

Optimizing Joint Operational Readiness: Lessons for Japan

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INTRODUCTION

Warfare has entered a new era of transformation in recent years, not simply with the introduction of new technologies and diversification of domains, but also with new concepts and doctrines to utilize those assets. Consequently, warfare has become overwhelmingly complex, requiring defense forces to synergize their capabilities and readiness to deal with the multifaceted challenges. Today, an increasing number of defense forces around the world have accelerated their efforts to enhance their joint operations readiness as a means of effectively and efficiently conducting both cross and multi-domain operations. In particular, joint operations readiness is the means of synergistically boosting a defense force's ability to gain an edge over its opponent even under disadvantageous conditions. But while joint operations readiness is vital, it is also critical to properly understand the nature of, and challenges in attaining joint operational readiness.

This paper aims to discuss the significance of, and the challenges in optimizing joint operations readiness. The paper starts with the basics by looking at the definition of joint operations readiness followed by an overview of the key developments to date. Then the paper will analyze the key drivers and enablers of joint operations readiness, and the key challenges in achieving them. Finally, the paper will consider the key lessons for the Japan Self-Defense Force (JSDF) as it works to boost its joint operations readiness for cross-domain operations.

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1. DEFINING JOINT OPERATIONS READINESS

In simple terms, “joint operations” can be defined as the coordination and integration of a force’s capabilities to operate within and across various warfighting domains. Taking a step further, “joint operations readiness” is about ensuring the right level of readiness to conduct joint operations.² Doctrinal definitions orbit around similar ideas albeit with some variations in wording. On the one hand, the simplest definition is provided by the North Atlantic Treaty Organization (NATO), describing joint operations as “activities, operations and organizations in which elements of at least two services participate.”³ On the other hand, the United States (US) Joint Chiefs of Staff provides a more complex definition, explaining joint operations as “military actions conducted by joint forces and those Service forces employed in specified command relationships with each other, which of themselves, do not establish joint forces.”⁴ While states may vary in how they word the definition of joint operations in their doctrines, white papers, and other official documents, they are nonetheless based on the same principles.

Despite the importance of joint operations readiness, works on the topic are surprisingly limited. Much of the existing works on joint operations and readiness come in the form of doctrines and policy papers. In doctrines, the most well-known is the “JP” series by the US Joint Chiefs of Staff. The JP series consists of scores of doctrines that are hierarchically organized in the order of “capstone pubs” on “joint warfighting” and “the joint force” followed by “keystone pubs” on “joint personnel support,” “joint intelligence,” “joint campaigns and operations,” “joint logistics,” “joint plans,” and “joint communications

² For in-depth discussions on the definition of readiness, see: Richard K. Betts, *Military Readiness: Concepts, Choices, Consequences* (Washington, DC: Brookings Institution Press, 1995).

³ North Atlantic Treaty Organization, “Allied Joint Doctrine (AJP-01),” (North Atlantic Treaty Organization, 2017).

⁴ US Joint Chiefs of Staff, *Joint Publication 3-0: Joint Operations* (Washington, DC: US Joint Chiefs of Staff, 17 January 2017). p. ix.

systems,” and then with “core doctrine pubs” that include more specific doctrines concerning the respective keystone areas.

For publicized works, much are in the form of policy reports by think tanks. In the US for example, key security think tanks analyze joint operations readiness for the purpose of consulting and recommending improvements in the US forces’ joint operations readiness (e.g. CSBA, RAND, etc.). Then there is also the *Joint Forces Quarterly* by the National Defense University that tackles various issues relating to joint operations readiness albeit focusing on the US. Government-affiliated research institutions and civilian think tanks in other countries also conduct research on joint operations readiness albeit on a smaller scale compared to the US, with a mix of works that look at jointness in foreign countries as well as their own forces.

Conceptual works on joint operations make up the minority. The most in-depth work on joint operations was offered by Milan Vego, covering both the conceptual and practical aspects of joint operations.⁵ Some take the historical approach, with scholars such as Roger Beaumont and Stuart Griffin providing broad but detailed overviews of the historical developments in joint operations around the world.⁶ There are also works that collectively look at the components of joint operations, although in many cases they tackle the topic from the standpoint of a particular service branch or domain.⁷ Yet aside from the above, scholarly analyses of joint operations and readiness have mostly been

⁵ Milan N. Vego, *Joint Operational Warfare: Theory and Practice* (Newport, RI: Naval War College, 2007).

⁶ See: Roger A. Beaumont, *Joint Military Operations: A Short History* (Westport, CT: Greenwood Press, 1993); Stuart Griffin, *Joint Operations: A Short History* (London, UK: UK Ministry of Defence, 2005).

⁷ For examples, see: Ryan Burke, Michael W. Fowler, and Kevin McCaskey, *Military Strategy, Joint Operations, and Airpower: An Introduction* (Washington, DC: Georgetown University Press, 2018); Jon R. Lindsay and Erik Gartzke, *Cross-Domain Deterrence: Strategy in an Era of Complexity*, 1st ed. (New York, NY: Oxford University Press, 2019).

part of writings that examine strategic planning and military operations.⁸

Despite the debates on how joint operations readiness should be shaped, there is nonetheless consensus about its importance to national defense. Still, one needs to properly contextualize why joint operations readiness is critical. Above all, joint operations readiness is the means, not ends of enhancing the force's ability to effectively and efficiently deal with the threats and vulnerabilities. Specifically, joint operations readiness is about synergizing the various capabilities to diversify the number of options for the execution of missions for cross- and multi-domain operations. While creating a "cross-domain synergy" is one of the key objectives of joint operations readiness, there is a caveat in distinguishing "cross-domain" and "multi-domain" operations, where the latter is about operating in all domains while the former is about combining and integrating readiness across various domains via all organizations.

Joint operations readiness is also about diversifying the means and effects to gain an asymmetric edge over the adversary. Scholars such as Daniel Moran, argue that jointness is about "cooperating to their collective advantage."⁹ As David G. Perkins correctly claims, "war is the competition of asymmetry."¹⁰ Milan Vego succinctly explains the advantages of jointness in the asymmetric edge context, arguing that it stems from "complementary capabilities, greater flexibility, and hence, a greater number of options...and exploitation of enemy vulnerabilities by employing one's forces asymmetrically."¹¹ One useful metric is B.A.

⁸ For examples, see: Jan Angstrom and Jerker Widen, *Contemporary Military Theory: The Dynamics of War* (London, UK; New York, NY: Routledge, 2014).; David Jordan et al., *Understanding Modern Warfare*, 2nd ed. (Cambridge, UK: Cambridge University Press, 2016).

⁹ Daniel Moran, "Geography and Strategy," in *Strategy in the Contemporary World*, ed. John Baylis, Jeannie L. Johnson, and James J. Wirtz (Oxford, UK: Oxford University Press., 2022). p. 166.

¹⁰ Modern Warfare Institute, *Ep. 40 – The Future Multi-Domain Battlespace with Gen. David Perkins*, podcast audio, Modern War Institute Podcast 6 Dec 2017.

¹¹ Vego, *Joint Operational Warfare: Theory and Practice*. p. V-99.

Friedman's nine tactical tenets that include: four physical tenets of maneuver, mass, firepower, and tempo; four mental tenets of deception, surprise, confusion, and shock; and one moral tenet of moral cohesion.¹² Friedman's tactical tenets – particularly the physical and mental – are useful in understanding how jointness can diversify both the means and effects of operations. The asymmetric abilities allow forces with options to not only gain the upper hand but more importantly create effects under degraded and disadvantageous environments.

For states eyeing to establish joint operations readiness, attaining the above is far from easy given that it would involve major structural adjustments and reconfigurations. After all, joint operations readiness is about both command and control, as well as management. In command and control, the joint command is responsible for executing the joint functions and readiness to achieve the force's missions. As for management, the joint staff and its directorates organize and manage the various functions and readiness of the forces. Moreover, joint operations readiness pivots much on context. Richard K. Betts for instance, continuously stressed the importance of shaping a force's readiness according to the questions of “for what,” “of what,” and “for when.”¹³ Hence states must ensure that they design, implement, and operationalize joint operations readiness according to those lines to properly deal with their security threats and vulnerabilities.

2. DEVELOPMENTS IN JOINT OPERATIONS

Joint operations itself is not a new concept and grew in congruence with the developments in the nature of warfare, as well as the structural changes within military institutions. While amphibious operations would be considered “joint” by today's standards, those of the ancient and medieval periods were simply the use of the maritime domain for land operations and not the coordination of different branches and

¹² B.A. Friedman, *On Tactics: A Theory of Victory in Battle* (Annapolis, MD: Naval Institute Press, 2017). p.22.

¹³ Betts, *Military Readiness: Concepts, Choices, Consequences*.

institutions. Early developments in actual joint operations can be traced back to Europe in the sixteenth century, and the wars in the following centuries increasingly involved coordination between the land and naval forces.¹⁴ More organized forms of joint operations developed during and after the First World War. As Edward R. Lucas and Thomas Crosbie argue, the “strategic and tactical failures” in operations like the Gallipoli Campaign and the Battle of the Somme “forced strategists to recognize that modern warfare required coordination of different assets both within and across services.”¹⁵ But the biggest changes came with the emergence of air operations that pushed joint operations beyond amphibious operations. In essence, the addition of the air domain added new layers that introduced new forms of operations and means of delivering effects, including maneuverability and speed that transformed the nature of warfare.¹⁶

Recognition of jointness as an essential part of military readiness grew in the years following the Second World War (WWII) – particularly in the US. Immediately after WWII, General Dwight D. Eisenhower stated “[s]eparate ground, sea and air warfare is gone forever. If ever again we should be involved in war, we will fight it in all elements, with all services, as one single concentrated effort.”¹⁷ The demand for jointness at this time was not simply because of the lessons of WWII and the Korean War, but the growing complexities of modern warfare shaped by new operational and tactical ideas, as well as new technologies. The introduction of nuclear weapons and strategic missiles were particularly significant, where although the weapons themselves are not “joint” per

¹⁴ See: Jan Glete, *Warfare at Sea 1500-1650: Maritime Conflicts and the Transformation of Europe* (London, UK; New York, NY: Routledge, 2000).; Williamson Murray, “The Evolution of Joint Warfare,” *Joint Force Quarterly* 31 (Summer 2002).

¹⁵ Edward R. Lucas and Thomas Crosbie, “Evolution of Joint Warfare,” in *Handbook of Military Sciences*, ed. Anders McD Sookermany (Springer, 2021). p. 3.

¹⁶ See: John Andreas Olsen, *Airpower Reborn: The Strategic Concepts of John Warden and John Boyd* (Annapolis, MD: Naval Institute Press, 2014).; Martin Van Creveld, *The Age of Airpower*, 1st ed. (New York: Public Affairs, 2011).

¹⁷ Dwight D. Eisenhower’s memo to Chester W. Nimitz, April 17, 1946 cited in: Murray, “The Evolution of Joint Warfare.” p. 36.

se, they nonetheless forced major realignments at the strategic, operational, and tactical levels because of their effects.

Still, the actual developments in joint operations readiness during much of the Cold War years were incremental. The biggest developments came in the final decade of the Cold War, particularly with the emergence of AirLand Battle in the early 1980s. Some developments also came from failures, such as the case when the US forces encountered major issues in inter-branch coordination during Operation Urgent Fury in Grenada in 1983. Consequently, the US Congress passed the Goldwater–Nichols Department of Defense Reorganization Act of 1986 which was essentially a political enforcement of jointness among the services. Consequently, the Goldwater-Nichols Act disciplined the US forces to generate concepts and doctrines for joint operational readiness, as well as produce and utilize technologies optimized for those purposes.

The 1990s was a watershed period for joint operations, particularly as the US ventured into what became known as “network centric warfare (NCW)” conceptualized by Arthur K. Cebrowski. In essence, NCW was about centrally networking various assets as a means of enhancing and speeding up command and control.¹⁸ In particular, NCW pivoted on the “cooperative engagement capability (CEC)” that links the high-performance sensor and engagement grids.¹⁹ While NCW was much about seamlessly connecting the strategic, operational, and tactical layers, it enabled greater command and control of assets across various domains.

Entering the 21st century, there was a pressing need to adapt to multi-domain warfare. In 2017, the US Defense Advanced Research Projects Agency (DARPA) unveiled a new concept known as “Mosaic Warfare” (also interchangeably called “decision-centric warfare”).²⁰ Following

¹⁸ Arthur K. Cebrowski and John H. Garstka, “Network-Centric Warfare: Its Origin and Future,” *Proceedings* 124, no. 1 (Jan 1998). pp. 32-33.

¹⁹ *Ibid.*, p. 33.

²⁰ DARPA, “Strategic Technology Office Outlines Vision for “Mosaic Warfare,”” *DARPA* (4 Aug 2017), <https://www.darpa.mil/news-events/2017-08-04>.

DARPA's original, both the Mitchell Institute for Aerospace Studies and the Center for Strategic and Budgetary Assessments (CSBA) published what could be called their own versions that renders particular aspects such as command and control, and operational art.²¹ Although the concept could be broadly considered as a successor of NCW, the two are starkly different in two aspects. Technologically, NCW was much about networked interoperability of various high-end command, control, communication, computer, intelligence, surveillance and reconnaissance (C4ISR) assets used in different domains, while Mosaic Warfare utilizes artificial intelligence and unmanned systems as interchangeable intermediary connectors. In command and control, unlike NCW which is based on a centralized network, Mosaic Warfare vouched for a more interconnected decentralized network.

The Mosaic Warfare concept was part of the US's effort to establish a more updated form of command and control for future multi-domain operations, known as Joint All-Domain Command and Control (JADC2) that focuses on “connect[ing] sensors from all of the military services—Air Force, Army, Marine Corps, Navy, and Space Force—into a single network.”²² DARPA's Mosaic Warfare was pursued alongside the Department of Defense (DOD) efforts for “Fifth Generation (5G) Information Communications Technologies,” “Fully Networked Command, Control, and Communications (FNC3),” as well as the Army's

²¹ See: David A. Deptula, Heather R. Penney, Lawrence A. Stutzriem, and Mark Gunzinger, *Restoring America's Military Competitiveness: Mosaic Warfare* (Arlington, VA: Mitchell Institute for Airpower Studies, 2019).; Bryan Clark, Daniel Patt, and Harrison Schramm, *Mosaic Warfare: Exploiting Artificial Intelligence and Autonomous Systems to Implement Decision-Centric Operations* (Washington, DC: Center for Strategic and Budgetary Assessments, 2020). For comparison of the ideas by DARPA, Mitchell Institute of Airpower Studies, and CSBA, see: Hideyuki Takahashi, “gunjiteki ishiketteigainennno sinkyuuhihakubunseki: beikokuno “mozaikusen” gainennno kantenkara [A Comparative Analysis of Old and New Concepts of Military Decision-Making: From the Perspective of the U.S. “Mosaic Warfare” Concept],” *kaikankousenryakukenkyyu [JMSDF Command and Staff College Review]* 10, no. 2 (Dec 2020).

²² John R. Hoeh, “Joint All-Domain Command and Control: Background and Issues for Congress,” (Washington, DC: Congressional Research Service, 2022). p. 1.

“Project Convergence,” Navy’s “Project Overmatch,” and Air Force’s “Advanced Battle Management System (ABMS).”²³ In simple terms, JADC2 can be labeled as the defense version of the “Internet of Things (IoT)” and has been termed by some as the “Internet of Warfighting Things (IoWT).”²⁴ The question of whether JADC2 is evolutionary or revolutionary, and more importantly, how it can be successfully implemented and operationalized is a topic of debate. Nevertheless, there is a clear trend toward the development of new joint systems as the new means of warfighting.

3. DRIVERS AND ENABLERS OF JOINT OPERATIONS READINESS

The developments for joint operations readiness have been driven by strategic, operational, and tactical demands. While much pivots on the need to defend and deter against adversarial actions, as well as conducting humanitarian assistance and disaster relief operations, it is the underlying changes in the nature of the conditions and challenges that ups the demands for greater joint operations readiness. These include but are not limited to: increasing tensions and the growingly hazardous strategic environment; diversity of warfare domains that include, land, maritime, air, cyber, outer space, and cognitive domains; expansion of adversaries’ anti-access and area denial that exposes one’s forces and operations in contested environments; and the emergence of new forms of hybrid warfare. Taken together, such conditions have upped the demands for better enablers that will allow the forces to effectively and efficiently execute multi-domain operations, and also accelerate the OODA loop process beyond the adversary’s capacity.

²³ Ibid., p. 1.

²⁴ Breaking Defense, “When We Talk About What Will Enable JADC2, We’re Really Talking About the Internet of Warfighting Things,” *Breaking Defense* (22 Mar 2023), <https://breakingdefense.com/2023/03/when-we-talk-about-what-will-enable-jadc2-were-really-talking-about-the-internet-of-warfighting-things/>.

3.1 Operational Art

The first pillar is the transformation of operational art – an aspect that is widely known but too often inadequately conceptualized. Vego aptly notes “operational art” as something that “serves both as a bridge and as an interface between strategy and tactics.”²⁵ While the abstract understanding of command and management at the operational level can be traced back to the eighteenth century, it was the Russian military theorist Alexander Svechin who conceptualized “operational art” in the 1920s. The momentum for a more modern form of operational art came in the 1980s as the US reconstructed its operations, particularly with the shift from attrition to maneuver-based operations influenced by thinkers such as Edward Luttwak.²⁶ Further demands for jointness came from new transformational concepts that emerged at the turn of the millennium, with NCW, effects-based operations (EBO), and rapid decisive operations (RDO).

Without a doubt, developments and transformations in military operations have been the biggest drivers of jointness.²⁷ However, it is important to note that operational art developed through the combination of innovation and adaptability.²⁸ While strategists and theorists were able to generate new fighting methods through innovation, much also came from adaptability (or lessons) from wars. Thus the demands for jointness come in various shapes and sizes according to the nature of the transformations in operational art.

²⁵ Vego, *Joint Operational Warfare: Theory and Practice*. p. I-3.

²⁶ For examples, see: Edward N. Luttwak, “The Operational Level of War,” *International Security* 5, no. 3 (1981).

²⁷ For an extensive analysis of the connection between operations and jointness, see: Vego, *Joint Operational Warfare: Theory and Practice*.

²⁸ See: Keizo Kitagawa, *gunjisoshikino chiteki inobesyon: doktorinto sakusenjutsuno souzouryoku [Intellectual Innovation of Military Organizations: Creativity through Doctrine and Operational Art]* (Tokyo, Japan: Keiso Shobo, 2020).

3.2 Technological Advancements

The second pillar is technological developments that have impacted joint operations readiness in two ways. On the one hand, new technologies have enabled greater networking of capabilities as well as command and control systems. On the other hand, new weapons systems pursued through the tactical, platform-centric approach combined with the specific nature of domains have created capability stovepipes that require upgraded joint architectures.

The efforts to find the technological solutions for jointness center on the importance and transformation of the “kill chain” (or “effects chain”) defined by Christian Brose as the three-step process of situational awareness, decision-making, and execution.²⁹ While the effect chain itself is a logical process that has existed as long as the history of warfare, overwhelming developments have taken place in recent decades. In particular, the evolution of information and communications technologies has been significant for C4ISR systems, not only in enhancing speed but also in networking various capabilities and domains to better intergrade “sensor-shooter” systems, such as in the case of tactical datalink systems that create a common operational picture. Moreover, technological developments have opened new horizons that create new demands regarding the nature of jointness. For instance, the need for more integrated and networked “sensor-to-shooter” systems for cross- and multi-domain operations required transitions from the original linear “effects chain” toward an “effects web” concept as seen in JADC2.

3.3 Institutional Changes

The third pillar of jointness relates to the growing complexities of defense institutions. Over the course of history, the diversification of warfare domains led to the institutionalization of operations, resulting

²⁹ Christian Brose, *The Kill Chain: Defending America in the Future of High-tech Warfare*, First edition, ed. (New York, NY: Hachette Books, 2020).

in the establishment of ground, maritime, and air forces (in some countries even cyber and space), as well as various commands within those branches.

While the establishment of branches and commands provided forces with more options to create effects, it also led to doctrinal differences, inter-branch rivalries, and stove-pipes that created complexities in command and control, and management of the forces that could inhibit defense readiness as a whole. Efforts to institutionalize joint operations date back to the early twentieth century. In the US, the Joint Army and Navy Board was established in 1903 but remained loose and underdeveloped, and it was not until the Arcadia Conference after Japan attacked Pearl Harbor when the US established the Combined Chiefs of Staff that later became the Joint Staff in 1949. The United Kingdom (UK) established the Chiefs of Staff Subcommittee (CSS) under the Committee of Imperial Defense in 1923 tasked with coordinating the land, naval, and air forces.

In command and control, the purpose of joint institutions is to plan, manage, and commandeer assigned combatant forces. Moreover, joint command and control also helps in setting the operational core identity of the armed forces and particular commands for specific operations. Broadly, unified commands can come in forms of: headquarters in charge of all joint-affiliated combatants; geographic commands in charge of combatants in a given area of responsibility; and functional commands in charge of combatants for particular missions.

The dynamics of unified commands varies state to state, and there is no “one size fits all” form of joint command and control. The specific form of joint command and control is determined not simply by the size of the forces and areas of operations, but the nature of the forces, their capabilities, and operations. The US has the longest history and arguably has been the most dynamic in institutionalizing unified

combatant commands.³⁰ Currently, the US has 11 combatant commands (CCMD), with seven geographic commands (Africa, Central, European, Indo-Pacific, Northern, Southern, Space) and four functional commands (Cyber, Special Operations, Strategic, Transportation). In contrast, China has five branches, consisting of the PLA Ground Force, Navy, Air Force, Rocket Force, and Strategic Support Force that are subordinate to five theater commands (Central, Eastern, Northern, Southern, Western). The UK has the Strategic Command in charge of preparing and managing joint operations, and also houses the Permanent Joint Headquarters that oversees the UK's overseas operations.

4. ISSUES IN ATTAINING JOINT OPERATIONAL READINESS

As a growing number of forces around the world are working to develop joint operations readiness, there are several caveats in how they shape, implement, and operationalize their efforts. The bottom line is that although planning and designing joint operations readiness is hard enough, implementing and operationalizing them is even harder. Defense planners must go through the tough process of not only connecting, coordinating, and integrating various hardware and software, but also ensuring the right level of readiness to execute the joint functions. As it was correctly claimed in an article, “all Services must coordinate divestiture of mission sets to ensure coverage of required capability in the joint force.”³¹ This, however, requires trade-offs among the branches to optimize the forces to create joint, synergetic effects.

³⁰ See: Edward J. Drea et al., *History of the Unified Command Plan 1946-2012* (Washington, DC: Joint History Office, 2013).; Andrew Feickert, “The Unified Command Plan and Combatant Commands: Background and Issues for Congress,” (Washington, DC: Congressional Research Service, 2013).

³¹ Curt Butler, Phillip Henrikson, Lisa Reyn Mann, and Palmer Roberts, “Beyond a Credible Deterrent: Optimizing the Joint Force for Great Power Competition,” *Joint Force Quarterly* 108 (Jan 2023). p. 57.

One important point is that there is no “one-size-fits-all” model of joint operations readiness. Although the US’s JADC2 may be regarded as the most advanced model of joint operations readiness, it is also one that is hard to emulate for many states. This is not simply because of the scale, mass, and diversity of the US forces and their operations, but also the platforms and infrastructures they possess. Hence the systems for joint operations readiness would come in various shapes and sizes with great variations, molded by factors including, but not limited to the state’s: concepts and doctrines; structure of the forces; and platforms and infrastructures.

4.1 Shaping a Joint Operations Identity

While joint staff offices and joint commands are undoubtedly important institutions to plan, prepare, facilitate, and execute joint operations readiness, it is equally vital to have the right mechanism to integrate the different branches and produce the force’s joint operations identity. The US, for instance, has the “Family of Joint Concepts” that consists of: Capstone Concept for Joint Operations (CCJO) that broadly sets the framework; Joint Operating Concepts (JOC) that provide the nexus between the strategic guidelines to specific operations; and the Supporting Concepts to define the technical details of the JOCs. But even if the mechanisms are in place, the foremost important task is to produce the concepts and doctrines that integrate and empower the different service branches.

Without doubt, producing joint operations concepts and doctrines is far from easy. Efforts for jointness are often impeded by inter-branch politics and rivalries. While the services have the common goal of national defense, they have different ideas on *how* to achieve those ends. As Elinor Sloan explains, military strategists and theorists often resisted recognition of other domains.³² The problem here is not simply about the differences in synergizing the different operational concepts

³² Elinor C. Sloan, *Modern Military Strategy: An Introduction*, 2nd ed. (London, UK: Routledge, 2017). p. 121.

and doctrines, but the fears held by the service branches over organizational equity and even survival. In the case of the UK in the late 1930s, while the establishment of the CSS allowed the structurization of jointness, it fell short of joint doctrines and readiness as the individual branches viewed that such undertakings would threaten their autonomy and even survival.³³ Japan also had similar experiences during the early years of the JSDF that still manifest to this day. Although Japan established the Joint Staff Council when the JSDF was conceived, it remained to be a meeting of the three branches rather than an organ for joint operations. The primary reason was due to fears of over-empowering the defense institution that could potentially undermine civilian control. Yet the other factor stems from the contrasting operational concepts and doctrines, as well as institutional identities that led to mutual concerns among the branches that jointness would lead to the loss of their autonomy.³⁴ Such issues, not only blocked the conceptualization of jointness but also led to platform-centric planning that exacerbated the stovepiping within the JSDF.

The other major challenge to formulating joint concepts and doctrines is caused by the fact that the ground, naval, air, and cyber branches are inherently different in their operational and tactical functions. Hence although it is easy to blame inter-branch rivalries and different service cultures, those should not be confused with the simple lack of familiarity with one another's functions in the respective domains. To overcome such issues, forces need to conform to the doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) framework to build and strengthen their joint foundations.

It is also important to note that joint concepts and doctrines are not permanent. As Thomas Crosbie argues, joint functions are a “paradox of stability and change,” where they serve as the “coherent framework” for

³³ Murray, “The Evolution of Joint Warfare.” p. 33.

³⁴ Akihiro Sadoh, *jeitai shiron: sei-kan-gun-min no 60-nen [Historical Studies on the JSDF: 60 Years of Governance, Bureaucracy, Military, Public]* (Tokyo: Yoshikawa Kobunkan, 2014). p. 99.

operations while being continuously revised and updated.³⁵ Operational and tactical concepts and doctrines are based on the premises of the present, but that does not mean that they are suited to tomorrow's warfight. Hence states and their forces must have adequate processes to continuously assess and update the concepts and doctrines to avoid becoming inadaptable to the threats and challenges of the future.

4.2 Establishing Equitable Joint Institutions

Serious problems are encountered in the institutionalization of readiness. Generally, forces with institutionally and doctrinally well-established branches tend to be more rigid and often resistant to becoming part of integrated institutions. The problems are not simply about inter-branch rivalries, but about the simple fact that the command and control structures of ground, naval, and air branches differ. Fixing these problems are far from easy, with some even arguing that the current command and control system needs to be overhauled to make one that enables smoother jointness.³⁶

Problems are compounded by bureaucratic and budgetary contests, where each branch will vouch for capabilities not just for their readiness but to get a bigger lion's share of the defense budget. Consequently, individual branches habitually pursue readiness buildups that benefit themselves but not necessarily in the context of joint operations readiness. Issues are most evident in heavy-duty platforms that create capability surpluses beyond the state's operational scope. For example, if a state that should focus more on sea denial than sea control starts to pursue aircraft carriers, such assets would symbolically boost the navy's capabilities while substantively leading to excessive costs that undermine joint operations readiness. In the US, one of the purposes of

³⁵ Thomas Crosbie, "Getting the Joint Functions Right," *Joint Force Quarterly* 94 (July 2019). p. 97.

³⁶ Leland Cowie, Todd Graff, Craig Cude, and Brad Dewees, "To Build Joint Command and Control, First Break Joint Command and Control," *War on the Rocks* (2 July 2021), <https://warontherocks.com/2020/06/chinese-debates-on-the-military-utility-of-artificial-intelligence/>.

the Goldwater-Nichols Act was to minimize such problems by strictly putting the secretaries of branches under the secretary of DOD. Indeed, such measures do not guarantee cost-saving, as some assets for joint operations could prove to be more expensive than their predecessors. Nevertheless, centralizing the management of branches with focus on joint operations readiness lessons the zero-sum imbalances and frictions.

It must be noted, however, that forcing jointness also has its downsides, where there could be greater complexities and compromises that undermine the readiness of the forces as a whole. For instance, Hew Strachan critiqued that the British efforts created new problems, where jointness became “dysfunctional in the process of becoming functional.”³⁷ Hence the trick is how to keep in mind the fact that the goal should not be about establishing joint institutions, but rather institutionalizing jointness in ways that elevate the force’s readiness as a whole.

4.3 Technological Fluency

There are also technology-related caveats in enhancing joint operations readiness. In particular, the effectiveness of joint operations readiness pivots on the quality of C4ISR systems. Moreover, given the range of domain-specific radars and sensors, intermediary connectors and software are critical in creating a common operational picture. Today, new and emerging technologies such as AI and cloud-based systems are proving their potential to significantly enhance C4ISR systems and consequently joint operations readiness. Considering the trend for centralized command and control and decentralized execution, a greater array of C4ISR technologies needs to be developed and distributed to commanders and their staffs.

Naturally, the problem is the costs associated with the development, acquisition, distribution, and operationalization of the devices,

³⁷ Hew Strachan, “One War, Joint Warfare,” *The RUSI Journal* 154, no. 4 (2009). p. 23.

instruments, and networks that are central to joint operations readiness. Similarly, sound joint operations readiness depends much on the quality of transport infrastructures and logistics chains. Moreover, given that joint operations involve the coordination and integration of various capabilities and units, both interoperability and interchangeability are critical. Consequently, even if the states and their forces envision attaining greater joint operations readiness, lacking developments in infrastructures, instruments, and devices, as well as other platforms would undermine their efforts.

Although it is easy to look at the hardware issues, the other major challenge is how to adapt to, and operationalize the technologies. Across the board, forces will need to align themselves to the new digital age, to which Jasmin Alsaied correctly stressed the importance of enriching a “digitalized culture” within the forces.³⁸ The problem is not simply about fluency in hardware and software, but also working in faster OODA loops. At the operational level, commanders and staff will need to work out ways to process greater volumes of information and then decide and direct the course of action. Even at the tactical level, Gabe Camarillo and Randy George noted “simplicity,” “intuitiveness,” “low signature,” and “continuous iteration” as the “four baseline requirements warfighters need from their command and control systems in tomorrow’s fight.”³⁹

5. IMPLICATIONS FOR JAPAN: CHALLENGES AHEAD

The developments and issues concerning joint operations readiness raise a number of implications for Japan and the JSDF. The security environment surrounding Japan has become increasingly challenging in recent years, not only with the threats posed by anti-status quo powers in the region and the evolving multi-domain threats but also the risks

³⁸ Jasmin Alsaied, “Developing a JADC2 ‘Culture’ for the Navy,” *Key Terrain Cyber* (19 July 2023).

³⁹ Gabe Camarillo and Randy George, “Command and Control in a Digital Age: The U.S. Army’s Blueprint for the Future Battlefield,” *Army Magazine* 73, no. 7 (July 2023).

of simultaneous contingencies.⁴⁰ Making matters worse, despite the promised increases in defense spending, Japan remains to face constraints in enhancing its defense readiness. Against this backdrop, joint operations readiness is imperative for Japan. Yet there are several questions that Japan will need to consider going forward.

In December 2022, Japan released the National Security Strategy (NSS), National Defense Strategy (NDS), and Defense Buildup Plan (DBP) which significantly enhanced Japan's national security and defense planning. In particular, the NDS outlined seven "key capabilities for fundamental reinforcement of defense capabilities," including: "stand-off defense capabilities;" "integrated air and missile defense capabilities;" "unmanned defense capabilities;" "cross-domain operation capabilities;" "command and control and intelligence-related functions;" "mobile deployment capabilities and civil protection;" "sustainability and resiliency."⁴¹ Among the seven items, "unmanned defense capabilities;" "cross-domain operation capabilities;" and "command and control and intelligence-related functions" are categorized as those essential to "gain superiority across domains."⁴²

The key agenda for the JSDF is the establishment of the joint command system promised in the 2022 NDS.⁴³ Although Japan established the Joint Staff Office in 2006, the push for a joint command headquarters never materialized when Japan revised its defense planning doctrines (National Defense Program Outlines) in 2010, 2013, and 2018 – despite the emphasis on jointness and integration of the three JSDF branches. The defense budget request for 2024FY states that the Ministry of

⁴⁰ Markus V. Garlauskas, "The United States and Its Allies Must Be Ready to Deter a Two-front War and Nuclear Attacks in East Asia," *Atlantic Council Report* (16 Aug 2023), <https://www.atlanticcouncil.org/in-depth-research-reports/report/the-united-states-and-its-allies-must-be-ready-to-deter-a-two-front-war-and-nuclear-attacks-in-east-asia/>.

⁴¹ Japan Ministry of Defense, "National Defense Strategy," (16 December 2022). pp. 23-29.

⁴² Japan Ministry of Defense, "Defense Programs and Budget of Japan - Overview of FY2023 Budget," (Tokyo, Japan2022). p. 3.

⁴³ Japan Ministry of Defense, "National Defense Strategy." p. 30.

Defense (MOD) will establish a Permanent Joint Headquarters (PJHQ) consisting of 240 staff by March 2025.⁴⁴ While the details of the PJHQ remain undetermined, its establishment will no doubt be an essential step, as it will allow not only more effective and efficient command and control for cross-domain operations but also set the core framework of the JSDF's operations.

Once established, the PJHQ would need to shape the core operational framework of the JSDF, which requires Japan to think about and define its key operations, capabilities, and readiness needed, rather than simply integrating the JSDF's capabilities. Moreover, given the challenges Japan faces, the JSDF will need to formulate its joint operations concepts and doctrines based on the premise that it will be fighting under the most disadvantageous conditions. How the JSDF solves the complex puzzle, will depend much on innovation. While there are various possibilities, one critical point would be to place greater emphasis on asymmetric operations to dislocate the level of engagement to disrupt the opponent's effects chain/web and penetrate their vulnerabilities.

The next question is how Japan will arrange the joint combatant commands under the PJHQ. Given the nature and array of the threats Japan faces and the means required to contextually defend against them, the JSDF faces the tough question of how to create the right composition of both geographic and functional joint commands. For geographic commands, each of the JSDF branches currently operates in five zones, but the location and shape of the operation areas differ. The JSDF therefore, could align the three branches' area of operations so that the JSDF can contextually operate according to the area-specific circumstances and conditions. As for functional commands, the JSDF already has the Cyber Defense Command and the Intelligence Security Command and has recently established the Maritime Transport Unit,

⁴⁴ Japan Ministry of Defense, "Defense Programs and Budget of Japan - Overview of FY2024 Budget Request (Japanese version)," (Tokyo, Japan2023). p. 11.

but the latter could be expanded into a Transportation Command to include all modes of logistics.

Of course, simply designing, shaping, and establishing the commands and doctrines alone are insufficient in attaining joint operations readiness. The real big task for the JSDF is to sustainably execute the process to enhance its joint operations readiness. In particular, the PJHQ and JSO will need to work closely to shape and apply the readiness evaluation, planning, and implementation processes, and also formulate their own DOTMLPF model to shape and nurture the JSDF's joint operations readiness. Moreover, given the importance of coordination and cooperation with the US and other like-minded states, both interoperability and interchangeability would be critical, consequently making "DOTMLPF-II" a suitable framework.

The NSS, NDS, and DBP has set a new path for Japan's national security and also defense planning. Among the various agendas in Japan's defense planning, joint operations readiness is arguably the one that will make or break the JSDF's ability to create the needed effects for national defense. Although establishing jointness and developing all the structures and enablers will take time, the critical point is that Japan has made a start on what will significantly sharpen and strengthen the JSDF's strategies, operations, and readiness.