Arctic and Offshore Patrol Vessels

The Arctic and Offshore Patrol Vessels (AOPV) – called 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 the operating season there, and provide the Navy with new capabilities in a range of global defence and security missions.

The plan for their construction was first announced in July 2007 and the AOPV were subsequently included in the National Shipbuilding Procurement Strategy (now the National Shipbuilding Strategy (NSS)) announced in 2010. The AOPV were assigned to the combatant class of vessels as part of the large ship projects, within the strategy, as announced in 2011. Irving Shipbuilding Inc. was selected for the largest portion of the new work assigned as consisting of six to eight AOPV and the Canadian Surface Combatants (CSC). The AOPV Project was sequenced to precede the CSC Project, as this was seen as a logical point to re-establish Irving as a world-class, modern shipyard with all of the investments in people, infrastructure and processes and procedures starting with the smaller and less complex vessels being constructed and delivered first. An AOPV contract was signed with Irving in Halifax in 2015, for construction of the first of class booked to begin in September 2015. The number of AOPV vessels was initially reduced to five vessels, with an option for a sixth, but then in November 2018 the government announced that the sixth ship would proceed. In December 2018, it was announced that two additional AOPV would be built for the Canadian Coast Guard with the same basic design and minor deviations from the RCN vessels.

The first ship of the class, the future HMCS *Harry DeWolf*, departed Irving's Halifax Shipyard in November 2019 and, using its diesel-electric engines, moved to the Bedford Basin to commence initial builder's sea trials. These trials encompassed anchor handling, testing the integrated bridge and navigation system, fin stabilizers, Multi-Role Rescue Boat launch and recovery, and trials of the communications systems. On November 23, 2019, the future HMCS *Harry DeWolf* left Halifax harbour for the first time to continue with builder's sea trials. After successful completion of the trials the ship was transferred to the RCN on July 31, 2020 and commenced naval sea trials. In the winter of 2021, the ship made its first voyage north for cold weather and ice trials – performing very well. In June 2021, HMCS *Harry DeWolf* was commissioned into service with the RCN.

HMCS *Harry DeWolf* began its first major operational deployment in August 2021. The ship circumnavigated North America, starting from Halifax, going through the Northwest Passage, then southward along the Pacific coast and through the Panama Canal, thence northward back to Halifax. HMCS *Harry DeWolf's* transit of the Northwest Passage in the summer of 2021 was the first RCN transit of the northwest passage since HMCS *Labrador* in 1954.

The second of the class, HMCS *Margaret Brooke*, was commissioned in October 2022 following a comparable series of builder's and naval sea trials and tests. Prior to commissioning, in September 2022, the HMCS *Margaret Brooke* was tasked to provide support to hurricane relief efforts, after Hurricane Fiona's devastating impact on the Atlantic Provinces. The vessel provided

damage assessments and welfare checks to the most impacted communities along the south coast of Newfoundland, where water access was the only means of accessing these villages and outports. On May 29, 2022, there was an official joint naming ceremony for *Margaret Brooke* and *Max Bernays*, the third ship of the class. The future HMCS *Max Bernays* was delivered to the RCN in September 2022 for final post-acceptance trials and is scheduled to be the first Pacific-based ship in the class, arriving in Esquimalt, BC in May 2024. The fourth AOPV, HMCS *William Hall*, was launched in November 2022, and was handed over to the RCN in August 2023.

The full class of AOPV will include the following:

- HMCS *Harry DeWolf* (AOPV 430)
- HMCS *Margaret Brooke* (AOPV 431)
- HMCS *Max Bernays* (AOPV 432)
- HMCS *William Hall* (AOPV 433)
- HMCS *Frédérick Rolette* (AOPV 434)
- HMCS *Robert Hampton Gray* (AOPV 435)

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

- 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 assistance operations); and
- sovereignty protection.

At 103 metres and 6,615 tonnes, the AOPV will be the largest ship in the RCN until the delivery of the Joint Support Ships (JSS). Despite their large size, they will carry a small crew of 45, with the capacity to support up to 40 additional embarked personnel. As noted, the ships are not icebreakers, but they are designed for Arctic operations. The AOPV will meet the International Association of Classification Societies' (IACS) PC 5+ ice requirements with a Polar Class 4 bow, allowing them to travel through one 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 CH-148 Cyclone maritime helicopter (though for Arctic operations it may typically embark smaller Griffon helicopters) and can operate a variety of unmanned aerial vehicles. The AOPV 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 to make the ship self-sufficient for loading and unloading equipment.

While armed, the AOPV are not intended to engage in direct 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 the threat assessment in the Arctic and expected patrol areas. Thus, rather than warfighting, these ships will focus on monitoring, policing, maritime presence, surveillance, and assisting civilian and commercial activities. These are the low-risk, high-probability security threats expected to emerge with the increased use and development of the Arctic.

The primary role for the AOPV will be operations in the Arctic. To exercise sovereignty in the North Canada needs to maintain presence and illustrate functional control and stewardship. This is accomplished by enhancing the ability to operate in the region, manifested in increased awareness, response and support capability. The AOPV will greatly improve the RCN's ability to monitor activity in the region and support other government departments, as their responsibilities expand due to the increased activities in the region as a result of the melting of Arctic ice. 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 AOPV will redeploy south during most of the winter months.

Outside the Arctic, the AOPV will be deployed on a wide range of patrol and surveillance duties, as well as humanitarian/disaster assistance relief missions in Canada and 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 AOPV will work in conjunction with the future JSS, to deliver supplies and assist responders ashore.

For missions such as fisheries patrols, surveillance, and interdiction of smuggling/narcotics operations, the AOPV can be more effective and less costly than employing combatant warships. The AOPV is less expensive to operate and has a much smaller crew than the Halifax-class frigates. 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 the activities of Defence Research and Development Canada, 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 *DeWolf*-Class has experienced teething problems. In addition to malfunctions of its fire suppression system, freshwater generator and communication system, there have been problems with the diesel generators in HMCS *Harry DeWolf*. Such challenges are to be expected when delivering a new class of warship. In August 2022, HMCS *Harry DeWolf* set sail to participate in an exercise in Canada's 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 affected HMCS *Margaret Brooke* and HMCS *Max Bernays*. Also, HMCS *Max Bernays* has had problems with its bow thruster, the system that allows the ship to manoeuvre laterally and is important when berthing and unberthing. The ships remained alongside in Halifax in 2023 until the repairs were made, and all will be returning to service in 2024. In late 2023 HMCS *Harry DeWolf* completed a successful Great Lakes deployment and delivered the Grey Cup to Hamilton prior to the 110th edition of the game. Regrettably, soon after the Grey Cup delivery, the ship's company encountered an outbreak of COVID-19, which forced the ship to quarantine and cancel some of the planned port visits before returning safely to Halifax. On January 12, 2024, HMCS *Margaret Brooke* departed for a six-week deployment on Operation

Caribbe. Led by the United States, this multi-national deployment marks Canada's contribution to the enhanced counter-narcotics operations focused on strengthening safety and security, in the Caribbean region.

The AOPV are intended to buttress Canada's sovereignty in the North. They will be an important tool in enforcing the laws and regulations in the Arctic respecting shipping, the environment, fishing activities, resource management and in providing a military presence. They can also fulfil other vital roles in support of Canadian government objectives beyond the Arctic. The RCN has seen both qualitative and quantitative improvements in each new AOPV ship coming into service. There are issues to resolve of course, but this is a natural part of the shipbuilding process.