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Together with China's assertive maritime activities in the East China Sea, the growing Anti-Access/Area Denial (A2/AD) capabilities of the People's Liberation Army (PLA) pose grave threats to the security of Japan. Japan Self-Defense Forces (JSDF) should develop and possess its own counter-A2/AD capabilities for maintaining a deterrent posture across the spectrum of conflict levels, as well as lowering costs for US intervention in the Western Pacific. The JSDF's land component, Japan Ground Self-Defense Force (JGSDF), should play leading roles in this Japanese version of counter-A2/AD, to include long-range strike capabilities.

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ROLES FOR JAPAN GROUND SELF-DEFENSE FORCE IN THE A2/AD ENVIRONMENT

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Executive Summary

Title: Roles for Japan Ground Self-Defense Force (JGSDF) in the A2/AD Environment

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Thesis: Japan Self-Defense Forces (JSDF) should develop and possess its own counter-Anti-Access/Area Denial (A2/AD) capabilities. Its land component, Japan Ground Self-Defense Force (JGSDF), should play leading roles in this Japanese version of counter-A2/AD, to include long-range strike capabilities.

Discussion: Together with China's assertive maritime activities in the East China Sea, the growing A2/AD capabilities of the People's Liberation Army (PLA) pose grave threats to the security of Japan. The PLA's missile forces especially hold at risk almost all US bases located in Japan, deterring US intervention in the Western Pacific. The PLA's A2/AD capabilities function as a backdrop to support China's assertiveness in the gray-zone confrontation. It also questions the credibility of US commitments in the region. Japan has not squarely addressed the PLA's A2/AD, as it is overly focused on lower-scale contingencies in the gray-zone. Japan should develop its own counter-A2/AD capabilities for maintaining a deterrent posture across the spectrum of conflict levels, as well as lowering costs for US intervention.

Besides strengthening the Japanese version of A2/AD strategy in the East China Sea, Japan needs to improve its ballistic missile defense (BMD). The BMD is the only defensive means which can proactively mitigate the effects of Chinese missiles. Intercepting Chinese missiles may be beyond the current Japanese BMD capacity, as the system has been purportedly directed against North Korea, not China. It is advised that the JGSDF introduce and operate the Terminal High Altitude Area Defense (THAAD), a land-based BMD system, in order to add another layer of defense to the existing two-tier BMD, making the whole system more robust.

An offensive approach is more efficient than a defensive one. Currently Japan does not possess any weapon or delivery system capable of striking targets on the enemy's soil, because of its "exclusively defensive policy" resulting from the pacifist post-war constitution. It is still feasible to develop and possess such capabilities in terms of legal, political, operational, and technical considerations. The JSDF would best use the long-range strikes in combination with the BMD. The JGSDF's land-based missiles would be optimum platforms for such attacks. The offensive approach might invite negative responses from neighboring countries. It would be necessary to manage an arms race with an effective long-term competition strategy.

Conclusion: In order to counter the PLA's A2/AD, especially with the missile forces as its core, the JGSDF should play leading roles: the defense with the THAAD and the offense with land-based missiles. Those ground systems must be fully integrated into joint and combined operations with the JMSDF, JASDF, and the US military. The JGSDF would have to review its force structure, doctrine, and organizational culture, at the same time striking a balance between new roles and traditional combined-arms competence.

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

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Preface

From March 2013 to March 2016, I worked in the G-5 of the Ground Staff Office in Tokyo, which was a bureau in charge of defense planning and programs of the entire Japan Ground Self-Defense Force. I spent the first year as a staff officer in the Policy and Programs Section of the G-5, when the Japanese Ministry of Defense was preparing for the latest 2013 National Defense Program Guidelines, an approximate equivalent of the Quadrennial Defense Review of the US Department of Defense. I was indirectly involved in the planning process of that strategic document, which would be eventually released in December 2013. Naturally most Japanese policy makers were concerned about China's maritime activities in the East China Sea. The discussions mainly focused on how to build up the Japan Maritime and Air Self-Defense Forces, which had been key players in the confrontation in maritime and air domains in the East China Sea. Although trying to transform itself in its own way, such as the creation of the amphibious brigade, the Ground Self-Defense Force faced a stiff uphill battle in the inter-service rivalry for budget, with even its relevancy in the Anti-Access/Area Denial (A2/AD) environment questioned. As I witnessed the planning process as a young major, I personally came to think that it might become more and more difficult for the Ground Self-Defense Force to maintain its strength and force structure with its traditional focus on combined arms proficiency. In order to stay relevant, I believe, the Ground Self-Defense Force would need to redefine its roles in the A2/AD environment, which might happen to be more important and crucial than those of the maritime and air forces if properly defined. This paper is a result of my thinking, thus exclusively oriented on the peculiar geopolitical situation of Japan. With that said, I hope this paper will provide some insights for those who are generally interested in land forces' roles in the A2/AD environment.

Yusuke Kawachi, Lieutenant Colonel, Japan Ground Self-Defense Force

At Quantico, Virginia, the United States

Introduction

East Asia has witnessed a situation unprecedented in history, where both Japan and China are major powers. In the history of Japan-China relations, either pre-modern Japan was under the sway of dynastic China, or semi-colonial and communist China was far weaker than modernized Japan in the late 19th and most of the 20th centuries. Today, China poses a dilemma to Japanese policy makers and defense planners. China's steady military build-up and assertiveness in territorial disputes are a source of concern for Japan's security. The build-up of the People's Liberation Army (PLA) is spectacular in its development of anti-access/area denial (A2/AD) capabilities. On the other hand, Japan is one of the beneficiaries of the still growing Chinese economy. Given the current international norms, the level of economic interdependence, and the modes of each society, any kinetic war with China would be a disaster for both Japan and China. [1] As the 2015 Japanese National Security Strategy states, the priority is "to strengthen the deterrence" of direct threats to Japan, rather than fighting and winning a war.[2] Japan's strategic goal should be to deter China, while enmeshing it into the existing international order by long-term engagement.

When one looks more specifically into what Japan must deter, there is a discrepancy between the perceived threats and the measures actually taken. While it has repeatedly expressed concern over China's A2/AD,[3] Japan does not squarely address this challenge. Rather, as far as China is concerned, recent defense programs for the Japan Self-Defense Forces (JSDF) are overly oriented to lower-scale, so-called "gray-zone"[4] contingencies in the East China Sea. Despite the presence of missiles reaching almost all the JSDF and US military bases inside the archipelago, for Japanese planners, responding to China's maritime harassment and deterring its further escalation are more urgent.

The current Japanese approach—or the absence of an approach—to China's A2/AD is fundamentally flawed. Preparing only for lower-scale contingencies cannot deter them, since the A2/AD capabilities of the PLA encourage China's aggressiveness in the gray-zone. Moreover, should deterrence fail, there are few options left for the JSDF to regain the status quo, assuming the current unpreparedness to the A2/AD continues to prevail. To date Japan is totally reliant on the United States for counter-A2/AD capabilities. This would not be appropriate, however, because the very intention of China's A2/AD is to keep the US forces away from the Western Pacific. These observations lead to a recommendation that the JSDF should develop and possess its own counter-A2/AD capabilities. This paper will first discuss the problem of the PLA's A2/AD, then study defensive and offensive approaches to address them, with a conclusion that the Japan Ground Self-Defense Force (JGSDF) should play leading roles in the Japanese version of counter-A2/AD, to include long-range strike capabilities. Discussions will be kept at the operational level, recognizing the larger issues such as the diplomatic aspect of the problem.

Problem: the PLA's A2/AD Capabilities

As a preliminary analysis, it is appropriate to review the present situation of the PLA's A2/AD and China's maritime activities, together with the JSDF's current response, in order to frame the problem and provide a rationale for Japan to develop its counter-A2/AD capabilities. According to US defense planners, A2/AD generally refers to those actions and capabilities either to prevent an opposing force from entering an operational area—anti-access—or to limit its freedom of action within the operational area if an opposing force arrives—area denial.[5] In the case of the PLA, the term specifically refers to its collective capabilities that "serve to dissuade, deter, or if ordered, defeat possible third-party intervention during a large-scale, theater campaign

such as a Taiwan contingency."[6] The PLA's A2/AD platforms include an array of ballistic missiles, cruise missiles, air defense systems, surface ships, submarines, and sea mines. These attack platforms are supported by cyber/electronic warfare and anti-satellite capabilities which disrupt intelligence, surveillance, reconnaissance (ISR), or command, control and communication (C3I) of the opposing force.

Figure 1: The PLA DF-15 and DF-21 Ranges

Source: Yoshi Toshihara,"Chinese missile strategy and the US naval presence in Japan."

There remains some ambiguity about China's intention in such capabilities because China itself never uses the term A2/AD.[7] Analysts, however, share the view that these capabilities are to keep US forces beyond their effective ranges, imposing unacceptably high costs on possible US intervention in the Western Pacific, especially in high-end conflicts over Taiwan.[8] In any scenario, it would be necessary for the PLA to mount preemptive strikes on US bases in Japan, because the archipelago is home to the bulk of the US forces in East Asia, such as the Seventh Fleet, the Fifth Air Force, and the III Marine Expeditionary Force.[9] The PLA would have to render those forces combat-ineffective and drive them out of the Second Island Chain.

Over the past decade, the PLA has made remarkable progress in long-range precision strike capabilities, particularly various ballistic and cruise missiles. As Figure 1 shows, key US bases in Japan such as Kadena, Sasebo, Yokosuka, Yokota, and Misawa all fall within the range of its

medium-range ballistic missiles (MRBM) DF-21.[10] In a military parade held in September 2015 in Beijing, China demonstrated its latest platforms such as the intercontinental ballistic missiles (ICBM) DF-31A and DF-5B, the anti-ship ballistic missile (ASBM) DF-21D dubbed the "Carrier-Killer," and the intermediate-range ballistic missile (IRBM) DF-26 referred to as "Guam-Killer."[11] Japanese analysts assess that this publicizing of the missiles was part of China's efforts to dissuade US involvement in the East and South China Seas.[12]

Since the Japanese government acquired the islands' property rights from a private Japanese owner in 2012, China has intensified its claim over the Senkakus, which China refers to as the Diaoyu Islands. Besides continued intrusion by its patrol ships and aircraft into Japan's territorial waters and airspace, China has repeatedly made provocative moves such as its navy vessels locking on a Japanese destroyer with fire control radar, its fighter jets flying dangerously close to JSDF aircraft, and Beijing unilaterally announcing the "East China Sea Air Defense Identification Zone (ADIZ)" over the high seas, to name only a few.[13] In the East China Sea as well as the South China Sea, however, it deserves attention that China has used methods of low-intensity coercion, in combination with economic and diplomatic approaches, rather than more overt threats. Carefully avoiding escalation to military conflict, often with its para-military or law enforcement forces, China has accumulated small, incremental gains in the gray-zone between peace and war, to increase its effective control over disputed areas.[14] Analysts refer to this modus operandi as "opportunistic creeping expansion," which probes for reactions from the United States and the countries concerned, in order to find out their lower threshold of deterrence commitment.[15]

Concerns for China's steady military build-up and growing assertiveness have driven current Japanese defense policy. In December 2013, the Japanese government released its first ever National Security Strategy (NSS), together with a new version of the National Defense

Programs Guidelines (NDPG) which defines the roles, missions, and capabilities of the JSDF. Understandably an alarmed tone as to China marks both documents. The NSS states that "such an external stance and military activities by China…have become an issue of concern to the international community including Japan."[16] One may also add that behind the historic legislation in September 2015 to lift a self-imposed ban on the exercise of the right of collective self-defense, there was a calculation on the Japanese side that further enhancement of the Japan-US alliance would better deter China.[17] Reflecting Japanese defense planners' concern over China, the 2013 NDPG puts forward a modernization plan for the JSDF. The plan envisions a "Dynamic Joint Defense Force" capable of conducting persistent ISR operations, strategic training and exercises, as well as building a response posture through rapid deployment of adequate units, such as an amphibious brigade the JGSDF is to create.

Strangely enough, however, the capabilities to be modernized are predominantly meant to deter and respond to low-scale "gray-zone" contingencies in the East China Sea, not the A2/AD forces holding the entire archipelago at risk. Whereas the NDPG voices the fear that China strengthens "its asymmetrical military capabilities to prevent military activity by other countries in the region by denying access and deployment of foreign militaries to its surrounding,"[18] it offers no solution to these challenges. There are probably two reasons for this absence.

First, even as the security environment surrounding Japan becomes severe, Japan's basic assumption is still that "the probability of a large-scale military conflict between major countries… presumably remains low" in East Asia.[19] The PLA's A2/AD presumably intends to defeat possible third-party intervention during a large-scale campaign over Taiwan. Such a conflict is improbable for the time being: accordingly it is unlikely that China would unleash its high-end A2/AD on US intervention forces in Japan. Daunting as the notional worst-case scenario may be, responding to

ongoing incessant maritime harassments by the Chinese authorities in the East China Sea would be a more urgent necessity for Japanese planners.

Second, this focus on lower-end contingencies by Japan is a natural extension of the traditional division of roles between the JSDF and the US military, which have been likened to a "shield" (JSDF) and a "pike" (US), due to constitutional restrictions on the use of Japanese military power. The basis of Japan's defense policies has been that a combination of the "shield's" denial and the "pike's" threat of punishment can deter any conventional attacks against Japan.[20] In the latest version of the bilateral document which defines both allies' roles, the US military is supposed to "conduct operations involving the use of strike power" in "bilateral operations across domains to repel an armed attack against Japan and to deter further attacks."[21] Given that the term *operations across domains* is the integral concept of the US counter-A2/AD concept,[22] this formulation implies that it is under the purview of the US military to address A2/AD. These two assumptions will prove flawed, once one considers how the sheer presence of the PLA's A2/AD capabilities negatively affects Japan's ability to deter China across the spectrum of contingencies.

On the first point, it would be irrelevant to justify the excessive focus on the gray-zone by reason of its higher probability, if the A2/AD functions are a backdrop to support China's activities in the gray-zone. Some scholars point out that China's assertiveness in the gray-zone may result from what nuclear deterrence theorists during the Cold War called the stability-instability paradox.[23] This paradox originally refers to a situation in the nuclear arms race. Once a state acquires a survivable second-strike capability, it achieves stability with its adversary at the strategic level. Then the state becomes more assertive at lower levels of escalation because the state is now confident in its ability to deter a nuclear response.[24] By applying the same logic to the relation between the gray-zone and the A2/AD, one could argue that it is partly because of

China's greater confidence in its A2/AD capability to deter the United States that it has grown more assertive and adventurous in the lower level of the gray-zone. If this is the case, preparing only for the gray-zone cannot deter China at that level, because it does not address the root cause.

The second assumption is also problematic. China's A2/AD raises the disproportional costs for US intervention in the Western Pacific, as it is poised to attack valuable power projection platforms of the US military with less expensive means such as missiles. The asymmetry of the interests at stake would make matters worse, especially in the gray-zone conflicts in the East China Sea. Naturally the United States would be less willing to see its aircraft-carriers sunk in a dispute over tiny uninhabited islets, which have no value for the Americans.[25] Such high costs may "decouple" the United States from its regional allies, unless the situation escalates into a full-scale war.[26] If China's A2/AD capability questions the credibility for US commitment itself, it would not make any sense to leave it up to the US military to address that, especially at lower levels of the escalation ladder. Coupled with the first point, this also makes it difficult for Japan to deter China in the lower-scale contingencies.

On the other hand, these two problems convey a hint for remedies. In terms of the stability-instability paradox, Japan would have to shatter the stability of China's deterrence at the conventional level in order to regain the stability in the gray-zone. The JSDF can achieve this by reducing the friendly vulnerability to the A2/AD and rendering China less confident in its ability to deter the United States. It is incumbent on the Japanese side to lower the costs in terms of causalities for US intervention. These observations reveal the rationale for Japan to develop its own counter-A2/AD capabilities for maintaining a deterrent posture across the spectrum of conflict levels, as well as shaping operational conditions for US commitment.

In order to reduce the friendly vulnerability, there are defensive and offensive approaches, which are not mutually exclusive. A defensive approach mitigates the incoming effects of the PLA's A2/AD forces, whereas an offensive approach directly acts on targets inside Chinese territory. Considering the "exclusively defense-oriented policy" of Japan, it would be appropriate to discuss the defensive approach first.

Defensive approach: strengthening Japanese ballistic missile defense

In the context of criticizing the Air-Sea Battle (ASB)—the US military's operational concept to counter A2/AD threats—a number of US analysts have already forwarded defensive or indirect US strategies in the A2/AD environment, which are allegedly not as offensive as the ASB. Such strategies include maritime denial, offshore control (distant blockade), and their variants.[27] The maritime denial has some relevance to the Japanese defense planning, as it is most committed to the defense of the archipelago, assuming the Japan-US alliance as its prerequisite. This serves as a reference point for developing Japan's own defensive approach, with its benefits and shortfalls.

One can characterize maritime denial as the allied or Japanese version of A2/AD strategy. Andrew Erickson is among the first to advocate this strategy, arguing that the United States and its allies should maximize their own A2/AD capabilities to disrupt China's ability to seize and hold offshore territories.[28] Toshi Yoshihara more specifically recommends the JSDF to adopt a Japanese version of A2 strategy with submarines, sea mines, guided-missile boats, and land-based anti-ship missiles.[29] In this context, a number of US analysts emphasize coastal artillery roles of land forces—the US Army or the JGSDF—as Andrew Krepinevich makes the case for "archipelagic defense."[30] These concepts commonly intend to counter the PLA Navy (PLAN)'s maritime power projection by creating a mutual "no-go zone" inside the First Island Chain.

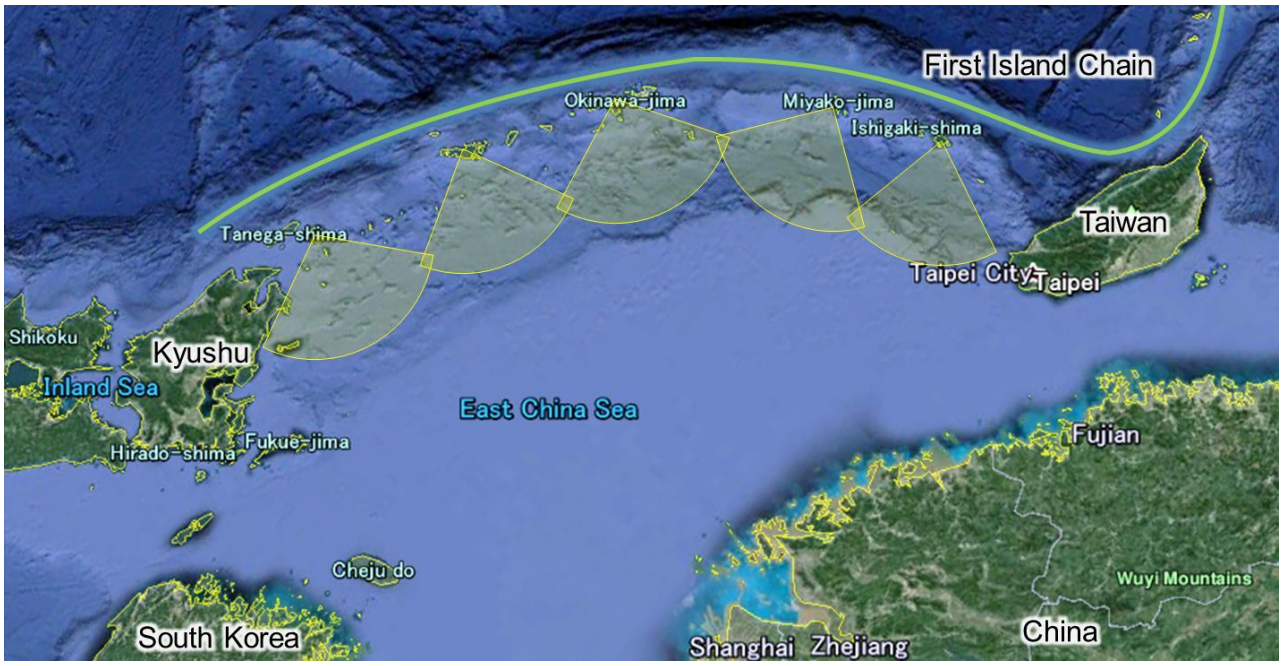

Figure 2: The First Island Chain and the JGSDF Surface-to-Ship Missiles

This Japanese A2/AD has its own advantages. As Figure 2 shows, it makes good use of the geographical features of the Ryukyu or Southwestern Islands, which straddle over the PLAN's outlet to the Western Pacific. By closing off narrow channels between the islands with land- and sea-based missiles, the JSDF can block the PLAN's advance beyond the First Island Chain, as well as deny its use of the area inside. The concept also has a merit of being cost-effective, as it takes advantage of existing JSDF platforms such as the JGSDF's latest Type 12 Surface-to-Ship Missile (SSM). The JGSDF partly embraces this idea, as it reportedly seeks to deploy the Type 12 SSMs to the Ryukyu Islands—namely, Miyako, Ishigaki, and Amami.[31] The Japanese A2/AD is a promising strategy to deter and defeat China's maritime aggression, especially in scenarios where the PLA attempts to invade Japan in a full-scale war.

In terms of *countering* the PLA's A2/AD, however, this concept is slightly off the mark. Although SSM launchers or missile boats may complicate the enemy's targeting, they do little to remove the threat of China's own land-based missiles, which make up the bulk of their A2/AD

capabilities. Such Japanese A2/AD would not be relevant in the gray-zone conflicts either, because those capabilities would leave the PLA's missile forces intact to embolden China's creeping expansion, whereas they would be too lethal and escalatory to repel Chinese patrol ships swarming around the disputed islets.

As far as defensive measures are concerned, except for hardening, dispersal, and concealment of potential targets, air and missile defenses are the only means to proactively mitigate the effects of those missiles which underpin China's assertiveness. Of the various PLA missiles, ballistic missiles are the most difficult to intercept due to their higher terminal speeds. It would be necessary for the JSDF, therefore, to complement the possible Japanese A2/AD with another layer of improved ballistic missile defense (BMD) capabilities.

Japan's current BMD is a two-tier system of sea- and land-based interception platforms. The Japan Maritime Self-Defense Force (JMSDF) Aegis-equipped destroyers widely intercept missiles in the upper tier, and then the Japan Air Self-Defense Force (JASDF) Patriot Advanced Capability-3 (PAC-3) fire batteries locally engage the remnants in the lower tier. As of 2016, the JMSDF has four *Kongo*-class and two *Atago*-class Aegis-equipped destroyers, while the JASDF fields seventeen fire batteries of the PAC-3.[32] As North Korea's test launch of the Taepodong missile in 1998 eventually led Japan to introduce the BMD system in 2003, the Japanese BMD has been purportedly directed against North Korea, not China. Although the specific capacities of the BMD are all classified, if one compares their respective numbers of missile launchers, it is reasonable to assume that the Japanese system, which may match North Korean missiles, may not match those of the PLA. The number of launchers indicates maximum rounds of a single simultaneous volley: whereas North Korea has less than fifty launchers for the MRBM Nodong,[33] the PLA fields 100-125 launchers for the MRBM and 250-300 for the SRBM.[34] Intercepting these

Chinese missiles may be beyond the current Japanese BMD capacity if the PLA launches saturation salvo attacks. Reinforcing the BMD is an urgent issue.

The weakness of the BMD is its high costs. Since its introduction in 2003, the Japanese Government has reportedly spent 1.58 trillion yen for BMD related programs for thirteen years, a considerable amount given that the annual defense budget of FY 2016 was 4.86 trillion yen.[35] Improving both sea-based and land-based BMD systems is desirable in terms of effectiveness, but hard to sustain amid the current financial drought. The JSDF needs to prioritize improvements of one BMD over the others.

The sea-based BMD is advantageous in respect of survivability, because its mobility on the sea makes them less vulnerable to attacks, especially to those conducted by the enemy ground elements. Aegis-equipped destroyers also provide a large footprint of missile defense with their SM-3 missiles. The JMSDF will commission two more Aegis-equipped destroyers by FY2018.[36] Under the present situation in the East China Sea, however, further increasing the number of Aegis-equipped destroyers is not realistic. Besides the diminishing marginal utility, the current BMD missions have already overstretched the JMSDF, making it difficult for these destroyers to perform tasks other than the BMD.

As for the build-up of any land-based BMD systems, procuring more PAC-3s would not be an effective solution due to their small footprint. Among the platforms currently available, the Terminal High Altitude Area Defense (THAAD) seems to be the only viable option. In fact one THAAD battery is said to have a footprint wide enough to cover the area equivalent to South Korea, intercepting 20-50 missiles simultaneously.[37] Deployed in Japan, this would add another layer of defense to the existing two-tier BMD, making the whole system more robust.

The JGSDF should assume the lead for the deployment of the THAAD system. Because of its strategic importance, the land-based BMD would be the highest value target for the enemy. Besides striking the Japanese BMD assets with its own long-range missiles, the PLA could attack them by its guerrilla or commando forces. In addition to their operators, a considerable number of land troops would need to fortify and protect the launchers upon deployment. Even for the PAC-3s which are currently under the JASDF's control, the JGSDF may well take over their operation, given that the JGSDF provides security whenever they are put on standby upon North Korea's missile test launches.[38]

This defensive approach by the BMD is not a panacea. Even if the THAAD is a reliable system, it is not easy to keep it reliable. As there is no sign that China will slow down its military build-up, the JSDF would need to make every effort to acquire and maintain a balance favorable to Japan and its ally. Furthermore, the THAAD is no less expensive than the existing BMD systems. The Japanese government would have to pay billions of dollars for the THAAD system, as the United Arab Emirates purchased two THAAD fire batteries from Lockheed Martin for 1.96 billion dollars in 2011.[39] As China continues to produce its missiles at far lower costs, countering them only with the BMD is not financially sustainable in the long term. This leads to the discussion for the offensive approach.

Offensive approach: Japanese long-range strikes

Common sense tells that it is easier and more efficient to kill the archer than catch the arrows. This is the basic rationale behind the offensive approach to directly attack A2/AD forces on the enemy's soil. Currently Japan does not possess any weapon or delivery system capable of such long-range strikes. This absence of capability is not without reason. The first and foremost

is Japan's "exclusively defensive policy" resulting from the pacifist post-war constitution. Japan has refrained from acquiring offensive weapons such as ICBMs, long-range strategic bombers, and attack aircraft carriers. This is because their primary function is clearly the mass destruction of another country.[40] Their utility in other operations has been also questioned. There has been concern for neighboring countries' reactions as well. In order to put forward the offensive approach, one needs to carefully look into its feasibility and specify reasonable expectations.

Contrary to popular belief, the Japanese government's understanding has remained that striking targets in the enemy's soil is legal and constitutional *under certain conditions*. In fact these conditions set restrictions on the way the JSDF carries out such strikes. As early as 1956, Ichiro Hatoyama, Japanese Prime Minister at the time, clarified the government's position in the House of Representative Cabinet Committee as follows:

> If Japan were in imminent danger of an illegal invasion, and the method of invasion were a missile attack against Japan's national territory, I simply cannot believe that the spirit of the Constitution requires that we merely sit and wait to die. In such a case, I believe that we should take the absolute minimum measures that are unavoidably necessary to defend against such an attack, so that in defending against a missile attack, for example, if no other suitable means are available, striking the missile base should be legally acceptable and falls within the range of self-defense.[41]

Always referring to this unchanged stance, discussions for long-range strike capabilities have taken place in Japanese politics, but especially since North Korea started ballistic missile test launches in the late 1990s. To date the Japanese have forgone such capabilities of their own, as a matter of political preference, mainly because of their trust in the US military's striking power. As discussed earlier, however, the PLA's A2/AD questions this US credibility. Given the deteriorating strategic situation, it seems ever more reasonable for Japan to change this preference, within legal limits.

On the other hand, this interpretation of the constitution precludes certain forms of attack. It states that striking the enemy on its soil is possible only "if no other suitable means are available" and must be the "absolute minimum measures."[42] This implies that JSDF would not be authorized to destroy any parts of the enemy which are not related to missiles. Accordingly mass destruction of the enemy country would be out of question. Notwithstanding the misconception of some US analysts—even some Japanese—who associate the Japanese long-range strikes with the idea of the "deterrence by punishment,"[43] deterring effects of such strike capabilities would be nothing but the extreme case of "deterrence by denial." Even with any conventional long-strike capabilities, Japan would continue to rely on the extended deterrence of the US nuclear power for any punishment. In this legal and political context, defense planners would need to set the specific expectations for this new independent Japanese capability from an operational point of view.

Within the limits of the deterrence of denial, there can be a wide range of expectations for such strikes, from total destruction of the enemy missiles to more moderate results. In view of actual strike operations, a number of analysts have already pointed out the difficulty in locating and destroying Chinese missiles forces.[44] The PLA launches most of its land-based missiles from transporter-erector launchers (TEL). In order to enhance their survivability, such mobile launchers usually hide in hardened and concealed waiting areas, and move out into firing points only when they fire. The flight time of any attack platforms would make it more difficult to destroy the moving targets. Analysts often cite the example of the "Scud Hunt" air campaign in the Gulf War in this regard: whereas the Iraqis presumably had possessed 20-30 Scud launchers, the US Central Command flew a total of 1,460 sorties throughout the Gulf War to attack the moving launchers as well as their hide-outs and production facilities, but the Iraqis kept firing Scuds until the end of the war. The Scud Hunt achieved only limited results because of the difficulty to locate and identify

the moving targets, even with overwhelming US air superiority.[45] Given the far larger number of the PLA TELs, it would be almost impossible to destroy all the Chinese missiles threatening Japan.

Rather than rendering the offensive approach outright impracticable, this fact advises the JSDF to set reasonable expectations. The long-range strikes should not and need not counter the A2/AD by themselves alone: the JSDF would best use the offensive approach in combination with its defensive BMD, as the two approaches are mutually reinforcing. The strikes reducing the number of incoming missiles would contribute to the effectiveness of the BMD, because obviously the fewer the missiles, the easier it is to intercept them. In turn, the BMD radars tracking incoming missiles would facilitate the offensive efforts to locate the points of origin.

Attacks against Chinese TELs may not need to even physically destroy them. Unlike the ASB or the Joint Operational Access Concept (JOAC) to replace the ASB, which are mere precursors for follow-on operations, the Japanese long-range strikes would not serve any other operations.[46] Therefore the JSDF would not need to render the PLA's A2/AD forces permanently combat-ineffective, as long as they do not fire. If actual attacks or even a prospect of attacks compel the PLA TELs to stay in hide-outs longer, with fewer firing opportunities and fewer rounds coming to Japan, they would partly achieve their objective. The example of the Scud Hunt offers another insight in this regard. Out of the eighty eight rounds of the Iraqi Scuds actually launched during forty three days of the war, thirty five rounds—approximately 40% of the total—were launched in the first seven days. This means that the number of rounds significantly decreased after the Scud Hunt had started.[47] Even though the US air campaign did not destroy all the Scuds, it did succeed in restraining the Iraqis. The JSDF should set a similar level of expectations, depending on the capacity of platforms and target information available.

Aside from actual warfighting, when it comes to deterrence, the expectations for combined effects of the offensive and defensive approaches would be even more moderate. The JSDF does not have to be able to destroy all launchers or stop all incoming missiles to deter China. This is because even minimally effective denial would impose uncertainty on the calculation of the attacking side, as Andrew Marshall found out about the deterrent effects of the Strategic Defense Initiative on the Soviets in the 1980s.[48] It is natural to assume that the PLA also demands a certain level of probability for mission success, before ever launching missile attacks against Japan. Imperfect as the countermeasures may be, if they are likely to reduce the probabilities below that threshold, this could deter China.

With that said, the JSDF should spare no effort to make its attacks effective. For timely target information, Japan would need to invest in the intelligence capabilities as well, in order to search for not only TELs but also other related targets such as fire control nodes, ammunition dumps, production, and storage facilities. The JGSDF's special operations forces may have a role to play for the intelligence. To strike moving targets as quickly as possible, the JSDF would need to build its own high-speed reconnaissance-strike complex with enhanced C3I capabilities and attack platforms with the fastest response time.

The offensive approach may be technically possible with two candidates: an air strike by the JASDF and a missile strike by the JGSDF. The JASDF currently fields a total of 92 F-2 multirole fighters.[49] It has also budgeted for procuring 28 F-35As, the latest fifth-generation stealth multirole fighters by FY 2018.[50] Theoretically the JASDF can use both fighters to strike the A2/AD forces on the ground, as they are equipped with air-to-ground weapons. In reality, however, the technical feasibility is questionable due to the complexity of the task. In order to strike ground targets in the Chinese mainland, the JASDF fighters would have to penetrate deep

into its A2/AD zone. Such a task would include suppressing the PLA's Integrated Air Defense System (IADS) within 300 nm (556km) of its coastline, which is composed of early warning, fighter aircraft and a variety of SAMs.[51] As fighters alone cannot perform the task, it would be necessary for the JASDF to organize strike packages of escort fighters, reconnaissance, tanker, AWACS and jamming aircraft. The JASDF lacks many of these aircraft, as it has historically focused on tactical counter-air missions. Other shortcomings are the fighters' limited numbers and their high costs. For example, the FY 2017 defense budget proposal has earmarked 88 billion yen, together with 30.9 billion yen for other related expenses, for only six F-35As.[52] Committing these few, extremely expensive assets to high-risk ventures would be insanity.

The land-based missiles by the JGSDF have a brighter prospect. Although the JGSDF currently does not have any long-range cruise missiles, to date it fields two kinds of surface-to-ship missiles, the Type 88 SSM and the latest Type 12 SSM, of which operational ranges are both more than 100 km. It is not a technologically hard task to upgrade the existing SSMs to long-range cruise missiles to strike ground targets. In order to overcome the IADS, the missiles would need to cruise at a low altitude, at a supersonic speed, which would also make them more responsive than the fighters. For the long term, on the basis of the technologies used for existing commercial solid-fuel rockets, once political hurdles are cleared, it might not be impossible for Japan to build ballistic missiles, which are more difficult to intercept. As Figure 3 shows, when deployed in the Ryukyu Islands and Kyushu, such missiles with range of 1,000 km would hold at risk those Chinese MRBMs and SRBMs in Eastern and Northern Theaters which directly threaten Japan, as an effective deterrent to their possible use or threat of use. As one Type 12 SSM launcher costs 1.9 billion yen, this paper recommends the missile option as more advantageous in terms of cost-effectiveness.[53]

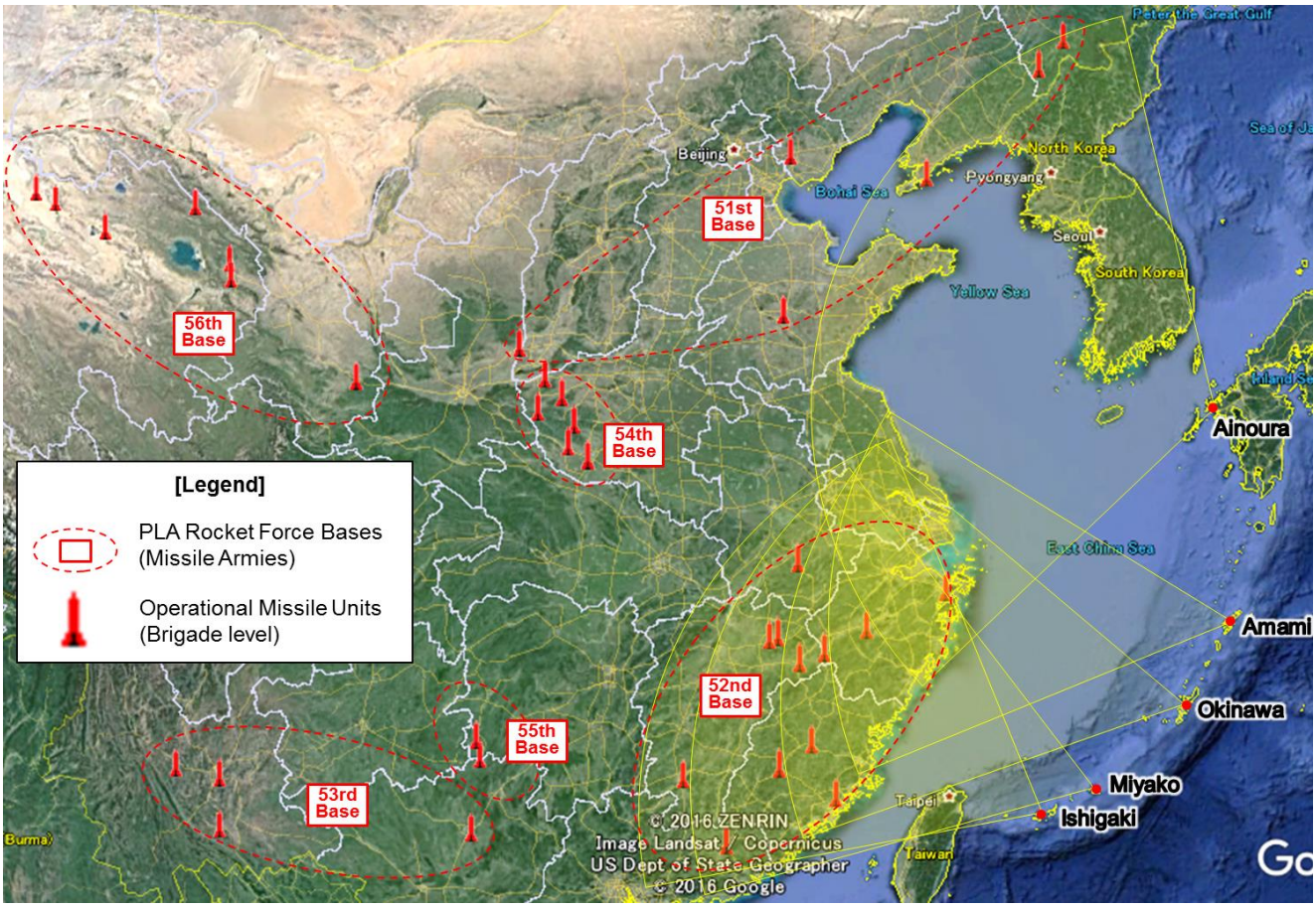

Figure 3: The PLA Missile Units and the JGSDF Notional Missiles' Coverage
Source: Sean O'Connor, "PLA Second Artillery Corps," last modified April, 2012, http://www.ausairpower.net/APA-PLA-Second-Artillery-Corps.html

A number of analysts point out that any offensive capability of the JSDF will invite negative responses of the neighboring countries, thus endangering the regional stability.[54] Even US officials have reportedly expressed concerns to their Japanese counterparts over such a move by reason that it could infuriate China.[55] As China is fiercely opposing South Korea's initiative to deploy the THAAD system in the peninsula, any move will naturally elicit an angry response from China, whether defensive or offensive. There are two counter-arguments.

First, if China was building up its military with benign and defensive intentions and only reacting to initiatives of the United States and Japan, certainly Japan would bear the blame for intensifying an arms race by developing this offensive capability. However this is not the case.

China's officially-disclosed military budget of 2016 is 3.4 times larger than that of 2006, whereas the defense budget of Japan has increased by only one percent and that of the United States by fifteen percent during the same decade.[56] China has unilaterally expanded its military capacity regardless of the US or Japan's defense programs. It is also questionable that China has only benign and defensive intentions. Let alone China's actual behaviors in the East and South China Seas, even the PLA's own military publications imply that its concept of strategic deterrence is broad, to include concepts of *compellence* or *coercion* in Western parlance.[57] What one has witnessed in East Asia is not an undesired arms race resulting from a security dilemma, but a long-term competition challenged by a revisionist power to status quo powers. The JSDF's offensive capability would be only a modest effort to redress the growing imbalance, which would otherwise widen further in China's favor. Countering its A2/AD poorly would rather give China an incentive to become more assertive and continue to destabilize the region.

Second, if the long-term competition goes on anyway, Japan and the United States need to compete with China in a more cost-effective way. The current mode of competition is too favorable to China. The PLA's heavy reliance on long-range missiles is a cost-effective strategy, imposing high costs on the US power projection with relatively cheap investment in the asymmetric means. Since defensive systems are more expensive than missiles, focusing only on the BMD is not a sustainable strategy for Japan. On the other hand, if it develops its own offensive capability, Japan would be able to turn the tables and impose disproportionally large costs on China's military efforts. Because the PLA's missile defense systems are in a rudimentary stage with limited capabilities, such a Japanese move would compel China to invest in more costly defensive measures, as the US B-1 bomber program might have compelled the Soviets to invest in costly territorial air defenses during the Cold War.[58] Resources which would be otherwise devoted

to offensive missiles would be allocated to the capabilities less menacing for Japan. An arms race is not bad in itself. Managed with an effective long-term competition strategy, it would work in the favor of Japan and its ally.

Conclusions

As demonstrated, China's aggressiveness in the gray-zone confrontation is nothing but a symptom of the deeper root cause, which is the PLA's confidence in its growing A2/AD capabilities. The PLA's A2/AD emboldens China in the lower-scale of contingencies, as well as questioning the credibility of the United States in the region. Japan needs to develop its own counter-A2/AD capabilities in view of redressing its deterrent posture across the full spectrum of contingencies, as well as setting conditions for US commitments. In order to counter the PLA's A2/AD, especially the missiles forces as its core, the JGSDF should play leading roles: the defense with the THAAD and the offense with land-based missiles.

Those ground systems must be fully integrated into joint and combined operations with the JMSDF, JASDF, and the US military. They must be highly mobile and rapidly deployable to function as flexible deterrent options, rather than staying 24/7 standby on fixed locations. In steady state, the JGSDF needs to regularly conduct training and exercises with its counter-A2/AD forces in order to communicate to China that Japan has the capacity and will to address the PLA's A2/AD, independent of US actions, at least at a level that makes further Chinese aggression too risky. In case of mounting tension with China, the JGSDF carefully tailors deterrent options which include staged deployment of missile launchers to the Ryukyu Islands and Kyushu as well as activation of the THAAD to cover likely targets. Such options are intended to show Japan's resolve and deter China from further escalation.

If deterrence should fail and a kinetic war broke out, the JGSDF's counter-A2/AD forces, especially its missile forces, would operate in close cooperation with the US forces. Sharing target information with the US forces, the JGSDF missiles may support and complement US air operations by suppressing the PLA's IADS and creating corridors for US deep attacks, in addition to attacking Chinese TELs. Paradoxically, due to the removal of the ban on the exercise of the right of collective self-defense, the JGSDF might well be more ambitious about targeting if it was now defending an ally.

Such active roles of the JGSDF in the A2/AD environment are something unanticipated for defense planners in Tokyo, even for ground planners. Here lies the largest challenge for the JGSDF, which has contented itself with the position of the "final goalkeeper" on the ground. The JGSDF still field fifteen divisions and brigades evenly in all over the country, waiting for enemy's land invasion. In order to adapt itself to the new strategic environment, the JGSDF would have to review its force structure, doctrine, and organizational culture, at the same time striking a balance between new roles and traditional combined-arms competence. Counter-A2/AD is a function quite distinct from the existing combined-arms, as it would not serve other ground operations. While a more thorough study would be required, one may well suggest that the JGSDF should organize a strategic missile corps as an independent branch tasked with the BMD and long-range strike operations. The JGSDF should also streamline the existing divisions and brigades, while maintaining their core competency as combined arms formations. Protecting the strategic missile corps would be one of the primary missions of those divisions and brigades.

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Glossary

A2/AD	Anti-Access and Area Denial
ADIZ	Air Defense Identification Zone
ASB	Air Sea Battle
ASBM	Anti-Ship Ballistic Missile
BMD	Ballistic Missile Defense

C3I	Command, Control, Communication, and Intelligence
IADS	Integrated Air Defense System
ICBM	Intercontinental Ballistic Missile
IRBM	Intermediate-Range Ballistic Missile
ISR	Intelligence, Surveillance, and Reconnaissance
JASDF	Japan Air Self-Defense Force
JGSDF	Japan Ground Self-Defense Force
JMSDF	Japan Maritime Self-Defense Force
JOAC	Joint Operational Access Concept
JSDF	Japan Self-Defense Forces
MRBM	Medium-Range Ballistic Missile
NPDG	National Defense Programs Guidelines
NSS	National Security Strategy
PAC-3	Patriot Advanced Capability-3
PLA	People's Liberation Army
PLAN	People's Liberation Army Navy
SSM	Surface-to-Ship Missile
SRBM	Short-Range Ballistic Missile
TEL	Transporter-Erector Launcher
THAAD	Terminal High Altitude Area Defense

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