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When Nuclear Weapons Return to Belarus: Evolving Concepts in Russian Escalation Strategy

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Abstract

The deployment of nonstrategic nuclear weapons to Belarus marks an important shift in Russia's nuclear posture. How does the Russia-Belarus nuclear sharing arrangement align with Russia's prewar escalation management framework, and what are the implications for Russia's prewar escalation management framework? This paper employs empirical research on the operationalization of the Russia-Belarus nuclear sharing arrangement, including official announcements, open-source media reports, and satellite imagery of key military sites in Belarus. It also reviews Russian-language defense periodicals to trace the evolution of escalation management concepts related to the arrangement. Findings suggest that the operationalization of the Russia-Belarus nuclear sharing agreement reflects both continuity and evolution in Russia's escalation management strategy, highlighting the country's efforts to adapt its nuclear posture in response to the ongoing conflict in Ukraine and perceived threats of more proxy wars instigated by NATO members. Overall, the nuclear sharing arrangement aligns with Russia's preexisting escalation management framework while introducing novel features to enhance strategic deterrence.

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Cover image: Russia-Belarus joint tactical drills. Russian Ministry of Defense (Telegram).

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Executive Summary

During the Russia-Ukraine war, the Kremlin has engaged in repeated nuclear saber-rattling in an attempt to coerce the West into ceasing ongoing military assistance for Kyiv. Russian actions included thinly veiled threats to use nuclear weapons at key times during the war. Yet Russia's attempts at coercion were only partially successful, deterring direct Western intervention but failing to compel the West to stop the flow of military support for Kyiv.

In response, Russian military elites have argued for the country to adopt new measures to restore the credibility of its coercive nuclear signaling while engaging in vigorous internal debate on options to achieve this goal. Amid such debate, Russia's political and military leadership have pursued a nuclear sharing agreement with Belarus, first announced in early 2022. This agreement includes the provision of Russian dual-capable delivery systems and, reportedly, the deployment of nuclear weapons to Belarus, where they would remain under Russian control. Such efforts have, in turn, raised important questions regarding the new nuclear sharing agreement's implications for Russia's escalation management strategy.

This paper examines the Russia-Belarus nuclear sharing agreement to determine how Russia's escalation strategy may be evolving. We employed two complementary research techniques to complete this assessment: one empirical and one theoretical. For the former, we examined open-source reports regarding the deployment of nuclear weapons in Belarus, reviewed Russian nuclear doctrine, and assessed satellite imagery of Belarusian military sites involved in these deployments. For the latter, we conducted a systematic review of Russian-language defense periodicals to trace the evolution of key concepts related to Russia's escalation doctrine and how they were applied with respect to Belarus.

This paper examines the Russia-Belarus nuclear sharing agreement to determine how Russia's escalation strategy may be evolving.

By combining the two research techniques, we were able to make several key findings and to draw preliminary conclusions on the evolution of Russia's escalation management strategy. We found that deployment of nuclear weapons to Belarus demonstrates both change and continuity in Russian thinking on escalation management. For instance, measures taken to operationalize nuclear weapons deployments to Belarus, including how Russia and Belarus are planning and exercising nuclear operations, are largely consistent with those prescribed in Russia's prewar escalation doctrine for the demonstration period (the period preceding armed conflict). These measures include demonstrations of military capabilities, increases in combat readiness, demonstrative weapons tests, combined military exercises, and force deployments to threatened border areas. All of these were demonstrated in one form or another during operationalization of the Russia-Belarus nuclear sharing agreement.

Yet there were important changes in Russia's escalation strategy as well in response to the escalatory challenges it faced in Ukraine, starting with the deployment of nuclear weapons in Belarusian

territory in response to Ukraine, which in and of itself represents a marked departure for Russia, given its long-standing opposition to North Atlantic Treaty Organization (NATO) nuclear sharing arrangements. Russia has also taken steps to integrate Belarus more closely into its nuclear umbrella, as reflected in recent changes to Russian declaratory policies equating attacks on Belarus with those against Russia itself.

These events are not happening in a vacuum either, as Russian military elites are writing extensively on ways to modify Russia's escalation strategy, shedding further light on the measures taken in Belarus. One article recommends explicitly that Russia position dual-capable systems outside of the country's borders as a practical demonstration of Russia's ability to impose immediate costs on potential aggressors.[1] Russian military scholars are also writing extensively on ways to enhance the effects of future escalation measures using tailored approaches, preemption, and other concepts designed to manipulate Western threat perceptions. Many of these concepts are manifested in the Russia-Belarus nuclear sharing agreement.

The deployment of Russian nuclear weapons to Belarus indicates that the following changes to Russian escalation strategy, posture, and behavior have already taken place or are currently underway:

- The deployment of nuclear weapons to Belarus, combined with changes in Russian theoretical writings, indicates an increased willingness (and a perceived need) by Russian thinkers to respond concretely to adversary actions in Russia's near abroad and Eastern Europe, including use of demonstration exercises and strikes.
- The forward deployment of a survivable set of nuclear weapons in Belarus is intended to complicate Western efforts to intervene in Belarusian affairs while making it harder to intercept inbound Belarusian missiles, thereby enhancing their deterrent effects.
- Renewed Russian reliance on nonstrategic nuclear weapons (NSNW) represents a reversal of recent trends in Russia toward increased dependence on conventional versus nuclear forces.

The deployment of Russian nuclear weapons to Belarus also has important implications for European security and Russia's escalation management strategy more generally:

- The deployment of Russian nuclear weapons in Belarus alters the balance in Eastern Europe, making it more difficult for NATO to defend against Russian military strikes during future crises or conflicts. These systems are deployable at such short distances that NATO will have very little reaction time if they are launched preemptively against Eastern Europe.
- The growing alignment between Russia and Belarus, including the incorporation of Belarus into Russia's nuclear umbrella, could well lead to additional deployments of both conventional and nuclear weapons (such as the Oreshnik) to Belarus.
- Changes to Russia's escalation strategy and its theoretical system of conflict typologies, including new types such as proxy war, could lead Russian strategists to alter the menu of escalatory options available to Russian leaders during future crises. Such operations are likely

[1] Anya Fink, Gabriela Iveliz Rosa-Hernandez, and Cornell Overfield, *Moscow Does Not Believe in Tears: Russia's Political-Military Establishment Debates Credibility of Nuclear Threats and Potential Nuclear Employment*, CNA, 2024, https://www.cna.org/reports/2024/09/Moscow-Does-Not-Believe-in-Tears.pdf.

to include more escalatory responses at lower levels of conflict, with particular emphasis on demonstrations of NSNW capabilities.

- Although a high degree of continuity remains in Russia's strategy for escalation management, the strategy is clearly evolving. Russia is embracing new forms of escalation management not seen since the Cold War, including new measures to enhance the credibility of its nuclear deterrence capabilities. The deployment of nuclear weapons in Belarus represents the most important of these measures because it constitutes an extension of Russia's nuclear posture to the territory of a Russian ally. US and NATO strategists and planners should immediately take the implications listed here into consideration. Intelligence analysts and the Russia studies community should closely monitor the continued evolution of Russia's escalation management strategy.

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Introduction

Russia's 2022 invasion of Ukraine has generated major concerns in the West about the potential for nuclear escalation based on Russian signaling at key points during the war. Over the course of the conflict, the Kremlin has engaged in repeated nuclear saber-rattling in response to ongoing Western military assistance to Kyiv and direct and indirect threats of Western intervention. Russian actions have included thinly veiled threats to use nuclear weapons at key inflection points during the war, repeated nuclear exercises involving tactical nuclear weapons, and use of the Oreshnik intermediate-range ballistic missile against targets in Ukraine.

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The Kremlin's coercive campaign during the war and its perceived failure has likewise raised questions for members of Russia's military-analytical community about the effectiveness of the country's strategy for escalation management.[2] Such efforts have only been partially successful. Although Russia succeeded in deterring direct Western intervention, the Kremlin was far less successful in dissuading the West from providing ongoing military support for Ukraine. Although recurring Russian threats intended to restrict the timing and delivery of Western military assistance have proven somewhat effective, they were judged by Russian military thinkers to have been insufficient at preventing further inflows of increasingly sophisticated Western military equipment to Ukraine. Likewise, Russia was only partially successful in coercing the West to limit the rules of engagement for Ukraine's use of Western military equipment, which now include permitted strikes on the Russian homeland.

As a result, some inside Russia have advocated for an even stronger response to coerce the West to refrain from providing further military assistance to Ukraine. For example, in June 2023, Sergei Karaganov, dean of the School of International Economics and Foreign Affairs at Moscow's Higher School of Economics, argued that it would be impossible for Russia to achieve its security goals in Ukraine unless it could break the West's will to support the Kyiv regime and compel the West to retreat strategically.

Karaganov also contended that after 75 years of peace, Western leaders had stopped fearing nuclear weapons and that Russia had unwisely set the

[2] We use the term *military-analytical community* when referring to the community of Russian military scholars who can exert a degree of influence in shaping the views of Russian political and military leaders on military strategy and policy. Most of these scholars hold affiliations with important Russian military commands or leading military-academic institutions falling under the General Staff or the Russian Ministry of Defense. Members of this elite community tend to publish their articles in the leading Russian military journals. For these reasons, we have chosen to focus primarily on their perspectives to gain insights into what the Russia-Belarus nuclear sharing agreement means for the future of Russia's nuclear policy and its strategy for escalation management.

threshold for nuclear use too high, allowing too much space for Western leaders to take coercive measures against Russia without fear of nuclear retaliation. To restore Russia's coercive power, Karaganov argued that the West's fear must be revived through preemptive nuclear strikes against Europe.[3]

Although Karaganov's call for nuclear strikes on Europe met with widespread opposition inside Russia, there has been a growing consensus within the Russian military-analytical community since 2022 that the country must take further steps to restore the credibility of its coercive nuclear signaling. These steps include new measures to improve the effectiveness of the country's escalation management strategy in preparation for future crises or conflicts with the North Atlantic Treaty Organization (NATO).

Amid this debate, the country's political and military leadership have begun to take concrete measures to enhance "strategic deterrence"—the Russian term for nuclear, nonnuclear, and nonmilitary coercion.[4] Russia's planned deployment of nuclear weapons to Belarus, first announced in June 2022, is one of the most important of these measures.

Since the announcement, Russia and Belarus have been operationalizing the agreement, including the transfer of Russian dual-capable Iskander missiles to Belarus and the upgrading of Belarusian Su-25 attack aircraft to carry nuclear gravity bombs. The two sides have also been upgrading Belarusian military bases where these new systems will be deployed, as well as a Soviet-era nuclear storage facility in Belarus where Russia-provided tactical nuclear warheads will reportedly be kept. In addition, the two sides have conducted training and combined exercises to work out operational details associated with potential nuclear employment.

The actual implications of this new arrangement for Russia's escalation doctrine have yet to be systematically explored in the West. This paper is intended to help remedy this deficiency by examining the Russia-Belarus nuclear sharing agreement and its operationalization in greater detail. It seeks to address the following questions: how does the Russia-Belarus nuclear sharing arrangement align with Russia's prewar escalation management framework, and what does the agreement tell us about how Russia's escalation management strategy is evolving? The paper also examines the implications of the new agreement for Russia's nuclear policy and posture toward Europe and beyond.[5]

Scope and methodology

To address these questions, we employed two complementary research techniques, each designed to provide different perspectives on the topic. The first technique entailed examining the steps taken by both Russia and Belarus regarding the formation and operationalization of the nuclear sharing agreement. This part of the assessment focused on what Russian and Belarusian officials have said about the new agreement and what steps they have taken to operationalize the agreement. It relied primarily on empirical analysis of Russian and Belarusian political and military leaders' official pronouncements, open-source media reports regarding the nuclear sharing

[3] Sergei Karaganov, "A Difficult but Necessary Decision," *Russia in Global Affairs (Publisher's Column blog)*, 2023, https://eng.globalaffairs.ru/articles/a-difficult-but-necessary-decision/.

[4] Dmitry Adamsky, "Quo Vadis, Russian Deterrence? Strategic Culture and Coercive Innovation, *International Security* 49 (2024): p. 50; Timothy Wright and William Alberque, "The Credibility and Implications of Russia's Missile and Nuclear Proposal to Belarus," International Institute for Strategic Studies, July 21, 2022, https://www.iiss.org/online-analysis/online-analysis/2022/07/the-credibility-and-implications-of-russias-missile-and-nuclear-proposal-to-belarus/; William Alberque, "Nuclear Weapons in Belarus: History Repeats Itself," Russia Matters, Mar. 31, 2023, https://www.russiamatters.org/analysis/nuclear-weapons-belarus-history-repeats-itself.

[5] However, this paper does not seek to definitively answer these questions; rather, it focuses on selected aspects of the problem.

agreement and its operationalization, and satellite imagery of the principal military sites in Belarus where the delivery systems and warheads are being deployed.

We examined Russian official doctrine and open-source reports to obtain basic details regarding the nuclear sharing agreement, as well as formal changes to Russia's declaratory nuclear policy. We also used satellite imagery, made available by Planet Labs, to survey several key locations inside Belarus that were mentioned in publicly available sources as potential transit points or deployment areas for nuclear weapons, delivery systems, and nuclear-capable forces. We focused on locations in Belarus currently undergoing modernization consistent with a nuclear role (e.g., installation of double- or triple-layer fencing, unusual levels of security, and the presence of equipment used by Russian nuclear handling units). We also examined recent footage of Belarusian and Russian combined nuclear exercises.

We examined Russian official doctrine and open-source reports to obtain basic details regarding the nuclear sharing agreement, as well as formal changes to Russia's declaratory nuclear policy.

The use of imagery intelligence proved instrumental for our assessment, allowing us to gain a clearer understanding of the operationalization of the nuclear sharing agreement, particularly the deployment of Russian nuclear weapons and dual-capable delivery systems in Belarus.[6] For example, satellite imagery allowed us to determine whether infrastructure signatures at key deployment sites in Belarus were consistent with the storage of nuclear warheads and the deployment of dual-capable delivery systems. Satellite imagery and reviews of Russian state media reporting of exercises also enabled us to examine whether activities at these sites in Belarus were consistent with traditional Russian operations and practices involving the deployment and storage of nuclear weapons.

Finally, imagery intelligence allowed us to assess what these deployments reveal about how Russia (or potentially Belarus) may be planning to use the nuclear weapons in Belarus during a future crisis or conflict. Imagery intelligence thus helped to inform our understanding of Russian escalation dynamics during both the lead-up to war and during armed conflict. Combined with analysis of Russian theoretical writings, the empirical assessment enabled us to draw key inferences and conclusions regarding the implications of this new agreement for Russia's escalation doctrine and its evolution.

The second research technique involved a systematic review of Russian-language defense periodicals to trace the evolution of concepts related to Russia's escalation doctrine as relevant to the nuclear sharing agreement. For this part of the assessment, we focused on articles written since the 2022 invasion of Ukraine by influential members of Russia's military-analytical community regarding demonstrations of capabilities and demonstrative use of force, training, and nonstrategic nuclear weapons (NSNW). We also

[6] See the appendix for additional background on the benefits of using imagery intelligence.

reviewed several key articles regarding the evolution of Russian conflict typologies (i.e., how the Russian military characterizes conflict phases and types) to explore how changes in Russian thinking about the character of conflict (especially new concepts of proxy war) were manifested in the Russia-Belarus nuclear sharing agreement.

Finally, we examined key articles highlighting how the Russian military-analytical community proposes to modify Russia's escalation strategy to restore the credibility of its nuclear signaling, as manifested in the deployment of Russian nuclear weapons to Belarus.

We focused our research primarily on articles advocating for new or modified approaches to escalation management and potential courses of action to be undertaken by Russian leaders during the demonstration period in Russia's escalation management framework. In Russian parlance, the demonstration period covers those conflict phases taking place during the lead-up to armed conflict, including steady-state competition, the emergence of military threats and dangers, and prewar crises.[7]

Sources

In selecting writings for this review, we drew primarily from articles published in *Voennaia Mysl* (*Military Thought*), which is Russia's most important and influential military journal. We systematically examined every article from 2022 to 2025 in *Military Thought* related to concepts of escalation management. Unlike other Russian military journals, *Military Thought* offers a "vetted spectrum of opinion deemed important by the General Staff."[8] Examining these writings is crucial because *Military Thought*'s editorial board has historically used the journal's content to communicate messages to the West. For instance, in 1999, the editorial board decided to allow the publication of a contentious article on potential changes to Russia's nuclear doctrine to express displeasure with NATO's bombing of the former country of Yugoslavia.[9] Collectively, Russian-language articles that we reviewed for this paper featured authors from the Russian General Staff, the Strategic Rocket Forces, Russian Ministry of Defense institutes, and various service academies.[10]

To supplement this research, we also examined articles published in other leading Russian military journals and central newspapers relating to the Russia-Belarus nuclear sharing agreement and articles written by Western military experts on this agreement and on Russia's escalation doctrine. Finally, we relied heavily on CNA's substantial body of prior research on Russian nuclear strategy and escalation management to help frame the assessment.

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[7] For more details on the role of the demonstration period in Russia's escalation management framework, see the Theoretical Framework section.

[8] Anya Fink, *The General Staff's Throw-Weight: The Russian Military's Role in and Views of US-Russian Arms Control*, CNA, 2024, https://www.cna.org/reports/2024/03/Russian-Military-Role-in-US-Russian-Arms-Control.pdf.

[9] Fink, *The General Staff's Throw-Weight*.

[10] Critically examining Russian journal articles can offer a glimpse into internal debates and points of consensus within the Russian armed forces. As a historical reference to the validity of such sources, in the 1970s, CNA analysts led by Bradford Dismukes analyzed Soviet-era articles published in *Morskoy Sbornik*, the Soviet monthly naval digest that is the equivalent of the US Naval Institute's *Proceedings* magazine. The CNA team concluded that the Soviet navy would not pursue a naval strategy like Germany's approach to unrestricted submarine warfare during World War II but rather intended to devote the navy to protecting ballistic missile submarine "bastions" in Soviet waters. The US Navy discounted this interpretation at first; however, later intelligence intercepts confirmed that the bastions theory was, indeed, correct. The US Navy then accepted this view of Soviet strategy and planned the 1980s US Maritime Strategy accordingly.

Theoretical Framework

This study builds on past CNA work on Russian escalation management concepts. In 2020, CNA derived a theoretical framework of Russia's approach to escalation management based on an in-depth survey of hundreds of articles and reports by Russian military scholars on the role of escalation in Russian military strategy.[11] CNA found that over the past 30 years, Russian military thinkers have engaged in intensive debate regarding the best means to achieve deterrence and manage escalation in crises and conflicts. This debate was heavily influenced by increased awareness of Russian military limitations during the post–Cold War era, especially the growing conventional military superiority of the NATO alliance. During this debate, Russian military scholars developed a uniquely Russian set of concepts and tools built on deterrence levels, damage types, and coercive political and military measures to be employed at different rungs on the escalation ladder. These efforts culminated in a reasonably mature system of deterrence covering the full spectrum of Russian security requirements from peacetime through nuclear war.[12]

This section offers a basic overview of Russia's escalation management framework as it existed during the lead-up to the Russia-Ukraine war. This framework serves as a baseline model to measure the extent to which Russian thinking about escalation management has evolved in connection with the Russia-Belarus nuclear sharing agreement.

CNA found that over the past 30 years, Russian military thinkers have engaged in intensive debate regarding the best means to achieve deterrence and manage escalation in crises and conflicts.

Understanding this framework requires some familiarity with Russia's concept of *strategic deterrence*, which differs markedly from the Western use of the term. In Russian discourse, the concept of strategic deterrence involves employing a combination of military and nonmilitary capabilities and approaches to prevent or reduce the threat of possible destructive actions by aggressor states.[13] This concept entails undertaking measures of "containment, [measures of] fear inducement (intimidation), [and] measures to encourage restraint (dissuasion)," along with dosed forms of coercion, all operating within a single coercive scheme.[14] Consequently, in Russian discourse, *strategic deterrence* represents a holistic concept for shaping

[11] Michael Kofman, Anya Fink, and Jeffrey Edmonds, *Russian Strategy for Escalation Management: Evolution of Key Concepts*, CNA, 2020, https://www.cna.org/reports/2020/04/russian-strategy-for-escalation-management-key-concepts.

[12] Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*, p. i.

[13] Anya Loukianova Fink, "The Evolving Russian Concept of Strategic Deterrence: Risks and Responses," *Arms Control Today* 47 (2017), https://www.armscontrol.org/act/2017-07/features/evolving-russian-concept-strategic-deterrence-risks-and-responses; Anya Loukianova Fink and Olga Oliker, "Russia's Nuclear Weapons in a Multipolar World: Guarantors of Sovereignty, Great Power Status, and More," *Daedalus* 149, no. 2 (2020), https://www.amacad.org/sites/default/files/publication/downloads/Daedalus_Sp20_3_Fink%20%26%20Oliker.pdf.

[14] Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*.

adversary decision-making by integrating military, economic, diplomatic, and informational means.

Russia's system of escalation management is built on subdividing the spectrum of conflict into individual conflict phases and types. These conflict phases run the gamut from steady-state competition during peacetime to internal armed conflict to local, regional, and large-scale wars. The conflict phases are currently outlined in Russia's 2014 military doctrine, which has yet to be updated to capture lessons learned in Ukraine and other recent conflicts (see Figure 1 for a graphic depiction derived from the 2014 military doctrine).

Russia's escalation management model assumes that the relevant Russian authorities will determine the phase of conflict that Russia faces at any given time and the likelihood of further escalation.[15] They make this determination by situating the conflict within the spectrum of conflict phases and types set forth in Figure 1.

Figure 1. Conflict phases and types in Russian military doctrine

Conflict Phase/Type	Description
Military danger	State of interstate or intrastate relations, characterized by the correlation of factors that could under certain conditions lead to the appearance of a military threat.
Military threat	State of interstate or intrastate relations, characterized by the real possibility of an appearance of military conflict between opposing sides, as well as a high degree of readiness of any state (or group of states) or separatist (terrorist) organizations to use military force (armed violence).
Armed conflict	Armed conflict of a limited scale between states (international armed conflict) or between opposing sides in the territory of one state (internal armed conflict).
Local war	War in which limited political-military goals are pursued, military actions are conducted within the borders of combating states, and the interests (e.g., territorial, economic, political) of just these states are primarily affected.
Regional war	War with the participation of several states from one region, led by national or coalition armed forces, during which the sides pursue important military-political goals.
Large-scale war	War between coalitions of states or the largest states of the global society, in which the sides pursue radical political-military goals. Large-scale war could be the result of escalation of an armed conflict, local, or regional war involving a significant number of states from various regions of the world. This war would demand mobilization of all available material resources and spiritual forces of the participant states.

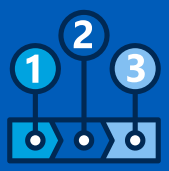
Source: Russian Military and Security Research Group, *The Military Doctrine of the Russian Federation*, 2014, https://rusmilsec.blog/wp-content/uploads/2021/08/mildoc_rf_2014_eng.pdf.

[15] Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*.

Under Russia's system, military dangers can evolve into military threats, leading to outright military conflict. Armed conflicts, which are limited actions taking place entirely within the borders of a single country (e.g., civil wars, armed insurgencies) can escalate to local wars that are generally fought between two sovereign countries. Conflicts can then further escalate to regional wars between coalitions of countries operating in a single theater (e.g., a Russia-NATO conflict in Europe) and to large-scale wars between coalitions of countries on a global basis across multiple theaters.[16] Conflicts can likewise deescalate to lower levels on Russia's conflict typology scale.

Russia's escalation management framework also specifies measures to deter armed aggression and manage escalation, depending on the conflict phase involved. The nature and scale of the measures prescribed by Russia's escalation ladder tend to increase correspondingly as the scale and intensity of the underlying conflict escalates. A high-level overview of the specific measures to be taken during each phase of conflict is provided in Figure 2, which depicts Russia's existing escalatory model based on prior CNA analysis.

Russia's military-analytic community has articulated a system of escalation based on assigning conflict phases to one of three distinct periods. These include the demonstration period, the "adequate damage infliction period," and the "retaliation period" (see Figure 2) and are layered onto the spectrum of conflict phases.



Russia's military-analytic community has articulated a system of escalation based on assigning conflict phases to one of three distinct periods. These include the demonstration period, the "adequate damage infliction period," and the "retaliation period" and are layered onto the spectrum of conflict phases.

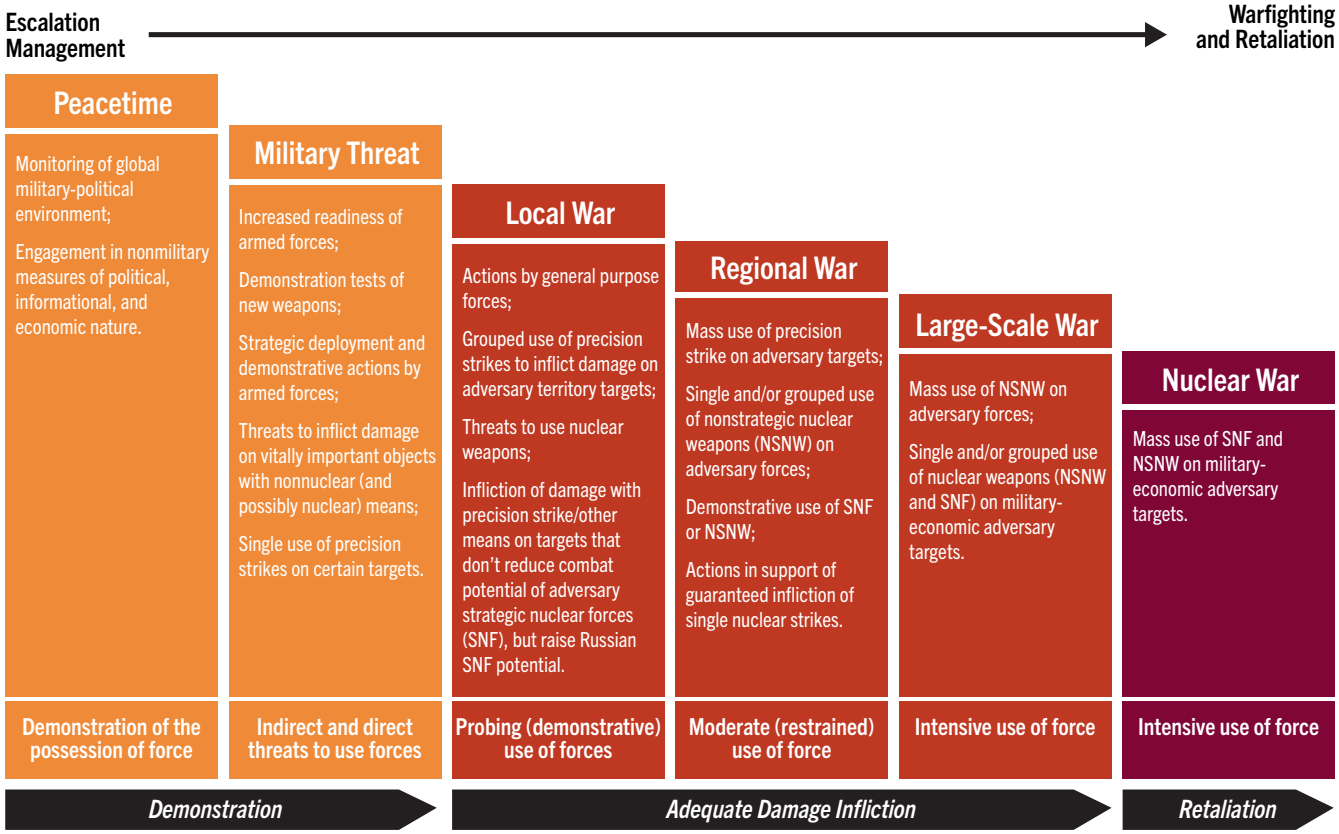
This system of escalation allows Russia to calibrate its coercive campaign to particular levels of conflict based on the corresponding importance of its objectives. This paper is concerned primarily with the demonstration period, which takes place during peacetime and at lower levels of competition (i.e., phases of conflict falling below the level of armed conflict). During the demonstration period, Russia's escalation doctrine calls for the employment of primarily nonkinetic measures to achieve "deterrence through intimidation or fear inducement."[17]

As its name suggests, the demonstration period includes demonstrations of capabilities and

[16] Fink, Rosa-Hernandez, and Overfield, *Moscow Does Not Believe in Tears*; Fink, *The General Staff's Throw-Weight*; Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*.

[17] Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*. As a conflict escalates into actual armed conflict (local or regional war), Russia's escalation doctrine prescribes increasingly expansive measures, including military strikes designed to achieve "deterrence through limited (or calibrated) use of force" (i.e., a system of intrawar deterrence). At higher levels of armed conflict (regional or global war), Russia's escalation doctrine calls for employment of the most serious measures, up to and including large-scale use of nuclear weapons, to achieve "deterrence by defense or through retaliatory measures." Russian military thinkers characterize these three types of activities as demonstrative, damage inflicting, and retaliatory.

Figure 2. Potential Russian approaches to escalation management



Source: Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*.

demonstrative use of force.[18] It encompasses a variety of actions ranging from declaratory statements and other forms of nuclear saber-rattling to the movement of forces, demonstrative launches, joint and combined military exercises, combat patrols with visible forces, and weapons tests.[19]

If these measures prove unsuccessful in deterring or containing armed conflict, Russian escalation efforts would transition to the adequate damage infliction period, which involves the actual use of military force, typically starting with conventional weapons.[20] Later in this phase, Russia's escalation doctrine calls for more aggressive measures, including low-intensity

[18] V. I. Kovalyov and S. Yu. Malkov, "Possible Approaches to Forming a 'Systemic Configurator' in the Subject Area 'Nonmilitary Threats' to Russia's Security [ВОЗМОЖНЫЕ ПОДХОДЫ К ФОРМИРОВАНИЮ СИСТЕМНОГО КОНФИГУРАТОРА НЕВОЕННЫЕ УГРОЗЫ]," *Strategic Stability*, no. 3 (2016).

[19] Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*; A. V. Muntyanu and Yu. A. Pechatnov, "Challenging Methodological Issues on the Development of Strategic Deterrence Through the Use of Military Force [ПРОБЛЕМНЫЕ МЕТОДОЛОГИЧЕСКИЕ ВОПРОСЫ РАЗРАБОТКИ МЕХАНИЗМА СИЛОВОГО СТРАТЕГИЧЕСКОГО СДЕРЖИВАНИЯ]," *Strategic Stability*, no. 3 (2010); Kovalyov and Malkov, "Possible Approaches to Forming a 'Systemic Configurator' in the Subject Area 'Nonmilitary Threats' to Russia's Security."

[20] Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*.

dosing involving nuclear threats and larger-scale actions by general purpose forces.[21] At the highest levels of conflict, during the retaliation period, Russian forces would transition to use of large-scale nuclear strikes.

These concepts are used to frame our assessment of the Russia-Belarus nuclear sharing agreement. Given that the nuclear sharing agreement is being operationalized in the absence of kinetic armed conflict among Russia, Belarus, and NATO, all the associated actions taken in connection with the agreement are by definition occurring during the demonstration period. These actions include demonstrations of capabilities linked to explicit declaratory statements and actions that convey a readiness to use the nuclear weapons capabilities being deployed to Belarus.

For the same reason, we focus our assessment on what the measures taken by Russia and Belarus to operationalize the nuclear sharing agreement tell us about how Russia's escalation management framework appears to be evolving. In this regard, we likewise focus our assessment mainly on the demonstration period, specifically on whether these measures are consistent with prior Russian thinking regarding the demonstration period.

[21] Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*.

Nuclear Deployments to Belarus

To set the stage for determining how Russia's escalation strategy is evolving in light of the deployment of nuclear weapons to Belarus, we begin with an empirical review of the Russia-Belarus nuclear sharing arrangement, focusing on how it came to pass, how it has evolved, and what is being done to operationalize the agreement.

Russia and Belarus began discussions about a nuclear sharing agreement in 2021. Over the next three years, such efforts intensified. This section provides additional background on the formation and operationalization of the nuclear sharing agreement, using open-source reporting and a review of Russian state media. In addition, we reviewed satellite imagery of the three primary sites in Belarus where nuclear warheads and dual-capable delivery systems are reportedly stored or located. We also examined imagery of the primary transfer point for Russian nuclear weapons and delivery systems. With these observations, we were able to assess the impact of the agreement on Russia's escalation management framework.

The deployment of nuclear weapons to Belarus reportedly includes the delivery of nuclear warheads and gravity bombs that can be mated with either ground-based or air-based delivery platforms, including Iskander ballistic missiles and Su-25 attack aircraft, respectively. Facilities have also been established for the storage and maintenance of nuclear weapons on Belarusian soil. Four facilities in particular have been mentioned repeatedly in public reporting as being related to nuclear weapons activities inside Belarus:

- The **1405th Artillery Ammunition Base in Asipovichy** (a small Belarusian city 100 kilometers from Minsk and roughly 300 kilometers from the Polish border), a conventional munitions storage facility that includes a Soviet nuclear weapon storage igloo that has not been used to store nuclear weapons since 1996.[22]
- The **465th Missile Brigade in Asipovichy**, responsible for the operation of nuclear-capable Iskander ballistic missiles deployed at that site.[23]
- **Lida Air Base**, where Belarusian state media have shown Su-25 Frogfoot close air support aircraft training for a nuclear mission.[24]
- **Prudok Rail Station**, a munitions storage and rail transfer point along the Russian border where public reporting claims that Russian nuclear equipment was transferred to Belarus.[25]

[22] Thord Are Iverson (@The_Lookout_N), "There seems to be ongoing construction work ongoing at the northeastern part of the 1405th Artillery Ammunition Base, near Asipovichy, Belarus. Work began in March/April," Post, X, June 22, 2023, 6:31 a.m., https://x.com/The_Lookout_N/status/1671858523657912321.

[23] Wright and Alberque, "The Credibility and Implications."

[24] Matt Korda, Eliana Johns, and Hans Kristensen, "Video Indicates That Lida Air Base Might Get Russian 'Nuclear Sharing' Mission in Belarus," Federation of American Scientists, Apr. 19, 2023, https://fas.org/publication/video-indicates-that-lida-air-base-might-get-russian-nuclear-sharing-mission-in-belarus/.

[25] Jack Detsch and Robbie Gramer, "Russia's Nuclear Weapons Are Now in Belarus," *Foreign Policy*, Mar. 14, 2024, https://foreignpolicy.com/2024/03/14/russia-nuclear-weapons-belarus-putin/.

We completed a detailed review of relevant satellite imagery taken of these four sites since the announcement of the planned transfers of Russian NSNW to Belarus in June 2022. In addition, we obtained satellite imagery of multiple nuclear weapon storage and maintenance sites located inside Russia. These are currently operated by the 12th Main Directorate (12th GUMO), which oversees Russian nuclear weapons programs and related facilities. This data allowed us to compare infrastructure being constructed at suspected nuclear weapon sites in Belarus to that at established nuclear weapon sites inside Russia.[26]

After the collapse of the Soviet Union, significant numbers of nuclear weapons effectively under Russian control were located outside the territory of the new Russian Federation in Belarus, Ukraine, and Kazakhstan.

Evolution of nuclear weapons in Belarus

When Belarus was a constituent republic of the Soviet Union, it hosted Soviet strategic and tactical nuclear weapons at various installations throughout its territory. Nuclear weapons deployed to Belarus during this period ranged from strategic intercontinental ballistic missiles to nuclear gravity bombs and artillery shells.

After the collapse of the Soviet Union, significant numbers of nuclear weapons effectively under Russian control were located outside the territory of the new Russian Federation in Belarus, Ukraine, and Kazakhstan. In 1992 these three states signed the Lisbon Protocol, in which all three promised to accede to the Nuclear Nonproliferation Treaty (NPT) as nonnuclear weapon states as soon as possible.[27]

However, the three states hesitated to divest entirely from the missiles and warheads that they still possessed. In 1994 the three states—along with Russia, the United Kingdom, and the United States—signed the Budapest Memorandum, an agreement in which Ukraine, Belarus, and Kazakhstan committed to give up their missiles, warheads, and highly enriched uranium entirely in exchange for financial incentives and nonbinding security assurances. Belarus acceded to the NPT in 1993, declared itself a nuclear-free zone, and began the transfer of missiles and warheads to Russia, a process that was completed by November 1996.[28]

Despite increasing conventional military cooperation between Belarus and Russia, Belarusian interest in Russian nuclear weapons is a more recent development. Over the past decade, Russia and Belarus have developed increasingly close military ties, partly in response to what Belarus and Russia

[26] The locations of these facilities were pulled from Pavel Podvig and Javier Serrat, *Lock Them Up: Zero-Deployed Non-Strategic Nuclear Weapons in Europe*, United Nations Institute for Disarmament Research, 2017, https://unidir.org/files/publication/pdfs/lock-them-up-zero-deployed-non-strategic-nuclear-weapons-in-europe-en-675.pdf.

[27] Olga Karach, "Nuclear Weapons in Belarus: What We Know," International Campaign for the Abolition of Nuclear Weapons, Nov. 22, 2024, https://www.icanw.org/nuclear_weapons_in_belarus_what_we_know.

[28] Karach, "Nuclear Weapons in Belarus"; Podvig and Serrat, *Lock Them Up*.

see as Western-backed color revolutions targeting Moscow-friendly leadership in post-Soviet states.[29]

There are strong indications that Belarusian President Aleksandr Lukashenko was motivated to proceed with an agreement to deploy Russian nuclear weapons capabilities because of the large-scale protests in Belarus following contested presidential elections in 2020. In response, Lukashenko engaged in a brutal crackdown, relying on Russian support to shore up his regime and suppress these protests, which he attributed to Western interference.[30] The US and the European Union imposed a series of sanctions on Belarus while offering support for the Belarusian opposition. These actions led to rising tensions between Belarus and the West.[31] Consequently, Lukashenko may have seen the nuclear sharing agreement with Russia as a means to bolster the country's defenses against further Western interference in Belarus's internal affairs.

A clear example of the growing ties between Russia and Belarus, and their mutual concerns about the degrading internal and external security situation, can be found in the Zapad 2021 military exercise, which simulated a joint Belarusian-Russian counterattack against a force made up of several external states that had fomented internal unrest in Belarus as a prelude to an invasion.[32]

Lukashenko's attempts to strengthen deterrence continued in November 2021, when he proposed to Russian President Vladimir Putin the return of Russian nuclear weapons to Belarusian territory if American nuclear weapons were deployed to Poland.[33] On February 28, 2022, five days after the start of Russia's full-scale invasion of Ukraine, Belarusians voted in a referendum on revising the Belarusian constitution to allow the transfer of Russian nuclear weapons to Belarusian territory.[34] In May 2022, Belarus announced that it would acquire Iskander missile batteries capable of launching both ballistic and cruise missiles armed with conventional and nuclear warheads.[35]

In June 2022, Putin officially announced that Russia would be transferring Iskander ballistic missiles to Belarus and configuring Belarusian missile launchers

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[29] Russia's political and military leadership often use the term *color revolution* when referring to political protest movements in countries friendly to Russia, especially countries in Russia's near abroad, aiming for Western-style democracy and social change. Russian leadership tend to attribute such movements to Western meddling and interference in the domestic affairs of the affected countries. The term *color revolution* itself can be traced to three key political movements taking place in the 2000s, including the Rose Revolution in Georgia (2003), the Orange Revolution in Ukraine (2004), and the Tulip Revolution in Kyrgyzstan (2005). Since then, the term has been used by Russian leaders when referring to other conflicts and crises negatively impacting Russia, including the Syrian civil war, NATO's intervention in Libya, and various other events.

[30] Vladimir Isachenkov, "Belarus President Offers to Host Russian Nuclear Weapons," AP News, Nov. 30, 2021, https://apnews.com/article/russia-ukraine-germany-migration-europe-ab1efae5e65bf01af3be2f6139ef6f4b.

[31] Alla Leukavets, *Crisis in Belarus: Main Phases and the Role of Russia, the European Union, and the United States*, Wilson Center, Kennan Cable No. 74, 2022, https://www.wilsoncenter.org/publication/kennan-cable-no-74-crisis-belarus-main-phases-and-role-russia-european-union-and-united.

[32] Johan Norberg and Natalie Simpson, *Zapad 2021 and Russia's Potential for Warfighting*, Foreign Policy Research Institute, 2021, https://www.fpri.org/article/2021/09/zapad-2021-and-russias-potential-for-warfighting/.

[33] Isachenkov, "Belarus President Offers to Host Russian Nuclear Weapons."

[34] "Belarus Referendum Approves Proposal to Renounce Non-Nuclear Status—Agencies," Reuters, Feb. 27, 2022, https://www.reuters.com/world/europe/launchpad-russias-assault-ukraine-belarus-holds-referendum-renounce-non-nuclear-2022-02-27/.

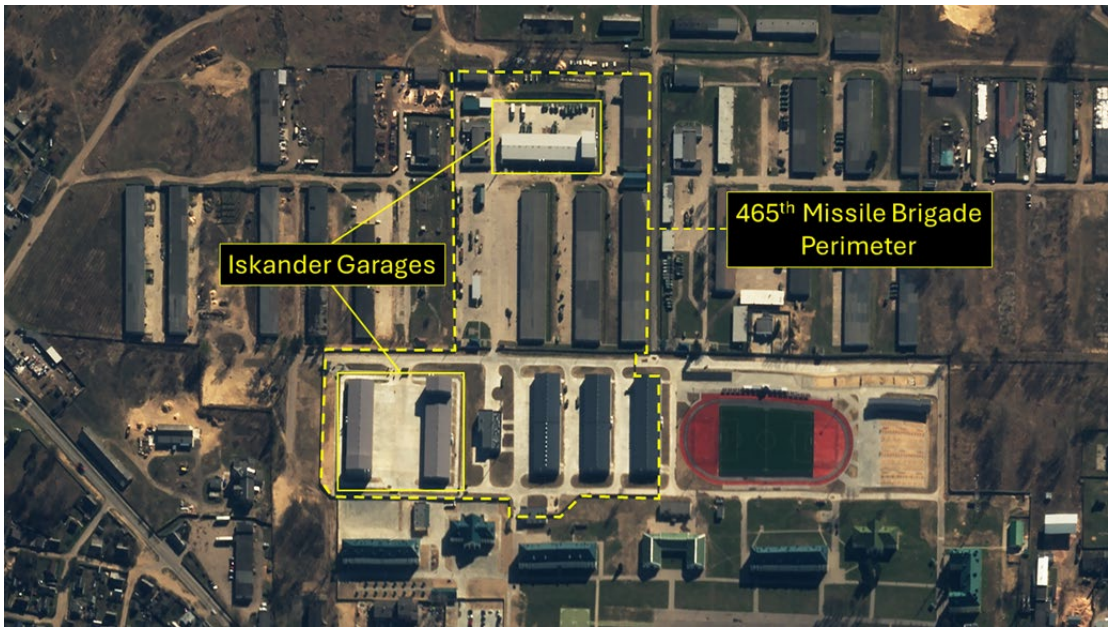
[35] Matt Gluck, "Belarus Buys Iskanders, S-400 from Russia," CSIS Missile Threat, May 20, 2022, https://missilethreat.csis.org/belarus-buys-iskander-missiles-and-s-400-anti-missile-systems-from-russia/.

and aircraft to carry Russian NSNW.[36] Yet in December 2022, Kremlin spokesperson Maria Zakharova stated that "at present, there are no plans to physically equip Belarusian systems with nuclear warheads, nor to move such warheads to Belarusian territory."[37] Belarusian military personnel would receive training on the use of the Iskander missile and modified Su-25 combat aircraft at Russian training centers, yet operation of nuclear warheads was expressly excluded. Zakharova added that Russia had no plans to create warhead storage facilities in Belarusian territory. Instead, Russian nuclear warheads would continue to be housed at central storage facilities in Russia.[38]

Yet, later in December 2022, Putin reversed course, indicating that Russia would train Belarusian forces on the use of nuclear weapons after all. In doing so, Putin emphasized that Russia was simply mirroring NATO's practices under existing nuclear sharing arrangements in Europe.

That same month, Lukashenko reported that Russian Iskander missiles in Belarus were fully operational.[39] This announcement marked the first concrete evidence of the deployment of dual-use missiles in Belarus, as construction efforts began at Belarus's only remaining tactical missile brigade, the 465th Missile Brigade at Asipovichy (see Figure 3).

Figure 3. 465th Missile Brigade facility



Source: Image © Planet Labs PBC. (Markup added by CNA.)

[36] Hans M. Kristensen et al., "Nuclear Weapons Sharing, 2023," *Bulletin of the Atomic Scientists* 76, no. 6 (2023): p. 400, https://fas.org/wp-content/uploads/2023/11/Nuclear-weapons-sharing-2023.pdf.

[37] Steve Brown, "Lukashenko Regime Finalizes Agreement on Deployment of Russian Nuclear Weapons," *Kyiv Post*, May 25, 2023, https://www.kyivpost.com/post/17509.

[38] Anastasia Dombitskaya and Elena Chernenko, "The Russian Foreign Ministry Has Provided Details on Russian-Belarusian Cooperation in the Nuclear Sphere," *Kommersant*, Dec. 21, 2022, https://www.kommersant.ru/doc/5735075?from=top_main_2.

[39] Kristensen et al., "Nuclear Weapons Sharing, 2023," p. 400.

The 465th Missile Brigade in Asipovichy

Belarus inherited the 465th Missile Brigade from the Soviet army after the dissolution of the Soviet Union. Until recently, the 465th Missile Brigade operated OTR-21 Tochka (NATO reporting name: SS-21 "Scarab") tactical ballistic missiles but upgraded to the Iskander missile complex.[40] The Scarab can carry a 100-kiloton nuclear warhead, but all such warheads were removed from Belarus after the signing of the Budapest Memorandum.[41]

This missile brigade relocated to Asipovichy in 2018 as Belarus sought to consolidate its mobile artillery and rocket systems. Asipovichy also hosts the 336th Rocket Artillery Brigade and the 51st Guards Artillery Brigade. These units are intended to provide Belarusian ground forces with mobile fire support.

The 465th Missile Brigade now operates the Iskander missile complex, and personnel from this brigade have been shown on Belarusian state media operating the Iskander-M ballistic missile. The Iskander complex can also carry the recently introduced 9M729 (NATO reporting name: SSC-8 "Screwdriver") cruise missile, which can achieve ranges beyond 500 kilometers. It is unknown whether any Iskander cruise missiles have been transferred to Belarus, and so far, none have appeared on state media or satellite imagery.

In October 2022, ground clearing at Asipovichy became apparent on satellite imagery, the first sign of construction of what would eventually become the first garages for Iskander missile launchers and reload vehicles. Iskander missile brigades consist of three to four battalions, with each battalion consisting of two batteries (effectively a company) containing two launchers.[42] A battalion therefore consists of four launchers, four reload vehicles (9T250E vehicles), and various command and support vehicles, with a single Iskander brigade having 12 launchers.

At first, construction of garages sufficient for a single battalion of Iskander missile launchers and reload vehicles was visible at the site (a single battalion constitutes only one-third of a full brigade) (see Figure 4). Construction on the other two garages did not begin until October 2023 but was completed by the beginning of 2025. Belarus's and Russia's desire to achieve operational readiness with a single battalion before fully deploying and training a second and third battalion could explain the temporal gap between construction of the first garage and the second and third garages.

1405th Artillery Ammunition Base in Asipovichy

Despite the transfer of dual-use weapons, it was still unclear whether Russian nuclear weapons would actually be stored on Belarusian territory or simply deployed from Russia to Belarus during a crisis. In March 31, 2023, Russia and Belarus announced the formal signing of a nuclear sharing agreement, providing greater clarity, as Putin announced plans to construct a special storage facility for NSNW in Belarus.[43] In April 2023, Belarus and Russia announced

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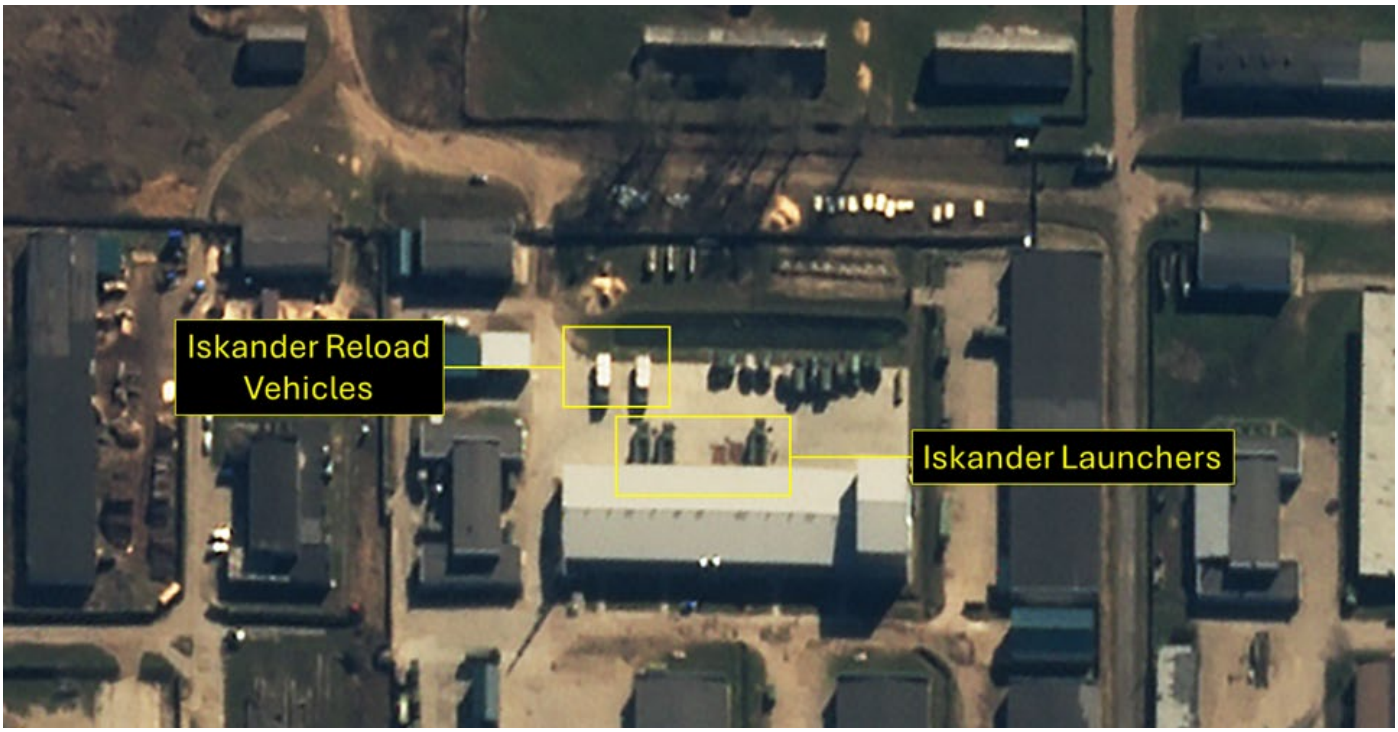
[40] Konrad Muzyka, *The Belarusian Armed Forces: Structure, Capabilities, and Relations with the Russian Federation*, International Centre for Defence and Security, 2021, https://icds.ee/wp-content/uploads/2021/08/The-Belarusian-Armed-Forces.pdf.

[41] Joseph P. Harahan, *With Courage and Persistence: Eliminating and Securing Weapons of Mass Destruction with the Nunn-Lugar Cooperative Threat Reduction Programs* (Defense Threat Reduction Agency, 2014), https://www.dtra.mil/Portals/125/Documents/History/With_Courage_and_Persistence.pdf.

[42] Konrad Muzyka, *Russian Forces in the Southern Military District*, CNA, 2021, https://www.cna.org/archive/CNA_Files/pdf/russian-forces-in-the-southern-military-district.pdf.

[43] Yuras Karmanau, "Russia Signs Deal to Deploy Tactical Nuclear Weapons in Belarus," AP News, May 25, 2023, https://apnews.com/article/belarus-russia-nuclear-weapons-shoigu-285ff887e8b1c28d20ff68e1d775441e.

Figure 4. Iskander garages and vehicles



Source: Image © Planet Labs PBC. (Markup added by CNA.)

that training of Belarusian military personnel for the nuclear mission had been completed.[44] In June 2023, Putin stated that Russia would begin deployment of nuclear weapons to Belarus in July, once the necessary facilities were ready.[45]

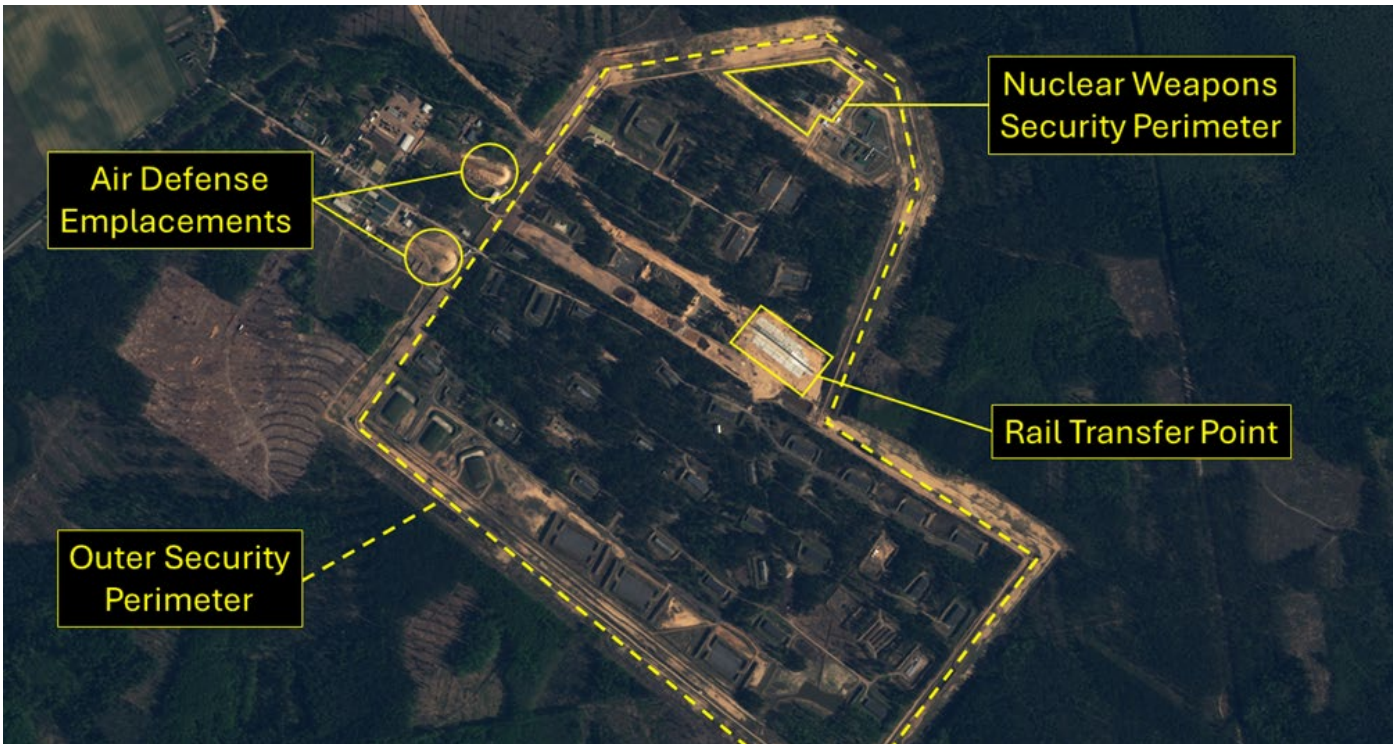
Public media reports have identified a munitions storage facility outside Asipovichy, the 1405th Artillery Ammunition Base, as the likely site of Russian nuclear weapons (i.e., nuclear warheads and gravity bombs) in Belarus (see Figure 5). The Asipovichy depot is a Soviet-era military munitions storage facility that formally hosted Unit 63303 of the Soviet 12th GUMO and stored nuclear artillery shells for the 51st Guards Artillery Brigade, then part of the Soviet 5th Tank Army. The site is now organized as the 1405th Artillery Ammunition Base of the Belarusian armed forces.

After nuclear weapons were removed from Belarus in 1996, the nuclear igloo on site was no longer maintained, but other areas of the facility continued to store conventional weapons in support of Belarusian conventional artillery and short-range missile brigades in the Asipovichy area. The Asipovichy depot contains a single nuclear weapon storage igloo. However, in 2022, the storage facility did not comply with security measures present at

[44] "Russian Defense Ministry: Belarusian Pilots Are Ready to Use Nuclear Weapons," Radio Sputnik, Apr. 14, 2023, https://radiosputnik.ru/20230414/letchiki-1865348971.html.

[45] Karmanau, "Russia Signs Deal to Deploy Tactical Nuclear Weapons in Belarus."

Figure 5. 1405th Artillery Ammunition Base facility



Source: Image © Planet Labs PBC. (Markup added by CNA.)

established nuclear weapon sites inside Russia, because security measures inside Russia had gone through considerable revision since the collapse of the Soviet Union and modernization under the Nunn-Lugar Cooperative Threat Reduction program.[46]

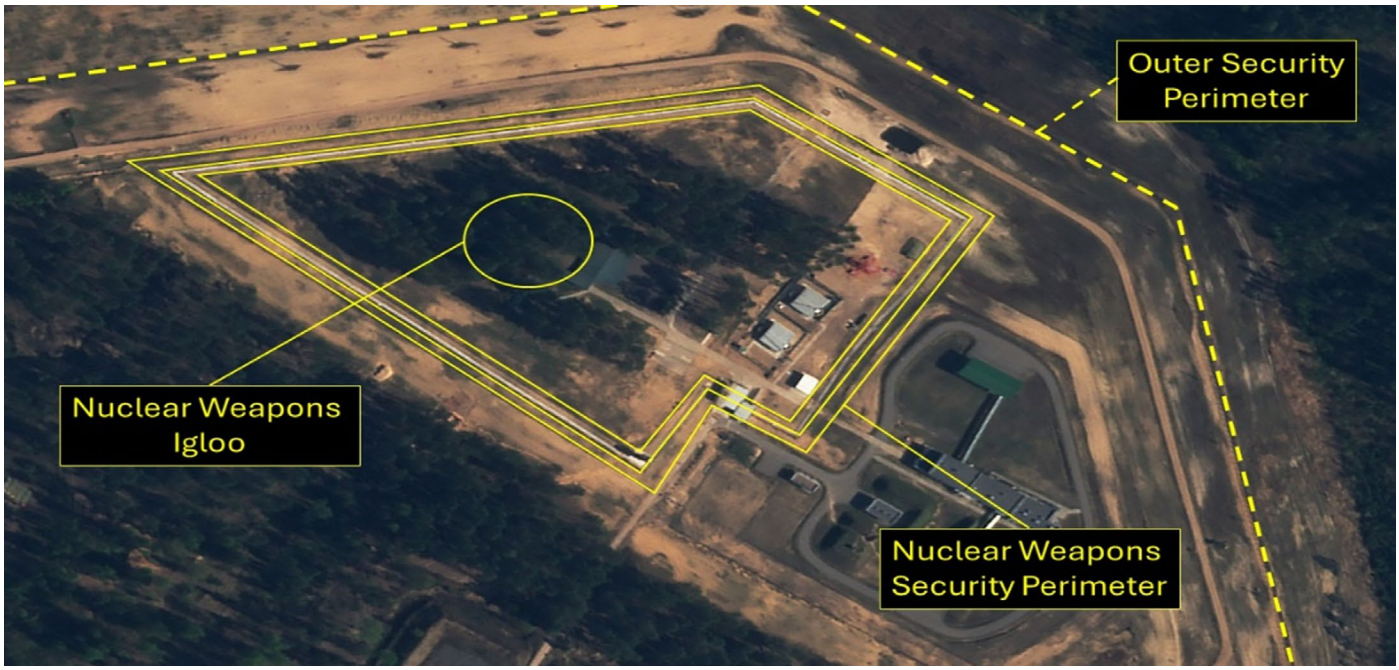
In February 2023, before the nuclear sharing agreement was formally announced, ground clearing began at the munitions storage facility, which is located 10 kilometers from the site of the new Iskander garages. This activity was focused on the perimeter around the nuclear weapon storage igloo, suggesting upgrades to the fencing around the site (see Figure 6).

This fencing is similar in both appearance and spacing to security fencing used at 12th GUMO facilities inside Russia.[47] This additional fencing is complemented by new watchtowers and a significantly larger security and inspection checkpoint at the facility's entrance. This inspection checkpoint is also extremely similar to inspection checkpoints constructed at nuclear weapon storage facilities inside Russia over the past

[46] William M. Moon, "The Story Behind US Access to Russian Nuclear Warhead Storage Sites," Stimson Center, Feb. 4, 2021, https://www.stimson.org/2021/the-story-behind-u-s-access-to-russian-nuclear-warhead-storage-sites/.

[47] The shape and spacing of security fencing at the Asipovichi site (obtained via satellite imagery) was compared to that of various known nuclear weapon storage facilities inside Russia operated by the 12th GUMO, such as Bryansk-18, Belgorod-22, and Vologda-20. For a full list of 12th GUMO storage facilities, see Podvig and Serrat, *Lock Them Up*.

Figure 6. Nuclear weapon storage igloo at 1405th Artillery Ammunition Base



Source: Image © Planet Labs PBC. (Markup added by CNA.)

decade, suggesting the checkpoint is being built to standards set by 12th GUMO for the storage of nuclear weapons (see Figure 7).[48]

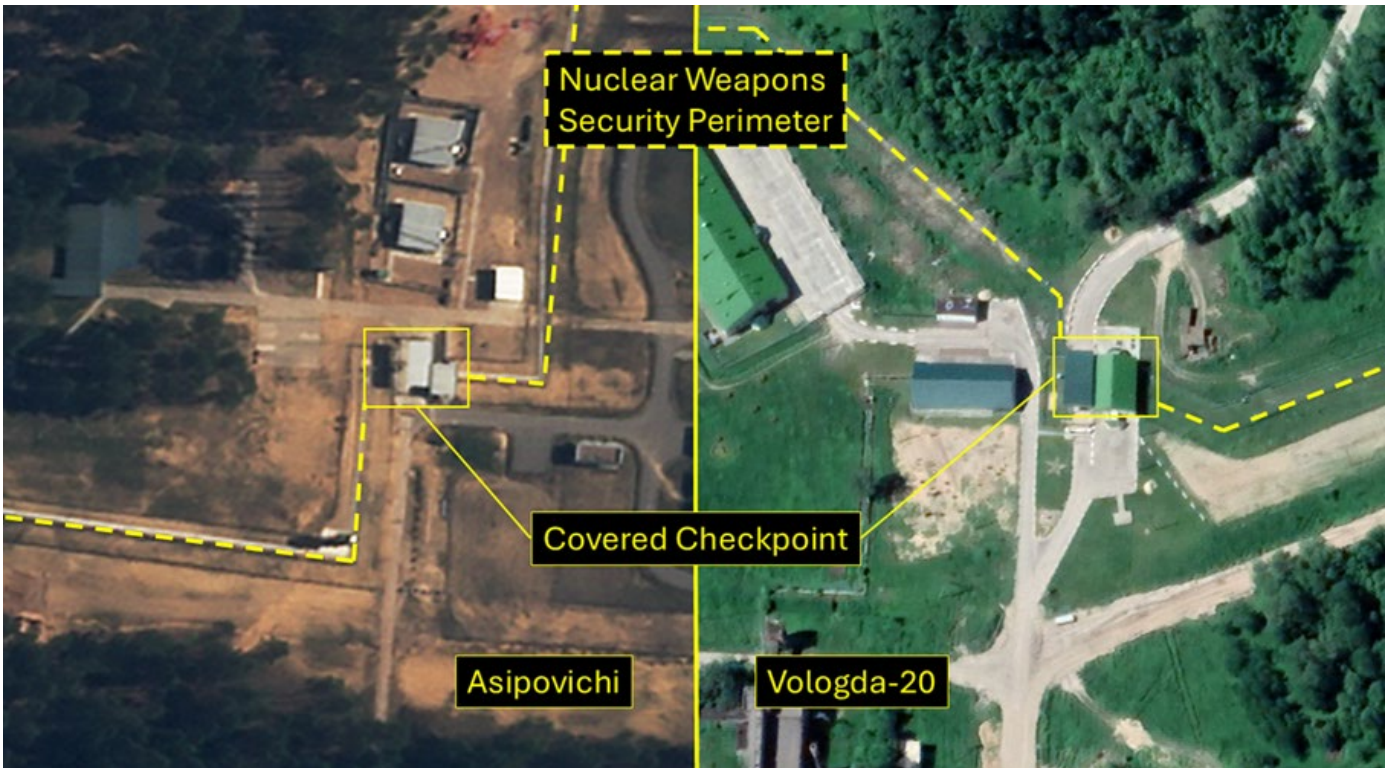
By late May 2023, the fencing around the facility was approaching completion.[49] In addition to upgrades to the security fencing around the Asipovichy storage facility, there have been several major improvements to associated infrastructure located at the facility, including the addition of a large communications tower inside the security fencing. This large tower is similar in appearance to communications towers constructed over the past 10 years at multiple 12th GUMO facilities, including the 12th GUMO nuclear weapon storage facilities at Vologda-20 and Bryansk-18 in Russia. This tower will likely support communications activities specific to the 12th GUMO.

Satellite imagery shows that the infrastructure present at the 1405th Artillery Ammunition Base is consistent with security and communications infrastructure built at 12th GUMO facilities across the Russian Federation. This facility will very likely be operated by the 12th GUMO and is designed to store Russian nuclear weapons in a manner consistent with Russian nuclear security and communications requirements.

[48] This similarity was first pointed out to the authors by Michael Duitsman.

[49] Hans Kristensen and Matt Korda, "Russian Nuclear Weapons Deployment Plans in Belarus: Is There Visual Confirmation?" Federation of American Scientists, June 30, 2023, https://fas.org/publication/russian-nuclear-weapons-deployment-plans-in-belarus-is-there-visual-confirmation/.

Figure 7. Comparison of sites in Belarus and Russia demonstrating similarities in facility design



Source: Image © Planet Labs PBC. (Markup added by CNA.)

Notably, on June 16, 2023, Putin announced that transfers of an initial batch of nuclear warheads to Belarus had also been completed and that the remaining warheads would be transferred by the end of summer or by the end of the year at the latest.[50] In December 2023, Lukashenko announced at the Collective Security Treaty Organization meeting in Moscow that transfers of nuclear warheads to Belarus had been completed.[51] In a March 2024 report, Western officials confirmed to *Foreign Policy* that Russia had moved NSNW into Belarusian territory.[52]

Still, there is insufficient evidence from publicly available satellite imagery to confirm these announcements. Based on the foregoing information, efforts to upgrade potential storage facilities at Asipovichy, the most likely place for holding such weapons, have yet to be completed in accordance with Russian (12th GUMO) standards. This state of affairs leaves only two possibilities. First, that despite such reports, Russia has yet to actually transfer the nuclear warheads/munitions needed to arm Belarusian Iskander missiles and Su-25 combat

50 Kristensen and Korda, "Russian Nuclear Weapons Deployment Plans in Belarus."

51 "Belarus Leader Says Russian Nuclear Weapons Shipments Are Completed, Raising Concern in the Region," AP News, Dec. 25, 2023, https://apnews.com/article/russia-belarus-nuclear-weapons-shipments-lukashenko-poland-a035933e0c4baa0015e2ef2c1f5d9b1a.

52 Detsch and Gramer, "Russia's Nuclear Weapons Are Now in Belarus."

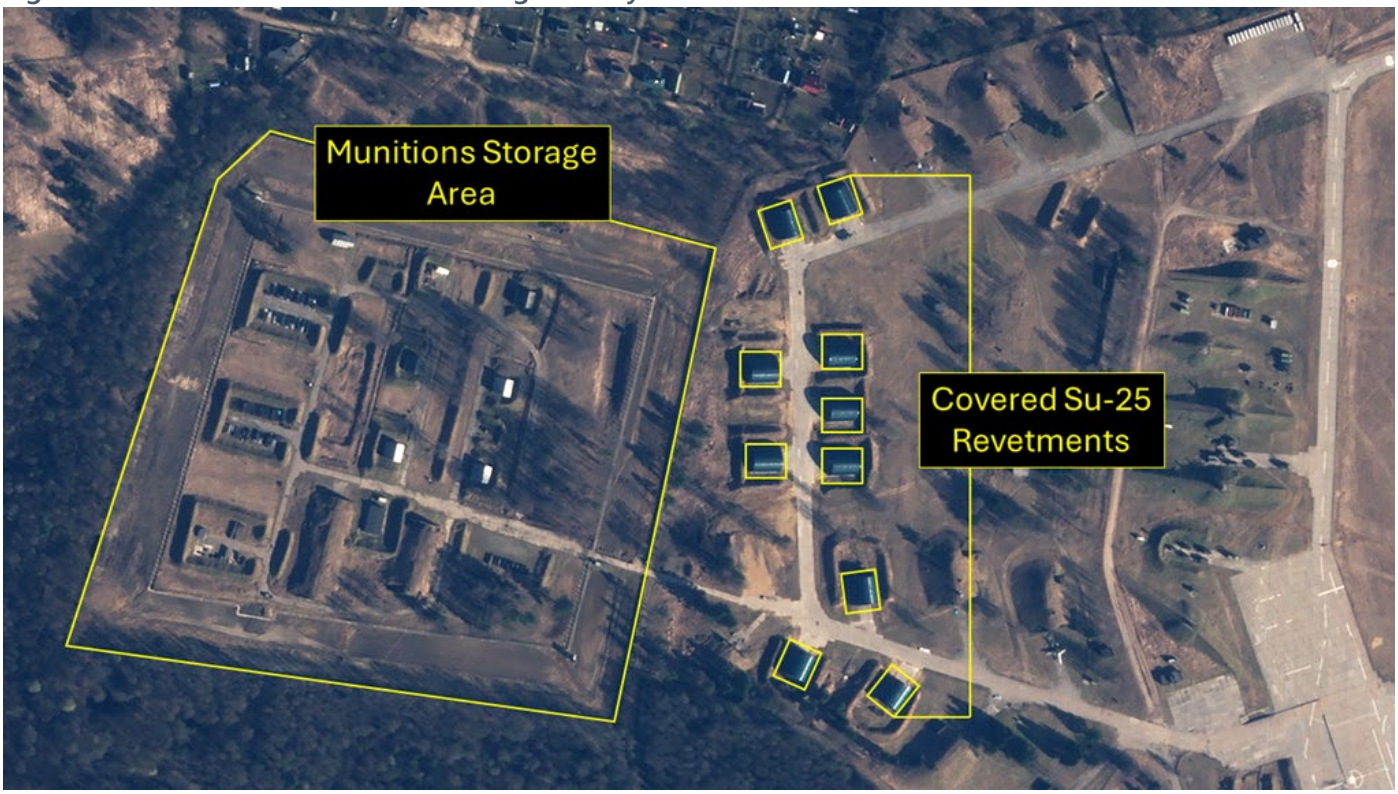
aircraft. Second, and more likely, such munitions were transferred to Belarus prior to completion of the necessary facility upgrades needed to store such weapons in accordance with 12th GUMO standards.

Lida Air Base

In addition to nuclear-capable Iskander-M missiles, Russia is reportedly providing Belarus with nuclear weapons for its Su-25 Frogfoot close air support aircraft.[53] The Su-25 is a relatively small tactical aircraft intended to conduct low-altitude fire support missions for advancing ground troops. It is generally armed with conventional rockets and gravity bombs. Currently, Belarus operates roughly 50 such aircraft at a single air base outside the city of Lida. That base is referred to as the 116th Guards Aviation Radomskaya Red Banner Base and has a storage facility for aviation munitions (see Figure 8).

During 2022 and 2023, there was insufficient infrastructure activity to imply that Belarus was planning to store nuclear weapons at Lida Air Base. Only in the fall of 2024 did upgrades to the security fencing at Lida Air Base become apparent, with the digging of several trenches for electrical wires and the installation of what may be watchtowers or sensors along the facility's edge. In addition to upgrades to munitions storage facilities, Belarus has been installing metal covers at aircraft parking

Figure 8. Lida Air Base munitions storage facility



Source: Image © Planet Labs PBC. (Markup added by CNA.)

[53] Korda, Johns, and Kristensen, "Video Indicates That Lida Air Base Might Get Russian 'Nuclear Sharing' Mission in Belarus."

spaces at Lida Air Base, presumably to obscure the Su-25 aircraft. These upgrades could be intended to protect Su-25 aircraft from the elements, but they are more likely designed to prevent open-source geolocations of Su-25 aircraft from appearing in Belarusian state media.[54]

Whether these upgrades are intended to facilitate the storage of nuclear weapons is not yet clear. So far, there have been no indications of any efforts to construct storage bunkers similar to those used by Russia and the Soviet Union to store nuclear weapons. Moreover, although the security perimeter at Lida is being upgraded, the perimeter does not appear to be compliant with Russian nuclear weapon storage standards.

For example, the munitions storage facility at Lida has only two layers of fencing, whereas other Russian nuclear weapon storage facilities typically have three. All Russian nuclear storage facility perimeters have a standard covered checkpoint at the entrance, as seen at the 1405th Artillery Ammunition Base at Asipovichy and at 12th GUMO storage facilities throughout Russia. Yet such a checkpoint is not currently present at this facility.

Therefore, we currently assess that the ammunition storage facilities at Lida Air Base are not yet sufficiently built out to store nuclear munitions. Additional features would need to be added to bring these facilities into full compliance with Russian standards. These additional features, in turn, would allow them to be used in a manner consistent with established Russian operating procedures, which are designed to ensure that control over nuclear weapons remains in the hands of 12th GUMO forces for as long as possible. Nuclear gravity bombs intended for Belarusian Su-25 aircraft will likely stay in the 12th GUMO's care until the weapons are delivered to units in the field during a crisis or conflict.

We cannot fully rule out that the lack of infrastructure features for the storage of nuclear weapons at Lida Air Base may simply be due to the slow pace of construction. The Asipovichy site, for example, required prolonged construction to install similar trenches. Security upgrades at Lida Air Base could simply be lagging behind construction efforts in the rest of Belarus. However, this situation would be inconsistent with the timelines evident at the other facilities in Belarus, where construction began even before official announcements were made. Thus, the deployment of nuclear weapons at Lida Air Base does not appear to be imminent.

Prudok Rail Station

The fourth facility examined using imagery intelligence is a military munitions depot and rail transfer point located at the town of Prudok on the Belarusian-Russian border. Public reporting indicates that this facility is a transfer point for Russian nuclear weapons equipment into Belarus.[55] However, no major infrastructure changes have been detected, which is perhaps unsurprising because the facility is not intended to store nuclear weapons permanently but rather serves as a pass-through checkpoint into Belarus.

Because of the difficulty in identifying specific railcars used for the transfer of nuclear weapons (i.e., 12th GUMO railcars dedicated for such purposes) on satellite imagery and the fact that such railcars would be located at the facility only temporarily, we were unable to identify any specific 12th GUMO activity at Prudok Rail Station. Therefore, we were unable to

[54] See Korda, Johns, and Kristensen, "Video Indicates That Lida Air Base Might Get Russian 'Nuclear Sharing' Mission in Belarus."

[55] Detsch and Gramer, "Russia's Nuclear Weapons Are Now in Belarus."

confirm reports that Prudok is being used as a transit point for Russian nuclear warheads transferred to Belarus.

Russian-Belarusian nuclear exercises

Since 2023, Belarus and Russia have practiced nuclear operations during multiple exercises (see Figure 9). Such exercises are necessary because nuclear missions differ in important ways from conventional missions. Conventional Iskander missile companies may receive fire orders from commands to which they may be attached in the field for tactical fire support. They may also receive commands to execute conventional strategic operations from higher levels of the Belarusian military, but the nuclear mission demands specific command-and-control systems and knowledge regarding operation of the nuclear warhead itself.

The first explicit nuclear exercise in which Belarusian units participated occurred in April 2023, before Putin announced that nuclear warheads were being delivered to Belarus.[56] In this exercise, Russian and Belarusian state media showed Su-25 aircraft and Iskander launchers training for a nuclear mission, but whether training forms for nuclear weapons were present is unclear. Russian and Belarusian media took the unusual step of obscuring details by blurring Iskander warheads and Su-25 bombs. Whether the purpose of this action was to hide specific markings on nuclear weapon training forms is unclear. The Federation of American Scientists geolocated this imagery to a Su-25 aircraft based at Lida Air Base, but no nuclear weapon training forms were shown.[57]

Figure 9. Belarusian Su-25 with nuclear weapon training forms

Source: "Statement by the Chief of the 12th Main Directorate of the Ministry of Defense of the Russian Federation," Russian Ministry of Defense, June 13, 2024, https://rutube.ru/video/3b65130efe595fba972be446dd944342/.

[56] Liviu Horovitz and Lydia Wachs, "Russian Nuclear Weapons in Belarus? Motivations and Consequences," *Washington Quarterly* 47, no. 3 (2024), https://www.tandfonline.com/doi/full/10.1080/0163660X.2024.2398952.

[57] Korda, Johns, and Kristensen, "Video Indicates That Lida Air Base Might Get Russian 'Nuclear Sharing' Mission in Belarus."

Footage released on Russian state television showed 12th GUMO nuclear weapon transport convoys operating at several air bases throughout Russia. None of these nuclear weapon transport convoys were geolocatable to locations in Belarus, however. Therefore, it is unclear what the April 2023 nuclear exercises were designed to achieve if nuclear weapon training forms were not actually present in Belarus. This training exercise may have been held simply to practice command and control.

It was not until the summer of 2024 that Russian and Belarusian military forces practiced together, during a multiround nuclear military exercise. Indeed, Belarusian television showed Su-25 aircraft with "practice nuclear bombs" in June 2024.[58] Present at the exercise was Lieutenant General Igor Kolesnikov, commander of Russia's 12th GUMO, who discussed the role of his command in Belarusian operations. He said the 12th GUMO would be responsible for maintaining custody of Russian nuclear weapons, which would be released to Belarus only if required during a crisis.[59]

This means the 12th GUMO would distribute weapons to Belarusian military forces at dispersed field locations while maintaining custody up until an order has been issued to mate Russian nuclear weapons to Belarusian launchers. This system not only ensures that Russia maintains custody but also gives Russia multiple opportunities to signal to the adversary during handover operations.

None of the exercises conducted so far are inconsistent with existing Russian practices and procedures. In Russia itself, the 12th GUMO stores nuclear weapons in the same manner as the storage system in Belarus. Nuclear weapons are kept in storage at centralized facilities before being dispersed to field units via 12th GUMO convoys. There is, so far, no evidence that Russia has operationalized any processes in Belarus that significantly deviate from these established procedures.

Corresponding changes to Russia's declaratory policy

As noted earlier, concurrent with the operationalization of the Russia-Belarus nuclear sharing agreement, Russia publicly released an updated version of its official nuclear doctrine in November 2024, with important changes related to Belarus. Specifically, in the section covering conditions under which Russia would transition to the employment of nuclear weapons, the main clause was expanded from the prior version of the doctrine released in 2020 to expressly include Belarus. As revised, the clause now reads as follows:

> [Russia] reserves the right to employ nuclear weapons in response to the employment of nuclear and (or) other types of weapons of mass destruction against itself and (or) its allies, as well as in the event of aggression against the Russian Federation and (or) the Republic of Belarus as participants in the Union State with the employment of conventional weapons, which creates a critical threat to their sovereignty and (or) territorial integrity.[60]

[58] Thomas Newdick, "Belarus Touts Su-25 Loaded with Simulated Nuclear Bombs but Won't Show Them," The War Zone, June 13, 2024, https://www.twz.com/news-features/belarus-touts-su-25-loaded-with-simulated-nuclear-bombs-but-wont-show-them.

[59] Newdick, "Belarus Touts Su-25 Loaded with Simulated Nuclear Bombs but Won't Show Them."

[60] Vladimir Putin, "Fundamentals of State Policy of the Russian Federation on Nuclear Deterrence," 2024, https://www.mid.ru/ru/foreign_policy/international_safety/disarmament/1434131/?lang=ru.

This clause, as revised, essentially treats conventional strikes against Belarus the same way that attacks against Russia would be treated. Second, the clause appears to have lowered the threshold for Russia to conduct nuclear strikes to cases in which the employment of conventional weapons against Russia or Belarus "creates a critical threat to their sovereignty and (or) territorial integrity." Russia's 2020 doctrine had authorized a nuclear response in cases in which conventional attacks on Russia had threatened the very existence of the Russian state, a seemingly higher threshold for nuclear use.

Further Insights from Russian Theoretical Writings

We can draw additional insights on what the nuclear sharing agreement indicates about Russia's evolving escalation doctrine from our theoretical assessment of recent scholarly writings by key members of Russia's military-analytical community. Most such writings were written during the Russia-Ukraine war and reflect the deep dissatisfaction felt by members of Russia's military-analytical community regarding the failures of Russia's escalation doctrine during the war.

As noted by R. O. Nogin of Russia's Strategic Rocket Forces Academy, writing in July 2022, Russian efforts to "bring some sense into" the United States and NATO and jointly prevent a "new world war" have so far been unsuccessful.[61] Russian setbacks in Ukraine, especially failures to deter indirect Western military assistance, have ignited intense debates among Russian military elites while sparking new lines of theoretical discussion on shoring up deterrence.[62]

Although these writings are rarely linked directly to Russian nuclear deployments in Belarus, the direction of military thought during the Russia-Ukraine war environment suggests that the deployment of Russian nuclear weapons to Belarus is at least partially designed to shore up the credibility of Russia's nuclear threats and to demonstrate the capabilities needed to back up those threats, all the while responding to the unique challenges presented to Belarus. In addition, the underlying logic of these writers' arguments often aligns with the Russia-Belarus nuclear sharing agreement.[63]

For example, Victor Kalganov, deputy head of the National Defense Control Center, along with G. B. Rizhov and I. V. Solovyov, has argued for bolstering Russia's coercive reputation through better organization, planning, and control of strategic deterrence. The three authors write that the central elements of strategic deterrence include not only intimidation through the threat of destruction

[61] Fink, Rosa-Hernandez, and Overfield, *Moscow Does Not Believe in Tears*; R. O. Nogin, "On the Question of Further Development of the Operational Art of the Strategic Missile Forces [К вопросу о дальнейшем развитии оперативного искусства Ракетных войск стратегического назначения]," *Military Thought*, no. 11 (2024).

[62] Although we touch on other topics during the course of this assessment, we have concentrated our analysis on recent Russian writings regarding new conflict typologies, and especially new conflict types and phases. We did this because, as noted above, Russia's escalation management framework relies heavily on properly classifying a conflict to determine the most appropriate escalation management steps to take given a particular conflict type. In this regard, Russian writings on proxy war, derived from Russia's experiences in Ukraine, play a special role in our assessment as they provide further insights on the rationale for the Russia-Belarus nuclear sharing agreement.

[63] Interestingly, we were unable to find a single article published in *Military Thought* openly discussing the Belarus nuclear sharing agreement prior to 2024, even though Russia and Belarus have been working on the arrangement since at least 2022. The first article in *Military Thought* directly discussing the nuclear sharing arrangement wasn't published until mid-2024, after the arrangement was well underway. Prior to this, the last article in *Military Thought* remotely close to the topic was an article written in 2021 by Sergei Karakaev, the commander of the Strategic Rocket Forces, which focused on the removal of nuclear weapons from Belarus following the breakup of the Soviet Union. This dearth of publication indicates that the decision to proceed with the nuclear sharing arrangement was likely a political decision driven initially by the Kremlin. This in turn gives Russian theoretical writings post-2022 on escalation management and other topics relevant to the agreement a certain ex post facto character, in which members of the military-analytical community seem to be striving to integrate the decision into Russian strategic thinking on nuclear weapons. Yet, despite lack of direct references to the agreement, we found numerous references in *Military Thought* on how Russia should update its escalation management framework and its doctrinal documents to reflect changed circumstances since the Ukraine invasion and what Russia should do to restore its coercive reputation given its negative experiences during the war.

but also coercion through the complex impact of military and nonmilitary measures—these elements can purposefully form expectations in the minds of a potential adversary about what will happen if it crosses Russian "red lines."[64]

According to these authors, by using such measures, Russia can convince the object of deterrence that Russia's actions will be decisive and commensurate with the object's aggressive behavior.[65] As discussed in the next section, this kind of thinking has clearly been manifested in the design and operationalization of the Russia-Belarus nuclear sharing agreement.

The war in Ukraine has also prompted serious discussions among Russian military thinkers regarding the reinterpretation of conflict phases and, implicitly, what they believe Russia's escalation management strategy should be based on its goals in Ukraine. Although these discussions began during the war, their aim is not only to address the challenges posed by ongoing US and NATO support for Ukraine but also to prepare for the next proxy war against the West.

The war in Ukraine has also prompted serious discussions among Russian military thinkers regarding the reinterpretation of conflict phases and, implicitly, what they believe Russia's escalation management strategy should be based on its goals in Ukraine.

Emerging concepts and proposals for new conflict typologies shed further light on Russia's aims in pursuing the Russia-Belarus nuclear sharing agreement. Therefore, we argue that the operationalization of the Russia-Belarus nuclear sharing agreement fits comfortably into the current direction of Russian strategic thought on conflict typologies and escalation models.

Since 2022, Russian military thinkers have attempted to make sense of the "special military operation" (SVO) in Ukraine and its place in Russia's conflict typology.[66] To this end, they have focused on clarifying the nature of the war in Ukraine, because of dissatisfaction with the results of the Kremlin's escalation measures during the war. Understanding the debates surrounding Russian interpretations of conflict phases is crucial because, in Russian thought, the selection of capabilities to inflict specific levels of damage on an opponent for the purpose of

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64 V. A. Kalganov, G. B. Ryzhov, and I. V. Solovyev, "Strategic Deterrence as a Factor in Guaranteeing the National Security of the Russian Federation [Стратегическое сдерживание как фактор обеспечения национальной безопасности Российской Федерации]," *Military Thought*, no. 8 (2022).

65 Lydia Wachs, "Russian Nuclear Roulette? Elites and Public Debates on Nuclear Weapons in Moscow After Ukraine," *Nonproliferation Review* 30, no. 4-6 (2023), https://www.tandfonline.com/doi/full/10.1080/10736700.2024.2435706.

66 A. I. Malishev, V. N. Marducin, and V. Yu Khakhalev, "Analysis of the Transformation of the Main Categories of Military Conflictology in the Doctrinal Foundations of the Russian Federation [Анализ трансформации основных категорий военной конфликтологии в доктринальных основах РФ]," *Voennaia Mysl*, no. 8 (2023); A. A. Bartosh, "Escalation Models of Modern Military Conflicts [Модели эскалации современных военных конфликтов]," *Voennaia Mysl*, no. 1 (2024); Roger N. McDermott and Charles K. Bartles, *An Assessment of the Initial Period of War: Russia-Ukraine 2022 Part Two*, Foreign Military Studies Office, US Army, Training and Doctrine Command, 2023, https://oe.tradoc.army.mil/product/an-assessment-of-the-initial-period-of-war-russia-ukraine-2022-2/.

managing escalation depends on the type and scale of the conflict.[67]

As noted by some Russian military thinkers, Western elites failed to comprehend the consequences of their actions in assisting Ukraine as they continued to provide Kyiv with increasingly advanced military assistance and real-time intelligence, surveillance, and reconnaissance support.[68] Absent effective Russian threats and countermeasures, Western elites have, according to Russian sources, "lost" the fear of nuclear war they once held during the Cuban Missile Crisis. These writers believe that the actions of the West signal a greater willingness to risk a direct conflict with Russia.[69]

In response to these problems, Russian military thinkers are increasingly advocating for the country to revise its escalation doctrine and associated system of conflict typologies to avoid a similar fate during future conflicts. Much of this emerging discourse has focused, in one way or another, on the concept of proxy conflict.

In one of the earliest attempts to distinguish the conflict in Ukraine from Russia's traditional conflict categories, Viktor Litvinenko, a well-respected member of the military scientific community, posited that the SVO itself has distinct features, which could theoretically make it a new category of conflict.[70] He first defined *special military operation* as "a special operation of troops (forces)…coordinated in objectives, tasks, place and time, carried out according to a single plan to achieve specified goals."[71] Nonetheless, as the Russia-Ukraine war progressed, Litvinenko admitted that the conflict had evolved into something more akin to a local or regional war. He further suggested that Russia is fighting the US and NATO by proxy while blaming the West for escalating the conflict by providing military assistance to Ukraine.[72]

In the August 2023 issue of *Military Thought*, Alexander Malishev, a retired major general and member of the Military Academy of the General Staff—along with his colleagues former deputy commander of the Western Military District Victor Marducin and Colonel Vladimir Khakhalev, also from the Military Academy of the General Staff—published an analysis of Russia's doctrinal documents over the years.[73] The article critiqued the 2014 military doctrine and its associated conflict typology, arguing that it failed to reflect modern forms of armed confrontation adequately.

To address this problem, they recommended that Russia expand the definition of *international armed conflicts* to encompass conflicts of different scale, arguing that such conflicts can take place within a single country as well as in localities or regions. More important for our purposes, the authors also

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67 Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*.

68 Kalganov, Ryzhov, and Solovyev, "Strategic Deterrence as a Factor in Guaranteeing the National Security of the Russian Federation."

69 Aleksandr Bartosh, "Deterrence Takes Other Forms [Сдерживание приобретает различные оттенки]," *Nezavisimoe Voennoe Obozrenie*, no. 24 (2023); Aleksandr Bartosh, "A Punishing Sword in the Hands of Russia [Карающий меч в руках России]," *Nezavisimoe Voennoe Obozrenie*, no. 10 (2023); Nogin, "On the Question of Further Development of the Operational Art"; Kalganov, Ryzhov, and Solovyev, "Strategic Deterrence as a Factor in Guaranteeing the National Security of the Russian Federation."

70 McDermott and Bartles, *An Assessment of the Initial Period of War*.

71 McDermott and Bartles, *An Assessment of the Initial Period of War*.

72 McDermott and Bartles, *An Assessment of the Initial Period of War*.

73 Malishev, Marducin, and Khakhalev, "Analysis of the Transformation of the Main Categories of Military Conflictology in the Doctrinal Foundations of the Russian Federation"; A. I. Malishev, Yu. F. Pivovarov, and V. Yu Khakhalev, "Categories of 'War' and 'Armed Conflict': Similarities and Differences [КАТЕГОРИИ "ВОЙНА" И "ВООРУЖЕННЫЙ КОНФЛИКТ": СХОДСТВО И РАЗЛИЧИЕ]," *Voennaia Mysl*, no. 2 (2022).

proposed distinguishing between different kinds of internal armed conflicts based on whether foreign intervention is involved.

Essentially, this new approach, if adopted, would expand the concept of international armed conflict to encompass both the current conflict in Ukraine as well as potential future conflicts in which foreign intervention plays a role. As a result, it would implicitly parse out escalation options for a potential proxy war with the United States and NATO. This approach represents a marked departure from Russia's existing conflict typology, given the possibility that a conflict with the US and NATO, which would ordinarily be characterized as a regional war, could be classified instead as an "international armed conflict" or "local war."

This proposed approach seems to be another attempt to understand how Russia's war in Ukraine and the actions of the Russian government align with prewar strategic conclusions. For their part, Russian officials have often attempted to paint the Russia-Ukraine war as a regional war with NATO while framing it as a proxy war.[74] In Russia's conflict typology, *regional war* is defined as a conflict between coalitions of powers in a particular theater. Yet the absence of direct armed conflict between Russian and NATO forces has made the task of labeling the war in Ukraine as a regional war more difficult to justify. On the other hand, the war in Ukraine can also logically be considered a local war because direct conflict has been geographically constrained.

Confusion over what type of conflict Russia is fighting in Ukraine has made it difficult for Russia to apply a coherent escalation management strategy, thereby contributing to Russians' growing dissatisfaction with its prewar escalation doctrine as applied to Ukraine and potentially in future wars. Russia's inability to position the Ukraine conflict properly within its conflict typology has had important implications for Russian escalation management efforts during the war.

Russian leaders have had difficulty applying appropriate escalation measures because of the hybrid nature of the conflict. Measures prescribed by Russia's escalation management strategy for a local war are geared more toward managing escalation with a particular adversary in Russia's near abroad (in this case, Ukraine). But these measures were insufficient to deter large-scale Western military support for Ukraine. Likewise, measures specified for a regional war, such as engaging in targeted high-precision strikes against NATO high-value targets, are deemed too provocative in a proxy war involving the West, because the West is not directly involved in actual armed combat with Russia.

This debate on how best to define Russia's war in Ukraine and its trajectory has been persistent in Russian military journals, especially given growing Russian frustrations over Western involvement in Ukrainian strikes against mainland Russia. Another prominent example addressing this issue can be found in an article in the May 2023 issue of *Military Thought,* authored by Aleksandr Bartosh, who is also a noted proponent of the hybrid war framework and one of the first military thinkers to propose that Russia alter its doctrine to reflect the challenges it has faced in Ukraine.[75]

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[74] Office of the Director of National Intelligence, *Annual Threat Assessment of the US Intelligence Community*, 2025, https://www.dni.gov/index.php/newsroom/reports-publications/reports-publications-2025/4058-2025-annual-threat-assessment; "Russia, US Are in Hot Conflict Phase—Senior Diplomat," *Tass*, 2023, https://tass.com/politics/1599707.

[75] Aleksandr Bartosh, "Proxy-War as an Important Factor in the Military Conficts of the 21st Century [Прокси-война как определяющий фактор военных конфликтов XXI века]," *Military Thought*, no. 5 (2023); Bartosh, "Escalation Models of Modern Military Conflicts."

In this article, Bartosh argues for Russia to incorporate the term *proxy war* formally into its traditional conflict typologies and to update its military doctrine, along with its other declaratory documents. According to his conceptualization, *proxy war* can be best defined as an international conflict between two countries seeking to achieve their objectives using the military actions and resources of a third country. These military actions can occur entirely within the borders of the third country, ostensibly under the pretense of resolving an internal conflict within that country's territory.

Bartosh also argues that Russia now finds itself in Ukraine in such a proxy war with NATO.[76] Specifically, he argues that the Ukraine conflict should be considered a regional proxy conflict with potential global consequences, implying that the proxy war concept is highly malleable in terms of where it is situated in Russia's concept of phases of conflict. His writings implicitly explain the nuclear signaling undertaken by the Russian government during the Russia-Ukraine war as measures to prevent a proxy war from turning into large-scale aggression. Moreover, he wrote this article long before Sergei Karaganov advocated for a nuclear strike on NATO territory to deter further military assistance for Ukraine.[77]

As will be shown in the next section, Russian views on proxy wars and the kinds of escalation management steps most appropriate for such conflicts help to explain both the design and rationale for the Russia-Belarus nuclear sharing agreement.

[76] Aleksandr Bartosh, "Factors of Surprise Yesterday and Today [Фактор внезапности вчера и сегодня]," *Nezavisimoe Voennoe Obozrenie*, no. 2 (2023); Bartosh, "Deterrence Takes Other Forms"; Bartosh, "A Punishing Sword in the Hands of Russia."

[77] For a deeper discussion of the Karaganov debate, see Fink, Rosa-Hernandez, and Overfield, *Moscow Does Not Believe in Tears*.

Assessment: Continuity and Change in Russia's Escalation Management Strategy

Since the beginning of the Russia-Ukraine war, Russian military thinkers have consistently advocated for stronger measures to reinforce Russia's signaling credibility. Given this context, the Kremlin's decision to enter into a nuclear sharing agreement with Belarus is consistent with the idea that Russia sought to strengthen its nuclear deterrence strategy, restore the credibility of its coercive signaling, and assume greater escalation risks than NATO. Under this new arrangement, Russia has delivered dual-capable systems to Belarus, including the Iskander-M complex and upgraded Su-25 aircraft capable of nuclear strikes. In addition, Russia has allegedly moved nuclear warheads onto Belarusian territory, and the two countries have conducted joint training and combined NSNW exercises.

In this section, we draw on the results of both our empirical and theoretical research to conclude that what the Russia-Belarus nuclear sharing agreement tells us about how Russia's escalation management strategy is evolving based on the war in Ukraine and other relevant drivers.

When viewed both holistically and as a set of individual measures, the Russia-Belarus nuclear sharing agreement demonstrates a high degree of continuity with Russia's existing (pre-Russia-Ukraine war) escalation management framework. Yet certain elements of the agreement represent new or modified approaches to escalation management. This section examines indicators of both continuity and change in Russia's escalation doctrine, as reflected in the Russia-Belarus nuclear sharing agreement.

Indicators of continuity

According to Russia's escalation management framework, the demonstration phase notionally envisions a series of escalation management measures to be taken during periods of increased military danger, imminent military threats, and intensifying interstate crises. These include a range of nonkinetic deterrence measures to be taken during the demonstration period of a potential conflict with NATO, many of which are entirely consistent with actions undertaken in Belarus to operationalize the new agreement.[78]

Actions to operationalize the agreement include transfers of dual-capable weapons systems to Belarus, upgrades to Belarusian military bases, construction of potential nuclear weapon storage sites, weapons deployment and testing, provision of military training for Belarusian combat personnel, and combined military exercises. Such measures are expressly provided for in Russia's escalation framework, which includes measures to increase the readiness of armed forces, demonstrative testing of new weapons, strategic deployments of armed forces, and similar measures.

Likewise, the movement of nuclear weapons and the publicization of their deployment to Belarus are consistent with Russia's preexisting escalation management framework, which emphasizes the signaling benefits of these actions. In the case of Belarus, nuclear deployments were intended to send a strategic signal to Western adversaries about the increased risks of a potential incursion

[78] Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*.

in Belarus, enhancing Russia's ability to manage escalation during future crises.[79] Such measures have also allowed Russia (and Belarus) to demonstrate deployed nuclear capabilities and readiness, even though the actual military assets in Belarus, including Su-25 aircraft and Iskander launchers, have inherent military limitations.

The operationalization of the agreement also demonstrates significant continuity with Russia's existing (pre–Russia-Ukraine war) systems for supporting nuclear operations, especially in terms of how Russia's 12th GUMO has structured its operations. Russian and Belarusian forces supply, train, and practice nuclear and conventional missions in ways that are entirely consistent with how Russian dual-capable forces have long planned to operate, even before the war in Ukraine. As an example, Belarusian Iskander missiles are kept on base in peacetime, although their nuclear warheads are stored off site, consistent with Russian practice.

In addition, the operationalization of the nuclear sharing arrangement demonstrates significant continuity with Russia's prewar escalation doctrine by maintaining a gradualist approach to moving up the escalatory ladder. Geospatial evidence supports this interpretation as well, because deployments, to date, appear to be relatively moderate in terms of both the number of weapons deployed and the quantity of available launchers.[80] Likewise, Russia's approach in Belarus, which involves storing weapons and delivery systems at considerable distances from one another, highlights the need for significant preparatory steps to be taken over time before such weapons could be used.

Consequently, Russian nuclear-related deployments to Belarus provide more options to signal at lower levels of conflict while remaining consistent with Russia's prewar escalation management strategy. Once these weapons are dispersed during a crisis, Russian nuclear weapons will be attached to Belarusian launchers in the field at various dispersal sites across Belarus, including designated field sites for missile launchers and highway locations for the air component of the Belarusian nuclear-capable force.

This approach offers significant signaling benefits for Russia during the early phases of a crisis or conflict. For instance, Russia and Belarus could theoretically publicize the movement of nuclear warheads to weapons delivery sites to signal their readiness to use such weapons during a crisis. Such warheads would have to be transported from storage and prepared for use, following procedures like those used within Russia's own nuclear arsenal, which would offer the Kremlin additional opportunities to signal possible further escalation.

When viewed in combination, the various elements incorporated into the nuclear sharing arrangement aim to comprehensively increase risk perceptions among Western leaders regarding direct or indirect intervention in Belarus or continuing support for Ukraine.

This was rather openly acknowledged in an article by Lieutenant General Kolesnikov, commander of the 12th GUMO and the man responsible for operationalizing the nuclear sharing agreement. He argued that Russia and Belarus need to counter

[79] Kofman, Fink, and Edmonds, *Russian Strategy for Escalation Management*; Muntyanu and Pechatnov, "Challenging Methodological Issues on the Development of Strategic Deterrence Through the Use of Military Force"; Kovalyov and Malkov, "Possible Approaches to Forming a 'Systemic Configurator' in the Subject Area 'Nonmilitary Threats' to Russia's Security."

[80] Jaroslaw Adamowski, "Belarus to Make Su-25 Attack Aircraft as Russia Eyes Industry Takeover," *Defense News*, Feb. 21, 2023, https://www.defensenews.com/global/europe/2023/02/21/belarus-to-make-su-25-attack-aircraft-as-russia-eyes-industry-takeover/.

the West's desire to unleash attacks on them.[81] He contended that Russia and Belarus needed to take appropriate measures because the US and its allies are laying the groundwork for a possible military conflict. Therefore, Russia (and, implicitly, Belarus) should strive for high readiness of its nuclear forces and their special support system.

Indicators of evolution

The operationalization of Russia's nuclear sharing agreement with Belarus also includes novel features not previously provided for in Russia's prewar escalation management strategy. These features demonstrate significant change in Russia's approach to escalation management since the Russia-Ukraine war. First and foremost in this regard is the nuclear sharing agreement itself, with Russia's decision to accede to such an agreement representing a distinct departure from its previous post–Cold War policy.

Before its announcement, Moscow was categorically opposed to nuclear sharing agreements in principle, arguing repeatedly that NATO's nuclear sharing agreements were contrary to the NPT, which forbids transfers of nuclear weapons to nonnuclear weapon states. However, when Putin announced his intention to transfer Iskander missiles to Belarus, he attempted to justify this decision by citing the existence of NATO's nuclear sharing arrangements.[82] Consequently, the advent of a nuclear sharing agreement and the delivery of dual-capable systems and nuclear warheads to Belarus represent new forms of escalation management for Moscow.

Deployment of Russian nuclear weapons to the territory of other states is also consistent with the writings of certain Russian military scholars who have advocated for similar measures to enhance the credibility of Russia's nuclear deterrence.

By the same token, Russia's prewar escalation doctrine did not foresee the deployment of nuclear weapons to the territory of Russian allies or partners, regardless of the existence of a nuclear sharing agreement. This was the first time since the Cold War that Russia has undertaken such a deployment. Consequently, such deployments also represent a new form of nuclear signaling that could potentially be repeated in other countries during future crises or conflicts.

Deployment of Russian nuclear weapons to the territory of other states is also consistent with the writings of certain Russian military scholars who have advocated for similar measures to enhance the credibility of Russia's nuclear deterrence. For example, writing in 2023, V. V. Sukhorutchenko et al. emphasized the importance of positioning dual-capable systems outside Russian borders as a "practical demonstration" of nuclear and nonnuclear capabilities that can be promptly used as part of a cost imposition strategy.[83] The authors underscored

[81] I. A. Kolesnikov and V. V. Kruglov, "On New Military Dangers and Threats to Russia," *Military Thought*, no. 6 (2024).

[82] Fink, Rosa-Hernandez, and Overfield, *Moscow Does Not Believe in Tears*.

[83] V. V. Sukhorutchenko, A. S. Borisenko, and E. A. Shlotov, "Russian Federation Policies in the Area of Assuring Military Security in the Environment of Stagnation of the International-Legal System of Control over the Armed Forces and Military Activities [Политика Российской Федерации в области обеспечения военной безопасности в условиях стагнации международно-правовой системы контроля над вооружениями и военной деятельностью]," *Military Thought*, no. 5 (2023); Fink, Rosa-Hernandez, and Overfield, *Moscow Does Not Believe in Tears*.

the importance of credible demonstrations and recommended showcasing military systems and their capabilities as well as conducting training and exercises to demonstrate such capabilities.[84] Although they did not openly discuss the prospect of a nuclear sharing agreement between Russia and Belarus, focusing instead on strategic weapons, the operationalization of the new nuclear sharing agreement is wholly consistent with their approach.

In addition, certain aspects of the nuclear sharing arrangement appear designed to enhance their deterrence effects in ways outlined by Kalganov et al. (as discussed earlier), who have argued for Russian defense planners to find ways to bolster the country's coercive reputation and credibility in light of Russia's deterrence failures in Ukraine. For example, the forward deployment of Belarusian Iskander missiles and Su-25 strike aircraft appears to render them more vulnerable to preemptive strikes by NATO forces, especially given the limited number of delivery systems involved.[85]

However, some analysts have argued this situation makes it more likely that Belarus (or Russia) would use these weapons preemptively during the lead-up to war, to avoid losing them altogether.[86] This, in turn, enhances their deterrence effects by making it more risky for Western countries to take actions against Belarus that might provoke a crisis.

Finally, the operational limitations of the forces deployed in Belarus likely indicate that Russia has elected to rely more heavily on dual-use weapons in Belarus as a deterrence force, something that it has been reticent to do in the past.[87] Previously, weapon systems such as the Iskander and Su-25 were deployed primarily for tactical-operational use by general purpose forces, although they also retained a secondary nuclear role. However, in the case of Belarus, there has been increased emphasis in Russian and Belarusian official statements and propaganda on Su-25 and Iskander systems representing an explicitly nuclear deterrence force.

In general, Russia has not previously sought to rely primarily on nuclear deterrence at lower levels of escalation or to entangle its nuclear forces with its conventional forces, despite a substantial investment in dual-use systems.[88] As evidenced in Belarus, however, this approach may be changing, with Russia electing to rely more heavily on NSNW for nuclear signaling and coercive effects at lower levels of conflict (e.g., during the demonstration period).

Corresponding changes to Russia's declaratory policy

Recent changes to Russia's declaratory nuclear policy also reflect substantial departures from Russia's preexisting approaches to nuclear deterrence. As noted earlier, recent changes in Russia's 2024 nuclear doctrine equating conventional attacks on Belarus to attacks on Russia itself represent an attempt to elevate what was formerly an extended deterrence commitment toward Belarus to one of direct deterrence against what would now be considered an attack on Russia itself, to render the threat more credible.

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84 Sukhorutchenko, Borisenko, and Shlotov, "Russian Federation Policies."

85 Horovitz and Wachs, "Russian Nuclear Weapons in Belarus?"

86 Nikolai Sokov, "Russia Is Deploying Nuclear Weapons in Belarus. NATO Shouldn't Take the Bait," *Bulletin of the Atomic Scientists* (Apr. 24, 2023), https://thebulletin.org/2023/04/russia-is-deploying-nuclear-weapons-in-belarus-nato-shouldnt-take-the-bait/.

87 Kristin Ven Bruusgaard, "Russian Nuclear Strategy and Conventional Inferiority," *Journal of Strategic Studies* 44, no. 1 (2021), doi: 10.1080/01402390.2020.1818070.

88 Ven Bruusgaard, "Russian Nuclear Strategy and Conventional Inferiority."

These changes to Russia's declaratory policy are also consistent with recent theoretical writings of Russian military elites who have sought to enhance the credibility of Russia's nuclear signaling. Writing in *Military Thought*, for example, Sukhorutchenko et al. called for a more assertive declaratory policy and for Russia to convey its red lines to the West more clearly, to achieve a more holistic and coordinated approach to nuclear signaling.[89] Their arguments help elucidate the officially adopted perspectives in Moscow regarding the role and significance of Russia's strategic nonnuclear and nuclear weapons within the country's doctrine and strategy.[90]

According to this view, Russia appears to have absorbed Belarus into its overall nuclear posture, and Russian military planners have essentially confirmed as much. For example, in an interview in December 2024, Sergei Karakaev, the commander of the Strategic Rocket Forces, noted that changes to Russia's nuclear doctrine regarding Belarus have affected the Strategic Missile Forces, with Russia's doctrine regarding Belarus as a geographical expansion of its official doctrine.[91]

New conflict types and their role in the nuclear sharing agreement

Insights drawn from Russian theoretical writings shed further light on the rationale for the Russia-Belarus nuclear sharing agreement and how its escalation doctrine is evolving. For example, arguments by Bartosh (as noted earlier) regarding the need for Russia to develop new concept types to better prepare for future proxy conflicts with the West can be readily seen in the nuclear sharing agreement with Belarus. When viewed through this lens, the agreement should be seen as a strategic tool to signal resolve, deter escalation by NATO, and respond to perceived Western encroachments in Belarus—especially from Eastern European states—within a proxy war framework of escalation but controlled coercion.

Bartosh's arguments also suggest that the Russia-Belarus nuclear sharing agreement is a form of horizontal escalation in response to the West's proxy conflict against Russia in Ukraine. Bartosh further developed this thesis in the same article, arguing that Russia should undertake costly measures toward NATO, and especially Poland (including conventional strikes on countries arming Ukraine), which is perceived to have been particularly proactive in assisting Ukraine. This line of thinking would imply that operationalization of the Russia-Belarus nuclear sharing agreement is perceived by Bartosh as a costly signal toward NATO as a whole. Yet given the short delivery ranges of the dual-use systems deployed under the agreement, Russia's nuclear mission in Belarus can be interpreted as being aimed primarily at Poland.[92]

Although Bartosh's prescribed measures do not represent a consensus within Russia, his underlying rationale highlights the necessity of clearly defining the types of conflicts that Russia may encounter, and the corresponding use of military force based on the scale of conflict, to coerce potential aggressors. Consistent with this, other Russian military thinkers have indicated that deploying nuclear weapons

89 Sukhorutchenko, Borisenko, and Shlotov, "Russian Federation Policies in the Area of Assuring Military Security"; Fink, Rosa-Hernandez, and Overfield, *Moscow Does Not Believe in Tears*.

90 Wachs, "Russian Nuclear Roulette?"

91 "A Reliable Support for Russia's Security and Sovereignty [Надёжная опора безопасности и суверенитета России]," *Red Star*, 2024, https://milportal.ru/nadyozhnaya-opora-bezopasnosti-i-suvereniteta-rossii/.

92 Sokov, "Russia Is Deploying Nuclear Weapons in Belarus."

and nuclear-capable delivery systems in Belarus would prevent the kinds of undesirable outcomes experienced in Ukraine.[93]

For example, M. A. Savushkina from the Mikhailovskaya Military Artillery Academy has noted that Ukraine is not the only possible proxy conflict on Russia's periphery.[94] Lieutenant General Igor Kolesnikov—the head of the 12th GUMO and overseer of the nuclear sharing arrangement—and retired Major General Vyacheslav Kruglov also seem convinced of this premise, as they have urged Russia to prepare for new proxy wars orchestrated by the West:

> The deployment of new American and NATO units and military formations in Poland, Romania, the Baltic States, Finland and Sweden is in fact an operation to prepare the armed forces of these countries to unleash military conflicts with Russia and the Republic of Belarus. [Given] this goal, a provocation to enforce a blockade in Kaliningrad is possible.[95]

According to Kolesnikov and Kruglov, Russia and Belarus needed to pursue nuclear measures to deter such actions.

Russian military thinkers have also warned that the West is seeking to create crisis situations on Russia's periphery while noting that the West has already attempted to support a color revolution in Belarus in 2020. For example, in 2022 A. V. Serzhantov and D. A. Pavlov wrote, "It is assumed that to weaken the Russian Federation, Western countries will artificially create crisis situations, primarily in the post-Soviet space, accompanying their actions with a build-up of military potential near our borders."[96] Clear examples cited in the article include the recent uprisings in Belarus in 2020 and in Kazakhstan at the beginning of 2022.[97]

Other Russian military thinkers appear to share these musings. For instance, Savushkina, building on Bartosh's work, wrote in 2024 that "the formalization of concepts related to means and forms of unconventional warfare at the legal level is a crucial step towards developing measures to counter proxy wars."[98]

This line of thought supports the notion that one of Moscow's primary objectives in acceding to the Russia-Belarus nuclear sharing agreement is to deter the West from attempting to provoke further crises in Belarus. In this regard, the NSNW exercises conducted pursuant to the nuclear sharing agreement may well have been conducted, in part, to reinforce this purpose. Belarusian Defense Minister Viktor Khrenin asserted that the expanded involvement of the Belarusian armed forces during the second stage of exercises was necessary because of the increase in regional tensions as a result of perceived Western provocations. In particular, he mentioned

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93 Horovitz and Wachs, "Russian Nuclear Weapons in Belarus?"

94 M. A. Savushkina, "Proxy Warfare as a Phenomenon of Digital Society [Прокси-война как феномен цифрового общества]," *Military Thought*, no. 1 (2024). Savushkina, "Proxy Warfare as a Phenomenon of Digital Society."

95 Kolesnikov and Kruglov, "On New Military Dangers and Threats to Russia."

96 A. V. Serzhantov and D. A. Pavlov, "The Hybrid Nature of Dangers and Threats, Their Impact on the System of Ensuring the Military Security of the Russian Federation [Гибридный характер опасностей и угроз, их влияние насистему обеспечения военной безопасности РоссийскойФедерации]," *Military Thought*, no. 5 (2022).

97 Serzhantov and Pavlov, "The Hybrid Nature of Dangers and Threats, Their Impact on the System of Ensuring the Military Security of the Russian Federation."

98 Savushkina, "Proxy Warfare as a Phenomenon of Digital Society."

the West's aggressive military policy, unwillingness for constructive dialogue with Minsk, failed attempts to drag Belarus into a color revolution, and alleged plans for the use of military force against Minsk.[99]

Collectively then, Russian nuclear deployments in Belarus demonstrated a clear desire on the part of both Russia and Belarus to increase risk perceptions among Western leaders regarding direct or indirect intervention in Belarus.

[99] Alexander Taranov, "Russia and Belarus Hold Joint Non-Strategic Nuclear Exercises (Part Three)," *Eurasia Daily Monitor* 21, no. 124 (2024), https://jamestown.org/program/russia-and-belarus-hold-joint-non-strategic-nuclear-exercises-part-three/.

Implications

The deployment of Russian nuclear weapons to Belarus likely represents an operationalization of Russia's current escalation framework, which is undergoing further evolution to reflect the changing threat perceptions of Russia's military thinkers. These perceptions have been influenced significantly by Russia's ongoing war in Ukraine and the series of recent domestic political crises (including color revolutions) in states Russia views as permanently attached to its sphere of political and cultural influence, such as Belarus and Kazakhstan. Because of the perceived failures of Russian deterrence efforts to respond to these situations, Russia is changing its nuclear policy to account for future threats, and these changes include bringing Belarus physically under the Russian nuclear umbrella.

Another key inference that can be drawn from our findings is that the deployment of Russian nuclear weapons to Belarus is as much a sign of decreasing Russian confidence regarding the internal security situation in Belarus and the Union State as a whole as it is a sign of Russia's views on the deteriorating external security situation. The internal and external security environments are closely coupled concepts in the writings of Russian military experts who share a common view about the cause of their degradation, namely the Collective West. Therefore, the deployment of nuclear weapons to Belarus has significant implications for Russia's nuclear behavior in future scenarios, including potential conflicts of various scale in both Russia's near abroad, Eastern Europe, and domestic political crises within the Union State.

Consequently, one of the key implications of this report is that we are likely to see increased nuclear signaling, demonstrations of force, and demonstrative deployments of both conventional and nuclear weapons to counter Western interference in Russia's near abroad. At lower levels of conflict, the West should also be prepared to see Russia as more willing to use concrete physical signaling to deter possible Western action against itself or territories and states that it sees as within its exclusive sphere of influence.

Moreover, the growing alignment between Russia and Belarus, including the incorporation of Belarus into Russia's nuclear umbrella, could well lead to additional measures to deter Western intervention in Belarus and to manage escalation at higher levels of conflict. Such measures could include the deployment of additional nuclear weapons to Belarus, the distribution of such weapons to Belarusian units, and, in the event of a deteriorating crisis or conflict, demonstration strikes at the conventional or nuclear level to show commitment and willingness to defend against real or perceived Western aggression.

Therefore, NATO states should individually and collectively consider Russia's obsessions over the threat of massed aerospace attacks and color revolutions and expect that either the movement of NATO aerospace forces adjacent to Belarus or domestic instability inside the Union State will likely generate strong Russian signaling efforts.

The deployment of Russian nuclear weapons—as well as the operation of advanced Russian ballistic and cruise missiles from inside Belarusian territory—also has implications for NATO's ability to respond to and defend against Russian military threats in times of crisis or conflict. The deployment of an Iskander brigade to Belarus doubles the number of Russian ground-based dual-use launchers along the border of the Baltic States and Poland. Moreover, these systems are deployable at such short distances from

European borders that NATO will have very little reaction time if Russian and Belarusian forces elect to launch missile strikes against targets in Eastern European NATO states.

This problem will become even more pronounced if Russia and Belarus follow through on recent Belarusian statements about the potential deployment of the Oreshnik system (a nuclear-capable intermediate-range ballistic missile) to Belarusian territory. At such short distances, Oreshnik will likely fly along trajectories and at speeds that make defense against them very difficult. This would increase the threat to NATO air and missile defense assets throughout continental Europe. This threat is coupled with Russia's extreme anxiety about NATO's potential use of such assets in combination with a precision long-range strike, so any movement of these assets during a crisis may draw unwanted escalation from the Russian side.

Moreover, in the event of an actual armed conflict among Russia, Belarus, and NATO, the deployment of NSNW to Belarus exacerbates the entanglement problem inherent with dual-capable systems, because now every close air support and strategic missile platform in Belarus could be perceived as a nuclear mission. This dynamic, in turn, will make it difficult for the West to distinguish between a conventionally armed and nuclear-armed Belarusian platform.

By the same token, any Western attack on Belarusian Su-25 platforms could technically be considered an attack on a nuclear asset and could, in some circumstances, be interpreted as a NATO attempt to degrade or eliminate Belarusian nuclear deterrence capabilities in Belarus.

On the other hand, Russian nuclear sharing agreements with other countries in Russia's near abroad or nuclear weapons deployments outside Russia appear unlikely, at least under current geopolitical conditions. Belarus plays a unique role in Russian strategy, both because of its role as a buffer state to protect the main industrial and population centers in Russia and the growing alignment between Presidents Putin and Lukashenko.

Moreover, as noted previously, there are strong indications that the Kremlin views the nuclear sharing agreement with Belarus and associated nuclear deployments as necessary to deter Western-backed color revolutions in or outright attacks on Belarus. More recently, the Kremlin has become increasingly concerned with avoiding the kind of Western-backed proxy war in Belarus that Russia is now facing in Ukraine. Consequently, the possibility of Western incursions in Belarus is increasingly seen as a major threat to Russian security, warranting the kind of response reflected in the nuclear sharing agreement.

Russia is unlikely to feel compelled to take similar measures in other areas of its near abroad, such as the Caucasus or Central Asia. The potential for large-scale Western incursions in these regions is viewed as far less likely—and hence as less of a perceived threat—especially because the countries in these regions are smaller, less defensible, and less accessible to Western military intervention.

We can also offer a few general observations about possible future Russian courses of action.

- First, the Russian military is exploring new ways to strengthen deterrence during the demonstration period, so the West can expect Russia to adopt novel approaches to achieve its deterrence goals in other places and in other scenarios. The deployment of nuclear weapons to Belarus is the most notable example, but Russian military elites are also intensely debating the best ways to enhance deterrence and restore the credibility of the country's nuclear signaling during future crises and conflicts. Moreover,

they are pursuing new options, including increased reliance on demonstrations of military capability, forward deployments of conventional and nuclear weapons, enhanced nuclear signaling around use of NSNW, and other means to increase risk perceptions in the minds of Western leaders.[100] At the same time, they are engaging in increased discussion about the benefits of preemption while fostering greater ambiguity in Russian official doctrine and nuclear signaling efforts.

- Second, Russian leadership will likely continue experimenting with ways to enhance the strategic effects of deterrence and escalation management steps by using a combination of military and nonmilitary measures tailored to specific scenarios. This approach is already evident in Belarus, where Moscow and Minsk are pursuing a set of measures to magnify and reinforce the impact of nuclear weapons deployments to Belarus. These measures included public pronouncements by leaders in both countries; visible transfers of dual-capable systems and, allegedly, nuclear munitions to Belarus; construction of military sites consistent with Russian operational standards; changes to Russia's declaratory policy; and combined training and exercises. As discussed earlier, members of the Russian military-analytic community, such as Kalganov, are advocating for a combined approach to ensure that the strength of some measures can compensate for the weaknesses of others and vice versa. We should expect Russia to pursue a combined approach to escalation management in future scenarios as well.
- Finally, as noted earlier, Russia is currently rethinking its escalation management framework, including existing conflict typologies, in light of its negative experiences in Ukraine. The prewar classification of conflicts did not envision the kind of hybrid or proxy conflict that Russia has encountered in Ukraine. Consequently, the country was ill prepared to respond with appropriate measures to deter or limit Western military assistance for Ukraine. In response, Russia is experimenting with new concepts and conflict phases, including, most notably, the concept of proxy war. Russian military elites are also devising new escalation measures that are more appropriate for managing escalation during such conflicts. Consequently, Western military leaders should no longer expect Russia to employ more limited measures formerly prescribed for local wars while reserving increasingly aggressive measures for regional or large-scale wars, because the lines between such conflicts are becoming increasingly blurred.

[100] Adamsky, "Quo Vadis, Russian Deterrence?"; Nicole Grajewski, "Russia's Updated Nuclear Doctrine Isn't a Blueprint for Weapons Use. Its Primary Value Is Manipulation," Carnegie Endowment for International Peace, Nov. 26, 2024, https://carnegieendowment.org/emissary/2024/11/russia-nuclear-doctrine-update-weapons-use-sovereignty?lang=en.

Appendix: Imagery Intelligence

Satellite imagery can take many forms and can be obtained using optical imagery, synthetic aperture radar imagery, or multispectral imagery. The integration of imagery intelligence into a study of nuclear posture can provide additional information not readily available from open-source media reports. Such information can reveal, for example, how many nuclear missiles a state has and precisely where they are deployed. This kind of information is extraordinarily useful for gaining greater clarity on what is happening on the ground.

Yet it is far from the limit of what satellite imagery can accomplish. For example, imagery *analysis*, which is the process of using information gained from the interpretation of satellite imagery, can provide important intelligence on a myriad of topics, including individual and organizational behavior and state intent.[101] Simply put, imagery intelligence can take visual data and use that data to draw wide-ranging conclusions about human behavior within organizational, climatological, and cultural contexts.[102]

The most famous example of the difference between imagery interpretation and imagery intelligence took place during the Cuban Missile Crisis. In August 1962, American spy planes detected "Star of David"–shaped paths in the ground at various locations in northern Cuba. These patterns were recognizable to imagery interpreters in the United States as conforming with the shape of Soviet SA-2 "Guideline" surface-to-air missile installations.[103]

But it was not simply their presence that alarmed analysts in the United States. The SA-2 sites had been placed in a trapezoid pattern, the same way that surface-to-air missile sites in the Soviet Union were laid out to protect Soviet nuclear missile sites.[104] This realization helped the Central Intelligence Agency (CIA), employing imagery intelligence, not only guess what the SA-2 sites were intended to defend but also know precisely where to look for recently deployed Soviet nuclear missiles. In October, follow-on spy plane missions took photos of Soviet nuclear missiles in exactly the places where the CIA predicted they would be.

This achievement in imagery intelligence was attained not simply because interpreters knew what they were looking for. It was made possible because analysts recognized patterns in the data that informed them of standard organizational practices used by the Soviet military and they applied those patterns to entirely new data. In this way, imagery analysis can do far more than simply inform leadership of where something is actually deployed. If appropriately structured, imagery analysis can place the targets of observation into their appropriate context, which, in turn, can enable teams to make broader conclusions regarding the implications of such deployments and organizational processes and policies.[105]

101 Aaron Jabbour and Renny Babiarz, *Geospatial Data, Information, and Intelligence* (Artech House, 2023), pp. 103–104.

102 Jabbour and Babiarz, *Geospatial Data, Information, and Intelligence*, pp. 111–113.

103 John T. Hughes and A. Denis Clift, "The San Cristobal Trapezoid," *Studies in Intelligence* 36, no. 5 (1992).

104 Hughes and Clift, "The San Cristobal Trapezoid."

105 Jabbour and Babiarz, *Geospatial Data, Information, and Intelligence*, pp. 103–104.

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