

Abstract

Updated National Defense Program Guidelines published in 2018 and the future of the Japan-Maritime Self-Defense Force

SAITO Akira

This paper aims to provide an overview of the nature of the Multi-Domain Defense Force, the JMSDF defense capability development based on the National Defense Program Guidelines (NDPG) and Mid-Term Defense Program (MTDP), and the priorities the JMSDF will be committed to.

Firstly, the nature of the Multi-Domain Defense Force indicates a direction of JMSDF defense capability development and a concept for a Multi-Domain Defense Force with a truly effective defense capability that does not lie in a linear extension of the past. This concept is to protect the lives, bodies, and property of the people as well as territorial land, sea, and air, thereby ensuring the peace and security of Japan.

Secondly, the JMSDF future defense capability development covers a wide range of areas such as utilizing quasi-zenith satellites, conducting permanent surveillance on systems in cyber space, and developing multi-purpose airplanes (EP-3/UP-3D). In traditional domains, JMSDF will research and develop Unmanned Underwater Vehicles (UUV) and provide existing vessels with Take-Off and Vertical Landing (STOVL) capability.

Thirdly, in an effort to materialize the concept of the NDPG and MTDP, the JMSDF will put forth endeavors such as further improving the effectiveness of maritime defense and strengthening cooperation with the US Navy as well as friendly navies.

The problem of Rule of Law on the Indo-Pacific region

— The Interpretation of Warship's navigation —

TANIGUCHI Naoto

For actuarization of Free and Open Indo-Pacific region, that forms important part of the basis of Japan's security, there are some obstacles concerning claims or opinion of international law, especially law of the sea. The matter of special importance is that of navigation of warship on the region. Claims of coastal states on the region are not necessarily uniform and the act of warships, unlike merchant vessels, will indicate national intention directly, finally forms state practices. Indicating unintentional implementation of the state could undermine national interests. So, the author will consider path of solution on for effectiveness Free and Open Indo-Pacific region from military side, in particular navigation of warships including Japan Maritime Self Defense Forces. And it does not necessarily aim at the short-term agreement of the views of states. Peaceful solution of conflict is also a principle of international law, and the implementation of individual agreements and bilateral military exercise may be important means for realizing the rule of law in the international community. Therefore, it will be necessary to clarify what kind of legal stance Japan should take when navigating its Defense Ships on the region.

Strategic Communication and the Korean Peninsula Crisis 2017-8

— Use of Force for Deterrence and Compellence —

ISHIHARA Takahiro

The importance of strategic communication has recently increased. In so-called gray-zone situations and hybrid warfare, SC is considered as a promising way to fight against it. In "National Defense Program

Guidelines for FY 2019 and beyond”, it is mentioned as follows, “Japan will further advance steady-state efforts such as strategic communications by systematically combining all available policy tools.”¹

So, specifically, what kind of military activity would be a tool to send a message to the other party? Will consider the case on the Korean peninsula where tensions have increased since the spring of 2017.

There were North Korea's missile launch and nuclear tests. On the other hand, US forces, Korean forces, and the Japan Self-Defense Forces conducted exercises and deployed units. Analyze the both side activities.

Potential Vulnerability of Japan-U.S. Alliance in Gray Zone - Four Gray Zones in “Gray Zone”-

**TAKEI Tomohisa
SAITO Yusuke**

In recent years, the so-called gray zone has attracted attentions due to the change of status quo by force in Crimea by Russia, and the South China Sea by China. The similarity in both cases is that Russian and China carefully and precisely premeditated not to start actual armed conflict.

Japan and the U.S. define the gray zone to consist of time and situation factors, and there is no gap between Japan and the U.S. in that sense. However, their interpretations are not perfectly aligned. There are four gray zones in gray zone situation. First is how each country recognizes an armed attack by other nations. Second is the timing to end law enforcement activities before a use of force. Third is the timing of recognizing an armed attack. Finally, the gray zone may

¹ “National Defense Program Guidelines for FY 2019 and beyond December 18, 2018,” p9,
https://www.mod.go.jp/j/approach/agenda/guideline/2019/pdf/20181218_e.pdf

delay U.S. response to defend Japan.

As the gray zone remains ambiguous, U.S. allies inevitably face vulnerability regarding the recognition of armed attack and timely joint response. Alliance may mean recognizing and managing the existing gaps between them. While Japan should realize the concepts and plans in the Defense Program Guidelines launched in December 2018, Japan should make efforts to decrease the vulnerabilities of Japan-U.S. alliance in gray zone.

Ensuring Japan's Future Air Security : Recommendations for Enhancing the JASDF's Readiness to Confront Emerging Threats

OGURO Masataka

This study is intended to examine the state of the air security situation around Japan and analyze the country's preparations for its future air defense in response to emerging threats. The report focuses particularly on scrambles, known as air policing, which are conducted by fighter aircraft in peacetime and gray-zone situations. Recently, the number of scrambles conducted by the Japan Air Self-Defense Force (JASDF) has been rapidly increasing, mainly because of China's coercive efforts to change the territorial and sovereign status quo. China has been applying "salami slicing" tactics in the ocean, gradually expanding its activities further into the Pacific in a piecemeal fashion. It has also been pursuing a similar strategy in the air by changing the quantity and quality of its air activities since declaring the establishment of a new Air Defense Identification Zone (ADIZ) in the East China Sea in 2013. China's peacetime expansion strategy poses a qualitatively different threat to its neighbors than they experienced during the Cold War. Amid China's ongoing military buildup, the People's Liberation Army (PLA) increasingly relies on non-traditional platforms to conduct its operations, especially unmanned aerial vehicles (UAVs). Based on the above considerations, this report underscores the need for Japan to

develop a new method of air policing.

This paper was originally published by the Brookings Institution in Washington, DC.” English version (full) is available on the webpage below. (<https://www.brookings.edu/research/ensuring-japans-future-air-security/>)

JMSDF’s Multi-domain Defense Force to demonstrate the capabilities essential for cross-domain operations

NAKAYA Jun

According to National Defense Program Guidelines for FY 2019 and beyond, to construct Multi-domain Defense Force, it is essential to enable JSDF to defend Japan executing cross-domain operations, even if its forces are inferior to the enemy in individual domain.

This paper examines the capabilities and issues of executing cross-domain operations. Then, it explains the construction of Multi-domain Force related to JMSDF which is possible by demonstrating the required capabilities to execute cross-domain operations.

Analysis of Cyber Research Institutes

IDE Tatsuo

This paper discusses the necessity of Cyber Research Institutes based on the think tank concept from the National Security Program Guidelines.

The paper has the following structure: Section 1, Research Background, examines the National Security Program concept and explains the necessity of a Cyber Research Institute.

In Section 2, Research Methods, the scope of a Cyber Research Institute is defined by specifying its research objects and methods.

In Section 3 and Section 4, the case for a Cyber Research Institute is presented and analyzed through the Case Study method.

The findings of this research contribute to the body of knowledge regarding Cyber Research Institutes in the field of defense, including their characteristics.

Consideration for Autonomy in Robot weapons — Focusing on Lethal Autonomous Weapons System(LAWS) —

UENO Hiroshi

The introduction of autonomous weapon systems into the “battlespace” will profoundly influence the nature of future warfare. This reality has begun to draw the attention of the international legal community. Most notably, in November 2012, Human Rights Watch released *Losing Humanity: The Case against Killer Robots*. The report is a scathing critique of autonomous weapons systems and has sparked a lively and important debate over the lawfulness of taking humans “out of the loop” during lethal targeting.

High Contracting Parties, international and regional organizations and civil society have consistently discussed since 2014, including in informal meetings, at a Group of Governmental Experts (GGE) under the United Nations Convention on Certain Conventional Weapons (CCW). At present, LAWS still lack a clear and agreed definition and many countries believe such weapon systems do not exist. However, LAWS are closely related to existing weapons and new weapon systems that are being developed. Therefore, the solution to the issue of LAWS is very complex and covers wide areas.

This thesis is intended to help infuse granularity and precision into the computer science and legal debates surrounding such weapon systems and their future uses.

How to apply AI technology for JMSDF ships to realize smaller number of crew

SUGIMOTO Shigeo

In recent year it can be seen computer system applied AI technology for many fields.

Since it have been enforced “Science technology basic law” in 1995 and established “Council for science, technology and innovation” in the Cabinet, ICT , included AI technology, was accelerated of development for many systems.

On the field of Commercial ships, conventionally it have been trying to decrease ship crew by AI technology adoption such as automatic detect, processing and identification for navigation, engine control and others. And now it is going to be “Full automatic navigation ship”.

JMSDF is also must make an effort to insert ICT technology for the ship not only to epuie up-dated system but also difficulty of keeping enough ships’ crew under predicted situation of future population.

But the JMSDF ships are there for the perpose, it would not easy to reduse the number of crew simply to adopt AI.

On this point of view, this document is trying to find out how to reduce crew’s work by adoption of AI technology for JMSDF ships for the goal of smaller number of ship’s crew not to lose basic operate capability.

“Work-life Balance” to “Work-life Management” : Work style reform of JMSDF

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OKAMURA Yuji
IGARASHI Hiroshi
RYU Jae-hak

This research is an overview of what kind of work-life balance concept

should be introduced and practiced in JMSDF.

In Promoting the work-life management, we should consider our peculiarity service environment and abandon the binary opposition-like thought which divide merely working hours and living time.

By recognizing the “work” as the mission, the “life” as human life including the work, it is important to manage actively the work and life of each member according to their life style and life stage, and to contribute to the mission accomplishment.

JMSDF should promote work-life management in order to create a virtuous cycle by accumulating highly productive work and interact each other.