ARCTIC AND OFFSHORE AND PATROL SHIPS

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The Arctic and Offshore Patrol Ships (AOPS) – the *Harry DeWolf*-class – are ice-strengthened patrol ships (not icebreakers) designed to extend the Royal Canadian Navy's (RCN) reach deeper into Arctic waters, expand its operating season there, and provide it with new capabilities in a wide range of global safety and security missions.

The plan for their construction was first announced in July 2007 and the AOPS were subsequently included in the National Shipbuilding Procurement Strategy (now the National Shipbuilding Strategy) announced in 2010. A contract was signed with Irving Shipbuilding in Halifax in 2015 for six to eight vessels with construction of the first AOPS beginning in September 2015. The number was reduced to five vessels, with an option for a sixth, but then in November 2018 the government announced that the sixth ship, the future HMCS *Robert Hampton Gray*, would be built. And in December 2018 it was announced that two ships will be built for the Canadian Coast Guard.

The first ship of the class, the future HMCS *Harry DeWolf*, departed Irving/Halifax Shipyard in November 2019 and, using its diesel-electric engines, moved to the Bedford Basin to start initial builder's sea trials associated with anchor handling, the integrated bridge and navigation system (IBNS), fin stabilizers, Multi-Role Rescue Boat (MRRB) launch and recovery, and communication systems. On 23 November 2019, *Harry DeWolf* left the harbour for the first time to continue with builder's sea trials. With successful builder's trials complete, it was handed over to the navy on 31 July 2020 and underwent sea trials with the navy. In winter 2021 *Harry DeWolf* made its first voyage to the North for cold weather and ice trials – performing very well. In June 2021, *Harry DeWolf* was commissioned into the RCN. HMCS *Harry DeWolf* began its first major operation starting in August 2021 and circumnavigated North America, starting from Halifax, going through the Northwest Passage, then south along the Pacific coast and through the Panama Canal back to Halifax.

The second of the ships, HMCS *Margaret Brooke*, was launched on 10 November 2019. The ship completed builder's sea trials and was handed over to the RCN in July 2021 to begin RCN trials. *Margaret Brooke* undertook cold weather trials in winter 2022. The third AOPS, *Max Bernays*, was launched in January 2022. On 29 May 2022, there was an official joint naming ceremony for *Margaret Brooke* and *Max Bernays*. *Max Bernays* was handed over to the RCN in September 2022. The fourth AOPS, the future HMCS *William Hall*, was launched in November 2022, and is scheduled to be handed over to the RCN in 2023. First steel was cut for the fifth ship (the future HMCS *Frédérick Rolette*) in May 2021, and as of April 2023, its three mega blocks are taking shape, and the ship will be moved outside in summer 2023. Construction of the sixth ship (the future HMCS *Robert Hampton Gray*) began in August 2022.

The full class of AOPS will include the following ships:

- HMCS *Harry DeWolf* (AOPS 430)
- HMCS *Margaret Brooke* (AOPS 431)
- HMCS *Max Bernays* (AOPS 432)
- HMCS *William Hall* (AOPS 433)

- HMCS *Frédérick Rolette* (AOPS 434)
- HMCS *Robert Hampton Gray* (AOPS 435)

These vessels are designed as versatile patrol ships, capable of undertaking a wide spectrum of safety and security missions. Canada's 2017 defence policy, *Strong, Secure, Engaged*, says the ships will provide surveillance of Canadian waters, especially in the Arctic, as well as enforce sovereignty and provide the government with information about activity in Canadian waters. Specific missions are listed in the navy's 2015 Concept of Use as the following:

- search and rescue;
- support for other government departments (for example, fisheries or border services);
- maritime domain awareness (to ascertain who is in Canadian waters and what they are doing);
- assistance to law enforcement (for example, smuggling);
- aid to civil power (for example, assistance dealing with an oil spill in the Arctic);
- logistical support to the Canadian Armed Forces and other government departments (for example, transport of equipment or personnel for disaster relief operations); and
- sovereignty protection.

At 103 metres and 6,615 tonnes, the AOPS will be the largest ship in the RCN until the delivery of the Joint Support Ships. Despite their large size, they will carry a small crew of 45, with the capacity to support up to 40 additional personnel. As noted, the ships are not icebreakers, but they are designed for Arctic operations. The AOPS will meet the International Association of Classification Societies' (IACS) PC 5+ ice requirements with a Polar Class 4 bow, allowing them to travel through a metre of ice. They can also carry multi-purpose rescue and assault boats, as well as pick-up trucks, all-terrain vehicles and snowmobiles in the vehicle bay. The helicopter deck is large enough to support the Canadian Armed Forces' CH-148 Cyclone maritime helicopter (though for Arctic operations it may typically employ smaller Griffon helicopters) and can operate a variety of unmanned aerial vehicles if required. The AOPS can also be integrated with payloads such as underwater survey equipment and will have space designed for shipping containers. A 20-ton crane has been fitted on the ship to make loading and unloading all this equipment faster.

While armed, the AOPS are not intended to engage in combat. The ships have a BAE Mk 38 deck gun designed for constabulary rather than war-fighting duties. The decision to arm these ships so lightly is based on years of assessing threats in the Arctic. The conclusion of these assessments is that the security threat in the region is, and will likely remain, unconventional. Thus, rather than war-fighting, these ships will focus on monitoring, policing and assisting civilian and commercial activity. These are the low-risk, high-probability security threats projected to emerge because of the increased use and development of the Arctic.

In the Arctic, the AOPS will likely spend most of the time in a support role, assisting other government departments and agencies in fulfilling their northern mandates. This support work may include hydrographic surveying with the Canadian Hydrographic Service, fisheries patrols with the Department of Fisheries and Oceans, and constabulary operations with the RCMP. Because they are not icebreakers, the AOPS will redeploy South during the winter.

In addition to these other tasks, the AOPS are also intended to buttress Canada's sovereignty in the North. A major element of sovereignty in the North is to maintain presence and illustrate

functional control and stewardship. This is accomplished by enhancing Canadian ability to operate in the region, manifested in increased awareness, response and support capability. It is also accomplished by the navy's increased ability to monitor activity in the region and to support other government departments as their responsibilities expand as Arctic ice melts. The AOPS will be an important tool in enforcing the laws and regulations in the Arctic – for example, on shipping, environment, fishing and military presence.

The ships are referred to as Arctic *and Offshore* Patrol Ships indicating that they have more than one role. Outside the Arctic, the AOPS will be deployed on a wide range of patrol and surveillance duties, as well as humanitarian/disaster relief missions overseas. Operating off foreign coasts in a support capacity will be made easier by the ships' ample space for cargo and civilian support personnel, and the AOPS will work in conjunction with the forthcoming Joint Support Ships, the *Preserver*-class, to deliver supplies and assist responders ashore.

It is thought that missions such as fisheries patrols, surveillance and interdiction of smuggling/narcotics operations, which are often undertaken by frigates, can be more effectively performed by the AOPS, owing to the fact that they have roughly one-third the crew of a patrol frigate. The ships' size and space for additional personnel also makes them ideal platforms for maritime naval scientific research. As such, the *DeWolf*-class will support Defence Research Development Canada, the Canadian Armed Forces and government efforts in scientific research and development, while also being able to respond to academic and industry requests.

It should be noted that – like most new classes of ships – the *Harry DeWolf*-class has experienced teething problems. In addition to malfunctions of its fire suppression system, fresh water generator and communication system, there have been problems with the diesel generators in *Harry DeWolf*. In August 2022, the ship set sail to participate in an exercise in the North but had to return to Halifax because of issues with its diesel generators. The malfunction is linked to the engine cooling system, and also affects HMCS *Margaret Brooke* and HMCS *Max Bernays*. As well HMCS *Max Bernays* has had some problems with its bow thruster, the system that allows the ship to manoeuvre. The ships will remain alongside in Halifax until the repairs can be made, with the expectation that the ships will return to duty some time in 2023.[1]

Despite these growing pains, in the future the AOPS will undertake a variety of global missions for Canada and extend the range of the RCN in the Arctic for the first time since the 1950s. Indeed, HMCS *Harry DeWolf*'s transit of the Northwest Passage in summer 2021 is the first RCN transit of the passage since HMCS *Labrador* in 1954.

[1] And, unfortunately, the government will have to pay for the repairs for the first two ships as the one-year warranty with Irving has expired. See Lee Berthiaume, "Ottawa Will Pay for Repairs to Navy's New Arctic Ships Due to Expired Warranty," CTV News, 6 March 2023.