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RUSSIA'S NATIONAL ARCTIC WATERWAY: CHALLENGING FUTURE

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ATOMFLOT

The Russian nuclear-powered icebreaker *Artika* escorting a vessel on the Northern Sea Route. Much has been said about new, shorter trade routes in the Arctic Ocean, made possible by the retreat of Arctic sea ice, but serious constraints remain.

The Russian maritime Arctic stretches more than 3,000 nautical miles from the Norway-Russia border in the Barents Sea to the Bering Strait. This vast region with broad continental shelves fronts the Arctic Ocean and presents critical security and economic challenges for Russia. Russian law defines the Northern Sea Route (NSR) as the waterways stretching from the islands of Novaya Zemlya in the west, including waters out to the 200-nautical mile exclusive economic zone, and extending east to the Bering Strait. Notably, the Barents Sea is not part of this definition and therefore not under the strict NSR rules and regulations. The Northeast Passage (NEP) is the historic and geographically accurate route applied to voyages across the entire sweep of the Russian maritime Arctic. The NSR is a key component of the NEP, but ships on full NSR transits have not completed an Atlantic-to-Pacific passage.

Much has been made about new, shorter trade routes across the Arctic Ocean, including the NSR, made possible by the profound retreat of Arctic sea ice. The dialogue has been focused primarily on trans-Arctic voyages replacing major global ocean waterways such as the Suez and Panama Canals. However, a future with reliable routes is highly improbable given a host of practical and economic factors. Less attention has been given to the NSR's central role as a national Arctic waterway or marine transportation corridor that facilitates cabotage (domestic cargoes and trade within the Russian Arctic) and foreign-flag carriers moving natural resources to global markets.

Driving increased marine traffic in the Barents Sea and along the NSR is oil and gas development in Western Siberia on the Yamal Peninsula and at the industrial complex in Norilsk, one of the world's largest metal producers. Liquefied natural gas (LNG) and oil terminals in the Ob River and Dudinka, a port on the Yenisey River connected to Norilsk, maintain year-round access. The LNG carriers, tankers, and bulk carriers—many of which are ice-class ships and escorted by icebreakers in winter—are sailing westbound along the NSR and Barents Sea to Europe and eastbound to Pacific markets.

Rosatom, the state-owned nuclear power company given responsibility for NSR development in 2018 (and administrative control in 2022), has reported 2024 cargo shipments of 37.9 million tons, mostly LNG and oil. However, Russian Arctic strategic documents signed by President Vladimir Putin called for a target of 80 million tons of NSR cargo shipments by 2024. Since Russia's 2022 invasion of Ukraine, economic sanctions have affected the expansion of Arctic LNG development. Sanctions also have led Russia to use a shadow fleet of carriers that change flags, have unknown insurance, conceal locations, and are high risk. The overall national budget has been challenged to maintain priority funding for Arctic projects.

Complex environmental, governance, and economic factors determine the feasibility of trans-Arctic shipping along the NEP (only 60 to 90 ships annually). The region's key determinant is that it remains ice-covered for six to eight months a year—and will for the foreseeable decades. The practical navigation issue is that lower ship speeds in sea ice, even with icebreaker escort, can make voyages longer, negating the advantages of shorter distances. Also, the International Maritime Organization's Polar Code mandates special provisions for safety, construction, discharges, and mariner competency that increase ship costs.

The future of Russia's Arctic marine transportation system is fundamentally linked to the export of natural resources and destinational shipping. It will be influenced by global commodities pricing and the continued emergence of international hydrocarbon mitigation and adaptation strategies. Increased domestic and foreign investment in maritime infrastructure will be critical for safe and effective operations. China's role in these investments and use of Russian Arctic waters potentially will be key factors. Use of these waterways for seasonal, trans-Arctic voyages will be tested by geopolitical uncertainties, such as regional conflicts and tariffs, and the economics of the global shipping enterprise.

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