Importance of Transshipment Hubs for the Development of the NSR

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4rd Industry Seminar: NSR’s Future Cargo Base
DNV GL Korea, Haeundae I-Park, Busan, South-Korea, Tuesday May 31, 2016

CENTRE FOR HIGH NORTH LOGISTICS
What Makes a Port an Important Transshipment Hub?

Location

• Proximity to several shipping routes and preferably at the end of a major international route; were routes divide and ships head for a number of destinations

• Proximity to an international airport is no less important if the port is to fulfill its role as a link in the transport systems of international shipping companies

• Proximity to urban centres and their transport networks is an advantage, but urban development close to ports can limit future expansion possibilities

• It is essential to choose the location for transshipment ports and plan such ports with care and due regard for environmental requirements
What Makes a Port an Important Transshipment Hub?

Natural Conditions

• The port needs to be sufficiently deep and wide, and have clear approaches that can accommodate the largest ships on the routes they serve.

• Land must be available to extend operations or build new wharfs to allow for future increases in shipping; several hundred hectares of land would be required for cargo/container storage and industries related to port operations.

• Good shelter from swells and wind is essential; large ships are susceptible to strong winds as are cranes.
What Makes a Port an Important Transshipment Hub?

Port Services

• Effective port facilities (large cranes and other loading equipment) and high level of performance (short time to load and unload cargoes)

• Effective cargo storage facilities; oil/LNG storage facilities are essential prerequisites for providing for the energy needs of a fleet of cargo vessels

• Access to a wide range of support services including repair and maintenance services; water and electricity; maritime industries; labour

• Good air traffic system and efficient international communication channels

• Effective environmental management scheme to protect the environment and ensure quick reaction in cases of pollution risk and accidents
Why are Transshipment Hubs Important for the NSR?

• High ice-class Arctic shuttles would be solely employed on Arctic voyages

• Fully utilize specialized high-ice class Arctic vessels in the most economically efficient way

• Provide cargo storage facilities for both destination Arctic shipping and transit shipping; serve industrial purposes

• Transshipment hubs in the northern latitudes would add a new dimension to global trade routes
«Arctic Cargo Shuttles»
Between Two Transshipment Hubs

Year-Round Cargo Transportation

NSR WEST
Transshipment Hub A

Feeder Ships

High Ice-Class Vessels

Feeder Ships

NSR EAST
Transshipment Hub B

Feeder Ships

Feeder Ships

Eastbound

Westbound

High Ice-Class Vessels

High Ice-Class Vessels
An image of the Arctic sea ice on March 24, 2016 (maximum ice extent)
The orange dots represent all of the ports of call for ships sailing to or from the NSR in 2013 (Sea ice data from NSIDC in 2014 and port data from NSRA)
An image of the 2015 Arctic maximum sea ice on February 25, 2015
Petropavlovsk-Kamchatsky Sea Port

Anchorage Depth: 18.6 - 19.8 m
Cargo Pier Depth: 7.1 - 9.1 m
Petropavlovsk-Kamchatsky
Russian Arctic Ports

- Murmansk
- Kandalaksha
- Vitino
- Kandalaksha
- Onega
- Arkhangelsk
- Mezen
- Naryan Mar
- Varandey
- Sabetta
- Dikson
- Igarka
- Amdema
- Dikson
- Khatanga
- Tiksi
- Pevek
- Provideniya
- Anadyr
Inaccessibility and Poor Condition of Existing Arctic Ports

- Adequate port infrastructure and support facilities for commercial shipping are rarely available in the Arctic – such as deepwater access, places of refuge, marine salvage, port reception facilities for ship generated waste, and towing services.

- Draft limitations make most Russian ports along NSR inaccessible for larger cargo ships – suggesting the need to floating and mobile support infrastructure.
An image of the 2015 Arctic maximum sea ice on February 25, 2015
Dutch Harbor International Port

Cargo Pier Depth: 15 - 16.5 m
Dutch Harbor International Port
Concluding Remarks

• Increased transshipment simplifies the transport network allowing it to deal with increased volume resulting in reduced shipping costs

• Privatisation of port operations where large shipping companies invest in the facilities they themselves need. Shipping companies assess a port’s facilities based on its overall profitability and how it fits into the international transport networks

• The large shipping companies have the final word in deciding whether or not a new transshipment port will become part of their networks; they generally operate their own shipping terminals