

[Northwest Passage 100th Anniversary](#)

Icebreaking styles may change, but polar challenges linger on

by Al Martin and John Trone

Aboard the USCGC HEALY, August 24 (Special) - When Norwegian explorer Roald Amundsen on the sail boat GJOA became the first to transit the Northwest Passage through the ice-bound Canadian Arctic, he needed plenty of open water and wiggle room.

Today, the Coast Guard polar icebreaker HEALY is in that Northwest Passage on a voyage from Greenland to Alaska, the same goal as Amundsen had 100 years ago in the summer of 1903. It took Amundsen three years to make the trip. The HEALY will reach its destination in about 12 days.

While GJOA, with only a primitive 13 horsepower motor to complement the power of its sails, had to make numerous detours around ice fields, HEALY generally forges straight ahead. There are exceptions such as now. Today, with the aid of helicopter reconnaissance, HEALY has taken the long way around a mixture of hard multiyear and first year ice from the Arctic that has jammed Melville Sound partially blocking the ship's entrance into Prince of Wales Strait. As the HEALY crew like to point out, "patience" is one of the ten commandments of icebreaking. A principal tenet is, avoid icebreaking entirely if you can!

Following his historic feat, Amundsen wrote that maneuvering "a sailing ship in closely packed ice requires many years of experience." Nearing the Alaskan shore, GJOA executed a familiar maneuver to free itself from the ice one last time. Amundsen describes it this way:



"Luckily," he writes, "we had a small stretch of open water in front of us so that we got up some speed before we came up to the ice. The GJOA struck it with a heavy thud, turning everything on deck topsy-turvy, but her bow parted the ice. We all (there were seven aboard the GJOA) worked with boathooks to clear the ice away as well as we could, a tough desperate fight. The ice yielded a fraction of an inch at a time but at last it gave way. The barrier was broken with a clear homeward track before us."

One of the HEALY helicopters leaves on reconnaissance in Baffin Bay

The HEALY, a research vessel as well as icebreaker, is one of the most sophisticated ships in the Arctic. At 16,000 tons and 420 feet in length, she is the newest and largest of our polar icebreakers and one of the most versatile vessels of her kind. During many months of polar deployment, navigating in all kinds of ice, HEALY has supported a myriad of research projects and had as many as 14 science parties working on board simultaneously. And there is still plenty of work ahead because the Arctic remains one of the least known places on planet earth.

The robust HEALY, propelled by motors capable of generating 30,000 horsepower and a steel skin over an inch and a half thick, can steam through ice four feet thick at a speed of several knots. By backing and ramming, a key maneuver in heavy ice conditions, HEALY can punch through ice pressure ridges that are several times that thick. The ship is equipped with an integrated control, navigation and positioning system requiring only two people on the bridge even in the most demanding ice environment. Two touch-screen panels are used to control the ship. A dynamic positioning system integrates the bow thruster, twin propellers and rudders allowing the officer of the deck to maneuver with a joy stick. In really tough ice conditions, the officer of the deck takes the helm in one hand and throttles in the other to work his way through the ice.

HEALY's two HH-65A Dolphin helicopters are invaluable not only for reconnaissance but in facilitating the work of onboard scientists and rescue operations, if needed.

The GJOA and HEALY do have one thing in common, small crews. Amundsen believed that the manpower on polar expeditions had to be limited for the enterprise to be successful. His record conquests of the Northwest Passage in 1903-06 and the South Pole in 1911 would seem to prove that. The Coast Guard purposely designed the HEALY to be a minimally-manned vessel requiring only a fraction of the crews needed to operate its other polar icebreakers.

Following her Northwest Passage and subsequent science projects in the western Arctic, HEALY returns to her home port in Seattle in October. She will have been at sea almost continuously since January on missions which have taken her from one end of the earth to another, from Antarctica to the Arctic.



A Healy helicopter returns from reconnaissance