Knowledge Transfer and Cooperation on Shipping & Logistics in the Arctic

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CHNL CENTRE FOR HIGH NORTH LOGISTICS
The Task at Hand

- Several deficiencies in the current marine transport infrastructure have been identified (e.g. AC’s AMSA 2009)
- Essential to plan a new logistics and marine transportation system in the Arctic
- Logistics solutions should take advantage of the Arctic resource potential and Arctic shipping opportunities
- Provide the needed safety and reliability of operations and adequate pollution prevention to safeguard the fragile Arctic environment

CHNL Centre for High North Logistics
First Step – Assessment Study

- Inventory of northern and Arctic infrastructure – ports, airports and response capabilities
- AC’s Arctic Maritime & Aviation Transportation Infrastructure Initiative (AMATII) – Arctic Maritime & Aviation Infrastructure Database and Interactive Web-Based Map

http://arcticinfrastructure.org/
Second Step – Modeling Study

- Circumpolar Arctic modeling of the needed infrastructure for reliable and safe cargo transport, resource extraction, and to carry out emergency response and search and rescue activities.
- Results should be displayed as interactive GIS maps with effective visualization – show how the whole logistics system should operate and function.
- A joint industry-academic exercise based on the most logical, sensible and environmentally sound solutions.
Third Step – Cost and Financing Study

- The costs of various infrastructure components needs to be estimated.
- Some kind of funding mechanism needs to be put in place – e.g. transnational «Arctic Development Bank» or «Arctic Bank».
- Public-Private Partnerships (PPPs) - between Arctic States’ governments and energy/mining companies, shipping companies, and other interested parties that see benefit in better access to Arctic resources and shorter trade routes.
Logistics & Marine Transportation System

- The new logistics system would be an integrated network of navigable seaways, ports, terminals and offshore structures interconnected with main railroads, airports, roadways, pipelines, and river transport.
THE INTERNATIONAL GATEWAY TO RELEVANT KNOWLEDGE ABOUT LOGISTICS IN THE HIGH NORTH

Would you like to develop your knowledge, expand your international network and take part in the business opportunities in the High North?

Would you like to meet and discuss with companies, research institutes and politicians and to participate in workshops where you can develop practical knowledge and expand your network?

Then you should join CHNL "The international gateway to relevant knowledge about logistics in the High North".

IN THE FOCUS

NSR Demonstration Project 2010
CHNL was involved in a demonstration project to ship iron ore from Norway to China via the NSR in September 2010. This was the outcome of a workshop i...
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The ARCTIS Database
The Centre for High North Logistics is currently working on establishing an online database - a knowledge hub that will provide the best available inf...
Read more

ARCLIO
CHNL’s Arctic Logistics Information Office (ARCLIO) was established in April 2011 in Kirkenes. Added support came from FSUE Rosatomflot (providing con...
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Logistics operations in the High North
The resources are in the Arctic but the growing market is in the Far East. In order to access the offshore oil, gas and mineral deposits, the harsh cl...
Read more

CHNL’s Workshops
CHNL’s International Conference in Murmansk on the 14 February 2012 on Transit Navigation on the Northern Sea Route (NSR) attended by about 100 partic...
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Vision

Provide the most complete and up to date information about transportation and logistics in the High North

Promote strong collaboration between businesses and academic institutions-public authorities on High North logistics

Act as an international hub (gateway) for creating and developing efficient and sustainable solutions for shipping and logistics in the High North
Objectives

Establish and operate the ARCTIS database

Organize workshops and conferences on shipping in Arctic waters and needed infrastructure

Establish and operate the ARCLIO office

Coordinate projects between the shipping industries and research institutions in finding practical solutions to transport and logistics problems in the Arctic
Information & Knowledge Hub on Shipping in Arctic Waters

ARCTIS (Arctic Resources & Transportation Information System); www.arctis-search.com

Arctic Logistics Information Office (ARCLIO) www.arctic-lio.com
CHNL’s Arctic Logistics Information Office

We provide relevant and practical information for the shipping industry
CHNL’s Logistics Information Office

Practical Information

Part 1
Arctic Ports
- Navigational information
- Port cargo profile
- Port infrastructure
- Local rules and regulations
- Rates of port dues
- Tariffs for services
- Immigration control
- Customs control

Part 2
NSR/NEP
- General area description
- Current NSR legislation
- Permission for NSR transit
- Sailing routes
- Ice conditions
- Icebreakers assistance
- Tariff system
- Search and rescue
- Environmental issues

Part 3
Coastal Navigation
- International fleet and cabotage within the inland Russian waters and EEZ
- Immigration and customs boundary regime
- Necessity and conditions for obtaining a cabotage permit
ARCLIO The Arctic Logistics Information Office

ARCLIO provides practical information on shipping and logistics along the NSR

ARCLIO’s website, www.arctic-lio.com, was formally launched at the 8th Annual Arctic Shipping Forum in Helsinki, Finland, April 25th, 2012, in front of 300 experts on Arctic shipping and logistics.

Our work is aimed at the increase of information level of the international society related to the practical issues on shipment arrangements in the Arctic, particularly use of the NSR seaways and main Arctic ports.

The main objective of the project is to make practical information required for planning and arrangement of shipping in the High North areas available and precise. We build our work according to the effective international legislation as well as national standards and regulations.

We believe it is very important to have reliable information in English available for a wide range of potential NSR users. It is essential for the international shipping industry to know the possibilities, challenges and conditions of work on the NSR seaways.

The Arctic Logistics Information Office (ARCLIO) has been established as a joint initiative of the Norwegian Centre for High North Logistics and Russian FSUE Rosatomflot. The project is carried out with the support of the Norwegian Barents Secretariat.
In order to use the potential advantages of the NSR in practice it is important to know and understand the requirements of the efficient international and national legislation.

**NSR New Rules and Regulations**
- New rules of navigation in the waters of the Northern Sea Route 2013
- New admittance criteria / ice class for navigation in the Northern Sea Route 2013
- New communications instructions for Arctic navigation 2012 - 2013 on the Northern Sea Route
- Procedures of cabotage permit issuance for vessels under foreign flags
- New procedures of navigation arrangement in the Northern Sea Route water area 2013
- New rules of icebreaker support for vessels in the Northern Sea Route water area 2013
- New rules of ice pilotage of vessels in the Northern Sea Route water 2013
- New rules of pilotage on the routes of the Northern Sea Route water 2013
- Rates of port dues and application rules
- NSR transit voyages statistics

**Oil and Gas from Murmansk**

<table>
<thead>
<tr>
<th>State</th>
<th>through Suez Canal</th>
<th>through NSR</th>
<th>+/- days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan (p. Kobe)</td>
<td>12 291 miles</td>
<td>37,1 days</td>
<td>18,1 days</td>
</tr>
<tr>
<td>Korea (p. Busan)</td>
<td>12 266 miles</td>
<td>37 days</td>
<td>18,4 days</td>
</tr>
<tr>
<td>China (p. Ningbo)</td>
<td>11 848 miles</td>
<td>35,8 days</td>
<td>19,9 days</td>
</tr>
</tbody>
</table>
Welcome to ARCTIS!

The ARCTIS Database, developed by the Centre for High North Logistics (CHNL) in North Norway, is a gateway to know-how for businesses, governments, and the research/educational community on shipping, transportation infrastructure, logistics and non-living resources in the Arctic.

Online Database

- General
- Arctic Energy and Mineral Resources
- Marine Transport and Logistics
- Arctic Sea Routes
- People, Industries and Institutions
- Maps and Charts
- Arctic Ice Conditions, Geography and Climatology
- Arctic History, Policies and Governance

WWW.ARCTIS-SEARCH.COM
Database focusing on shipping in Arctic waters, marine transportation infrastructure, mineral and energy resources, and innovative logistics solutions for the Arctic

Updating of information and data, and quality control will be managed by our group of more than 40 theme editors

Become the preferred gateway to information and knowledge for businesses, governments, and the educational/research community on Arctic shipping

No other database with such a focus exists today

Our aim is to contribute in this way to a more environmentally friendly transport and logistics solutions and infrastructure development in the Arctic
ARCTIS
Arctic Resources & Transportation Information System

Online Database

Topics
- General
- Arctic Energy and Mineral Resources
- Marine Transport and Logistics
- Arctic Sea Routes
- People, Industries and Institutions
- Maps and Charts
- Arctic Sea Ice and Climatology
- Arctic Policies and Governance

Centre for High North Logistics
ARCTIS is a dynamic online database focusing on shipping in Arctic waters, transportation infrastructure, mineral and energy resources, and innovative logistics solutions in the Arctic.

ARCTIS Topic: Marine Transport & Logistics

1. Legal & Regulatory Framework
2. Technical Requirements for Ships
3. Types of Vessels in the Arctic
4. Icebreaker Assistance
5. Ports & Terminals
6. Tariffs & Port Dues
7. Communication & Navigational Systems
8. Crew Competence Requirements
10. Marine Insurance
11. Environmental Impacts of Shipping
ARCTIS Topic: Arctic Sea Routes
1. Transport Passages of the Arctic Ocean
2. Navigation on the Northeast Passage/NSR
3. Navigation on the Northwest Passage
4. Navigation on the Trans Polar Passage
5. Connecting Corridors in Southern Waters
6. Statistics on Transit Voyages
7. Cost Comparison Arctic Trade Routes vs. Suez

ARCTIS Topic: People, Industries & Institutions
1. Marine Transport Industries
2. Oil & Gas Industries
3. Off-Shore Support Industries
4. Coal Industries
5. Mining Industries
6. Research & University Institutions
7. Profiles on Influential People
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Legal and Regulatory Framework

Marine Transport and Logistics » Legal and Regulatory Framework

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Comments
Marine Communication and Traffic Services

Three satellite communication systems can support NSR operations today: The INMARSAT system, the CEAN system and the IRIDIUM commercial system\(^1\). Communications using Very High Frequency-radio (VHF), Medium Frequency-radio (MF) and High Frequency-radio (HF) as well as satellites are generally adequate for the NSR.

Vessel Traffic Management and Information Systems (VTMIS) have been used on the NSR in decades. Generally a VTMIS gathers, evaluates and distributes vessel traffic and waterborne transport data to improve the safety and efficiency of transport\(^2\). The ARCOP-study showed that there is a lack of sufficient VTMIS along the NSR. One of their concluding proposals related to communication improvements, was to define a vessel traffic service covering the total traffic volume of the NSR. For implementing such a goal they found it necessary to improve the cooperation with local services along the route, such as port services and emergency services\(^3\). Also integrate new communication services to the system that is currently not part of the system. The work with the VTMIS showed that there are a number of Arctic information services that can be combined in the system. In the future especially the ice information should be part of the VTMIS system. Russia is planning to improve their existing maritime communication services during the next years with a 2020 timeframe. However, it is still uncertain whether they will receive financial funding.

Although the ARCOP-study considered the current Russian ice information system as an optimal ice data provider in order to support any future NSR navigation\(^4\), the AMSA-study found that the existing charts is insufficient to support current marine activities\(^5\). The Russian satellites are currently not able to provide Arctic navigation with reliable data due to technical problems. As a result foreign satellite images are used. By orders of consumers, the national ice service in Russia (AARI) using the American satellite NOAA observations in the visible range as well as the Canadian satellite RADARSAT. This is not consistent with the ARCOP-recommendation, which considered the Russian ice information system to be a standard platform for integration by other Arctic ice information systems. For instance, and to ensure sea trial of the leading containership of Norilsk Nickel of a highest ice class LU7 in March 2006, AARI ordered 2 radar images of the ice conditions in the Kara Sea from the Canadian satellite RADARSAT\(^6\). It is also interesting to note that the Beluga ships used their own meteorologists last summer, providing the ice navigator with up to date data, in order to get as reliable ice information as possible.
Provide various businesses with critical information for decision-making and strategic planning for operations in Arctic waters and navigating along Arctic sea routes.

Information and data for assessing and planning future marine transport infrastructure needs in the Arctic based on various scenarios and environmental conditions.

Dissemination role for the international research community by making research results known to key stakeholders in as user-friendly a way as possible.

Aid national funding agencies to pinpoint what research topics should be emphasized in the years to come to fill critical knowledge gaps and avoid duplication of efforts.