

Summaries in English

Feature: Future Roles of Air Power: Learning Lessons from War in Ukraine

Soviet and Russian Airpower Philosophy

KOIZUMI Yu

This paper traces the evolution of Soviet and Russian air-power thought from its origins in the early twentieth century to the present Russian Federation. Despite Russia's status as a major air-power with extensive combat experience, its theoretical contributions have rarely gained global recognition. The study demonstrates that Russian air-power thinking has been shaped less by independent doctrinal innovation than by political intervention, industrial constraints, and the persistent primacy of ground operations. From the Red Army's early emphasis on reconnaissance and close air support, through the institutional fragmentation of the Cold War and the rise of nuclear forces, Russian air-power remained largely subordinate to land warfare and strategic defense priorities. After 1991, debates among traditionalists, revolutionists, and modernists reflected competing visions of large-scale attritional warfare, high-tech precision strike, and small-war contingencies. Although Russia experimented with precision weapons, UAVs, and network-enabled strike systems in Ukraine and Syria, structural limitations—economic, technological, and organizational—continued to hinder doctrinal consolidation. The paper concludes that Russian air-power thought has evolved through adaptation rather than theoretical coherence, shaped by political volatility, resource scarcity, and a deep-rooted belief in the centrality of land power.

[Research Note]

The Past, Present and Future of Air Power Studies

TANAKA Yoshikazu

This paper surveys the genealogy of air-power studies, identifies the gap between existing theory and the realities of contemporary air operations, and seeks to offer insights into future issue and directions for air power studies. Historically, studies of air power have been dominated by two main schools: air-power absolutism, which argues that strategic bombing alone can destroy an enemy's will or capability to wage war and thereby bring about victory, and air-power relativism, which recognizes the utility of strategic bombing but emphasizes the indispensability of air support for land and naval operations. These two schools have long framed the debate in a binary manner—"How should air power be used?"—a tendency rooted in the conventional definition of air power as "the ability to control the air and project power from the air to the surface." As a result, existing theories have failed to fully explain such contemporary realities as the defensive use of air power exemplified by the concept of air denial observed in the Russia–Ukraine war, the policing role of air power exemplified by air policing, and the diplomatic role demonstrated in multinational training exercises, as well as the relationship between air power and emerging power such as space, cyber, and the electromagnetic spectrum. Recognizing this gap between theory and reality suggests that it is necessary to reconsider the definition of air power itself.

Evolution and Regression of Soviet Air Defense Force: From the perspective of Functional Differentiation and Regression of Military Organizations

YAMADA Yuichiro

Military history shows that while functional differentiation leads to the creation of new services, it also involves regression, such as the

downsizing or abolition of existing services. However, the latter has not been given much emphasis in conventional research. This article selects the Soviet Air Defense Force during the Cold War as a case where a new military service created and was later downsized. It aims to clarify the policy decision-making process by applying the hypothesis described below.

This article presents the following hypotheses: When Condition 1 (changes in the strategic environment), Condition 2 (the military organization's capacity to respond to changes is sufficient), and Condition 3 (the power of civilian political leaders prevails over senior military leaders resisting change) are met, the military undergoes functional differentiation, giving rise to a new military service (Hypothesis 1). Furthermore, if either Condition 1 or 2 ceases to be met, and Condition 3 remains valid, the differentiated functions will be reduced or abolished (Hypothesis 2). Analysis confirmed that the creation and subsequent downsizing of the Soviet Air Defense Force during the Cold War resulted from a policy decision-making process where the aforementioned conditions interacted in a complex, phased manner.

Airpower Theory and Practice in the Russo-Ukraine War: Towards an Integrated Framework for Modern Airpower

SAKUMA Kazunobu

This paper critically examines the transformation of airpower theory and practice as revealed by the Ukraine war, challenging long-standing paradigms. The conflict demonstrates that neither side can achieve decisive air superiority due to robust, layered air defenses and the widespread deployment of unmanned aerial systems (UAS), resulting in a persistent state of mutual air denial. Consequently, air operations have shifted from large-scale strategic bombing and comprehensive air dominance to localized, tactical missions—such as interdiction and close air support—often conducted by low-cost drones in contested low-altitude zones. To address these evolving realities, the study introduces the "two

parities model," which categorizes airspace access and utilization for both sides, enabling a nuanced analysis of contested and denied states across different altitude bands. The model provides a framework for understanding the complex dynamics of contemporary air warfare and highlights the necessity for flexible strategies, integrated multi-domain operations, and ongoing doctrinal innovation. The paper concludes that modern airpower theory must adapt to the multifaceted challenges of current conflicts, emphasizing the importance of organizational and operational agility in the face of persistent uncertainty.

[Research Note]

**Factors for Ukraine's persistence in the war:
Implementation and adaptation through drone-centric air
interdiction**

WATANABE Akira

This paper examines how Ukraine persist in the war despite asymmetric disadvantages. In previous research, their effective employment of drones has been identified as a key factor in this sustained resistance. However, the question remains, "how does Ukraine use drones to continue fighting?" To answer this, this study focuses on air interdiction, examining three essential elements: ISR, command and control, and sustainability.

The article demonstrates that Ukraine implemented drone-centric air interdiction to address operational challenges including expanded battlespace, numerically superior enemy forces, and insufficient conventional aircraft. As new challenges emerged, particularly Russian electronic warfare and force dispersion, Ukraine adapted by qualitatively and quantitatively improving all three elements through both technological and organizational development. These interconnected improvements enabled Ukraine to persist air interdiction despite asymmetric disadvantages.

Research Papers

The benefits of the Sino-Russian partnership — Considerations based on the Expected Utility Theory of Alliances —

TAKEUCHI Mari

This article highlights the relationship between China and Russia, which has been maintaining as a partnership, not a military alliance. Based on Michael Altfeld's theory, this study focuses on the expected utility functions of alliances: security, wealth, autonomy. And examines whether these expected utility functions of alliances would be maximized if China changed its relationship with Russia to a military alliance. Even under this partnership, China-Russia relations continue to deepen. This paper observes an urgent need to theorize partnership.

[Research Note]

A study of Sweden and Finland's application for NATO membership

- Shifting from a Neutral, Non-aligned Policy —

NEGISHI Daisuke

Following Russia's invasion of Ukraine, which began in February 2022, two Nordic countries traditionally considered neutral and non-aligned, Sweden and Finland, declared their intention to join NATO in May 2022, with Finland becoming a member in 2023 and Sweden in 2024.

This study examines why these two countries shifted their security policies and simultaneously applied for NATO membership, examining the transition of their security policies, domestic public opinion, and the strategic significance for both countries and NATO.

Both countries adopted neutral policies due to their respective geopolitical circumstances. The collapse of the Soviet Union prompted them to change their policies from neutral and non-aligned to non-aligned, moving toward EU membership and narrowing the gap with NATO.

Both countries' decisions to join NATO were influenced by the significant shift in public security awareness following Russia's invasions of Ukraine, which influenced their government decisions. Furthermore, the simultaneous application for membership by countries has strategic significance for both countries and NATO, and the two governments worked closely together to reach the application.

Transit Passage through International Straits and Foreign Aircraft: An International Legal Perspective on Operational Issues of Overflight

YAMADA Takanari

This paper examines the international legal issues concerning the overflight of foreign aircraft above international straits, with particular focus on Article 38 of the United Nations Convention on the Law of the Sea (UNCLOS), which recognizes the right of transit passage not only for ships but also for aircraft. Traditionally, the legal discourse surrounding transit passage has concentrated on maritime navigation, while the implications for aircraft have remained underexplored. In recent years, the use of Automatic Identification System (AIS) data has made strait traffic more visible, thereby making the designation of international straits more practicable and bringing to light the legal issues surrounding transit passage by aircraft.

The provision on transit passage under Article 38 represents a notable exception in that the law of the sea has influenced international air law, partially relaxing the otherwise absolute principle of airspace sovereignty over territorial seas. The issue of transit passage for foreign aircraft—

which, in principle, do not enjoy the right to enter foreign territorial airspace—is thus regarded as a significant legal and practical development when compared to the well-established right of innocent passage for foreign vessels through territorial waters.

This paper does not address the qualification of specific straits as international straits, but rather considers the legal and operational implications that such designation may entail for aircraft overflight. In particular, it points out that the structural concentration of entry and exit routes during transit passage—believed to be inherent in the regime—constitutes one of several significant legal concerns in the context of overflight above international straits.

[Research Note]

A Legal Analysis of Electronic Jamming against Satellites

SASAKI Yasunari

CSIS, Center for Strategic and International Studies, has pointed out that “some nations build arsenals of counterspace weapons to disrupt, degrade, or destroy space systems and hold at risk the ability of others to use the space domain.”

Direct-ascent anti-satellite (DA-ASAT) missiles—representing kinetic and non-reversible counterspace means—inevitably generate large amount of space debris, thereby inviting strong international condemnation. Consequently, their operational use, especially prior to the outbreak an armed conflict, faces extremely high threshold.

Therefore, it would be meaningful to conduct a study on the legal interpretation of non-kinetic and reversible means such as electronic jamming against satellites, which is likely to take place same as cyber-attack from peace time to gray-zone.

As a result of this study, it can be interpreted that, while electromagnetic jamming against satellites may be considered as a violation of international law, ASAT itself is not currently prohibited

as an act of violation of international law, and, when a nation or a military is responsible for the interference, it would be difficult to immediately determine this act as a violation of international law in the light of ITU regulations and nations practice.

[Research Note]

Military use of public infrastructure

SAIKI Takeshi

This study examines the possibility of using expressways as alternative runways for military purposes in Japan, based on examples from other countries. Following the issuance of three strategic documents, measures regarding the use of civilian airports are being promoted, but given that Japan is within China's threat zone, it is difficult to maintain war-fighting capabilities with existing military and civilian airfields alone, and it is therefore necessary to use expressways as alternative runways.

In this study, we asked the question, "What are the common characteristics of foreign countries that use expressways as alternative runways?" and hypothesized that "the use of expressways as alternative runways requires that the nation has established 1) a total defence system, 2) a civil defence system, and 3) resilience," and investigated and analyzed examples from these countries.

In the case analysis, we selected six countries - Germany, Sweden, Poland, Finland, Taiwan, and South Korea - and analyzed the installation status and background of alternative runways in each country. As a result of the investigation and analysis, it was confirmed that each country had "established a total defence system, civil defence system, and resilience at the national level," and concluded that these were requirements for the use of alternative runways.

The military use of public infrastructure makes it a target for enemy attack, so it must be promoted in conjunction with the establishment of a civil defence system. At this point, what is needed is to raise

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public security awareness and further develop defence and infrastructure policies.