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Aging fleet slows U.S. in Arctic "chess game"

By Sandi Doughton

Seattle Times science reporter

When Coast Guard Adm. Thad W. Allen imagines a melting Arctic, it's not a pretty sight: Cruise ships collide with icebergs. Oil tankers and ore ships run aground. Foreign fishermen sneak into American waters.

Even worse, the nation's top Coast Guard officer fears he may not have the tools to respond to these future crises.

At a time when Russia, Canada, Norway and other Arctic nations are scrambling to stake out turf in the still-frozen north, the United States' two most powerful icebreakers sit at a dock in Seattle, nearing the end of their working lives.

One is manned by a skeleton crew. Both are about 30 years old, and nothing is on the drawing board to replace them.

"We have the responsibility for maritime safety, stewardship and security," Allen said. "But how do you respond up there if you have no presence?"

Allen and others are urging the U.S. government to prepare now for the changes global warming will bring to the Arctic. The nation needs to figure out how to

Scramble for the Arctic

As climate change melts ice in the Arctic, several nations are vying for dominance - and icebreakers are one of the new status symbols. Experts urge the U.S. to build new icebreakers to replace two aging vessels based in Seattle.



PRENTICE DANNER / AP

The Coast Guard cutter Healy breaks ice to support scientific research in the Arctic Ocean near Barrow, Alaska, in July 2006. The cutter, one of three based in Seattle, is eight years old and can continuously break through 4-foot-thick ice. It was designed mainly for Arctic science.

protect American interests, handle disasters and enforce laws in a region that will still be ice-choked much of the year, he said.

"Icebreakers will have an important role to play," Allen said.

A National Research Council panel concluded last year that planning and construction should start immediately on two new icebreakers. "U.S. icebreaking capability is now at risk of being unable to support national interests," the panel warned.

Each of the new ships could cost \$750 million or more, experts estimate.

The Arctic ice cap shrank to a record low this summer, opening up the Northwest Passage along Canada's fringe for the first time.

Scientists say the ice is melting much faster than global-warming models predict, with the possibility that the Arctic Ocean will be completely ice-free in summer by 2050.

But the region will remain frozen in winter. And the Arctic's notoriously variable weather also means that entrepreneurs, tourists, fishermen and explorers lured into the area by its beauty and the promise of profit are likely to encounter bad weather and ice year-round.

More people traveling in icy waters translates into more accidents, more oil spills, more security problems — and more need for powerful icebreakers, says Scott Borgerson, a fellow at the Council on Foreign Relations and a former Coast Guard officer.

"Climate change is giving birth to a new region and allowing for all kinds of access," he said.

"A global chess game"



THOMAS JAMES HURST / THE SEATTLE TIMES

The Polar Star, based in Seattle, is in "caretaker status," essentially docked to save money. It and the Polar Sea were built in Seattle in the 1970s. The Polar Sea remains fully staffed and operational.

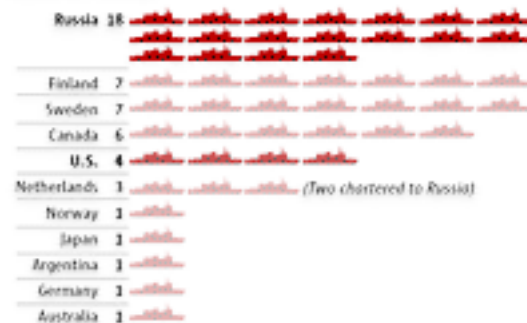


THOMAS JAMES HURST / THE SEATTLE TIMES

A Coast Guard fireman relays information from the Polar Sea's engine room back to the main control room of the Seattle-based cutter.

A country-by-country tally of icebreakers

With thousands of miles of Arctic coast, Russia leads the world in polar icebreaking capacity, with its fleet that includes seven nuclear-powered ships. Canada recently announced plans for a \$3 billion fleet of ice-capable ships and military posts along the Northwest Passage.



Source: National Research Council

MARK NOWLIN / THE SEATTLE TIMES

The U.S. Geological Survey estimates a quarter of the world's untapped oil and gas resources may lie beneath the Arctic Ocean. Oil and mineral companies are already building ice-strengthened tankers.

After a Russian minisubmarine planted a flag on the ocean floor beneath the North Pole this year, the Canadian government announced plans for military bases and a \$3 billion fleet of ice-reinforced ships to patrol the Northwest Passage, which the country claims as sovereign territory.

President Bush countered by insisting the passage is an international waterway. Norway asserted its territorial rights, while Denmark, which controls Greenland, appealed for calm.

"We're seeing a global chess game play out in the Arctic as nations position and stake claims for the region's vast, untapped resources," said Coast Guard Cmdr. Brendan McPherson, Allen's press secretary.

If icebreakers are among the chess pieces, the United States is outnumbered.

The nation has three multipurpose icebreakers, all based in Seattle. The aging Polar Sea and Polar Star, both able to ram through 21 feet of ice, have primarily been used to break open a route to U.S. research stations in Antarctica.

The newest member of the fleet is the Healy, an eight-year-old ship capable of continuously breaking through 4-foot-thick ice and designed mainly for Arctic science. A fourth icebreaker is leased by the National Science Foundation exclusively for research in Antarctica.

With a much more extensive Arctic coastline, Russia has 18 icebreakers, seven of them nuclear-powered. Finland has a fleet of seven. Canada has six.

But it's not really a numbers game, says Lawson Brigham, deputy director of the U.S. Arctic Research Commission and former captain of the Polar Sea.

The United States needs to be able to patrol Alaska's 2,500 miles of Arctic coastline, conduct research in both the Arctic and Antarctic and respond to emergencies. The National Research Council panel concluded that a fleet of three modern icebreakers can do the job.

Arctic research includes underwater mapping, which is key to territorial claims under the 1982 United Nations Convention on the Law of the Sea. Every Arctic nation except the United States has signed the treaty, which gives countries rights to underwater terrain extending from their continental shelves.

The 420-foot Healy is heading back to Seattle now after a two-month mapping voyage in the Chukchi Sea off Alaska's northwest coast.

The lead scientists on the project say their work has already shown that American territory extends at

least 350 miles from land — well beyond the traditional 200-mile limit. In the Chukchi Sea, the U.S. may be able to stake claims even farther out.

But first the United States has to ratify the treaty, something the Coast Guard and many maritime experts have been calling for.

"We have to join the treaty if we want to participate in carving up the Arctic," Borgerson said. "At the moment, we don't even have a seat at the table."

Ships take a pounding

U.S. icebreakers trace their origins to the revenue cutters that policed the new territory of Alaska. During the Cold War, a large fleet serviced military outposts and early-warning radar stations in the Arctic, ground zero for the nuclear faceoff between the U.S. and the Soviet Union.

The 399-foot-long Polar Sea and Polar Star were built in Seattle in the 1970s. The 60,000-horsepower cutters use their contoured bows to ride up on the ice, crush it with their bulk, then push the chunks aside, Brigham said.

"The noise, the vibration — it's really something."

The ships take a pounding, and maintenance budgets have not kept pace, the National Research Council found. Replacement parts often have to be built from scratch.

The Coast Guard calls the old icebreakers "operationally challenged." Borgerson puts it more bluntly. "They're geriatric. Moribund," he said. "It's just like a car. You can't drive a car for 300,000 miles ... and expect it's going to be in great condition."

The National Science Foundation, the icebreakers' main "client," took control of their budgets a few years ago. In 2006, the foundation temporarily hired a Russian icebreaker to open the route to McMurdo Station in Antarctica.

The ship broke a propeller, and the Polar Star was dispatched from Seattle to assist. Since that mission, the Polar Star has been in "caretaker status," essentially docked to save money. The Polar Sea remains fully staffed and operational.

Even if work started tomorrow on new icebreakers, it would be 10 years before they're ready to launch, said Jacqueline Grebmeier, a University of Tennessee polar researcher who served on the National Research Council panel.

"If people think it's important to have these ships," she said, "some decisions need to be made now."

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