



Issue Brief

Northern Sea Route and Russia's Resource Exploitation Strategy

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Issues relating to the Arctic region are fast gathering momentum in Russia's strategic calculations. Russia is closely monitoring the climate induced melting of the Arctic ice and developing strategies for exploiting metallurgical ores, oil and gas and marine living resource that abound the region and have hitherto remained unexploited due to thick ice cover and lack of technology. Similarly, the global shipping industry is eagerly waiting to ship newfound booty from the region to the resource hungry world. However, the above opportunities are highly dependent on the continued shrinking of the ice cap which ironically is expected, and the Arctic is predicted to be ice free by 2050.

It is well known that the summer ice in 2010 has shrunk considerably, and as August approaches, the focus in the Arctic region has shifted towards the Northern Sea Route (NSR). This is so because during August-September a significant portion of the polar ice would have melted with only drift-ice along Russia's Arctic coast. Although it is a short window of opportunity, it offers favourable condition to plan commercial shipping passage through the treacherous NSR.

On July 14/15, 2010 two Russian ice-classed tankers Varzuga and Indiga with 27,000 tons of diesel oil sailed from Murmansk for Pevek on Chukotka in Russia.¹ Last year, in August 2009, two merchant vessels sailed from South Korea to Holland via Vladivostok, Russia along the NSR.² Further, Russian oil major Sovkomflot plans to sail in August a 70,000 dwt ice-classed shuttle tankers from Pechora Sea via the NSR to Japan.³ There are also plans to transport, on a trial basis, the first ever bulk cargo through the NSR in late August 2010. Iron ore

from the Sydvaranger Gruve AS iron-ore mines in Kirkenes, Norway will be shipped to China, and if the voyage is successful, according to the company sources, other mining companies on the Kola Peninsula may be tempted to use the NSR to ship bulk cargo to markets in Asia.⁴

The above developments are significant and herald a new era in international shipping through the NSR. In that context, this paper attempts to examine the current challenges relating to the usage of the NSR including its economic variability, particularly in the context of the shipping industry that is highly sensitive to profit margins and timely delivery of cargo. The paper also examines issues relating to challenges for shipping industry, availability of ice-classed vessels including nuclear powered ice breakers, bunkering and repair facilities, crew limitations, navigational safety systems, search and rescue arrangements, and environmental impact of shipping to the fragile eco system. Given the preponderant geographical location of Russia astride the NSR, the paper also argues that Russia can be expected to leverage the NSR to develop its economic power potential.

The Northern Sea Route (NSR)

As the name suggests, NSR is a transport corridor in the Arctic Ocean and offers the shortest path in the Northern Hemisphere for shipping goods between Asia and Europe. Russia calls the route NSR while the Europeans prefer to address it as the Northeast Passage (NEP), it being towards their East. The NSR stretches from Kara gate in the West to Bering Strait in the East and the Western edge of the NSR i.e. the Kara Gate remains navigable round the year.

The NSR has served as an important passageway for connectivity for the Russian Arctic inhabitants and contributed to their social and economic wellbeing. Also, the route is the only economically viable passageway for trade in oil, timber, ores and other products of the Russian Arctic region. Besides, the NSR supports Russian military and scientific installations in the Arctic.

In the 1970's, Russia used the NSR for the development of its northern oil and gas industry and by 1978 the first ever all weather route was established between Yenisey (Dudinka) and Murmansk which facilitated movement of oil and bulk shipping;⁵ but the vessels transporting the cargo had to be assisted by icebreakers. In 1987, 331 vessels on 1,306 voyages transited the NSR.⁶

During the Cold War, the NSR was exclusively used by the Soviet Union. Also, there was lack of international interest due to the challenges posed by climate and geography. It was

only in 1987 that President Mikhail Gorbachev proposed to give access to non-Soviet shipping and in 1991 the NSR was formally opened to outside users. Consequently in 1993 Russia, Norway and Japan instituted several research projects to study and evaluate the economic viability of the NSR.

The International Northern Sea Route Programme (INSROP), a six-year research programme spanning June 1993 to March 1999, produced 167 technical reports covering a wide spectrum of issues about the NSR.⁷ The INSROP research concluded that commercial shipping operations through the NSR are feasible and as the cargo base in the region improves it can generate significant traffic.⁸ However, while comparing the NSR with the Suez Canal–Indian Ocean route, it was not economically viable. It was also concluded that the NSR was most treacherous for shipping due to thick ice cap making it an insurmountable obstacle to navigation and would require nuclear powered ice breakers to escort the specially designed ice classed cargo ships to sail through the route. Besides, a large part of the NSR could not be used round the year. The other studies related to Arctic connectivity include the 2001-2005 Arctic Operational Platform (ARCOP)⁹ and the 2002-2005 Japan Northern Sea Route-Geographic Information System (JANSROP-GIS).¹⁰

In terms of cargo transportation, 7 million tons of goods, mostly metallurgical ores and oil and gas were moved during 1991-1996 and thereafter the cargo volume began to decline and stabilized at 1.5-2.0 million tons annually.¹¹ This was partly due to the breakup of the Soviet Union and the poor state of Russian economy in the following years. Since then, there have been a few transits through the NSR by research vessels, military vessels (excluding nuclear submarines that continue to be deployed under the polar ice cap by both Russia and the US), fishing vessels, Arctic tourism liners, and yachts; but most of the international shipping has stayed away from the NSR.

However, there is a new interest to exploit this route as it has become navigable, though only for a short period and offers the shortest passage for shipping goods from Asia to Europe and vice versa. According to estimates, the NSR will witness 5-6 millions tons of cargo movement towards the eastern direction and 2-3 million tons to the west.¹² No doubt the shrinking Arctic ice cap has provided an opportunity for exploiting the NSR, but its economic viability merits attention.

Transportation through the NSR

Before undertaking the cost-benefit analysis of the NSR, it is important to keep in mind that shipping companies are constantly engaged in juggling with the geographical-commercial-operational matrix before selecting a route for merchant vessels to transport cargo. The foremost considerations include (a) the route should be short; (b) it should be economical; and (c) it should be safe for transit. Further, the shipping companies also take into account other factors including harbours and ports for repair and replenishment, and recuperation for the crew.

In terms of distance, the NSR offers shipping companies considerable advantage. For instance, the distance between Yokohama (Japan) to Rotterdam (Netherlands) is 5,618 miles when compared to 11,209 mile passage through the Suez Canal or 11,250 miles through the Panama Canal, and 1,735 miles via the Cape of Good Hope.¹³ The route through the NSR results in saving approximately 10-15 days of passage time.

On the other hand, it is still cheaper to transport cargo via the Suez or the Panama Canal as against the NSR. This is due to the fact that the shipping companies do not incur additional costs on account of chartering ice-classed vessels that have to have double hulls, ice breaker escorts, specialist crew, and higher insurance premiums. A study titled “Container Shipping on the Northern Sea Route” clearly lays out the advantages in favour of the shipping cargo via the Suez Canal as against the NSR.¹⁴

Container shipping between Shanghai and Hamburg port

	Via Suez	Northern Sea Route
Distance (miles)	10,200	7700
Transit Time (days)	28-30	18-20
Average Ship Speed	24	17-24
Approximate Rate(US \$/TEU)	1000	2000
Estimated Surcahrge(US \$/TEU)	400-800	500-800
Total (US \$/TEU)	1400-1800	2500-2800
Base Line 100	100	100%

Source: Data extracted from Claes Lykke Ragner, “The Northern Sea Route”, available at <http://www.fni.no/doc&pdf/clr-norden-nsr-en.PDF>

As far as safety of the traffic through the NSR is concerned, commercial shipping would encounter hazardous weather conditions, floating ice, fog, fierce winds and lack of navigational

aids for safe passage. The ships would also require special navigation instruments on board and a highly trained crew to navigate ice classed ships through glacial waters. They would naturally seek higher wages which would add to the overall cost of transportation. In essence ships transiting the NSR would entail higher costs of transportation and significant geographical and operational challenges for an economically viable voyage.

There are very few ports along the NSR that are fully developed to offer bunkering, repairs and recuperation for the crew. Besides, these are widely spaced. Further, the search and rescue organisation in the area is still very rudimentary and it will not be possible to undertake casualty evacuation. The Russian Ministry of Emergency Situations recently announced that it was planning to spend around Euro 4 million to establish 10 rescue centers along its Arctic coastline.¹⁵ These will be manned on permanent basis by 150 personnel and support search and rescue activities in the region.

Meanwhile Russia is investing significant fiscal resources to develop the NSR. It is planning to build six new nuclear powered icebreakers and has also introduced a new law to regulate shipping along the NSR.¹⁶ Ships using the route would be required to pay fees for chartering icebreakers, obtaining weather and ice reports and expenses connected with clean up after accidents. The shipping companies have argued that the above levies are 'unreasonable' and the custom tariffs are too high. Further, the current icebreaker support is unreliable and could delay the passage by vessels and impact adversely on delivery schedules. This means that using the NSR is expensive and may not result in profits.

From the above discussions it is quite evident that the NSR offers a mixed bag of advantages and disadvantages and would require greater technological development of platforms, navigational facilities, trained human resource and good cargo base to encourage shipping companies to deploy vessels along the NSR. Above all, the cargo base would have to improve to reduce overall cost of shipping.

Environmental Issues

The economic benefits of the NSR have invited international attention however, the environmental impact of increased shipping activity in the Arctic merits scrutiny. For instance, the possibility of shipping accidents remains high; in July 2010, two oil tankers belonging to Murmansk Shipping Company collided along the NSR.¹⁷ According to reports, the collision took

place ‘in difficult ice conditions, exacerbated by poor visibility.’ However, there was no oil spill and vessels continued their voyage.¹⁸

Unlike the above incident, in September 2009, a vessel ran aground off Bear Island south of Svalbard, Norway and discharged 54 cubic meters of oil.¹⁹ Apparently, the oil spill did not cause much damage to the nesting sites of birds, but if the accident had ruptured the oil tanks of the vessel, it would have been an ecological disaster of immense proportions. Given the stormy weather conditions in the Arctic, ships, particularly tankers can cause enormous damage to the fragile Arctic eco system.

There is also the potential impact of Arctic shipping disturbing the animal and mammal life such as the polar bears, whales, seals and other marine living resources. Some ships may even discharge the ballast water which can potentially disturb the fragile eco system by entry of predatory marine organisms.

At another level, the Arctic waters have witnessed extensive nuclear dumping. It is estimated that between 1984 and 1986, nearly 17,000 containers of nuclear waste were dumped into the Barents and Kara Seas in Russia’s Arctic.²⁰ Likewise, a Soviet nuclear-powered icebreaker (The Lenin) had two serious accidents ‘whose consequences are still felt today in the form of environmental degradation.’²¹ It is important to point out that the Kola Peninsula is home to Russian Northern Fleet at Severomorsk, near Murmansk and the region continues to witness movement of nuclear platforms.²² However, given the secret nature of their activities, nuclear accidents are rarely made public.

Russia and Arctic Resource Strategy

In the post Cold War period, the Arctic is no more an arena of US and Russia rivalry but is fast getting integrated into Russia’s overall economic strategy. Over 20 percent of Russian territory lies above the Polar circle and it claims a third of the Arctic Ocean as its continental shelf. Nearly 30 percent of world’s untapped oil and gas reserves²³ are located in the Russian Arctic zone. Further, 20 percent of Russia’s gross domestic product (GDP) and 22 percent of the total Russian export is generated north of the Arctic Circle. In terms of resources, Russia produces about 95 percent of its gas, 75 percent oil, and large volumes of nickel, tin, platinum and gold are extracted from the region.²⁴ The development of these resources in the Arctic has emerged as a priority area in Russia’s economic strategy. It is expected to offer Russia immense opportunities to develop its economic power potential. Consequently the NSR would play an

important role for Russia in leveraging its economic power potential in global affairs. However, the current infrastructure to transport these resources to international markets is still inadequate.

Speaking at the international conference “The Northern Sea Route: A Strategy for Revival” the Russian Minister of Transport Igor Levitin noted that ‘the Arctic is becoming an increasingly important region in global politics and economics,’ and commenting on Sovcomflot's plans to sail a loaded 70,000 dwt tanker via the NSR Igor noted “The experiment should show the owners the economic benefits of the Northern Sea Route in comparison with the southern direction, across the Indian Ocean, which has turned out not quite safe”.²⁵

Concluding Remarks

There are significant resources in the Arctic region with a promise of generating a good cargo base for an economically viable merchant traffic through the NSR. There is also an interest among Arctic littorals, shipping companies, shipbuilding yards, oil and gas and the mining companies to exploit the opportunities offered by the melting of the ice. This is notwithstanding the harsh climatic conditions including ice for most of the year barring a short window in August and September. However, the current infrastructure in terms of ships, ports, bunkering and repair is still inadequate and would require significant investments.

The attractiveness and the continued use of the NSR is highly dependent on the political and economic strength of Russia that must maintain a well-functioning infrastructure for keeping the NSR operational. It will have to build an adequate number of ice-classed cargo vessels and nuclear powered ice breakers. At another level, Russia will have to evolve flexible, non-discriminatory regulatory norms and offer attractive tariff regime for international shipping. There is likelihood that the NSR will witness regular maritime traffic and emerge as an economic reality. This will enable Russian heartland accessibility to the global markets and add to Russia's power potential.

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Notes

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- ³ “Bulk from Kirkenes to China via the Arctic”, *Barents Observer*, July 21, 2010.
- ⁴ Ibid.
- ⁵ Claes Lykke Ragner1, “The Northern Sea Route”, available at <http://www.fni.no/doc&pdf/clr-norden-nsr-en.PDF> accessed on July 25, 2010
- ⁶ For an excellent account of the early developments of the Arctic shipping see “Arctic Marine Shipping Assessment 2009 Report” available at <http://www.arctic.gov/publications/AMSA/history.pdf> accessed on July 25, 2010.
- ⁷ For details on the International Northern Sea Route Programme see <http://www.fni.no/insrop/> accessed on July 26,2010.
- ⁸ “Arctic Marine Shipping Assessment 2009 Report”, *op.cit.*
- ⁹ For more details on the project see http://www.transport-research.info/web/projects/project_details.cfm?id=38216 accessed on July 26, 2010.
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- ²² D. J. Bradley, “Radioactive Contamination of the Arctic Region, Baltic Sea, and the Sea Of Japan From Activities in the Former Soviet Union”, cited in Mia Bennet, *op.cit.*
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