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## **POLAR BEARS CAN NOT FIX SHIPS - CANADA'S IMPERATIVE NEED TO BROADEN ITS OPTIONS FOR AVAILABLE NAVAL ARCTIC INFRASTRUCTURE**

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**JCSP 43**

***Exercise Solo Flight***

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**INTRODUCTION**

The Canadian Surface Navy is about to start calling the Arctic waters home. The Arctic Offshore Patrol Ship (AOPS) shall join the Canadian Coast Guard on regular patrols in these waters as a demonstration of national sovereignty, to broaden the reach of search and rescue (SAR), and to monitor transit and environmental concerns. To be effective, Canada's arctic posture requires suitable ships with matching infrastructure to allow the greatest degree of operational reach and sustainment. So far, the government and Canadian Armed Forces (CAF) have only concentrated on one part of the equation – the ships. But ships need bases and forward operating points to stay on station. As the new ships are built, the government and the higher echelons of the military need to give equal consideration to effective and adequate support because infrastructure takes time to build. It will be argued that the RCN cannot properly support the AOPS with its current infrastructure and will need the support of its Arctic neighbours to safely fill the gaps. The first part of this paper will examine the depths of this limitation within Canada. The second part will subsequently highlight some options from within the other Arctic nations that the RCN can leverage.

**PART 1 – CANADA**

The problem, as seen from Canada's shores is a combination of the limitations of the RCN platforms and bases, the current limited plans for military and commercial infrastructure, and the delay in implementing any further plans for additional infrastructure.

## **THE ARCTIC OFFSHORE PATROL SHIP AND AJISS**

The AOPS will be managed in class under the AOPS/JSS (Joint Support Ship) In-Service Support (ISS) Contract, better known as the AJISS Contract. Managing the AOPS under such an ISS Contract allows the RCN to reduce the number of required technicians on board as only a cursory amount of first line support would be conducted by the crew technicians. Most first and second line support would be conducted by contractors, who would be sub-contracted by the AJISS Contract managers on both east and west coasts<sup>1</sup>. Maintaining them in-class means a strict adherence to the class society rules for inspections and maintenance with regards to when they are needed, why they are needed, and who may conduct the work. It will be the AJISS Contractor's responsibility to track and coordinate repair and maintenance work for the AOPS both in Canadian home ports and while away on deployment. The AOPS will be able to store most parts and material required for planned maintenance, but corrective maintenance is more difficult to anticipate. The AOPS will need to carry some anticipated parts to enable repair work, but some parts are too large or too infrequently used, to warrant storing them on board. It will be necessary to have a plan to transport these items to the AOPS while they are in Arctic waters. One troubling assumption is that the Royal Canadian Air Force can be readily made available to facilitate transportation of parts for the RCN and private contractors – an erroneous belief that puts the risk on the military and the RCN at the mercy of the priorities and obligations of the Air Force. The more likely plan will be that the AJISS Contractors will need to learn to establish

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<sup>1</sup> Department of National Defence, *Guide for In-Service Support Contracts in HMC Dockyards*, (Ottawa: DND Canada, 25 May 2016) 3.

rapid contractor airlift or sea transport to bring the parts and contractors to the ship as required.

The AOPS are not ice breakers, but they are ice strengthened ships. This indicates that they will be able to break first year ice for their own transit, but are not qualified to break an ice path for other vessels such as the Canadian supply ships. This means that depending on the upcoming Joint Support Ships or the interim AOR to transport parts to the AOPS location, is not a reliable option in Arctic waters.

Opinions are mixed regarding the propensity of future commercial shipping through the Canadian northern passage. However, the question of Canadian sovereignty being established will be addressed by Canada's ability to patrol and provide environmental disaster relief as well as SAR efforts in this area. And since, disasters and SAR emergencies do not provide forewarning, if a need arises, the AOPS could be tasked to traverse into the Arctic waters outside the customary 4 months of predictable safe passage. Even within the 4 months of safe passage, a ship deployed at the Arctic Circle is approximately three times closer to Greenland than Halifax and two times closer than Newfoundland. The AJISS Contractor needs forward based locations in the Arctic to use as ports or airfields that the AOPS' helicopter, small boats, or the ship itself can quickly reach to take on necessary contractors and parts.

## **CANADIAN INFRASTRUCTURE**

Joint Task Force North has been working to establish Northern Operation Hubs (NOH) throughout the Yukon, the North West Territories, and Nunavut<sup>2</sup>. There are four primary ones and four alternate ones with the first NOH in Iqaluit opened in September

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<sup>2</sup> S.D. MacEwan, *Canadian Forces Directive – Establishment of Northern Operations HUB Iqaluit*, (Canadian Forces Base Iqaluit: file 3350-02 (J5 Sp4), 7 August 2014).

2014 and the last planned to open in Yellowknife and Resolute Bay in Fiscal year 2018/2019<sup>3</sup>. The purpose of the NOHs was to “develop deployable high readiness operational support capabilities to support Horizon 1 high readiness operational tasks for up to 30 days”. By having access to 8 NOHs spaced around the northern area, the Canadian Joint Operations Command (CJOC) can conduct operations in the north with up to 60 personnel, and locate themselves in an area appropriate to the situation<sup>4</sup>. In relation to the Navy, the NOHs are to provide material management, local procurement and contracting services, aircraft servicing support at the local air fields, and strategic communications. The NOHs are very army and air force focused and lack the ability to assist with the specialized requirements of the RCN. The limits found in the NOH locations include a lack of maintenance experience with which to establish ship repair contracts, the shelf life of equipment stored in these areas, and the need to leverage a fuelling contract as long term storage of fuel would be hazardous when unmanned. In fact, it is unlikely that ship-grade fuel could be contracted and provided so far north via the HUBs normal servicing practices. These limits mean that the Navy should only look to use the NOHs for their air fields and potentially as locations where CJOC staff could assist with coordinating very basic contractor support or parts receipt.

The NOHs receive their supplies sometimes via air lift (extremely expensive<sup>5</sup> if not planned well in advance), but most regularly by way of contracting transportation services via the west and east routes. The western route is via land to Hay River, along the

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<sup>3</sup> Canadian Joint Operations Command, *Northern Operations Hubs*, (13 November 2014).

<sup>4</sup> A. Ghanmi, DRDC CORA TM 2001-122, *Optimal RSOM-hub Locations for Northern Operations – A MAJAID Scenario Analysis*, (Ottawa: Defence R&D Canada, August 2011), 18-21.

<sup>5</sup> Parliamentary Information and Research Service Publication PRB 08-08E, “The Arctic: Transportation, infrastructure and communications,” last modified 24 October 2008, <http://www.lop.parl.gc.ca/content/lop/researchpublications/prb0808-e.htm>.

Mackenzie River via barges, and up along the pipeline routes to the village of Tuktoyaktuk<sup>6</sup>. The eastern route contracting was previously managed through the Canadian Coast Guard, but is now managed by the government of Nunavut<sup>7</sup> and Joint Task Force North (JTF(N)). Resupply services are facilitated out of Montreal by general cargo ships and tankers. Supply efforts are not reactive but take many months to plan – making the RCN needs to acquire last minute parts and/or contractors, infeasible. That leaves airlift. However, the Iqaluit airport in Nunavut is not capable of being reached by boat year-round so the RCN would be limited to transporting smaller items via the ship helicopters when weather permits.

The fuel available at NOHs is not appropriate for ship use. Without a supply ship capable of traversing Arctic waters, construction of the new naval facility at Nanisivik<sup>8</sup> is essential for routine and extended Arctic deployments. At the entrance of the Northwest Passage, Nanisivik previously serviced a zinc mine. Repurposing the site as a fuelling station has not been easy. Considerable decontamination of the site and repair of the old wharf facility has entailed delays from the original plans. Construction is to commence in summer 2017 with a new target completion date of mid-2018, roughly coinciding with the first AOPS delivery. However, the construction season in the north is extremely limited and more delays such as the jetty sinking in clay or further discovery of decontamination needs

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<sup>6</sup> Tom Nelthorpe, *DEAL ANALYSIS: Arctic Infrastructure*, London: Euromoney Institutional Investor PLC, 2013, [http://cfc.summon.serialssolutions.com/2.0.0/link/0/eLvHCXMwnV1NTwMhEJ3YetBT\\_YxaTfbgdesW6AJezEbb2KT1YJuY9dIAA8aDW63x\\_wv7YRObePAMBxjIYwZ47wFQ0kviX5hgjFYyIdo5YhLGqFUDF6S4OCWYOMFKNhmbPvPHqchrUn4KahWuwHJErlxacKIVXfw6qvFfwBfPPEQcbqfDcWntqtGCbO0YvBz4U7785GWNqiSca81CfdAOCAqqMOmlacY5zpvLbDzl6U63x34Pcg06jIh111T7Zhy1bHMBOW0rPITLu2E2ibKHbJLPxrNr3zOQp6Jx4Vaq0pj9WtkjmIG89v7uHZQiF8EJ7FSkjLhgkIP9YmZFEZLgr5G8kmAMKgpTRShFFFznydpxpl1ktmEaddnDpEeQ7tYFvYEImTOH\\_ZcJFSmzKBVyyqVolEDFIR5wegrdJgCLrVjsZ782ZtXdglwWSiZPidQ9tPyl5Ay0f-G0d4qXE](http://cfc.summon.serialssolutions.com/2.0.0/link/0/eLvHCXMwnV1NTwMhEJ3YetBT_YxaTfbgdesW6AJezEbb2KT1YJuY9dIAA8aDW63x_wv7YRObePAMBxjIYwZ47wFQ0kviX5hgjFYyIdo5YhLGqFUDF6S4OCWYOMFKNhmbPvPHqchrUn4KahWuwHJErlxacKIVXfw6qvFfwBfPPEQcbqfDcWntqtGCbO0YvBz4U7785GWNqiSca81CfdAOCAqqMOmlacY5zpvLbDzl6U63x34Pcg06jIh111T7Zhy1bHMBOW0rPITLu2E2ibKHbJLPxrNr3zOQp6Jx4Vaq0pj9WtkjmIG89v7uHZQiF8EJ7FSkjLhgkIP9YmZFEZLgr5G8kmAMKgpTRShFFFznydpxpl1ktmEaddnDpEeQ7tYFvYEImTOH_ZcJFSmzKBVyyqVolEDFIR5wegrdJgCLrVjsZ782ZtXdglwWSiZPidQ9tPyl5Ay0f-G0d4qXE).

<sup>7</sup> Jean-François Pelletier and Emmanuel Guy, "Supply and Demand for the Eastern Canadian Arctic Sealift," *Maritime Policy & Management* 42, no. 7 (2015), 670.

<sup>8</sup> The Toronto Sun, "Canadian navy delays opening of crucial Arctic facility to 2018," last modified 2 March 2015, <http://www.torontosun.com/2015/03/02/canadian-navy-delays-opening-of-crucial-arctic-facility-to-2018>.

could easily put off availability by a year or more. Delays will mean that any prolonged AOPS Arctic deployments will need either to be interrupted by the AOPS leaving the Arctic waters to meet up with a supply ship, or to be provided an option outside of Canada's current infrastructure capacity.

Transport Canada's Arctic-wide governance model for port development is proposing three more projects to improve infrastructure, facilitate development, and provide supply relief to the Canadian people in the territories. The first project is a winter road connecting the rail line in Churchill, Manitoba to Rankin Inlet, Nunavut. The second project is the creation of the Pond Inlet Small Craft Harbour on Baffin Island. Finally, there is the proposed Gray's Bay Road & Port in northern Nunavut. The first two projects are at the business case stage while the last one is only approved in principle. These government initiatives may eventually provide the AOPS with other options in acquiring supportability assistance, but given the current stages of the projects, the AOPS cannot rely on their implementation in the near term.

## **PART 2 – OUR ARCTIC NEIGHBOURS**

In October 2007, the Arctic Ocean coastal states met in Norway and again in May 2008 in Ilulissat. They broached the idea of creating an Arctic Treaty, but instead opted to work within existing agreements and treaties. The Arctic Council also facilitated the Arctic Marine Shipping Assessment Report in 2009. This co-authored report examined issues related to protection of the Arctic Marine environment, using Regional Environmental case studies to examine capabilities, limitations, and risks posed by various likely scenarios occurring. Examining these scenarios and their impacts on the Arctic states, discloses gaps in infrastructure.



The lack of readily available assets or sufficient ports and air fields in these inhospitable and vulnerable areas were highlighted. Since 2009, many countries have paid heed to the seriousness of being underprepared to provide military assistance to environmental and SAR disasters, and have attempted to bolster their territory as well as embark on various joint exercises to learn how to best leverage the capabilities of coastal neighbours. The report encouraged “governance that generates common security through the provision of mutual assurance from joint action to ensure the well-being of people and their surroundings”<sup>9</sup>. It recognized that “the general shortage of infrastructure and material resources in the Arctic, in combination with high costs, serves to make joint solutions more attractive than national ones”<sup>10</sup>. The AOPS need to have Arctic ports and airfields for their ship helicopters, small boats, and the ships themselves, to access to acquire fuel, parts, and contractor support. Canada needs to understand the capabilities of its Arctic neighbours as a means to providing the AOPS with that support. Part 2 examines the capabilities of the other Arctic Five, the United States, Greenland, Norway and Russia, making recommendations to the feasibility and practicality of this support.

## **THE UNITED STATES OF AMERICA**

While Canadians have a lengthy history of leveraging from established American bases, Alaska has very little Arctic infrastructure for military or resupply purposes. There are “no deepwater ports along the North Slope of Alaska”<sup>11</sup>. The “only American-owned

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<sup>9</sup> James Kraska, *Arctic Security in an Age of Climate Change*, (Cambridge; New York: Cambridge University Press, 2011), 7.

<sup>10</sup> *Ibid*, 153.

<sup>11</sup> *Arctic Marine Shipping Assessment 2009 Report* (Arctic Council: April 2009), 178.

deep water port near the Arctic basin is Dutch Harbour in the Aleutian Islands”<sup>12</sup>, a Coast Guard station providing quick access on the Southern portion of Alaska. As the US Navy does not own ice-strengthened patrol ships, the only US Arctic capable vessels are the nuclear submarines which are based in southern states, and the coast guard vessels based in Kodiak. Kodiak, Alaska is, however, an excellent facility for acquiring assistance. Ships can dock near the harbour and supplies can be jet serviced or ferried from Homer and Whittier on the mainland. They can then be shipped or flown via ship helicopters. The one drawback is that these facilities are located on the southern side of Alaska and do not allow for quick and easy access for vessels sailing in the area of the Beaufort Sea. The northern port facility near Kotzebue owned by the DeLong Red Dog mine company offers a more appropriate location and can be reached by one of the few rail and road services in the area as well as an airstrip. It might be possible that cooperation could be sought through this company to use their private airfield as a means of obtaining parts and contractors into the area.

## **GREENLAND**

The American government’s best access into the Arctic is actually via its base in Thule, Greenland. Greenland itself lacks ports in the northern part of the country though hosts several deepwater ports on the west coast. The north-eastern village of Etah was previously settled, but is now abandoned due to an inhospitable climate. The village of Nord is a military and scientific station located in the north-east, but inaccessible due to the extreme icing in the vicinity. This weather station receives supply flights via the only other northern facility, Thule. Originally a US air force base, it is now the location of the NORAD Air Force Space Command. Its facilities include air strips used by the air force. The port

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<sup>12</sup> *Ibid*, 77.

facility is only ice free for a short time during the summer<sup>13</sup>, but the waters are more accessible on the Western side and an AOPS would likely be able to anchor near enough to Thule or Station Nord to allow the ship's helicopter to reach the bases for needed supplies and parts. Arctic cooperation between Canada and Greenland started in 1920 with the Svalbard treaty and then again in 1970 with the Polar Bear Treaty. The links between the Nunavut Inuit and the Greenlanders regarding their shared interests in environmental concerns as well as the military ties established during joint SAR exercises could be leveraged to establish more regular cooperation regarding supply efforts. The only aspect that could prevent them from allowing this cooperation would be if they felt it might appear to be a "militarization of the Arctic"<sup>14</sup> and a threat to Russia which the Greenland government is eager to avoid.

## **NORWAY**

Given that Norway is significantly south of the Arctic Circle, at first look, it appears to be an irrelevant country to propose as an option for in-service support assistance. However, Norway is an extremely active international coordinator of SAR joint exercises. If something happened to a Canadian ship on the eastern side of the Arctic Ocean, it is very likely that Norway would respond to assist. Infrastructure on its Arctic ports has enjoyed "significant improvement compared to other Arctic states"<sup>15</sup>, specifically at the main naval base outside Bergen, Haakonsværn, Orlogsstasjon, and in Ramsund, Northern Norway. If it were not possible for a Canadian vessel to transit down to the Norwegian ports to receive

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<sup>13</sup> Kari Möttölä and Ulkopoliittinen Instituutti (Finland), *The Arctic Challenge: Nordic and Canadian Approaches to Security and Cooperation in an Emerging International Region* (Boulder: Westview Press, 1988), 39-41.

<sup>14</sup> *Ibid*, 159.

<sup>15</sup> James Kraska, *Arctic Security in an Age of Climate Change*, (Cambridge; New York: Cambridge University Press, 2011), 60.

aid, facilities and ships are available to permit towing. As well, parts and contractors could be flown into Norway and then provided passage to the AOPS by way of Norwegian commercial or military assets.

## **RUSSIA**

In 2010, Norway conducted a joint naval exercise with Russia. They also have been joined biannually by the other Nordic countries in effort to conduct SAR exercises. Given the positive manner which Russia has approached Arctic disputes, it would not be unforeseeable that a joint SAR exercise between Canada and Russia could be conducted in the near future. However, it would be difficult to see Russia opening its ports and air fields to the Canadian Armed Forces. Russia maintains several deepwater ports open to foreign vessels, most extensively along the western Arctic coast, though there are a few ports inland, along the middle of the coastline, such as Igarka. The Western port of Murmansk has made headlines “being the largest deepwater port north of the Arctic Circle that is ice-free throughout the year”<sup>16</sup>. Its progress in cultivating oil and ore production sites has been made possible with government funding for rail, road, airfield, and port infrastructure. The ideal Arctic environment here has also played a factor in the country’s success. The Barents sea experiences only modest ice movement and the ice that ships must pass through “is nearly always less than one year old and relatively thin”<sup>17</sup>. While Russia has always been a proponent for international SAR response, it has never been inclined to seek any form of cooperative stewardship in the Arctic. It could be very disinclined to embark on a practice of shared Arctic infrastructure if it meant continued military presence of a Western Nation.

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<sup>16</sup> *Arctic Marine Shipping Assessment 2009 Report* (Arctic Council: April 2009), 178.

<sup>17</sup> Douglas Brubaker, *The Russian Arctic Straits*, Vol. 14 (Boston; Leiden/Nijhoff, 2005), 19.

However, it would be a good exercise in prudence to map out how Canada might provide parts or contractors to an AOPS if the nearest ports were Russian and vice versa.

The Arctic Marine Shipping Assessment in 2009, reported on various regional environmental case studies. Included was one on the Barents and Kara seas in Western Russia. The greatest risk in the area was an oil spill and that risk grows as commercial development continues to progress. It is foreseeable that any Canadian vessel transiting near the site might be tasked to assist with such a disaster and that vessel is most likely to be an AOPS. As long as a Canadian AOPS have the possibility of being deployed internationally, work needs to be done to pre-plan possible in-service support options. It is imperative that Canada realises that Russia remains a powerful option. The feasibility of using one or more Russian port or airfield should be more closely examined.

## **CONCLUSION**

Whether ready or not, the RCN will deploy AOPS to the Arctic Ocean as soon as possible. It is essential that the Canadian government demonstrate to the Canadian public that the investment in a specialized Arctic Vessel was warranted given the new capacity it will provide the RCN to embark on SAR, environmental disaster relief, and sovereignty patrols in the north. Naval projection challenges of operating in the Arctic are almost the same as operating halfway around the world, if not more so. Prolonged sailing in the Arctic waters, outside the range of other Canadian ships, distanced from readily available port facilities – this is a unique and daunting endeavour to the unprepared. In any other area of the world, ensuring the ship is able to receive the support it needs in a timely manner is only limited by the ability to speak the language or exchange the currency. The maintenance strategy of the AJISS and its reliance on flying contractors to the ship as required, is likely

to prove more difficult to manage than the RCN is prepared to be able to address within Canadian supportability options. The assurances of a fuelling station in Nunavut arriving in a timely manner cannot be assured. Any further development projects should not be relied upon in any future RCN maintenance plan. What should instead be examined are those assets currently available to the other Arctic Nations and establishing cooperation and sharing agreements with them as a stop gap until Canada develops its own facilities and capabilities.

The American facilities in Greenland provide an excellent option for providing support to Canadian Naval operations. However, there are other possibilities which are equally attractive. Norway has enjoyed several improvements to its facilities. American ports in Alaska hold promise with commercial assets possibly better situated than military ones. Finally, there is excellent infrastructure well established in Russia. The benefits profited by sharing the responsibility of environmental and SAR responsiveness should make leveraging infrastructure amenable to the other Arctic Five. Only by allowing the establishment of Canadian contractor cooperation in other Arctic nation's ports and air fields, will Canada be able to provide AOPS with the year-round support it requires. There would likely be a fee attached to using their infrastructure, however, this would be necessary if the government wishes to safely optimize Canadian deployments in this area. Until Canada is prepared to provide adequate Canadian facilities, it must rely on creative solutions and the affordable options available with its Arctic neighbours.

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