Naval Association of Canada | Strategy Notes

An Arctic Operating Concept

Building for Specialized Operations in the North

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Overview

As the RCN adjusts to sustained Arctic operations and a growing Government of Canada focus on the region, it will have to decide on a force composition which either builds a niche Arctic capability into specific ships or extends a limited Arctic-capability across multiple platforms. Specifically, the Navy must decide on whether to design and equip future corvettes, submarines, and other craft with ice-strengthening and Arctic specialization, or delegate that task to Arctic and Offshore Patrol Vessels (AOPVs) and other Arctic-focused platforms and systems.

Background

The RCN is planning its future fleet structure amid heightened Arctic security concerns and the need to modernize aging platforms. The AOPV fleet has entering service with hulls and systems specifically optimized for Arctic constabulary operations. Simultaneously, discussions are ongoing regarding future corvette designs which Admiral Topshee has suggested should be Polar Class 6. Likewise, recent comments suggest that the RCN is examining upwards-facing sonar and other systems for the future SSK fleet.

The need for greater Arctic capability is an important part of Canadian Defence Policy and has been highlighted repeatedly by government as a critical consideration. Activity in the region is also increasing, with commercial shipping (tourist and resupply) expanding and Chinese government/quasi-government activity growing exponentially in the Western Arctic. American threats to Canadian sovereignty may also spill over into the Arctic as the long-dormant Northwest Passage dispute represents a possible future crisis point. As such, Canada will require presence and capacity to address all these growing friction points.

ANALYSIS

Threat Environment

Historically, Canadian efforts to project power into the Arctic have conflated political and military threats in an unhelpful manner. Questions of 'sovereignty' and general insecurity about state control in the area, have led governments to deploy, or seek to deploy, combat power on the false assumption that this translates directly into 'sovereignty.' This is not accurate for a variety of reasons. Rather, combat capability should be developed to meet real or likely threats and, in the Arctic, there has often been a mismatch between those threats and plans.

Kinetic operations are unlikely to take place in the Canadian Arctic and the adjacent seas. In war, high-intensity combat involving Russian or Chinese forces would most likely occur in the North Atlantic and North Pacific – not deep within the Arctic or in ice covered areas. Russian (or potentially Chinese) submarine operations are possible in the region, however, hunting these SSN is beyond Canadian capabilities. Submarine detection in ice-covered waters would be impossible from a moving vessel. There are also no targets of strategic importance in the region that require persistent defence (with Pituffik being the one exception).

Critically, an ice-strengthened surface combatant would be ineffective in the region against submarines. A corvette is also unnecessary for such tasks since ASW helicopters, integrated into seabed listening systems could more easily be launched from AOPV, CCG icebreakers, or airfields ashore.

Surface vessel incursions into the Canadian Arctic or surrounding seas are also unlikely. The Canadian Arctic offers constrained and ice-infested waters – all within easy range of Canadian and American fighters. ASuW would therefore be far easier to prosecute by air than from surface combatants.

Even Canada's planned SSK fleet may be overemphasizing under-ice capability. These vessels will not have the ability to safely operate for long periods under the ice. Nor will they have to. During wartime, enemy submarines under the ice would present no serious danger to Canada. There is little that such a vessel could do to damage Canada or its allies in the region – there is no shipping in the ice-covered Arctic and nothing of military value to strike. At most, the Canadian Arctic could be used as a transit route to open waters. As such, the Canadian SSKs should be developed for ice edge operations – operating in open waters with a limited under-ice capability to guard the entrances and exits of the Arctic, not the Arctic itself.

Overbuilding warships to include an ice capability is expensive and would require tradeoffs in capability. A PC6 corvette will require heavier hull plating and closely spaced framing (especially the ice belt), a stronger bow, ice-capable propellers, shafts, and rudders. All of that adds mass and drag. Speed and maneuverability will be compromised, ship weight may lead to lighter mission modules as well as reduced margins for future proofing. Arctic capability would also add significant costs – resources that could go into procuring additional hulls.

Arctic Requirements

While Arctic security threats are proliferating, the region is not the center of gravity for great power competition. Where that competition is taking place, it does so in the form of hybrid and grey zone tactics. These threats are better met with a constabulary capability, not warfighting platforms. Chinese research vessels conducting unauthorized surveys, fishing fleets operating in Canadian waters, potential cable-cutting operations, and grey-zone activities designed to establish presence without clear accountability are the most realistic scenarios Canada must address.

These threats are precisely what the AOPV fleet was designed to counter. With their 25mm guns, boarding capabilities, extended endurance, and ice-strengthened hulls, AOPVs provide appropriate capability for enforcing Canadian laws, deterring malign activity, and providing persistent presence. The vessels can operate during the navigation season in Arctic waters and conduct constabulary missions in southern waters during winter, maximizing utilization. During winter, CCG icebreakers will be sufficient to meet any foreign icebreaker presences.

AOPV and icebreakers will also be adequate for 'political' missions. This could involve shadowing Chinese or American trespassers, or boarding quasi-state actors embarked on hybrid missions. These missions would require large vessels with minimal armament, not the heavy weapons of a surface combatant.

Where additional capability is required to address evolving hybrid threats, the solution is an upgrade to the AOPV to "constabulary+" platforms. This entails containerized weapons systems, point defence, and enhanced sensors. Such modular upgrades provide the flexibility needed to respond to grey-zone challenges while maintaining the AOPV's core constabulary mission and avoiding the massive costs of universal Arctic capability.

Recommendation

Canada faces existential threats from peer adversaries. The RCN must field surface combatants and submarines capable of operating effectively in high-intensity conflict alongside allies. Degrading the performance of future corvettes and surface ships to provide an unnecessary Arctic capability represents poor strategic resource allocation. Submarines will operate at the ice edge but caution should be exercised not to over-emphasize (and over-spend for) a true under-ice role that has more political than military value.

The AOPV fleet provides appropriate, carefully tailored capability for the actual and likely future Arctic threat environment. Along with CCG assets, these vessels represent sufficient capacity for sovereignty patrols, domain awareness, hybrid threat response, and constabulary enforcement – all without compromising the RCN's ability to field competitive warfighting platforms for high-intensity scenarios in primary theatres.

Canadian naval strategy should clearly divide Arctic and non-Arctic roles and rely on specialized craft for the Arctic. If a broader Arctic capability is deemed necessary, strategy must make it clear what threat this is being developed to meet and why that threat cannot be more appropriately met by AOPV or RCAF assets.