A New Transportation System in the U.S. Arctic – What are the risks?

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A New Transportation System in the U.S. Arctic…

- Two phenomenon have become pronounced in recent times:
  - Abatement of Sea Ice
  - "Globalization"

- Result:
  - Perception of new economic opportunities in the Arctic
    - Shipping
    - Mineral Resource Development
First, some alignment on the notion of Arctic Shipping

The abatement of sea ice has resulted in a longer navigable season

This has prompted the discussion and promotion of arctic shipping

Alternative to existing routes
A means to convey raw materials from the arctic region to market
First, some alignment on the notion of Arctic Shipping

Four primary modes of shipping
  - Trans-arctic
  - Destination
  - Intra-arctic
  - Cabotage
Remarks on trans-arctic shipping

Only viable route (out to 2030 or so) is the NSR

NSR navigable season is uncertain
- Cargo with flexible arrival times
- Not attractive for container shipping

Insurance: expensive or unobtainable

Bottom Line
- Don’t expect much from trans-arctic shipping
  - .....other than the occasional cruise ship....

The Cold, Hard Realities of Arctic Shipping
Stephen M. Carmel
U.S. Naval Institute. July 2013 Vol. 139/7/1,325

U.S. Navy Arctic Roadmap: 2014-2030
See page 11; “Arctic Sea route Navigability”

Gulf-times: “Icebergs, insurance hamper top of the world route”
....that said, there has been a limited increase in trans-arctic shipping....

Not large numbers of vessels, though

Mostly through the NSR
Cruise ship Crystal Serenity to traverse the NWP in 2016 with 900 passengers aboard
Trans-arctic Shipping: Cruise ship transit Northwest Passage (Canada, US)

› **The risk: vessel becomes incapacitated**
  - (runs aground, loses power, etc.)

› **Mass casualty event – rescue hundreds of passengers**
  - Limited air assets in the region
    › One helicopter at a time....
    › Long flight to safety
    › Probably have to set up a shore base in the vicinity of incident
  - Limited number of vessels in the region at any time
  - Pretty much on your own...
Trans-arctic Shipping: Cruise ship transit Northwest Passage (Canada, US)

› The risk: vessel becomes incapacitated
  - (runs aground, loses power, etc.)

› Mass casualty event – rescue hundreds of passengers
  - Virtually no advanced (surgical) medical facilities in any theater of the NWP
  - Housing
    › Little/ no excess housing in villages
    › House casualties in schools/ community centers?
  - Village food and water supplies can be overwhelmed with even a small influx of people from outside

  - “What do you do with the people if they cannot stay on the cruise ship?”
  - Should Canada & US require an escort vessel in lieu of another viable alternative?
Arctic Destinational Shipping

- Getting goods from **THE ARCTIC TO MARKET**....
- As far as arctic shipping; this likely provides the greatest economic opportunity
- Can expect the most activity in this category
  - Oil
  - Natural Gas
  - Mining Products
Arctic Destinational Shipping
- Getting goods from THE ARCTIC TO MARKET....

The Alaskan Arctic: A Summit on Shipping and Ports
Presented by Felix Tschudi

Tschudi Shipping Company

The Arctic: Where Gas meets Ore

Center for High North logistics
Arctic Destinational Shipping

› The corridor concept

- Land-based transportation corridors are being built .... northward!

- Intention is to bring resources to shore side
  › Accessible to the Northern Sea Route (NSR)

- Ship out of the arctic from there....
Arctic Destinational Shipping

› The corridor concept

- Russia has adopted this approach
  › Aimed at getting arctic resources to asia

- Finland-Norway rail corridor
  › “Arctic Train Would Open Up Arctic Potential”
    - Barents Observer. February 13, 2015

- Churchill Gateway [corridor]: 1931
Northern Latitudinal Route railway - expanded access for Russian regions to the NSR
The Alaskan Arctic: A Summit on Shipping and Ports
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Center for High North logistics

Many projects which should be coordinated

ARCTIC RAILWAY ROVANIEMI-KIRKENES

www.arcticcorridor.fi
The Alaskan Arctic: A Summit on Shipping and Ports
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Center for High North logistics
The confluence of two shipping corridors
What the future could hold...!

Northern Sea Route

North-Pacific
Big Circle Route

Credits: The Custom-House: The U.S. in the World Economy
The confluence of two shipping corridors
What the future could hold…!

Northern Sea Route

Backhaul to supply coastal communities in northern Russian

Mineral Processing/Transshipment Port somewhere in Aleutian Iss.

Raw mineral products overland

Backhaul to supply coastal communities in Alaska

North-Pacific Big Circle Route

Credits: The Custom-House: The U.S. in the World Economy
Arctic Destinational Shipping

The risks of arctic destinational shipping:

- Navigational risks
  - Charting in arctic is incomplete
  - Potentially uncharted hazards to navigation
  - Sea-ice: the arctic is not ice free and will not be any time soon!
Arctic Destinational Shipping

The risks of arctic destinational shipping:

- Environmental risks
  - Risk to vessels
    - Seasonal storms are becoming more severe
    - Arctic region lacks salvage services (to rescue ships and cargo)
    - Damage or entrapment from sea ice
  - Risk from vessels
    - Fuel spills from ships
    - Release of deleterious cargo

Statistically, if traffic increases one should expect more incidents.
Arctic Destinational Shipping

› Mitigating the risks
  - Adopt/Enforce the IMO Polar Code
  - Modernize navigational charts
  - Ice strengthened merchant ships
  - Salvage services for commercial shipping
  - Spill clean-up assets
  - Have a response plan
Arctic Destinational Shipping

› Mitigating the risks
  – Ice strengthened merchant ships – already being built....
Arctic Destinational Shipping

- Mitigating the risks
  - Ice strengthened merchant ships - already being built....

Fednav MV Nunavik: from Quebec to China via the NWP, Sept.-Oct. 2014

Korean LNG Vessels
Yamal Peninsula Petroleum Development

Source: Marine Exchange of Alaska presentation
Arctic Destinational Shipping

› Mitigating the risks
  - Modernize navigational charts

Bering Strait Port Access Route Study (PARS)

Making Vessel Traffic Safer:
• Reduce Impact on Environment
• Reduce Maritime Accidents
• Reduce Oil Spills
• Reduce Marine Mammal Strikes
• Increase Safety On Waterway
• Increase Navigation Predictability
• Increase Efficiency of Waterway

Bering Strait PARS study by US Coast Guard and NOAA

• Establish a shipping corridor charted to modern standards and with appropriate ATONs

• E.g., Vessels underwriters can require adherence to established corridor
Arctic Destinational Shipping

- Mitigating the risks
  - Have a plan!

The Alaskan Arctic: A Summit on Shipping and Ports
Presented by Willie Goodwin
Thank you!