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Complexed Missile Threats and Integrated Missile Defense Cooperation

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Overview of the Current Security Environment

A gradual and persistent challenge to security is approaching. Current U.S. allies and security partners in the Indo–Pacific region are facing serious near- to long-term challenges from both qualitative and quantitative improvements in the capabilities of adversaries and competitors. To grasp the nature of the situation, it is first necessary to examine the current security environment. There are two main areas of concern.

Near Term—North Korea. It has passed 15 months since the last ballistic missile launch by North Korea. It is easy to evaluate that the risk of large-scale conflict in the Korean Peninsula temporarily declined. In particular, it can be understood that relaxed military tension in the demilitarized zone is favorably accepted by President Moon and South Korea. However, we must face the fact that North Korea's substantial nuclear and missile capabilities have not declined at all and see the reality that the progress of denuclearization is stagnating.

North Korea has started dismantling its nuclear test site at Punggye-ri and missile-engine test site at Sohae, but these are reversible and mobile missiles can be launched from anywhere. In addition, in recent months, the Japanese Ministry of Defense (MOD) and the U.S. Department of Defense has released documents including assessment that North Korea's nuclear capability is improved. The 2018 National Defense Program Guidelines or NDPG —equivalent to Japanese National Defense Strategy—assesses that "[g]iven technological maturity obtained through a series of nuclear tests, North Korea is assessed to have already successfully miniaturized nuclear weapons to fit ballistic missile warheads." Similarly, the 2019 Missile

Defense Review or MDR has pointed out that "North Korea now has the capability to threaten the U.S. homeland with a nuclear-armed missile attack."

In that sense, there is no doubt that North Korea is still an urgent threat to regional security.

Improving North Korea's nuclear and missile capabilities are based on a reasonable "theory of victory." In the Korean War, Japan was the logistical forward base for U.S. intervention on the Korean Peninsula. If a contingency were to arise on the peninsula, the United States would again rely on Japan. The Korean Peninsula and Japan have been a single-integrated operational theater since hostilities broke out in 1950. The U.S.–Japan defense guidelines and Japan's security legislation provide clear evidence of support under such circumstances.

Using its missile capabilities and casting a "nuclear shadow," North Korea could threaten Japan with the intention of reducing public support for seemingly "antagonistic" U.S. bases in Japan. For example, North Korea can try to target within the Japanese territorial waters or remote islands with less casualties by conventional-armed Scud-ER/No-dong or solid-fuel submarine-launched ballistic missile (SLBM)/KN-11 as a warning shot. In fact, the four ballistic missiles fired on March 6 were launched by the Hwasong ballistic missile division, which, according to the *Korean Central News Agency*, is "tasked to strike the bases of the US imperialist aggressor forces in Japan."

If it escalated the situation, North Korea may launch nuclear-tipped missiles or detonate nuclear explosive devices on the covert-operation boats in the Sea of Japan or the Pacific Ocean to demonstrate their willingness of actual nuclear use. This is the so-called nuclear blackmail scenario.

Through these warning shots or nuclear blackmail, North Korea would send some signal to the Japanese government and citizens to coerce: "Japan should not support the U.S.–Republic of Korea (ROK) alliance," or "Japan must deny passage of U.S. military assets through Japanese territorial water and air space." If the Japanese government does not approve the use of U.S. military bases in Japan, it will be difficult for the U.S. to operate effectively on the Korean peninsula. For North Korea, their security environment would be dramatically improved.

Under these situations, Japan would also face to very difficult policy coordination. The first question is how to prevent further escalation.

As a similar case, South Korea already faced a sinking of the patrol boat "Cheonan" in March

2010 and a bombardment of Yeonpyeong-do in November of the same year. Although the possibility of torpedo attack by North Korea was strongly suspected in the beginning of the "Cheonan" incident, it took time to attribute and the ROK did not retaliate directly. In the Yeonpyeong-do incident, it was clear that the bombardment was due to North Korea, so the ROK side retaliated against the North Korea's artillery bases, and prevented further escalation.

However, the Japan's Self Defense Force (JSDF) currently does not have its own long-range counterattack capability. Therefore, in such cases, Japan will rely on the U.S. forces for kinetic response. Here is the second question: What is the proportional response to warning shots in which casualties are zero or very limited? Including the risk of escalation to South Korea and the United States, it is a difficult political decision to instantaneously decide between Japan and the United States.

In other words, in the scenario of warning shot and nuclear blackmail, it is assumed that a kind of "gray zone" situation will be caused by North Korea's ambiguous missile launch or limited nuclear use. At the same time, these problems are related to the so-called stability–instability paradox problem that when it is confident that emerging nuclear powers can deter high-intensity escalation by its nuclear weapons, they are more likely to conduct low-intensity assertive behaviors. It will be necessary to think together.

Furthermore, if North Korea suggested with such blackmail, "If the Japanese government does not support any U.S. military operations, we will not target Japan," and a cease-fire and peace negotiation, it may cause public concern that Japan will be entrapped in U.S.–ROK operations, to provide support for their operations.

This is a type of de-coupling problem. However, it is qualitatively different from the traditional de-coupling. This is because a traditional de-coupling format during the Cold War was based on a combination of regional and intercontinental strike capability. If North Korea possesses a reliable intercontinental ballistic missile (ICBM) that can reach the U.S. homeland, U.S. political leaders may face the challenge: "Why does the United States need to sacrifice San Francisco to defend Tokyo and Seoul?" This kind of public opinion gives some negative impact to U.S. leaders' decision making, and has further brought the credibility of U.S. extended deterrence into question.

In that sense, if North Korea obtains sufficient reliable ICBMs as a second-strike capability, the concern will rise. However, simply having a small number of ICBMs, it hard to penetrate U.S. homeland missile defense provided by Ground Based Interceptors or GBIs.

Therefore, the strategic relationship between North Korea and the United States needs to consider both elements, which North Korean missile capacity and capability development and the U.S.'s homeland defense.

On the other hand, if North Korea conducted warning shots or nuclear blackmail against Japan, it can be easily imagined that a number of Japanese citizens may think "why do we need to sacrifice Tokyo for defending Seoul?" This is the essence of the de-coupling problem in the regional strategic format. In short, Japan has to deal with two different types of de-couplings.

Long term—China. As for long-term concerns, there is of course the rise of Chinese influence and power in the region. China has been engaged in a robust military development program without transparency, which has resulted in a large qualitative upgrade in their capability.

These take the form of fourth- and fifth-generation fighters and expansion of their blue-water navy, as well as developing dual-capable ballistic and cruise missiles.

These range from MIRV-ICBMs, road-mobile ICBMs, to intermediate-range ballistic missiles. There are also developments of Anti-Ship Ballistic Missiles (ASBM), sea- and air-launched, and cruise missiles. Of particular concern is the Chinese deployment of missile systems that have the nuclear warhead routinely attached. Chinese ground-based nuclear forces have deployed launch systems with the warheads decoupled from the launch platforms. This is a security measure to ensure political control over the nuclear forces and prevent a rogue launch by potentially hostile elements in the People's Liberation Army. By contrast, the Chinese SLBMs cannot be deployed in such a fashion.

There is also a low-intensity risk of conflict with China over disputed maritime territorial claims. Recently, attention has been focused on China's limited probing and attempts to pull off "fait accompli," gray zone coercion. This is mainly carried out by three means: First, maritime police vessels are used to assert disputed claims. Second, fishing fleets and deep-sea surveying vessels challenge the exclusive economic zones of neighboring countries. And third, land reclamation, particularly in the support of disputed claims in the South China Sea, has been employed. In addition, we can expect that unknown asymmetrical threats may manifest themselves in the future as China continues to explore low-level conflict through creeping expansion and non-military aggressions.

We are faced with difficult choices in dealing with and the gray zone conflict in Japan's Southwestern islands and South China Sea. To prevent gray zones, it is important to increase

the amount of coast guards and military assets and to show their presence through flexible presence patrols. However, considering the efficiency of the warfighting situation, if we deploy the asset too forward it is vulnerable. On the other hand, to avoid that vulnerability, dispersing assets will not show enough presence. Even if the conflict began in the gray zone, assuming the subsequent escalation, it is required to grip the escalation control at all levels. In other words, China has an "escalate to de-escalate" doctrine, which is backed up by the use of force including limited nuclear use, to proceed with opportunistic creeping expansion, even the opposition of the international community.

As mentioned in the case of North Korea, even if nuclear weapons are not actually used, their existence is influenced as a nuclear shadow at the conventional and gray zone level. Therefore, it is not appropriate to discuss the gray zone conflict on its own, it should be considered to link to another domain and spectrum.

U.S. and China Strategic Stability at the Nuclear and Conventional Level

When old cold warriors broach the topic of strategic stability, concepts such as MAD—mutual assured destruction—often arise. While some similarities can be found in that analogy, it is better to focus more on broader elements.

Let's consider the strategic stability between the U.S. and China. When we refer to strategic stability, we tend to focus on the antagonist's ballistic missile submarine (SSBN) and SLBM as reliable second-strike capabilities. Surely, Ohio-class SSBNs and Trident D-5 SLBMs are well known as the ultimately survivable nuclear deterrent. On the other hand, China's developing Jin-class SSBNs and JL-2 SLBMs have not been able to achieve a reliable second-strike capability unlike their Trident SLBM, due to their shorter range. This limitation means their SLBM force must venture out of their safe bastion surrounding Hainan Island into the central Pacific, falling under the dome of U.S. and allied anti-submarine warfare (ASW) detection and engagement capability.

Nevertheless, it is only a matter of time until mutual vulnerability is established between the U.S. and China. For example, with China's deployment of road-mobile ICBMs such as the DF-31 and DF-41, one could say that a mutual vulnerability already exists. (While vulnerability exists, it is not rising to anything near the U.S. and former Soviet Union's balance of terror.)

In this context, Japan and the U.S.'s regional allies have to be prepared to face the stability–instability paradox, which raises the likelihood of some conventional and tactical confrontation.

A salient feature of China's military posture is their development of anti-access/area denial (A2/AD) capabilities, particularly over the past 10 years. Especially, China has introduced qualitative and quantitative improvements in dual-capable ballistic and cruise missiles for both static and mobile deployments on land, sea, and air, completing and expanding their nuclear triad—deploying specific systems such as MIRV-ICBMs (DF-5B); road-mobile ICBMs (DF-31, DF-41); short-range and intermediate-range ballistic missiles (DF-15, DF-21, DF-26, etc.); ASBMs (DF-21D, DF-26 variant); SSBNs (Jin class/Type 094, JL-2 SLBM); and air-launched cruise missiles (DH-10) in their arsenal. Furthermore, in recent years, China has also been focusing on the development of hypersonic boost-glide vehicles (HGVs).

This has raised concerns about the vulnerability of not only Japan, but also U.S. forward bases and presence, including carrier strike groups (CSGs) to a preemptive strike by these ballistic and cruise missiles. In the event of a contingency in this region, Washington will deploy major assets like the F-35s and B-2s to Okinawa or Guam. Furthermore, they will also deploy CSGs to send a signal as a Flexible Deterrent Option. In addition, if the United States is not restricted by the Intermediate-Range Nuclear Forces (INF) treaty, it is also possible to deploy land-based anti-ship missile batteries.

Unfortunately, the new risks to these assets of a Chinese preemptive strike will have to be taken into account and be offset in order to maintain the strategic balance. Additionally, since U.S. stealth fighters and bombers are hard to detect and intercept in the air. Beijing has some incentives to use their new capabilities early in a confrontation to counter perceived U.S. advantages for power projection. This is because detection and neutralization have a much higher probability of success while these assets are on the ground, a Pearl Harbor scenario.

Policy Recommendations:

How do we maintain credible deterrence and what should we do if it fails? It is not easy to maintain deterrent presence and reduce vulnerability, but there are several essential efforts.

First, strengthening the Japan–U.S. and allied missile defense network is essential. The United States does not silently overlook the growing regional ICBM threats. Based on the fiscal year (FY) 2018 National Defense Authorization Act and the 2019 MDR, the U.S. will significantly increase the number of GBIs. To make the U.S. continent more secure is vital to the reliability of extended deterrence.

In addition, it is very important that Japan decided to acquire Aegis Ashore, SM-3 BlockIIA,

and SM-6 in strengthening the multilayered U.S.–Japan joint missile defense to cope with an adversary's combination of ballistic and cruise missiles salvo attack. Furthermore, to the limitations posed by the defense budget, if it is also difficult to introduce additional interceptors. Japan should ask to deploy THAAD to U.S. forces in Japan, then use seamless U.S.–Japan cooperation connecting mid-course to upper- and lower-tier terminal phases and the air defense system should be strengthened. In order to strengthen missile defense, coordination of not only interceptors but also sensor networks are indispensable. In this sense, strengthening terrestrial forward sensors deployed in South Korea and Japan will contribute not only to the defense of Japan, but also to the defense of Guam, Hawaii, and the U.S. homeland. Japan, the U.S., and Australia should also advance technical cooperation in space-based sensor layers, such as the hosted payload of space-based kill assessment satellites and pre-boost phase defense technology such as "left of launch."[1]

Second, we should promote strengthening to underwater-based capabilities. The U.S. nuclear forces structure in the Asia–Pacific region has been increasingly dependent on strategic nuclear forces since the *2010 Nuclear Posture Review* (NPR) of the Obama administration decided to retire TLAM-N. As a method of filling up this escalation ladder gap, there is a method of deploying dual-capable aircraft (DCA) and B61 tactical nuclear bombs like NATO. However, as mentioned above, considering the crisis stability in the A2/AD environment, DCA might no longer be deployable. Thus, the Trump Administration's 2018 NPR proposes two new underwater-based, low-yield nuclear options—tactical trident and new nuclear SLCM. These survivable underwater systems will provide effective deterrence and prompt strike power in this region.

However, if these systems are needed, the U.S.'s SSN may be susceptible to detection at the expense of its advantage, stealth. Therefore, Japan needs to thoroughly conduct ASW so that U.S. submarines can concentrate on deterrent missions in the western Pacific, and to reassure the United States. In this regard, we may be able to cooperate with Australia, India, and Association of Southeast Asian Nations countries.

Third, the Japanese, U.S., and Australian governments should establish joint R&D programs for offensive and defensive hypersonic technologies. Before the United States, China (and Russia) has already developed various hypersonic systems including HGVs. In particular, because of their altitude and unique trajectory, HGVs cannot be intercepted by existing mid-course defense systems. We should consider defensive measures against hypersonic systems and also consider how to offset them by offensive tactical hypersonic systems. Japan

[1]Riki Ellison, "Left of Launch," Missile Defense Advocacy Alliance, March 16, 2015, https://missiledefenseadvocacy.org/alert/3132/ (accessed October 8, 2019).

Acquisition, Technology & Logistics Agency（ATLA）began research on element technologies of a Hyper Velocity Gliding Projectile (HVGP)[2] from FY 2018. It has a range of 300–500 km and can glide to its target using small attached wings. The target date for delivery to the Ground Self Defense Forces (GSDF) is 2026. This is aimed at remote island defense, but technically it is similar to the Conventional Prompt Strike program, and depending on the booster, it could extend the range of intermediate-range ballistic missiles. It may be preferable to the United States and its partners to apply the hypersonic technology to accelerate this practical use. The Woomera test range in Australia, in particular, has a lot of research experience in hypersonic technology with the U.S.'s White Sands Missile Range and Defense Advanced Research Projects Agency and will contribute greatly to our technology improvement.

Finally, in considering damage limitation, it is better to have increased strike capability. As an important element of integrated air and missile defense, the 2019 MDR emphasis on not only active and passive defense, but also conducting attack operations.

Distributing these capabilities will also reduce vulnerabilities of U.S. forward deployed assets. Japan should seek limited counter-attack capabilities. Besides the F-35A and F-15J with standoff cruise missiles such as joint-strike missiles and joint air-to-surface standoff missiles, a combination of a submarine and Tomahawk missiles can be considered. The latest version of Tomahawk can also be launched from a torpedo tube, and it will fit Japanese submarines without a vertical launching system.

Moreover, instead of permanently deploying the HVGP and medium-range ballistic and cruise missiles mentioned earlier, these systems are combined with the rapid deployment capability of the GSDF and can be used as a long-range anti-ship missile. Unlike mobile launchers on land, the PLA Navy's vessels cannot be hidden by shelters, so they are relatively easy to target with cruise or ballistic missiles. If the United States is not restricted by the INF treaty, it is also possible to operate the U.S.–Japan joint-developed tactical HVGP and long-range anti-ship missile such as the land-based long-range anti-ship missile established combined task force of GSDF and U.S. Army or Marine Corps to block chokepoints at the first island chain.

Even though Japan has its own capabilities, they will function within the framework of the U.S.–Japan alliance. Japan's counterattack capabilities are intended to limit damage from second- and third-wave attacks rather than serve as deterrents. Even if Japan cannot prevent

[2]Japan Ministry of Defence, "Defence Related Budget Request for JFY2019," September 2018, https://www.mod.go.jp/e/d_budget/pdf/300914.pdf (accessed October 8, 2019).

the first salvo, it can reduce and suppress the adversary's number of remaining missiles and platforms before the next wave, and thus, improve the probability of interception by missile defense.

It is important to note that targets have different priorities in different countries and are dependent on each country's capabilities. Therefore, when conducting a combined operation, closer prior consultation on target selection and identification is required. In doing so, Japan possesses its own intelligence, surveillance, and reconaissance capability and it is important to gather intelligence during peacetime to coordinate adaptive, joint targeting coordination with the United States. In this regard, equipping a dynamic targeting sensor on UAVs acquired by Japan will help deepen allied command and control mechanisms. For example, as the SDF takes charge of attacks on fixed targets, U.S. forces will be able to effectively concentrate on time-sensitive targets.

Conclusion

The framework to fight against missile threats in the Asia–Pacific today is (1) a flexible strike capability consisting of nuclear and non-nuclear forces; (2) comprehensive and robust missile defense; (3) joint commitment through military exercise; and (4) consultation mechanism on extended deterrence. The Government of Japan strongly supports the *2018 Nuclear Posture Review* (NPR)[3] with low-yield nuclear options. These options are appropriate as hardware reinforcement measures. In addition, further strengthening the software should be done in parallel with upgrading the hardware.

For example, Japan and the United States should upgrade the Extended Deterrence Dialogue (EDD). The EDD is a consultative framework for strengthening and deepening mutual understanding of the deterrence of the U.S.–Japan alliance, which has been held regularly since 2010. It is imperative to continue to implement it in the future. To that end, the EDD should be upgraded to a form that integrates with high-level consultations like the U.S.–Japan Security Consultative Committee or the "2 + 2."

Therefore, linking the contents of the EDD with the combined operational planning process through the U.S.–Japan Bilateral Planning Committee and seamlessly constructing its escalation ladder from the gray zone to the conventional and nuclear domains. Based on these plans, it is desirable to repeatedly conduct U.S.–Japan joint exercises involving not only U.S. Forces Korea (USFK) and Indo–PACOM, but also Strategic Command (STRATCOM), to continually check on and share information about practical issues.

[3]U.S. Department of Defense, *2018 Nuclear Posture Review*, February 2018, https://dod.defense.gov/News/Special-Reports/0218_npr/ (accessed October 8, 2019).

Among the exercises are the issues which should also be verified in each operational plan. For example, the risk of forward deployment of DCA in a time of crisis; the military and political utility of increasing the presence of DCAs and strategic bombers; and the frequency of deployment of SSGN/SSBNs in the western Pacific region, as well as the utility of low-yield SLBMs against time-sensitive targets such as mobile missiles, based on the necessity to use them as a prompt disarming strike means at an appropriate time.

Japan can counter the risk of adversarial misinterpretation by demonstrating our capability to robustly defend U.S. forward bases and assets and assuring the United States of the capability to intervene effectively in defense of our common interests. It is time to redefine not only the balance between hardware and software, but also the appropriate mix of the allied strike and defense toolkit.

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