country using an anti-access strategy aimed at locally inhibiting the Joint force. Iran relies heavily on mobile but inaccurate ballistic missiles and large numbers of small surface craft to limit US utilization of land and seabasing. Russia, far less exposed to naval forces, leans on advanced air defenses specifically designed to detect and engage low-observable targets at any altitude. Russia's efforts are comprehensive and aimed at NATO rather than solely against the US, recognizing the comparative weakness of NATO's land forces. The arrows in the Russian quiver also include nuclear, conventional and unconventional intimidation along with their traditional staple of massed armor. Iranian and Russian A2/AD capabilities have the same genesis – the Gulf War. Indeed, the Chinese counter-intervention efforts used Russian-built equipment as the baseline for most counterair capabilities, a path that the Iranians are likely to follow.

The Chinese A2/AD was designed to prevent a repeat a Desert Storm-like campaign using large numbers of short-range fighters striking terrestrial targets from nearby bases. It is a defensive strategy designed against a specific set of conditions and threats. From an opposing perspective, there is little point trying to double down on a tactically-focused, widget-on-widget pseudo-strategy that is inappropriate for both the adversary and the geography. So we should not.

The Geography

There is a distinction between fighting over the first island chain and fighting from it. The US has an inbuilt asymmetry in that we have an alliance structure and our adversaries typically do not, with the possible exception of China's relationship with the DPRK. The PRC is hemmed in by countries with which they have an adversarial relationship (Vietnam, India) or which are US Allies (Japan, Korea, the Philippines and Thailand, or both. Taiwan occupies a uniquely and deliberately ambiguous position in US defense policy. The effect of the geography of the western Pacific is twofold: it provides a natural barrier to maritime and air power projection from China, and a very close forward position from which to threaten PRC interests. This latter condition is a double-edged sword, in that US and allied forces in close proximity to the PRC are likewise within range of a massive inventory of strike capability consisting of aircraft, cruise and ballistic missiles. It may be that operations from terrain in close proximity to the PRC (such as Okinawa) is militarily infeasible. This is a major barrier to executing a repeat of DESERT STORM. The Chinese counter-intervention strategy has already succeeded in meeting its design objectives – it is simply not feasible to operate massed air or seapower from China's front yard.

But it is not necessary to defend the first island chain from the islands closest to China. The island chain is long and confining; we should consider the warfighting implications of the entire chain

rather than the tactical vulnerabilities of its weakest elements. Japan's main islands are not only further away from China than Okinawa is, but Kyushu's airfield density is substantially greater than Okinawa's, tipping the defensive balance in favor of Japan as the distance from China increases. The Philippine military airfields on Luzon are well out of SRBM range and out of reach of unrefueled TACAIR launched from the mainland. The Philippines, Vietnam, Indonesia and Malaysia sit astride China's primary maritime routes. Because of the US bomber force, Guam and Darwin are credible locations for power projection, despite their distance from China. The tactical objective remains essentially defensive: deny Chinese power projection forces both time and sanctuary and make the PLA come outside its protective shell to project power. The tactical defensive enables the strategic offensive, where any conflict will be settled.

The Domains

On the Asian continent, the land domain is paramount, at least with or near Chinese borders. China largely expanded to natural borders, and there have always been formidable barriers to further expansion: rivers, mountains (including the Himalayas), dense jungle and open desert. China's ability to dominate this domain falls off rapidly outside China's borders, although China can still project conventional power for some distance. Proximity aside, the limited transportation infrastructure limits the nature of the PLA's reach to systems that can strike from a distance; traditional land-centric force application is heavily constrained by terrain.

For a modern China, the Maritime domain is absolutely critical. China is effectively an island nation; roughly 98% of all traffic (by volume) crossing China's borders arrives or departs by sea. The port complex of Shanghai moves substantially more volume in 60 days than every road and rail crossing combined move in an entire year. Where China's portion of the land domain can be controlled effectively by China, the maritime domain extends globally, well outside of China's capability to project power. Preparations for countering Chinese aggression should focus on the maritime domain, because it can be affected from any of the other domains, often at significant distance. The land, air, space, cyber and undersea domains all reach into the maritime domain effectively.

A focus on the maritime domain moves any strategy discussion away from the political and military challenges with striking the Chinese mainland or fighting close to it while not in any way surrendering powerful leverage against the PRC. It also partially obviates the challenges of tackling their A2/AD environment head on, instead reversing the advantage and making use of the commanding geographical positions held by Korea, Japan, the Philippines, Indonesia and Vietnam. In effect, we counter an "anti-access" strategy with an anti-access strategy of our own, recognizing that the US and its allies literally sit astride China's sea lanes. Geography that is unfavorable for a short range, high-intensity operation is much more favorable for a long-acting strategy fought from a distance, turning a US strategic vulnerability into strategic depth. We should plan on fighting across and through domains as much as within them.

Strategies

The poorest possible strategy option for offsetting China's counter-intervention efforts is to remain in the air domain and charge headlong into the mouth of the guns. Late recognition by the US of both the nature and the magnitude of the Chinese air and missile threat has placed us in an

untenable position. We cannot today fight the PRC at close range – and we should not expect that we would develop magic technologies that will enable us to do so in the future. Aside from the obvious cost issues and the deleterious effect of a moribund and ineffective acquisition system, geography trumps technology in the Western Pacific. We cannot attempt to repeat our successful template against Iraq using short-range airpower and nearby bases. Any assertion that we can bomb China into submission is at odds with historical reality, our limited magazine depth and a hardened and distributed military target set. The Chinese regime survived the Cultural Revolution; they could survive a short conventional air campaign even if we could execute one.

The strategy template we are looking for was successfully employed against Japan in World War II. The Pacific War was largely a long-duration counterlogistics strategy fought over the maritime domain from inside and outside the domain itself. This time we have advantages that we did not have in World War II – Japan is a strong ally and the Philippines are not an occupied nation that we need to return to. But the similarities are striking – China is almost completely dependent on maritime traffic for survival. The trade links and supply lines that exist overland are grossly insufficient to make up any lack caused by maritime interdiction. A strategic interdiction strategy could be conducted – indeed must be conducted – from far outside China's local waters and airspace.

China's unfavorable geographic position and dependency on maritime traffic flows combine to establish a unique vulnerability to Strategic Interdiction - a Joint effort designed to prevent the movement of resources supporting military forces or operations. A more tailored variant of maritime interdiction or offshore control, Strategic Interdiction (SI) is a targeted, four-element campaign to interdict the production and transport of energy resources:

- A "Counterforce" effort designed to attrit PLAAF and PLANANF air forces (particularly bombers), naval forces (gray hulls) and naval auxiliaries (replenishment) to the point where they can neither project military power nor defend against US power projection, at least far beyond the PRC continental shelf.
- An "Inshore" element, consisting of operations to interfere with unopposed traffic in coastal waters and rivers.
- A "Distant" maritime strategy, which will interdict energy supplies close to their source, out of effective Chinese military reach. Aimed *primarily* at bulk petroleum carriers (tankers) and secondarily at coal transports, this element ignores container, dry bulk, or passenger vessels. A traditional quarantine conducted at a nontraditional distance, the seizure or diversion of Chinese-flag or China-bound hulls need not involve lethal force.
- An "Infrastructure Degradation" plan intended to disrupt or destroy specific soft targets, such as oil terminals, oil refineries, pipelines and railway chokepoints such as tunnels and bridges. This is intended to make any resource distribution problem created by distant interdiction much worse by chopping the internal supply and production networks into unsupported pieces.

The strategy is tailored to China's vulnerabilities. The objective is to constrain military forces by starving them of energy. The proximate targets are naval and air forces, which rely on jet fuel and maritime diesel, leaving the PLA to fight with domestic priorities for diesel fuel and gasoline.

Without the PLAAF and the PLAN, the PLA doesn't ever leave the mainland. It is necessarily a long war strategy that takes time to implement. It departs from traditional kinetic-focused attacks, being a distant interdiction strategy enhanced by kinetic attacks and cyber on critical process chokepoints on the mainland. Kinetic attacks on the land domain occupy a *supporting* role in that they are designed to make bad problem worse by targeting oil refineries and transportation chokepoints, both difficult and time consuming to repair and both relatively soft and difficult to defend. Here we also can exploit the massive size of the country. In the initial version of the targeting strategy supporting a Strategic Interdiction campaign, all pipeline targets and the majority of rail, bridge and refinery targets are in airspace undefended by ground-based air defense.

Changing the Game

We spend entirely too much time talking about "game changing" technologies and not enough time talking about game-changing strategies or considering an entirely different game. Game-ganging technologies are difficult to find, and may not even exist. Even nuclear weapons were not game-changing so much as a harbinger of an entirely difficult game, which thus far no country has been willing to play. We can change the game by boycotting the Salvo Olympics and concentrating on the PRC's strategic vulnerabilities rather than trying to smash our way through their tactical strengths.

The "salvo competition" envisioned within DoD is an example of a symmetric force-on-force concept fought from a substantial disadvantage, and should be avoided. The reality is that it can be avoided, because it is not necessary to accomplish warfighting goals. Faced with the current A2/AD challenge, we should spend our time finding strategies that will enable us to avoid the challenge rather than seeking silver bullets that enable us to "win" it. Against China, we can establish our own A2/AD challenge, forcing China to defend its extended supply lines rather than trying to bludgeon our way into the teeth of their antiair and antiship defenses. Our advantages in this endeavor are more enduring than mere technological advantage or tactical innovation – we have geography that favors a distant strategy, we have committed allies, and we have intellectually flexible personnel with a substantial pool of combat experience. That combination of conditions should allow us to capitalize on strategic asymmetry rather than trying to match up against an adversary's tactical strengths.

In strategy the longest way round is often the shortest way there; a direct approach to the object exhausts the attacker and hardens the resistance by compression, whereas an indirect approach loosens the defender's hold by upsetting his balance.

-Sir B.H. Liddell Hart

The views expressed are those of the author and do not necessarily reflect the official policy or position of the Department of the Air Force or the US Government.

The U.S.-Japan Alliance: Space-based Counter A2/AD Capabilities

Paul S. Giarra

The Role of Alliance Military Space in Countering China's A2/AD Efforts

As advanced nations become more dependent upon on-orbit and terrestrial control infrastructure, Japan is facing the reality that space is a key factor not only for civil society, but in national security as well. However, Japan does not yet possess the capability, infrastructure, or organization to develop and conduct effective defense-relevant counter A2/AD space operational capabilities.

Space-based counter A2/AD capabilities are important in their own right, but their rationalization, coordination, negotiation, and command and control also are ***emblematic of the political and cultural challenges facing alliance managers more broadly***.

Given the scope and extent of the China challenge, other alliance security space problems – specifically ***Russia and North Korea – are lesser-included cases***.

Those nations and alliances that can establish, maintain, operate, and defend their space-based communications, surveillance, reconnaissance, and targeting capabilities hold the "high frontier" against earthbound competitors, but the number of space-faring nations is growing who can apply their capabilities to defense in the space domain. In the early post-Cold War period, the United States essentially dominated what had been a largely bilateral U.S.-Soviet competition during the Cold War. Over time, western and Japanese commercial space entities gradually built up national security space capabilities in parallel (and often in partnership) with U.S. systems, and some countries gradually developed their own on-orbit military capabilities.

In the meantime, China – as part of a broad competition with the United States and intrinsic to its emergence as a world power – recognized not only the advantage to itself of these space-based capabilities, but the importance of being able to hold at risk U.S. space assets as part of its strategy of anti-access and area denial. With the growing integration of the U.S.-Japan alliance, Japan and the alliance also will be the object of Chinese A2/AD planning and capabilities.

Regarding defense capabilities in the space domain, U.S.-Japan alliance space cooperation has been distinctly lopsided, with Japan largely focused (with a few exceptions) by law, doctrine, and policy on exclusively civil space pursuits. Japan is now in the process of consciously transforming its national security space posture to reflect military requirements and new command and control arrangements on the national level, and the strides made in the past several years are commendable. However, this is a work in progress, and much remains to be done. In the meantime, alliance coordination on military space issues is active, and full of promise, but lags seriously behind Japan's pace setting national process of gradual military space normalization.

The special challenges of China and North Korea are driving virtually every emerging requirement for Japan's national security space capabilities. Therefore, bilateral Japan-U.S. consultations, decisions, and actions are particularly important for Japan's own national security space posture.

This is a necessary precondition for alliance transformation, and makes alliance progress much more likely.

The Unique Attributes of the Military Space Domain in Countering Chinese A2/AD

Strategic and operational acuity is not a cure all, but being able to watch and listen from above to China's military developments, posturing, and operations is a key factor in deterrence and warfighting. During peacetime, to see and to hear is to be forewarned. Furthermore, revealing China's objectionable actions publicly is a first step in rolling them back.

This is going to require not just effective alliance information sharing, but the broader initiative to share widely the results of space-based surveillance. Traditionally, this has been objectionable because of concerns over revealing sources and methods and the capabilities of space-based platforms. Currently, this concern is a major retarding factor in developing effective Maritime Domain Awareness capabilities, which in fully developed concept are representative of the dual-use advantages of on-orbit surveillance. Nevertheless, China's A2/AD developments have shifted the argument in favor of sharing.

As the benefits of distributed information within the alliance and more broadly become better appreciated, they will highlight the advantages and requirements of that process of integrated exchange. Not only are the challenges of space warfare emblematic of the broader challenges of alliance management, but success in this domain – necessarily integrated with the broader issues of command and control, operational integration, and information sharing, and decision making -- will have broader spin-on effects.

Opportunities Exist in Allied Collaboration on Space-Based Counter A2/AD Capabilities

Japan is not starting from scratch in its development of military space capabilities. Beyond its modest space-based military capabilities that have been developed over the last two decades, Japan is shifting from the market to the military in its space policies and capabilities.[28] ***There are significant opportunities to capitalize on Japanese dual use space technologies that have been more or less consciously developed to be relevant to the space domain since the end of the Cold War.***

Japan's space science and space-based earth science communities are relatively advanced, and JAXA cooperation with NASA is longstanding and fruitful regarding peaceful uses of outer space. ***There certainly exists considerable enthusiasm for space cooperation on the part of American scientists and engineers.***

American and Japanese space defense policy experts, strategists, and planners have established an active dialogue that <u>should</u> be able to expand on demand, and there is a shared (if not congruent) awareness of the importance of space as a critical warfighting domain.

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[28] See Saadia M. Pekkanen and Paul Kallender-Umezu, *In Defense of Japan – From the Market to the Military in Space Policy*, Stanford University Press, Stanford, California, 2010

Limits, Liabilities, and Gaps in the Space Domain Where Alliance Cooperation and Countering Chinese A2/AD are Concerned

Despite the foregoing opportunities, there exist several holdbacks.

To a large degree, ***the politics have not caught up with the policy regarding national security space in Japan***. National security space always has been considered as an outlier in Japan. Publicly, this equates to general lack of understanding, unease, and misgivings in the press and among Japanese citizens. This can and will change positively over time, but it will take longer than we have in the face of China's A2/AD challenge.

Within the Japanese government, the strict emphasis on the peaceful use of space is deeply held. Bureaucratic resistance to the military normalization of Japan's and the alliance's space policies and capabilities is quite significant in some ministries.

Elsewhere, ***there exists only a limited technical appreciation for what space-based capabilities can provide, with regard to not just more information, but different information.*** These are high hurdles for political leaders and alliance managers to overcome.

The handling and protection of classified material in Japan will remain a significant problem for enhanced bilateral cooperation in space. This is not just a trust building exercise in areas where exchanges have not occurred previously, but also an institution-building exercise in Japan, where procedures are just now being put in place for the protection, processing, and distribution of classified material.

Hardening, integration, and redundancy of systems are part of the price of success in the space domain, but they are quite expensive. **So far, neither Japan nor the United States have articulated the rationale for or the willingness to commit the resources to these requirements**.

Nine Key Issues for Alliance Managers

<u>These factors raise nine key issues for alliance managers:</u>

1. ***Countering China's A2/AD capabilities requires starting with the concept of warfighting*** and working down and out from that conceptual focus, rather than building up from and converting routine peacetime platforms, organizations, doctrines, and operations. There will be some overlap, but for the alliance, this will require different political, policy, legal, and acquisition approaches.

2. ***In order to sort out these new approaches, the alliance will have to establish broader and more intimate dialogues on national security space, alternating frequently between Tokyo and Washington***. This is particularly important because a clear understanding of requirements under challenging circumstances is necessary, and also because of the political and cultural gaps that exist between Japan and the United States with regard to the military use of space. Neither existing policy restrictions nor present space-based capabilities can be taken for granted going forward, and new and sensitive technological advances will emerge routinely. Overcoming these gaps will require

the institution of a new-old Track 1.5 and Track 2.0 approach to discussing the issues that includes -- but goes beyond -- the more restrictive Track 1.0 government-to-government channel.

3. As at the national level, ***alliance military space products are only as good as the tailored systems necessary for sharing and analyzing them.*** This highlights not just the importance of alliance terrestrial control centers, but also the analytical organizations and distribution networks and protocols necessary to support space warfare.

4. Deterrence is a key counter-A2/AD factor, and the integration, integrity, and ***survivability of alliance space-based communications, surveillance, reconnaissance, and targeting is a key component of deterrence.*** The credibility of the alliance's ability to see and hear Chinese military developments and operations is a key component of deterrence, and the best bet to check China's A2/AD strategy.

5. ***Survivability of these alliance capabilities is equally important in case of conflict, and directly related to successful integration, integrity, resilience, and redundancy across the range of warfighting, imagined and implemented well in advance of conflict.*** This mandates that space-based military systems -- and dual-use civil systems supporting military operations -- have to be designed and operated to be survivable against kinetic and non-kinetic Chinese countermeasures in every phase of conflict, including grey zones.

6. Typically, China has been ahead of us in the A2/AD-counter A2/AD competition, and the military space domain is no exception. ***One can infer that China is thinking not just of conflict through space and to space, but also warfighting in space and from space.*** Dealing with this will be harder than the normal difficulties of normalizing alliance space capabilities, doctrines, etc., because warfighting *in* space and *from* space is forbidden to us. However, ***it is not forbidden to think in advance about the potential for breakout from these legal and political restrictions***, and it will be necessary to consider them now, not in a crisis or when conflicts breaks out.

Directly related to this point is that on-orbit space warfare is generally considered impossible because of ruinous orbital plane debris generated by kinetic attacks. However, ***a variety of very effective non-kinetic attack capabilities are available that will not generate debris***, including tactical EMP that does not require nuclear generation. This will make on-orbit warfare much more likely, and should generate both defensive and offensive concepts.

7. ***Alliance military space managers are going to have to deal with the implications of preemption as a factor*** in space-based planning, procurement, and operations. If space-based communications, surveillance, reconnaissance, and targeting capabilities are vitally important, then China and others are going to be tempted to seize the high ground preemptively. Among other things, this will put great stress upon alliance alertness, readiness, and resiliency.

8. As the alliance strengthens, and as Japan's security policies mature and relevant defense capabilities evolve, ***a special conditional opportunity is being discussed by the U.S.***, as demonstrated by the unique *U.S.-Japan Comprehensive Dialogue on Space Issues*:

- ***On offer is the possibility for Japan to join the exclusive "Four Eyes" (U.S., U.K., Australia, and Canada) space operations and C4ISR club***.

9. ***This potential takes the issue of national security space beyond the alliance.*** As an alliance priority, this provides new planning perspectives. Japan and the United States will need to develop and field capabilities that:

- are relevant to "Four Eyes" security
- are interoperable and mutually supporting with the "Four Eyes"
- provide redundant operational capabilities that complement "Four Eyes" systems
- are identical to "Four Eyes" systems or are rational complementary Japanese alternatives
- share capabilities and products with "Four Eyes" commanders and networks
- and are an integrated extension of the "Four Eyes" C4ISR network

The Bottom Line

These challenges and opportunities present a policy checklist for alliance national security space planners:

- What relevant national security space technologies to pursue
- What industrial capacity to develop, and how much
- What on-orbit and terrestrial control capabilities to develop in the context of future military requirements
- How to organize bureaucratically and programmatically within the GOJ, in the United States, and bilaterally
- How to structure bilateral dialogues in order to cooperate most effectively
- How to design, develop, re-orient, and sustain the Japanese national scientific and technical infrastructure necessary for successful development of national security space capabilities
- How to identify, recruit, train, and sustain the necessary national security space cadre – technical, operational, managerial, analytical, bureaucratic, strategic planning, and bilateral
- How to develop accepted foundational alliance and national strategic and operational concepts for space that guide all of the above

Emphasize on dual use civil-military space systems will be crucial, both politically and with regard to space budgets:

- Oceanography – Anti-Submarine Warfare
- Tsunami warning – Maritime Domain Awareness
- Civil-military communications – secure communications
- Earth science payloads – terrestrial surveillance
- High-resolution remote sensing – reconnaissance and early warning
- Space Situational Awareness – monitoring foreign space activities
- Space-based positioning, navigation & timing (PNT) national security applications

Nowhere more than with regard to space-based counter A2/AD, the explicit direction to strive for a "Seamless Alliance" dictates bilateral integration throughout the space domain.

The right next step is to conduct an alliance Space Net Assessment.

Nuclear Forces

Elbridge Colby

Nuclear weapons play an important and indeed foundational role in the U.S. strategic posture in the Asia-Pacific, constituting the ultimate guarantor of U.S. extended deterrence in the region. Though views vary both internally and across time, U.S. allies Japan, Australia, South Korea, and the Philippines all view U.S. nuclear weapons as a crucial cornerstone of their security, and indeed their interest in this role has risen in the last decade as the threats to their security from China and/or North Korea have intensified.

Yet, while important, the role of the U.S. nuclear arsenal in the U.S. defense posture in the region has been largely recessed for many years, especially since the collapse of the Soviet threat, For the last generation, the United States has largely relied upon its non-nuclear forces to deter and, if necessary, defeat adversaries, and has viewed its nuclear capabilities as reserved for responding only to the most extreme forms of attack, including primarily – though not exclusively – nuclear attack. In the case of a conflict with China, the United States has planned for its conventional forces to bear the burden of defeating any Chinese attempt to project power against a U.S. ally or partner, and effectively viewed its nuclear forces as useful for deterring Beijing's resort to employment of its much smaller and less sophisticated nuclear arsenal, likely as a "last gasp" act of desperation in the face of defeat.

Washington's preference for minimizing reliance on its nuclear forces and the advisability of this policy have stemmed from a number of factors: the greater employability and thus attractiveness to decisionmakers of conventional forces, the perceived general U.S. interest in promoting the tradition of nuclear non-use, and, perhaps most significantly, the marked U.S. advantage in conventional forces in Asia (and around the world) against its potential foes – including China –under any plausible circumstances. If, for instance, China attacked Taiwan, let alone Japan or the Philippines, the United States and its allies could rationally expect U.S. conventional forces to defeat such an effort at tolerable cost and risk. It has therefore been both attractive and prudent for Washington to look upon its nuclear arsenal as instruments reserved for extreme and generally fairly implausible contingencies, and for U.S. allies to view this arrangement as reasonably satisfactory.

This policy is unlikely to change due to a shift in Washington. Though views differ regarding questions of degree and emphasis regarding nuclear weapons policy in the United States, U.S. leaders and influencers across the political spectrum regard some variant of the current approach as preferable to one in which the United States feels compelled to rely much more on nuclear weapons in its strategic posture. It is widely agreed that the optimal posture for the United States is one in which it can rely upon its conventional forces to handle most scenarios – including all or nearly all conventional ones – and in which nuclear forces largely serve to deter adversaries from thinking that they can, to paraphrase the 2014 Quadrennial Defense Review, escalate their way out of conventional defeat.[29]

[29] U.S. Department of Defense, *Quadrennial Defense Review 2014,* (March 4, 2014), 14.

The issue is that potential U.S. adversaries – including Russia in Europe and elsewhere and North Korea and, perhaps most significantly, China in the Asia-Pacific and beyond – do not appear so content with this equilibrium. And it is their discontent with the current strategic and military balance that could drive the United States and its allies to see increasing merit or necessity in relying more on U.S. nuclear weapons for their security.

North Korea's nuclear, missile, and unconventional capabilities are posing an increasingly pointed threat to South Korea, Japan, and even the U.S. homeland. The DPRK's conventional military remains large and capable of wreaking great damage upon the ROK and U.S. forces on the Peninsula. Given the enormous advantages in conventional forces enjoyed by the United States and South Korea, however, with conventional forces alone North Korea could do great harm but would be decisively defeated and likely destroyed. It is instead Pyongyang's capability to launch highly damaging strikes (especially though not exclusively nuclear ones) through its missile forces and alternative means that are compelling Seoul, Tokyo, and Washington to reexamine and adapt their strategic posture towards the North. This adaptation has thus far included the development of a missile defense architecture in the region, greater focus on conventional strike options, and a reexamination of U.S. and ROK plans for how to defend against a North Korean attack, inter alia.[30] It has not, however, yet led to a greater reliance on U.S. nuclear forces beyond a somewhat more pronounced emphasis on their role in statements by the United States and ROK governments.[31]

This is likely to change, though, if North Korea's nuclear and missile arsenals continues to grow and advance in quality. In such an eventuality, South Korea and Japan seem likely to press more fervently for a more visible and formidable U.S. nuclear posture in their defense. And, indeed, in such an eventuality the United States may well see such a posture as more suitable and appropriate. This is particularly likely to be the case if the DPRK is able to develop nuclear and missile arsenals sufficiently large and sophisticated enough to enable iterated, relatively controlled, and survivable employment against U.S. and allied targets, even in the face of U.S. and allied strike and defensive options. In such an eventuality, in which a strategy of pure defense may not be fully feasible, the United States and its allies are likely to look more to forces capable of deterring North Korea through the threat of cost imposition, including nuclear forces.[32] In such a case, the United States is likely to contemplate more seriously strategies involving nuclear employment as well as nuclear capabilities that can more effectively hold at risk a wider range of targets of particular value to the North Korean leadership, such as hardened and deeply buried targets.

China, however, poses an even more fundamental challenge to the legacy U.S. strategic posture than North Korea. For, while North Korea's belligerence and developing nuclear program pose an increasingly severe threat to U.S. allies and the United States itself, the threat is limited by the

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[30] See Karen Montague, "A Review of South Korean Missile Defense Programs," (George C. Marshall Institute, March, 2014.)
[31] See Aaron Mehta, "US Noncommittal on Strategic, Missile Defense Assets for Korea," Defense News, January 7, 2016, http://www.defensenews.com/story/defense/international/asia-pacific/2016/01/07/north-korea-nuclear-us-strategic-missile-defense-assets/78435222/; and Frank A. Rose, Assistant Secretary, Bureau of Arms Control, Verification, and Compliance "Missile Defense and the U.S. Response to the North Korean Ballistic Missile and WMD Threat" (Institute for Corean-American Studies, Washington DC, May 19, 2015).
[32] See Benjamin David Baker, "South Korea Goes Indigenous for Its Missile Defense Needs," The Diplomat, November 7, 2015.

straitened base of the North Korean economy and the DPRK's isolation. The peril from Pyongyang is therefore menacing but relatively narrow. China, on the other hand, has initiated a massive expansion of its military strength, represented by its increasingly sophisticated A2/AD network and growing capability for regional strike and power projection, and has done so based on an economic base of growing wealth, sophistication, and size. Nor does this military buildup appear likely to cease or even materially slow for the foreseeable future.[33] And, while China is a far cry from North Korea in behavior, it has nonetheless evinced an increasingly bumptious and revisionist approach to the existing order in the region.

China's buildup, if it continues, threatens to undercut the fundamental bases of the U.S. defense posture in the region, and thus to make U.S. nuclear weapons (again) a more salient part of the strategic posture of the United States and its allies in the region.[34] This is because the expansion and advancement of the PLA, a buildup that has been specifically designed and implemented to challenge American military supremacy in the Asia-Pacific, are increasingly imperiling U.S. conventional superiority in the region, including in maritime Asia – and thus in and on the air, waters, and territory in, around, and above U.S. allies and territory in the area. If the United States (and, by necessary extension, its allies) lose the conventional advantage to China over plausible contingencies in maritime Asia, the basic formula of the last generation for U.S. extended deterrence in the region will no longer work. If, in other words, China can best the United States and its allies in a conventional fight in the Western Pacific touching on the important interests of Washington or its confederates, then an extended deterrence strategy that relies too greatly on conventional forces risks challenge, frustration, and even defeat.

This is not to say that China will necessarily gain the advantage over the United States and its allies in maritime Asia. How the balance of conventional military power evolves will be subject to a multiplicity of factors, including whether Beijing is able to sustain its military expenditures and effectively reform its armed forces, the degree of focus on high-end contingencies and effectiveness of reform efforts on the part of the U.S. defense establishment, and the significance of contributions by key allies like Japan and Australia, among others. In any case, the balance is unlikely to shift in binary terms. Rather, it is likely to be dynamic and competitive, with China gaining greater margin closer to its shores but those gains dropping off the farther one ventures from the mainland.[35] It is nonetheless essential to observe that the conventional balance with respect to maritime Asia has already shifted markedly away from nearly unfettered U.S. dominance, and that the bulk of evidence

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[33] See Elbridge Colby, "Why China's Growing Defense Budget Matters," Real Clear Defense, March 9, 2015; and Jason Subler, "Exclusive Q&A with Chinese President Xi Jinping," *Reuters,* October 17, 2015. For a fuller examination of these issues, see Elbridge Colby, Robert M. Gates Senior Fellow, Center for a New American Security, "China's Offensive Missile Forces: Implications for the United States," Testimony before the U.S.-China Economic and Security Review Commission, April 1, 2015.

[34] For a review of the earlier U.S. nuclear posture in the region, see Elbridge Colby, Abraham Denmark, and John Warden, "Nuclear Weapons and U.S.-China Relations: A Way Forward," A Report of the PONI Working Group on U.S-China Nuclear Dynamics (Center for Strategic and International Studies, March 2013); For a fuller examination of the issues here, see Elbridge Colby, "Welcome to China and America's Nuclear Nightmare," The National Interest, December, 2014.

[35] See, for instance, Stephen Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle*, (Princeton University Press, 2004)

suggests that things are very likely to continue to move in China's favor.[36] Taiwan in particular appears an increasingly difficult defense problem, but this is likely to be a harbinger of China's future capabilities rather than their terminus.

If China does gain a material advantage in the non-nuclear military balance over the United States and its allies with respect to the latter's key interests, they will be compelled to look beyond conventional forces for deterrence. This will particularly be the case if the PLA develops the capabilities not only to unfold a formidable A2/AD umbrella near or even over them but also to conduct significant and persistent strike and mount sustained and effective power projection operations – which the PRC appears to be seeking to be able to do.[37] In such an eventuality, unless the United States and its allies regard China as having evolved into a satiated state or seek to emphasize accommodation and conciliation rather than defense in their policies, a greater reliance on nuclear forces is one of the only strategies – if not the only one – that can promise to address this problem adequately.

It is uncertain whether the United States and its allies would wish to pursue such a course, even in the event China does continue growing substantially in military power and geopolitical ambition. There are substantial antibodies to deepening reliance on nuclear weapons in all of the relevant states, particularly but not exclusively Japan. And many in the United States would likely find placing a greater weight on nuclear weapons distasteful, not least because it would presumably raise the threat to the American homeland.

The strategic logic of such reliance would, however, likely be compelling if the nations wished to field a serious military deterrent in such circumstances. In this context, the United States and its allies would be likely to consider emphasizing more than they do today that they are prepared to use nuclear weapons in the face of effective and severe Chinese *non-nuclear* attack against important U.S. or allied interests. That is, they would likely concentrate more on the nature and severity of the assault than on the weapons employed in doing so, a concentration whose appeal is predicated on the superiority of U.S. arms in conventional warfare. Such a posture would be designed to more closely tie the deterrent effect of nuclear weapons to a broader range of potential contingencies, rather than reserving them for a relatively narrow band of circumstances, such as nuclear and unconventional weapons attack.

To support such a strategy, the United States would be likely to field, plan for the use of, and develop a nuclear force and its associated C4ISR architecture more capable of limited and controlled strikes, particularly but not exclusively focused against any attacking Chinese forces as well as those nodes crucial to their projection and sustainment. At the same time, U.S. allies like Japan would be likely to press for a more visible and connected U.S. nuclear deterrent posture on their behalf. For instance, they would likely consider more seriously the possibilities for participating in U.S. nuclear

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[36] Eric Heginbotham, Michael Nixon, Forrest E. Morgan, Jacob Heim, Jeff Hagen, Sheng Li, Jeffrey Engstrom, Martin C. Libicki, Paul DeLuca, David A. Shlapak, David R. Frelinger, Burgess Laird, Kyle Brady, and Lyle J. Morris, "The U.S. China Military Scorecard: Forces, Geography, and the Evolving Balance of Power, 1996-2017," (RAND Corporation, 2015.)

[37] For a fuller examination of these issues, see J. Randy Forbes and Elbridge Colby, "We're Losing Our Military Edge Over China. Here's How to Get It Back," The National Interest, March 2014.

missions, perhaps along the lines of NATO's "nuclear sharing" arrangements, as well as for basing arrangements for U.S. nuclear-capable forces, and even potentially for U.S. nuclear weapons themselves. Should the threat from China become especially severe and some allies lose confidence in the sufficiency or credibility of the U.S. extended nuclear deterrent, pressures for independent nuclear arsenals would be likely to intensify.

This demonstrates that the development of China's military power will not necessarily have purely linear or correlative consequences. That is, there is sometimes an implicit sense that responses to China's military buildup are likely to remain within the legacy strategic and political-military architecture. Yet the reality is that there are likely to be thresholds at which more discontinuous or disruptive responses become more likely. One of the most significant of these is likely to be if China is able to attain conventional mastery in the Western Pacific, a mastery that would compel the United States and its allies and partners in the region to reexamine at the most fundamental level their traditional strategies – a reexamination that would essentially have to include consideration of a greater reliance on nuclear weapons for their deterrent and defense.

Employing Ground Forces to Counter Chinese Strategy in the Asian Maritime Environment

LtCol Peter McAleer, USMC

Military operations in the Pacific theater have long been viewed through the lens of maritime conflict. Vast ocean distances separate island nations, archipelagoes, and a host of reefs, shoals, and rocks. Disputes among the many Asian coastal nations frequently hinge on questions of exclusive economic zones, continental shelves, territorial seas, and the resources of the sea and seabed. With legal authorities and territorial control often in question, ownership and access to the disputed areas can be determined by simply a physical presence in the area. Naval surface action groups, coastal defense flotillas, and fishing fleets are all used by regional players to lay claim to disputed territories. China has further enhanced their attempts at territorial control through the employment of so-called anti-access and area denial (A2/AD) systems. These systems, designed to inflict significant operational cost on an opponent symbiotically combine with other Chinese military forces to exclude other claimants from territorial area – effectively ensuring command of the seas and reinforcing claims of possession by establishing de facto control and a physically uncontested presence. Gaining and maintaining access to disputed territories in this opposed environment is crucial to maintenance of conditions favorable to the U.S. and its allies, partners and friends.

Strategists are puzzling over the operational capabilities and techniques necessary to defeat Chinese A2/AD capabilities to ensure an American ability to meet security arrangements with regional partners. The now-defunct Air Sea Battle Concept and its progeny, the Joint Concept for Access and Maneuver in the Global Commons (JAM-GC), both look to operational solutions for countering and defeating A2/AD systems. In the Asian maritime environment, these concepts offer answers such as enhanced naval and air capabilities; they rely on the development of technical solutions to defeat Chinese missiles; and, they militarize the cyber and space domains. While these concepts may prove effective against current iterations of A2/AD systems, there is little guarantee of sustained dominance over improved and adapted systems. To avoid an everlasting cycle of punch and counter-punch over Chinese A2/AD capabilities and to achieve its regional aims, the U.S. must instead defeat the Chinese strategy underpinning A2/AD capability development.

Simply stated, China's strategy attempts to expand Chinese influence over regional actors by exploiting reductions of U.S. credibility and power in the region. Already a key economic partner to many in the region, China can solidify its regional preeminence by also becoming a regional security guarantor - a position currently occupied by the United States. China's increasingly capable military and growing A2/AD capabilities are designed to support this strategy by preventing American military assets from conducting operations to counter Chinese maneuvers. With American military freedom of action restricted or denied, the United States will be less able to counter Chinese aggressions against regional players and partners. A reduction of America's assurance of security in the region will undermine perceptions of U.S. power and make regional partners more susceptible to Chinese advances. China can then exploit apparent weaknesses in America's regional security guarantees. With America's security relationships in question and increased Chinese economic impacts throughout the region, China will be free to become the regional hegemon.

To counter the Chinese strategy, the answer does not rest entirely with operational air and naval forces, or even with the visions of Air-Sea Battle and JAM-GC, but also with the strategic use of

ground forces. Properly employed, ground forces reassure allies and deter opponents. In the watery theater of the Indo-Pacific region, ground forces may provide the key to retaining U.S. influence and ensuring a favorable order. Therefore, it may be time to view the Pacific theater through a more ground-tinted lens.

The weakness in China's strategy is its predication on degraded security relationships between the U.S. and its regional partners. Robust A2/AD systems are needed to prevent U.S. intervention in the region and allow unhindered Chinese military actions. Yet, China's A2/AD systems alone would not guarantee Chinese freedom of action as they do not ensure exclusion of U.S. forces in the region. Chinese expansion can be thwarted by maintaining control of key locations along the Asian mainland and through the island chains of the Western Pacific and Oceana even if U.S. offensive military operations are denied. Countering the Chinese strategy requires the reinforcement and expansion of U.S. security relations in the region which, in turn supports a favorable order.

In this context, the U.S. must accomplish two strategic objectives to succeed. The United States must reassure its allies and partners as a continued and credible security guarantor. Additionally, the U.S. must deter Chinese aggression against partner nations. And, should deterrence fail, the U.S. must control the key geographic locations needed to prevent Chinese expansion and freedom of operation. While the actions and arrangements appropriate for deterrence inherently provide assurance to regional partners, measures to reassure partners do not necessarily provide deterrence. For this reason, focus must be placed first on deterring Chinese action and controlling critical locales.

Ground forces provide an effective means for controlling important terrain. Further, ground forces employed on behalf of a partner display a level of commitment and military resolve which far surpasses the reassurances of mere diplomatic promises, occasional military over-flights, or the fleeting passage of naval vessels. Yet, there are several significant problems facing ground forces in the Pacific basin, and particularly for U.S. forces near the Asian coast. First among these, is the understanding that in the event of conflict, it is a near certainty that insufficient ground forces will be located in close proximity to the contested operating areas. This causes several operational challenges. Not insignificantly, is the question of what should be done with those forces that may be in an operationally significant area – how can they be employed in an effective way? And, how can those forces be sustained and reinforced? If these forces fall under the threat of China's A2/AD umbrella, the U.S. will find it difficult to sustain the forces, reposition them, or reinforce them with other capabilities. Essentially, U.S. forces may become isolated in the operating area, leaving them vulnerable to defeat or operational irrelevance. The operational problem thus revolves around ensuring enough forces are in the correct area and in sufficient quantities to be operationally effective. But, the U.S. alone does not have the capacity to preposition sufficient forces in all the critical locations to be effective in an A2/AD fight. Leaving forces forward positioned and scattered through the many potential operating areas is not a viable option.

Therefore, the strategic problem must revolve around placing sufficient forces, whether U.S. or partner forces, in the most effective locations to deter Chinese aggression and backing those forces with a credible deterrent threat. An uncertainty about American response to the loss of a unit or capability due to Chinese actions must pervade all Chinese strategic decision-making. A very real and credible threat of sizable American military retaliation must buttress every unit and military asset

placed on critical terrain. A credible threat is key to the deterrence of Chinese aggression. In this way, ground forces become a trip-wire for a heavy, retaliatory response.

Once sufficient deterrence is attained, there is flexibility available for the size, type and nature of ground force units deployed to the region. This flexibility can be used to bolster security relationships, reinforce defense of strategically and operationally important positions, and build partner capabilities to withstand Chinese actions. To achieve greatest benefit, efforts should be focused on partners and locations most strategically placed to encircle the East and South China seas. Among the options available to do this are a reinvigorated forward-basing plan, increased partner capacity building, and enhanced and diversified operations to put more U.S. forces in more locales.

In the first option, the United States should consider re-filling the strategic ring which previously surrounded contested waters and constrained Chinese expansion. This would require a reversal of the strategic positioning the American military has conducted over the last few years. Instead of withdrawing forces from Korea and Japan, those forces should be kept in place and augmented. Instead of moving forces to Guam, in the second island chain, forces should remain centrally located on Okinawa in the first island chain and reinforced with additional area denial capabilities. Additionally, efforts to build access and presence in the Philippines, Singapore, Australia and Malaysia should continue. Increased force presence in Korea and Southern Japan will help control naval access from the East China Sea to the Sea of Japan and beyond. Bolstered forces on Okinawa occupy the central component of Japan's so-called Southwest Wall and prevents Chinese expansion past the first island chain. Military basing in the Philippines will strengthen control of the sea space between Taiwan and the northern Philippines, as well as restrict movement from the South China Sea through the Philippine islands. And, a string of bases in Singapore, Malaysia, Indonesia and Vietnam will control access from the South China Sea to the Indian Ocean.

The cost to building permanent bases may be prohibitively expensive, however. Additionally, permanent bases are fixed points which can be targeted, isolated or bypassed in operational situations. To mitigate these risks, the U.S. could focus on a policy of 'places, not bases.' In this construct, less effort should be expended in the creation or enlargement of bases and more should be placed in the development of temporary operating locations. In concert with regional partners, the U.S. should develop forward operating locations, 'warm' bases, and operational 'lily-pads' from which bi- and multi-lateral operations can be conducted. These locations provide multiple benefits at both the strategic and operational level. Strategically, these bases represent a physical tie between the U.S. and its partners, they require diplomatic and military relations and provide platforms from which to conduct partner building and interoperability training. Already extant bases in Korea and Japan, including Okinawa, should be maintained as forward operating locations to buttress the northern and eastern flanks of the operating area. Concerted diplomatic efforts are needed to secure further expanded functionality of locations in Singapore and the Philippines, and build lily-pads in Malaysia, Thailand, Indonesia and even Vietnam.

Concomitant with either of the preceding efforts is the need to increase the ability of our regional partners to conduct ground operations in support of the overall strategy. Those stronger partners, like Japan and Korea, should receive continued development and training support to ensure their ability to defend their critical locations, while developing partners should receive assistance in

military to military training, equipment for rudimentary interoperability, and inclusion in basic multi-lateral command and control structures. All partners should be encouraged to participate in multi-lateral, regional exercises to build operational capability, interoperability among the partners, and familiarity. As these cooperative exercises are conducted, efforts toward burden sharing of equipment and missions should be contemplated and encouraged.

China's strategy for expansion in the Asian maritime environment depends on the weaknesses of individual states once the security guarantees of the United States are no longer viable. The expanding military capabilities of China threaten U.S. preeminence in the region and cast doubts on U.S. willingness and ability to respond to threats to partner nations' interests. To defeat Chinese maritime advances, the United States must embark on a campaign of reassurance and deterrence. Centered on the discrete positioning of ground forces and tailored bi- and multi-lateral training of partners the U.S. strategy will challenge Chinese advances by presenting a capable and unified front.

The views expressed are his own and do not represent those of the U.S. Marine Corps or the Department of Defense.

Fighting Fire with Fire: Taiwan and Countering Chinese A2/AD

Harry Krejsa

Taiwan, in contrast to many American friends and partners in the Asia-Pacific, knows far more about how a potential conflict with China could unfold. While the United States, China, and various claimants in the South China Sea are still determining one another's redlines and avenues of response, there is relatively little ambiguity across the Strait of Taiwan. This makes contingencies in the Strait both more unlikely, with the risk of miscalculation relatively lower, but also more ominous, with the stakes of a miscalculation or deliberate escalation more clear. Yet it is also clear that the key to countering the A2/AD threat posed by China in the Strait of Taiwan is for the island to learn from Chinese efforts and develop its own robust A2/AD deterrence.

While China would employ asymmetric A2/AD capabilities against U.S. intervention in a cross-strait conflict, the capabilities deployed against Taiwan would be relatively conventional. The threat posed by China's much-vaunted conventional missiles is real; aircraft, naval power, and amphibious landings would all likely be important components of a cross-strait conflict, but also vulnerable to Taiwan's own A2/AD efforts. Like Beijing's policy towards U.S. military power, the Taiwanese need not outmatch potential adversaries across the strait—but instead should make the cost of instigating conflict (or, barring that, making that conflict become protracted) prohibitively high.

A Cross-Strait Contingency: Politics by Other Means

The most likely cause of conflict in the Strait of Taiwan would be formal or informal motions toward Taiwanese independence. Such moves need not necessarily come in the form of deliberate provocations by Taiwanese authorities, like a referendum or legislative declaration. Rather, the crisis could inadvertently arise if the Taiwanese and Chinese governments misunderstand the others' intentions and redlines. This could be the case if Taiwan took actions toward policies sufficiently "independence-ish" that they provoked an unexpected response from Beijing. China has also outlined internal unrest, nuclear weapons development, and indefinite delays in cross-strait dialogue as potential provocations warranting a military response across the strait.[38]

While cross-strait relations have experienced a warming of late, the potential for conflict (and the potential cost of such a conflict) remains among the highest in the Asia-Pacific. An invasion of Taiwan—and, in particular, mitigating a U.S. intervention in that invasion—remain the primary focus of the Chinese military. That contingency still represents the focus of the People's Liberation Army for both planning and military investment, and is frequently the most debated issue in domestic Taiwanese politics.[39]

Because the *types* of events likely to kick off a crisis are relatively well understood, a cross-strait contingency would unlikely come as a total surprise. Indeed, PLA publications indicate that Beijing would act rather predictably in the case of cross-strait conflict. PLA forces would strike Taiwanese

[38] "Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2015," (Office of the Secretary of Defense, April 2015), 58.
[39] Ibid, i.

command and control centers, communications hubs, domain awareness sensors, and logistics facilities first in a campaign to assert "information superiority." Quickly thereafter would follow air superiority, sea control, defenses at potential landing points, and finally mines and other marine landing obstacles. After establishing a beachhead, Chinese forces would expand the landing area as quickly as possible to facilitate amphibious reinforcements and, eventually, a land invasion force.[40]

Key Technologies and Capabilities:

While Chinese military planning has emphasized asymmetric, A2/AD capabilities for countering U.S. military power, coercion or invasion of Taiwan would likely require a more conventional approach by the PLA. This conventional approach—deploying planes, ships, and amphibious landing craft—is vulnerable in the face of Taiwan's ability to craft a well-executed A2/AD strategy of its own. The notable exception to this rule is, of course, China's vast complement of conventionally-armed ballistic and cruise missiles.

Missile and Air Superiority vs. Hardened Targets and Recoverability

China's missile capability, commanded by the Second Artillery Corps, has seen a dramatic improvement in both qualitative and quantitative power in the last decade. Beginning with only a few hundred missiles of moderate quality ten years ago, the Corps now commands at least 1,200 short-range ballistic missiles capable of striking any target in Taiwan, in addition to many U.S. partners and assets throughout the region.[41] In addition, large numbers of Chinese aircraft are based within bombing range of Taiwan without needing aerial refueling, allowing for air superiority with unparalleled logistical support.[42] The initial strikes in a Taiwan contingency would be tremendously fast, unremittingly punishing, overwhelmingly extensive, and exceedingly difficult to counter.

While missile defense in such an environment is likely technically infeasible for the foreseeable future, Taiwan has already made significant progress in adapting to the threat of both missile and aerial bombardment. Taiwan possesses some of the most robust airbases in the Asia-Pacific. The island possesses 50 hardened aircraft shelters, the highest percentage of well-defended airbases of any country in the region. Many of its aircraft and associated assets are even stored in mountainside tunnels and therefore essentially invulnerable to conventional attack.[43] While the runways outside these storage facilities are still susceptible to attack and easily destroyed, the more valuable aircraft inside would remain intact.

Fortunately, the capabilities Taiwan needs to yet develop in this realm build on its already relatively strong foundation for asymmetric defense. Like many A2/AD solutions, these capabilities will range from advanced and in development to inexpensive and field-tested. Chiefly, Taiwan should do more to harden both military and civilian critical infrastructure. In regards to military infrastructure,

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[40] Roger Cliff, *China's Military Power* (Cambridge: Cambridge University Press, 2015), 203.
[41] "Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2015," 58.
[42] Ibid, 64.
[43] Michal Thim, "China's Neighbors Embrace Asymmetric Warfare," China Policy Institute Blog on Taiwan in Perspective, November 7, 2014, http://taiwan-in-perspective.com/2014/11/07/chinas-neighbours-embrace-asymmetric-warfare/.

Taiwan should advance beyond robust aircraft storage and complete the process of moving its fuel tanks and associated equipment underground. To the extent possible, vital civilian services should be strengthened against aerial bombardment.[44] In addition to their mountainside and hangar-defended survivability, Taiwan's air force needs to be able to deploy following Chinese attacks on runways. Rapid runway repair capabilities, as well as surface-to-air missile systems like MEAD, could markedly increase the likelihood that Taiwanese jets would be able to return to the fight.[45]

Naval and Amphibious Capability vs. Coastal and Marine Defense

In the event of an invasion, a naval assault and amphibious landing will likely follow. This holds whether the target for invasion is either Taiwan or its various outlying islands, several of which hold military facilities that could be targets of Chinese armed coercion. While much has been made of the PLA Navy's embryonic attempts to build a bluewater navy with global force projection, targeting Taiwan at only 90 miles away remains its primary goal for institutional planning and investment.

Whether using a blockade to coerce and debilitate Taiwan, or a force designed to clear the Strait in advance of an amphibious landing on the main island or the ROC's outlying military outposts, the PLA Navy would quickly become the primary driver of this second phase of Chinese assault. The PLA Navy's initial activities would range in scope and target, but would likely still represent overwhelming force in comparison to Taiwanese sea power, particularly following initial aerial and missile bombardment. That said, while Taiwan's best strategy during the initial bombardment is likely limited by technical capacity to mitigate rather than respond, the entry of the PLA Navy represents the best opportunity for deploying a defensive, asymmetric A2/AD approach.

Developing this asymmetric approach will be particularly important due to the low likelihood that many large Taiwanese surface ships will be able to remain active well into a cross-strait conflict. The Republic of China Navy primarily operates out of bases on Taiwan proper and the Penghu islands—all of which would be among the first targets for Chinese strikes. Without these resupply bases, the Taiwanese navy would be hard-pressed to continue operating for long—and absent reinforcement by U.S. forces within a few days, would likely be forced to cease operations completely.[46] To stand in the way of a subsequent amphibious assault, Taiwan will have to turn to asymmetric means of coastal defense.

As with mitigating the initial aerial and missile bombardment, Taiwan already has a good foundation on which to build an A2/AD coastal defense. The primary reason is geographical: Taiwan is extremely mountainous, with many opportunities for highly defendable weapon placements. Embedded, dug-in forces operating anti-ship missiles, long-range guns, or even surface-to-air defenses could withstand substantial punishment and still pose a major coastal threat to Chinese naval assets.[47]

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[44] Roger Cliff on behalf of RAND Corporation, "China's Military Modernization and the Cross-Strait Balance," Testimony to the U.S.-China Economic and Security Review Commission, September 15, 2005, 6.
[45] Thim, "China's Neighbors Embrace Asymmetric Warfare."
[46] Michal Thim, "A Millennium Challenge for Taiwan's Military," Thinking Taiwan, November 6, 2014, http://thinking-taiwan.com/a-millennium-challenge-for-taiwans-military/.
[47] James Holmes, "Four Ways Taiwan Can Survive," Real Clear Defense, June 20, 2015, http://www.realcleardefense.com/articles/2015/06/20/four_ways_taiwan_can_survive_108103.html.

However, to develop a more robust response, especially in the case of an amphibious approach, Taiwan should invest in inexpensive, asymmetric marine capabilities. Because Taiwan may not be able to rely on a survivable surface fleet following initial strikes on its naval bases, these underwater capabilities would ideally have the ability to operate longer without a substantial naval resupply infrastructure. Luckily, the Taiwanese navy has begun developing a fleet of small, fast watercraft that, while operating along the island's periphery, could swarm enemy ships with light anti-ship missiles. Distributed, mobile threats to Chinese warships would be more likely to maintain operability following initial strikes and to survive indirect confrontation with PLA warships. Taiwan's domestic production of anti-ship missiles has ramped up in recent years and reportedly begun yielding formidably advanced and high-quality weapons.[48] Similarly, the Taiwanese military has invested in the ability to quickly lay sea mines to protect beaches most likely to be targeted as amphibious landing spots.[49] Mines, missiles, and mountain-borne gunnery are cheap and asymmetrically effective, and should form a key pillar of Taiwan's A2/AD defense against the Chinese navy.

Some asymmetric preparation may require more substantial investment, however. Antisubmarine warfare is considered a significant shortcoming of the PLA Navy and, though expensive, may be a worthwhile vulnerability for the Taiwanese to invest in exploiting.[50] Taiwan has begun building a nascent indigenous submarine construction capability, but it should not necessarily be tempted to "go big" with conventional diesel-electric attack submarines. China has reportedly been investing in small, dispersed "midget submarines" as a part of its preparations for an assault on Taiwan, but such an approach may suit Taiwan's defensive strategy as well.[51] Taiwan's submarine fleet need not go toe-to-toe with the best PLA submarines or even attempt to emulate the globally premier effectiveness found in U.S. submarine warfare capabilities. Rather, they need only exploit the PLA Navy's relative weakness in the realm of antisubmarine warfare, serving as another layer of distributed, lethally asymmetric defense against coastal attack or amphibious landing.

U.S. Collaboration

The United States and Taiwan have a long and robust history of security cooperation. However, each side will have to continue working to ensure that the goals of this security cooperation are clear-eyed about the most likely threats facing Taiwan and the best avenues to interdict those threats.

F-16 fighter jets have become the unofficial face of U.S.-Taiwan security cooperation, and while they can be important tools in Taiwan's defense, this risks obscuring the Republic of China's true security needs. Sales of new F-16 fighter jets have long been seen as both fulfilling the United States' commitments under the Taiwan Relations Act, but also a potentially profoundly provocative move against the PRC. Successive U.S. administrations have sought a middle ground solution, choosing to provide upgrades and refurbishments to existing Taiwanese F-16s rather than fulfill a sale of new

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[48] Thim, "A Millennium Challenge for Taiwan's Military."
[49] Thim, "China's Neighbors Embrace Asymmetric Warfare."
[50] Ronald O'Rourke, "China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress," (Congressional Research Service, November 23, 2015), 6.
[51] William Lowther, "Chinese military developes 'midget' sub: reports," Taipei Times, July 1, 2015, http://www.taipeitimes.com/News/taiwan/archives/2015/07/01/2003621999.

jets. Aerial dogfights are unlikely to be Taiwan's best form of defense in the event of a cross-strait conflict, yet F-16 sales monopolize much of the debate around the island's security.[52] This feeds a perception that Taiwan's defense planners—perhaps with a kernel of truth—are at risk of being distracted by the newest and most powerful technologies when their security depends far more on capabilities that are simpler and inexpensive. Washington's dance on F-16s (whether the latest order is fulfilled or not) should be accompanied by a commitment to encourage Taiwan to work toward a military that is targeted and effective, rather than the United States in miniature.

The United States, when planning on how best to support Taiwan in a cross-strait contingency, will also need to learn many of the same lessons from Taiwan's maritime defense. To be able to maintain its ability to respond in a crisis, U.S. forces and facilities in the region will need to emphasize hardening and distributed operations.[53] The Second Artillery Corps and its conventional missiles not only pose a serious threat to Taiwan, but also have the capability to strike many U.S. targets throughout the Asia-Pacific. Hardening against missile bombardment and diffusing forces and logistics will be crucial in protecting the United States' ability to respond and support its partners in the event of a conflict, whether in Taiwan or elsewhere.

Conclusions

While a cross-strait conflict over Taiwan is among the most likely contingencies in the Asia-Pacific, the U.S. and Taiwanese should capitalize on the fact that it is also among the most predictable. Key recommendations include:

Meet A2/AD with A2/AD

- The capabilities China would deploy against Taiwan include many that are vulnerable to asymmetric attack from the Taiwanese themselves.
- Emphasize cheaper methods of home defense over expensive attempts at domain superiority. Mines are better than destroyers, and dug-in gunnery is better than new F-16s.
- Distributed mobility is better than concentrated power. Swarming anti-ship small craft will be better naval assets than large surface ships requiring base

Maintain Flexibility in Service Missions and U.S. Collaboration

- The Taiwanese military services will likely need to adapt to operating uncomfortably outside their service's traditional area. Taiwan's air force will need to focus on survival and enemy attrition rather than achieving superiority, while conventional naval operations may become quickly infeasible following initial strikes of resupply infrastructure.
- Though Taiwan's chief military benefactor boasts the largest and most advanced force in the world, Taiwan would not benefit most from attempting to emulate it. Rather, it should

[52] Van Jackson, "Forget F-16s for Taiwan: It's All About A2/AD," The Diplomat, April 8, 2015, http://thediplomat.com/2015/04/forget-f-16s-for-taiwan-its-all-about-A2/AD/.
[53] Cliff, "China's Military Modernization and the Cross-Strait Balance," 6.

capitalize on U.S. support to pursue a highly specialized force, rather than a miniature model of a global one.

India: A2/AD Partnership Requirements for Awareness and Access

Admiral Nirmal Verma, Indian Navy (Ret.)

The term anti-access and area-denial shortened to the acronym A2/AD was first coined by the office of the Center for Strategic and Budgetary Assessments. The term has been under intense focus in more recent times, with many linking it to the induction of certain new weapon systems in military inventories of some countries. However, A2/AD as a concept is not new. History is replete with examples stretching from the Peloponnesian war to the more recent wars in the Middle East, with varying outcomes.

The Joint Operational Access or JOAC document 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".

Sam Tangreddi cites geography of the theater, criticality of information and intelligence, the conflict space as key factors influencing A2/AD; diplomacy, economic relations and overt and covert military support also being relevant.

Most nations would have the concept of A2/AD embedded in their operational plans with respect to their likely adversaries. Essentially it is a strategy of "denial". The strategic goal of an A2/AD state would be to achieve deterrence against a strategically superior power that enjoys an edge in a force-on-force conflict. What individual nations actually field would depend on the assessed threat, limited by affordability.

Technology certainly plays a key role in the process through increasing the range and accuracy of weapon systems, addition of stealth features, survivability and better battle-field transparency. At the same time technology comes with its vulnerabilities due increased reliance on space assets for anti-access networks, as also the internet.

Further, technology alone may not assure success in case of a confrontation. A strategically inferior force could also blunt an attack through tactical innovation and disruptive use of currently available technologies, coupled by exploiting geographic advantages available.

Depending on the mass of combat power that an A2/AD state can bring to bear, it would endeavor to stretch its anti-access envelope to the maximum extent. The more stealthy and survivable platforms would be deployed at the outermost perimeter, the SSN/AIP submarines being preferred options, while concurrently exploiting the advantages conferred by geography. In narrow straits, access can be disrupted by shorter range missiles fired from Fast Attack Craft or even from shore, and mines. Open ocean spaces necessitate a different game plan altogether. The recent launch of twenty-six 3M14E land attack cruise missiles from small missile ships by Russia on targets 1000 miles away, ushers in a new dimension in small ship capabilities. Lower costs of the platform-weapon mix would aid a state in fielding larger numbers.

These factors have to be taken into account by a counter-A2/AD power as it seeks access into contested areas. The challenge posed will necessarily call for technological superiority and innovation in the systems and tactics fielded to counter an A2/AD adversary, while minimizing risk to own forces, as well as to supporting C4SIR infrastructure.

The challenge becomes greater for a counter-A2/AD power, when it seeks access in 'out-of-area maritime space'. This would be particularly relevant to scenarios when US forces are called to operate in the Western Pacific, and the A2/AD power is China.

What stands out is the missile emerging as a key weapon system, with increased ranges, speed, accuracy, lethality and survivability against countermeasures. It applies to both the anti-ship and surface-to-air missile. In the case of China, it would be the ASCMs YJ-18, YJ-12, YJ-63 and DH-10, and more recently the ASBMs DF-21D, DF-26D and the WU-14 that have essentially triggered the debate on counter-A2/AD strategies.

In the air domain, the HQ-9 and the S-300 and S-400 systems acquired from Russia expand the air-defense umbrella, markedly. Hence various categories of missiles would be fielded from the outer-most A2/AD perimeter for defense through submarines, and inner barriers of surface ship and air deployments, and anti-ship missile attacks from ashore, that Andrew Erickson terms as the concept of 'using the land to control the sea'. What should be expected are 'saturation attacks' aimed at overwhelming the precision weapons launched by the approaching force to neutralize them, while also depleting the on-board inventories.

How does India view these developments? India's primary area of maritime interest is the Indian Ocean region as defined in the document "Ensuring Secure Seas: India's Maritime Security Strategy" released by India's Defense Minister on Oct 26, 2015. South and East China Seas, the Western Pacific Ocean and their littoral regions figure as secondary areas of maritime interest. The document states that the "likely source of traditional threat would be from states with a history of aggression against India, and those with continuing disputes or maintaining adversarial postures to India's national interests". To that end, possibility exists for some of the A2/AD systems being fielded in the Western Pacific finding their way into India's primary area of maritime interest. It will not be the first time that such transfer of key technologies has taken place in India's neighborhood.

India's plans can be expected to invest in A2/AD systems, as well as counter A2/AD systems, to steer the course of conflict, should it occur. Budgetary allocations would have a definite influence in deciding the mix of between 'high-end' and 'low –end' capabilities, as numbers deployed play an equally relevant role. India's efforts are steered jointly by the Armed Forces, the Defense Research and Development Organization (DRDO) and the Defense Public Sector, with increasing participation of the Private Sector. The participation of India's Private Sector has received a fillip under the "Make in India" initiative of Prime Minister Modi.

A reading of the A2/AD debate in the US suggests that as the US fleshes its Third Offset Strategy, the focus areas for counter-A2/AD strategies would exploit core competencies of the US in unmanned platforms and weapons, automation, stealth, robotics, directed energy weapons, electromagnetic railguns, and with special focus on 'human-machine' collaboration. The desired

outcome being the fielding of a Global Surveillance and Strike (GSS) network that enables the projection of US power in multiple locations while reducing reliance on forward bases.

Specifics of Cyber, Electronic Warfare and the domain of Space are discussed to a much lesser extent in the open domain, as may be expected for reasons of secrecy. What also underlines the debate is the imperative to marshal the extraordinary technical expertise resident in Silicon Valley and the private sector at large, to create synergistic options. The instruments for channelizing the efforts being the Defense Innovation Initiative and the DARPA.

The US has a number of security alliances with a number of nations in the Pacific, and some are directly impacted by current developments in East and South China Seas. However, many do not have the necessary kinetic assets, and others who may have them, may be hesitant to even discuss their deployment under the given set of circumstances. The words of former Prime Minister of Singapore, late Lee Kuan Yew, who has a profound influence on the political ethos of South East and East Asia ring loud; he said " - -To name potential enemies is to make actual enemies. But defense is a basic necessity, like the shell of a turtle, against contingent dangers. With the shell, there may never be an attack, but without the shell, survival is problematic". US will have to work with its allies and partners in the Western Pacific to arrive at the roadmap that they subscribe to, and could be implemented to address the challenge.

How can India and US collaborate in addressing such common challenges? The demise of the Cold War and the economic reforms in India in 1992 ushered in a new phase in the bilateral relationship that has since grown exponentially. Prime Minister Modi terms it the 'Indo-US Strategic Partnership', while President Obama has referred to it as the 'defining partnership of the century'. Earlier this year, the joint strategic vision outlined by President Obama and Prime Minister Modi states that the US rebalance to Asia, and India's Look East policy were in harmony. From India's perspective – a major concern is cross-border terrorism. The fact that the Joint Statement not only commits to deepening collaboration to combat the full spectrum of terrorist threats, but is also explicit in naming the terror outfits operating in South Asia, has resonated well in India. Mil-to-Mil relations have also moved briskly in step with the growing strategic convergence between the two countries.

More recently the two leaders met on the sidelines at the UN General Assembly in September this year. President Obama said after the hour-long talks, the third between the two leaders in over a year - "We discussed how we can further refine our strategic vision", while Prime Minister Modi acknowledged -"Our defense cooperation, including defense trade and training is expanding".

Of the large number of Agreements concluded between the two countries, I would like to single out three. Besides the path-breaking Civil Nuclear Agreement that has been a game-changer in the Indo-US relationship, those related directly to security and defense include the 2015 Framework for US-India Defense Relationship that will guide and expand the bilateral defense and strategic partnership over the next 10 years. The second is the Defense Trade and Technology Initiative (DTTI), encompassing defense technology transfers, trade, research, co-production and co-development. The latter two agreements provide the necessary framework for military-technical cooperation to address common challenges to security, including the A2/AD chessboard. Such cooperation should focus on first identifying the 'desired capabilities' and then the specific programs to address the

deficiencies. The scope of collaboration should also look at concepts and ideas, and not be restricted to technology options alone. I see the DTTI loaded with opportunities. It only requires vision to decide the future projects and programs, and single-minded efforts to see them through.

No new mechanisms need to be set up to look at areas where the two countries could work together in the field of A2/AD and counter-A2/AD strategies; in principle, when the two are looked as a composite whole, they would not appear to be targeted at any particular country. While I had earlier mentioned the umbrella agreements for defense cooperation, there are a number of sub-organizations that look at different verticals. Put together, they should be able to address the recommendations that emerge.

The geographic theatre has a decided impact on the geo-strategies of nations. The imperatives in the Western Pacific and the Indian Ocean Region (IOR) can be expected to differ in many ways.

At the outset, the concept of A2/AD/ counter-A2/AD strategies as relevant to the IOR would need to be examined in detail. This in turn would yield firstly, the operational concepts that aid in achieving the intended objective, and the technology options that need to be concurrently implemented. It is likely that for the latter, there would be many common areas *vis-à-vis* the Third Offset Strategy of the US.

India has a fairly mature defense R&D and production base with many programs underway. Cooperation in the areas of cyber security, electronic warfare and security/exploitation of space based assets would definitely be a 'given'. Concurrently, there will be immense interest in unmanned platforms in the domains of air/surface/sub-surface, stealth and automation, and low-cost ordnance delivery systems like directed-energy weapons. Exchange of classified information would certainly pose a challenge that will need to be addressed.

The other area that would need to be addressed is that defense R&D and production in India is largely under government agencies, whereas in the US it is almost entirely with the private sector. Direct collaboration between the two is definitely a challenge. If one were to take a leaf from India's successful defense R&D and production ventures with foreign partners, there has always been the involvement of the government of the collaborating country, even if the implementing agency was from the private sector. The 'US government' will need to be involved in the joint programs undertaken; they cannot be left to the private sector agency alone. The Government-to-Government arrangement embedded in the US Foreign Military Sales program, explains its success in India.

In conclusion, the Third Offset Strategy being adopted by the US appears to be the obvious 'Way Ahead' for the A2/AD challenge that is emerging globally with the proliferation of weapon technologies, the ones fielded being influenced by the geography of the theater. There are areas in which the US would work with its allies and partners in a particular geographical theater in implementing the operational concepts to meet the desired objective, and technology cooperation with those who have the wherewithal. Given its own security challenges, India can be expected to collaborate in working on new technologies for implementing A2/AD/counter A2/AD strategies under the existing bilateral defense mechanisms.

Malaysia's A2/AD Dilemma

Scott Cheney-Peters & Natalie Sambhi

Part 1: The Strategic Challenges Posed to Malaysia by China's A2/AD Capabilities

Background

The development of China's anti-access / area-denial (A2/AD) capabilities have been primarily driven by the perceived requirement for undermining U.S. power projection in the Western Pacific, derived from U.S. air and seapower.[54] Yet this development also poses defense planning complications for China's neighbors. The risk and strategic uncertainty generated by un-located submarines, ballistic and cruise missiles that can hold both naval forces and land-based facilities at risk, and the targeting of intelligence, surveillance, and reconnaissance (ISR) capabilities that can greatly reduce the operational effectiveness of an opposing force, are keenly felt by many defense analysts around China's periphery.[55]

Malaysia, China's maritime neighbor at the south end of the South China Sea, faces an array of complications from the expansion of China's operational reach and growing capabilities. While China and Malaysia have "a thriving trade and investment relationship, defense and security ties are much less pronounced."[56] Although this deficit stems from China's previous support for the insurgent Communist Party of Malaya (CPM) and the historic perception of a lack of effective gains to be had from a closer defense relationship with China, the continued detachment is likely due to mistrust arising from competing maritime claims.[57]

In addition to overlapping claims to several of the Spratly Islands, China also claims the Luconia Shoals and James "Shoal" despite both falling within Malaysia's Exclusive Economic Zone (EEZ) under the principles of the U.N. Convention on the Law of the Sea (UNCLOS).[58] While China does not occupy any of the 11 features in the Spratlys claimed by Malaysia (this distinction belongs

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[54] Maj Christopher J. McCarthy, USAF, "Anti-Access/Area Denial: The Evolution of Modern Warfare," U.S. Naval War College, Luce.nt, 03-05-2010, https://www.usnwc.edu/Lucent/OpenPdf.aspx?id=95. As defined by Robert Work, Barry Watts, and Andrew Krepinevich in "Meeting the Anti-Access and Area-Denial Challenge," Center for Strategic and Budgetary Assessments, 2003, "anti-access (A2) strategies aim to prevent US forces entry into a theater of operations," while "area-denial (AD) operations aim to prevent their freedom of action in the more narrow confines of the area under an enemy's direct control." (ii)

[55] See for example Dennis M. Gormley, Andrew S. Erickson, and Jingdong Yuan, A Low-Visibility Force Multiplier: Assessing China's Cruise Missile Ambitions (Washington, D.C.: National Defense University Press, 2014).

[56] Chow Bing, 295.

[57] Chow Bing notes that the lack of strong ties may be an indication of the prioritization of other areas in the bilateral relationship, like economic co-development),rather than a lack of trust, noting military to military cooperation is actually growing, albeit from a very low starting point, despite increasingly public disagreements over the South China Sea. (Chow Bing 297-8)

[58] James Shoal was so-called due to an error during the translation of a map, and has since been touted as China's southernmost territory despite being an underwater feature. Bill Hayton, 11.The Luconia Shoals, meanwhile, may have only recently and artificially been transformed into an "island" from a low-tide elevation (and therefore also not "claimable" by China in its own right under UNCLOS) (Scott Bentley, "Malaysia's "special relationship" with China and the South China Sea: not so special anymore", The Asan Forum special forum paper, 31 July 2015, http://www.theasanforum.org/malaysias-special-relationship-with-china-and-the-south-china-sea-not-so-special-anymore/, accessed 5 January 2016).

instead to the Philippines and Vietnam[59]) its behavior elsewhere has aroused suspicion. Since 2012, China has gradually shifted its maritime "paramilitary assets" away from operating near the Spratly islands and closer to eastern Malaysia.[60] In June 2015 Malaysia announced that China had kept anchored a China Coast Guard (CCG) vessel, apparently on rotation, in the area of the Luconia Shoals "for about two years,"[61] and later in November local reports described Malaysian fishermen being threatened off by the Chinese crew aboard the vessel.[62] The past two years have also seen a spike in reports of CCG incursions into the waters near James Shoal and even harassment of Malaysia's offshore oil and gas surveys and drilling operations in disputed areas.[63] Malaysia already has active oil production operations around the Luconia Shoals, while China regards the James Shoal area as oil-rich.[64]

These incidents indicate the potential threat to the vital Malaysian fishing and energy sectors[65], demonstrating that the challenge of China's improving capabilities and expanded operational reach goes beyond nationalist sparring. To better understand why and how it's important to draw a few distinctions, which can be aided by sketching out a few (non-exclusive) hypothetical scenarios and their impacts on Malaysian interests[66]:

Scenario 1: Conflict between China and the United States. This scenario pits U.S. power projection against China's A2/AD capabilities. As Stephen Biddle argues in a paper on the subject, in a near-term contest between the two powers "there is little real A2/AD threat to confront: most analysts still see ongoing U.S. naval and air superiority over all but the immediate Chinese littoral and sometimes the airspace over Taiwan."[67] Malaysia's coastal waters would see neither side with a sustained A2/AD advantage absent the involvement of an expanded set of belligerents. Yet Biddle also notes "Technological change is progressively reducing the net cost of striking fixed targets...with precision-guided ballistic missiles at ever-increasing ranges. This will not enable A2/AD-like military control beyond about 400-600 km from friendly landmasses, but it will make a form of coercive strategic bombardment available to any state that chooses to field the needed missiles."[68] Precision-

[59] Malaysia occupies eight of the claimed maritime features while Vietnam or the Philippines occupy the other three: Prashanth Parameswaran, 'Playing it safe: Malaysia's approach to the South China Sea and implications for the United States', Maritime Strategy Series paper, Center for a New American Security, February 2015, http://www.cnas.org/sites/default/files/publications-pdf/CNAS%20Maritime%206_Parameswaran_Final.pdf, accessed 7 January 2016.
[60] Bentley, Not So Special
[61] http://www.theborneopost.com/2015/06/03/china-coast-guard-vessel-found-at-luconia-shoals/
[62] http://www.freemalaysiatoday.com/category/nation/2015/11/01/chinese-navy-keeps-miri-fishermen-away-from-shoals/
[63] Scott Bentley http://www.theasanforum.org/malaysias-special-relationship-with-china-and-the-south-china-sea-not-so-special-anymore/
[64] *Brittle Might? Testing China's Success: Highlights from the conference 5-6 October 2015, Ottawa*, CSIS/SCRS World Watch: Expert Notes series publication No. 2015-12-04, (December 2015), 147.
[65] Despite a diversified economy, the oil and gas sector still accounted for roughly a third of government revenue in 2013, see Nurhisham Hussein, 'Will falling commodity prices bring down Malaysian growth as well?', *East Asia Forum*, 31 December 2014, http://www.eastasiaforum.org/2014/12/31/will-falling-commodity-prices-bring-down-malaysian-growth-as-well/, accessed 8 January 2016.
[66] We do not argue that any one of these is more likely than the other and are grossly over-simplifying a multitude of nuances in their construction.
[67] Biddle, 3. The area of the "immediate littoral is defined as 400-600km in his paper.
[68] Biddle, 5

guided munitions capabilities developed by China in an A2/AD construct can therefore exert a coercive influence on the Malaysia's political decision making if given enough range, perhaps dissuading the country from entering into the conflict or granting access to American forces.[69]

Scenario 2: Conflict between China and Malaysia. This scenario imagines a conflict between China and Malaysia. While China would struggle for sea control outside of its waters against the United States in Scenario 1, it would fare better in this scenario. In such a conflict, China would need to call first upon its power-projection capabilities to attempt to establish local sea control at the southern end of the South China Sea.[70] As part of such a campaign it could use its A2/AD capabilities to restrict Malaysia's ability to move forces from Peninsular Malaysia to Malaysian states in Borneo. One Malaysian defense analyst remarked, "our armed forces would find it difficult to do so even if challenged by our immediate neighbours, let alone China," and found the threat of China using A2/AD capabilities to prevent partners such as the United States and Australia from coming to Malaysia's aid if they should join the conflict "worrisome."[71]

Scenario 3: Continued Tailored Coercion. Under this scenario territorial disputes and regional tension would not rise to the level of armed conflict, with the next decade instead characterized by a continued Chinese campaign to coerce its neighbors and the continued development of Chinese power projection and A2/AD capabilities.[72] Even without open warfare, such capabilities would have a negative effect on Malaysian interests. A Malaysian defense expert notes "China's growing potential to deny access to the South China Sea will affect Malaysia's willingness and ability to develop new fields within its EEZ."[73] Analysts also note that this scenario could at the same time generate the second-order effect of provoking the United States to exert a greater "direct role" in regional maritime security - also a prospect Malaysia views "with alarm" due to sovereignty sensitivities.[74]

There's no sign that the Chinese capabilities undergirding these current and potential clashes of interest with Malaysia will subside in the coming decade, with the latest official U.S. reports on the subject projecting growing and modernizing fleets of Chinese submarines, surface vessels, mines and missiles among other relevant platforms and weapon systems.[75] It's also important to recognize that below the threshold of war, China can coerce Malaysia through means other than those outright military. Even without resorting to the use of maritime law enforcement and paramilitary maritime forces, China can wield a constraining impact on Malaysia's range of action through its economic

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[69] Potential quote or source from Erickson.
[70] Biddle, 4.
[71] Interview SL
[72] http://www.cnas.org/tailored-coercion
[73] Interview SL
[74] Security Strategies in the Asia-Pacific: The United States' "Second Front" in Southeast Asia Andrew T H Tan, Palgrave Macmillan, Aug 2, 2011, 166.
[75] Office of Naval Intelligence, *The PLA Navy, New Capabilities and Missions for the 21st Century*, undated but released in April 2015; Department of Defense, *Annual Report to Congress [on] Military and Security Developments Involving the People's Republic of China 2015*. Washington, undated but released in May 2015; Ron O'Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, Congressional Research Service, December 21st, 2015.

leverage as Malaysia's top trading partner, accounting for 13% of its exports and 19% of its imports.[76]
Given these challenges it's necessary to briefly review Malaysia's relations with China to understand the context of its responses and its constraints—real or imagined—on further action.

Part 2: Malaysia's Response to China's Challenges

Malaysia's reaction to the security challenges posed by China have to date been something of a balancing act. Malaysia has tried to preserve its "special relationship" with China while signaling its displeasure with perceived Chinese encroachment. An example of the delicate balance Malaysia has struck in its diplomatic handling of these challenges is Chief of the Malaysian Armed Forces Zulkefli Mohd Zin's walking back comments about China's "unwarranted provocations" in the South China Sea.[77] Defense Minister Datuk Seri Hishammuddin has also made it clear that Malaysia will continue to engage all major powers, especially both China and the United States.[78]

Efforts to shore up the relationship with China include the signing of an MoU on the sale of China's LY-80 Medium Range Surface to Air Missile (MRSAM) defense system and Prime Minister Najib's visit to China in late May 2015 during which the two sides signed a joint communiqué formalizing the Comprehensive Strategic Partnership.[79] In November 2015, Malaysia also announced that it would provide access to its base in Sabah state at Kota Kinabalu to the PLA Navy.[80]

At the same time, Malaysia's signaling to China and response to its A2/AD challenge have taken concrete forms too. In response to China's encroachments Malaysia has "stepped up" its maritime law enforcement patrols.[81] And while the official policy may be a comprehensive strategic partnership with China, Malaysia has long pursued a "hedging strategy" that seeks to strengthen defense ties with the United States while attempting to modernize the Malaysian Armed Forces (MAF) with the threats of the South China Sea foremost in mind.[82]

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[76] http://atlas.media.mit.edu/en/profile/country/mys/. John Lee rightly notes however that "China's capacity to use economics to exercise strategic and political leverage is somewhat overestimated," especially in comparison with the United State's ability due to the evidence that the U.S. economy has a bigger impact on the health of the Malaysian economy. "China's Economic Leverage in Southeast Asia," The Journal of East Asian Affairs, Vol. 29, No. 1 (Spring/Summer 2015), pp. 16.
[77] (Jianing)
[78] http://www.straitstimes.com/asia/se-asia/malaysia-faces-tricky-sino-us-balancing-act
[79] http://www.armyrecognition.com/june_2014_global_defense_security_news_uk/malaysian_and_chinese_firms_sign_mou_for_surface-to-air_defense_missile_system_ly-80_sam.html; Chow Bing 270
[80] http://www.scmp.com/news/china/diplomacy-defense/article/1881300/pla-navy-gains-use-port-malaysia; Yet analysts also note that Malaysia has long given access to Western navies including the United States to its bases and that Malaysia's defense relations with the United States "are significantly stronger than those with China." See Prashanth Parameswaran for analysis on the Kota Kinabalu agreement http://thediplomat.com/2015/11/why-did-chinas-navy-gain-use-of-a-malaysia-port-near-the-south-china-sea/ and Chow Bing for the quote, 294.
[81] Dzirhan Mahadzir, "Malaysia Steps up Presence at Luconia Shoals," IHS Jane's defense Weekly, 16 December, 2015 http://www.janes.com/article/56721/malaysia-steps-up-presence-at-luconia-shoals.
[82] Chow Bing, p. 274.

Modernization has struggled, however. Malaysia has been attempting to transform the MAF from a primarily counterinsurgency focused force since the 1970s when the threat of the CPM began to ebb. Budget cutbacks during periods of economic slowdown have meant a stop-and-start approach to developing a conventional force, leaving the air and naval components of the MAF "underdeveloped." According to one analyst, the Royal Malaysian Navy (RMN) and Royal Malaysian Air Forces (MAF)'s lack of numbers and significant capability coupled with China's A2/AD capabilities make scenarios involving the recapture of an island a "moot" point.[83] Additionally, the procurement of multiple models of combat aircraft for the MAF has led to large redundancies and operational costs with little return, as the Russian platforms—the Su-30MKMs and MiG-29s—have proven to be difficult and expensive to maintain, thus limiting the flight hours for their pilots.[84]

Current Capabilities

Yet this doesn't mean Malaysia has nothing on offer in defense of its interests against expanding Chinese capabilities. As mentioned above, Malaysia's distance from China and proximity to the features in dispute provides it with an asymmetric advantage. China is however mitigating this protector of Malaysian interests as it improves its power projection capabilities and upgrades its facilities in the South China Sea. Malaysian bases in Peninsular and East Malaysia are increasingly vulnerable to the threat of China's precision-guided munitions, which boost China's coercive potential and decrease the bases' utility for partner nations in planning for contingency operations.[85] Although Malaysia faces the loss of "geographical distance" from China as a "strategic buffer," for the time being China cannot sustain large operations afar, affording the opportunity for Malaysia to undertake its own exploration of A2/AD thinking to affect China's cost calculus.[86]

Useful capabilities for such an approach can be found in the MAF's air and sea services. The RMAF's small but capable fleet of F/A-18Ds and SU-30MKMs are armed with anti-ship missiles that could play an important role in a limited campaign or targeted operations in the region. The RMN meanwhile fields two modern Scorpène air-independent propulsion diesel submarines equipped with a mix of black shark torpedoes and exocet anti-ship missiles, along with a handful of missile-equipped surface vessels and fast-attack craft.[87] As a sign of the prioritization these subs and the F/A-18Ds receive, selection for the crew of these platforms has been described as exceptionally competitive," indicating that of the MAF's platforms currently in service they have the best chance of performing well.[88] But realistically the limited number of these capabilities would be unlikely to affect the outcome of a bilateral conflict under Scenario 2 described above, and are not enough to prevent the continuation of Scenario 3.

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[83] Interview DM
[84] Interview SL
[85] Interview DM
[86] Quote: Bentley, "Malaysia's "Special Relationship" with China"
[87] Refits are however scheduled for both the RMN's Scorpène submarines and service-life extensions for the Lekiu-class frigates, temporarily removing them from service on a rotational basis. Interview DM
[88] Interview SL

Part 3: The Outlook

There are a number of domestic issues that could impact Malaysia's ability to procure the requisite capabilities for a more formidable defense. Defense budget constraints will continue to be a factor. Malaysia spends around 1.5% of its GDP on defense (approximately RM 17.3 billion).[89] Despite calls by Malaysian defense officials to boost the country's maritime defenses, Prime Minister Najib announced in October that defense spending is set to fall by 2% amid poorer economic performance over successive quarters.[90] In and of itself, the cut is not expected to significantly impact defense capability although some future projects could be delayed. Priority maritime-related projects such as acquisition of six Second Generation Patrol Vessel - Littoral Combat Ship (SGPV - LCS) vessels, Starstreak ground-based air-defense missile systems, and the Airbus A400M Atlas transport aircraft will not reportedly be affected.[91]

Corruption issues are another factor. There are ongoing investigations that Malaysian navy documents were sold to France to assist its bid for Malaysia's submarines contract which it won in 2002.[92] One analyst noted that the scandals associated with the purchase of the two Scorpène submarines "is likely to dissuade any attempts by the government to augment the force, even though the navy recognizes that having only a couple is far from optimal."[93] In a related vein, observers have noted Malaysian defense expenditures are frequently used for political patronage, diluting the efficacy of what is actually spent, through attempts to shore up constituencies for incumbent parties or boost indigenous but ineffective production.[94]

Even within the defense budget, although the deficiencies with respect to credible capabilities against Chinese encroachment and the threat of incursion "are well recognized by the Ministry of Defense, the political leadership has decided to focus defense procurement primarily towards the security challenges in eastern Sabah," another analyst remarked.[95] While the South China Sea may grab the headlines in the United States, it was the armed followers of the so-called Sultan of Sulu that has focused the attention of Malaysian defense planners, launching an invasion from the southern Philippines of Malaysia's states on Borneo in February 2013 and leaving dozens dead before their defeat.[96]

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[89] Information from the Stockholm International Peace Research Institute (SIPRI), http://www.sipri.org/research/armaments/milex/milex_database, accessed 8 January 2016.
[90] Prashanth Parameswaran, 'Malaysia cuts military budget for 2016 amid economic woes', *The Diplomat*, 27 October 2015, http://thediplomat.com/2015/10/malaysia-cuts-military-budget-for-2016-amid-economic-woes/, accessed 8 January 2016.
[91] Jon Grevatt, 'Malaysia announces 2016 defense budget', *IHS Jane's 360*, 25 October 2015, http://www.janes.com/article/55504/malaysia-announces-2016-defense-budget, accessed 8 January 2016.
[92] Stuart Grudgings and Rachel Will, 'Submarine scandal surfaces to trouble Malaysia PM ahead of polls', *Reuters*, 26 June 2012, http://www.reuters.com/article/us-malaysia-submarines-idUSBRE85P08N20120626, accessed 9 January 2016.
[93] Interview SL.
[94] See for example Bridget Welsh, "A Wrong Turn in ASEAN's Arms Race," The Edge Review, March 20th-26th, 2015, http://bridgetwelsh.com/2015/03/a-wrong-turn-in-aseans-arms-race/
[95] Interview SL.
[96] Scott Cheney-Peters, "Borneo Violence Escalates," U.S. Naval Institute News, March 6th, 2013, http://news.usni.org/2013/03/06/borneo-violence-escalates.

Potential/Projected New Malaysian Capabilities

Given the pessimistic outlook on defense spending, Malaysia needs to keep on schedule the few projects it has on the books that raise its ability to safeguard its interests. Malaysia's local shipbuilder is contracted to deliver six LCS frigates furnished with the Norwegian Naval Strike Missile in 2019, provided the schedule is maintained.[97] The RMN plans to upgrade four of its six Kedah-class Offshore Patrol Vessels (OPV) with torpedo launchers, towed array and hull-mounted sonars and equipment to support ASW helicopters.[98] The remaining two OPVs will be upgraded for anti-surface warfare operations. These OPV upgrades are expected to remain unaffected by budgetary constraints, while also still on track is the agreement between the Malaysian and UK government signed in September last year for Thales to supply Starstreak high velocity missile ground-based air defense missile system, which will help to mitigate the threat of Chinese precision-guided munitions.[99] Malaysia is still exploring its options for fighter jet platforms but remains committed to replacing its ageing fleet of MiG-29 fighters, though Defense officials warn there could be delays in the order given budgetary constraints.[100] Also planned is the refit of the RMN's two Scorpène submarines with the awarding of a contract to a joint venture between Malaysia's Boustead Heavy Industries Corporation (BHIC) Defence Technologies and French shipbuilder DCNS in November[101], which is expected to take 18 months for each submarine from the start of each contract.[102]

Another developing capability is Malaysia's nascent Marine Corps, to be stationed at a new base in Sarawak near James Shoal.[103] These could provide an opportunity for regional engagement, including training with U.S. Marines located in Darwin. However, some analysts are skeptical about this potential; the United States has been forthcoming in offers for assistance, however, the Malaysian government appears not to know exactly what it wants from the development of its amphibious capability or a replacement for the sole amphibious vessel that was destroyed in a 2009 fire.[104]

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[97] Dzirhan Mahadzir, 'LIMA 2015: Malaysia selects NSM, VL Mica for littoral combat ships, *IHS Jane's 360*, 22 March 2015, http://www.janes.com/article/50093/lima-2015-malaysia-selects-nsm-vl-mica-for-littoral-combat-ships, accessed 9 January 2016.
[98] Ridzwan Rahmat, 'Malaysia plans to upgrade four Kedah-class corvettes for ASW role', *IHS Jane's 360*, 23 April 2015, http://www.janes.com/article/50908/malaysia-plans-to-upgrade-four-kedah-class-corvettes-for-asw-role, accessed 9 January 2016.
[99] Charles Forrester, 'DSEI 2015: Malaysia inks contract for Starstreak', *IHS Jane's 360*, 16 September 2015, http://www.janes.com/article/54401/dsei-2015-malaysia-inks-contract-for-starstreak, accessed 10 January 2016.
[100] The options currently being considered include Dassault Aviation's Rafale, Boeing's F/A-18, Swedish firm Saab's Gripen and the Eurofighter Typhoon, see 'Hisham: Malaysia reviewing French proposal for Rafale fighter jets', *The Star*, 1 September 2015, http://www.thestar.com.my/news/nation/2015/09/01/hisham-franch-fighter-jets/, accessed 10 January 2016.
[101] Ridzwan Rahmat, 'Boustead, DCNS joint venture secures Malaysia's submarine refit contract', IHS Jane's 360, 16 November 2015, http://www.janes.com/article/56035/boustead-dcns-joint-venture-secures-malaysian-submarine-refit-contract, accessed 10 January 2016.
[102] 'BHIC group's subsidiary bags RM1.2bil submarine refit contract', The Star, 16 November 2015, http://www.thestar.com.my/business/business-news/2015/11/16/bhic-groups-subsidiary-bags-submarine-refit-contract/, accessed 10 January 2016.
[103] http://thediplomat.com/2013/10/malaysia-to-establish-marine-corps-and-south-china-sea-naval-base/
[104] Interview DM.

Increased Cooperation with the United States and Other Allies and Partners

The ability for the MAF and its partner militaries to capitalize on engagement opportunities will depend on the state of broader defense and diplomatic relations. Malaysia has a history of ambivalent relations with the United States. Some elements of U.S. foreign policy including the invasion of Iraq in 2003 and the Israel-Palestine conflict remain deeply unpopular with sections of Malaysia's Muslim population so there are distinct limits to relationship.[105] Yet much closer actualized military ties with the United States than China is seen as the "highlight" of bilateral relations.[106] Malaysia's various 'soft balancing' moves include strengthening security ties with the United States, and Malaysia "remains poised to further upgrade these even if it will resist committing to a formal treaty."[107] Thus, the extent of external assistance accepted will depend on Malaysia's foreign policy posture. However, one analyst notes that, beyond subs and bases, there's currently "little for Malaysia to offer" in a greater conflict with China.[108]

For the United States and other partners, a range of options exists for helping Malaysia respond to challenges of China's growing A2/AD and power projection capabilities. In addition to helping Malaysia with its own capability development, specific recommendations for which will be discussed below, looking for ways to further Malaysia's participation and hone its role in the regional security framework also holds the potential to improve its response. The most beneficial are those that target meaningful increases in familiarity, interoperability, and access between Malaysia and its partners. Doing so serves to signal that Malaysia has friends who agree that its interests should be respected, and to increase the ability of the respective powers to work together in the event of conflict.[109] Examples of this run the gamut from exercises to port calls to the the Australian-Malaysian Operation Gateway agreements that allow Australian maritime patrol aircraft (MPA) to fly out of Malaysian bases to conduct maritime domain awareness (MDA) flights.[110]

The tragedy of Malaysian Airlines flight MH370 underscored the need for further cooperation and information-sharing between regional partners in maritime surveillance and MDA. The search-and-rescue effort, however, benefitted from the institutionalized trust build-up between regional states who are party to the Five Power defense Arrangements: Australia, Malaysia, New Zealand, Singapore and the United Kingdom.[111] Tim Huxley calls the grouping a 'non-provocative form of

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[105] Shahriman Lockman, 'Why Malaysia isn't afraid of China (for now)', *The Strategist*, 24 April 2013, http://www.aspistrategist.org.au/why-malaysia-isnt-afraid-of-china-for-now/, accessed 9 January 2016.
[106] Elina Noor quoted in Justin Goldman, 'CARAT 2014: advancing the US-Malaysia partnership', *The Diplomat*, 25 June 2014, http://thediplomat.com/2014/06/carat-2014-advancing-the-us-malaysia-partnership/, accessed 9 January 2016.
[107] Lee, "China's Economic Leverage in Southeast Asia"
[108] Interview with DM. US defense officials have also stated in September 2015 that talks between the Malaysian PM's office and the US government have intensified due to increased Chinese incursions into Malaysian territorial waters. No formal agreement has been signed: Josh Rogin, 'Malaysia and U.S. in talks to ramp up China spying', *Bloomberg View*, 3 September 2015, http://www.bloombergview.com/articles/2015-09-03/malaysia-and-u-s-in-talks-to-ramp-up-china-spying, accessed 9 January 2016.
[109] For example, during the Center for International Maritime Security's August 2015 South China Sea-based wargame the initial move deemed most effective for Malaysia to make in furthering its interests was inviting more port calls by Japan, India, and the United States. https://cimsec.consider.it/
[110] http://www.defence.gov.au/operations/SouthChinaSeaIndianOcean/
[111] Euan Graham makes this point here 'FPDA—not fade away', *The Strategist*, 21 October 2014, http://www.aspistrategist.org.au/fpda-not-fade-away/, accessed 6 January 2016.

hedging and confidence-building'[112]; it could be leveraged further by Malaysia to explore maritime domain awareness issues and further interoperability.

Diplomacy and Security Architecture

There is potential for Malaysia to work with other Asia-Pacific partners including Japan, which has keenly engaged in maritime capacity-building with Southeast Asian nations. In the past, Japan has supported the Malaysian Maritime Enforcement Agency (MMEA) with grants of aid and equipment.[113] In May 2015, security cooperation between the countries deepened with Prime Ministers Najib and Shinzo Abe agreeing to initiate negotiations for transfer of defense equipment and technology—the first time Japan has initiated such talks with an ASEAN member state.[114]

Other options include working together with Philippines and Vietnam given the immediacy of their circumstances, though this might be done cautiously for fear of rocking relations with China. In the past Malaysia has pursued forms of pragmatic economic cooperation through joint development agreements with Thailand and Brunei and potential exists to deepen ties between Malaysia's and Vietnam's respective state oil companies, Petronas and Petrovietnam in other overlapping zones.[115]

Cooperation with neighbors like Indonesia is likely to remain modest with coordinated rather than joint maritime patrols set to continue[116]; sensitivities related to sovereignty mean that closer defense relations remain challenging. However, there have been talks of joint patrols in the lower reaches of the South China Sea between Malaysia, Indonesia and Singapore to address the resurgence of piracy in the region.[117] Such cooperation could form the basis for operational familiarity, relationship building between personnel and information sharing which could be leveraged in other

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[112] Tim Huxley, 'The future of the Five Power defense Arrangements', *The Strategist*, 8 November 2012, http://www.aspistrategist.org.au/the-future-of-the-five-power-defense-arrangements/, accessed 6 January 2016.
[113] Speech by Y.Bhg. Tan Sir Rastam Mohd Isa 'On the occasiong of the signing and exchange of notes relating to Japan's grant aid for the project for improvement of equipment for maritime security enhancement', 25 January 2008, https://www.kln.gov.my/archive/content.php?t=7&articleId=241725, accessed 6 January 2016; Embassy of Japan in Malaysia, 'Handover of equipment for maritime security enhancement to Malaysia Maritime Enforcement Agency (MMEA)', 20 March 2009, http://www.my.emb-japan.go.jp/English/ODA/090320mmea_eng.html, accessed 6 January 2016.
[114] Ministry of Foreign Affairs of Japan, 'Japan-Malaysia Joint Statement on Strategic Partnership', 25 May 2015, http://www.mofa.go.jp/s_sa/sea2/my/page3e_000342.html, accessed 5 January 2016; Masaaki Kameda, 'Japan, Malaysia agree to beef up defense cooperation', *The Japan Times*, 26 May 2015, http://www.japantimes.co.jp/news/2015/05/26/national/politics-diplomacy/japan-malaysia-agree-to-beef-up-defense-cooperation/#.Vo1lU5MrKi5, accessed 5 Januay 2016.
[115] There are currently joint ventures between Petronas and Petrovietnam in the Bunga Orkid and Bunga Kekwa fields: Denny Thomas, 'UPDATE1-Petrovietnam eyes stake in Murphy Oil's Malaysian assets - source', *Reuters*, 14 August 2014, http://uk.reuters.com/article/petrovietnam-murphy-oil-idUKL4N0QK2L720140814, accessed 8 January 2016. There are several factors, however, that can determine the success of such ventures. These include whether there are clear limits of the disputed area to be jointly developed, see Huy Duong, 'Joint development in the South China Sea', *cogitASIA* blog, 12 July 2013, http://cogitasia.com/joint-development-in-the-south-china-sea/, accessed 7 January 2016.
[116] Fadli, 'Indonesia, Malaysia to hold coordinated maritime patrol', *The Jakarta Post*, 28 May 2015, http://www.thejakartapost.com/news/2015/05/28/indonesia-malaysia-hold-coordinated-maritime-patrol.html, accessed 6 January 2016.
[117] Titus Zheng, 'Indonesia, Malaysia, Singapore discuss joint patrol', *Fairplay IHS*, 12 May 2015, http://fairplay.ihs.com/article/17841/indonesia-malaysia-singapore-discuss-joint-patrols, accessed 6 January 2016.

contingencies but, while promising, will depend on the extent to which Indonesia is prepared to accommodate foreign vessels patrolling its territorial waters.

In further developing intra-ASEAN maritime cooperation, Malaysia could explore the proposal for an intra-ASEAN set of naval protocols for humanitarian assistance / disaster response (HA/DR), proposed by the Philippines in 2013.[118] However, Malaysia's mixed scorecard as chair of ASEAN in 2015 means that it cannot rely too heavily on a multilateral framework nor can other ASEAN states with interests in the South China Sea rely on it to drive the process.[119] Minilateral or bilateral arrangements are likely to remain the more effective and hence preferred configuration.

Closing Recommendations

We have outlined a number of non-material ways Malaysia can protect its interests in the face of growing Chinese capabilities. Nonetheless, investing smartly is still the surest way to meet that objective. This would take into account two overarching considerations: first, it is possible to develop safeguards while not antagonizing China by pursuing dual-purpose capabilities. Those capabilities would be useful for both the challenges of Chinese A2/AD and Malaysia's other nontraditional security challenges, for instance, MDA for counter-illegal, unreported, and unregulated (IUU) fishing and/or counter-piracy. As an analyst notes, "defense procurement that heavily prioritizes surveillance capabilities would avoid significantly antagonizing China and, in the long run, allow Malaysia to contribute towards operations with its partners."[120]

Second, the risk of antagonizing China can be overstated and should not be a major factor in Malaysia's defense purchase plans. According to one analyst, Malaysia's defense purchase plans do not take into account what Beijing thinks.[121] With those broad considerations in mind, there are a number of specific priority areas for investment.

Increasing MDA Capabilities: Malaysia has several options for improving this capability depending on the political needs and budget realities, but a combination of better MPA aircraft (manned or unmanned) and coastal radars devoted to the mission would help Malaysia develop a clearer sense of what is taking place on the seas. It would also be something which partners could integrate with, making it a likelier candidate for foreign assistance. For example, while Malaysia has foregone the option to integrate a VTOL UAV on its new class of LCS, the U.S. Navy and DARPA have made progress developing a next-generation shipboard VTOL UAV known as the TERN, which if it reaches its potential as an integral part of ad-hoc MDA networks should be considered for building up Malaysia's own capabilities.[122]

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[118] Euan Graham, 'Expanding maritime patrols in Southeast Asia', RSIS Commentary, 7 April 2015, https://www.rsis.edu.sg/rsis-publication/rsis/co15082-expanding-maritime-patrols-in-southeast-asia/#.Vo2KtZMrKi4, accessed 6 January 2016.
[119] See Rashaad Ali, 'From ASEAN chair to UN Security Council: Malaysian foreign policy', RSIS Commentary, 18 December 2015, https://www.rsis.edu.sg/rsis-publication/rsis/co15274-from-asean-chair-to-un-security-council-malaysian-foreign-policy-in-2015/#.VpGvgsB94y5, accessed 7 January 2016.
[120] Interview SL.
[121] Interview DM.
[122] http://www.defensenews.com/story/defense/naval/2015/12/29/darpa-onr-northrop-tern-pogo-vtol/78034916/

Another option would be to develop Medium-range MPA and coastal MDA. The Beechcraft King Air B200T in use by the RMAF can only fly for about five hours, limiting the surveillance coverage. According to one analyst, a platform like the CN-235s or even the ATR 72s would be "optimal" for Malaysia.[123] The same analyst noted, however, that more MPAs might be useless without enough fighters to protect them. In terms of coastal MDA, there is currently insufficient coverage for the Sarawak coast, "leading to high fuel costs for the RMN and MMEA as they cannot sufficiently focus their patrols."[124] Both Malaysia's military and civilian agencies could also leverage UAVs for their maritime domain awareness. This would require investment in the technology but also alignment with civilian aviation authorities and diplomatic engagement with regional partners to clarify airspace requirements.

Precision-Guided Munitions: Malaysia has a "robust" arsenal of medium-range ASMs stationed primarily in Peninsular Malaysia that can hold China's shipping in the Strait of Malacca at risk in the event of conflict.[125] The expansion of this capability to East Malaysia would further strengthen its utility in dealing with the threat of and help Malaysia create an A2/AD defensive umbrella of its own over its South China Sea claims. Land-based cruise missiles could potentially be useful[126], however one analyst deems it as potentially too ambitious for Malaysia's political leaders.[127] A land-based ASM would "probably be too provocative as the only place to effectively place it would be in Malaysia's Spratlys holdings itself."[128]

Wildcards: More creative options that warrant further exploration as to their feasibility, cost, and benefit include:

- Rotational basing of U.S. Marines and/or other access agreements with the United States and other partners. This could also include port calls and allow operations out of Malaysian bases, as with Australia's Operation Gateway.
- Focus on a niche counter-A2/AD capability, such as mine clearance, that would make them invaluable to their partners.
- Explore the possibility of a joint submarine purchase with another potential strategic partner in the market for the same underwater capability.

As the scenarios outlined at the beginning of the paper made clear, even without an overt conflict, Chinese increasing A2/AD and power projection capabilities are having a negative impact on Malaysian interests. Additionally, barring a change in China's policy of coercion, if Malaysia wants to mitigate this impingement on its interests and reduce the risk of its interests being trammeled in the event of hostilities, Malaysia will need to determine how it can better integrate into a more robust security framework with other partners and find opportunities to reprioritize spending within the budget and the defense topline to those capabilities outline above.

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[123] Interview SL.
[124] Interview SL.
[125] RAND, pg 8, http://www.rand.org/content/dam/rand/pubs/technical_reports/TR1300/TR1321/RAND_TR1321.pdf
[126] RAND
[127] Interview DM.
[128] Interview DM.

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