Strengthening Russia’s Nuclear Forces in the Arctic

The Case of the Kinzhal Missile

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Summary

Russia’s Northern Fleet has begun preparations to deploy the air-launched ballistic missile Kh-47M2 Kinzhal on MiG-31K carriers. The deployment of the new hypersonic weapon is consistent with Russia’s ongoing and persistent efforts to strengthen its military presence in the Arctic. The number of available munitions is, however, constrained by the limited number of carrier vehicles and the need to provide a fighter escort for the carrier vehicle. In order to ensure that the Kinzhal system can fulfill its role in Russia’s escalation management strategy, the missile is likely intended to be loaded with nuclear warheads and strike both sea and land targets. Although the capabilities of Russia’s new strategic weapons are often exaggerated, the operating range of the system and mobility of the carrier vehicle represent a significant improvement over Russia’s other nuclear-capable precision-strike assets in the Arctic. Moreover, the North Atlantic Treaty Organization (NATO) and its partner states Finland and Sweden should be aware that the MiG-31K can strike targets in Norway through Finnish and Swedish airspace. Cooperation between NATO and its partner states retains its importance in the face of Russia’s military buildup in the Arctic.

Introduction

Russia is remilitarizing the Arctic. Cold War-era bases are being restored, and new infrastructure is being built. Russia’s 2020 Arctic strategy states that the increased conflict potential of the Arctic requires the Russian armed forces to constantly increase their combat potential in the region.
Russia’s military forces in the Arctic have been undergoing modernization for some time. Now, these efforts will be supported by an additional new capability in the form of the Kh-47M2 Kinzhal, an air-launched ballistic missile that can be fitted with both nuclear and conventional warheads.

In December 2020, Russia’s Ministry of Defence announced that Russia’s Northern Fleet will begin preparations to deploy the Kinzhal on specifically modified MiG-31K interceptors. Citing the missile’s ability to penetrate current and future missile defenses, President Putin called the missile “an ideal weapon” when he announced Russia’s development program of new strategic weapons in 2018.

The Kinzhal has for some time been deployed on a squadron of MiG-31Ks in the Southern Military District, and the Western Military District is set to receive the much-touted hypersonic weapon in the near future. What does the appearance of Russia’s newest hypersonic weapon in the Russia-NATO contact zone mean? The missile strengthens Russia’s position in the Arctic, though its impact in a conventional conflict might be limited because of constrained numbers. The greatest impact will likely be through its nuclear capabilities.

**Russia’s Perspective on the Arctic**

Russia holds regional military superiority in the Arctic, particularly due to the Northern Fleet’s naval forces. After years of modernization, the fleet possesses a large arsenal of dual-capable, high-precision weapons that Nordic countries cannot compete with, even if they combined their forces in the Arctic.

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Russia’s concern, however, is that the global military balance, especially in the sphere of airpower, is tilted against it. Should Norway be reinforced with a sizeable grouping of NATO forces—as was the case during the Trident Juncture exercise in 2018 and will occur again in the upcoming Cold Response 2022—the Northern Fleet would risk being outnumbered and outgunned in conventional capabilities. This, in turn, would put Russia’s strategic nuclear submarines and other military capabilities at risk.

For this reason, Russia’s first goal in a conflict with NATO would be to coerce both Norway and NATO’s partners Finland and Sweden into remaining outside of the conflict, essentially limiting the conflict to more defensible regions in its western flank—for example, the Baltic region—where it has fewer strategic assets at risk. At the same time, Russia is continuously building up its arsenal of dual-capable weapons in the Kola Peninsula and elsewhere, framing these actions as defensive.

Whether Russia’s military buildup in the Arctic is offensive or defensive has been a subject of debate. The reality is that offensive and defensive actions are largely intertwined in Russian military thinking.

**Deterrence by Intimidation**

Deterrence, for Russia, is about more than simple war prevention. Rather, Russia associates the concept
with something akin to conflict management. In peacetime, Russia seeks to prevent undesirable wars. If this fails, deterrence measures continue during wartime to terminate the conflict on terms favorable to Russia. There is no simple delineation between denial and punishment. Rather, Russia’s deterrence measures are based on coercion and intimidation, which are expected to guide the decisionmaking processes of the adversary to desirable results.

Andrei Kokoshin, an academic and a former secretary of Russia’s Security Council, has voiced this approach in more plain language by approvingly quoting Pyotr Belavenets, a developer of the Tsarist navy in the early twentieth century: “permanent readiness to attack the adversary’s territory would deter it from attacking our lands.” Russia’s deterrence strategy is now more complex than a century ago, but the logic is still recognizable.

Russia’s armed forces have now developed a coherent strategy for managing escalation levels both before and during conflicts. The primary military means for controlling escalation levels are long-range, precision-guided weapons. These systems can inflict types and levels of damage on psychologically important targets and, when integrated with other military and non-military means of coercion, can manage and terminate conflicts in accordance with Russia’s strategy. The escalation management strategy integrates nuclear and conventional weapons; the deterrent effect of conventional weapons is enhanced by the possibility of an escalation to the nuclear level.

Diversity of assets is vital in this strategy, but Russia’s advanced long-range systems in the Arctic have largely been based on naval platforms. The deployment of the Kinzhal will accordingly be the latest step in Russia’s efforts to strengthen its instruments of escalation management in the region. For example, Russia has already shown interest in diversifying its capabilities by deploying ground-based Iskander systems near the Norwegian border during the Zapad 2017 military exercise.

How Does the Kinzhal Compare to the Iskander?

The Kinzhal’s design is based on the ballistic 9M723 Iskander missile, having many of the same characteristics, but with significant improvements. For example, whereas the Iskander system has an announced range of 500 kilometers, the Kinzhal is reported to have an operating range of up to 2,000 kilometers if launched from a MiG-31K interceptor and about 3,000 kilometers if launched from a Tu-22M3 bomber. The impressive reach of the system has been a subject of a public relations campaign in Russia, but the number includes the combat radius of the carrier vehicle. The range of the missile after launch is comparable to the 9M723 Iskander; however, the Kinzhal uses the flying carrier vehicle effectively as a booster, which increases the range of the missile itself.

As is the case with the 9M723 Iskander, the Kinzhal’s depressed and unpredictable flight trajectory complicates its interception. However, the recent experience of the 2020 Nagorno-Karabakh war suggests that this is no panacea for evading missile defenses. During the war, the Azeri forces, using an Israeli-made Barak-8 missile defense system, successfully intercepted an Armenian Iskander missile. Although initially assumed to be the downgraded export variant, the intercepted missile may have been the advanced 9M723 model. This suggests that claims of the Kinzhal’s invulnerability to missile defense systems may also be somewhat exaggerated.

The Kinzhal does, however, have a major upgrade over the Iskander system in terms of overcoming missile defenses: the airborne carrier vehicle. The MiG-31K can strike from unpredictable directions and could avoid interception attempts altogether. The flying carrier vehicle might also be more survivable than the road-mobile Iskander system, if Russia’s anti-access/area denial (A2/AD) “bubbles” are not as impenetrable.
as they are often claimed to be. The possibility of avoiding interception allows the missile to fulfill its role in Russia’s escalation management strategy, up to the nuclear level.

**The Kinzhal Strengthens Nuclear Deterrence, but in Limited Numbers**

The Kinzhal’s role in non-nuclear deterrence has occasionally been noted by both Russian and Western sources. This would make the system a weapon at lower phases of escalation. The Kinzhal, however, is likely intended to be primarily a nuclear weapon. First, it is unclear whether the Kinzhal is truly precise enough for non-nuclear de-escalation. Moreover, the system has constraints both in the number of available munitions and carrier vehicles, limiting its use during large-scale conventional warfighting.

The increased range and mobility of the MiG-31K over the Iskander system comes at a price: only one missile can be carried by each MiG-31K. A Tu-22M3 bomber can carry several missiles, and some bombers in the Northern Fleet will likely be fitted with Kinzhals once the production of the weapon increases. However, this would mean changing the loadout from the Kh-32 anti-ship cruise missiles, the longer range of which complements the Tu-22M3’s greater combat radius.

The number of MiG-31K carriers is also going to be limited. The squadron deployed in the Southern Military District is composed of ten MiG-31Ks, giving some indication of the size of the unit that will be deployed in the Northern Fleet. One Russian analyst expects that a new aviation unit will be created based on two MiG-31 squadrons currently deployed in the 98th Mixed Air Regiment. Deploying a higher number of carrier vehicles is not feasible, because the MiG-31 is stripped of its air-to-air assets to accommodate the Kinzhal. The carrier vehicle must be protected during its mission by a fighter escort, whose availability will be constrained by funding and production capacity. Therefore, Russia might deploy only one MiG-31K squadron and assign the second MiG-31 squadron to escort duty.

Citing the limited number of missiles and carrier vehicles, a former military planner in the general staff of Russia’s armed forces claims that even tasks of an operational scale should not be assigned to the Kinzhal unless the system carries “special” [nuclear] warheads. If the Kinzhal has a conventional mission, it would likely be one that precedes its nuclear mission, for example, targeting a large surface combatant instead of the entire carrier group.

Once armed with nuclear warheads, however, even a limited number of Kinzhals would become a powerful instrument of deterrence due to the missile’s speed and the mobility of the carrier vehicle. In line with its escalation management framework, Russia may find conventional warheads useful for the missile in early phases of escalation, but their coercive effect is enhanced by the possibility of escalating to the nuclear level. The Kinzhal fits into this role due to the variety of its targeting options.

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**Multipurpose Targeting**

The Kinzhal is typically described as a weapon intended to destroy high-value ground targets, such as missile defense sites. The system is also being increasingly referred to by Western sources as an anti-ship weapon. Both land-attack and anti-ship options are available, as Russia tends to favor flexible weapons systems both in terms of dual capability and targeting. The system can receive targeting designations from the Il-20M reconnaissance aircraft, which has recently been modernized for this purpose. The targeting data will apparently be relayed to the MiG-31K carrier rather than to the missile itself.

For the anti-ship mission, the Kinzhal's primary targets would be aircraft carriers as well as Aegis cruisers and destroyers. The ballistic flight trajectory of the missile results in an extremely high terminal speed, which ensures that, even when armed with a conventional warhead, the kinetic force generated by a direct hit would be destructive to large surface combatants. Armed with a sufficiently high-yield nuclear warhead, the Kinzhal could threaten carrier groups.

The Kinzhal may also have an important land-attack role in Northern Europe, considering that an Iskander brigade was recently deployed near the Norwegian border. Russia may see a need for a land-attack missile system if it expects a naval engagement to occur near the Bear Gap between Svalbard and northern Norway. In this case, Russia's sea-launched precision strike assets might be unable to strike high-value land targets in Norway, such as air bases. Moreover, NATO might be able to reinforce Norway from the south unless Russia's Baltic Sea Fleet succeeded in disrupting the operation. This could pose a problem for the defense of the Kola Peninsula since the Northern Fleet's available high-readiness land forces consist only of six battalion tactical groups, or 4,000 to 5,000 personnel.

The recent deployment of the Iskander brigade near the Norwegian border bolstered the capability of Russia's armed forces to threaten ground targets, but the Iskander system's mobility and the range of available targets are restricted by the geography of northern Scandinavia. With a range of 500 kilometers, the most critical targets in Northern Europe, such as NATO's military sites in Bodø, are beyond its reach. Russia also expects the Iskander to be protected by A2/AD systems, restricting its mobility in practice. For this reason, the Kinzhal constitutes a substantial improvement over the Iskander-M system in the land-attack role. Its operating range covers most of the Northern Europe. It can also engage in anti-ship missions in the entire Russian Arctic zone, from the Atlantic to the Pacific.

**Expanded Operating Range**

By replacing the Iskander brigade deployed during Zapad 2017 with a MiG-31K squadron, Russia can target NATO's military infrastructure and naval assets in Norway through Finnish and Swedish airspace. Russia may, of course, continue to deploy Iskander systems in the Kola Peninsula, but with the deployment of the MiG-31K, it would no longer depend on them for the land-attack role.

Besides NATO's military sites in Bodø, the Kinzhal can also reach the Kallax and Rovaniemi air bases in Sweden and Finland, should they give host nation support to NATO during a conflict. The operating range of the MiG-31K also allows it to target military assets in central Norway and even carrier groups in the Norwegian Sea, although the carrier vehicle would have to move deep into Finnish airspace before launching the missile.

Russia's military planners may, however, expect to face less resistance in Finnish airspace than in the contested areas near the Norwegian coast, where the naval engagement between Russia and NATO would likely occur. As Enhanced Opportunity Partners of NATO, Finland and Sweden have no Article 5 commitments to NATO members. Russia would likely use this as leverage, along with other forms of military-political coercion,
to ensure that Finland and Sweden remained outside of the conflict, even if their airspaces were violated.

The Kinzhal’s operating range is also greatly increased by Russia’s expansion of military infrastructure in the Arctic. Russia’s chief of general staff, Valery Gerasimov, has notably *singled out* the Kinzhal’s operating range as a beneficiary of Russia’s *recently rebuilt network of air bases* in the Arctic. Nagurskoye and Rogachevo air bases in the Alexandra Land and Novaya Zemlya islands, respectively, would be useful launching pads for an anti-ship mission near the Bear Gap. With the support of *mid-air refueling*, longer-distance missions would also be possible. Meanwhile, the MiG-31K carrier vehicles would be based beyond the reach of most of NATO’s long-range systems, as the air bases are located deep in Russia’s Arctic zone.

MiG-31Ks could utilize Russia’s network of air bases to move across the entire arctic region as far as the Pacific. One Russian analyst has *suggested* that, for this reason, the system radically changes the balance of power in the Arctic. This conclusion is, however, slightly misleading. The military balance in the Arctic is already tilted in Russia’s favor—the Kinzhal merely enhances Russia’s strong position.

**Conclusion**

Although there is certainly a lot of hype in many claims related to Russia’s new strategic weapons, the Kinzhal offers capabilities that other high-precision assets of the Northern Fleet cannot: speed, mobility, and a wide range of targets. Its primary weakness is the low number of immediately available munitions and carrier vehicles.

With both land-attack and anti-ship targeting options, the missile can strike any target at any time in its immediate operational environment, which is being greatly expanded due to Russia’s recent upgrade of military infrastructure in the Arctic. The option of striking through Finnish and Swedish airspace against targets in Norway with a system of hypersonic speed is something new and should be considered in the defensive planning of these countries and NATO.

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Even though capabilities and the strategic impact of Russia’s advanced weapons systems are sometimes exaggerated, interception of the missile would be a complicated endeavor due to its speed and the mobility of the carrier vehicle. The weak point appears to be the MiG-31K carrier, which is vulnerable to air-to-air munitions. Accordingly, all Nordic countries should ensure that they can protect their airspace in all conditions. Interoperability, close cooperation, and situational awareness between NATO, Finland, and Sweden are becoming even more important against the backdrop of Russia’s military buildup in the Arctic.
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