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THE NORTHERN SEA ROUTE (NSR): A NEW TRANSIT PASSAGE BETWEEN EUROPE AND ASIA?

Joshua Ho

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The predicted 'blue' Arctic Ocean may emerge earlier than the middle of this century, given the current rates of global warming. The opening up of the Northern Sea Route will have a tremendous impact on the future of current regional hub ports.

GLOBAL WARMING has now been accepted as a new reality. It will have a direct impact on the safety, security and environmental well-being of global citizens. If global warming due to greenhouse gas accumulations is expected to be severe world-wide, it is worse in the Arctic regions. The warming predicted by the climate models used by the Intergovernmental Panel on Climate Change (IPCC) in the Arctic over the next 50 years is in the range of three to four degrees Celsius. This is more than twice the global average. The Arctic will be where the most rapid and dramatic changes will occur during the 21st century.

Already observations confirm that the air temperature has increased at double the rate of the global average over the last 100 years, with the total ice extent decreasing at a rate of three to five percent per decade. Hence, global warming will have a strong impact on the ecosystem, fisheries, living conditions for humans and animals, oil and gas exploration and production, and ship transportation along the Northern Sea Route.

The Northern Sea Route (NSR)

During the last 75 years, the Soviet Union and its successor state, Russian Federation, have operated in the Northern Sea Route. Maritime transport has been extensive and mainly in the form of regional export of natural resources and to a lesser extent of cargo to the communities along the Siberian coast. After the collapse of the Soviet Union, there was expectation of an increased use of the Northern Sea Route for maritime transport between Europe and Asia. However, this has yet to become a reality.

The Northern Sea Route has never been ice-free, even during the summer months, to allow for significant maritime transportation. However, the maritime activities along the Northern Sea Route have increased over the last two years. Previously, no non-Russian ships traversed the Northern Sea

Route along the Siberian coast. Now merchant, research and expedition vessels have journeyed through the Northern Sea Routes during the summer seasons since 2004 and this volume is set to increase.

There have also been signs that the trans-Arctic passage may open up much quicker than expected. For example, in 2008, the Arctic Ocean experienced for the first time ever an ice-free and navigable Northern Sea Route along the Siberian coast. This occurred during a summer melt season after a winter in which the maximum ice extent was greater than had been observed in the previous five years. It suggests that future ice-free passages during the summer months along the Siberian coast is highly likely. Satellite photos seem to also highlight this possibility. (Compare the extent of reduction of ice concentration between Figures 1 and 2).

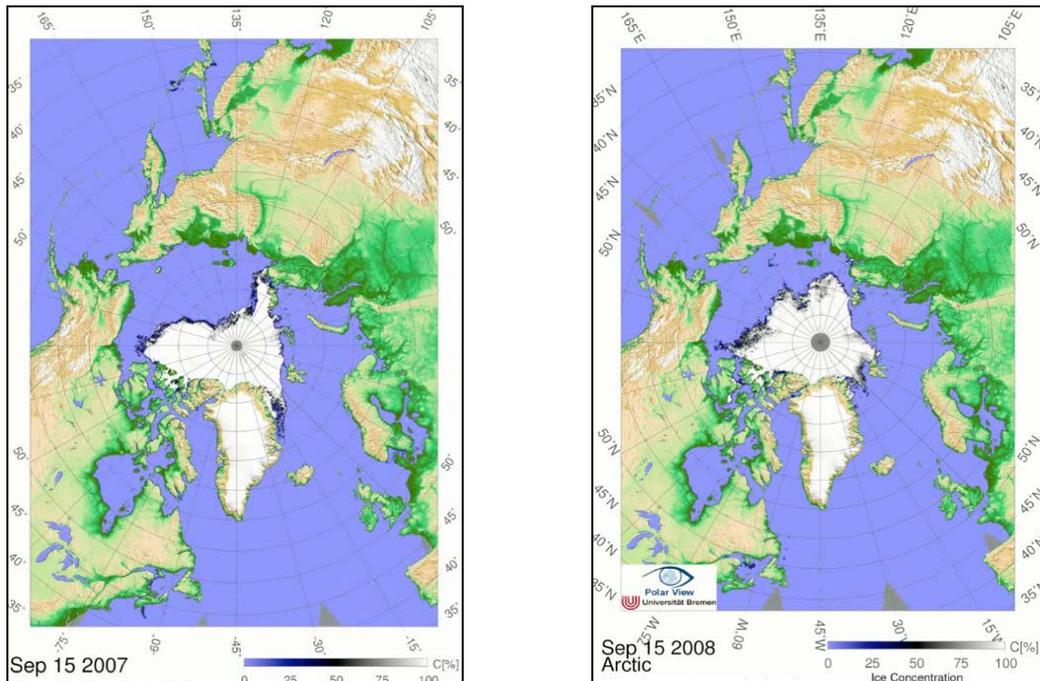


Figure 1: Arctic sea ice concentration in Sep 07 **Figure 2: Arctic sea ice concentration in Sep 08**

(Source: Daily Updated AMSR-E Sea Ice Maps, IUP Universität Bremen Website, <http://www.iup.uni-bremen.de:8084/amr/amre.html>)

Despite this evidence, current estimates are conservative and tend to vary as to when the Arctic is likely to be ice free during the summer. For example, the Arctic Marine Shipping Assessment (AMSA) assesses that transit traffic in the Northern Sea Route may be more regular from around 2025. Even though the sea routes along the Siberian coast may open up earlier, it appears that the depth of water along the coast will limit the size and freight capacity of ships that can transit.

Therefore, AMSA estimates that regular trans-polar summer transport (four months) may not occur until towards the middle of this century, that is, from 2040 onward. The National Snow and Ice Data Centre in the United States is even more conservative in suggesting a seasonally ice-free Arctic by 2060.

Despite this prognosis, some Norwegian shipping companies have already embarked on studies which will be completed by mid-2009 on the business cases for trans-Arctic shipping. The size of ships being examined include 100,000 tonne LNG carriers and up to 5,000 TEU container ships for deployment by 2015. The Japanese have also examined ports that can serve as possible hub ports in northern Japan.

Both seem to indicate an earlier ice-free passage via the Northern Sea Route. The US National Intelligence Council, in its study on Global Trends 2025, has suggested that the date for a seasonally ice-free Arctic could even be as soon as 2013.

If this is so, tremendous shipping benefits would accrue as transiting the Northern Sea Route above Russia between the North Atlantic and the North Pacific would trim about 5,000 nautical miles and a week's sailing time compared with the use of the Suez Canal.

Improvements Needed

However, before the Northern Sea Route can reliably be used as a transit route between Europe and Asia, four issues need to be resolved.

Firstly, environmental monitoring and forecasting services providing meteorological, oceanographic and sea ice information to support shipping all year round will need to be significantly enhanced. Secondly, search and rescue as well as ice-breaker support services, with seasonal and regional increased access, will need to be provided in a comprehensive manner. Thirdly, new ship technology is required for independent ship operations in ice-covered waters, which will remain present for most of the year. Lastly, an integrated governance and regulatory framework based on the United Nations Convention on the Law of the Sea is needed.

A New Transit Passage between Europe and Asia?

Despite the fact that a 'blue' Arctic Ocean is predicted in the summertime (four months) to occur from the middle of this century, current rates of warming may indicate this may occur earlier. However, even before trans-polar navigation is realised, routes along the coast of Siberia will be navigable much earlier. Already there are plans to build trans-Arctic ships and plans for hub port development in Northeast Asia that will take advantage of this ice-free passage.

Such plans indicate that the Northern Sea Route may be opened up for ice-free passage as early as 2013 given current accelerated rates of global warming. The opening up of the Northern Sea Route will have a tremendous impact on the future viability of current regional hub ports. It will also have an impact on the profitability of the current liners operating between Europe and Asia.

Both liner and terminal operators, including those in Southeast Asia, will have to factor the early opening of the Northern Sea Route into their plans if they are not to be caught off guard.

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