



Russia Threatens with New Missile and Nuclear Capabilities

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Russia's use of the Oreshnik ballistic missile in Ukraine was calculated as a demonstration of force towards NATO, to add some credibility to its "red lines" and to emphasise the importance of its revised nuclear doctrine. This missile system appears to be an improvised design, but it is also indicator of one of the possible options for the expansion and modernisation of the Russian arsenal aimed at Europe. Expected changes in Russia's missile and nuclear capabilities require serious investments in American and European offensive systems, independent of effective—but very expensive—missile defence systems.

On 21 November, Russia attacked the Ukrainian Yuzhmash plant in Dnipro, using what it called a "new medium-range missile", the Oreshnik. According to U.S. intelligence, it was an experimental version of the Rubezh, an intermediate missile with a range of 3,000-5,500 km. Russia is threatening further strikes against Ukraine and has announced the possibility of development of this class of missiles. [Russia and the U.S. committed to not deploying land-based missiles with a range of 500-5,500 km](#) in Europe under the 1987 INF Treaty, of which the American side withdrew in 2019 after accusing Russia of violations of it for many years.

Political and Technical Dimensions of the Strike. According to Russia, the strike on Dnipro was aimed at Ukraine's [missile production facilities](#). In a special speech, Vladimir Putin justified it by the [Ukrainian strikes with ATACMS and Storm Shadow missiles](#) in the Kursk and Bryansk regions since 19 November. He emphasised that this was a response to "aggressive NATO actions", meaning increased military aid for Ukraine. Putin even suggested that Ukrainian missile systems are operated by NATO experts and that the war with Ukraine is gaining some "global dimensions". However, Russia notified the U.S. of the strike in advance, reporting the launch of a new missile as a version of the Rubezh missile from the Kapustin Yar range (800 km to the target). In addition to confirming the system used in strike, the notification also indicates that Russia wanted to avoid an unintended escalation with the U.S. Putin also suggested the further development of the Oreshnik is dependent on U.S. moves. Although his statement focused mainly on Ukraine, according to

Russia's Ministry of Foreign Affairs, the plans in this regard might be a response to the [recent completion of the EPAA-NATO missile defence system](#). It can also be assumed that in the future, Russia will justify the potential development of the Oreshnik with strengthening of the Alliance's offensive capabilities in Europe. These may include [American PrSM missiles](#) (the successor to the ATACMS), the Typhon launcher (for the SM-6 and Tomahawk), and the Dark Eagle hypersonic weapon.

Putin declared that the Oreshnik missile carries conventional warheads, which cannot be intercepted thanks to their hypersonic speed. These claims exaggerate the technical performance of the new missile. It is likely just an improvised design, using at least one stage of the Rubezh missile, tested in 2011-2015. As with other intermediate- and intercontinental-ballistic missiles, its warheads enter the atmosphere and reach their targets at hypersonic speeds. [But unlike the hypersonic weapons](#), Oreshnik's warheads did not perform any manoeuvres at hypersonic speeds, which would [complicate the operation of anti-missile defences](#). The Oreshnik did not carry multiple independently targetable re-entry vehicles (MIRVs), although it could have used a post-boost bus for the multiple re-entry vehicles (MRVs) with unguided warheads adapted from the Bulava missile. Less clear are the technical details of the six re-entry vehicles and warheads used, which disintegrated into 36 fragments. This was either the result of disintegration of the training warheads with heavy ballast or the use of some form of cluster munitions. In both cases, this must have weakened the kinetic effect of strike, allowing only an area attack without causing

much damage. It can be assumed that Russia does not have more than a few or dozen of Rubezh's prototypes, which can be easily and quickly adapted into further Oreshniks.

Threats to Ukraine and NATO. Oreshnik does not add new qualitative capabilities to wage war with Ukraine. Russia is struggling with limitations in the production of Iskander-M and Kinzhal ballistic missiles, but this gap is filled by systems of the same class obtained from North Korea and Iran. Russia has successfully multiplied the production of Kh-101 and Kalibr cruise missile but these are easier targets for air defence of Ukraine. Currently, the most serious threat to Ukraine are conventional gravity bombs converted into glide bombs, which can be used from safe distances for Russian aircraft. It is also unlikely that Russia will be able to effectively and widely use Oreshnik missiles during the war. A simpler way to increase the scale of ballistic strikes on Ukraine might be to use the Topol-Yars family of intercontinental missiles (from which the Rubezh is technologically derived) that are scheduled for utilisation. Such improvised systems can be used only in strikes on large targets—cities, industrial centres and airports.

Currently, Oreshnik is still mainly a psychological weapon against NATO. It does not pose a present threat to the Alliance and does not change the balance of nuclear and conventional forces between it and Russia. Like many other already disclosed strategic systems of Russia, such as the Sarmat and [Burevestnik missiles](#), [Poseidon torpedo](#), and an [unknown anti-satellite system](#), it is intended to intensify the fear of nuclear conflict. The strike publicised by Russia was another element of intimidation of NATO societies and decision-makers and a suggestion of the deeper meaning of [the editorial changes to its nuclear doctrine](#). Regardless of the progress in the development of the Oreshnik, Russia has a diverse strategic arsenal and nuclear parity with the U.S., which gives it a wide range of options to strike targets in Europe and Asia. For instance, and in violation of the INF Treaty, Russia has already introduced into service [9M729 cruise missiles with a range of up to 2,500 km](#) (i.e., land version of the naval Kalibr). It certainly also has Iskander-M ballistic missiles armed with nuclear warheads with ranges of up to 500 km. It should also be remembered that part of its strategic arsenal (Kalibr, Kh-102, and Kh-555 with nuclear warheads) is earmarked for war scenarios in Europe. Moreover, Russia retains tactical nuclear bombs and regularly [threatens to deploy these into Belarus](#).

At the same time, the Oreshnik may indicate Russia's plans to develop missile and nuclear capabilities directed against NATO in the 2025-2030 period. A two-stage ballistic missile with a range of up to 3,500 km would make it easier for Russia to blackmail European countries in the event of a weakening of transatlantic ties and a possible limited war with the NATO. In military terms and with the use of nuclear warheads, it would pose an additional threat to nuclear forces, airports, ports, logistics hubs, and command centres of NATO in Europe. After improvement and a series of tests, Russia can produce it by using common parts and expanding the production lines of the Yars, Rubezh, and Bulava missiles. Another quick option for modernising Russia's arsenal could be to adapt maritime Tsirkon hypersonic missiles with a range of up to 1,000 km on the Iskander launcher. With more

investment, Russia could also introduce new shorter-range ballistic missiles into its arsenal. The [experience of the USSR and South Korea](#) shows that the range of the Iskander-M can be extended from 500 km to 800–900 km. Such a missile could be launched from the Iskander launchers that are already in service. However, developing another missile with a range of up to 1,500 km would require a different design and new mobile launcher for it, so it would be much more expensive. An open question is whether to integrate with this missiles the already proven Soviet or Russian nuclear warheads or to use completely new warhead models, which in turn would require a resumption and a series of nuclear tests.

Conclusions and Recommendations. Most of Russia's claims about the recently used Oreshnik missile are questionable. Even a strike with several or a dozen of these prototypes will not affect the course and results of the war with Ukraine. The Oreshnik does not change the current balance of nuclear forces between NATO and Russia, which already has an extensive and diversified arsenal against Europe. Russia also has a reserve of strategic missiles that it can target at Europe at any time. The use of Oreshnik in combat was intended to reinforce the impression that serious changes had been introduced into Russia's nuclear doctrine, and thus to discourage the public and NATO decision-makers from supporting Ukraine. In this context, it is crucial that the U.S. and Europe refuse to bow to Russia's blackmail and instead further strengthen Ukraine's drone and missile arsenal.

Russia will also use the threat of developing missiles previously banned by the INF Treaty to influence the perception of threats among NATO countries and to try to break the cohesion between Europe and the U.S. It will seek to facilitate negotiations on new arms-control measures or a moratorium on the deployment of INF-type systems. In this way, it will want to make it more difficult for the U.S. and NATO to strengthen their defence and deterrence with deployment of American PrSM missiles, Typhon launchers, and Dark Eagle hypersonic weapons in Europe.

NATO countries can defend themselves against limited-scale ballistic missile salvos using American THAAD, Aegis BMD, and Aegis Ashore systems. The Israeli Arrow-3 system, which Germany wants to introduce into service in 2025, will have similar capabilities to intercept ballistic missiles in space. An analysis of options for Russia's capabilities over the next five years shows that it can still expand its arsenal against targets in Europe. Therefore, NATO's response should be ready in the same period, with offensive capabilities that could partially balance the changes on Russia's side. The prospective systems here are the conventional Typhon and Dark Eagle. However, it is not certain whether the new U.S. administration will be ready to deploy them in Europe, and if it decides to do so, whether it will withdraw them during a potential crisis in the Indo-Pacific. Therefore, European NATO members will need to invest heavily in their own offensive systems. The priority for the next few years should be the development of the ELSA cruise or ballistic missile, the programme which was announced by France, Germany, Poland, and Italy during the Washington NATO summit. Of no less importance is the need for rapid progress in the research and development of a French ballistic missile with a range above 1,000 km.