

RUSSIA'S NEW STRATEGIC WEAPONS: AN ANALYSIS

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INTRODUCTION

As the US is scrambling in its diplomatic outreach to find a solution to the ongoing Russia-Ukraine War, the Russian Federation is readying all its conventional and nuclear weapons with new tests and deployment. Ever since the war started in February 2022, Russia has deployed and tested a variety of weapons. These include the deployment of air-launched ballistic missiles such as the Kinzhal,¹ an air-to-air nuclear-capable missile variant of the R-37M long-range air-to-air missile, and hypersonic weapons such as the Oreshnik.² The tests include the launch of the Bulava Intercontinental Ballistic Missile (ICBM),³ the test launch of a modified Topol-M ICBM called

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1. Javed Alam and MD Arifur Rahman, "An Analysis of Hypersonic Missile Technology: A Case Study of Russia-Ukraine War (2022-2023)," *Pakistan Journal of Integrated Social Sciences*, vol. 1, issue 2, December 2024.
2. "Russia has Used its Hypersonic Oreshnik Missile for the First Time: What are its Capabilities?" The Associated Press, December 9, 2024, <https://www.ap.org/news-highlights/spotlights/2024/russia-has-used-its-hypersonic-oreshnik-missile-for-the-first-time-what-are-its-capabilities/>. Accessed on October 24, 2025.
3. "Russia Says it Test-fired Nuclear-Capable Bulava Missile from New Submarine," *Al Jazeera*, November 6, 2023, <https://www.aljazeera.com/news/2023/11/6/russia-says-it-test-fired-nuclear-capable-bulava-missile-from-new-submarine>. Accessed on October 24, 2025.

the Topol-ME,⁴ and the test launch of the Multiple Independently Reentry Vehicle (MIRV)-capable Yars ICBM. Along with these developments, Russia has also managed to reequip itself with 88 per cent of modern weapons, which are of Russian origin instead of being developed during the Soviet times.⁵ Unsurprisingly, Russia is now testing new weapons of different classes to make sure that its nuclear and conventional capacities remain at par with, if not more than, those of its adversaries. The ambition to develop these weapons, however, goes back to 2018. In his address to the Federal Assembly in March 2018,⁶ Russian President Vladimir Putin announced the existence of six significant nuclear-capable weapon programmes. The systems dubbed *superoruzhie* (super weapons) are essentially strategic in nature. The following were the systems as announced by President Putin in 2018.

1. RS-28 Sarmat Intercontinental Ballistic Missile (ICBM).
2. Yu-74 aka Avangard hypersonic Boost-Glide Vehicle (BGV).
3. Poseidon nuclear-armed, Unmanned Underwater Vehicle (UUV).
4. 9M730 Burevestnik ground-launched, nuclear-powered cruise missile.
5. Kh-47M2 Kinzhal air-launched ballistic missile.
6. 3M22 Tsirkon (Zircon) ship-launched anti-ship hypersonic cruise missile.⁷

Under this thinking, Russia has recently tested a long-range nuclear-powered cruise missile and now plans to deploy it at the earliest. At around the same time, Russia also tested the Poseidon

4. "Topol-ME Launch from Kapustin Yar to Sary-Shagan," Russian Strategic Nuclear Forces, April 12, 2024, https://russianforces.org/blog/2024/04/topol-me_launch_from_kapustin_shtml. Accessed on October 27, 2025.

5. Maxim Starchak, "Why Russia's Nuclear Forces Are No Longer Being Updated," *Carnegie Politika*, January 23, 2025, <https://carnegieendowment.org/russia-eurasia/politika/2025/01/russia-nuclear-arsenal-modernization?lang=en>. Accessed on October 30, 2025.

6. The President's Address to the Federal Assembly, March 1, 2018, <http://kremlin.ru/events/president/news/56957>. Accessed on November 1, 2025.

7. The 3M22 Tsirkon (Zircon) (SS-N-33) ship-launched hypersonic anti-ship missile was not mentioned by President Putin in his 2018 address to the Federal Assembly. However, details of the programme were revealed soon afterwards.

nuclear-powered UUV. This article examines these two tests, their significance, and their repercussions for the global nuclear order.

9M730 BUREVESTNIK

On October 27, 2025, it was reported that Russia had successfully tested its nuclear-powered cruise missile, the Burevestnik.⁸ Russia's chief of the General Staff of the armed forces stated that the missile travelled 14,000 km and was airborne for about 15 hours. The missile, officially known as the 9M730 Burevestnik (Storm Petrel) and North Atlantic Treaty Organisation (NATO)-designated SSC-X-9 Skyfall, is described by Russia as "invincible" at penetrating current and future missile defences. The significance of the missile can be understood from the fact that Russian President Vladimir Putin touted it as "a unique weapon which nobody else in the world has."⁹

The test, which was announced as successful, has, however, had its fair share of failures over the years. The 9M730 Burevestnik was revealed in March 2018. The missile tends to feature cruise missile capabilities at subsonic speeds. The development of the missile, however, goes back to 2011. In 2018, Russian President Putin stated that the Burevestnik "is a low-flying stealth missile carrying a nuclear warhead, with almost unlimited range, unpredictable trajectory and ability to bypass interception boundaries."¹⁰

The information essentially explained the significant features of the missile, which can be attributed as follows:

1. Low-flying altitude suggesting cruise capabilities.
2. Stealth design meant for survivability.
3. Nuclear warhead signifying strategic missions.
4. Unlimited range, intended for intercontinental targeting.
5. Unpredictable trajectory aiming for counter-air-defence capability.

8. Guy Faulconbridge and Lidia Kelly, "Russia Tested New Nuclear-Powered Burevestnik Cruise Missile," October 27, 2025, <https://www.reuters.com/world/china/russia-tested-new-nuclear-powered-cruise-missile-top-general-says-2025-10-26/>. Accessed on November 1, 2025.

9. Ibid.

10. Tim Lister and Mariya Knight, "Putin says Successful Test Carried Out of New Nuclear-Powered Strategic Missile," CNN, October 6, 2025, <https://edition.cnn.com/2023/10/05/europe/putin-nuclear-powered-strategic-missile-intl>. Accessed on November 1, 2025.

One of the essential features of the Burevestnik, which was highlighted in 2018, was its unlimited range. To fulfil the said requirement, Russia had ensured the integration of a nuclear-powered engine as the necessary propulsion. The concept on which the Burevestnik is based is not new and had been explored during the early phase of the Cold War.¹¹ The US worked on two plans, known as Project Pluto and Project Rover, from 1956 to 1973. Project Pluto included tests of two open-loop propulsion reactors—the Tory-IIA and Tory-IIC—intended for developing a supersonic nuclear ramjet. Accordingly, the Tory reactors had dimensions of less than ten feet in length and diameter. However, to make a nuclear-powered missile work like the Project Pluto cruise missile, chemical rockets were required to provide the velocity that the nuclear ramjet needed.

Regarding the technical parameters of the Burevestnik, nothing conclusive is available in the public domain, let alone anything from the Russian side. Russia conducted four tests of the Burevestnik between November 2017 and February 2018. In February 2018, a test of the missile was reported to have crashed somewhere in the Barents Sea, but the observation yielded only technical details about the missile. It was reported that the reactor of the missile was “very small in size, [and] is likely using highly enriched uranium-235 as fuel. The core diameter is less than half a meter.”¹² In 2021, the UK Chief of Defence Intelligence, James Hockenhull, reaffirmed that the Burevestnik is a subsonic nuclear-powered cruise missile with global reach. The other technical considerations that can be proposed are as follows:

1. A ramjet design, which essentially works efficiently above Mach 2, can also operate subsonically and, thus, the Burevestnik can be both subsonic and ramjet at the same time.
2. An unlimited range of the missile, as claimed by Russia, is more on the lines of a symbolic threat than the actual threat the

11. Cheryl Rofer, “A Russian Nuclear Cruise Missile?” *Nuclear Diner*, August 24, 2018, <https://nucleardiner.wordpress.com/2018/08/24/a-russian-nuclear-cruise-missile/>. Accessed on November 2, 2025.

12. Thomas Nilsen, “Nuclear-Powered Missile Crashed in Barents Sea, Intelligence Report Allegedly Claims,” *The Barents Observer*, August 22, 2018, <https://www.thebarentsobserver.com/security/nuclearpowered-missile-crashed-in-barents-sea-intelligence-report-allegedly-claims/156206>. Accessed on November 2, 2025.

missile can pose. Yes, indeed, the nuclear ramjet propulsion systems can have a long cruising range, but it is not infinite. Fuel consumption imposes a stricter limit on the range.¹³

3. While it is still unknown what kind of reactor the missile uses, studies have proposed at least two types of systems which the Burevestnik can utilise to heat the incoming air for acceleration. The first one is an open-loop system where the “incoming air flows straight through the reactor to extract the heat and propel the missile.”¹⁴ The second is a closed-loop system, “where the reactor is isolated from the airflow by a heat exchanger that transfers the reactor’s heat to the air.”¹⁵

In addition to the features mentioned above, this missile system must also overcome issues related to inertial forces and atmospheric turbulence while airborne. Both inertial forces and atmospheric turbulence can create problems for the reactor and its heat generation. Besides these issues, since the missile is touted as a stealth platform, the onboard platforms which require running the reactor need to be autonomous. Any form of communication during the flight will compromise the missile’s stealth characteristics. Since the missile is subsonic in nature, it won’t be able to outrun the incoming adversaries.¹⁶

POSEIDON

In its early development, the Poseidon was known as the ‘Oceanic Multipurpose System Status-6’ or just ‘Status-6.’¹⁷ The initial report, which highlighted the Poseidon’s development, came to light in November 2015. At that time, the Poseidon was termed as a large, autonomous and fast nuclear-tipped torpedo. During the same time,

13. Ernest O. Lawrence, *Radiation Laboratory* (California: University of California, 1959).

14. Chris Spedding, “BASIC Brief: Burevestnik,” October 11, 2023, <https://basicint.org/brief-burevestnik/>. Accessed on November 3, 2025.

15. Ibid.

16. Ibid.

17. Richard Connolly, “Putin’s ‘Super Weapons’”, in Samuel Bendett, Mathieu Boulègue, Richard Connolly, Margarita Konaev, Pavel Podvig, and Katarzyna Zysk, “Advanced Military Technology in Russia: Capabilities and Implications,” September 2021, <https://www.chathamhouse.org/sites/default/files/2021-09/2021-09-23-advanced-military-technology-in-russia-bendett-et-al.pdf>, p. 25. Accessed on November 4, 2025.

the UUV was measured at 24 m in length and 1.6 m in diameter, with a maximum depth of 1,000 m and a maximum speed of 185 km/h. By 2018, further details about the Poseidon's technical parameters surfaced. In 2018, according to none other than President Putin, the Poseidon was built as a multi-purpose UUV that "can be armed with both conventional and nuclear munitions. This will allow them to engage a wide range of targets, including aircraft carrier groups, coastal fortifications, and infrastructure."¹⁸ Further information, as revealed by President Putin, was about the propulsion and range of the UUV. Accordingly, it was stated that a miniature nuclear reactor would power the UUV, which would provide essentially unlimited range.¹⁹ The carrying platform for the Poseidon was the Belgorod, a modified Oscar II-class nuclear-powered submarine. The Belgorod became operational in 2022. However, on November 1, 2025, the Khabarovsk, another nuclear-powered submarine, was rolled out, and it appears to be designed explicitly for a Poseidon-carrier role. As of now, Russia is reported to have ordered 32 Poseidon UUVs.²⁰ The other technical considerations that can be proposed are as follows:

1. An autonomous platform essentially signals the Poseidon's uncrewed capabilities, which helps in negating the human risk associated with military missions.
2. A test-bed for further development of a similar weapon system fulfilling second-strike requirements.
3. A reported diving depth of up to one km renders the Poseidon safe from any existing manned submarines and, thus, provides an exceptional technical and strategic edge over Russia's adversaries.

ARE THESE TECHNOLOGIES TOO RISKY TO BE PURSUED?

While it is still unknown how Russia has managed to bring this technology on board and whether it is working as projected, what

18. n. 6.

19. Connolly, n. 17, p. 25.

20. "Russian Navy to Put Over 30 Poseidon Strategic Underwater Drones on Combat Duty—Source," TASS, January 12, 2019, <https://tass.com/defense/1039603>. Accessed on November 5, 2025.

can be put out is the technology's ramifications. The first concerns accidental launch or loss of the system during a heightened crisis. To date, 32 nuclear weapon accidents have occurred, which are more commonly known as "Broken Arrows."²¹ The concept of Broken Arrows only explains "an unexpected event involving nuclear weapons that result[s] in the accidental launching, firing, detonating, theft, or loss of the weapon."²² Perhaps, now that the development of the Burevestnik is complete, the time has come to expand the definition of Broken Arrows and involve accidental launch or loss of airborne nuclear reactors. A lesser but related risk for this kind of platform is accidental loss of the nuclear reactor during an exercise or test launch. Such an accident can result in airborne radioactivity. This happened in September 2017, resulting in a cloud of Ru-106 radioactivity. Besides the problem of accidental launch or loss, this type of missile system is essentially a first-strike platform with a dual-use configuration.²³ The dual-use configuration has both advantages and disadvantages. Still, when a nuclear reactor-powered missile is involved, it introduces additional risks—the risks of interception, which would result in the dispersion of radiation.

In terms of a platform like the Poseidon, there are risks involved, such as "a detonated Poseidon would produce significant local fallout that could quickly spread depending on wind directions."²⁴ More importantly, as with the Burevestnik, the Poseidon system can pose a contamination risk even during peace-time. The case of this contamination risk already exists. On June 23, 2020, scientists in Sweden detected "...higher than usual levels of radiation. Based on analysis of the weather, the origin was projected to be in Northern

21. "Broken Arrows: Nuclear Weapons Accidents," *Atomicarchive.com*, <https://www.atomicarchive.com/almanac/broken-arrows/index.html>. Accessed on November 6, 2025.

22. *Ibid.*

23. Jill Hruby, "Russia's New Nuclear Weapon Delivery Systems: An Open-Source Technical Review" *Nuclear Threat Initiative*, November 2019, https://media.nti.org/documents/NTI-Hruby_FINAL.PDF, p. 35. Accessed on November 7, 2025.

24. Felix Lemmer, "Security Tech Brief: Poseidon," March 2022, https://www.hertieschool.org/fileadmin/2_Research/1_About_our_research/2_Research_centres/2_Centre_for_International_Security/Papers/Security_Tech_Brief_Poseidon_May31.pdf, p. 6. Accessed on November 7, 2025.

Russia.”²⁵ The possible cause of this radiation remains undetected, but some reports have hinted towards tests associated with the Poseidon.²⁶

MILITARY OBJECTIVES THAT RUSSIA COULD ACHIEVE

There are essentially four military objectives that Russia seems to achieve from these platforms. These are:

1. **Cruising Ahead of the Ballistic Missile Defence:** Since the Burevestnik is a cruise missile, it is meant to evade any existing ballistic missile defence technologies that Russia's adversaries possess. While it may seem like a self-fulfilling prophecy for Russia, given that the US is now pursuing its Golden Dome system, Russia has been wary of the US ballistic missile defence technology since the US withdrawal from the Anti-Ballistic Missile (ABM) Treaty in 2002. Over the years, Russia has managed to build platforms such as hypersonic weapons, which can help evade ballistic missile defences.
2. **Improving Second-Strike Capabilities Through Sea-Based Deterrence:** The development of the Poseidon can be termed as a super-second-strike capability, providing additional firepower to Russia's existing nuclear capabilities at sea.
3. **A Second-Strike Capability Beyond Sea-Based Deterrence:** Another important military objective which the Burevestnik can fulfil is to provide an assured second-strike capability to Russia. Fundamentally, it is the sea-based nuclear capabilities which provide such capabilities. However, a platform like the Burevestnik, which can remain airborne for an extended period due to its nuclear propulsion, can play the same role as sea-based platforms.
4. **An Offensive Platform with a Political Undertone:** While the Burevestnik is essentially an offensive military platform, it is also a political weapon. Since the Russia-Ukraine War, Russia

25. H.I. Sutton, "Russia's New Super Weapons May Be Cause of Radiation Leak," July 1, 2025, <https://www.forbes.com/sites/hisutton/2020/07/01/russias-new-super-weapons-may-be-cause-of-radiation-leak/?sh=48e6741c5f8c>. Accessed on November 7, 2025.

26. Ibid.

has managed to showcase to the world the weapons which once seemed too difficult to develop, integrate, and utilise. For example, in the ongoing war, Russia has managed to field its hypersonic weapons quite extensively. These hypersonic platforms may not have helped Russia end the war on its own terms, but they have also played on the Western powers' fears. At the same time, the nuclear sabre-rattling by Russia has, on more than one occasion, helped negate the export of military technology to Ukraine. Announcing the success of the Burevestnik is as much political as military, sending signals to the Western and NATO powers.

CONCLUSION

The announcement of the Burevestnik and Poseidon has come at a time when Russia is in the midst of a war with Ukraine and modernising its defence structure, with nuclear modernisation as a primary goal. The proclamation has also come at a time when Russia is developing more advanced nuclear platforms such as the Poseidon, which can carry nuclear weapons that can cause radioactive tsunamis, wiping out huge coastal areas. Both the Burevestnik and Poseidon are nuclear-capable platforms and add to Russia's sea and air-based nuclear triad. Both developments are also significant for Russia, as its new land-based nuclear platform has experienced several major failures in recent testing.²⁷ Besides military objectives, Russia would not want to lag in integrating these platforms before Russia and the US again sit down for an arms control agreement, which, as of now, seems a distant dream. The Western analysts have already termed the development of the Burevestnik and Poseidon as "either technically unfeasible or militarily ridiculous."²⁸ However, the development is somewhere between these claims. These systems cannot make any difference in terms of upsetting the existing nuclear

27. Doniyor Mutalov, "Sarmat Failure Casts Doubt on Russian Heavy ICBM," Arms Control Association, November 2024, <https://www.armscontrol.org/act/2024-11/news/sarmat-failure-casts-doubt-russian-heavy-icbm#:~:text=A%20Russian%20RS%2D28%20Sarmat,already%20on%20active%20combat%20duty>. Accessed on November 7, 2025.

28. n. 17, p. 32.

deterrence between Russia and the US and its nuclear allies in Europe. Both nations possess enough doomsday power to end each other's existence virtually. The exact nature of these novel systems is to create new fears and feed into the existing argument for building more resilient defensive systems, such as the Golden Dome project in the US. Systems like the Poseidon and Burevestnik are not yet integrated into Russia's nuclear firepower, but their cascading effects on the arms race and strategic stability is already being felt.