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North American Arctic – Shortcut or Destination

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The North American Arctic is a fabled area. Not long after the discovery of the New World, mariners started their attempts to find routes around the land masses for a westward passage to the Orient. Until the early part of the Twentieth Century, attempts to navigate the Northwest Passage uniformly failed, sometimes tragically. Even today, with climate change facing us on all fronts, transits of the Northwest Passage are few, and those by merchant vessels number less than 30.

Humans have inhabited the North American Arctic for thousands of years. In coastal regions, Native Americans have traveled and hunted by boat whenever conditions allowed. In about the year 1000 AD, Vikings from Iceland, led by Eric the Red, settled in southern Greenland. Vikings continued to live in Greenland for the next 400 years. His son, Leif Ericson, is credited with establishing the first, albeit temporary, European settlement in North America at L'Anse aux Meadows, Newfoundland and possibly other locations in about 1003. John Cabot, sailing for the English in 1497, was the first European seeking to reach the Orient by attempting to round the top of North America. Other early attempts to find the Northwest Passage were made by Giovanni da Verrazano (1523), Jacques Cartier (1534), Martin Frobisher (1576), Humphrey Gilbert (1583), John Davis (1585), and Henry Hudson (1607). The ill-fated Franklin expedition of 1845 and the numerous relief efforts that followed shortly thereafter captured the public's attention for many years.

Meanwhile, fishermen, whalers, and sealers have been operating in waters of the North American Arctic for hundreds of years. More recently, cargo ships of the Hudson's Bay Company and others have been calling in Churchill and other ports in Arctic waters of Canada. On the western or Pacific side of North America, Russian expeditions, initiated by Vitus Bering (1728) navigated waters between Siberia and Alaska. After the Russians sold Alaska to the United States, the taking of fur seal pelts in the Pribilof Islands of the Bering Sea became lucrative.

A large whaling operation developed in waters of the Bering Sea, the Chukchi Sea, and the Arctic Ocean off the northern coast of Alaska. In November 1897, eight whaling ships were beset in the ice near Barrow, Alaska. The US Revenue Cutter *Bear* approached as close as it could in the Bering Sea. Lieutenant David Jarvis of the *Bear* then led an overland expedition,

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driving a herd of reindeer 1,500 miles through winter weather to save the 275 whalers from starvation. This accomplishment, for which Congressional Gold Medals were awarded, pointed out two things: first, that commercial activity in North American Arctic waters was extensive; and second, that response resources in those waters were almost non-existent.

Currently, there are a number of mining operations in the North American Arctic. For those occurring on offshore islands (particularly in the Canadian Archipelago) or in coastal areas of Alaska or the Canadian Arctic mainland, the minerals are brought out by ship. From 1975 until its closure in 2002, the Nanisivik Mine at the northern end of Baffin Island used bulk carrier ships to move its zinc and lead extractions to market. Likewise, the Polaris Mine on Little Cornwallis Island shipped its zinc extractions by bulk carrier from 1981 until its closure in 2002. Both closures were the result of falling mineral prices on the world market, rather than difficulties navigating the Arctic waters. The Raglan Mine is a large nickel mining complex in the Nunavik region on the mainland of northern Quebec. The nickel ore is transshipped through the seaport constructed at nearby Deception Bay. The Baffinland Iron Mine is currently under development in the Mary River region of northern Baffin Island. Its extremely high-grade iron ore will be shipped by bulk carrier when the mine commences operation in 2014.

The Red Dog Mine on the Alaska coast north of the Bering Strait is now the world's largest zinc mine, providing 10% of the world's output. Its ore is brought to market by numerous bulk carriers during the ice-free summer months. Mineral deposits in the Arctic regions of Alaska, Canada, and eastern Siberia will continue to be developed and will only increase the amount of traffic by large merchant vessels in these waters. As the importance of these resources grow, so too will the pressure to extend the navigation season (not unlike what has occurred over the years with commercial navigation on the Great Lakes).

The most significant economic pressure for increased maritime operations in Arctic waters, though, will come from the oil and gas industry. Petroleum and natural gas reserves in the Arctic Basin, proven or estimated, are very large. Big oil companies are already vying for permits from the US Minerals Management Service (MMS) to commence exploratory drilling in waters of the Chukchi Sea and the Arctic Ocean off Alaska's North Slope. Issuance of the leases is currently stalled over environmental issues, particularly concern for the polar bear. It is expected that the environmental issues will result in various conditions being placed in those leases, requiring unprecedented environmental protection measures to be instituted by the oil and gas companies working in that region. The Canadian Government is expected to take a similar approach to efforts to engage in oil and gas exploitation in its Arctic waters.

Such offshore oil and gas development in the Arctic waters of North America will result in even greater marine traffic. Mobile offshore drilling units (MODUs) will be developed for operations in ever harsher environments. In shallow waters, artificial islands will be constructed to serve as drilling sites. Offshore supply vessels, specialized anchor handling vessels, etc. are already being built to operate in polar environments. Until and unless pipelines can be laid, the oil and gas extracted will be brought to market by ice-strengthened tankers. None of this oil and

gas development in the Arctic waters of North America will happen quickly, but is certain to happen eventually.

The Arctic waters of North America are one of the last remaining frontiers for the fishing industry. As fish stocks in other waters are depleted and worldwide demand continues to grow, the pressure to exploit the apparently rich fishing grounds of the Chukchi Sea, Beaufort Sea, and Arctic Ocean will become overwhelming. On May 26, 2009, the National Marine Fisheries Service (NMFS) issued a proposal to establish an Arctic Management Area so as to regulate fisheries in US Arctic waters north of the Bering Straits for the first time. Canada and Russia will certainly follow suit. The bottom line is that, as has been the case in the Bering Sea, significant numbers of fishing vessels, fishing industry vessels, and support craft will be operating in Arctic waters off the coast of North America.

All of these craft, be they associated with the fishing, oil and gas, or mineral industries, will require an infrastructure to support their new activities in the Arctic waters of North America, an infrastructure that does not yet exist. Recently, a crewmember on a cruise ship making a brief excursion to Barrow, Alaska was struck with a life-threatening condition. The ship had to divert to waters off Prudhoe Bay so that the individual could be medically evacuated by helicopter to the only modern medical facility in the region. There was also no dock at which the ship could berth.

There are no traditional marine aids to navigation (lighthouses, beacons, or buoys) in the Arctic waters of North America. Charts are based largely on old and sparse data. As an aside, when I served in the USCG icebreaker *Northwind* and we transited the waters of Canadian archipelago from Alaska to Greenland in 1969 to meet up with the tanker *Manhattan* for its historic trip to Prudhoe Bay, the Canadian Government insisted that we provide it with a copy of our soundings to be utilized in marine charts of those waters. There is also a paucity of search and rescue (SAR) capability in the Arctic waters of North America, as well as a lack of pollution response resources. Admiral Thad Allen, Commandant, US Coast Guard, has pressed for expansion of assets and personnel in the region. Congress has expressed support for those efforts, but little money has been appropriated to date to address this vacuum.

There are also jurisdictional issues lurking in the Arctic. The boundary in the Beaufort Sea between Canada and the United States is in dispute, as is the boundary between the United States and Russia in the Chukchi Sea. There is a lingering dispute between Canada and Denmark over Canada's boundary with Greenland. The seaward boundaries of the outer continental shelves of nations adjacent to the Arctic Ocean, hopefully, will be resolved by the United Nations based upon the results of ongoing marine scientific research in those waters. Finally, the status of waters surrounding the Canadian archipelago remains unsettled. Canada claims the waters as part of its territorial sea. The United States asserts that the Northwest Passage is a strait used for international navigation. To date, the two parties had agreed to disagree. While reserving its position, the United States has cooperated with Canada regarding transits of those waters.

In summation, marine activities in the Arctic waters of North America are on the verge of great expansion. The vast majority of that expansion will see those waters used as a commercial destination – for fisheries, the oil and gas industry, mineral extraction, and tourism. A small segment of marine traffic in those waters will be using the route as a shortcut between the Atlantic and Pacific Oceans as a shortcut (the Northwest Passage), but this will be the exception rather than the rule.