Russian Military Thought and Doctrine Related to Non-strategic Nuclear Weapons: Change and Continuity

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An Iskander-M missile launcher on display at the International Military-Technical Forum 'Army 2022' at Kubinka military training ground near Moscow on 17 August 2022. (Pavel Pavlov/Anadolu Agency via Getty Images)

Project Description

The International Institute for Strategic Studies (IISS) undertook a project in 2022, funded by the Russia Strategic Initiative of United States European Command (EUCOM), to improve the IISS's and EUCOM's understanding of Russia's non-strategic nuclear-weapons (NSNW) arsenal and its potential use scenarios. The IISS's Strategy, Technology and Arms Control programme ran the project, which built upon work for Alion Science and Technology (now part of Huntington Ingalls Industries) and EUCOM, and asked the key research question: what is Russian military doctrine regarding NSNW today? In answering this, the project also addressed a number of other important subsidiary questions:

- What were the historical roots of and developments in Soviet thought and doctrine?
- What common threads can be drawn from the Soviet era to the present?
- What was learnt in previous IISS study of Russian deployment and use of NSNW that is indicative of underlying military thought and doctrine?
- What has been learnt about Russia's use of threats, exercises and deployments related to NSNW during its war in Ukraine and subsequent events?
- What, if any, changes are anticipated in Russian nuclear thought and doctrine based on the results of Russia's war in Ukraine?
- What does Russia believe about the United States' nuclear doctrine that would shape its own thought?
- What are the credible Russian NSNW-use scenarios?
- What additional work can be identified for classified or unclassified study?

The IISS conducted a thorough research and literature review, compiled an extensive bibliography, convened two workshops at the IISS–Europe office in Berlin with experts from the US and around the world, and generated the following report outlining its findings, as well as recommendations for further study.

Executive Summary

Russian nuclear doctrine, especially its doctrine related to non-strategic nuclear weapons (NSNW), has become one of the most pressing issues in international relations. Publics around the world are paying close attention to the war in Ukraine and Russia's reckless use of nuclear threats to attempt to coerce Ukraine and the West, as well as its recent declared intention to station NSNW on Belarusian territory. China is watching the conflict carefully and drawing lessons that it may apply in a potential war against Taiwan or elsewhere in the Indo-Pacific – a fact well known to the countries across that region. A particularly concerning development, from the perspective of the West, is Russia's belief in its ability to gain and maintain escalation dominance, as well as absorb personnel and materiel losses to a degree unimaginable to the West. This tolerance for casualties may also be shared by China. The more that can be understood of Russian doctrine and military thought related to NSNW, the more likely it is that deterrence with Russia can be maintained. Understanding Russia and maintaining deterrence vis-à-vis Russia are a matter of survival for the West.

For the purposes of this paper, the definition of NSNW, taken from the US Department of Defense, is: '*nuclear weapons designed to be used on a battlefield in military situations. This is opposed to strategic nuclear weapons, which are designed to be used against enemy cities, factories, and other larger-area targets to damage the enemy's ability to wage war*.'[1]

During the Cold War, there was a substantial amount of published scholarship and open debate on nuclear weapons by Russian military thinkers; this continued during the United States' wars in Iraq and the NATO intervention in Yugoslavia and is ongoing in the context of Russia's war in Ukraine. Some of these articles provide a view of the vast scale of Russian military-academic arguments on doctrine and employment scenarios. It is important to note that Russian thinking on nuclear weapons, and NSNW in particular, appears consistent with certain strands of Soviet thinking – but with significant discontinuities due to improvements in the accuracy and lethality of a variety of short-, medium- and long-range artillery and missiles. Examining this scholarship systematically, through three eras – the Cold War, post-Cold War to Crimea, and Crimea to today – can provide critical insights.

Moscow sees its NSNW as playing a significant role, in coordination with the full range of its military and non-military instruments of power, in deterring unwanted conflicts, shaping the battlefield for planned conflicts, limiting escalation within conflicts and ensuring that it prevails in any conflict. It also sees its NSNW as providing a comparative and asymmetric advantage over its immediate neighbours and the US and its allies. President Vladimir Putin has asserted that Russia's nuclear weapons are a guarantor of its sovereignty and great-power status, deterring an otherwise inevitable US effort to replace his rule.[2] It is highly likely that Putin perceives NSNW as among a series of flexible tools he can use to:

- coerce adversaries;
- control escalation in conflict and near-conflict situations;
- dissuade outside powers from intervening in any conflict that Russia deems critical to its interests;
- force adversaries to agree to war termination on conditions dictated by Russia;
- prevent any conflict from escalating from the local to the theatre level of war (for instance, in Europe through intervention by NATO); and
- prevent any conflict from escalating from the theatre to the strategic level of war (that is to say, escalation to direct strikes on the US and Russian homelands).

To this end, Russia employs and continues to develop NSNW of varying types and ranges to provide a nuclear option at every rung in the escalation ladder.

Recent developments reinforce these observations about Russian thought and doctrine regarding NSNW.

In its war on Ukraine, Russia has used direct nuclear signalling to the US and NATO with its strategic and theatre nuclear forces. More recently, it has shown with Belarus that it sees NSNW as a useful tool to exert further control over its near-abroad and increase its coercive power against NATO. Its muted reaction to the NATO membership of Finland, and soon Sweden, seems to indicate that it has no need to fundamentally change its NSNW posture in the Nordic region due to any perceived threat from NATO enlargement. However, its recent changes in its NSNW posture in Belarus are significant and worth watching.

Russia probably discounts the US NSNW arsenal as a significant threat. While it mirrors the US interest in air-dropped nuclear-armed bombs, it has developed a suite of short- and medium-range NSNW options to provide it with a perceived advantage in crisis management, escalation and war termination in compensation for a lack of confidence in its conventional forces. The Russian perception of the lack of credible Western will to use nuclear weapons or to accept casualties in conflict further reinforces Russia's aggressive NSNW thought and doctrine. It probably worries that the US could return to a more robust NSNW force posture in Europe, including a more diverse set of NSNW-delivery options. However, Russia has the added confidence that it would be able to detect and respond to any such scenario in a timely manner due to the transparency and long timelines for such decisions in Congress and NATO (a function of the West's open societies), as well as the potential for opposition from European public opinion to any such changes.

In light of this, options for policymakers from the US and its allies and partners include:

- continuing to monitor the debate in Russian-language military journals and other publications for the general direction of Russia's debate – as well as specific, core doctrinal issues – while acknowledging the divide between public thought and classified doctrine;
- focusing on changes to Russia's force posture, especially nuclear-storage sites – their numbers and size, the levels of activity inside the facilities and any related movements in or out – as well as exercises that explicitly or implicitly involve NSNW;
- continuing to examine Russia's military exercises to gain insights on potential NSNW scenarios, discounting deceptive scenarios, and focusing on coordinated exercises of radiological-defence troops interacting with high-readiness forces as a key indicator of Russia preparing to fight in a radiological environment;
- working to improve awareness and understanding among the US and its allies and partners of Russia's NSNW thought, doctrine and force posture, as well as the value of US extended-deterrence guarantees through better coordination, planning, exercising and public outreach; and
- increasing the base of experts on NSNW thought and doctrine within the governments of the US and its allies and partners, as well as engagement with academia, think tanks and mass media.

Introduction

In June 2023, in the shadow of Russia's war in Ukraine, Sergei Karaganov, the head of Russia's Council on Foreign and Defense Policy and one of the more influential advisers to the Russian political leadership, wrote an article calling for a pre-emptive nuclear strike against an ally of the US in Europe directly supporting Ukraine.[3] He theorised that such a strike would help curb US actions against Russian interests and allow Russia to prevail in what he sees as a global conflict between the East and West. This view was condemned by some in Russia,[4] but it was also praised by respected theorists such as Dmitry Trenin of the Russian International Affairs Council.[5] The scope and scale of debate surprised many in the West and further heightened already-growing fears across the globe of Russian NSNW use in its war against Ukraine. This debate has been under way in Russia for decades however – since the end of the Cold War – as Russia has wrestled with its perceived weakness and a deeply held desire to push back against American exceptionalism and global leadership. Understanding the role of NSNW in Russian military thought and doctrine, therefore, is key to maintaining and strengthening deterrence and defending US interests and global security.

Definitions

It is worth further defining a NSNW beyond the textbook definition, as well as what nuclear thought and doctrine are. The simplest method for defining NSNW is to distinguish them from strategic nuclear weapons, which were defined by the US and the Soviet Union in the Cold War as weapon systems capable of delivering a nuclear warhead from the continental US to the Soviet Union, and vice versa.[6] Strategic nuclear weapons were designed for strategic bombing – that is to say, the destruction of the adversaries' population centres, industry and military command.[7] All other nuclear weapons, designed for theatre, battlefield or defensive use, were defined in bilateral relations between the US and Soviet Union, and later Russia, as NSNW. This understanding was most recently codified in the Russia–US New Strategic Arms Reduction Treaty (New START) of 2010, with strategic nuclear forces defined as including all intercontinental ballistic missiles (ICBMs), air-launched cruise missiles (ALCMs) fired from long-range bombers and submarine-launched ballistic missiles (SLBMs).[8] However, there remain differences between the two sides' definitions.

In published literature, definitions of NSNW have been proffered in various formats. For instance, the US Department of Defense defines non-strategic nuclear forces as: 'those nuclear-capable forces located in an operational area with a capability to employ nuclear weapons by land, sea, or air forces against opposing forces, supporting installations, or facilities. Such forces may be employed, when authorized by competent authority, to support operations that contribute to the accomplishment of the commander's mission within the theater of operations.'[9] Russia, in the NATO-Russia Council, provided four definitions for nuclear weapons, defining strategic versus non-strategic nuclear weapons, and then sub-dividing NSNW into two categories – tactical and operational:

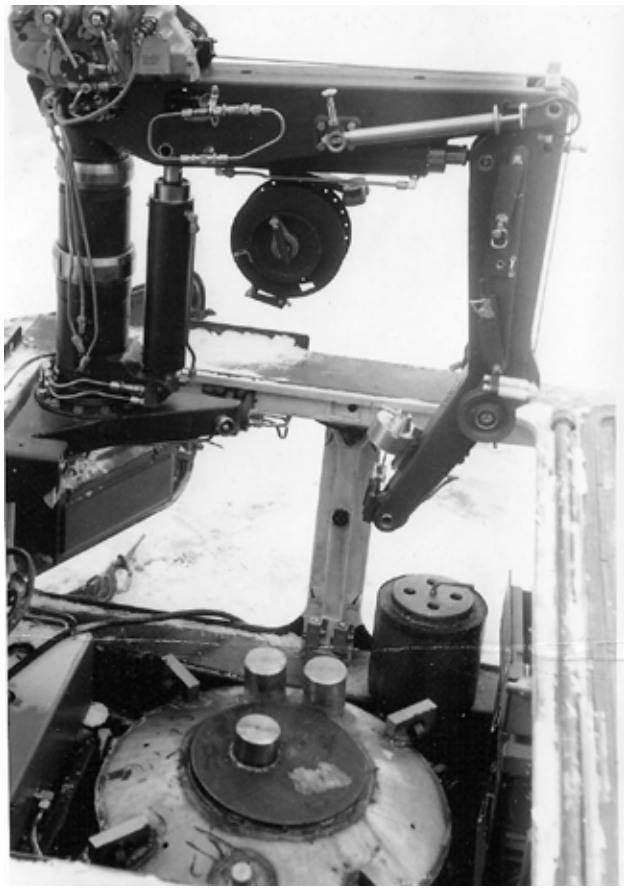
- '*Strategic nuclear weapons* [emphasis added] are designed to engage objects in geographically remote strategic regions (over 5500 km) to accomplish strategic missions', such as the destruction of cities, national industrial capacity and related capacity to wage war. 'In exceptional situations, strategic nuclear weapons may be used to accomplish operational missions. Strategic nuclear weapons are in service with the strategic nuclear forces.'
- '*Non-strategic nuclear weapons* include all nuclear weapons which do not fall into the class of strategic nuclear weapons, that is, weapons with less than 5500 km ranges, to include Tactical and Operational nuclear weapons.'
- '*Tactical nuclear weapons* are designed to engage objects in the tactical depth' (the close-in battlefield, usually within 300 km) 'to accomplish a

tactical mission. Under certain conditions, tactical nuclear weapons may be involved in operational or strategic missions.'

- '*Operational nuclear weapons* are designed to engage objects in the operational depth' (the theatre, for instance, all of Europe, usually beyond 500 km) to accomplish operational missions. 'Under certain conditions operational nuclear weapons may be involved in the accomplishment of strategic missions and in exceptional cases, in the accomplishment of tactical missions.'[10]

The Russian definition differs from the US one due to geography. Russia could conceivably strike the capitals of other nuclear states, such as London or Paris, using short- or medium-range NSNW in a conflict with NATO, thus demonstrating the potential crossover between strategic, operational and tactical levels of warfare. For the US, however, it is unlikely that any battlefield, theatre or operational weapons would be used to strike its territory, and thus the division is easier to conceptualise and maintain.

A training version of a Russian atomic demolition munition being transported in an NG52P6 vehicle designed for nuclear-munition transport and based on an MT-LB chassis



(Matej Rafael Riško, Adapt Institute)

For illustrative purposes, the following is an indicative list of NSNW and delivery vehicles designed and fielded since the dawn of the nuclear era:

- aircraft (including bombers, fighters, fighter/ground-attack aircraft and ground-attack aircraft)
  - ALCMs, air-launched ballistic missiles
  - free-fall and guided bombs
- artillery (weapons capable of engaging ground targets with indirect fire)
  - artillery shells (200 millimetres or more), mortar shells (80 mm or more) and unguided rockets (100 mm or more)
- atomic demolition munitions
  - portable and heavy emplaced mines
- missiles (guided and unguided self-powered systems)
  - ground-launched ballistic and cruise missiles (short-range ballistic missiles [SRBMs], medium-range ballistic missiles, intermediate-range ballistic missiles [IRBMs] and ground-launched cruise missiles [GLCMs])
  - ballistic-missile defence interceptors
  - direct-ascent anti-satellite missiles
  - anti-aircraft missiles
- submarines (vessels designed to operate primarily underwater)
  - torpedoes, depth charges
  - anti-ship missiles, land-attack cruise missiles
- surface combatants (surface ships designed for combat operations on the high seas)
  - ballistic missiles, cruise missiles
  - depth charges, naval mines, torpedoes
  - uninhabited underwater vehicles

Military thought, in Soviet and Russian doctrine, is the overall category of conceptualising the use of military force, seeking to describe the nature and laws of war and the guiding thoughts and principles for building military doctrine. *Military doctrine*, then, is 'the officially accepted set of concepts that delineate the ways and means to achieve military objectives in the interest of politics'.[11] It specifies the structure of the armed forces, the necessary resources and further R&D, and

how and when military force is to be used. Military doctrine derives from the study of *military science* and its subsidiary subject, the *military arts*, which help further elaborate upon and define the military's principles, planning and actions.[12] Modern military thought is debated in Russia in a group of military, government and non-governmental organisations and publications (especially in such publications that seek to advance a particular viewpoint or set of policies in military affairs). Russia's nuclear doctrine, that is to say the ways and means by which nuclear weapons could be used by Russia to achieve its military objectives, is ultimately unknowable without access to what are likely highly classified and closely held Russian documents.

Russian NSNW Thought and Doctrine

Russia probably no longer views NSNW as 'enhanced artillery' (as it did in the Cold War) for creating battlefield effects, due to the revolutionary improvements in the accuracy and availability of its precision-guided conventional weapons since the end of the Cold War. This judgement is informed by extensive research carried out by the IISS for this report, which demonstrated the lack of the maintenance, exercises and support by Russia that the enormous numbers of nuclear artillery necessary to have a decisive effect on the battlefield would require. It is also informed by the decline in observable radiological-defence preparations for its regular and high-readiness troops in its strategic- and operational-level exercises. As became clear in the research for this report, it is likely that Russia has significantly more NSNW than are cited in open-source analysis,[13] which makes faulty assumptions about Russia's rate of warhead dismantlement and underestimates Russia's propensity to keep even obsolete materiel and maintain its extensive supporting infrastructure (as well as overestimates Russia's goodwill and long-term political trajectory).

Instead, Russia probably sees certain precision-guided conventional weapons, such as highly accurate thermobaric multiple-launch rocket systems, as more useful delivery systems, due to their suitability for a wider range of employment scenarios on the tactical battlefield than NSNW. The NSNW, then, are seen by Russia as operational/theatre-level tools designed to decisively and promptly create effects such as terminating a war on Moscow's terms.[14] As the research for this report showed, Russia has exercised its theatre-strike concept of operations on many occasions over the past two decades, including in its annual large-scale theatre-level exercises, such as *Zapad* (Russian for West, also indicating its geographic location and strategic direction), *Kavkaz* (Caucasus), *Tsentr* (Centre) and *Vostok* (East).[15] Supported by its large and diverse arsenal of theatre-level NSNW delivery systems and associated platforms, Russia appears to continue to believe in its ability to establish and maintain escalation dominance, due to its willingness to use and threaten to use dual-capable theatre systems against a variety of adversaries and its greater tolerance for risk and losses compared with the US and NATO.

Putin's recent publication of an unclassified Russian nuclear doctrine has provided fuel for debate.[16] It is likely a combination of truth and deliberate inaccuracies designed to have a specific effect on key Western audiences (especially to confuse them above all), and not intended as a clear set of ways and means for nuclear weapons to contribute to the achievement of political and military objectives.[17] Such documents are consistent with the theory known as 'reflexive control', wherein one side seeks to shape the perceptions and potential courses of action of an adversary in order to ensure victory.[18] Russia is highly likely to have a nuclear doctrine, along with a subsidiary doctrine on the deployment and use of NSNW. The latter would be likely to provide:

An *Iskander*-M missile launcher on display at the International Military-Technical Forum 'Army 2022' at Kubinka military training ground near Moscow on 17 August 2022

(Pavel Pavlov/Anadolu Agency via Getty Images)

- the overall guidance for the NSNW force, including identifying the functions it needs to fulfil on the basis of advice from scientific and R&D organisations, the industrial base and military planners;
- guide decisions on how many of each type of weapon and delivery system are built, and where and when they are deployed and used; and
- inform military planning, both standing-defence plans and scenario-based plans, by providing options for the deployment and use of nuclear weapons in peacetime, crisis and war.

The ultimate decision on when and how to use NSNW in Russia rests with the head of state – Putin – and no one else. If Putin were to choose to deploy nuclear weapons in a manner inconsistent with Russia's unclassified published nuclear doctrine, his military commanders would provide him with the appropriate options.[19] While doctrine shapes the force and plans, the use of NSNW in any specific situation will depend on the combination of capabilities available and the decision made by the head of state.[20] Therefore, one way to develop a better and more realistic understanding of nuclear doctrine is to observe the actual systems that a state develops, deploys and exercises. But examining the available literature still remains a valid undertaking in seeking to understand the debates that underlie military thought and doctrine.

1. Origins and Evolution of Soviet NSNW Thought and Doctrine

Historical Origins: The Roots of Soviet Nuclear Thought and Doctrine

Soviet military doctrine evolved throughout the Cold War, but it consistently held onto three main tasks: defending the homeland, defeating military adversaries and seizing vital connecting territory.[21] Soviet nuclear thought and doctrine evolved more radically throughout the Cold War. It started from a position of disadvantage and then tried to catch up by mirroring US nuclear doctrine, with the first Soviet nuclear test coming four years after the Trinity test.

At the same time, the US was faced with the strategic conundrum of how to defend Western Europe against the Soviets' overwhelming conventional superiority.[22] NATO planners quickly presented the organisation's leadership with a choice in 1952: collectively increase conventional forces by 1954 from 12 to 96 divisions to defend Western and Central Europe (the Lisbon Force Goals) or be prepared to lose against a Soviet invasion.[23] A second option came with the Eisenhower administration's 'New Look' defence policy and the publication of Project Vista's final report, both of which leaned towards the employment of large numbers of battlefield nuclear weapons – especially nuclear artillery – to stop the invading Soviet forces, instead of relying on unsustainably large standing armies of US and NATO soldiers.[24] Thus, the US began deploying NSNW to Europe in 1954 and NATO quickly agreed to a military doctrine to 'prevent the rapid overrunning of Europe unless NATO immediately employed these weapons both strategically and tactically'.[25] The successful launch of the Sputnik satellite in October 1957 further crippled Western confidence in its ability to defend Europe without the early and massive use of NSNW to stop the Soviet Army. By 1971, the US had more than 7,000 nuclear weapons in Europe.[26]

The Soviet Union was faced at the end of the Second World War with its own essential conundrum, based on its geography, history, and military doctrine and thinking. Its territory was not separated from potentially hostile neighbours by long borders and, still traumatised from the Second World War, it created a buffer zone in the form of the Warsaw Pact to protect itself. Despite this, the prospect of a land war still particularly worried the Soviet authorities, so the army was given priority over the air force and navy.[27] Also, due to the proximity of three other nuclear powers – the United Kingdom, and later France and China – the Soviets defined nuclear weapons as spanning strategic and intercontinental ranges.[28] Their relationship with China would also complicate their defence planning, but their focus on the desire to occupy Western Europe and deny the US access to the continent remained fixed. The Soviets' lead in conventional forces was large and, while the ratio improved for NATO forces throughout the Cold War, they still continued to maintain a significant lead in manpower, battle tanks, aircraft and artillery.[29] Thus, in the earliest days of the Cold War, it was in Soviet interests to keep any battle at the conventional level so they could prevail without the introduction of nuclear weapons – the opposite of the NATO strategy. (Today, in a reversing of roles, Russia seems more likely to introduce NSNW at an early stage of any combat with NATO, whereas NATO would seek to keep the fight at the conventional level.) The Soviets quickly incorporated relatively small numbers of nuclear weapons into their battle plans to balance the US threat and, with the army in the lead, nuclear weapons were quickly adapted for battlefield tasks, amplifying the capability of the artillery.

Historical Evolution: The Evolution of Soviet NSNW Thought and Doctrine During the Cold War

Soviet NSNW doctrine began to shift after Sputnik handed the Soviets the lead in the development of longer-range rockets. Soviet premier Nikita Khrushchev believed that nuclear forces could replace massive standing armies, which would allow for a massive cut

in his armed forces, threaten the US homeland and nullify US advantages in strategic air forces. He also began a policy of direct nuclear threats against the US and its allies, using bluster to exaggerate Soviet capabilities to deter the West. Finally, the introduction of longer-range missiles allowed the military to shift its attention from nuclear war on the battlefront to nuclear strikes in the rear area to disrupt NATO reinforcement plans and decisively win on the European continent.[30] The Cuban Missile Crisis checked some of his ambitions, but the Soviets still built a massive arsenal of nuclear-armed ICBMs, intermediate-range ballistic missiles and short-range missiles, rockets, artillery, landmines, torpedoes and anti-aircraft missiles.[31] By 1970, the Soviets had reversed the cuts to the size of the army while still seeking to prevail in nuclear war and occupy enemy territory (however irradiated).[32] They had also built up their tactical-aircraft capabilities, to strike at operational depth, alongside growing numbers of increasingly accurate IRBMs with ever-longer ranges.[33]

One other significant change in the Soviet NSNW posture during the Cold War with implications for today is nuclear sharing. It is widely known that Soviet nuclear weapons were stored on the territory of its Warsaw Pact allies, notably Bulgaria, Czechoslovakia, East Germany, Hungary and Poland.[34] What is less known is that the Soviet Union had nuclear-sharing arrangements with Poland[35] and Hungary[36] that are similar to NATO's current nuclear-sharing arrangements. Nuclear weapons were introduced into both countries as early as 1961 and included nuclear artillery, rockets, missiles and free-fall nuclear bombs. In theory, the nuclear warheads themselves remained under the control of the Soviet 12th Main Directorate of the Ministry of Defense until they were released to the local troops for mounting and firing, so no one but the Soviet troops controlled the warheads during peacetime. Local troops also practised the mounting and firing of the weapons with training rounds and trained with Soviet and other Warsaw Pact troops in large-scale exercises. The warheads were withdrawn from Warsaw Pact member states' territory in 1989 and 1990.[37]

The Soviets did not intend to devastate all of Western Europe with nuclear strikes, seeking instead to occupy it and draw upon its resources in a post-war environment. Thus, they sought to target critical military targets and centres of gravity in Europe and devastate the US entirely, especially its superior industrial capacity.[38] From the early 1970s, the Soviets believed that NATO forces would first use nuclear weapons against frontal targets to attempt to reclaim their position on the battlefield. The Soviet response would be both a massed strike to open holes in the NATO lines, pushing manoeuvre units into rear areas, and strikes against remaining NATO nuclear weapons in the tactical and operational areas. The Soviets would then strike critical infrastructure at operational depth with IRBMs, which should have produced a theatre exchange but forestalled a general, strategic nuclear exchange between the US and the Soviet Union.[39] In other words, nuclear war between the US and USSR could be contained within the European theatre, leaving the US and Soviet homelands unscathed. However, it is notable that at this time missiles remained highly inaccurate, and therefore required large nuclear warheads to improve their chances of destroying targets. Even on the close battlefield, artillery and unguided rockets were very inaccurate. The lack of accuracy required overkill in terms of the numbers of systems and sizes of warheads. This further eroded the possibility for demonstrable victory, but both sides pursued massive NSNW arsenals regardless.[40]

The Soviets incorporated planning for pre-emption, not in terms of first use, but to out-escalate the West and prevent the shift into a strategic nuclear phase through delivering a knock-out blow to NATO forces and preventing reinforcement at critical ports and airports.[41] The Soviets began to believe NATO decision-making was so slow that up to five days might elapse before a decision to use nuclear weapons would be taken, providing more than enough time for them to advance.[42] In this theory of active defence, the Soviets would prevail by using their conventional superiority combined with surprise and speed, while resorting only to counterforce NSNW attacks to destroy massed NATO forces and critical military targets across Europe and so end the conflict on Soviet terms. Decisiveness, speed, mobility and surprise were key elements in this theory. The Soviets understood the risks of the theatre war turning into a strategic nuclear exchange; however, they planned and

prepared to fight and prevail in the event of a nuclear exchange in a theatre war.[43]

This belief in the ability of the Soviet Army to prevail against NATO and fight and win a nuclear war against the US continued until the premiership of Mikhail Gorbachev, who, having not fought in the Second World War, was less belligerent than his predecessors and less willing to risk a general nuclear exchange with the US.[44] Some generals had begun to question the orthodoxy that the Soviets could win a nuclear war, while others realised a declaration of a policy of no first use of nuclear weapons could harm the reputation of the West, which could not give up the possibility of a first strike against the Soviets' overwhelming conventional superiority. But nuclear strategy had already begun shifting, as the competing technological trends of increased missile accuracy and the possibilities of missile defences began to upset the balance of terror.[45] In addition, the Soviet Union started to field ever-larger numbers of more capable air and naval forces, reducing the primacy of the army and increasing the focus on the operational and strategic levels of warfare, rather than the tactical.[46] However, the US and Soviet Union were able to agree on the landmark Intermediate-range Nuclear Forces (INF) Treaty in 1987, which eliminated all ground-launched ballistic and cruise missiles with ranges between 500 km and 5,500 km, further transforming the security environment in Europe and Asia and moving the focus of the two countries to the remaining NSNW in their arsenals.

2. Evolution in NSNW Thought and Doctrine from the Cold War to Crimea

How Russian NSNW Thought and Doctrine Evolved from Soviet Thought and Doctrine

At the end of the Cold War, the US hoped that the threat of global nuclear war had been removed. The collapse of the Soviet Union presented an unprecedented opportunity for both the US and the Soviet Union to radically reduce their nuclear arsenals. Strategic-arms control between the sides – in the form of the Strategic Arms Reduction Treaty – was nearing completion. But with rising fears that the Soviet Union might lose control of its nuclear arsenal, the US launched an effort to reduce the large number of NSNW on both sides through parallel, unilateral declarations, instead of embarking on a lengthy negotiation and ratification process.[47] Both sides made two announcements known as the Presidential Nuclear Initiatives (PNI): president George H.W. Bush on 27 September 1991 and 28 January 1992, and premier Gorbachev on 5 October 1991 and president Boris Yeltsin on 29 January 1992. As part of the commitments undertaken in these statements, the Soviet Union, and then Russia, pledged to destroy all of its nuclear-artillery rounds, mines and warheads for SRBMs and to remove all NSNW from ships, general-purpose submarines and naval aircraft, surface-to-air missiles and tactical aircraft. A substantial portion of the removed warheads were to be destroyed, with the rest placed in central storage.

However, Russian official statements from that time have cast doubt on the full implementation of its PNI obligations, calling them a goodwill gesture rather than an obligation.[48] Simultaneously, a debate had broken out in Russian analytical circles about the risks of a US-led global order and what Russia could do to avoid being part of it. The Gulf War sent shockwaves through Russia's elite as the US overwhelmed the Iraqi army in short order using advanced conventional weapons and tactics. There was fierce competition for scarce resources among and within the services, with a doctrinal debate about whether to invest in conventional or nuclear forces dominating the discussions.[49] In May 1992, Russia's draft military doctrine eliminated the no-first-use pledge from 1982, and the November 1993 final version confirmed the change. Rather than seeing this as a threat, US analysts mainly saw this as a proliferation risk.[50] Russia began to have concerns about the reliability of its strategic deterrent throughout the 1990s[51] and experienced an embarrassing series of military failures, including the first Chechen war.

How the US Shaped Russian NSNW Thought and Doctrine over the Decades

The US and NATO's execution of *Operation Allied Force/ Noble Anvil* in Yugoslavia in 1999, including the then-groundbreaking use of long-range, precision-guided weapons along with unguided munitions to achieve a strategic outcome, shocked the Kremlin with its success and speed. Russia reacted quickly at the April 1999 meeting of the Security Council, making three decisions that marked a sea change in Russian nuclear policy: one on funding the nuclear enterprise, one on NSNW[52] and one that remains secret, but was leaked to the press as concerning Russia's nuclear doctrine.[53] The results of the meeting were reported by the secretary of the council, Vladimir Putin. Russia made it clear that it would rely upon theatre NSNW to deter and defeat the US and NATO in case they sought to overthrow the leadership in Moscow.[54] Increasingly loud voices in Moscow also began to call for Russia to withdraw from the INF Treaty.[55]

As a result of these fears, Russia quickly re-designed the *Zapad-1999* military exercise to demonstrate its ability to defeat NATO, despite its conventional inferiority, by using nuclear weapons with theatre-nuclear forces; the exercise featured simulated medium-range bomber strikes with nuclear-armed ALCMs on Poland and Hungary.[56] In other words, faced with an unwinnable conventional campaign against NATO, Russia would resort to nuclear weapons first to terminate the conflict on terms favourable to Moscow.[57] This strategy, referred to as 'escalate to de-escalate' by Western analysts, has been the subject of debate by analysts and officials.[58] However, the Soviet Union also had the objective of out-escalating the US in

order to defeat it in a direct conflict, reflecting a recognition that a willingness to escalate, rather than capitulate, and inflict retaliatory damage so as to make the initial attack undesirable was not only the very definition of deterrence but also one of the keys to victory in conflict.

Russian military exercises such as *Zapad-1999* make it clear that Russia had attempted to fully reintegrate conventional and nuclear war fighting into its strategy, doctrine, plans and exercises during the late 1990s. This attempt at reintegration was continued through Russia's 2000 Military Doctrine, which first set out the need for a nuclear deterrent to prevent an attack and regime change in Russia.[59] Consistent with doctrine, Russia would adopt a more confrontational policy to deal with the West, with NSNW at the centre, until such time as it could recapitalise its strategic nuclear and conventional forces.[60] The lessons that Russia learned from NATO's Kosovo campaign and Western revulsion at Russia's brutal conduct in the second Chechen war showed a huge divergence in values.[61] Alexey Arbatov's paper on the transformation of Russia's military doctrine presaged a much darker turn in the security debate in Moscow, especially with the US withdrawing from the Anti-Ballistic Missile Treaty in 2002, initiating its global 'war on terror' and fighting the Iraq War. Russia's analysts watched in amazement again as the US seemingly effortlessly toppled a government, and the Russian government immediately began to invest further in NSNW – especially in theatre-nuclear capabilities – while prioritising the nuclear component of the country's strategic forces in the budget. Jacob Kipp's 2001 paper sought to draw attention to the negative trends in Russian NSNW doctrine.[62] Even a Pentagon report noted the negative trends – Russia's reliance on NSNW, its non-dismantled stocks of all types of NSNW and its potential to build back – but these warnings were ignored due to Russia's poor economic condition and the 'war on terror'.[63]

Russia's position in the 2000s improved greatly, with the US-inspired instability in the Middle East driving up oil prices and providing now-President Putin with the opportunity to better fund the recapitalisation of his nuclear-weapons enterprise and his conventional forces. In the meantime, his 2007 Munich speech – in which he criticised the US and declared his antipathy for NATO and the post-Cold War order – and a query by Sergei Ivanov, then Russia's defence minister, to his US counterpart Robert

A 9M729 ground-launched cruise missile on display at the Patriot Park near Moscow on 23 January 2019

(Vasily Maximov/AFP via Getty Images)

Gates about withdrawing from the INF Treaty raised some eyebrows in the West but were quickly forgotten.[64] Russia embarked on several rounds of ambitious reform, especially after further setbacks during its war against Georgia in 2008. In 2006, Russia began deploying the new *Iskander* (RS-SS-26 *Stone*) nuclear-capable ground-launched SRBMs, designed to defeat NATO missile defences. In *Zapad-2009*, Russia again exercised nuclear strikes against Poland, which raised concerns amongst NATO's Baltic member states but ultimately resulted in little change to NATO's defence posture or plans.[65] From 2013, Russia began the practice of conducting no-notice exercises to avoid mandatory military transparency under the Vienna Document 2011. It exercised nuclear strikes as part of its annual large-scale exercises (starting with *Zapad-2013*, then *Kavkaz*, *Tsentr* and *Vostok*), usually against an 'alliance of nations' in a thinly veiled reference to NATO. With increased confidence in its NSNW, strategic-nuclear and conventional capabilities, Russian analysts re-examined the terms of their internal debate on the trade-offs among these systems with regards to deterrence and defence.[66] Russia also began development of the 9M729 GLCM, with a range of more than 2,500 km, in anticipation of the end of the INF Treaty.[67] Russia also began fielding other new dual-capable/NSNW systems, including air- and sea-launched cruise missiles interchangeable among multiple delivery platforms. The West, for the most part, continued to perceive NSNW as liabilities to be added to the disarmament queue and forgotten about.

3. From Crimea to Today: The Impact of Russia's War in Ukraine on NSNW Thought and Doctrine

Changing Russian Military Posture and Phase One of Russia's War in Ukraine, 2013–2014

Russia's illegal annexation of Crimea on 21 March 2014 opened a new chapter in US and NATO approaches to and understanding of Russia's nuclear-weapons thought and doctrine. While Russia had previously made nuclear threats against the US or NATO (see previous sections), the crisis caused by Russia's military action put these threats into sharper focus.

The different political climate when compared with today's, including an unwillingness to see Russia as a threat, meant that the West ignored ominous warnings of a changing Russian military posture before the annexation of Crimea. As early as 2009, Russia had begun to increase its large-scale-exercise activity and air-sortie tempo, hitting a new peak in 2013. Russian bombers and fighters greatly increased their activity levels that year, including aircraft capable of delivering nuclear-armed ALCMs or air-dropped nuclear bombs, Tu-95MS *Bear H* bombers flying near a US Air Force base in Guam in February[68] and a simulated nuclear attack with Tu-22M3 *Backfire C* bombers on Sweden in March.[69] *Zapad-2013* included approximately 70,000 troops – the largest Russian exercise since the Cold War – and Russia began conducting 'snap inspections' (surprise combat-readiness inspection exercises) to avoid mandatory transparency measures through the Vienna Document 2011.[70]

Once the invasion began in February 2014, military activity picked up even more. NATO quick-response aircraft flew more than 100 intercepts against Russian air sorties in the first ten months of 2014 – three times more than in the whole of 2013.[71] Russia also conducted a large-scale exercise in Kaliningrad during the outset of its war on Ukraine in 2014,[72] as well as its largest exercise since the height of the Cold War, *Vostok-2014*, with 155,000 troops involved.[73] Russian Foreign Minister Sergei Lavrov declared in July 2014 that Russia could resort to nuclear weapons if Ukraine tried to retake Crimea (making specific reference to doctrine).[74] Putin claimed in March 2015 that he had considered putting his country's nuclear force on alert the previous year.[75] In the same month, Russia threatened nuclear strikes against Denmark if it joined NATO's missile-defence shield.[76] All of this menacing behaviour by Russia took place in the shadow of a speech in January 2013 by Chief of the General Staff Valery Gerasimov on the future of warfare, which emphasised the use of a preponderance of non-military instruments of power (NMIOP) in combination with military instruments of power as a decisive new element in warfare, and the successful use of such ways and means in Russia's seizure of Crimea.[77] The methods described by Gerasimov can be observed in the pattern of Russia's behaviour through to the second stage of the war in 2022.

Lessons from Phase Two of Russia's War in Ukraine, 2015–present

The IISS has published extensive analyses on the lessons from Russia's war on Ukraine since 24 February 2022,[78] while analyses of Russia's nuclear signalling during this period have been published elsewhere.[79] Russia's threats are consistent with an effort to deter the US and NATO from engaging directly in combat – successfully employed to date – as well as less successful efforts to coerce them into not providing certain equipment and capabilities to Ukraine. This increase in Russian pressure on the West from February 2014, resulting from Russia's rhetoric and military activities, has seen an outpouring of military analysis in Russia and the West on Russian nuclear doctrine. The debate in Russia on nuclear weapons seemed to focus on two themes:

- the inevitability of deeper conflict with the US[80]
- the role of nuclear versus non-nuclear deterrence in the inevitable conflict

In the West, the quality of analysis of Russian military and nuclear strategy has improved during this period, but the majority has focused on Russia's overall military strategy,[81] its strategic nuclear deterrent[82] and escalation management.[83] Arguments over the existence of the 'escalate to de-escalate' doctrine are particularly prevalent. However, some articles on the importance to Russia of escalation control in conflict are compelling and their arguments are borne out by the bulk of published Russian literature on conflict with the US and the balance between non-nuclear and nuclear capabilities in prevailing in a conflict. One fundamental misunderstanding that appears in Western analysis of Russian thought, which appears to be an example of Western mirror-imaging or projection, is a focus on an either-or scenario: that once Russia is more confident in its theatre non-nuclear capabilities, it will reduce its reliance on nuclear weapons.[84] The fact remains that Russia maintains a perception of its technological inferiority to the West and therefore believes it needs to have all capabilities at its disposal – including asymmetric.

It is clear from the Russian doctrinal debates – and the actual systems deployed in the field – that Russia's NSNW doctrine and the role of NSNW next to conventional and strategic nuclear forces (and other cross-domain capabilities) is a permanent feature.[85] The continued development and fielding of new types of dual-capable high-precision missiles on land, sea and air platforms, rather than dedicated conventional or nuclear missiles, by Russia speak to this. The debates in Russian literature, even at the height of Russia's confidence in its new dual-capable missile systems and war-fighting capability from 2015 until February 2022, still focused on the need for theatre NSNW to terminate any war on Russian terms, as well as strategic nuclear weapons for threatening an adversary with annihilation should the conflict go badly for Russia.[86]

In short, the Western debate over 'escalate to de-escalate' cannot provide an essential understanding of Russia's views on conflict – the phrase describes an objective, not a strategy.[87] Russia believes that the US would seek to exploit any conflict to which Russia is a party to inflict a strategic defeat on Russia, and therefore Russia believes it requires the full suite of tools – non-nuclear strategic, non-strategic nuclear and strategic nuclear (and NMIOP, and the cyber and space domains) – to prevail in any local war with conventional weapons. This suite of tools would include the use of a combination of non-strategic and strategic nuclear deterrence to prevent the US from intervening directly, persuade the US to leave the conflict, if it engages, without inflicting critical damage to Russia through conventional and non-strategic nuclear strikes, and, in extremis, threaten to engage or engage its strategic nuclear weapons should the survival of the Russian state be at stake.[88]

It should be noted that during the period when it supposedly had 'confidence' in its conventional forces, Russia never wavered from its reliance on nuclear-capable and dual-capable delivery systems in its deployments, exercises and rhetoric. It knew it did not have sufficient non-nuclear capabilities to execute conventional-strike operations against critically important targets to defeat the US and NATO at the level of conventional war,[89] and it probably would have to rely upon non-strategic, or theatre, nuclear weapons to inflict enough damage on the Alliance to prevail.[90] Russia remains worried that the US or NATO would engage in almost any local war, especially in Europe. Therefore, escalation control, either to prevent the US and NATO from engaging or to coerce them into war termination on Russian terms, remains essential to its own theory of victory. Indeed, knowing that the West is casualty and risk averse, Russia may seek to use enough NSNW to inflict damage preventing its own defeat, knowing that the US would be unwilling to cross the nuclear threshold in retaliation, and may be willing to terminate the conflict early.[91]

With Finland joining NATO, and Russian conventional forces being depleted in Ukraine, Russia probably will rely more heavily on dual-capable NSNW to deter NATO in the Nordic-Baltic region in the short to medium term. It is also possible that Russia will redeploy its high-readiness, high-mobility forces away from the region, as they are more likely to be needed near Ukraine, the Caucasus or Central Asia in the longer term. This assumption derives from the belief that Russian forces in the Nordic-Baltic region were originally located there to exploit a significant advantage against the relatively small forces of NATO there in

any conflict. Finnish membership of NATO erases this advantage.[92] At the same time, Russia probably does not believe that NATO would initiate conflict in the region, allowing Russia to rely on NSNW for deterrence. Regardless, Russia's losses in Ukraine have undoubtedly shifted the pendulum away from high confidence in its conventional, non-nuclear strategic capabilities towards a growing reliance upon NSNW to deter and defeat NATO in a potential future conflict.

What Can Be Learnt About Russian NSNW Thought and Doctrine from Russia and Belarus?

On 25 June 2022, Putin told Belarusian President Alyaksandr Lukashenka that Russia would provide Belarus with nuclear-capable *Iskander* missiles (the RS-SS-26 *Stone* ground-launched SRBM and the RS-SSC-7 *Southpaw* short-range GLCM), upgrade Belarusian Sukhoi Su-25 *Frogfoot* close-air-support aircraft to carry nuclear-armed air-dropped bombs and train Belarusian crews assigned to these systems to deliver them.[93] Russia began delivering the *Iskander*s to Belarus in December 2022 and completed the initial phase of aircrew training in April 2023. Putin claimed nuclear storage would be completed in Belarus by 1 July 2023.[94] There is no evidence to date of nuclear weapons permanently emplaced in Belarus, although several facilities appear to be ready to receive such weapons.[95] According to Putin, Russia is conforming to the Nuclear Non-Proliferation Treaty and will maintain Russian custody of the warheads at all times until and unless Putin releases these NSNW for launch. These arrangements, as announced, seem similar to those between the Soviet Union and Czechoslovakia and Poland in the Cold War and thus mark a significant continuity in thought and doctrine from the Soviet Union to Russia.

Russian President Vladimir Putin speaks with his Belarusian counterpart Alyaksandr Lukashenka during their meeting in Saint Petersburg on 25 June 2022

(Photo by Mikhail Metzel/SPUTNIK/AFP via Getty Images)

A Russian Air Forces officer poses for a photo on a Sukhoi Su-25 *Frogfoot* aircraft during the MAKS-2021 International Aviation and Space Salon, held between 20–25 July 2021 in Zhukovskiy, outside of Moscow

(Mikhail Svetlov/Getty Images)

The potential deployment of nuclear-armed ground-to-ground SRBMs and air-dropped bombs to Belarus demonstrates that it is highly likely that Russia has not restored its nuclear artillery or other forms of ground-launched NSNW and instead continues to rely on NSNW for theatre-range, and not battlefield, targets. The *Stone* and *Southpaw* have a range of 500 km and are not intended for the tactical battlefield, while air-dropped nuclear bombs mirror NATO's NSNW posture. According to interviews in 2023, Lukashenka claims he first asked Putin for nuclear-armed artillery but was told that Belarusian artillery could not be appropriately modified.[96] For Putin, fulfilling Lukashenka's long-standing request for SRBMs and air-dropped bombs was more consistent with Russian NSNW nuclear doctrine.

Thinking About Russian NSNW Scenarios

As stated in the previous IISS report on Russian NSNW deployment and use, it is difficult to know from Russia's doctrine its use scenarios for NSNW. While its doctrine probably includes elements of deception, it does provide a framework for understanding Russian NSNW

use. Russia's declaratory policy of June 2020 lists four scenarios in which Russia could use nuclear weapons:

- receipt of reliable information about the launch of ballistic missiles against the territories of the Russian Federation and/or its allies;
- the use by an adversary of nuclear weapons or other types of weapons of mass destruction against the territories of the Russian Federation and/or its allies;
- enemy attacks on critical state or military facilities of the Russian Federation, the failure of which will lead to the disruption of the response of nuclear forces; and
- aggression with conventional weapons against the Russian Federation, when the very existence of the state is threatened.[97]

This final scenario implies that in a conflict, if Russia's conventional forces cannot hold back an attack from its national territory, it may use nuclear weapons on the battlefield to blunt its opponent's forces and demonstrate resolve. Considering Russia's perceived weakness compared with the West, any direct conflict with the US is likely to be seen as threatening the existence of the state. Thus, Russia probably will not use NSNW in local conflicts that do not involve outside powers, especially the US. It may threaten NSNW or strategic nuclear use if it believes the US may seek to become involved, consistent with the Russian NSNW thought outlined above. If the US became involved in a local or theatre conflict with Russia, Russia probably would use NSNW at the theatre level to 'soberise' the West into realising that it should settle the conflict as quickly as possible, preferably on Russia's terms.[98] Russia's military strategy at all levels of conflict – including pre-nuclear use – seeks to find the dose that will enable it to achieve its objectives while avoiding nuclear retaliation or other forms of major escalation from the US.

4. Questions for Further Study

As with the previous IISS study on deployments and use of NSNW by Russia, there are a number of unknowns that will continue to evade specific answers. However, further useful work can be undertaken to strengthen the understanding of Russian NSNW thought and doctrine amongst the US and its allies and partners and thereby maintain and strengthen deterrence against Russia.

What Will Be the Future of the Debate on Russian NSNW Thought and Doctrine in the Wake of Karaganov's Advocacy for a First Strike Against NATO?

It would be prudent to continue to monitor this debate in Russian-language military journals and other publications. It is particularly important to keep abreast of the general direction and specific doctrinal issues that form the centre of Russia's debate – while acknowledging the divide between public thought and classified doctrine. There should be no illusions that this debate has a direct and specific impact on Russian official NSNW doctrine, but it remains a useful window into Russian military thought and debate.

What Are the Recent, Ongoing and Likely Future Changes to Russia's NSNW Force Posture?

One useful insight that can be gained into doctrine is from monitoring the actual NSNW forces Russia designs, develops, tests, builds and deploys. While much of the design, development and testing is shrouded in a veil of secrecy, some information can be gleaned through National Technical Means and some through open-source collection. By watching changes in Russia's actual force posture – its deployed systems – much can be learned, especially through observing any changes to Russia's nuclear-storage sites – their numbers, size, interior activity levels and any related movements in or out – as well as changes in the posture of associated dedicated or dual-use delivery systems, the conduct of nuclear exercises or conventional exercises with a nuclear phase and any detectable real-world deployments.

What Are the Most Likely Russian NSNW-Use Scenarios?

Studying Russia's military exercises – particularly the large-scale theatre-level exercises and specifically designated nuclear exercises – can illuminate some of the potential Russian NSNW-use scenarios, albeit often in unrealistic settings or deceptively designed scenarios. Another useful tool to understand Russian NSNW-use scenarios is to follow the movements of its radiological- and nuclear-defence forces, specifically observing how much the chemical, biological, radiological and nuclear defence (CBRN-D) forces interact with regular and high-readiness forces that may need to operate in a radiological environment.

How Much Will US Allies and Partners Support Ongoing Work to Maintain and Strengthen US Deterrence Against Russian NSNW?

The clichéd phrase among Western specialists is that NATO needs to 'raise its nuclear IQ'.[99] While the phrase is inelegant, it tells a story – Western policymakers, defence analysts and publics are largely underinformed on nuclear-deterrence matters. Their Russian equivalents, as this paper has shown, seem far more comfortable thinking about nuclear deterrence in public and stating what they believe needs to be done. Thus, it would be useful to improve awareness and understanding amongst US allies and partners of Russia's NSNW thought, doctrine and force posture, as well as the value of US extended-deterrence guarantees, through better coordination, planning, exercising and public outreach.

Is the US Security-policy Sector Prepared to Lead the Way?

As with the previous point, the US also has a paucity of deterrence thinkers, and few senior civilian and military leaders can recall a time in their own careers when

mastery of such topics was necessary to lead credibly. Therefore, it is necessary to increase the base of US experts on NSNW thought and doctrine within government and the public sector – especially through engagement with academia, think tanks and mass media, as well as experts from outside the traditional nuclear field, including logisticians, systems engineers, behavioural scientists and regional experts.[100]

Regardless, no amount of effort is likely to provide the US with a precise number of Russian NSNW, their types, stationing and all potential use scenarios. Deterrence, therefore, remains the 'threat that leaves something to chance'.[101]

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