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For much of its 75-year history, Montreal-based Fednav has been involved in every major shipping project in Canada's Arctic.

OPEN FOR BUSINESS?

With receding ice, shippers and carriers debate the viability of using Arctic sea routes

BY MARK CARDWELL

Archimedes once famously surmised that the shortest distance between two points is a straight line.

But Tom Paterson says the ancient Greek mathematician's theory doesn't hold water when it comes to using the Northwest Passage as a commercially viable waterway for the movement of ocean freight as a result of climate change.

"All the articles you read and things you hear about it being a shorter sailing distance between Asia and Europe or the Eastern Seaboard fail to mention one thing—it's only shorter if you're going the same speed," said Paterson, se-

nior vice president, Shipowning, Arctic and Projects at Fednav.

The Montreal-based firm, which just celebrated its 75th anniversary, has been involved in every major shipping project in Canada's Arctic for the past 65 years. Today Fednav owns and/or manages more than 100 vessels—including the three largest ice-breaking bulk carriers in the world—that service every major mine in Canada's North and Alaska, carrying more than eight million tons of material from the region in 2019.

Paterson told *Canadian Shipper* that the unique weather and ice conditions that prevail in different sections of the

Northwest Passage during the navigable summer months make it a far more precarious, go-slow route than the warm-water Panama Canal, even though it adds 4,000 kilometres to the journey.

"Much of (the passage) is wet and foggy and miserable with restricted visibility and multi-year ice in the water," Paterson said. "Whether you go 20,000 miles at 10 knots or 10,000 miles at 20 knots, you still travel the same distance in the same amount of time. Using the Northwest Passage doesn't save time (and) no ship maintenance gets done."

Despite the obvious dangers, decades of decline in both the extent and thickness of Arctic sea ice—the result of an ongoing global warming trend that scientists say could result in a completely ice-free Arctic in the summer within decades—simultaneously titillate and terrify profit-minded owners, operators and agents of ships involved in world trade over the prospect of functional commercial waterways over the top of the world.

All three routes—the Northwest Passage, the Northern Sea Route and the Transpolar Route, a near-mythical shipping lane that would open over the North Pole if and when the entire Arctic region becomes ice free during the summer months—have become the subject of intense international debate in recent years over the possible economic savings and benefits versus safety and environmental impacts of shipping good through the region.

The Russians are coming

The most talked about route of late is the Northern Sea Route (also called the Northeast Passage), which hugs the Arctic coasts of Russia and Norway, linking the Pacific and Atlantic Oceans.

In both theory and practice, it is a much shorter route that links Northeast Asia with Western Europe than the Suez or Panama Canals or around the Cape of Good Hope, reducing the distance between Rotterdam and Yokohama by 37 per cent, Shanghai by 24 per cent and Hong Kong by 11 per cent.

Russia has invested massively recent years in infrastructure and capacity aimed at making the route a conduit for



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—Tom Paterson, SVP, Fednav

not only international trade but for the export of its massive oil and gas reserves in its frozen northern regions.

There are now a dozen ports along the route with a combined population of around two million. The Kremlin is also building icebreakers at a record pace, with nearly 50 now in service—including several nuclear-powered vessels—and more on the way.

Shipping traffic in the region between May and October has continued to increase in recent years. According to the most recent data from the Northern Sea Route Information Office (NSRIO), there were 452 voyages into and out of the region and 186 vessels operating in route waters in September—always the busiest month—including general cargo ships (134 voyages), tankers (130), supply (48), LNG tankers (40) and research vessels (30).

However, the number of full transits remains small and has grown unevenly from only four ships in 2011 to an all-time high of 71 full transits in 2013. According to NSRIO numbers, only 31 ships had made the full voyage by the end of October, 2019.

Russia's nuclear container ship *Sevmorput* was the fastest to pass in 2019, taking less than six days to—an average speed of 15.1 knots—to deliver sea products from Petropavlovsk-Kamchatskiy to St. Petersburg.

The largest number of transits in a single month—16—was in September,

with five ships going east to west, four west-east and seven, including the *Sevmorput*, stopping between Russian ports.

The viability of the Northern Sea Route got a big boost from Maersk in 2019 in a follow-up to the voyage of the *Venta Maersk*, which became the first commercial container ship to transit the route in 2018—the same year China called for an infrastructure-building Polar Silk Road initiative in the Arctic—when it carried 660 reefer containers with South Korean electronic products and Russian fish from Busan to Bremerhaven, Germany.

Officials with the world's largest container company initially called the 37-day trip by its Baltic feeder ship, the fourth in a new line of the world's largest ice-class vessels that are designed to operate in -25 degrees Celsius water, as a one-off designed to test vessel systems and gain operational crew, support and equipment training.

But in June 2019, Maersk unexpectedly announced that it was in talks with Russian nuclear-powered icebreaker company Rostamflot aimed at establishing a service agreement.

"We have experienced growing demand for transport of goods from the Far East to West Russia (and) are currently exploring the possibilities of offering together with Atomflot," the company told Reuters, adding that it had no current plans to dedicate or deploy vessels to the route.

Rosatom Group, the Russian state-run nuclear power operator, doubled-down in November, announcing plans to borrow \$7 billion from Russian banks to build 55 ice-class container ships to operate along the Northern Sea route.

Within weeks, however, several of Maersk's international shipping rivals poured cold water on the potential of all Arctic waterways and their tantalizing savings in fuel costs and faster cargo delivery by publicly renouncing their use over environmental concerns.

In August, CMA CGM Group chair and CEO Rodolphe Saadé announced during a visit with French President Emmanuel Macron at the Elysée Palace that none of his company's 500 ships will use the Northern Sea Route due to the accompanying dangers it represents for natural ecosystems.

"With this decision, CMA CGM makes the resolute choice to protect the environment and the planet's biodiversity despite the major competitive advantage this route represents for shipping companies," said Saadé.

In October, both Hapag-Lloyd and MSC made a similar pledge to avoid using any and all Arctic routes—for now at least. "Hapag-Lloyd does not use the Northwest Passage or the Northeast Passage as shipping routes right now, nor are there any plans to do so in the future," said the company's senior director for sustainability, Jörg Erdmann.

According to Erdmann, because container ships operate in liner services, the possible time savings and added cargo from the use of larger ships (albeit ones with the appropriate ice classes) in either/or the Northwest or Northeast Passages would be an economic boon.

"Thus, all things considered, the desirability of using these passages much be carefully weighed from both the ecological and economic perspectives," he said.

For his part, MSC president and CEO Diego Aponte said in a statement days later that "as a responsible company with a longstanding nautical heritage and passion for the sea," MSC finds the disappearance of Arctic ice "to be profoundly disturbing."

Aponte argued that a surge in container shipping traffic in the Arctic would threaten air quality and biodiversity there. “Our industry should focus its efforts on limiting environmental emissions and protecting the marine environment across existing trade routes,” said the Italian billionaire.

North-by-northwest

Compared to the Northern Sea Route, use and development of the Northwest Passage, a once-impassable waterway connecting the Atlantic and Pacific Oceans through the Canadian Arctic Archipelago, has been advancing at a glacial pace.

But as the number of vessels of all size and manner that now sail into the region during the increasingly ice-free summer months continues to grow, the same hopes and fears are being expressed over the route’s real and imagined use as an international trade route.

“The Arctic is a big place and sailing conditions are very uneven across it,” said Neil O’Rourke, assistant commissioner of the Canadian Coast Guard’s (CCG) year-old Arctic Region, from his office in Yellowknife. “We have to take a very prepared and flexible approach when it comes to our operations.”

According to O’Rourke, the advent of thinner and less expansive ice during the June to November ice-breaking season, together with predictive models that foresee open water in the Arctic in summer within 50 years, have led to a doubling of trips into the Canadian Arctic over the past decade, including leisure craft and cruise ships.

According to the latest statistics from Transport Canada, 147 vessels of at least 300 gross tonnes—which must by law report to Canadian authorities—made 368 voyages into the zone in 2019.

That was an all-time high and nearly twice the number of voyages as the 185 trips made in 2009.

The 2019 ships included 97 bulk carriers, 59 general cargo ships, 28 tankers and four grain ships. Most commercial traffic is resupply for Arctic communities and mining operations and domestic LNG and mineral carrying.

Only 27 ships did a full Northwest Passage transit from Baffin Bay to the Beau-



With Arctic ice melting, the Northwest Passage and Northern Sea Route have become the subject of intense international debate over the possible economic savings and benefits versus safety and environmental impacts of shipping goods through the region.

fort Sea in 2019. Of those vessels, only five were general cargo ships. The rest were pleasure craft (13), passenger ships, CCG ships (2), a tug and a research vessel.

That is a far cry from the high hopes expressed by some in 2013, when the ice-strengthened freighter *Nordik Orion* became the first bulk carrier to fully navigate the Northwest Passage, carrying a load of high-grade coking coal from Vancouver to Finland.

The route took four days less and allowed the ship to carry 25 per cent more cargo because it didn’t have to pass through the shallower waters of the Panama Canal, a route that is 1,600 kilometres longer.

The company owners admitted however that the trip would not have been either possible or profitable had it not been for the free icebreaker escort—a service that then cost \$50,000 a day—provided by the CCG.

According to O’Rourke, the seven ice breakers the CCG had in operation in the Arctic in 2019—including the CCGS *Captain Molly Kool*, one of three medium-class icebreakers that were built as tugs for Viking and bought by Canada in 2017 and refitted at the Davie shipyard in Lévis, Quebec—can handle the current demand for ice-breaking services.

And he is confident that the nearly \$2 billion in life extension programs and \$15 billion in capital expenditures announced by the federal government in 2019 for the construction of 16 new CCG vessels—including six 8,000-tonne heavy icebreakers and one or two 23,000-tonne polar icebreakers (including the long-delayed CCGS *John G. Diefenbaker*) at a third Canadian shipyard (likely Davie)—will help to handle what he says is growing interest for the Arctic among commercial shippers.

“The Inuit population in the region is booming, communities are getting big-

ger and there are more mining companies,” said O’Rourke. “Canadian shipping companies tell us they are getting lots of demand. If we can entice more traffic it would offset their costs of ice breaking and infrastructure.”

For Michael Broad, president of the Shipping Federation of Canada, whose 75 members operate or act as agents for more than 300 international steamship lines and represent 95 per cent of ocean vessels trading to and from ports in Atlantic Canada, the Arctic is and will remain for the foreseeable future more a destination market than a maritime highway across the North.

“You can have all the ice breakers and infrastructure you want, but it is a complex operating area with multi-year ice, drifting ice, reduced hours of light and it’s remote with little supporting infrastructure,” said Broad.

“There are literally dozens of things to consider. What if a crew member gets hurt? How do you get them out? And don’t forget the need for pricey Arctic insurance, expensive icebreaking services and environmental and safety protection. Our members are committed to safety, it’s the No. 1 priority.”


For Fednav’s Paterson, the risks of sailing in the Arctic outweigh the potential benefits of a quick passage that may or may not result from the effects of global warming.

“Twenty years ago, people said the Northwest Passage was going to be the next Suez Canal. Yes, there is now less ice, but the shoulder seasons have increased by only 10 days on either end, which is nothing dramatic,” said Paterson. “And don’t forget you don’t need the whole passage to be blocked to stop a ship, just a mile of it.”

Though the ice pack on the Canadian side of the Arctic is more blown and packed than on the European and Asian sides, making their water more ice free and navigable, Paterson says he fails to see the economic advantages of using trans-ocean Arctic routes by shipping companies that don’t have the specialized vessels required to sail in those waters.

“For a container company I can’t see how you could compete with 20,000-TEU ships carrying finished products

through the Suez Canal when you risk getting bogged down by weather in the Arctic,” said Paterson.

“You’d need spectacular ice-breaking container ships to operate there during the three- or four-month sailing season. The value is simply not there.” 



Mark Cardwell is an independent journalist and writer based in Quebec City. He is a correspondent for publications in various fields, including transportation, business, agriculture, medicine and law.

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