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# THE BEAVER HOWLING INTO THE WIND: CANADA AND THE CANADIAN ARMED FORCES APPROACH TO THE ARCTIC

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## INTRODUCTION

Throughout most of its history, Canada was a haven of security. Protected on the East and West Coasts by large oceans and with a stable and usually friendly ally to the south, Canadians prospered without worrying too much about foreign threats. And in the north, the situation was even better: with a landscape permanently covered in snow and ice that made access near impossible, the Arctic was seen as an impregnable wall requiring no additional protection.

This was not because Canadians didn't care about the Arctic; quite the contrary. As a nation, Canada inherited the romantic attachment to the North. For decades, imagery of pristine white snow, polar bears and the Inuit fed the Canadian psyche and created the northern myth:

> L'Arctique fait, en effet, partie de … [l'] imaginaire collectif [canadien] et de l'image qu'ils veulent projeter à l'étranger — dans ce cas avec raison, puisque bon nombre de citoyens étrangers perçoivent le Canada plutôt comme la terre des ours polaires que comme un membre du G-8. À certains égards, le 'Grand Nord' est aux Canadiens ce que l'Ouest a longtemps représenté pour les Américains: une terre sauvage et magnifique qui doit être conquise dans un élan propre à forger un destin collectif à la nation.[1]

And not that Canadians never worried about Arctic sovereignty. In the past, there were occasions when real (or perceived) threats endangered the nation's northern boundary:

> One of the most enduring traits of Canadian foreign and defence policy has been the appearance, seemingly like clockwork, of an Arctic sovereignty and security crisis every ten-to-fifteen years. During the Second World War, the massive influx of American military personnel associated with the Alaska Highway raised troubling questions about Canadian sovereignty in the far north. So, too, did the

[1] Frederic Laserre and Stephane Roussel, "Souveraineté, sécurité et identité: le Canada face aux défis posés par le changement climatique dans l'Arctique," *International Journal of Canadian Studies/ Revue international d'étude canadienne* no.36, (2007), 275-276.

> commissioning of the US funded and US-operated radar stations of the Distant Early Warning Line in the mid-to-late 1950s. In 1969 and 1970, Canadian and American differences over the international legal status of the Northwest Passage were thrown into sharp relief by the Manhattan affair. Debates of an essentially similar nature – exacerbated by a concurrent controversy over perceived links between North American Air Defence Modernization (NAADM) and the Strategic Defense Initiative – followed the transit of the Northwest Passage by the US Coast Guard icebreaker *Polar Sea* in 1985.[2]

One can compare Canada and its nation building project to a beaver building its hut and dam on the south side of a lake. When a perceived threat would appear to the north side of the lake, the beaver would climb up its hut and howl its indignation into the wind until the threat was gone. After which, it would continue building its dam as if nothing ever happened. This represented Canada's historical answer to the Arctic: small periods of outrage followed by significant periods of indifference.

But new factors such as climate change and the increasing demands for natural resources are affecting the world, and more specifically the Arctic. The rising temperature and the resultant melt of sea ice, as well as increased pollution from the south are having significant negative impacts. Yet, economic prosperity for the region may be created by easier access to natural resources.[3] In addition, the potential opening of the NWP[4] as a sea-lane for commercial shipping and for eco-tourism will add additional pressure to the region:

> [The] Canadian Arctic … is faced with some of the most intriguing and complex challenges in its history. Never before has the very nature of the Canadian Arctic region been altered by such a widespread set of factors. Perhaps the greatest current challenge for Canada is the worldwide realization that the Arctic is melting so that it is more accessible than ever before. Consequently, Canada must prepare for the outside world's entry into the Arctic. With international challenges to Canadian

[2] Martin Shadwick, "Northern Exposure," *Canadian Military Journal*, volume 3 no. 2 (Summer 2002): 65.

[3] The main natural resources normally considered when discussing the Arctic include but are not limited to oil, gas, minerals, and fisheries.

[4] NWP stands for the Northwest Passage. The abbreviation NWP will be used for the remainder of this essay.

> control of the region now emerging, Canada can no longer afford to ignore the Arctic.[5]

But what are these *international challenges* and what are the consequences to the sovereignty and security of Canada? In analysing the relationship Canada has with its Arctic neighbours and the international community, it is clear that many countries do not recognize Canada's entire sovereignty assertion. With actors such as the USA[6], Denmark and the EU[7], to name only a few, disputing some of Canada's Arctic claims, the country is potentially facing serious challenges in the future. As one of the key enforcers of sovereignty and security, the CAF[8] needs to have the tools to complete its mandate of defence and support to OGDA[9]. It is this paper's position that significant efforts have been made by the last government to prepare the CAF for its mission in the Arctic. However, future governments will need to maintain momentum and add some capabilities to prove to the rest of the world that Canada is serious when it comes to its Arctic and its protection.

To that end, this paper will explore the nature of the sovereignty challenges faced by Canada in the Arctic. First, the meaning of sovereignty and security in the Arctic context will be discussed. The second part of this essay will explore potential Arctic scenarios and evaluate their impact on Canada. Next, the specific sovereignty issues concerning the NWP, Hans Island and the Beaufort Sea will be discussed, followed by the examination of some key defence initiatives pursued to solidify the current Arctic security posture. Finally, this essay will identify some

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[5] Robert Huebert, "Canadian Arctic Sovereignty and Security in a Transforming Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 13.

[6] USA stands for the United States of America. The abbreviation USA will be used for the remainder of this essay.

[7] EU stands for European Union. The abbreviation EU will be used for the remainder of this essay.

[8] CAF stands for Canadian Armed Forces. The abbreviation CAF will be used for the remainder of this essay.

[9] OGDA stands for Other Government Departments and Agencies. The abbreviation OGDA will be used for the remainder of this essay.

missing capability elements when considering the future Arctic environment and make suggestions on how the CAF should adjust its approach.

## DEFINING THE PROBLEM

One of the first steps required in policy development is the definition of the problem. As Gregory Inwood explained, "[an] important part of understanding public policy lies in understanding how problems are defined in the first place".[10] In the case of the Arctic, with local communities, Arctic neighbouring nations[11], non-Arctic nations[12], international organizations[13] and corporations all exerting pressure with conflicting priorities regarding jurisdiction, right of access, development needs and environmental protection, the problem facing the Canadian government is meeting the definition of a *wicked problem.*[14] Any initiative implemented by the federal government will likely create situations where individuals, corporations and communities either gain or lose significantly. Even when focussing on CAF activities alone, any actions or inactions taken will have tremendous impact in the Canadian Arctic.

But before the government can determine the appropriate level of involvement for the CAF, there is a need to understand what is meant by sovereignty. Sovereignty is the result of a

[10] Gregory Inwood, *Understanding Canadian Public Administration: An Introduction to Theory and Practice*, (Toronto: Pearson Prentice Hall: 2012), 223.

[11] Arctic neighbouring nations in the case of this essay will be define as any nation having that was part of the original eights countries members of the Arctic council. This group includes Russia, Denmark (Greenland), Finland, Canada, the United States, Iceland, Sweden and Norway. Other term to use this group will be the Arctic eight.

[12] Non-Arctic nations mean countries that are not define as an Arctic nation but who have demonstrated interest in the Arctic. This groups include, but are not limited to, Japan, China, Singapore, India, United Kingdom and Germany.

[13] International organizations are defined as a entities that are not a nation but have demonstrated interest in the Arctic. This definition include groups of nations such as the EU, NATO, the United Nations and the Arctic Council. Also included are Non-Government Organizations such as Greenpeace.

[14] Horst W.J. Rittel and Melvin M. Webber, "Dilemmas in the General Theory of Planning," *Policy Science* 4 (1973): 161-167.

state being recognized as an international legal entity.[15] But for this recognition, three elements must be present: a defined territory, people within the territory, and an existing government.[16] This simple definition should be an easy concept to establish. However, the many competing claims in the Arctic, makes it very complex:

> Each of these variables may appear to be straightforward, but the reality is that all three are difficult to achieve within the Arctic…The most common problem with determining the existence of sovereignty tends to be associated with the existence of an accepted governance system. The sovereignty of a state is said to be threatened when parties compete to govern. In such case, until one side is defeated, either militarily or politically, or negotiated settlement is reach whereby the competing bodies agree to share power as a single entity, there is no one sovereign body.[17]

This is true of areas such as the NWP, the Beaufort Sea and Hans Island, where Canada's claim for sovereignty is contested. These areas and their associated challenges will be specifically discussed further below. The other aspect implied here is that sovereignty may involve one state defeating another through military force. So, what is the likelihood of military threat against Canada in the Arctic?

The short answer is when it comes to military threats from other nations, the Arctic remains a very stable region where such an occurrence is improbable. Several reasons lead to this conclusion. First, when considering the Arctic Five[18], four of the five nations are NATO[19]members. It is likely that differences between NATO allies would be solved through negotiation. Russia, being the only non-NATO member of the Arctic five, could represent a

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[15] Andrea Charron, "The Northwest Passage in Context," *Canadian Military Journal,* volume 6 no. 4 (Winter 2005-2006): 41.

[16] Alan James, *Sovereign Statehood* (London: Allen and Unwin: 1986), 13

[17] Robert Huebert, "Canadian Arctic Sovereignty and Security in a Transforming Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 14.

[18] The Arctic Five designate the group of nations having a border in the Arctic. They include Denmark (representing the interest of Greenland), Norway, Russia, The United States and Canada.

[19] NATO stands for the North Atlantic Treaty Organization. The abbreviation NATO will be used for the remainder of this essay.

problem. But in the recent history, the Russian government, despite moments of high theatricals, demonstrated a strong willingness to cooperate as demonstrated when they reached an accord with Norway concerning the Barents Sea in 2010.[20]

Second, there is a significant international framework to facilitate cooperation. With the Arctic Council, the ICJ[21], the UNCLOS[22] treaty to name but a few, many options are available for peaceful dispute resolution. Also, as demonstrated by the 2008 Ilulissat Declaration, the Arctic Five fully support it. In this declaration, they agreed to "remain committed to this legal framework and to the orderly settlement of any possible overlapping claims"[23]. Finally, despite the rise in temperature, the Arctic is, and will remain, a challenging environment. Extreme storms, cold temperature and long period of darkness make the region an area where military forces will experience difficulties operating. As Former Chief of Defence Staff, General Natynczyk remarked: "If someone were to invade the Canadian Arctic, my first task would be to rescue them."[24] Based on these reasons, it is unlikely Canada will face a state-on-state threat in the North. However, does it mean there is no security threat at all?

The answer is no. The threat for the Arctic falls within the asymmetric category:

> Despite the Arctic's Cold War History, the most significant security threats today are found along the southern fringes, in the Northwest Passage, the Northeast Sea Route, and the Barents, Greenland, Beaufort, Chukchi, and Bearing seas. They involve non-state actors, such as drug smugglers, gunrunners, illegal immigrants, and even

[20] Walter Gibbs, "Russia and Norway Reach Accord on Barents Sea," The New York Times, 27 April 2010, last updated 09 May 2016, http://www.nytimes.com/2010/04/28/world/europe/28norway.html?_r=0.

[21] The ICJ stands for International Court of Justice.

[22] UNCLOS stands for United Nations Convention on the Law of the Sea. The abbreviation UNCLOS will be used for the remainder of this essay.

[23] Ilulissat Declaration, "Arctic Ocean Conference Ilulissat, Greenland," last accessed 06 Nov 2015, http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf.

[24] Ryan Dean, P. Whitney Lackenbauer and Adam Lajeunesse, *Canadian Arctic Defence Policy: A Sythesis of Key Documents, 1970-2013*, (Calgary: Centre for Military and Strategic Studies, 2014), 76, last access 02 May 2016, https://cmss.ucalgary.ca/sites/cmss.ucalgary.ca/files/dcassv1.pdf.

> terrorists, who might take advantage of ice-free Arctic waters to move contraband or people between Pacific and Atlantic oceans or into North America or Europe.[25]

Based on this expected threat, the role of the CAF will be limited to supporting OGDA. When extending the meaning of security to include the concept of integrated security where, "military requirements are combined with an awareness of the need to act for ecological, economic, cultural, and social security"[26] this supporting role becomes even more prominent. Having discussed the meaning of sovereignty and defence requirements, the next section will examine the potential future scenarios and their implication.

## PREDICTING THE FUTURE

In order to better prepare the CAF for its role in the Arctic, government and Senior Leadership within DND must determine what potential scenarios are likely to occur. For this paper, the future scenarios considered will be the one developed by the Global Business Network titled *Future Arctic Marine Navigation Matrix* (see figure 1).

[25] Michael Byers, "Cold Peace. Arctic Cooperation and Canadian Foreign Policy," in *The Arctic Contested*, ed. Keith Battarbee and John Erik Fossum (Brussel: P.I.E. Peter Lang, 2014), 110.

[26] Franklyn Griffiths, "Epilogue: Civility in the Arctic" in *Arctic Alternatives: Civility or Militarism in the Circumpolar North,* (Toronto: Best Gagné Book Manufacturers, 1992), 279.

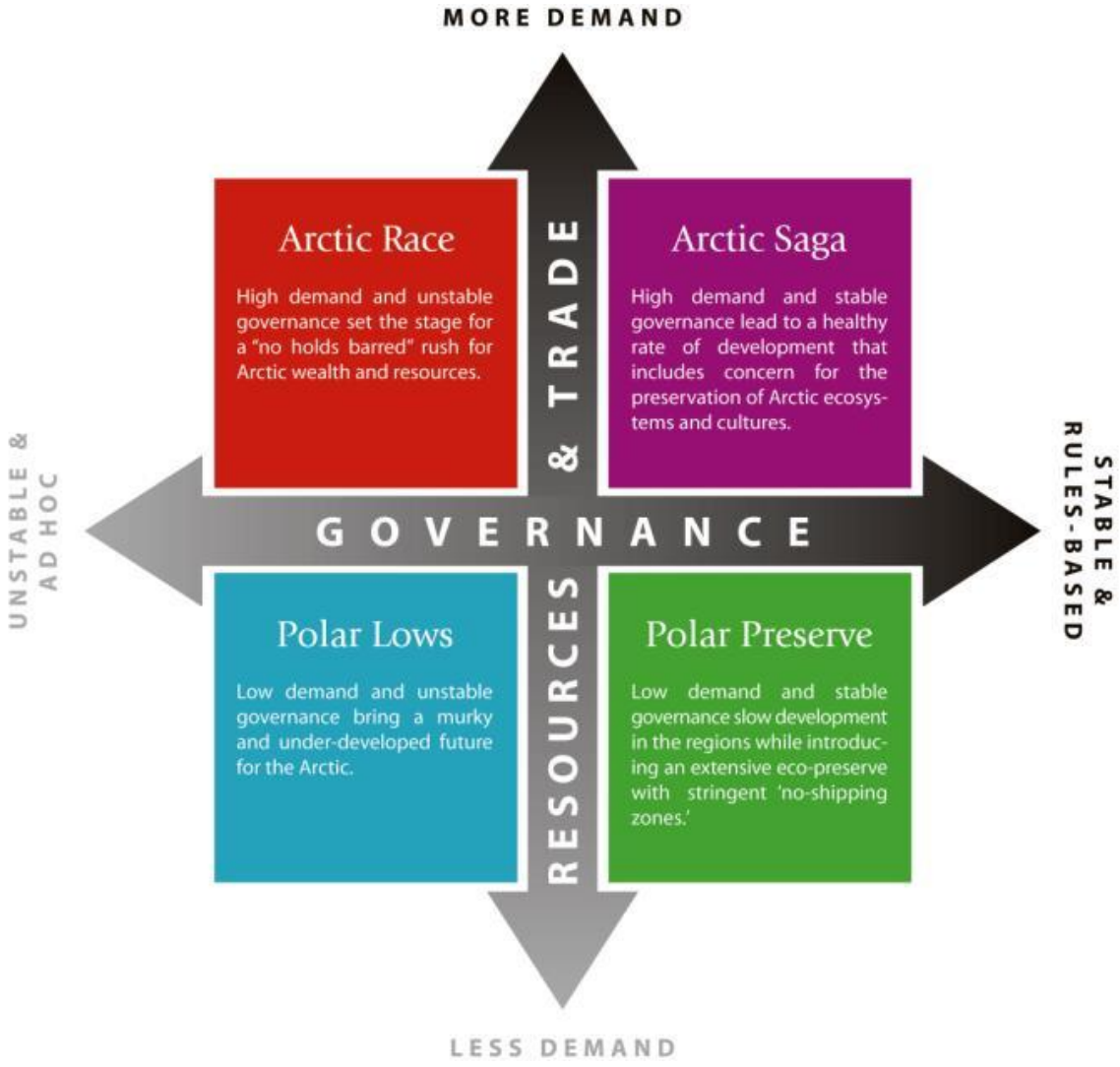


Figure 1 -- Future scenarios: The Global Business Network Future Arctic Marine Navigation Matrix

Source: Global Business Network, The Future of Arctic Marine Navigation in Mid-century. Scenario Narratives Report, 5.

In this diagram, the vertical axis represent the level of uncertainty regarding resource development which the reference material defined as:

> This uncertainty axis describes the level of demand for Arctic Resources and Trade. Framing this in a global context exposes the scenarios to a broader range of potential market developments, such as the rise of Asia or political instability in the Middle East.

> ↑ More demand implies exactly that—higher demand from more players and markets around the world for resources in the Arctic, including open water for trans-shipment trade.
>
> ↓ Less demand is also straightforward, with fewer players interested in fewer Arctic resources.[27]
>
> As for the horizontal axis, it represents the level of governance:
>
> This uncertainty axis describes the degree of relative Governance stability, both within the Arctic region and internationally.
>
> ← Less stability implies shortfalls in legal structure and transparency, as well as a propensity for actors and stakeholders to work on a more unilateral basis rather than by collaborating in a cooperative, international fashion.
>
> → More stability implies not only efficiently operating legal and regulatory structures, but an international atmosphere more conducive to collaborative and cooperative development.[28]
>
> Based on this diagram, four scenarios are possible: Polar Preserve, Polar Lows, Arctic Race and Arctic Saga. Further explanation of these four scenarios is included in Appendix 1.

Out of these scenarios, two are unlikely and somewhat undesirable for Canada and the northern communities. Despite the recent decline in prices for natural resources, it is almost impossible that prices will remain low in the future. The increasing global demand for raw material will eventually drive nations and corporations to exploit natural resources in the North. In addition, as noted by Whitney Lackenbauer, Canada's interest resides with the development of these resources:

> Neither 'Polar Lows' nor 'Polar Preserve' would bring the economic development that Canadian government and northern stakeholders desire…The federal government and northern stakeholders recognize that resource extraction offers the best prospect for sustained economic growth in the North; thus they encourage

[27] Global Business Network, *The Future of Arctic Marine Navigation in Mid-Century. Scenario Narratives Report*, San Francisco: Global Business Network, 2008, 5, Last access 02 May 2016. https://oaarchive.arctic-council.org/bitstream/handle/11374/838/ACSAO-NO03_6_1_AMSA_Scenarios_Future-Narratives_Report.pdf?sequence=1..

[28] Ibid, 5.

> development. By extension, Canada should not frame its foreign policy around either a 'Polar Low' or 'Polar Preserve' scenario.[29]

For these reasons, the two scenarios involving low resource development can be eliminated, leaving the Arctic Saga and Arctic Race as the two potential scenarios.

Next, these two scenarios can be evaluated to provide a context for the CAF capability development. In order to determine the CAF capacity and resource requirements, one must not only consider the likeliness of an event to occur, but the impact of such occurrence. To determine this impact, this paper will consider the diagram presented by Daniel Lachance (see figure 2). In his diagram, the year 2010 is used as a starting point but it could easily be replaced by any year. What is important to consider is that as the years progress, the ability to forecast the future development of a situation becomes uncertain. One set of possibilities will follow the median line and result in what is called the most probable scenarios. But some events (both positive and negative) may result in drastic changes in the future path of events potentially creating situations identified as Best Case and Worst Case scenarios.

[29] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 91-92.

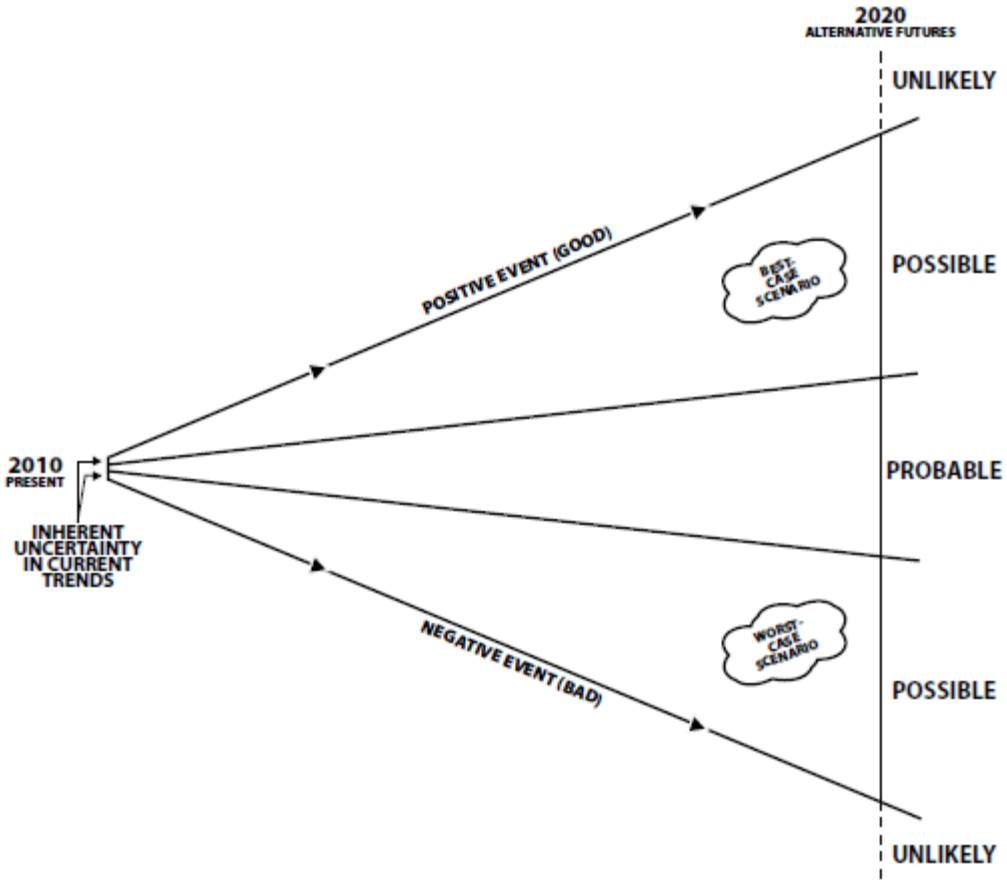


Figure 2 – Trend line Projection to 2020 and Alternative Futures

Source: Daniel Lachance, "Arctic Alternative Future" in *Sic Itur Ad Astra: Canadian Aerospace Power Studies – Volume 4 – De-Icing required! The Historical Dimension of the Canadian Air Force's experience in the Arctic*, 141.

If this concept is applied to the Arctic Saga and Arctic Race scenarios, the degree of governance will be the main factor affecting their placement in Figure 2. As such, with less international and regional governance, the Canadian government will need to spend more resources to defend its sovereignty claims and will likely face more conflicts. Therefore, the Arctic Race would fall under the Worst Case scenario and the Arctic Saga under the Best Case scenario. From this deduction, one can conclude that the most probable path would fall somewhere in between both scenarios in a situation where there will be a mixture between governance and race for resources. For the purpose of this paper, this probable scenario will be

called Arctic Mixture. Based on the immensity of the area to cover, the limited resources available to the government for implementing any action and the fact that Canada cannot realistically take unilateral actions against some of its Arctic neighbours without international support, the government should aim at achieving a capability for the CAF that meets the Arctic Mixture requirements. Now that this paper has established the most likely scenario, the next section will review specific sovereignty issues.

## SOVEREIGNTY CHALLENGES

The Arctic is one of the last remaining frontiers on Earth. This means that in the past, most of the world paid little attention to the region. With the effect of climate change and the increasing need of resources, a lot more actors are noticing the potential that exists within the region. For Arctic nations, this means sovereignty concerns that were considered better left undisturbed, are now of primordial importance. In the case of Canada, several areas could see potential conflicts concerning boundaries or sovereignty claims. In this section, three of these areas will be examined.

### The Beaufort Sea

The dispute between Canada and the United State is actually based on a lack of agreement concerning how the Yukon/Alaska border should be extended in the Beaufort Sea. In 1825, Russia and Great Britain signed a treaty delineating, "the border between Alaska and the Yukon Territory as a meridian line of the 141st degree, in its prolongation as far as the frozen ocean".[30] After Alaska's sale to the USA in 1867,[31] and the transfer of the British Arctic claims to Canada

[30] Michael Byers, "Cold Peace. Arctic Cooperation and Canadian Foreign Policy," in *The Arctic Contested*, ed. Keith Battarbee and John Erik Fossum (Brussel: P.I.E. Peter Lang, 2014), 113.

[31] Ken S. Coates *et al*, *Arctic Front. Defending Canada in the Far North* (Toronto: Thomas Allen Publishers, 2008), 17.

in 1880,[32] the land border between Alaska and Yukon never became an issue. The disagreement concerns the maritime boundary:

> Although the land boundary between Alaska and the Yukon is fixed by the 141°W meridian, the maritime boundary is disputed. Canada claims an extension of the land boundary into the sea based on the interpretation of the 1825 Convention between Great Britain and Russia…while the Americans based their claim on a lateral boundary line equidistant from the low-water line of each country's coast.[33]

This disputed zone, which has been contested since 1976,[34] is roughly the shape of a triangle covering approximately 21,000 square kilometers[35] and has potentially a significant hydrocarbon reserve.[36]

The situation maintained its status quo for several years. However, in 2008, both countries' Coast Guard cooperated in joint mapping expedition of the Beaufort Sea in order to support both countries' claims beyond the Economic Exclusion Zone.[37] The scientific results of this research had beneficial results for Canada's claim:

> Fortunately, the prospect of sovereign rights beyond 200 nautical miles has prompted experts to apply the longstanding U.S. and Canadian arguments on the boundary to the area beyond 200 nautical miles – with a surprising results…Canada and the [USA] now have to deal with two triangular areas of disputes: the pre-existing, southward pointing wedge of the exclusive economic zone within the 200 nautical miles from shore; and a new, much larger triangle of extended continental shelf beyond the 200 nautical miles. This development puts Canada in a much stronger

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[32] John English, *Ice and water. Politics, People and the Arctic Council,* (Toronto: Penguin Canada Books, 2013), 48.

[33] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 125.

[34] Ted L. McDorman, "Canada's Ocean Jurisdiction in the Arctic: An Overview of the Maritime Boundary Issues," in *Thawing Ice – Cold War: Canada's Security, Sovereignty, and Environmental Concerns in the Arctic* (Winnipeg: Centre of Defence and Security Studies, 2009), 15.

[35] Rob Huebert, "Why Canada, U.S. must resolve their Arctic border disputes," The Globe and Mail, 21 October 2014, last updated 21 October 2014, http://www.theglobeandmail.com/opinion/why-canada-us-must-resolve-their-arctic-border-disputes/article21189764/.

[36] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 125.

[37] Michael Byers, "Cold Peace. Arctic Cooperation and Canadian Foreign Policy," in *The Arctic Contested,* ed. Keith Battarbee and John Erik Fossum (Brussel: P.I.E. Peter Lang, 2014), 113.

> negotiating position. If we were to accept the U.S. position - and if Washington were to maintain its position unchanged – we would lose out on our claim to the lower triangle but gain a great deal farther north. And if we chose to stick with the 141st meridian position the chance of persuading Washington to accept have almost certainly improved.[38]

The likeliness this disagreement would degenerate to the point of conflict is very unlikely. Canada and the USA are strong partners and if a solution is ever devised, it will most certainly take the form of a negotiated settlement.

**Hans Island**

It is often forgotten that due to Greenland's proximity to Canada, Denmark is one of Canada's few neighbouring countries. The two countries share a maritime border of 1450 nautical miles, which was mostly delineated during negotiations in 1973.[39] However, both countries couldn't reach an agreement over Hans Island, which resulted in a small section of 875 meters of unsettled border in the Nares strait.[40] Since then:

> Denmark and Canada quietly disagreed over the ownership of this tiny uninhabited island for more than three decades before political theatre and hyperbolic rhetoric created a 'crisis' that some commentators portrayed as the opening salvo in a coming boundary war.[41]

The disagreement over the island's ownership remained fairly quiet, with the occasional official protest submitted by both governments. But in 2002, an op-ed piece written by Rob Huebert and titled *Return of the Viking* struck a nationalist cord in Canada resulting in an unfortunate, "escalation of the dispute in the media [which] played directly into the hand of

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[38] Ibid, 114.

[39] Ted L. McDorman, "Canada's Ocean Jurisdiction in the Arctic: An Overview of the Maritime Boundary Issues," in *Thawing Ice – Cold War: Canada's Security, Sovereignty, and Environmental Concerns in the Arctic* (Winnipeg: Centre of Defence and Security Studies, 2009),.

[40] Ken S. Coates *et al, Arctic Front. Defending Canada in the Far North* (Toronto: Thomas Allen Publishers, 2008), 157.

[41] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 119.

Canadian and Danish politicians seeking electoral advantage".[42] What followed was a series of so-called *tit for tat* military expeditions by both countries, which included landing forces on the island and raising national flags (and, in the case of Canada, building an inuksuk) followed by more official protests. Despite some media referring to these incidents in the same light as Canada's 1995 *Turbot War*, cooler heads prevailed. On 19 September 2005, Danish and Canadian Foreign Ministers met in New York and agree on a process to resolve the dispute.[43]

In the larger context, the Hans Island issue is insignificant. Once again, it is unlikely that NATO allies would engage in hostilities for a piece of land less than a kilometer wide. In addition, possession of the island will have minimal impact on of the maritime boundary as the rest of the negotiated border will not change depending on who own Hans Island.[44] If it were not for the spectre of potential oil and gas under its surrounding sea bed, few would care about such an island. And despite the initial political firestorm, Canadian and Danish relationship has recently improved. For example, in 2006, Danish and Canadian researchers began sharing data and conducting joint mapping projects on the Lomonosov Ridge to advance both countries UNCLOS claim.[45] Also, Danish forces participated in several Canadian military exercises in 2010.[46]

**The Northwest Passage**

[42] Michael Byers, *Who own the Arctic?* (Vancouver: D&M Publisher, 2009), 27.

[43] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 119.

[44] Rob Huebert, "Canada and the Newly Emerging International Arctic Security Regime," in *Arctic Security in an Age of Climate Change* (Cambridge: Cambridge University, 2011), 197.

[45] Roger Howard, *The Arctic Gold Rush. The New Race for Tomorrow's Natural Resources* (London: Continuum, 2009), 197-198.

[46] P.Whitney Lackenbauer, "Sovereignty, Security, and Stewardship: An update," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 236-237.

One of the most emotionally charged and enduring sovereignty issue for the Canadian public is the legal status of the NWP. Since the end of the 1960s, numerous situations occurred that brought the question of sovereignty to the forefront of the Canadian media and public. All situations involved the fear that Americans would not respect Canada's sovereignty by attempting to take over the NWP. But as in many cases in the North, myth and reality are very different and significant misinformation was supplied to the public. So, the first thing needed is to clarify reality.

The NWP is a web of potentially navigable channels going through the Canadian High Arctic, which is "a vast archipelago made up of [19,000] islands and countless rocks and reefs."[47] The strait itself stretches for 2,850 nautical miles from the Bearing strait in Alaska to Greenland's Cape Farewell (See figure 3). Of this, 1,200 nautical miles falls within the Canadian Arctic.[48] For the exact description of the potential transit routes see table in Appendix 2.

[47] Michael Byers, *Who own the Arctic?* (Vancouver: D&M Publisher, 2009), 38.

[48] Ken S. Coates *et al, Arctic Front. Defending Canada in the Far North* (Toronto: Thomas Allen Publishers, 2008), 82.

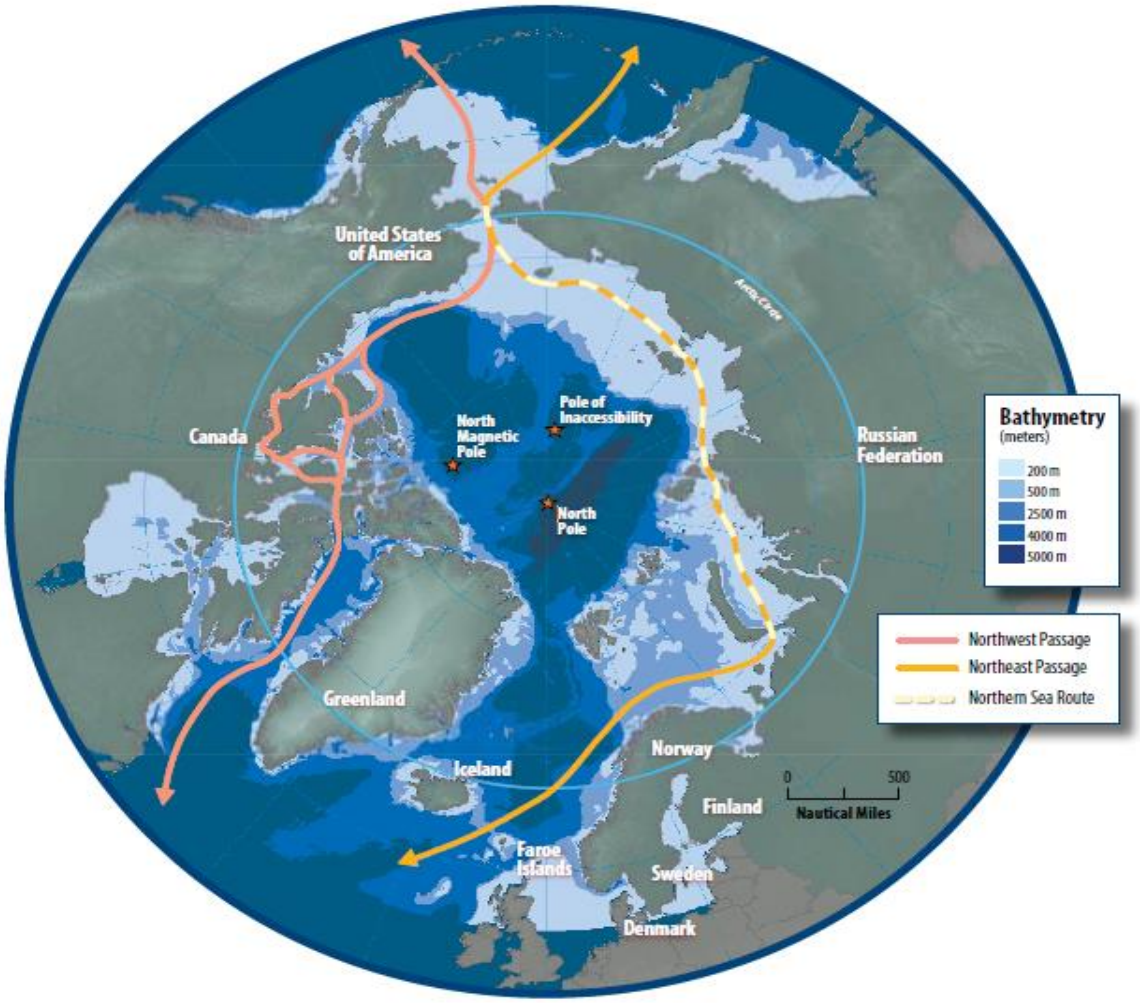


Figure 3 – The NWP and the Northeast/Northern Sea route

Source: Arctic Council, Arctic Marine Shipping Assessment 2009 Report, 17.

The attraction of the NWP is a reduction in the transit distance between the Atlantic and the Pacific ocean of up to "7,000- kilometer… [over] the preferred route through the Panama Canal."[49] Examples of distance savings are provided in table 1.

[49] Andrea Charron, "The Northwest Passage in Context," *Canadian Military Journal,* volume 6 no. 4 (Winter 2005-2006): 41.

Table 1 – Distances between sample ports in kilometers

| Itinéraire | Londres Yokohama | New York Yokohama | Hambourg Vancouver |
|---|---|---|---|
| Panama | 23 300 | 18 560 | 17 310 |
| Suez et Malacca | 21 200 | 25 120 | 29 880 |
| Cap Horn | 32 289 | 31 639 | 27 200 |
| Passage du Nord-Ouest | 15 930 | 15 220 | 14 970 |

Source: Frederic Laserre and Stephane Roussel, "Souveraineté, sécurité et identité: le Canada face aux défis posés par le changement climatique dans l'Arctique," 270.

As early as the 16th century, European explorers investigated the Arctic with the hope of finding a shorter trade route to Asia, though many expeditions met with disastrous and deadly results.[50] The difficulties in completing the transit are the near-continuous presence of ice, almost non-existent charts and unpredictable weather conditions. The first successful transit of the NWP was completed over a three year period by Roald Amundsen.[51]

But with the effects of climate change, the NWP may become more accessible. The question remains as to what extent the reduction in sea ice will allow safe passage. The 2009 Arctic Marine Shipping Assessment Report made several conclusions concerning sea ice prediction and the viability of commercial shipping. Some of these conclusions were:

> 1] Arctic sea ice coverage (extent) has been decreasing since the 1950s in all seasons. Observations of sea ice in the central Arctic Ocean have also indicated thinning during the past four decades. However, there remains a significant, year-to-year variability in regional sea ice coverage.
>
> 2] Global Climate Model [(GCM)] simulations indicate a continuing "retreat" of Arctic sea ice through the 21st century. Observed sea ice trends and GCM simulations show coastal Arctic regions to be increasingly ice-free or nearly ice-free for longer summer and autumn seasons. Importantly, all simulations indicate that an Arctic sea ice cover remains in winter.

[50] Michael Byers, *Who own the Arctic?* (Vancouver: D&M Publisher, 2009), 36.
[51] Ibid, 37.

> 3] Recent sea-ice model simulations indicate the possibility of an ice-free Arctic Ocean for a short period of time in summer by earlier than mid-century. The key implication for this physical change will be the near (or complete) disappearance of multi-year sea ice.
>
> 4] Future sea ice conditions remain uncertain. It is highly plausible that Arctic sea ice will be more mobile in partially ice-covered coastal seas, particularly in spring, summer and autumn. Coastal seas may experience an increase and greater frequency of ice ridging and shorter periods of coastal fast ice.
>
> 5] The resolutions of GCM simulations are much too coarse for adequate coverage of the complex geographies of the Canadian and Russian Arctic. GCM Arctic sea ice simulations also lack robustness to provide detailed information on future marine operating conditions such as the length of the navigation season, 'residence time' of ice-free conditions, frequency of leads and ridges and more. [52]

This inability to predict sea ice coverage has many Arctic experts, including Rob Huebert, debating about the potential increase in maritime shipping in the region:

> One of the most controversial economic potentials of the Arctic is the prospect of new northern shipping routes. The debate as to when and if the Arctic will emerge as a transit point for international shipping is extensive. There are three potential routes that may be taken: the Northwest passage, The Northern Sea Route and Northeast Passage, and over the North Pole… Canada has experienced some increased traffic in the Northwest Passage, but at this point, most of the shipping is destination based and not transit shipping. Although international shipping through northern routes may occur, it remains more theoretical than practical at this time. Nevertheless, both Canada and Russia are taking active steps to assert their control of the waterways.[53]

It is these steps taken by Canada to increase control, which form the main issue with the NWP: the disagreement is not about sovereignty, but it's about legal status. As Andrea Charron stated: "Let us be clear. That the [NWP] is considered Canadian territory is not in doubt. At issue is whether Canada has the right to control which vessels enter the [NWP]".[54] In short, two different legal views exist each allowing Canada different levels of control of the NWP.

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[52] Arctic Council, *Arctic Marine Shipping Assessment 2009 Report* (Anchorage: Arctic Council, 2009), 35.

[53] Rob Huebert, "Canada and the Newly Emerging International Arctic Security Regime," in *Arctic Security in an Age of Climate Change* (Cambridge: Cambridge University, 2011), 202.

[54] Andrea Charron, "The Northwest Passage in Context," *Canadian Military Journal,* volume 6 no. 4 (Winter 2005-2006): 42.

Canada's position regarding the NWP is that it is "part of its internal waters, as based upon the principle of straight boundary lines encompassing its archipelago".[55] This position has significant meaning with regard to the rights Canada assumes:

> [By assuming the position that the NWP is internal water, Canada enjoys] full sovereignty and the right to regulate and control foreign navigation. In short, foreign ships have no right of transit passage. Although Canada welcomes domestic and foreign shipping in its water, it retains the legal right to control entry to, and the activities conducted in, its internal waters as if these were land territories.[56]

This *legal authority* not only means that Canada could deny entry into the NWP to any vessel, but it would also allow the Canadian government to create and impose regulations concerning environmental and design standards, reporting as well as safety and security.

Unfortunately for Canada, several countries or international institutions disagree with its position, most predominantly the USA and member states of the EU.[57] But none have been more outspoken for a longer period of time about their opposition than the Americans:

> The [USA] insists that the [NWP] is an international strait with the right of transit passage. The Americans are inflexible on this issue. They see it as a potential commercial route between the Atlantic and the Pacific, and insist that commercial and their naval vessel need full access to it.[58]

The American position would means all governance concerning maritime shipping within the NWP would be left to international organizations, such as the IMO,[59] preventing Canada from enforcing any regulations as to its use. The reason the Americans are so adamant about this need for freedom of navigation, is that in accommodating Canada's desire to control the NWP,

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[55] John Kennair, "A Canadian Dire Strait: The Northwest Passage from a Legalist Perspective," in *The Arctic Contested*, ed. Keith Battarbee and John Erik Fossum (Brussel: P.I.E. Peter Lang, 2014), 90.

[56] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 126.

[57] Ibid, 131.

[58] Ken S. Coates *et al, Arctic Front. Defending Canada in the Far North* (Toronto: Thomas Allen Publishers, 2008), 83.

[59] IMO stands for International Maritime Organization.

there would exist the possibility that other nations such as Iran would "use the NWP case as a pretext for asserting unilateral control over the Strait of Hormuz, or Indonesia over the Malacca Strait".[60] But Canada's opinion is that the NWP should be considered as a "special case that should warrants unique attention"[61] based on historical claims that Inuit have used the NWP for hunting, fishing and travelling for millennia[62] and the lack of historical use of the NWP by maritime commerce.[63] On the other end, the USA, the EU and all others disagreeing with Canada's position believe that the test to determine the nature of the NWP is geographic and that there is no authority to base this determination on minimum threshold of use.[64] If the scenario of melting ice resulted in increased traffic through the NWP, as some experts have suggested, Canada's legal position would likely be weakened and, according to Americans officials, Canada would be wise to prepare for such an eventuality.[65]

Even when simply addressing the issue with Washington, a solution will be very difficult to achieve. For decades, both countries have mostly agreed to ignore the issue despite occasions of increased tension. When one considers the renewed interest in its status by new actors, the problem becomes even more complex. However, as Canada's closest ally, it is unlikely that the situation with the USA will deteriorate into open conflict. In addition, Washington would likely intervene to support Canada if its Arctic Archipelago and surrounding water were ever threatened by other nations as the American government would be concerned about North American defence. So, even if the status of the NWP were to remain unresolved, it is unlikely it

[60] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 129.

[61] Ibid, 129.

[62] Michael Byers, *Who own the Arctic?* (Vancouver: D&M Publisher, 2009), 50.

[63] John Kennair, "A Canadian Dire Strait: The Northwest Passage from a Legalist Perspective," in *The Arctic Contested*, ed. Keith Battarbee and John Erik Fossum (Brussel: P.I.E. Peter Lang, 2014), 101-102.

[64] [64] Michael Byers, *Who own the Arctic?* (Vancouver: D&M Publisher, 2009), 55.

[65] Andrea Charron, "The Northwest Passage in Context," *Canadian Military Journal,* volume 6 no. 4 (Winter 2005-2006), 45.

will result in military conflict. That being said, Canada cannot expect American support every time it need to protect its territory and must be prepared to defend and protect its own land. For this reason, the next section will review the Canadian Government's initiatives concerning the CAF and the Arctic.

## CAF CAPABILITY FOR THE ARCTIC

When considering the CAF response to Arctic security, the essential question requiring an answer was articulated by Kyle D. Christensen: "what, if any, security opportunity and challenges does… [the CAF] face in the North in the next 25 years?"[66] And the follow on question: what does the CAF need to do to prepare? As stated in CFDS[67], the CAF involvement in the Arctic is considered one of its six core missions.[68] By defining the probable future scenario as the Arctic Mixture and reviewing some of Canada's specific sovereignty issues, this paper established that the threat of state-on-state conflict is very remote, therefore:

> [The CAF's likely missions in the near to medium future should focus on supporting OGDA as increased] activity in the North is, for example, expected to bring more illegal fishing, maritime and aerospace accidents, dumping, pollution, trespassing, and criminal activity. For the most part, the CAF is not be the force mandated to respond to such threats; yet, by virtue of its assets, resources, and capabilities, it will provide crucial support that enables [OGDA] to exercise their own responsibilities and mandates in the North. Effectively, the Forces will be 'leading from behind' to help the government fulfill its basic responsibilities while being ready to respond to a wide spectrum of potential safety and security emergencies.[69]

Unfortunately, decades of indifference toward northern issues have ill-prepared the CAF and the nation for any involvement in the region:

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[66] Kyle D. Christensen, *Arctic Maritime Security and Defence: Canadian Northern Security and Challenges*, (Ottawa: Defence Research and Development Canada, 2005), iii.

[67] CFDS stands for the Canada First Defence Strategy. The abbreviation CFDS will be used for the remainder of this essay.

[68] Department of National Defence, *Canada First Defence strategy*, Ottawa: DND Canada, 2008, 3.

[69] Adam Lajeunesse, *The Canadian Armed Forces in the Arctic: Purpose, Capabilities, and Requirements* (Calgary: University of Calgary, 2015), 2-3.

> The country remains oddly incomplete, a northern nation more in the physical geography and symbol. Current sovereignty concerns are a product of both rapidly changing circumstances and Canada's long-standing indifference to a major portion of the country.[70]

Canada never developed the infrastructure needed to maintain its sovereignty over the Arctic. As a resultant of the budget cuts in the 1990s and very high tempo of operations since the end of the Cold War, the CAF capabilities were depleted affecting preparedness for the Arctic. Even as a supporting actor for sovereignty enforcement, the CAF was never adequately prepared.[71] However, after the tragic events of 9/11, consecutive governments have taken steps to improve the CAF's overall readiness, particularly in the North. This section will review some of the key procurement projects, either completed or in progress, which will enhance CAF Arctic capabilities.

**Arctic Offshore Patrol Ships (AOPS[72])**

When campaigning in January 2006, Stephen Harper, "promised to build three armed heavy icebreakers for the Canadian Navy, capable of operating anywhere in the North at any time of the year."[73] However, after the Conservative Party was elected, the project morphed in the acquisition of six to eight AOPS.[74] These Class 5 vessels are intended for operations in the Arctic during the navigable season[75] and should be capable of:

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[70] Ken S. Coates *et al, Arctic Front. Defending Canada in the Far North* (Toronto: Thomas Allen Publishers, 2008), 202.

[71] John Kennair, "A Canadian Dire Strait: The Northwest Passage from a Legalist Perspective," in *The Arctic Contested*, ed. Keith Battarbee and John Erik Fossum (Brussel: P.I.E. Peter Lang, 2014), 98.

[72] AOPS stands for the Arctic Offshore Patrol Ships. The abbreviation AOPS will be used for the remainder of this essay.

[73] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 101.

[74] Department of National Defence, *Canada First Defence strategy* (Ottawa: DND Canada, 2008), 4.

[75] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 101.

> [The AOPS must be] capable of conducting armed seaborne surveillance of Canadian waters out to the exclusive economic zone limit, including the Arctic, and assisting with search and rescue and supporting other [OGDA]… The AOPS must be able to operate year round in ice up to one-meter thick (but not to provide icebreaking services to other ships). It is also to have a gun armament.[76]

The project's initial delivery date was the fall of 2013,[77] but significant delays were experienced with delivery now scheduled for 2018.[78] Further, critics of the project suggested Canada was buying the wrong ship based on its inability to operate in thicker ice and lack of speed.[79]

**Canadian Armed Forces Arctic Training Centre (CAF ATC)[80]**

Located in Resolute Bay, the CAF ATC was designed as a facility where personnel would carry out Arctic training. Built as an expansion of the Polar Continental Shelf Facility,[81] "the (CAF ATC) will enable training and routine operations by providing a location to pre-position equipment and vehicles, and can also serve as a command post for emergency operations and disaster response in support of civilian authorities". [82] Opened in 2013,[83] it accommodates up to

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[76] Elinor Sloan, *Something Has to Give: Why Delays Are the New Reality of Canada's Defence Procurement Strategy* (Calgary: University of Calgary, 2014), 10.

[77] Ibid, 11.

[78] Royal Canadian Navy, "Arctic/Offshore Patrol Ships," last modified 21 July 2015, http://www.navy-marine.forces.gc.ca/en/fleet-units/aops-home.page.

[79] Murray Brewster, "Tory Arctic ship plan should be sunk, replaced with real icebreakers: senator," The Toronto Star, 26 December 2012, last access 06 May 2016, https://www.thestar.com/news/canada/2012/03/15/tory_arctic_ship_plan_should_be_sunk_replaced_with_real_icebreakers_senator.html.

[80] CAF ATC stands for the Canadian Armed Forces Arctic Training Centre. The abbreviation CAF ATC will be used for the remainder of this essay

[81] P.Whitney Lackenbauer, "Sovereignty, Security, and Stewardship: An update," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 231.

[82] National Defence and the Canadian Armed Forces, "Canadian Armed Forces Arctic Training Centre," last modified 27 August 2013, http://www.forces.gc.ca/en/news/article.page?doc=canadian-armed-forces-arctic-training-centre/hkdons6l.

[83] David Pugliese, "Canadian Forces to expand Nunavut training centre as Russia plans more bases in the Arctic," National Post, 23 February 2016, last updated 23 February 2016, http://news.nationalpost.com/news/canada/canadian-forces-to-expand-nunavut-training-centre-as-russias-plans-more-bases-in-the-arctic.

140 individuals, and includes a dining/recreational building, warehouse, workshop, vehicle storage, classrooms, briefing rooms and operations centre.[84]

**Polar Epsilon**

Completed in 2011,[85] Polar Epsilon was designed to enhance the CAF surveillance and data-gathering capability. Using data from Radarsat-2 satellites, it allows the CAF to track vessels in Arctic waters.[86] In addition:

> Polar Epsilon's capability to enhance [CAF] situational awareness is due to its ability to provide all-weather day/night surveillance in areas where other sensors are limited or unable to operate… The advantage of Polar Epsilon is that its imagery can be used for precise cueing and location of activities, which allows for a more efficient and cost-effective use of other Canadian military assets, such as patrol aircraft and ships. Polar Epsilon can also be used to survey for oil or water pollution, aircraft or satellite crash sites. The project however, does not have the capability to detect ballistic missiles, nor can it track small vessels or individuals. [87]

Compared to the cost of developing a system of sensors to cover the whole Arctic, Polar Epsilon provided significant cost savings. However, Radarsat-2 satellites are unable to provide real-time tracking information and their sensor suite is incapable of penetrating the water, limiting its usefulness on specific occasions.

**Joint Unmanned Surveillance Target-Acquisition System (JUSTAS)[88]**

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[84] National Defence and the Canadian Armed Forces, "Canadian Armed Forces Arctic Training Centre," last modified 27 August 2013, http://www.forces.gc.ca/en/news/article.page?doc=canadian-armed-forces-arctic-training-centre/hkdons6l.

[85] National Defence and the Canadian Armed Forces, "Polar Epsilon Project," last modified 07 November 2013, http://www.forces.gc.ca/en/news/article.page?doc=polar-epsilon-project/hnps1uo5.

[86] Robert Huebert, "Canadian Arctic Sovereignty and Security in a Transforming Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 37.

[87] National Defence and the Canadian Armed Forces, "Polar Epsilon Project," last modified 07 November 2013, http://www.forces.gc.ca/en/news/article.page?doc=polar-epsilon-project/hnps1uo5.

[88] JUSTAS stands for the Joint Unmanned Surveillance Target-Acquisition System. The abbreviation JUSTAS will be used for the remainder of this essay.

The JUSTAS project is intended to provide the CAF a capability in unmanned surveillance through the use of UAVs[89] which could operate across the globe including in the Arctic:

> The Air Force wants the UAVs to carry a range of sensors, including a gyro-stabilized sensor turret that enables the operating crew to covertly detect, identify and track targets at least as small as humans with weapons, and obtain targeting data, day or night. Full motion video would be available in color electro-optical, infrared and low light. In addition, the air vehicle will be expected to carry a synthetic aperture radar capable of producing high-resolution images and strip maps, as well as detecting ground-moving targets. As a minimum, the air vehicle must be able to transit 1,000 kilometers, loiter for 12 hours without descending, and return to base. The UAVs would also be capable of carrying weapons, although their main role would be surveillance, according to Air Force officers.[90]

UAVs could increase monitoring capability in the Arctic and would supplement the CP-140.[91] This project was initiated in 2005 with an expected delivery date of 2010, however, it was suspended due to lack of funding and had to be re-initiated in 2015.[92]

**Nanisivik Docking and Reeling Facility**

In August 2007, the government announced it would build a deep-water refueling facility at Nanisivik on Baffin Island:[93] the first deep sea port in the region. As the Arctic expects an increase in commercial traffic,[94] there is a growing need for a facility capable of providing the following capabilities:

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[89] UAVs stands for the Joint Unmanned Aerial Vehicles. The abbreviation UAVs will be used for the remainder of this essay

[90] David Pugliese, "Canada Restarts Attempt to Buy Drones," Defence News, 16 May 2015, last access 7 May 2016. http://www.defensenews.com/story/defense/air-space/isr/2015/05/16/canada-restarts-attempt-to-buy-drones/27242059/.

[91] The CP-140, also known as the Aurora, is a Long Range Patrol Aircraft initially designed to conduct Anti-Submarine Warfare. But recent upgrades improved its capabilities as an ISR platform.

[92] Elinor Sloan, Something Has to Give: Why Delays Are the New Reality of Canada's Defence Procurement Strategy (Calgary: University of Calgary, 2014), 32.

[93] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 103.

[94] Elinor Sloan, Something Has to Give: Why Delays Are the New Reality of Canada's Defence Procurement Strategy (Calgary: University of Calgary, 2014), 41.

> The primary role of the Nanisivik Naval Facility will be to refuel the Royal Canadian Navy's (RCN) Arctic/Offshore Patrol Ships (AOPS) on an as-required basis, during the navigable season. The facility will have the capability to refuel other RCN and Government of Canada vessels. The facility will consist of storage tanks for naval fuels, a site office, wharf operator's shelter and an unheated storage building. There will be modest repairs to the jetty and there will be a helicopter landing pad. Additionally, the facility will continue to provide the Canadian Coast Guard (CCG) with space to store cargo during Arctic re-supply missions. The facility also allows for the RCN and CCG to transfer and store a modest amount of supplies.[95]

This project was connected to the AOPS project and had a completion date of 2015, but it was scaled back and delayed.[96] The reduction in scope, mostly explained by increasing costs, would reduce fuel holding capability, eliminate the permanent communications facilities and heated accommodations, and delay improvement to the wharf. [97] Completion is now scheduled for 2018.[98]

**Northern Watch**

Northern Watch was a DRDC project intended to collect information on potential sensors and related systems to monitor the Recognized Maritime Picture[99] in the Arctic:

> The DRDC Northern Watch Technology Demonstration Project will demonstrate an Arctic maritime surveillance capability to the Department of National Defence and other concerned federal departments. This is a multi-year undertaking and is based at Gascoyne Inlet. The surveillance demonstration system will be unmanned, semi-autonomous, and remotely controlled through a satellite system connection to one of the DRDC centres. The project plan will culminate in a 6 month capability

[95] National Defence, "Canada's North: The Nanisivik Naval Facility," last modified 17 July 2015, http://news.gc.ca/web/article-en.do?nid=1002559.

[96] CBC News North, "Arctic naval facility at Nanisivik completion delayed to 2018," CBC News, 04 March 2015, last updated 04 Mar 2015, http://www.cbc.ca/news/canada/north/arctic-naval-facility-at-nanisivik-completion-delayed-to-2018-1.2980312.

[97] Elinor Sloan, Something Has to Give: Why Delays Are the New Reality of Canada's Defence Procurement Strategy (Calgary: University of Calgary, 2014), 42.

[98] National Defence, "Canada's North: The Nanisivik Naval Facility," last modified 17 July 2015, http://news.gc.ca/web/article-en.do?nid=1002559.

[99] Matthew R. MacLeod, Talia McCallum and David Waller, *Measuring Northern Watch: Goals, Inputs, Metrics and Outputs*," (Ottawa: Defence R&D Canada, 2009), 1.

> demonstration between August 2014 and August 2015. At the end of the project all buildings and equipment will be removed from the site.[100]

As a demonstration of potential capability, once completed, there will be no additional capability provided unless a new project is initiated.

**So what?**

As can be seen above, significant capabilities have been or are in the process of being acquired. However, certain gaps remain that need to be addressed if the government wants to successfully enforce its Arctic sovereignty in the future. The next section will discussed some of these gaps.

## MISSING CAPABILITIES

In this section, the author will provide his opinion on what missing capabilities need to be implemented to ensure the CAF mission success in the future.

### C4ISR

One of the key requirements to enforce sovereignty over any area is the ability to maintain situational awareness. The CAF needs to know who is in the Arctic and where they are, must be able to communicate with all the key actors, coordinate responses and monitor situations as they evolve. The future CAF operations in the Arctic lies in its support to OGDA, though there will be occasions when the CAF is required to work with multinational partners and non-

[100] Nunavut Impact Review Board, "Northern Watch Technology Demonstration Project Defence Research and Development Canada (DRDC)," last access 06 May 2016. http://ftp.nirb.ca/01-SCREENINGS/COMPLETED%20SCREENINGS/2008/08DN056-DRD-NWTD/01-APPLICATION/120503-08DN056-Non%20Tech%20Summary-IA1E.pdf.

governmental agencies. This means CAF units must be capable of conducting the full spectrum of JIMP[101] operations.

In order to fulfill this requirement, "a robust… [ $C^4$ISR] network is a key aspect of interoperability in Canada's North."[102] Despite some initial capability, such as the North Warning System and Project Epsilon, there is not enough coverage to effectively monitor the territory. For example, large sections of the North are not covered by radar.[103] In addition, communication (secure and non-secured) between the different OGDA and other actors is currently ad hoc, making interagency operations difficult.[104] Improved communications, implementation of a capability based on the Northern Watch demonstration project and completion of the JUSTAS project would address these deficiencies and prove critical in the future.

**Presence**

With the exception of the Rangers, the CAF presence in the North is very limited. There are no permanent naval assets; the Air Force has only one small transport squadron and the Army's presence consist of a Reserve unit newly stood up in Yellowknife. The remaining presence consists of CFS Alert, supporting positions throughout the North and staff position at

[101] JIMP stands for Joint, Interagency, Multinational and public.

[102] Kyle D. Christensen, *Arctic Maritime Security and Defence: Canadian Northern Security and Challenges*, (Ottawa: Defence Research and Development Canada, 2005), 52.

[103] Ibid, 43.

[104] P. Ormsby, *Canada Command (Canada COM) Lessons Identified from First Air 6560 (FA6560) incident in Resolute Bay, NU, During OP NANOOK 11*, (NDHQ Ottawa: File 6397-09900-02 (CANCOM LL), 08 February 2012).

JTFN[105] HQ. In the event of a crisis situation requiring CAF involvement, the current practice requires military forces to deploy from more southern regions.

Despite these inefficiencies, steps were initiated to resolve the situation. "[The] government's military strategy is moving in the right direction, strengthening practical capabilities without militarizing the area."[106] However, as human activities intensify in the Arctic, there will be a corresponding need for increased CAF presence. Listed below are some areas where CAF could increase its presence without fully militarizing the region.

Search and Rescue (SAR) [107]

Without SAR assets in the area, a MAJAID[108] or other large scale SAR would require assets to deploy from Canada's southern regions. Currently, the Joint Rescue Coordination Centre located in Trenton, ON is responsible for covering most of Canada's Arctic. The direct impact of this lack of SAR assets in the North is added delays in response time to SAR. In the past, commercial assets available in the area or US Air Force support from Thule, Greenland or Alaska were used as a work around to reduce delays.[109] As human activities increase in the region, the lack of SAR assets and associated infrastructure will become more problematic.

Arctic Maritime Security Operation Centre (MSOC)[110]

Implementing the 2004 National Security Policy, the government:

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[105] JTFN stands for the Joint Task Force - North. The abbreviation JTFN will be used for the remainder of this essay.

[106] Ken S. Coates et al, Arctic Front. Defending Canada in the Far North (Toronto: Thomas Allen Publishers, 2008), 202.

[107] SAR stands for the Search and Rescue. The abbreviation SAR will be used for the remainder of this essay.

[108] MAJAID stands for Major Air Disaster. The abbreviation MAJAID will be used for the remainder of this essay.

[109] Tony Balasevicius, "Toward a Canadian Forces Arctic Operating Concept," in *Canadian Military Journal* volume 11, no.2 (Spring 2011), 26-27.

[110] MSOC stands for Maritime Security Operation Centre. The abbreviation MSOC will be used for the remainder of this essay.

> directed the establishment of Marine Security Operations Centres (MSOCs) as a way of strengthening marine security for Canadians and allies. Three MSOCs are in operation… they presently collect and analyze vast amounts of information from the marine environment in order to identify security threats.[111]

The MSOC provides a working environment for close cooperation between six core partners.[112] Currently, the MSOC in Halifax and Esquimalt are dividing the Arctic responsibility at 95º west,[113] so decisions affecting the North are made by southern Canada limiting JTFN situational awareness. The implementation of an Arctic MSOC co-located with JTFN would improve Canada's ability to monitor and support the North.

Naval Reserve Division

Despite the creation of an Army Reserve unit in June of 2009,[114] the presence of the Reserve Force is mostly limited to the Rangers. Consideration should be given in increasing the Naval Reserve presence as it would provide significant benefits for the RCN:

> Liaising with the Rangers can assist the Navy in northern operations, and it can facilitate the transfer of information about the Navy's role, mission, and capabilities…The establishment of a Naval Reserve unit in the Arctic could also satisfy several public relations requirements. This would establish a liaison with northerners, it would build on Canadian Rangers tradition, it could serve as a public relations avenue, and it would establish foundation of northern naval maritime knowledge.[115]

As the Army Reserve unit is located in Yellowknife, the Naval Reserve Division should be established in an alternate location to broaden the area of responsibility and avoid competing

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[111] Canadian Coast Guard, "Marine Security Operations Centres (MSOC)," last modified 24 June 2013. http://www.ccg-gcc.gc.ca/eng/CCG/Maritime-Security/MSOC.

[112] The six core agencies are DND, the RCMP, the Canada Border Services Agency, Transport Canada, the Department of Fisheries and Oceans (DFO) and the Canadian Coast Guard.

[113] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 110.

[114] CBC News North, "Canadian Forces creates reserve company in Yellowknife," CBC News, 10 June 2009, last updated 10 June 2009, http://www.cbc.ca/news/canada/north/canadian-forces-creates-reserve-company-in-yellowknife-1.823074.

[115] Kyle D. Christensen, *Arctic Maritime Security and Defence: Canadian Northern Security and Challenges,* (Ottawa: Defence Research and Development Canada, 2005), 51.

personnel demands. Based on population,[116] Whitehorse might be a logical choice though further study would be required.

Canadian Arctic Station (CAS)[117]

This recommendation is more utopian in nature but it does reflect a fully integrated approach to Arctic needs. Historically, different elements in the CAF completed infrastructure projects, often in isolation, in order to meet specific needs. Even Joint CAF projects are often problematic. In addition, the involvement of the CAF with OGDA or other agencies to implement common capabilities has been somewhat limited. The concept of CAS is to create common working locations between CAF, OGDA and local communities in order to provide fully integrated approach to Arctic procurement and development. The CAS would provide the necessary infrastructure for a *Whole of Government* approach on steroid.

As an example, one could consider the development of the Nanisivik facility. Designed as a Navy project to provide refueling capability for the RCN and the Coast Guard, a CAS approach to it would have significantly improved its overall capability. For example, the project could have added hangars for SAR aircrafts and barracks for Army troops in order to meet a full CAF Joint capability. In addition, storage facilities and office space could have been included to support OGDA operations in the region. Finally, selecting a location suitable for local and territorial governments would allow part of the jetty to be used by northern fishermen providing a local positive economic impact. This kind of approach would require a significant level of coordination between the different actors and would be very difficult to achieve, however, it is

[116] The Canadian Encyclopedia, "Whitehorse," last modified 10 May 2015. http://www.thecanadianencyclopedia.ca/en/article/whitehorse/.

[117] CAS stand for Canadian Arctic Station. The abbreviation CAS will be used for the remainder of this essay.

the only way to ensure that funds spent on defence would contribute to the nation building project.[118]

**Follow Through**

The biggest challenge for the governments will be there ability to follow through with any promises regarding the Arctic:

> If the federal government breaks with the trend of previous governments by delivering on its existing military commitments and integrating them in a coherent whole-of-government strategy, then Canada should have the capabilities necessary to deal with the most probable threats to northern security.[119]

Historically, this has never been the case. One need only to consider the fading of Prime Minister Diefenbaker's Norther Vision,[120] as well as the never materialized nuclear submarines[121] or Class 8 icebreaker,[122] to understand that Canada has a poor track record in keeping promises. As the Arctic is changing, Canada doesn't have the luxury to speak loud and forget about the Arctic: It is time for action.

**CONCLUSION**

The Arctic is and will remain a complex environment where many actors and factors will contribute to an ever-changing situation. With issues such as climate change, conflicting sovereignty claims, socio-economic pressures and challenging development conditions, it is

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[118] Ken S. Coates et al, Arctic Front. Defending Canada in the Far North (Toronto: Thomas Allen Publishers, 2008), 216.

[119] P.Whitney Lackenbauer, "From Polar Race to Polar Saga: An integrated Strategy for Canada and the Circumpolar World," in *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011), 116.

[120] Ken S. Coates et al, Arctic Front. Defending Canada in the Far North (Toronto: Thomas Allen Publishers, 2008), 111.

[121] Rob Huebert, "Renaissance in Canadian Arctic Security?" *Canadian Military Journal* volume 6 no. 4 (Winter 2005-2006): 20.

[122] Frederic Laserre and Stephane Roussel, "Souverainté, sécurité et identité: le Canada fce aux défis posés par le changement climatique dand l'Arctique," *International Journal of Canadian Studies/ Revue international d'étude canadienne* no.36, (2007), 274.

critical that the federal government play a key role in the preparation of the Canadian Arctic for the future. As one of the key departments within the government, it is essential that CAF procurement and strategic decisions be thoroughly analyzed not only to ensure mission success but to provide a multi-faceted approach to Arctic protection and development. The purpose of this paper was never to provide a comprehensive answer to the Arctic sovereignty and defence issues, but simply to review some of the key considerations for developing a CAF Arctic Strategy. In addition, it was envisioned as a document that would generate ideas and discussions regarding what capabilities were present and what additional capabilities were required.

By defining sovereignty and security, describing the Arctic Mixture as the future scenario and analysing specific sovereignty issues, this paper determined the CAF Arctic operations in the near to medium term should take the form of support to OGDA. With that understanding, this paper determined that current government efforts with procurement, should it be sustained, will provide sufficient capabilities for the CAF to meet its current northern mandate. However, in preparation for the future, some capability gaps will need to be addressed. Unlike in the past, it is critical that future commitments remain constant. Canadian government and the CAF can no longer rely on the harsh environmental conditions, the Arctic sea ice and the lack of accessibility as the sole defender of the Canadian Arctic sovereignty. Further, Canada not only needs to be able to defend the Arctic, it must also start developing it. The clock is about to strike noon. It is time for the beaver to swim across the lake and start building the northern side of its nation.

APPENDIX 1

Table 2 – Scenario Comparison Table

| | Arctic Race | Polar Lows | Polar Preserve | Arctic Saga |
|---|---|---|---|---|
| Framing Uncertainties | ↑ More Demand for Resources and Trade<br>← Less Stable Governance | ↓ Less Demand for Resources and Trade<br>← Less Stable Governance | ↓ Less Demand for Resources and Trade<br>→ More Stable Governance | ↑ More Demand for Resources and Trade<br>→ More Stable Governance |
| High Concept | *High demand and unstable governance set the stage for a "no holds barred" rush for Arctic wealth and resources.*<br>*This is a world in which many international players anxiously move to outwit competitors and secure tomorrow's resources today. Political tensions are high, and brinkmanship is the name of the game.* | *Low demand and unstable governance bring a murky and underdeveloped future for the Arctic.*<br>*This is a world in which domestic disturbances divert attention from global issues, and simmering frictions cause prolonged divisiveness that never becomes extreme enough to coalesce distinct blocs.* | *Low demand and stable governance slow Arctic development while introducing an extensive eco-preserve with stringent "no-shipping zones."*<br>*This is a world where concern about the environment, coupled with geopolitical and economic interests elsewhere, drives a movement toward the systematic preservation of the Arctic.* | *High demand and stable governance lead to a healthy rate of development that includes concern for the preservation of Arctic ecosystems and cultures.*<br>*This is a world largely driven by business pragmatism that balances global collaboration and compromise with successful development of the resources of the Arctic.* |
| Primary Drivers of Change | • Global competition among many nations for future rights to resources, esp. oil and gas, intensified by rise of Asia<br>• Acute demand for water worldwide, continuing Middle East tensions<br>• Climate warms faster than models predicted | • Global economic downturn, and increasing national protectionism<br>• Increased domestic troubles worldwide, including regional outbreaks of new-generation Avian flu<br>• Recession of Arctic ice slower than models projected | • Arctic oil and gas reserves disappointing<br>• Alternative energy emerges as viable source for global growth<br>• Public concern about climate change and conservation, especially impacts to the Arctic | • Expanded global economic prosperity<br>• Systematic development of oil, gas, and hard mineral resources<br>• Shared economic and political interests of Arctic states<br>• Climate warms as expected |
| Key Implications for Arctic Marine Navigation | • Much activity, primarily military, and dominantly destinational for resource extraction<br>• Unilateral governance regimes lead to inconsistent infrastructure with incompatible standards<br>• Seasonal trans-Arctic passage possible, but not permitted politically | • Minimal Arctic marine traffic, consisting of government re-supply and research, with periodic disruptions<br>• Market for "ice-class" ships cools, reducing R&D<br>• Low attention to regulations, with unenforced and mismatched standards, and no new infrastructure | • Harmonized rules for Arctic ship design and pollution prevention<br>• Seasonal trans-Arctic shipping possible but proves prohibitively expensive due to environmental restrictions, frequent patrols, and aggressive enforcement<br>• Growth of Arctic marine tourism allowed through limited number of "use permits" | • Wide range and variety of marine activity<br>• Navigational infrastructure and aids expanded, making marine transport safer and more efficient<br>• New technologies make seasonal trans-Arctic shipping safer and economically viable, e.g., satellite surveillance systems |

Source: Global Business Network, The Future of Arctic Marine Navigation in Mid-century. Scenario Narratives Report, 6

APPENDIX 2

Table 3 – Water Routes of the Northwest Passage

| Route | Routing (East to West) | Physical Description | Of Note |
|---|---|---|---|
| 1 | Lancaster Sound – Barrow Strait – Viscount Melville Sound – Prince of Wales Strait – Amundsen Gulf. | **Lancaster Sound:** 80 km wide, 250 km long, deep at over 500 m.<br>**Barrow Strait:** 50 km wide, 180 km long, deep, string of islands west of Resolute disrupts clear navigation.<br>**Viscount Melville Sound:** 100 km wide, 350 km long, experiences multi-year ice from M'Clure Strait.<br>**Prince of Wales Strait:** minimum width of less than 10 km about half way through the Strait, 230 km long, limiting depth of 32 m.<br>**Amundsen Gulf:** irregular shape, 90 km wide entrance, approximately 300 km long. | Suitable for deep draft navigation; the route followed by *St. Roch* in 1944 on westerly transit and the *SS Manhattan* in 1969. |
| 2 | Same as 1 but substitute M'Clure Strait for Prince of Wales Strait and Amundsen Gulf.<br><br>Collectively Lancaster Sound – Barrow Strait – Viscount Melville Sound is known as Parry Channel. | **M'Clure Strait:** 120 km wide at east end, 275 km long to Beaufort Sea, deep at over 400 m, experiences multi-year ice from Arctic Ocean. | *SS Manhattan* attempted this route in 1969 but was turned back.<br>Russian icebreaker *Kapitan Klebnikov* succeeded in a passage in 2001.<br>In September 2007 was clear of Arctic pack ice for a limited time since satellite photos have been available; there was more ice in 2008. |
| 3A | Lancaster Sound – Barrow Strait – Peel Sound – Franklin Strait – Larsen Sound – Victoria Strait – Queen Maud Gulf – Dease Strait – Coronation Gulf – Dolphin and Union Strait – Amundsen Gulf. | **Lancaster Sound and Barrow Strait:** see Route 1.<br>**Peel Sound:** 25 km wide, deep at over 400 m at south end.<br>**Franklin Strait:** 30 km wide.<br>**Larsen Sound:** depths vary between 30 and 200 meters.<br>**Victoria Strait:** 120 km wide, at southern end is blocked by Royal Geographical Society Islands, worst ice conditions along the mainland coast of Canada.<br>**Queen Maud Gulf:** eastern entrance 14 km wide, but widens into an irregular area with width of up to 280 km before narrowing to 14 km at entrance to Dease Strait; numerous islands, reefs and shoals.<br>**Dease Strait:** 14 – 60 km wide, 160 km long.<br>**Coronation Gulf:** over 160 km long, many islands.<br>**Dolphin and Union Strait:** 80 km wide at Amundsen Gulf, 150 km long, caution should be exercised in passage, several soundings of less than 10 m have been recorded.<br>**Amundsen Gulf:** see Route 1. | Of the 3A, 3B and 4 routes, this is considered the best option but with a draft limit of 10 m. |
| 3B | A variation of 3A. Rather than following Victoria Strait on the west side of King William Island, the route passes to the east of the island following James Ross Strait – Rae Strait – Simpson Strait. | **James Ross Strait:** 50 km wide, but restricted by islands, extensive shoaling.<br>**Rae Strait:** 20 km wide, with limiting depths of between 5-18 m in mid channel.<br>**Simpson Strait:** about 3 km wide at narrowest point, most hazardous navigation area in 3B route. | The route of Roald Amundsen.<br>Also route of the *MS Explorer*, in 1984, the first cruise ship to navigate the Northwest Passage. |
| 4 | Similar to 3A. Rather than following Peel Sound on the west side of Somerset Island, the route passes to the east of the island through Prince Regent Inlet and Bellot Strait. | **Prince Regent Inlet:** 80 km wide, free of islands, deep.<br>**Bellot Strait:** short and very narrow, strong currents, limiting depth of 22 m. | Route of *St. Roch* in 1940-42 on easterly transit. |
| 5 | Hudson Strait – Foxe Channel – Foxe Basin – Fury and Hecla Strait – Gulf of Boothia – Bellot Strait – remainder via routes 3A, 3B or 4. | **Hudson Strait:** 100 km wide, 650 km long, deep, also serves as entrance to Hudson Bay and Churchill port.<br>**Foxe Channel:** 130 km wide, deep, with limiting shoal in the middle that can be avoided.<br>**Foxe Basin:** very large, many islands in northern end.<br>**Fury and Hecla Strait:** 160 km long, very narrow with fast current.<br>**Gulf of Boothia:** very large waterway connecting to Prince Regent Inlet to the north (see route 4). No problems for navigation except at exit of Fury and Hecla Strait where Crown Prince Frederick Island is to be avoided. | Not generally considered a viable commercial passage for moderate to deep draft ships. |

Source: Arctic Council, Arctic Marine Shipping Assessment 2009 Report, 21.

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