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RUSSIAN TACTICAL NUCLEAR WEAPONS USE AND DETERRENCE OVER UKRAINE



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Abstract

The ongoing conflict in Ukraine has brought with it new concerns regarding the possible use of nuclear weapons. Considering NATO's notable conventional superiority, the Russian Federation has relied on its nuclear armed forces for deterrence and power projection. As a consequence, Russia has actively maintained a greater number of tactical nuclear weapons. Yet despite this threat, NATO still has several options to bolster deterrence over Ukraine. Deterrence by punishment might see the US adopt a counterforce continuum targeting strategy. While, deterrence by denial primarily encompasses contributing arms to Ukraine, particularly surface-to-air missile systems. Finally, diplomacy, both official and unofficial, is key in allaying fears of nuclear escalation.

The Russo-Ukrainian War has brought about important questions regarding tactical nuclear weapons (TNWs) and deterrence. While there is no reason to believe that a nuclear strike is imminent, their potential use requires NATO to carefully evaluate its strategies regarding deterrence and diplomacy. Unfortunately, there is no easy, clear-cut solution to ensuring no further escalation in Eastern Europe.

Weitz (2011) clarifies that, currently, there is no universal consensus on what defines a tactical/non-strategic/sub-strategic nuclear weapon. Because of the fact that nuclear warheads can be moved from one launcher to another, range is an imperfect qualifier (Weitz, 2011). Still, TNWs are generally understood to be a relatively “small” nuclear weapon, carrying anything from less than a kiloton up to 15, with a range below 500 km (Weitz, 2011). TNWs can therefore be envisioned as short-range, low-yield battlefield weapons designed not for the annihilation of a country or city, but tactical superiority, though their strategic use still exists.

Russian Tactical Nuclear Capabilities and Doctrine

Compared to the United States's 200 TNWs, the Russian Federation is believed to possess 2,000 TNWs (Faulconbridge, 2022). According to Kristensen and Norris (2018, pp. 191–192), the Russian navy has over 800 warheads “for use by land-attack cruise missiles, anti-ship cruise missiles, anti-submarine rockets, anti-aircraft missiles, torpedoes, and depth charges”. The air force has approximately 500 warheads that can be equipped as gravity bombs, air-launched cruise missiles (such as the Kh-22 [AS-4 Kitchen] or the upgraded Kh-32), and air-to-surface missiles (such as the hypersonic Kh-47M2 Kinzhal/Killjoy) (Kristensen and Norris, 2018). There are around 380 warheads for air, missile, and coastal defences. Finally, the Russian army has about 140 warheads deployable as short-range ballistic missiles, especially on the modernised 9K720 Iskander-M (Kristensen and Norris, 2018). All this, is in addition to Russia's gigantic strategic nuclear arsenal.

It is important to understand Russian nuclear doctrine, as it provides a message of intent. The 2014 military doctrine best explains the role of nuclear weapons. It describes threats to deterrence, such as missile defence systems, which are seen as breaking down the stabilising effects of mutually assured destruction (Sinovets & Renz, 2015). Space and high-precision weapons are also seen as an important threat (Russian Gazette, 2014). Article 16 also mentions that nuclear capabilities are critical for the prevention of both conventional and nuclear war, although it does not specify in what way—although the document reasserts that stability, nuclear deterrence, and non-proliferation are key goals of the Russian Federation (Russian Gazette, 2014). Russian doctrine allows for first use “when the very existence of the State is under threat” by either conventional or nuclear attack (Giles, 2010, p. 2). Yet Russia's nuclear relevance is stretched to include “regional war,’ with the latter defined as ‘a war with a powerful state or a coalition [namely the United States and NATO], which Russian forces cannot win or terminate on favorable conditions” (Colby, 2016, p. 7). Worryingly for the present situation, since 2010, the promise in the Russian doctrine of the year 2000 to not utilise nuclear weapons on non-nuclear states has also disappeared (Giles, 2010).

Another source of information is Russian national security strategies, the latest one being from 2021. NATO is explicitly mentioned as a possible source of military danger/threat to Russia (President of the Russian Federation, 2021). Both the Russian national security strategy of 2015 and of 2021 repeatedly highlight the importance of strategic stability, non-proliferation, and an alertness against weapons of mass destruction, especially those which might be used by terrorists. Curiously, the 2015 version mentions a willingness to pursue bilateral nuclear arms reductions, but this is not restated in the newest one (President of the Russian Federation, 2015, 2021). For obvious reasons, these documents paint Russia as a victim and defender. Yet, contrary to the doctrinal focus on the use of nuclear weapons for defensive purposes, experts worry about Moscow's willingness to escalate, including Dr. Patricia Lewis from Chatham House and James Acton from the Carnegie Endowment for International Peace (BBC News, 2022).

In recent months, there has been significant talk and debate regarding the ‘escalate to de-escalate’ doctrine. This doctrine suggests a situation in which Russia would be willing to escalate to tactical nuclear warfare to stop the enemy and possibly bring the conflict to a quick resolution through the fear of further escalation (Ven Bruusgaard, 2022; Fasola, 2021). In other words, it is the employment of nuclear weapons to deter conventional war. The concern today is that, with the war in Ukraine not going as Moscow hoped, that the Russian military might resort to TNW strikes to reverse its situation and force Ukraine to accept defeat. However, such concerns may be exaggerated.

A very controversial document is that of the “Basic Principles of State Policy of the Russian Federation on Nuclear Deterrence”, which has alarmed many regarding its possible implications (Bugos, 2020; Oliker, 2020; Panda, 2020). Article 4 mentions that “In the event of a military conflict, this Policy provides for the prevention of an escalation of military actions and their termination on conditions that are acceptable for the Russian Federation and/or its allies” (President of the Russian Federation, 2020). Is this the much-debated ‘escalate to de-escalate’ doctrine? Oliker (2020) argues that it can be interpreted as:

First use is allowed only in case of existential threat: to Russia or to its deterrent. But if those conditions are met, and Russia decides to use nuclear weapons, Russia will do so intending to prevent further escalation and end the conflict as favorably (or acceptably) as possible for itself. (para. 15)

Article 17 of this document reaffirms that use of nuclear weapons is only permissible if Russia or its allies have been attacked by nuclear means or if there is an existential threat to the Russian state; Article 19 also includes attacks which might disrupt Russian deterrence (President of the Russian Federation, 2020). Indeed, such doctrine is arguably written intentionally ambiguous (Fink & Oliker 2020; Oliker, 2020). It should be noted that these documents do not differentiate strategic and tactical use, which implies that TNWs are ‘regulated’ as stipulated here, and that official doctrine does not permit a nuclear weapon use for battlefield purposes as has been feared in the current geopolitical context.

It is important to highlight that ‘escalate to de-escalate’ does not explicitly appear in the official Russian military doctrine nor in its nuclear deterrence policy (Bugos, 2020; Russian Gazette, 2014). Ven Bruusgaard (2022) refers to it as an “unproductive simplification” and that the “emphasis on very early nuclear use in Russian military doctrine is also outdated” (Why is it wrong? section, para. 1–2). Nicolò Fasola (2021) also argues that evidence for ‘escalate to de-escalate’ in Russian nuclear doctrine is weak and unfounded. He points out that “public statements by Russian politicians, officers, and experts, who seem to outline Russia’s propensity to use (non-strategic) nuclear weapons” is “insufficient proof” (Fasola, 2021, p. 5). He further argues that such statements are political threats, and that Russian narratives have mainly focused on strategic instability, not first-use.

Additionally, Fasola also points out that Russian military exercises that implement a nuclear aspect focus on strikes “as a result of escalation”, not of “a limited nuclear strike early in a war” (Fasola, 2021, p. 6). Thus the ownership of nuclear capabilities does not necessarily translate to a willingness to utilise them. Fasola (2021, p. 6) claims, “the vast Russian nuclear arsenal reveals serious operational shortcomings; nuclear procurement and modernization programmes lag behind schedule and funding, while conspicuous, is much less than other Russian forces” . Fasola (2021) then concludes that there is weak/no evidence that Moscow would be anything but reluctant to use nuclear weapons in an ‘escalate to de-escalate’ mindset, which is seemingly not in line with modern Russian military planning. That said, not planning to use TNWs does not guarantee that they will not be used. And there is, ultimately, no guarantee that doctrine has to be adhered to or that it might not be revised and altered.

Does a Conventional Warfare Loss Necessitate a Turn to Nuclear Weapons?

Indeed, in line with Fasola's (2021) points, there does not seem to be conclusive evidence to suggest that the Russian leadership does believe in an 'escalate to de-escalate' policy (Ryan, 2020). It certainly seems unlikely that Russia would utilise TNWs to salvage a poor 'military operation' in Ukraine. Fink and Oliker (2020) point out that 'escalate to de-escalate' is not a part of formal doctrine, and that TNWs add further ambiguity that supports Russia's nuclear deterrence. Nuclear warfare also seems impractical, as Russian troops would struggle to advance through radiated areas (Fasola, 2021). And yet, when it comes to nuclear weapons, no possibility can be ignored, especially if Russian nuclear thinking were to suddenly change out of desperation or political considerations. A lack of absolute certainty makes it difficult to disregard TNW use entirely.

What would happen if Ukrainian troops were to cross the Russian border? Does that constitute enough of a risk to the Russian state? While it is unlikely that Putin would resort to nuclear strikes on Russian soil, it does not seem unfathomable that TNWs would be deployed in retaliation to attack Ukrainian territories. In the end, what the real, practical threshold for the use of TNWs might be can only be decided and known by the Russian leadership. Putin claimed: "If the territorial integrity of our country is threatened, we will without a doubt use all available means to protect Russia and our people. This is not a bluff" (BBC News, 2022). Based on such statements, questions remain regarding the resolution of the Russo-Ukrainian War. The Russian annexation of Crimea, Donetsk, Kherson, Luhansk, and Zaporizhzhia (Deutsche Welle, 2022) suggests difficulties for a diplomatic resolution as Kyiv is determined to retake these lands (Gillett, 2022). However, it currently seems significantly more likely that Moscow will choose to conscript more troops (Koshiw & Sauer, 2023) and rely on pure numbers to win the war, rather than resorting to nuclear warfare.

The Conventional and Tactical Nuclear Capabilities of NATO

Every Russian action inevitably must take NATO into consideration. Besides having three major nuclear powers as part of the alliance, NATO carries the conventional capabilities of all 30 members. Its members have some of the most advanced defence capabilities in the world, with F-22s, Rafales, Eurofighter Typhoons, and the new F-35s providing second-to-none air dominance. NATO also has formidable armour on land, with the M1 Abrams, Challenger 2, and Leopard 2. Meanwhile on the naval side, the alliance carries thousands of ships, from aircraft carriers to submarines. All of this, alongside millions of military personnel, makes for the most powerful military alliance in the world (IISS, 2021), which will only grow more capable with the accession of Finland and Sweden. For Russia, NATO's capacity to supply Ukraine is of great concern, especially with recent discussions and news regarding the contribution of Patriot systems and tanks to Ukraine (Beale & Andersson, 2023; Partridge, 2022).

While the focus is often on nuclear capabilities, NATO's conventional equipment and personnel are a major source of deterrence. NATO has already been working on a multinational effort to improve procurement and cost management of its precision guided munitions, particularly air-to-ground (NATO, 2019). But arguably the most fundamental piece to NATO's deterrence is its ballistic missile defence systems, in the form of Aegis Ballistic Missile Defence Systems and the ground-based Patriot surface-to-air missile (SAM) systems (NATO, 2022). In effect, it is difficult to coerce an alliance that can strike and defend itself to the extent that NATO can.

However, the greatest deterrence is undoubtedly NATO's nuclear capabilities. Like Russia, NATO has access to thousands of nuclear warheads which can be launched from air, land, and sea with second-strike capabilities. Relevant to this discussion, the United States maintains about 100 B61 TNWs in Europe; located in bases in Belgium, Germany, Italy, the Netherlands, and Turkey (Kristensen & Korda, 2021). In an escalating conflict between NATO and Russia, counterforce strikes by TNWs on both sides would deter conventional warfare, as the mutual annihilation of the front line would cripple the capacity of both sides to invade the other.

Some suggest, however, that the B61 might be counterproductive (Coletta, 2013; Pifer et al., 2010). When it comes to TNW disarmament talks, Russian dominance has meant that the United States would have to make greater concessions to achieve proportional Russian disarmament. Another issue is that host countries "can unilaterally reduce NATO's effective nuclear ordnance by replacing current fighter-bombers with the Eurofighter, which unlike the US-sponsored F-35, is not certified to carry nuclear payloads" (Coletta, 2013, pp. 84–85; Pifer et al., 2010). Additionally, in case of a conflict against another nuclear power, the B61 might be much of a threat due to its capacity to reach city-destroying yields. The use of a B61 "might communicate uncontrolled escalation, inflating the risk of an irrational exchange too abruptly" (Coletta, 2013, p. 85). Regardless, the US will be doubling down on the B61, with plans to replace and modernise at least some of the current stockpile (Bender et al., 2022).

Avoiding Nuclear Warfare in Ukraine

Deterrence by punishment

There are alternatives to Coletta's (2013) view regarding the B61, primarily, the idea of a counterforce continuum: developing a targeting strategy in response to every level of conflict (Jamison, 2022). Especially with the US's advantage in regards to precision weapons, the US could plan to employ isolated low-yield nuclear strikes to damage infrastructure in response to economic coercion. This would be the lowest targeting level, and it is here where the B61 might serve a greater purpose (Jamison, 2022). As Talbot indicates, "the United States needs a variety of theater nuclear weapons along the escalation continuum in order to match any nuclear use by a great power—or regional power for that matter—tit for tat" (2020, p. 35). Deterrence requires resolve and credibility (Siebens & Stimson Center, 2022), and having a response for every level of conflict action, rather than just nuclear annihilation, provides the capacity to make credible threats at every level of deterrence (Jamison, 2022).

The key aspect of the counterforce continuum is messaging. Wargames, military exercises, and real-world operations can all provide evidence that a power can deter at every level of warfare. They also signal that a nuclear threat does not necessarily equate to a massive countervalue attack. Of course, the purpose of the counterforce continuum is not to coerce (Jamison, 2022); this would be particularly difficult against another nuclear power. However, it signals that aggressive actions can have a measured response, or in other words: deterrence at every level.

In the context of Ukraine, a counterforce continuum could threaten limited action in response to Russian TNW use. But if such deterrence were to be credible, there would have to be clear open dialogue between Ukraine and the US/NATO. NATO cannot directly involve itself in the Russo-Ukrainian War without entering said conflict. However, it is also important to message that employment of nuclear weapons will have serious repercussions. That said, a counterforce continuum is not a realistic option in the short term, but has serious potential, if implemented, for deterring future conflict escalations.

Deterrence by denial

A much more short-term approach is that of increasing missile defence system contributions to the Ukrainian war effort. Besides military confrontations, “Russia has attacked civilian infrastructure, including food and water supplies as well as public health facilities, throughout Ukraine with ballistic and cruise missiles” (Anthony, 2022, p. 2). The US recently promised a Patriot SAM battery to Ukraine, but this is arguably too little, too slow. It will take months for Ukrainian personnel to be trained to use the Patriot system (CBS Interactive, 2022). Another important consideration is that the system can only defend a limited area, such as a city (Britzky, 2022). More SAM systems are a necessity, however, the time required to train Ukrainian personnel means that this is an investment that required an earlier foresight to fully reap its rewards.

However, with a wide enough ‘net’, the Patriot in combination with other possible SAM systems could play a vital role in deterring the use of TNW. CBS Interactive (2022) reports:

Still the Patriot's ability to target some ballistic missiles and aircraft could potentially protect Kyiv if Russian President Vladimir Putin carried through on his persistent threat to deploy a tactical nuclear device. But that would depend on how the weapon was delivered, Karako said. If it was a gravity bomb delivered by a warplane, the system could target the aircraft; if it was a cruise or short-to-medium-range ballistic missile, it could also possibly intercept the missile, Karako said. (Patriot's capabilities section, para. 6)

American reluctance to provide the Patriot, however, might suggest that a substantially larger contribution of such SAM systems is unrealistic and not forthcoming.

Seeking Diplomacy

Achieving a partial mutual TNW disarmament might be, in this current geopolitical environment, a thing of fantasy. Nevertheless, it still merits consideration. Zolotarev and Stimson Center (2022) argue that, in a bipolar system between NATO and Russia, the simple difference in total military spending alone demonstrates Russia’s reliance on nuclear weapons. For that same reason, seeking arms reductions, especially to achieve some sort of parity, will be diplomatically expensive. Coletta (2013) mentions, “An agreement to dramatically reduce US (and Russian) nuclear arms could occur but not without concurrent political changes that (it is hoped) would relieve security pressure on the frontline members” (p. 79). Yet, NATO-Russia relations are arguably the worst they have ever been since the end of the Cold War. But perhaps it is precisely within such a context that a path toward peace and TNW reductions can be found.

It is also important to remember the relevance of so-called Track-2, or ‘backchannel’, diplomacy. One exemplary concept arises from discussions between retired American and Russian officers (Stimson Center, 2022). Perhaps a topic of discussion could be an alternative to reduction: distancing storage from delivery systems. While this does not outright guarantee that TNWs will never be used or threatened with, it “[leaves] space for military-diplomatic efforts to prevent escalation of the conflict to the nuclear level” (Zolotarev & Stimson Center, 2022, p. 45). Zolotarev and Stimson Center (2022) propose:

It appears that it would be desirable to reach agreements providing for:

- Locating facilities for storage of nuclear warheads for non-strategic delivery systems outside theaters of military operations (TMO);*
- Locating operational-tactical missiles, short- and medium-range missiles, and large-caliber artillery systems capable of using nuclear warheads outside TMO; and*
- Developing future rocket, artillery, air, and other advanced TMO fire attack systems with verifiable technical solutions precluding their use for delivery of nuclear warheads.*

This, for example, might be an area where NATO's diplomatic efforts might find less resistance from their Russian counterparts. It also highlights the importance of continuing and deepening Track-2 diplomacy wherever possible, especially when official, or Track-1, diplomacy fails.

Conclusion

There is a lot to consider regarding the Russian Federation's possible use of TNWs. Russia has, without a doubt, a large and modern nuclear capacity. Its doctrine, through vagueness and ambiguity, leaves doubts as to the use of nuclear weapons, especially TNWs in an 'escalate to de-escalate' scenario. While it seems that concern is unwarranted, it does not mean NATO should not be careful and prepared. And while NATO has exceptional conventional and nuclear capabilities, it might be worthwhile to rethink the strategy of the B61. It seems it would be used best in a counterforce continuum-type deterrence strategy, while there are other concerns to have, such as the availability of planes certified to carry this bomb. But the most direct way of deterring Russia from TNW use in Ukraine is likely that of providing modern SAM systems, such as the Patriot. Finally, military to military 'backchannel' diplomacy remains a valuable form of dialogue that governments perhaps ought to focus on more.

The Russo-Ukrainian War has put the world on high alert. NATO's conventional dominance seems to only be balanced by Russia's TNW superiority. While the ultimate decision to use TNWs rests with Vladimir Putin, there are important discussions to be had regarding what NATO can do to prevent this situation. Whether it be through diplomacy, deterrence by denial, or deterrence by punishment, NATO will need exceptional foresight to ensure that the situation in Ukraine does not escalate further out of control.

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