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# Doctrine by Necessity

## Analysing Russia's Nuclear Strategy Modification in the Era of Hypersonic Weapons

## Abstract

*This study examines Russia's 2024 nuclear doctrine modification in the context of its technological advancements and strategic challenges between 2020–2024. Drawing on the Nuclear Scepticism Theory and the Conventional Balance of Forces thesis, the analysis demonstrates that Russia's doctrinal changes represent a deliberate lowering of the nuclear threshold driven primarily by conventional military considerations rather than technological developments. While Russia emphasises its hypersonic weapons capabilities, the article reveals that doctrinal shifts correlate more closely with conventional military challenges exposed during the Ukraine war than with advances in weapons systems. The findings contribute to our understanding of how states adjust their nuclear strategies in response to conventional military pressures despite possessing sophisticated military technologies.*

*Keywords: nuclear doctrine, Russia, strategic stability, hypersonic weaponry, military strategy*

## Introduction

The Russian leadership has often emphasised its hypersonic weapons[2] capabilities as a cornerstone of its military modernisation. These weapons are strategically significant because they can potentially carry either conventional or nuclear warheads, and their speed and manoeuvrability make them particularly challenging to defend against. Russia has frequently linked these technological advances to its nuclear rhetoric, suggesting they strengthen its strategic position. However, despite claims about unrivalled hypersonic

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[2] Hypersonic weapons travel at least five times the speed of sound (Mach 5). While ballistic missiles also reach similar speeds during re-entry, hypersonic weapons uniquely maintain these speeds at lower altitudes while remaining manoeuvrable (Karako–Dahlgren 2022: 5).

capabilities and technological supremacy, this study reveals that Russia's recent nuclear doctrine modifications are driven more by conventional military considerations than by technological achievements.

In this context, the September announcement and November 2024 confirmation[3] of Russia's nuclear policy change signify a major shift in nuclear strategy and global security. This change seems to be motivated more by strategic considerations than simply by technological evolution, although occurring alongside the advancement of hypersonic weaponry. This study, covering the years 2020–2024, examines whether Russia's evolving nuclear strategy reflects significant technological progress or is mostly a response to broader strategic concerns.

## Strategic context

A commentary by Heather Williams argues that Russia's doctrinal modifications reflect "Russia's increasing reliance on nuclear weapons in an attempt to deter Western assistance to Ukraine".[4] This takes place against the backdrop of what seems to be an arms race for new technologies, such as the creation of hypersonic weapons.

"Hypersonic weapons combine the speed and range of ballistic missiles with the low-altitude and manoeuvrable flight profile of a cruise missile", stated by a CSIC report on complex air defence,[5] underscores the importance of these new weapons systems. According to Carnegie's commentary, "Russia and China appear to be focused primarily on the delivery of nuclear warheads", which, according to this view, does not change the nuclear status quo,[6] rather, it only reinforces it.

## Research problem

As Bollfrass and Herzog assert: "The nuclear order is neither air nor rock; it is water. While it cannot stop a determined and powerful state, it creates friction and transforms the option space. It makes some moves rather difficult while creating alternative opportunities and incentives. The source of this shaping power is the complex's ability to ameliorate coordination and collective-action problems such as security dilemmas."[7] President Putin made a similar remark in June, implying that the nuclear doctrine was a "living instrument" that may change based on global circumstances.[8]

This study examines the main motivations for Russia's revision of its nuclear doctrine in 2024 as well as the connection between technological advancement and doctrinal adaptation in nuclear strategy.

[3] RU MFA 2024.
[4] Williams 2024.
[5] Karako–Dahlgren 2022: 1.
[6] Acton 2018.
[7] Bollfrass–Herzog 2022: 9.
[8] Trevelyan 2024.

## Research questions and hypothesis

This essay attempts to answer the following questions:

- What influences the development of Russia's nuclear doctrine in the present strategic environment?
- What connection does doctrinal change have with declared technological capabilities?
- What effects does this have on strategic stability and global security?

The following hypothesis has been put forth in light of the questions:

Instead of a more comprehensive doctrinal shift prompted by technological evolution, Russia's 2024 nuclear doctrine changes reflect conventional military weakness and an attempt to prevent Western support to Ukraine.

The importance of this subject goes beyond the particular situation in Russia. As Heather Williams notes, "the purpose of the new doctrine may be not only deterrence but also an attempt to divide European allies on the basis of how much risk they are willing to accept in supporting Ukraine".[1] Understanding how doctrinal change and strategic context interact has significant ramifications for various issues such as alliance management, crisis stability, strategic stability and arms control.

## Theoretical framework

This research can be structured through two complementary theoretical approaches. The "Conventional Balance of Forces thesis"[2] posits that states' nuclear strategies are dynamically shaped by their perception of conventional military capabilities. This framework helps understand how conventional military inferiority may drive nuclear compensation, but also how improvements in conventional capabilities can affect nuclear posture and strategy.

Nuclear Scepticism Theory,[3] which contends that nuclear weapons are more useful for deterrence than for coercion, is a complement to this theory. Collectively, these frameworks indicate that nuclear strategies of states are influenced by the conventional military balance:

- conventional inferiority may result in heightened dependence on nuclear threats
- enhanced conventional capabilities can diminish reliance on nuclear options
- the interplay between conventional and nuclear forces is dynamic rather than static[4]

The primary utility of nuclear weapons is deterrence:

- more powerful for deterrence than coercion
- nuclear coercion rarely achieves its objectives
- the costs associated with coercive nuclear threats are excessively high[5]

[1] Williams 2024.
[2] Ven Bruusgaard 2021.
[3] Sechser–Fuhrmann 2017.
[4] Ven Bruusgaard 2021: 3–4.
[5] Sechser–Fuhrmann 2017: 46–60.

Kristin Ven Bruusgaard asserts that although "nuclear weapons remain effective for deterring large-scale nuclear war", their overall political and coercive effectiveness is less guaranteed.[6]

This integrated framework facilitates the analysis of the impact of conventional military capabilities on nuclear strategy, while recognising the intrinsic limitations of nuclear coercion.

Furthermore, hypersonic weapons systems, which represent both conventional and nuclear capabilities, must be taken into consideration by this framework. They reflect perceived conventional vulnerabilities, impact deterrence credibility and stability through innovative ways. They potentially diminish reliance on nuclear alternatives while also complicating strategic stability.

## Contextual analysis

### The current geopolitical context influencing nuclear arsenal developments

Russia's war in Ukraine is one of the key factors influencing the current geopolitical dynamics that have a substantial impact on the global nuclear landscape. According to Kristensen et al. (2024), Russia's significant losses in conventional military capabilities during the Ukraine conflict have likely heightened its dependence on nuclear deterrence.

> "Russia's nuclear modernization program appears motivated in part by the Kremlin's strong desire to maintain overall parity with the United States and to maintain national prestige, but also to compensate for inferior conventional forces as well as the Russian leadership's apparent conviction that the US ballistic missile defence system constitutes a real future risk to the credibility of Russia's retaliatory capability. The poor performance and loss of a significant portion of Russian conventional forces in the war against Ukraine and the depletion of its weapon stockpiles will likely deepen Russia's reliance on nuclear weapons for its national defense."[7]

Russia's deployment of dual-capable precision weapons in Ukraine, including Kh-101/102 air-launched cruise missiles and Kinzhal missiles, sea-launched Kalibr cruise missiles and ground-launched Iskander missiles, and the Oreshnik IRBM system, demonstrates the operational integration of nuclear-capable systems in conventional conflicts. In addition, "Russia's nuclear modernization programs – combined with frequent explicit nuclear threats against other countries in the context of its large conventional war in Ukraine – contribute to uncertainty about the country's long-term intentions and have generated a growing international debate about the nature of its nuclear strategy".[8]

The Russian–Belarusian nuclear cooperation agreement in 2023 marked a dramatic shift in nuclear deployment trends. Along with extensive training programs

[6] Ven Bruusgaard 2024: 338.
[7] Kristensen et al. 2024: 118.
[8] Kristensen et al. 2024: 118.

for Belarusian personnel and the conversion of Belarusian Su-25 aircraft for nuclear delivery capabilities, Russia declared plans to build nuclear storage facilities in Belarus. A significant change in the regional nuclear posture is represented by this extension of nuclear infrastructure beyond Russia's boundaries.[9]

The current scenario is made more complex by the breakdown of weapons control mechanisms. Nuclear force verification and monitoring have faced major obstacles since Russia's suspension of participation in the New START agreement in February 2023. The international community finds it more difficult to appropriately assess Russia's nuclear force developments and deployments in the absence of treaty-mandated inspections and information exchanges.[10]

Increased military operations in the Arctic, joint Russia–China strategic aviation patrols over the Sea of Japan and East China Sea, and modifications to submarine deployment patterns are some examples of regional military dynamics that further complicate the nuclear setting. These actions are a reflection of changing strategic alliances and wider geopolitical tensions that impact nuclear force deployments and postures.[11]

## Dynamics of strategic stability and deterrence

There is now more complexity in the relationship between strategic stability[12] and nuclear capabilities.

Russia has significantly changed its strategic capabilities with the development of modern weapons systems, especially hypersonic platforms like Avangard and Kinzhal. These dual-capable systems, which can carry either conventional or nuclear warheads, pose new challenges for strategic stability in two ways. First, their high speed and manoeuvrability shorten warning times and make defensive responses more difficult; second, in a conflict scenario, it becomes difficult for adversaries to determine whether an incoming missile carries a conventional or nuclear warhead, potentially resulting in misinterpretation and unintended nuclear escalation.[13]

Kristin Ven Bruusgaard defines three fundamental dimensions of strategic stability.

*Crisis Stability:* In addition to fears of a nuclear first-use in an ongoing conflict between Russia and NATO, NATO is concerned about possible Russian conventional attacks supported by nuclear threats.[14]
NATO's stronger conventional strike capabilities are the main source of Russian anxiety since they could jeopardise Russia's secure second strike capabilities.[15]

[9] Kristensen et al. 2024: 123–124.
[10] Kristensen et al. 2024: 121.
[11] Kristensen et al. 2024: 131–133.
[12] Strategic stability refers to the absence of incentives to initiate conflict or produce ever-larger weapon arsenals. Asymmetric approaches to deterrence (nuclear, conventional and unconventional) can create differing views of what constitutes strategic stability (Ven Bruusgaard 2024: 335).
[13] Norton 2016.
[14] Ven Bruusgaard 2024: 343.
[15] Ven Bruusgaard 2024: 345.

Although they have differing perspectives on escalation pathways, both sides are concerned about the possibility of an unintentional escalation to nuclear war.
*Arms Race Stability:* According to Kristin Ven Bruusgaard, NATO is concerned about Russia's nuclear modernisation and tactical nuclear weapons, particularly, "Russia's significant arsenal of sub-strategic nuclear weapons optimised to affect a regional war between Russia and NATO".[16]
Russia is concerned about NATO's missile defence capabilities, precision-strike capabilities and conventional force concentrations. Different perspectives on what defines destabilising behaviour and strategic stability in Europe are generated by asymmetric capacities.[17]
*Cross-Domain Stability:* Non-traditional and non-nuclear factors, such as cyber capabilities, information operations, domestic interference and economic warfare that impact strategic calculations are increasingly taken into account by both sides in deterrence (see also how NATO's new Strategic Concept defines societal resilience as one of three pillars of collective security).[18] Conventional notions of stability find it difficult to include these additional aspects.[19]

## Descriptive statistics

The conceptual foundation for understanding Russia's nuclear posture through these strategic stability dimensions was presented in the previous section. However, to evaluate how theoretical concerns translate into real military capabilities, a detailed examination of Russia's current nuclear capabilities and modernisation programs is required. A detailed examination of Russia's nuclear arsenal and contemporary advancements, particularly in relation to the development of hypersonic missiles, is provided in this section.

### Evaluation of Russia's strategic capabilities and nuclear forces: Present situation and modernisation initiatives

Russia keeps a sizable nuclear arsenal as part of its strategic deterrence, according to an extensive analysis published in the Bulletin of the Atomic Scientists. About 4,380 nuclear warheads for strategic and tactical use, with 1,710 operationally deployed, make up Russia's nuclear arsenal as of early 2024. Overall, there are roughly 5,580 warheads in the stockpile, including 1,200 retired warheads that are still pending dismantlement.[20]

[16] Ven Bruusgaard 2024: 347.
[17] Ven Bruusgaard 2024: 347–350.
[18] NATO 2022.
[19] Ven Bruusgaard 2024: 350–352.
[20] Kristensen et al. 2024: 118.

## Structure of strategic forces

There are three primary components to the strategic forces:

- The land-based ICBMs have about 870 warheads.
- There are roughly 640 warheads on submarine deployed missiles.
- About 200 warheads are stationed at heavy bomber stations in the Air Force.

Furthermore, 1,558 nonstrategic weapons and 1,112 strategic warheads are kept in storage.[21]

## Delivery systems

Russia's nuclear delivery capabilities include 67 strategic bombers (Tu-160 and Tu-95MS), 12 nuclear-powered ballistic missile submarines and 326 nuclear-armed ICBMs. Russia's continuous modernisation efforts are reflected in this force structure, which is driven by a number of factors:

- The necessity of preserving strategic equality with the United States.
- The desire to make up for the limitations of conventional capabilities.
- Concerns about U.S. ballistic missile defence capabilities.
- National prestige.22

## Strategic arms control background

The discontinuation of Russia's participation in the New START treaty in February 2023 is an important milestone that has an impact on nuclear force assessment. In September 2022, the most recent data available showed that 540 strategic launchers had 1,549 deployed warheads. Researchers estimate that if treaty limitations are dropped, Russia could be able to boost its deployed arsenal by 60%. While Russia could theoretically increase its deployed arsenal by this degree if treaty limitations are dropped, actual upload capacity varies significantly by platform – from hours for bombers to months or years for ICBMs and submarines. This verification challenge grows more complex each year as Russia could potentially test both U.S. detection capabilities and political willingness to address possible treaty violations.[23]

The Treaty's expiration on 5 February 2026 would mark the first time since 1972 without verifiable limits on the world's two largest nuclear arsenals. Both the United States and Russia could theoretically pursue larger expansions of their strategic nuclear forces, potentially returning to START I levels of 6,000 warheads each. Such expansion could cost the United States between $88–439 billion in acquisition costs plus $4–28 billion in annual operations, with comparable expenses expected for Russia. Beyond strategic forces, the end of verification regimes would likely drive increased investments in intelligence capabilities, conventional missiles, nonstrategic nuclear forces and missile defence systems. While this future is not inevitable, it requires diplomatic engagement

[21] Kristensen et al. 2024: 118–119.
[22] Kristensen et al. 2024: 124–132.
[23] Kristensen et al. 2024: 121–122.

through either continued mutual adherence, a new executive agreement, or a comprehensive new treaty.[24]

## Advanced weapons systems: Technology at hypersonic speed

Russia has invested much in the development of hypersonic weaponry, creating a number of important systems:

The Avangard System

Deployed on modified SS-19 Mod 4 ICBMs, the Avangard hypersonic glide vehicle is a significant technological achievement. At the Dombarovsky missile field, two regiments have been equipped: the 368th (reportedly finished in December 2023) and the 621st (finished in December 2021).[25]

The Kinzhal System (9-A-7760)

Russia's commitment to tactical hypersonic capabilities is demonstrated by this dual-capable air-launched ballistic missile system. It can fly up to 2,000 kilometres when fired from a MiG-31K and up to 3,000 km when launched from a Tu-22M3 bomber. This system has a specialised aviation regiment, and by 2024, it was expected to be deployed to the Central and Western Military Districts.[26]

There are reports about multiple strikes against strategic targets, but effectiveness is questioned after Ukrainian forces apparently intercepted missiles in a single May 2023 attack using Patriot air defence systems.[27]

Tsirkon (3M-22) Naval System

Russia's quest for sea-based hypersonic capabilities is demonstrated by this system, which was successfully tested from the Severodvinsk submarine in 2021 and 2022. It will be installed on Yasen-M class submarines and is intended for both surface and underwater launches.[28]

The Oreshnik IRBM System

A new intermediate-range ballistic missile derived from the RS-26 IRBM missile, first used in combat in November 2024 against Dnipro, Ukraine. Features multiple independently targetable re-entry vehicle (MIRV) capability with six warheads. While Putin claimed it as a novel hypersonic weapon, experts note it applies established ICBM technology in a new configuration, with reduced range compared to the RS-26.[29] Its deployment was explicitly framed by Russian leadership as a response to Western authorisation of ATACMS and Storm Shadow missile strikes against Russian territory.[30]

[24] Rogers et al. 2022.
[25] Kristensen et al. 2024: 126, 128.
[26] Kristensen et al. 2024: 136.
[27] Montgomery–Nelson 2023.
[28] Kristensen et al. 2024: 135.
[29] Doyle et al. 2024.
[30] Antonov–Osborn 2024.

## Future advancements and uncertainties

Russia is also working on other hypersonic technologies, such as the glide vehicles Anchar-RV and Gradient-RV.[31] Significant facets of these initiatives are still unknown or classified, though. It has been reported that the Su-57 fighter aircraft will be fitted with Kinzhal-style hypersonic missiles, while the new Kh-95 hypersonic missile will be carried by the Tu-160M and upcoming PAK DA strategic bombers.

The PAK DA "Poslannik", a subsonic flying wing bomber with 30–35-ton payload capacity and 12,000 kilometres range, is designed to carry various weapons including Kh-95, Kinzhal and Kh-BD cruise missiles. While production is scheduled for 2027, development faces potential delays due to Western sanctions.[32]

The 2M39 Poseidon – also known in the United States as Kanyon, Ocean Multipurpose System and Status-6 – represents a unique complement to Russia's hypersonic missile capabilities. This nuclear-powered underwater drone system, designed to be launched from submarines, reportedly combines unprecedented range (10,000 kilometres), significant operating depth (up to 1,000 meters) and high-speed capability (approximately 185 kilometres per hour). Russia plans to acquire 30 Poseidon torpedoes and deploy them on four submarines, with the first expected deployment by 2027. The Belgorod submarine has already been modified to carry these weapons, with a second Poseidon-capable submarine (the Khabarovsk) under development. While some experts view Poseidon primarily as a psychological deterrent, Russia has devoted substantial resources to its development, suggesting serious intent to field this novel strategic capability.[33]

The authors of the paper, published in the *Bulletin of the Atomic Scientists,* acknowledge that accurate information regarding deployment schedules, operational readiness and hypersonic weapon capabilities is frequently impossible to independently confirm. Accurate evaluations have become much more difficult as a result of the suspension of New START, which has decreased information regarding Russia's total nuclear forces.

Despite their remarkable technological prowess, the development and deployment of these systems follow established strategic goals influenced by conventional nuclear balance concerns rather than creating new doctrinal needs. Such technology developments mainly address long-standing strategic concerns regarding the vulnerability of conventional forces, as Kristin Ven Bruusgaard[34] points out. The timing of doctrinal changes, which are more closely correlated with conventional military troubles than with innovations in technology, makes the current situation clearer.

[31] Kristensen et al. 2024: 129.
[32] Defense News Aerospace 2024.
[33] Kaur 2023.
[34] Ven Bruusgaard 2021: 24.

## Research results

### Summary table of key components of the nuclear policy of the Russian Federation

This table was constructed through the analysis of relevant Russian legislation: Nuclear Doctrine of 2020[35] and Nuclear Doctrine of 2024.[36]

*Table 1: Russian Nuclear Doctrine: 2020–2024 Framework Comparison*

| **Basic Principles of State Policy on Nuclear Deterrence 2020 (No. 355)** | **Nuclear Doctrine Modifications 2024 (No. 991)** |
|---|---|
| **Conditions for Nuclear Weapons Use (Section 19, 2020):**<br><br>• Receipt of reliable information about ballistic missile launches attacking Russia and/or its allies<br>• Use of nuclear weapons or other WMD against Russia and/or its allies, against Russian military formations and/or facilities located outside Russian territory<br>• Enemy impact on critically important state or military facilities of Russia, disrupting the response actions of nuclear forces<br>• Conventional aggression when state existence is in jeopardy | **Conditions for Nuclear Weapons Use (Section 19, 2024):**<br><br>Maintains all 2020 conditions with precise wording and adds:<br>• Aggression against Russia and/or Belarus as Union State members using conventional weapons creating critical threat to sovereignty/territorial integrity<br>• Receipt of reliable information about massive launch (takeoff) of aerospace attack weapons (strategic and tactical aviation, cruise missiles, unmanned vehicles, hypersonic and other aircraft) and their crossing of Russian Federation's state border |
| **Key Strategic Changes between Doctrines** | |
| **Threat Assessment Framework**<br>2020: Focus on strategic nuclear and WMD threats<br>2024: Enhanced specification of:<br><br>• Modern warfare capabilities (aerospace, hypersonic)<br>• Coalition threats<br>• Supporting states' responsibilities | **Geographic/Strategic Scope**<br>2020: Russia and allies generally<br>2024: Expanded to specifically include:<br><br>• Union State framework with Belarus<br>• Critical sovereignty and territorial integrity threats<br>• Adjacent territories and maritime zones<br>• Supporting states' territory and resources |

*Source: compiled by the author*

The analysis of Russia's 2024 nuclear doctrine modifications demonstrates strong support for both theoretical frameworks, highlighting the influence of conventional military considerations on doctrinal changes. This is evidenced by clear timeline correlations, in particular:

- doctrine changes correspond directly with Russian military setbacks in Ukraine
- nuclear signalling escalated in response to expanded Western military aid
- Belarus's nuclear integration mirrors conventional military requirements

[35] RU MFA 2020.
[36] RU MFA 2024.

However, further research would be needed to precisely determine:

- whether hypersonic weapons development adheres to pre-war schedules or reflects wartime adaptations
- the distinction between planned technological evolution and war-driven acceleration

These patterns support both the Conventional Balance of Forces thesis and Nuclear Scepticism Theory, though establishing precise causal relationships requires additional evidence.

## Theoretical predictions and empirical evidence

The Conventional Balance of Forces thesis of nuclear strategy[37] posits that states adjust their nuclear strategy primarily in response to conventional military balance rather than technological capabilities.

The relationship between technological advancement and doctrine changes requires careful analysis. While Russia has achieved significant technical progress in weapons development, the evidence suggests this is not the primary driver of doctrinal change. Rather, the doctrine appears to adapt existing and emerging capabilities to address conventional military challenges.

Three important observations provide compelling evidence:
First, Russia's expanded scenarios for nuclear use came right after conventional military difficulties in Ukraine, correlating more closely with battlefield developments than technological breakthroughs. Second, rather than technological demands, the inclusion of Belarus in nuclear strategy arose as a response to traditional deterrence needs, extending nuclear presence closer to NATO territory. Third, rather than coinciding with technological advancements in the development of hypersonic weapons, the timing of doctrinal changes aligns exactly with pivotal Western decisions about military assistance to Ukraine, particularly the supply of advanced weapons systems like ATACMS and Storm Shadow missiles.[38]

The Nuclear Scepticism Theory[39] posits that nuclear threats have limited efficacy for coercive objectives. The observed results support this hypothesis. While Russia's nuclear threats initially slowed Western military assistance and contributed to Russia regaining strategic initiative in late 2023, their long-term coercive effect proved limited. The Biden Administration's subsequent approval of ATACMS deployment demonstrates the diminishing returns of nuclear coercion, even with advanced technology. Additionally, rather than eroding alliance cohesion, recurrent nuclear signalling seems to have largely strengthened NATO unity.

Particular doctrinal adjustments that target conventional vulnerabilities rather than technical capabilities make clear the importance of conventional military considerations:

[37] Ven Bruusgaard 2021.
[38] Kristensen et al. 2024: 118–119.
[39] Sechser–Fuhrmann 2017.

- a new focus on "aerospace attack" that reflects worries about the precision strike capabilities of the West
- a revised allocation of responsibility to assisting nations in an effort to discourage Western military aid
- conventional deterrence requirements led to Belarus's inclusion in nuclear planning

Systems like Avangard, Kinzhal and Tsirkon are proof of Russia's impressive technological advancements; however, the evidence suggests that these capabilities are more useful for meeting current strategic needs than for advancing doctrine changes. The hypothesis that doctrinal modification is driven by conventional military weakness rather than technical advancement is supported by the fact that the development of these systems runs parallel rather than anticipates strategic nuclear decisions.

## Discussion

The hypothesis that Russia's 2024 nuclear doctrine changes are not a result of technological advancement but rather of conventional military weakness and an effort to ward off Western support is highly supported by the results of the study. The analysis shows intricate relationships that require careful interpretation between doctrinal evolution, technological capabilities and strategic necessity.

### Primary analysis

The evidence clearly aligns with Ven Bruusgaard's (2021) Conventional Balance of Forces thesis. Russia's doctrinal revisions demonstrate nuclear compensation for conventional weakness, which is especially noticeable when those changes align with important Western military support decisions for Ukraine.[40]

These alignments include:

- September 2024 doctrine revision following ATACMS authorisation
- November 2024 Oreshnik deployment as direct response to Western medium-range missiles
- nuclear signalling intensified after Western air defence upgrades (in particular U.S. Patriot, Germany's IRIS-T and other systems) demonstrated capability to intercept Russian hypersonic weapons and other massive air attacks

Conventional vulnerabilities are expressly addressed by key doctrinal changes:

- the addition of "aerospace attack", which includes "aircraft, missiles, drones and other aircraft"
- third-party responsibility provision that targets military assistance from the West
- prioritising conventional threats over nuclear ones

[40] Williams 2024.

This strategic compensation manifests in several key ways:

- expanded nuclear use scenarios covering conventional threats
- integration of Belarus into nuclear planning
- focus on deterring Western military support through nuclear signalling

The findings also validate the predictions of the Nuclear Scepticism Theory about limited coercive utility.[41] Although Russia has developed sophisticated technology, like hypersonic delivery systems, nuclear threats have not been able to stop Western military assistance. The Biden Administration's approval of ATACMS strikes in Russia's territory is a clear example of this.[42]

Furthermore, Western nations have repeatedly stated their "unwavering" support for Ukraine, as seen by their repeated declarations, financial assistance and military backing. Support for Ukraine is a top priority on the EU agenda. However, a change in policy is anticipated on the U.S. side with the inauguration of the Trump Administration.

## Broader context

Russia's revision of its nuclear doctrine represents more than just "technical" military policy changes – it signals fundamental shifts in global security dynamics. Three key aspects deserve particular attention:

First, the timing and content of these doctrinal changes reflect Russia's response to military challenges in Ukraine. While Russia promotes its technological advances, particularly in hypersonic weapons, the doctrine primarily addresses conventional military limitations revealed during the war.

Second, the doctrine demonstrates how nuclear and conventional capabilities interact in modern strategic thinking. Russia appears to be lowering its nuclear threshold – the conditions under which it might consider nuclear weapons use – as a way to compensate for conventional military weaknesses. This represents a significant shift in how nuclear weapons factor into military strategy.

Third, the geographic expansion of Russia's nuclear planning, particularly to include Belarus, carries broader implications for European security. This move serves dual purposes: offsetting conventional military pressures while responding to NATO's expansion with Finland and Sweden's accession.

These changes matter beyond military circles because they affect:

- regional stability in Europe
- the risk calculations in future conflicts
- the effectiveness of international security arrangements
- global efforts to prevent nuclear weapons proliferation

[41] Sechser–Fuhrmann 2017.
[42] Entous et al. 2024.

## Strategic implications

Dual-capable systems play a part in making this dynamic more complex. Russia's hypersonic capabilities (Avangard, Kinzhal and Tsirkon) are important technological advances, but they support strategy rather than influence it. Despite causing strategic ambiguity, their dual-capability has not significantly changed the conventional nuclear balance to the point where it now influences nuclear doctrine decisions.

Contrary to many myths surrounding the topic of hypersonic weapons, such as the idea that they are unstoppable, they indeed "are not silver bullets" and can be intercepted.[43] The fact that "it is likely to be much more challenging to defend large areas"[44] may be the true risk.

The compression of response timeframes, known in U.S. military jargon as the OODA (Observe, Orient, Decide and Act) time, is arguably the greatest concern. "A hypersonic attack could occur with very little warning time; this factor and the unpredictability of the targets of a hypersonic attack compress the timeline for response by the party being attacked. Hypersonic missiles also increase the expectation of a disarming attack."[45] Furthermore, it makes it more likely to be mistaken for a nuclear-armed launch. Because of its "game-changing" potential, large-scale deployment of hypersonic systems may provide a wider range of risks that could exacerbate crisis instability.

The Belarus factor represents a noteworthy development in Russia's nuclear posture, serving dual purposes as previously discussed. The 2023 Russian–Belarusian nuclear cooperation agreement, which includes nuclear storage facilities and staff training, demonstrates how Russia extends its nuclear posture beyond its territory in response to these strategic changes.

## Implications for NATO policy

The review of Russia's nuclear doctrine has significant implications for NATO policy and planning. Heather Williams asserts that "the key for the United States and NATO allies is to hold the course in remaining united in support for Ukraine and NATO's nuclear mission".[46]

The primary objective of NATO's nuclear capability is to maintain peace, avert coercion and deter attack, as affirmed by NATO leaders in July 2024. "As long as nuclear weapons exist, NATO will remain a nuclear alliance."[47]

NATO's response requires balancing multiple elements:

First, NATO must enhance its member state consultation procedures and develop detailed response plans for crisis management. This includes:

[43] Karako–Dahlgren 2022: 16.
[44] Acton 2018.
[45] Speier et al. 2017: XIII.
[46] Williams 2024.
[47] NATO 2024a.

- conventional measures like the planned U.S. deployments in Germany from 2026 (SM-6, Tomahawk and hypersonic weapons)[48]
- maintaining NATO's established nuclear sharing arrangements that serve deterrence and also alliance management[49] purposes[50]
- integrating air defence systems that have proven effective against Russian missiles

Second, creating a thorough reaction plan is equally crucial. According to Heather Williams, there is an urgent need for a "strategy-driven review" of nuclear posture and modernisation plans, particularly given the potential that the U.S. nuclear arsenal is "necessary but not sufficient".[51] This assessment highlights the significance of a comprehensive approach to defence and deterrent capabilities.

Looking ahead, the Alliance must balance several competing interests:

- maintaining coalition cohesion despite varying risk perceptions among allies
- protecting critical infrastructure from emerging threats
- sustaining credible deterrence without unnecessary escalation

Overcoming these challenges requires sustained collaboration, strategic vision and an unwavering commitment to collective defence principles.

## Conclusion

With various significant ramifications for global security and strategic stability, this study shows that Russia's 2024 nuclear doctrine changes are motivated by strategic necessity rather than technological developments.

Three key findings emerge from the analysis:

First, the review of Russia's nuclear doctrine underscores the importance of conventional military balance in influencing nuclear strategy. Despite Russia's enhanced capabilities, such as hypersonic missiles, these technological advancements have not substantially transformed the strategic dynamics influencing doctrinal revisions.

Second, this result supports the two theoretical frameworks used in the analysis:

- The Conventional Balance of Forces thesis[52] accurately anticipates that nuclear strategy will adapt to conventional military pressures.
- The limited effectiveness of nuclear coercion in accomplishing strategic goals is precisely predicted by the Nuclear Scepticism Theory.[53]

The varied responses to Russian nuclear signalling demonstrate these dynamics. While the Biden Administration's decision to deploy ATACMS shows diminishing effectiveness

[48] Reuters 2024.

[49] While addressing Indo-Pacific rather than European security, the contemporary relationships between the U.S. and its allies South Korea and Japan offer a recent illustrative example of how nuclear arrangements serve as powerful instruments of alliance management and strategic leverage (Khalid 2025).

[50] NATO 2024b.

[51] Williams 2024.

[52] Ven Bruusgaard 2021.

[53] Sechser–Fuhrmann 2017.

of nuclear coercion, Germany's hesitation on Taurus missiles indicates continuing influence on some NATO members. This mixed response suggests that persistent nuclear signalling without credible conventional capabilities produces varied effects across NATO members while ultimately undermining strategic leverage.

This circumstance calls into doubt the application of nuclear signalling in global crises. As Richard K. Betts warns: "In crises, rhetoric about nuclear forces or changes in their readiness status are not good for fun and games. If a whiff of nuclear blackmail enters at all in the midst of a conflict, the action should have a purpose. If the purpose is not serious, why depreciate the nuclear currency, and why tempt fate?"[54]

Finally, the impending expiration of New START in 2026 adds further complexity to this strategic landscape. Without a successor agreement, the world faces the first period since 1972 without verifiable limits on the two largest nuclear arsenals. This could lead to significant arsenal expansion with substantial financial implications and broader effects on global strategic stability.

These findings demonstrate that while technological advances like hypersonic weapons may capture news headlines, the fundamental dynamics of nuclear strategy seems to remain rooted in conventional military realities and the complex calculations of deterrence. As Russia's doctrine evolves and arms control frameworks decline, understanding these relationships becomes crucial for maintaining strategic stability in an increasingly uncertain world.

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