

Russia as a Nuclear Power

Against the backdrop of its invasion of Ukraine, Russia continues to modernize its nuclear forces. Nuclear weapons remain a central part of Moscow's strategic arsenal, including as tools of coercion. While arms control initiatives are critical to mitigate the dangers associated with nuclear weapons, a credible nuclear deterrent on the part of NATO remains a prerequisite for their success.

By Oliver Thränert

Russia's invasion of Ukraine underscores the importance of military power in international relations. This applies not only to the conventional weapons used but also to Moscow's nuclear arsenal. Though not directly used in the conflict, the shadow of nuclear war still looms large across the war. Russia's President Putin made this clear, for example, in a speech on 21 September 2022, when he spoke of wanting to use all available means to ensure Russia's territorial integrity. For Putin, this obviously includes occupied Ukrainian territory that has been declared part of the Russian Federation through staged referenda. As a victim of aggression, Ukraine is legally entitled to significant assistance from the international community through the UN Charter and the principle of collective self-defense under Article 51. The threat of nuclear attack is an important tool Russia is invoking to deter such assistance. States that do provide aid to Ukraine calibrate their support so as not to cross unknown Russian "red lines." For example, NATO did not establish a no-fly zone despite Ukrainian requests. The alliance deemed that risks of a direct confrontation with Moscow and potential nuclear escalation were too great.

Against this background, it is important to take a closer look at Russia as a nuclear power. In the case of both strategic and non-strategic nuclear weapons, a modernization



A Russian Yars intercontinental ballistic missile system during a military parade on Victory Day in Moscow's Red Square on 9 May 2022. Maxim Shemetov / Reuters

process that has been underway for years continues. The extent to which Moscow envisions offensive roles for nuclear weapons remains controversial, but the Ukraine invasion underscores the value of nuclear weapons as a means of coercion. Western relations with Russia will therefore remain fragile from a nuclear standpoint. Arms control is unlikely to do much to reduce resulting risks for the foreseeable future.

Arsenal

Russia has the most nuclear weapons in the world and, like the US, maintains a triad of land-, sea- and air-based strategic nuclear weapons. These systems have a range of more than 5,500 kilometers and can reach the US directly. They therefore serve primarily to deter strategic nuclear aggression. In addition, these weapons underscore Russia's great power status.

For some time now, Russia has been investing in the comprehensive modernization of its strategic nuclear forces. Almost all of the delivery systems dating back to Soviet times have been replaced by new ones. More than half of Russia's strategic nuclear weapons are land-based. In the future, Moscow will rely on fewer types of missiles, likely to minimize costs. However, these intercontinental ballistic missiles can carry a higher number of nuclear warheads per missile. In times of crisis, Russia can thus increase the number of its deployable nuclear weapons, and therefore engage more targets, without having to station additional missiles.

Russia is also increasing the quality of its nuclear weapons. For example, new warhead designs have been introduced that more effectively reach targets secured in bunkers. Moscow is also equipping land-based strategic systems with hypersonic glide vehicles such as the Avangard, which is already operational. Unlike nuclear warheads, the Avangard does not fly toward a target in a ballistic curve after detaching from a delivery system, but instead can deploy mid-air evasive maneuvers to avoid enemy missile defense systems, even in instances of very high flight speeds.

Furthermore, the Russian Navy has ten strategic submarines - five each in the Northern Fleet stationed on the Kola Peninsula and five at a base of the Pacific Fleet on the Kamchatka Peninsula.

Moscow has also committed to modernizing its strategic submarine fleet by replacing Delta IV class boats with new Borei submarines. Similar to the introduction of the Avangard in land-based systems, Moscow aims to ensure its second-strike nuclear capability by making new submarines as difficult to detect as possible, even from advanced anti-submarine systems.

Strategic bombers form the weakest link in Russia's nuclear strategic triad. Since their ability to penetrate enemy airspace is questionable, they have now been equipped with air-launched cruise missiles. In addition, two new bomber models are being developed, one of which already completed an initial test flight.

During a state of the nation address in March 2018, Putin expanded on various nuclear force systems often referred to in the West as "wonder weapons." These include a nuclear-powered torpedo, a nuclear-powered cruise missile, an air-launched

ballistic missile, and a ground-based mobile laser system. It is questionable whether some of the planned systems will ever achieve operational readiness, in particular the nuclear-powered cruise missile. Their strategic value is doubtful and many Western analysts believe that their utility lies in enhancing Russia's great power prestige by emphasizing their comprehensive scientific and technical capabilities.

While the US and Russia agreed on common ceilings for strategic nuclear warheads and delivery systems under the New START treaty, Russia maintains a massive numerical superiority in non-strategic nuclear weapons. These weapons have a smaller range than strategic weapons and a lower yield. However, calling them "tactical nuclear weapons" is misleading in that most of these nuclear weapons have an explosive power that far exceeds that of the two atomic bombs dropped on Japan in 1945.

As with strategic nuclear weapons, Russia possesses non-strategic land, sea, and air systems. A notorious example is the 9M729 ground-launched cruise missile, which the Russian armed forces deployed in 2017. Due to its range of more than 500 kilometers, this missile violated the then-binding Intermediate-range Nuclear Forces (INF) Treaty, which prohibited US and Russian land-based missiles ranging between 500 and 5,500 kilometers. With this missile,

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Russia can now attack targets on NATO territory from secure rear positions with a land-based, highly targeted system.

During exercises, Russian forces repeatedly demonstrated their ability to end large-scale, conventional aggression directed against Russia through a limited use of nuclear weapons. Prior to the Russian invasion of Ukraine, some experts stated that this approach was intended as an interim solution until Russia had more effective conventional capabilities. Therefore, Russian interest in non-strategic nuclear weapons was expected to wane eventually. At the same time, some analysts believe that Russia's numerical superiority in non-strategic nuclear weapons was never based on conscious political or military decisions. Many decisions, they say, were due to the influence of powerful interest groups, including the leadership of the Russian Navy. Without its various

nuclear-tipped cruise missiles or torpedoes, the Russian Navy simply would not be in a position to counter the US Navy.

Unlike the United States, Russia has not deployed nuclear weapons on the territory of other states. However, that could soon change. In June 2022, Russian President Vladimir Putin announced plans to deliver Iskander M short-range missiles to Belarus. These missiles can be equipped with conventional or nuclear warheads. In addition, Belarusian Su-25 fighter aircraft have been outfitted to be able to carry nuclear weapons.

Doctrine

Nuclear weapons play an important role in Russian military doctrine. NATO's intervention in Kosovo in 1999 startled Russian military leaders, as it demonstrated that the alliance was willing to assert its interests militarily when political means were unsuccessful. Moscow feared that NATO might also intervene directly in conflicts closer to home, such as the one in Chechnya. According to the Russian view, the threat of limited nuclear escalation may lessen the risk of such an incursion.

Due to Russia's now improved conventional capabilities, the necessity of a first strike in a conflict with NATO is no longer as central to Russian thinking as it was in the early 2000s, Western analysts argued before the Russian invasion of Ukraine. However, it is yet unclear whether and to what extent Moscow will re-focus on the importance of nuclear weapons as deterrents. As a result of Russian forces' poor performance during the invasion of Ukraine, the very high casualties sustained by the Russian army, and the likely accession of Sweden and Finland to NATO, the Russian strategic position is seemingly weakened of late.

Some Western observers believe that Moscow attaches great importance to nuclear weapons regardless of its conventional capabilities. Much more so than in the West, Russia sees nuclear weapons as critical political tools. In Russia's view, they serve to enforce its own interests. In this respect, Russia's nuclear arsenal should be seen as one element, together with non-nuclear capabilities and informational capacities, of an overall strategy whose overriding goal is to impose its own will.

According to official Russian documents, nuclear weapons would be used in the following cases: in the event of the existence



of reliable data that a ballistic missile attack on Russia had begun; in response to the use of nuclear, biological, or chemical weapons on Russia or its allies; in the event of an attack on critical government or military facilities that would undermine Russia's ability to respond with nuclear means; or in the event of conventional aggression against Russia that threatened its existence as a state. Therefore, according to Putin, Russia's nuclear weapons should only serve as a deterrent.

The extent to which this is the case, or whether Moscow also sees its nuclear weapons as offensive tools, is a subject of heated debate in the West. For example, the US' Nuclear Posture Review, published by the Trump administration in 2018, stated that Russia was pursuing an "escalate-to-de-escalate" strategy. After a conventional "fait-accompli" operation in, say, the Baltics, a nuclear threat from Moscow could deter NATO from bringing in its own conventional forces to retake them. Other Western observers, however, tend to believe that Russia would plan to use nuclear weapons to prevent NATO from winning a war that it would have started itself. In this case, they say, nuclear weapons would serve defensive de-escalation purposes. Whichever view is closer to reality, Russian strategists continue to debate the

extent to which it would actually be possible to limit nuclear escalation. Meanwhile, Russia is increasingly deploying both conventional and longer-range nuclear-capable delivery systems, signaling that it accepts the risk of nuclear escalation to advance its own interests.

When Putin announced unprecedented consequences for countries standing in Russia's way, he made it clear that Moscow's nuclear capabilities would be a shield against international intervention in Ukraine, thereby adding a dimension to Russian nuclear policy not foreseen in official documents. However, as seen in an early speech from 24 February 2022, Putin also sought to underplay the weapons' offensive role in the conflict. There he spoke of a threat to Russian nuclear interests, meaning a threat to Russia's sovereignty and existence. This narrative could be interpreted as an attempt to align Putin's threats of offensive nuclear strikes should allies in the West intervene with Russia's nuclear doctrine, which states nuclear weapons should be used only if Russia's existence is at stake following a conventional attack. The uncertainty deliberately created by Putin's rhetoric about future Russian behavior was further exacerbated three days later, on 27 February 2022, by a presidential statement declaring a special state of readiness

for Russian nuclear weapons. This "special state" had no foundation or precedent within the Russian military lexicon.

These recent developments underscore the position of those analysts who view nuclear weapons as political instruments that serve to enforce Russia's interests through coercion and intimidation as part of a broader strategy. To the extent that this is indeed the case, the likelihood of Russian nuclear weapon use in current or future crises could increase.

Arms Control

The goal of arms control is to reduce the probability of nuclear war. During the Cold War, arms control was of eminent importance for stabilizing deterrence and establishing transparency and trust. All that remains of the nuclear arms control architecture established at the time is the New START Treaty, which entered into force in February 2011. The treaty sets ceilings on deployed Russian and US land- and sea-based intercontinental ballistic missiles as well as nuclear-capable heavy bombers from both sides. In addition, there is a limit on the number of nuclear warheads on these systems.

Implementation of the treaty is ensured through data exchange as well as mutual on-site inspections. However, in August 2022, Moscow declared that it would no longer allow on-site inspections on its territory because US sanctions prevented Russian inspectors from entering the United States. At present, it is unclear how long this situation will last. Regardless, Moscow is complying with the New START ceilings on its deployed strategic nuclear weapons for now and is refraining from placing more nuclear warheads on its long-range missiles, which would be technically possible. The agreement was for ten years, with the option of a one-time extension of up to five years, which US President Joe Biden initiated shortly after taking office. On 4 February 2026, New START will expire, with no option for another extension.

In order for nuclear arms control not to disappear completely, new agreements will have to be negotiated. Optimists assume that Moscow is still fundamentally interested in arms control. Indeed, Russia could use any agreement to showcase its importance for the West, thus bolstering its claims to great power status. However, this optimism is clouded by the fact that the strategic stability talks agreed at the Biden-Putin summit in Geneva in June 2021 have

come to a standstill due to Russia's invasion of Ukraine. The question then arises whether arms control could remain a strategic priority for both nations even as active confrontations escalate.

Even if a new agreement were to be reached, future arms control negotiations would face a variety of problems, only some of which can be mentioned here. For example, Russia would like to limit US missile defense capabilities, but this is extremely unpopular in Washington across the political spectrum. Conversely, there is broad agreement in the US that a new agreement would also have to apply to non-strategic nuclear weapons. Moscow, for its part, seeks the withdrawal of all US nuclear warheads from Europe – something NATO opposes more than ever in light of Russia's invasion of Ukraine – and wants to limit non-deployed nuclear warheads. Because of this, and because the delivery systems of non-strategic nuclear weapons can also be conventionally armed, for the first time in the history of arms control, inspections would have to cover not only the remaining delivery systems but the nuclear warheads themselves. This would require a degree of transparency that was not possible even in

the days of much better bilateral relations between Moscow and Washington. Finally, there is the question of whether and to what extent China, with its growing nucle-

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ar ambitions, would have to be included in nuclear arms control. Against this background, there is little hope that nuclear arms control between the United States and Russia has much of a future.

Outlook

Russia will remain a nuclear power in confrontation with its Western neighbors for the foreseeable future. Moscow has learned that nuclear threats can help secure a type of "cordon sanitaire" protecting its strategic goals. Thus, significant nuclear uncertainties are likely to remain in the relationship between Russia and NATO in the future, regardless of the degree to which Moscow will prioritize further modernization of its nuclear forces over the improvement of its conventional capabilities.

For NATO, maintaining and strengthening the credibility of its nuclear deterrent remains central. This includes countering nuclear coercion. While NATO's European allies – France and the UK – make significant contributions to this with their nuclear arsenals, acceptance of the deployment of US nuclear weapons on the territory of non-nuclear alliance partners and the provision of nuclear delivery systems by these states to help advance nuclear sharing efforts remains essential to demonstrate NATO cohesion.

At the same time, nuclear risks need to be reduced through arms control whenever possible. To the extent that political circumstances permit, nuclear risk reduction talks with Russia should be resumed. Comprehensive treaties to limit and reduce nuclear weapons, on the other hand, are unlikely to be possible for the time being.

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