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Survive, Sustain, and Manoeuvre: A Look at the Canadian Armed Force's Ability to Respond and Counter Arctic Threats

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**SURVIVE, SUSTAIN, AND MANEUVER:
A LOOK AT THE CANADIAN ARMED FORCE'S ABILITY TO RESPOND AND
COUNTER ARCTIC THREATS**

By Major Christopher R. Hartwick

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ABSTRACT

The Arctic's natural barrier, provided by its harsh climate and geography, continues to diminish, increasing access to Canada's North and its resources. This accessibility to the Arctic presents the increased possibility of threats to Canada's sovereignty. Additionally, if the Northwest Passage is legally recognized as an international strait, it will provide foreign adversaries with an additional avenue of approach to carry out operations against North American targets. Despite the peaceful and cooperative nature of current Arctic politics, Canada must still ensure it can defend its sovereignty throughout the North. However, for decades defence analysts and scholars have assessed military threats to Canada's Arctic as highly unlikely, resulting in the lethargic development of Canada's Arctic defence capability. The notion of there being no military threat in the Arctic has hindered the Canadian Armed Forces' (CAF) ability to develop and provide a credible response to threats throughout the North; thus limiting Canada's ability to assert its sovereignty throughout the region.

The CAF's current Arctic defence capability and response plan are faced with significant challenges and shortfalls. Outside of the military's search and rescue assets, conventional CAF elements assigned to Arctic response lack the required level of readiness, logistical support, and interoperability with other government department partners. If these CAF forces were required to deploy today, it would not only place the military members at risk of becoming casualties to the operating environment, it would jeopardize the success of the mission as well.

Ultimately, the CAF must be prepared to counter threats and respond to emergencies throughout the North, to the same degree of its capabilities to counter threats in the South. Therefore, the purpose of this study is to explain the potential dangers facing Canada if the CAF is unable to counter future threats in the Arctic.

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CHAPTER 1 – INTRODUCTION

INTRODUCTORY COMMENTS

Analysis of the Canadian Arctic as a battleground, or avenue of approach for foreign threats, is not a new a notion. A Canadian study was initiated to examine the possibility of incursion from the North, and Canada’s own ability to counter such a threat, in the early 1940s.¹ Canadian historian, C.P. Stacey, in his 1940 publication titled *The Military Problems of Canada*, concluded a military invasion from the North to be impossible. However, this theory was debunked in 1941, after the German campaigns in Russia.² Canada’s response was quick, and from 1941 to 1946 conducted various experimental training exercises under the guidance of the newly developed Canadian Army Winter Warfare School in Petawawa, Ontario.³ The exercises attracted the attention of several allies, and garnered national and international media coverage. Despite being hard on the soldiers and equipment, the training and experiments within that time dismissed the myth that incursion from the Arctic was impossible, and with appropriate supply chains in place, Arctic operations can be conducted just as they are in temperate climates.⁴ However, a review of the findings by Canadian and United States (US) defence strategists, revealed that the challenges of conducting resupply operations in the Arctic “. . . made it unlikely that any formidable or sizeable force would attempt to operate in the region.”⁵ The idea of the Arctic being an invasion gateway was reduced to being a possible infiltration route for small specialized enemy units; such as airborne forces, or those outfitted with long-range weaponry.⁶

¹ P. Whitney Lackenbauer and Peter Kikkert, *Lessons In Northern Operations: Canadian Army Documents, 1945-56*, Documents of Canadian Arctic Sovereignty and Security Number 7 (Calgary: University of Calgary, 2016), xii.

² *Ibid.*, vii.

³ *Ibid.*, viii.

⁴ *Ibid.*, ix.

⁵ *Ibid.*, xii.

⁶ *Ibid.*

From these assessments stemmed the development of the Distant Early Warning (DEW) radar line and the North American Aerospace Defense Command (NORAD).⁷

Testing and training of Arctic equipment, vehicles, and skills continued in Canada and the US up until the start of the Cold War. By this point, Canada had developed effective Winter Warfare training,⁸ which to this day is mostly unchanged and still conducted across the Canadian Armed Forces (CAF). One of the earliest common findings, within US and Canadian post-exercise reports, was that appropriate Arctic indoctrination training for every soldier selected for Arctic service was critical for operational success.⁹ However, by the mid-1950s, the scope of Arctic training diminished due to the increased employment of long-range bombers, aerial refueling, and atomic missiles. The Canadian Ranger program was subjected to years of neglect, and the White Paper on Canadian Defence published in 1964 did not even contain a single sentence regarding the North. Over a decade of lessons learned on Arctic operations faded away.¹⁰

It was not until the mid-2000s, when the Harper Government reinvigorated the Canadian public's interest in the North. By introducing the "use it or lose it" notion, Stephen Harper stoked the notion that Canada's sovereignty in the Arctic was being threatened by a "race for resources" resulting from rapid climate change in the North.¹¹ Since then, the Arctic has been a significant topic of interest within past and present Canadian defence policies. The Government of Canada in 2009 released the publication, *Canada's Northern Strategy: Our North, Our Heritage, Our Future*, followed by a *Statement on Canada's Arctic Foreign Policy* in 2010. These documents

⁷ Andrea Charron and Jim Fergusson, *NORAD: Beyond Modernization* (Winnipeg: University of Manitoba, Centre for Defence and Security Studies, 2019), 25.

⁸ Lackenbauer, *Lessons In Northern Operations . . .*, xv.

⁹ *Ibid.*, xvii.

¹⁰ *Ibid.*, xxi – xxiii.

¹¹ P. Whitney Lackenbauer and Heather Nicol, *Whole of Government through an Arctic Lens* (Antigonish: Publications Unit Mulroney Institute of Government St. Francis Xavier University, 2017), iv.

aided in fueling the fire, leading to the commencement of large joint annual Arctic training exercises, such as Op NANOOK. Major projects were initiated, many of which are still under development to this day, such as new Arctic infrastructure projects, a fleet of dedicated Arctic vehicles, ships capable of navigating Arctic waters, and logistics concepts to facilitate operations throughout Canada's North. However, since the shift in Canadian governments in 2015, the development rate of the abovementioned projects has slowed to a crawl, or in some cases, completely stalled. The recent publication of Canada's 2017 *Defence Policy*, and the 2019 *Canadian Arctic and Northern Policy Framework* (ANPF), emphasized the importance of Arctic defence indicating the Government of Canada's continued efforts in the matter. However, most efforts over the past decade have been focused on Arctic policy, as opposed to fielding new Arctic defence capabilities. The situation has not changed, the Arctic ice is still melting, and geopolitical attention in the Arctic continues to rise. Many have argued that Canada's current strategy, to maintaining security and sovereignty in the North, is not enough to weather the coming storm.

PROBLEM STATEMENT

Up until the past 20 years, the Arctic's harsh climate and geography provided a natural barrier shielding it from outside incursion. However, this is no longer the case, and although it might be a region of cooperation now, it is unknown how long it will last. Ongoing political tensions, such as the ones between Russia and the US, or tensions between China and various Western countries, have the potential of boiling over and affecting other political matters. Despite heightened emphasis on Arctic sovereignty over the last two decades, the Canadian Armed Forces (CAF) is still without a credible Arctic defence capability. This issue not only affects Canada domestically, it also affects Canada's international reputation as a leader in Arctic

affairs and its credibility to its Arctic, and near-Arctic, allies as a reliable defence partner. Arctic training and operations are nothing new to the CAF, and yet Canada's military is still without adequate means of rapidly responding to security threats and emergencies throughout the northern portion of the country.

According to well-known political scientists, Adam Lajeunesse and Whitney Lackenbauer, military conflict is *highly unlikely* to occur in the Canadian North. This notion has been reflected throughout the Government of Canada and CAF policies since the mid-2000s. It would appear that the Harper Government's conception of "use it or lose it," has lost its lustre; most likely because there have been no reports of major breaches to Canadian sovereignty in the Arctic since 2005.

However, *highly unlikely* does not mean impossible. Which is why there are still scholars such as, David Perry and Robert Huebert, whom believe increasing Canada's military presence in the Arctic is a prudent and responsible action given the amount of geopolitical attention the region has attracted over recent years. Therefore, this thesis will show that despite there being no current military threat directly facing the Canadian Arctic, there is potential for one to emerge within the next two decades, which requires a strengthening of the CAF's Arctic defence capabilities in order to be ready to counter a potential future military threat.

PURPOSE STATEMENT

The purpose of this directed research project was to explain the potential dangers facing Canada if the CAF is unable to counter future threats throughout the Arctic. The majority of information presented in this paper was obtained from secondary data, such as academic works, open source government publications, and media articles. However, a portion of data was obtained from the author's personal experience and one primary source, which the author

conversed with through e-mail. The in-depth methodological literature review conducted for this project focused on the threats surrounding Canada's Arctic region, the current Arctic defence plan, and the military's Arctic capabilities.

CHAPTER ORGANIZATION

Chapter 2 provides a thorough overview of the current and potential future threats facing the Canadian Arctic. Descriptions on military and non-military threats are provided at the start of the chapter to provide a better appreciation of the differences between the two. Chapter 2 then explores the existing, and potential future, direct and indirect threats towards Canadian sovereignty and security from Russia, China and the US. Chapter 3 provides an overview of the CAF's current Arctic response plan, drawing out several shortfalls regarding readiness, logistics, and interoperability with government partners. Chapter 4, examines the main shortfalls identified in Chapter 3, and makes recommendations to mitigate them. Also based on the shortfalls identified in Chapter 3, Chapter 4 then presents a theoretical concept for the development of a forward-positioned Arctic defence force.

CHAPTER 2 – THREATS TO THE CANADIAN ARCTIC

INTRODUCTORY COMMENTS

The Canadian Defence Policy, *Strong, Secured, Engaged* (SSE), addresses the significance of Canada’s Arctic and the Archipelago, how climate change has increased geopolitical attention to the region, and the requirement to expand the Canadian Armed Forces’ (CAF) arctic capability and presence in the region.¹² Interest in a more robust CAF presence across the Canadian Arctic extends beyond the borders of Canada, as other states, such as the United States (US), and multinational actors, such as the North Atlantic Treaty Organization (NATO), have identified the potential security challenges facing the Arctic. The 2020 NATO report, *Understanding the Future Arctic Security Environment*, referred to the Canadian Arctic as “...an avenue of approach to North America, necessitat[ing] defence across all domains enabled by partnerships.”¹³ Implying that NATO has a major role in Arctic defence than one might expect. The report also outlines the requirement for the CAF to possess the capacity to respond “. . . to counter hostile foreign state and non-state actors. . .” and have the means to intervene and assist with search and rescue (SAR), or disaster relief situations across the Arctic.¹⁴

These assessed security challenges and the importance of Arctic defence have also recently been echoed in other defence publications such as the Canadian Army’s latest modernization strategy, the US Navy’s latest publication on Arctic operations, and the 2019 US Report to Congress from the Department of Defense on Arctic Strategy.¹⁵ Even the 2019 volume

¹² Department of National Defence, *Strong, Secure, Engaged - Canada's Defence Policy* (Ottawa: DND Canada, 2017), 50-51.

¹³ North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment*, (Peterborough: Trent University School for the Study of Canada, 2020), i.

¹⁴ *Ibid.*

¹⁵ Department of National Defence, *Advancing with Purpose: The Canadian Army Modernization Strategy, 4th Edition* (Ottawa: DND Canada, 2020), 7; Department of the Navy, *A Strategic Blueprint for the Arctic* (Washington, DC: U.S. Government Printing Office, 2021), 14; Department of Defense, *Report to Congress, Department of Defense Arctic Strategy* (Washington, DC: U.S. Government Printing Office, 2019), 4.

of the *Arctic Yearbook's* focus was primarily on Arctic defence and security.¹⁶ Despite the widespread reporting on Arctic defence, all of these publications indicate the threat of conventional conflict in the Arctic as low. However, they also indicate a steady rise in commercial and military activity in Arctic regions on a global scale, and such increases are likely to result in the development of non-military and military threats. Therefore, as military threats are currently being assessed as low, Arctic nations like Canada, must be prepared now to counter non-military threats in the near to mid-term timespan.

MILITARY THREATS AND NON-MILITARY THREATS

Canada's Defence Policy identifies six core missions for the CAF, which have been assessed as essential for the protection and defence of Canada. The SSE's intent is to serve as the Government of Canada's (GoC) assurance that the CAF will be ready to perform any of its core missions when required. The CAF's first core mission is to "Detect, deter, and defend against threats to or attacks on Canada."¹⁷ Therefore, the CAF is mandated to respond to conventional military threats and non-military threats in the Arctic, just as it is required to counter such threats in the country's southern regions. Furthermore, it is not uncommon for non-military and conventional military threats to be intertwined with one another, as conflict usually leads to human security and or negative environmental impacts in the affected region.¹⁸ Therefore, prior to reviewing current security challenges and potential future threats facing the Arctic, it is prudent to examine what constitutes as a military and non-military threat when discussing Arctic defence.

¹⁶ Lassi Heininen, Heather Exner-Pirot, and Justin Barnes, *Redefining Arctic Security: Arctic Yearbook 2019* (Akureyri, Iceland: Arctic Portal, 2019).

¹⁷ Department of National Defence, *Strong, Secure, Engaged* . . . , 82.

¹⁸ Pauline Pic and Frédéric Lasserre, "What is 'Arctic' about 'Arctic security'?" *Arctic Yearbook 2019, Redefining Arctic Security* (November 2019): 409.

As climate change continues to affect the Arctic, making it less challenging for state and non-state actors to access, the CAF must be prepared to respond to non-military threats across all domains. Other terms often used to describe non-military threats are *safety challenges*, *unconventional security challenges*, and *unconventional security threats*; however, the term *non-military threat* will be used throughout this paper. Since the end of the Cold War, defence analysts and CAF strategists have shifted their focus away from conventional military threats towards non-military threats and regional safety challenges.¹⁹ Such threats include a heightened focus on “...environmental, food, and human security, as well as the potential for organized crime, terrorism, weapons of mass destruction, illegal immigration, and so on.”²⁰ SSE and the Canadian Arctic and Northern Policy Framework (ANPF) complement one another regarding non-military threats. Canada’s defence policy discusses both types of threats, where the 2019 ANPF has a greater emphasis on non-military threats, specifically within the document’s “Safety, security, and defence chapter.”²¹ The Safety, security, and defence chapter focuses on the potential negative impacts incurred by climate change and the growing international interest in the region; both of which are highly connected. These same challenges are also identified in SSE, along with the concerns of how they lead to the conduct of unsafe resource extraction and development methods, concerns stemming from careless tourism practices, and sovereignty issues from increased exploration and maritime traffic.²² An example of such a situation could include illegal fishing in Canadian waters by a foreign vessel. Such as the situation that occurred in 1995, when the Royal Canadian Navy (RCN) supported the Department of Fisheries and

¹⁹ *Ibid.*

²⁰ P. Whitney Lackenbauer and Heather Nicol, *Whole of Government through an Arctic Lens* (Antigonish: Publications Unit Mulroney Institute of Government St. Francis Xavier University, 2017), 301.

²¹ Government of Canada, “Arctic and Northern Policy Framework: Safety, security, and defence chapter,” last modified 10 September 2019, [Arctic and Northern Policy Framework: Safety, security, and defence chapter \(rcaanc-cirnac.gc.ca\)](https://www.rcaanc-cirnac.gc.ca).

²² Department of National Defence, *Strong, Secure, Engaged* . . . , 79.

Oceans by boarding a Spanish trawler off the coast of Newfoundland. The ship and its crew were proven to be illegally fishing and depleting the area of its already low fishing stocks.²³

Just as the CAF must be prepared to respond to most non-military threats, it must also possess the ability to counter, conventional and unconventional, military threats should prevention and deterrence methods fail. As previously mentioned, SSE discusses both military and non-military threats; however, the emphasis is primarily placed on non-military threats vice conventional threats in the document. The military threats noted within SSE revolve around the maintenance of security and control of Canada's maritime and aerospace domains from foreign Arctic and non-Arctic states looking to project forces from Arctic regions and push the limits of NATO's collective defence posture.²⁴

NATO does not employ the same conservative approach taken in SSE when analysing potential military threats to the Canadian Arctic. Instead, it addresses the issue in a more direct manner in its 2020 report, *Understanding the Future Arctic Security Environment*.²⁵ The NATO report discusses how new technologies and the reduction of geographic barriers have made the Arctic more accessible for exceptional opportunities, while also making it more exploitable to foreign adversaries as an avenue of approach for military actions.²⁶ Unlike the ANPF, the 2020 NATO report not only acknowledges how the Arctic has been a region of peace and cooperation between Arctic and non-Arctic States, it goes further by addressing how such a stable situation can quickly deteriorate due to impacts elsewhere on the geopolitical spectrum. Significant security events, generally referred to as "black swan events", can rapidly arise from a multitude

²³ Department of National Defence, *Canada in a New Maritime World: Leadmark 2050* (Ottawa: Commander, Royal Canadian Navy, 2016), 15.

²⁴ Department of National Defence, *Strong, Secure, Engaged . . .*, 79.

²⁵ North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment . . .*

²⁶ *Ibid.*, 7.

of factors at any time. Such types of “over the horizon events” are difficult to prepare for, as gaining support and resources to counter against them can be near impossible.²⁷

Lastly, SSE and the 2020 NATO report both discuss how “[s]tate and non-state actors are increasingly pursuing their agendas using hybrid methods in the ‘grey zone’ that exists just below the threshold of armed conflict.”²⁸ By operating in the “grey zone”, adversaries are able to employ an “...opaquer spectrum of threats than established policy and legal frameworks were designed to address, and are difficult to identify, attribute, categorize, and counter.”²⁹

CURRENT SECURITY CHALLENGES AND POTENTIAL FUTURE THREATS

Russia

With the renewal of its Long Range Aviation (LRA) patrols, missile development, and military buildup along its Arctic coastline, Russia once again is perceived as being a serious military threat to Canada and the rest of North America. Concerns regarding Russian as a threat to Canada were reignited in 2007, when Russian explorer Arthur Chilingrov placed his nation’s flag under the North Pole with a Russian owned and operated mini-submarine.³⁰ The media erupted with headlines that caused concern across North America, Europe, and in Russia as well. Canadian Defence Minister at the time, Peter MacKay, was infuriated and reacted in an alarmist manner. The situation was enough to bolster public interest in Arctic defence, which Canadian Prime Minister Stephen Harper used to redirect public criticism regarding sovereignty issues his government was having with the US, toward Russia’s military expansion in the Arctic. Two weeks later, the situation escalated further when Russian President, Vladimir Putin, “. . . signed a

²⁷ “. . . (sometimes referred to as “black swan” events) can emanate from “a rapid, unanticipated, less predictable event, such as the 9/11 attacks,” or can be a scenario that strategists have contemplated but transpires much earlier than expected.” *Ibid.*, 13.

²⁸ Department of National Defence, *Strong, Secure, Engaged* . . . , 53.

²⁹ North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment* . . . , 13.

³⁰ Lackenbauer, *Whole of Government through an Arctic Lens* . . . , 55.

decree authorizing the resumption of LRA strategic bomber patrols over the Pacific, Atlantic, and Arctic oceans, a practice that had been suspended since 1992.”³¹

The threat that came with the revival of Russia’s LRA patrols was compounded by the fact that the Northern Warning System (NWS) was, and still is, unable to detect and defend against Russia’s new generation of nuclear and non-nuclear cruise missiles. The binational military defence organization, the North American Aerospace Defense Command (NORAD), which has kept a watchful eye over Canada and the US for over 60 years, is at a serious disadvantage. The NWS, a chain of unmanned radars across the Arctic that allows NORAD to provide aerospace surveillance across Canada and the US’s northern approaches, is quickly becoming obsolete and is scheduled for decommission in 2025. Collaboration between Canada and the US has been underway to replace the NWS for some time now, as it approaches the end of its life expectancy.³² Furthermore, procurement of a NWS replacement will be challenging due to the short amount of time between now and 2025, the significant funding required, and the numerous environmental policies currently in place that were not present in the late 1980s during the construction of the NWS.³³ The NWS underwent an upgrade in 2018, increasing its coverage to encapsulate all of Canada’s northern most archipelago region.³⁴ Prior to 2018, the Canadian Air Defence Identification Zone (CADIZ) was based on the NWS’ predecessor, the Distant Early Warning (DEW) Line system, which was not capable of covering all of Canada’s archipelago.³⁵

³¹ *Ibid.*, 57.

³² Department of National Defence, *Strong, Secure, Engaged* . . . , 79.

³³ Ottawa Citizen, “String of radar stations in Canadian Arctic nearly obsolete and modernizing them will cost billions,” last modified 9 October 2018, <https://nationalpost.com/news/modernizing-warning-radars-in-the-arctic-will-cost-canada-and-the-us-billions-of-dollars>; Andrea Charron and Jim Fergusson, *NORAD: Beyond Modernization* (Winnipeg: University of Manitoba, Centre for Defence and Security Studies, 2019), 24.

³⁴ Government of Canada, “Canadian Air Defence Identification Zone now aligned with Canada’s sovereign airspace,” last modified 24 May 2018, <https://www.canada.ca/en/department-national-defence/news/2018/05/canadian-air-defence-identification-zone-now-aligned-with-canadas-sovereign-airspace.html>.

³⁵ Department of National Defence, *Strong, Secure, Engaged* . . . , 80.

Despite the upgrade, the NWS is quickly approaching its retirement and is still incapable of detecting and tracking some modern Russian Sea-launched cruise missiles (SLCM) and air-launched cruise missiles (ALCM).

Russia's new AS-23 KODIAK ALCM is a prime example of how modern Russian cruise missiles are able to defeat NORAD's defence capabilities. Entering service in 2012, the KODIAK's nuclear and conventional munitions payload variants are capable of being launched from LRA aircraft well outside the NWS' coverage range and use the Russian Global Navigation Satellite System (GLONASS) to guide it to its target. The KODIAKs are undetectable to NORAD's current systems due to the missile's reduced radar cross-section and its enhanced standoff distance, which gives it an operating range over 4,500 kilometers. Previous generations of Russian cruise missiles were outfitted with an internal navigation system that calculated its route based on terrain and used land-fixes to guide it on target, requiring the missile to be launched closer to a major landmass.³⁶

Similar to the KODIAK ALCM, the Russians are also employing the SS-N-30A KALIBR SLCM, which provide a greater depth to Russian offensive capabilities. Despite there being limited information about them, Russia's use of 26 KALIBR missiles against Islamic State of Iraq and the Levant (ISIL) forces in Syria in 2015, indicate the operational readiness of these SLCM.³⁷ Furthermore, the KALIBR's nuclear and non-nuclear variants can be launched from subsurface and surface vessels, giving the Russians a significant advantage as the missiles could be launched from Canadian waters where surveillance is limited or non-existent. Russia's recent show of force, where three Russian submarines broke through 1.5 meters of sea ice

³⁶ Charron, *NORAD: Beyond Modernization* . . . , 3.

³⁷ BBC News, "Russian missiles 'hit IS in Syria from Caspian Sea,'" last modified 7 October 2015, [Russian missiles 'hit IS in Syria from Caspian Sea' - BBC News](#).

simultaneously, is just another example of how an attack from within Canadian Arctic waters could be effectively carried out using SLCMs.³⁸ Again, the risk of such attacks is assessed as low, however are still possible and could be carried by exploiting seams between NORAD's separate warning missions.

In addition to the limitations surrounding aerospace control, due to the aging NWS, in 2006 NORAD also assumed the Maritime Warning Mission. This mission required NORAD to rebalance its focus, resources, and develop new capabilities to manage this new domain.³⁹ This addition to NORAD's mandate was an undertaking that took years to formalize, and is still being developed and refined. NORAD's ongoing limitations in its aerospace and maritime domain warning missions, has created a significant vulnerability in the defence of North America against Russia's current generation of missiles. A vulnerability that increases every year as Arctic sea ice continues to melt and Russia's capabilities further develop.

Unlike Canada, Russia views their Arctic as a vital piece to their national defence strategy and has been rapidly developing their domestic Arctic military capabilities over the past decade. Scholars, the media, and several states have been leery of Russia's aggressive militarization of the Arctic. However, when one considers the overall importance that Russia places on its Arctic region, their actions seem quite logical. The Arctic is where the majority of Russia's nuclear arsenal is stored.⁴⁰ The Kola Peninsula hosts two-thirds of the nation's sea-based nuclear forces and the Arctic and Atlantic Ocean provide access to US and other NATO targets, which are both key elements to Russia's deterrent practices. Russia's robust Arctic

³⁸ National Post, "Three Russian nuclear submarines simultaneously break through Arctic ice in drills," last modified 29 march 2021, <https://nationalpost.com/news/world/three-russian-submarines-surface-and-break-arctic-ice-during-drills>.

³⁹ Charron, *NORAD: Beyond Modernization* . . . , 14.

⁴⁰ "Security Management in the Arctic," *Defence Deconstructed Podcast*, 11 September 2020, https://www.cgai.ca/security_management_in_the_arctic.

military capability “. . . serves also as a symbol and guarantee of Russia’s great power status.”⁴¹

Russia is anticipating potential security challenges along its Northern Sea Route (NSR), just as Canada is anticipating the same along the NWP.

However, unlike Canada, Russia is prepared to defend its territory, against military and non-military threats, should the current rules-based order become over strained and collapse. An article published by the Arctic Institute in October 2020, called Russia an “undisputed superpower” regarding its military and economic status in the Arctic, and that “Russians have militarized the Arctic at an expeditious pace.”⁴² This military build up, depicted in Figure 2.1, has raised concerns in the US and Canada, but not enough to evoke an increased rate to the development of Canada’s Arctic defence capability. Over the past decade, Russia has reorganised its forces and in 2014 created a new unified command called *OSK Sever* to oversee all Arctic security matters.⁴³ To enforce their efforts, Russia has also fielded “. . . four new Arctic Brigade combat teams, 14 new operational airfields, 16 deep water ports, and 40 icebreakers with an additional 11 in development”⁴⁴ Russia also aspires to complete the modernization of 70% of its Arctic equipment by the end of 2021, an undertaking with an estimated price tag of eight point five billion dollars Canadian.⁴⁵ A paper published in 2019, identified that Russian forces had already procured over 70 airframes, 80 uncrewed aerial vehicles (UAV), four regimental sets of anti-aircraft missile systems, over 200 armoured vehicles including tanks

⁴¹ Valery Konyshchev, and Alexander Sergunin, “Is Russia a revisionist military power in the Arctic?” *Defense and Security Analysis* 30, no. 4 (Winter 2014): 324.

⁴² The Arctic Institute, “The Return of Great Power Competition to the Arctic,” last modified 22 October 2020, <https://www.thearcticinstitute.org/return-great-power-competition-arctic/?cn-reloaded=1>.

⁴³ *Ibid.*

⁴⁴ Foreign Policy, “Here’s What Russia’s Military Build-Up in the Arctic Looks Like,” last modified 25 January 2017, <https://foreignpolicy.com/2017/01/25/heres-what-russias-military-build-up-in-the-arctic-looks-like-trump-oil-military-high-north-infographic-map/>.

⁴⁵ Ernie Regehr and Amy Zavitz, *Circumpolar Military Facilities of the Arctic Five* (Vancouver: The Simons Foundation Canada, 2019), 62.

developed for Arctic employment.⁴⁶ Russian procurement has also focused on sourcing heavy capacity all terrain vehicles (ATV) and amphibious logistics vehicles, such as the M-3 Combat Buggy and the DT-30.⁴⁷ The high personnel and weight capacities these vehicles possess make them ideal for combat sustainment operations. They are also well suited for non-combat applications, such as search and rescue (SAR) and other humanitarian assistance situations.



Figure 2.1 – Russia’s Build Up of Arctic Military Forces

Source: Foreign Policy, “Here’s What Russia’s Military Build-Up in the Arctic Looks Like,” last modified 25 January 2017, <https://foreignpolicy.com/2017/01/25/heres-what-russias-military-build-up-in-the-arctic-looks-like-trump-oil-military-high-north-infographic-map/>.

⁴⁶ *Ibid.*

⁴⁷ Regehr, *Circumpolar Military Facilities of the Arctic Five . . .*, 72.

Russia's history as an actor in international Arctic affairs has not been without issues. In 2014, after the illegal annexation of Crimea, “. . . Russia was expelled from one of the principal security-based Arctic forums, the Arctic Security Forces Roundtable.”⁴⁸

Russia's partnership with China regarding combined Arctic defence, since the early 2000s to present day, has also been a cause for concern amongst the international community.⁴⁹ Furthermore, in 2018 the NATO exercise, Ex TRIDENT JUNCTURE, increased friction between NATO and the Russian Federation. NATO argued that the exercise, which was conducted in Norway with military personnel from 31 nations, was an exercise in the defence of allies in the European Arctic. However, the Russian government, and most media sources, perceived it as an attempt to deter Russia from the conduct of future offensive military actions.⁵⁰ Russia also responded with “. . . test-launched rockets near the Norwegian coast in the last days of the TJ [Ex TRIDENT JUNCTURE] while Russian bombers flew over the Barents and Norwegian Seas . . .”, and by jamming Global Positioning System (GPS) signals during the training.⁵¹ However, Russia has never attempted to conceal its opinions regarding NATO and its expansion towards the Russian frontier and Arctic.⁵² Since 2010, Russian politicians have been open to the fact that they are “. . . strongly opposed to any NATO involvement in the Arctic beyond the activities of Canada, Denmark-Greenland, Iceland, Norway, and the United States.”⁵³ President Putin has also stated NATO's continued

⁴⁸ The Arctic Institute, “The Return of Great Power Competition to the Arctic,” last modified 22 October 2020, <https://www.thearcticinstitute.org/return-great-power-competition-arctic/?cn-reloaded=1>.

⁴⁹ *Ibid.*; Adam P. MacDonald, “Precarious existence or staying the course? The Foundation and future of Arctic stability,” *Arctic Yearbook 2019, Redefining Arctic Security* (November 2019): 28.

⁵⁰ Mathieu Landriault and Adam MacDonald, “Debating Arctic security through a media lens – The case of NATO's Trident Juncture operation,” *Arctic Yearbook 2019, Redefining Arctic Security* (November 2019): 66.

⁵¹ *Ibid.*, 67.

⁵² Kristina Spohr and Daniel S. Hamilton, *The Arctic and World Order* (Washington, DC: Foreign Policy Institute/Henry A. Kissinger Center for Global Affairs, Johns Hopkins University, 2020), 188.

⁵³ Lackenbauer, *Whole of Government through an Arctic Lens . . .*, 64.

involvement in Arctic affairs would eventually result in “. . . risks to regional and global stability.”⁵⁴

Despite the frictions and aggressive military expansion in its Arctic region, Russia has proven to be a reliable and cooperative member when it comes to Arctic policy and international law development. This is evident from its participation as a member of the Arctic Council since the mid-1990s, and its adherence to the United Nations Conventions on the Law of the Sea (UNCLOS). Russia’s illegal annexation of Crimea in 2014 resulted in the other members of the Arctic Council imposing sanctions against Russia, and the meetings between the Arctic nations’ Chiefs of Defence Staff (CHoDs) halting. Canada even went as far as to chastise Russia for its actions in Ukraine/Crimea during the 2015 Arctic Council meeting in Iqaluit. Russia countered by stating, “No matter what is happening in the outside world, Arctic co-operation must continue . . . []. . . the Arctic is [a] territory of dialogue, not a platform for political quarrels”⁵⁵ It did not take long for business and cooperation between all Arctic Council states to return to normal, leading to progress regarding Arctic economic matters, marine security, SAR, maritime pollution regulations, and the implementation of the Polar Code in January 2017.⁵⁶ Additionally, Russia was the first nation in the world to submit its submission under the UNCLOS regarding its maritime and continental shelf claims, and has been extremely cooperative and detailed with its compliance of the UNCLOS.⁵⁷ When it comes to Canada-Russia cooperation, both nations have enjoyed several advantages and share similar legal positions. Both countries support one another’s claims regarding their Arctic straits as

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*, 84.

⁵⁶ High North News, “Analysis: The Arctic conflict – truth, fantasy or a little bit of both?” last modified 18 November 2018, <https://www.highnorthnews.com/en/analysis-arctic-conflict-truth-fantasy-or-little-bit-both>.

⁵⁷ *Ibid.*

internal waters, have exchanged research data on continental shelf exploration, and have shared “. . . a long history of trade via the Murmansk-Churchill Arctic Bridge.”⁵⁸

Despite Canada’s, and the Arctic Council’s, history of peaceful cooperation with Russia regarding the Arctic, Russia still presents as a significant military threat to Canada, and North America by extension. The negotiations of international matters cannot remain isolated from one another, regardless of an organizations effort. Eventually they intertwine with other matters and used as bartering-chips between states. Therefore, it is naive to believe that one can simply ignore other matters occurring in the world for the sake of Arctic cooperation and dialogue. When it comes to the Arctic, Russia has a significant military advantage, and Canada would be unable to counter a Russian military threat on its own. At this point, continued cooperation as an Arctic Council member and the maintenance of its relationships with allies, is Canada’s best option to mitigate and deter any potential Russian military threats.

China

China presents a different security challenge than Russia, as China’s efforts are focused more on gaining access to, and increasing their influence over, Arctic states to further enhance their economical power and better align the rules-based order with their national interests. For decades, China has been expanding its influence over the people and institutions of Arctic states through scientific, economic, and technological joint ventures; the majority of them being with Russia. These linkages were established over the years to gain further access to new northern commercial shipping routes, untapped natural resources, and as a means to lay the foundation for China’s Belt and Road Initiative (BRI) and Silk Arctic Road initiative.⁵⁹ As noted in the US Navy’s 2021 Artic Blueprint publication, judging from China’s actions in other regions of the

⁵⁸ Lackenbauer, *Whole of Government through an Arctic Lens* . . . , 81.

⁵⁹ Department of the Navy, *A Strategic Blueprint for the Arctic* . . . , 8.

world, such as the South China Sea, these actions have a high potential to undermine and threaten “. . . the economic and social progress of people and nations along these [Arctic] routes.”⁶⁰ With China’s economical and political international influence steadily increasing each year, it increases their military reach and potential as a future military threat to Canada.

China’s official stance and intent regarding the Arctic was discussed amongst Chinese leadership for decades. China has always shown an interest in the Arctic since the launch of its Arctic scientific research efforts, known as the Polar Program, in 1981.⁶¹ Up until 2015, China’s strategy regarding the Arctic was thought to be in a “. . . ‘state of nascent formulation’. . . .”⁶² However, this changed abruptly in 2016, when China’s Foreign Minister, Wang Yi, declared China as a “near-Arctic state” due to “. . . its strong historical ties as a result of the Svalbard Treaty in 1925.”⁶³ The remainder of China’s vision for the Arctic came quickly after that. In June 2017, China announced its interest in the Arctic sea routes as part of their BRI. Then in early 2018, China officially released its Arctic Policy, highlighting its goals and positions regarding the Arctic. Four months later, the “Arctic Circle China Forum” was held “. . . in Beijing with more than 500 participants from 30 countries . . .” in attendance.⁶⁴

Concurrent to their national policy efforts, China continued to expand its international economic ties. In 2014, Russia turned to China as a new major trading partner after being shut out of Western and European markets due to sanctions. The new partnership gave China greater access to Arctic maritime routes, ports, and opportunities for Chinese state-owned banks to further invest in resource extraction projects. From 2005 to 2017, the majority of China’s Arctic

⁶⁰ *Ibid.*

⁶¹ Adam P. MacDonald, “China Looking North: Compromising Canada’s Arctic Sovereignty and Security?” *Canadian Military Journal*, 18, no. 1 (Winter 2017): 7; Department of National Defence, *Defending Canadian Sovereignty: New Threats, New Challenges* (Ottawa: DND Canada, 2019), 77.

⁶² MacDonald, “China Looking North: Compromising Canada’s Arctic Sovereignty and Security . . .”, 7.

⁶³ Regehr, *Circumpolar Military Facilities of the Arctic Five . . .*, 119.

⁶⁴ *Ibid.*, 120.

investments, which total around 1.4 trillion dollars, were directed to Russian hydrocarbon projects, which was more than enough to cause concerns for Western politicians.⁶⁵ China's economic grasp on the Arctic continues to increase and not only with Russia. Since the early 2000s, with a spike occurring during the 2008 recession, countries such as Norway, Denmark, and Canada have had major Arctic resource extraction ties with China.⁶⁶ Although resource extraction in the Arctic remains very expensive, China continues to make progress by exploiting opportunities created by financial hardships. An example of this occurred in Denmark, when London Mining, a British firm, went bankrupt prior to beginning operations in the Isua Iron Mine; the Chinese company, General Nice, subsequently bought the mining project in early 2015.⁶⁷ China's extension international investments and influence it wields over numerous states were major contributors to China's ability in avoiding significant fiscal impacts during the 2008 recession. Even during the recent COVID-19 global pandemic, China's economy continues to grow, continuously searching for more investment opportunities, including those in Canada's North. Chinese State-owned companies have been investing in resource extraction operations in Canada's North for sometime now. However, tensions between Canada and China have been high since Canadian authorities arrested the Huawei executive Meng Wanzhou in 2018.⁶⁸ The level of scrutiny of Chinese funded resource extraction projects in Canada has since increased, resulting in the rejection of Chinese bids and proposals on the grounds of protecting national

⁶⁵ North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment* . . . , 55.

⁶⁶ Department of National Defence, *Defending Canadian Sovereignty: New Threats, New Challenges* . . . , 82.

⁶⁷ *Ibid.*, 83.

⁶⁸ Global News, "Canada blocks Chinese Arctic gold mine takeover, citing national security," last modified 22 December 2020, <https://globalnews.ca/news/7537057/canada-blocks-shandong-gold-takeover/>.

security. The most recent case being the 2021 rejection of a Chinese bid to purchase a Canadian gold mining company that operates in Nunavut.⁶⁹

China, a non-Arctic state, has been actively working to reshape the Arctic geopolitical landscape for almost a decade. In 2013, China was granted permanent observer status to the Arctic Council. A requirement of being a member of the Arctic Council is to recognize the sovereignty of states bordering the Arctic, which the Chinese Ministry of Foreign Affairs did shortly before the approval of their application to Arctic Council.⁷⁰ Despite, not being able to vote as an observer, China's presence in the Arctic Council still works in their favour. As an observer, China has been promoting their interest in the Arctic and has successfully introduced several new terms, such as "countries of Central Arctic" and "countries close to the Arctic", during open debates. These terms are meant to identify states without Arctic coastlines, and do not have sovereign territory within the Arctic Circle. Introduction of such terms into the Arctic lexicon strengthens China's image as a leader for other non-Arctic states, and increases its overall influence as an Arctic actor.⁷¹

As mentioned, China has also signed and ratified UNCLOS, even though its actions and position regarding their claims in the South China Sea may not fully portray this. In the past, China has sought permission to transit the Canadian NWP and the Russian Northern Sea Route (seen in Figure 2.2), indicating their acceptance of these waterways as sovereign internal waters to those nations. Signifying anything different would be counter productive to China's previous claims under UNCLOS. For decades China has "...claimed Bohai Bay (Gulf of Tonkin) and the

⁶⁹ University of Alberta – China Institute, "China is the Canadian Arctic: Context, Issues, and Considerations for 2021 and Beyond," last modified 12 January 2021, https://www.ualberta.ca/china-institute/research/analysis-briefs/2021/arctic_analysis_brief.html#:~:text=From%202005%20to%202017%2C%20cumulative,the%2060%20degrees%20north%20line.

⁷⁰ Department of National Defence, *Defending Canadian Sovereignty: New Threats, New Challenges . . .*, 82.

⁷¹ *Ibid.*

Qiongzhou Strait, between Hainan Island and southern China, as part of Chinese internal waters.”⁷² Therefore, one would conclude that China is in support of other internal water claims made by other nations, such as Canada’s in respect to the NWP. However, the unauthorized transit through the NWP in 2017 by the Chinese icebreaker Xuelong and China’s Arctic Policy raise questions regarding China’s official position as it was in direct violation of the UNCLOS.⁷³



Figure 2.2 – Canadian NWP and Russia’s Northern Sea Route

Source: The Economist, “Who owns the Northwest Passage?” last modified 22 May 2019, <https://www.economist.com/the-economist-explains/2019/05/22/who-owns-the-northwest-passage>.

In the Arctic white paper, under the subsection titled “China’s participation in the development of Arctic shipping routes”, it states that “China respects the legislative, enforcement

⁷² Suzanne Lalonde, “The debate over the legal status of the Northwest Passage” (Explanatory notes by Dr. Suzanne Lalonde, Université de Montréal, 2018), 11.

⁷³ Spohr, *The Arctic and World Order* . . . , 277; Department of National Defence, *Defending Canadian Sovereignty: New Threats, New Challenges* . . . , 79.

and adjudicatory powers of the Arctic States, in the waters subject to their jurisdiction . . .”, but then goes on to say that China also supports “. . . the freedom of navigation enjoyed by all countries . . .” as well.⁷⁴ Scholars and authors, such as Adam Lajeunesse, believe this ambiguity in China’s Arctic Policy was deliberate to muddy the waters “. . . enough to allow China to skirt the issue, neither locking itself into a recognition of Canadian sovereignty or offending a Canadian government that it wants to work with.”⁷⁵ This level of ambiguity labels China as unpredictable, which has Canadian policy makers concerned regarding future dealings with the superpower.

China’s stance on environmental protection and human security in their 2018 Arctic Policy are very similar to those found in Canada’s ANPF.⁷⁶ Although, strengthening the economy and enhancing the standard of living for Canada’s Arctic and its populations is a priority for Canadian leaders, one must remain vigilant of China’s true intentions. China’s current and past practices “. . . of oppressing its own minority populations and disregard for its own environment . . .”⁷⁷ have created further concerns amongst Canadian policy makers and industry leaders. Such concerns are warranted, especially given China’s history of lashing out at its allies and trade partners when they are questioned. The 2020 trade-war between China and Australia, is a prime example of China lashing out at one of its partners. Relations between the two countries were strained for years and did not fully erupt until Australia openly supported an inquiry regarding the origins of COVID-19. China retaliated by taking serious trade actions

⁷⁴ Lalonde, “The debate over the legal status of the Northwest Passage . . .”, 12.

⁷⁵ Adam Lajeunesse, “Finding “win-win” China’s Arctic Policy and what it means for Canada,” *The School of Public Policy Publications, SPP Briefing Paper* 11, no. 33 (December 2018): 5.

⁷⁶ *Ibid.*, 6.

⁷⁷ *Ibid.*, 2.

against Australia, which crippled Australia's export market leaving industry leaders helpless and looking toward the Australian government for relief packages.⁷⁸

Lastly, when it come China as a military threat, the US has been more vocal than Canada by stating China's growing interest in the Arctic is focused on setting conditions for future military access across the region. By gaining access to the Arctic through economic and political influence, China has been creating a dependency with Arctic states on Chinese investments. Critics argue that this increase in Chinese influence in the Arctic has a military end state, and China may have intentions of having a persistent, or semi-persistent, military presence in the Arctic.⁷⁹ There are beliefs that China has been conducting combined Arctic exercises with Russia.⁸⁰ It is well known that China, along with Russia and the US, is one of the lead nations currently developing intercontinental ballistic missiles (ICBM), which are capable of penetrating the current North American Defence systems.⁸¹ China has also been expanding its maritime capabilities by recently completing its second icebreaker, with plans to develop a third nuclear-powered icebreaker in the near future.⁸² Furthermore, it does not specifically state intentions of militarizing the Arctic, but China's 2015 White Paper on military strategy ". . . calls for China to protect its interests beyond Chinese . . . [waters and] . . . build military forces that are capable of performing certain operations in far seas."⁸³ An interesting statement regarding operating abroad,

⁷⁸ The Guardian, "Australia insists WHO inquiry into Covid origin must be robust, despite China tensions," last modified 28 December 2020, [Australia insists WHO inquiry into Covid origin must be robust, despite China tensions | Coronavirus | The Guardian](#).

⁷⁹ North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment* . . . , 55.

⁸⁰ MacDonald, "Precarious existence or staying the course? The Foundation and future of Arctic stability . . . , 22.

⁸¹ Richard Speier et al, *Hypersonic Missile Nonproliferation: Hindering the Spread of a New Class of Weapons* (Santa Monica, CA: RAND Corporation, 2017), 21–22.

⁸² North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment* . . . , 52.

⁸³ Department of National Defence, *Defending Canadian Sovereignty: New Threats, New Challenges* . . . , 88.

from a country that “. . . has advocated the principles of non-interference in the affairs of other countries as a key tenant of its foreign policy for six decades.”⁸⁴

Although China does not show any direct signs of being a current military threat within the Canadian Arctic, it displays high potential to become one in the future. Its military forces may not be suitable for Arctic operations just yet, and China is without Arctic territory of its own, but this will not deter it from continuing to expand its influence amongst Arctic States and military Arctic capabilities. By investing vast amounts of money into Arctic regions, and supporting Arctic infrastructure and resource extraction projects, China is slowly positioning itself to be an indispensable Arctic development partner. The allure of collaborating with China is there, but Canada, as well as the other Arctic States, must be sure that teaming up with China is truly in their nation’s best interest and in the best interest of their Arctic population.

The United States of America

Like China, the US is not considered as a direct threat to the Canadian Arctic, but the US and Canada have been at odds regarding the legal status of the NWP and international boundaries in the Beaufort Sea. The US has been direct regarding its position that the NWP is an international strait, vice internal waters to Canada. Aside from undermining Canadian sovereignty, this position also compromises the security of Canada and the rest of North America.

Prior to the further exploration of this situation, one must gain a greater appreciation for the legal situation surrounding the NWP. Within the UNCLOS, under Article 38, it states that the freedom of navigation through international straits is authorized for all states.⁸⁵ However, this

⁸⁴ Heath, Timothy R, *China’s Pursuit of Overseas Security* (Santa Monica, CA: RAND Corporation, 2018), 16.

⁸⁵ United Nations, Ocean Affairs and the Law of the Sea, *United Nations Convention on the Law of the Sea* (New York: UN, 1982), 37.

only applies to maritime straits that have not been officially identified as internal waters by a nation.⁸⁶ The Canadian government, having the foresight to identify the NWP as an internal waterway prior to ratifying the UNCLOS, is therefore able to assert that this provision does not apply to the NWP.⁸⁷ However, since 1969 the US, which has not ratified UNCLOS, has been challenging Canada's claim and arguing that the NWP is an international strait vice internal Canadian waters. For instance, the *USS Manhattan*, a US commercial ice-hardened oil tanker, transited the NWP during its maiden voyage in 1969.⁸⁸ The voyage was more than a test of the new tanker's ability to transport oil through ice-packed waters, it was also meant to challenge Canada's claim over the NWP; which was later confirmed in 1970, through the release of a declassified memo from the US Department of State.⁸⁹ Almost 20 years later in 1988, Canada entered into an agreement of Arctic cooperation with the US, agreeing that that all transit along the NWP by US icebreakers would require Canadian consent. However, by ways of a caveat, both countries ensured that their official position regarding the legal status of the NWP was not affected by the signing of this agreement.⁹⁰ The issue seemed to go dormant for decades afterward as there was no real necessity to resolve the maritime legal dispute. However, as the amount of Arctic sea ice continued to decrease each year, the US counter arguments toward the Canadian position regarding the NWP seemed to increase. This was most likely due to increased interest of resource extraction opportunities and the increase in shipping traffic in the more readily accessible Arctic waterways.⁹¹ The US's renewed attention on the matter can be observed

⁸⁶ *Ibid.*, 36.

⁸⁷ Lajeunesse, "Finding "win-win" China's Arctic Policy and what it means for Canada . . . , 5.

⁸⁸ Shelagh D. Grant, *Polar Imperative: A History of Arctic Sovereignty in North America* (Vancouver: Douglas & McIntyre, 2010), 348-351.

⁸⁹ Theodore L. Eliot, *Imminent Canadian Legislation on the Arctic* (US Department of State, Washington D.C.: Information Memorandum for Mr. Kissinger – The White House, 12 March 1970).

⁹⁰ North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment* . . . , 32.

⁹¹ Lajeunesse, "Finding "win-win" China's Arctic Policy and what it means for Canada . . . , 5.

in the last two *US Arctic policies* (2009 and 2013), and more recently in a speech delivered in May 2019, by US Secretary of State Mike Pompeo.⁹²

Therefore, this continued agreement to disagree between the US and Canada, regarding the NWP, is a growing concern for Canadian policy makers. As Arctic Sea routes continue to open up, Canada must start increasing its regulation of the increased shipping occurring in those waterways. However, what is more pressing for the Canadian government is the potential threat to Canadian sovereignty in Arctic waters should the US decide to expand its Freedom of Navigation Operations (FONOP) into Arctic waters.⁹³ Should this occur prior to a revised bilateral agreement between Canada and the US, or prior to a UN ruling on the legal status of the NWP, it would negatively affect US-Canada relations. Such an action by the US would be seen as an infringement on Canadian sovereignty and detract from Canada's positions regarding the legal status of the NWP as internal waters. However, it appears this has already occurred, and numerous countries, including the US, have transited the NWP without Canadian consent; however, they did so via submarine. The abovementioned 1988, agreement of Arctic cooperation between Canada and the US, only accounts for icebreakers, not military surface or subsurface vessels. It is known that Soviet submarines entered the NWP covertly during the Cold War, and the US submarine the USS Seadragon also did so in 1960.⁹⁴ However, these passages were conducted covertly, which Canadian policy makers agree was not a direct challenge to Canadian sovereignty. However, when a nation *overtly* enters another nation's sovereign territory, or waters, without seeking prior consent, such acts of incursion require a response. In 1995, Defence Minister David Collenette let slip in the House of Commons that he had knowledge of

⁹² North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment* . . . , 53.

⁹³ *Ibid.*, 34.

⁹⁴ Michael Byers, "Does Canada Need Submarines?" *Canadian Military Journal*, 13, no. 3 (Summer 2014): 10.

US submarines operating under the NWP.⁹⁵ Then in December 2005, Prime Minister Stephen Harper during a news conference in Winnipeg admitted, “Even the United States, an allied government, is currently making incursions into our territorial waters without even notifying us, let alone seeking permission, . . .” prior to making similar remarks regarding Russia, Denmark, and the United Kingdom (UK).⁹⁶ This acknowledgement and acceptance of foreign incursion in Canadian waters without any response could jeopardize Canada’s legal positions regarding its claim over the NWP. It creates an image of Canadian policy makers that are unwilling, or unable, to hold these other nations accountable for breaches in Canadian sovereignty. However, it appears Canadian officials have been treating such submarine activity as official-secret material, which behooves them to do for the time being.

Lastly, should the US’s arguments regarding the legal status of the NWP as an international strait prove successful, it would enhance access for foreign adversaries to carry out future military attacks on North America.⁹⁷ Therefore, it is advantageous for Canada and the US to continue to cooperate with one another regarding matters such as the status of the NWP to ensure the mutual defence of North America. To enhance this relationship a new bilateral agreement between the two nations, regarding Arctic water transit, needs to be brokered, or perhaps an enhancement to NORAD’s Maritime Warning Mission.⁹⁸ Until the situation regarding the NWP is resolved, Canada and the US will continue to be at odds.

CONCLUSION

⁹⁵ *Ibid.*

⁹⁶ The Globe and Mail, “Harper breaks ice on Arctic sovereignty,” last modified 23 December 2005, [Harper breaks ice on Arctic sovereignty - The Globe and Mail](#).

⁹⁷ North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment* . . . , 7.

⁹⁸ Andrea Charron, James Fergusson, and Nicolas Allarie, ‘*Left of the Bang*’: *NORAD’s Maritime Warning Mission and North American Domain Awareness* (Winnipeg: University of Manitoba, Centre for Defence and Security Studies, 2015), 58.

This chapter explored current and future potential military and non-military threats to the Canadian Arctic from Russia, China, and the US. Each of the examined countries presented several different manners that they could threaten the security of the Canadian Arctic. Russia for example, being the current world superpower for Arctic military capabilities, presented the largest potential of being a direct military threat to Canada's Arctic. Most of Russia's activities, such as their LRA patrols and covert subsurface maritime operations within the Canadian Arctic, do cause concern to some policy makers and scholars. However, for the most part, these activities do not currently present a direct military threat as their long-range bombers are unarmed and their submarine operations are covert. Furthermore, relations between Canada and Russia, mostly through the Arctic Council, have been stable and productive; and based on their efforts within the Arctic Council and the cooperation they have displayed toward the UNCLOS, Russia has demonstrated their willingness to respect the rules-based system surrounding the Arctic.

China on the other hand, does not current present itself as a direct military threat to the Canadian Arctic. The challenge with China is their capability to play the long game by making other states dependent on their support and then using that to influence and alter the situation in their favour. Their actions carry the high potential to threaten the Arctic through non-military means such as negatively impact the economy, environment, and human security. However, China's unpredictability and actions elsewhere, such as the South China Sea, does increase their potential as a likely future military threat.

Lastly, the US neither presents a direct military or non-military threat to Canada's Arctic. Canada and the US have enjoyed a long history of strong military and civil cooperation, which is not expected to deteriorate anytime soon. However, the US's frank approach to Arctic policy and

their positions regarding Arctic matters, specifically those that affect FONOPs, could potentially threaten Canada's legal arguments regarding the NWP and Beaufort Sea dispute. These actions indirectly threaten Canada's sovereignty and could increase North America's vulnerability to foreign military attacks.

Regardless of how one looks at the situation, the Arctic Sea ice is melting creating greater access to more efficient shipping routes and untapped resources. This new access will generate an increase to human activity in the Canadian Arctic, which will result in security challenges, geopolitical frictions, and eventually physical conflict with foreign adversaries. Regardless of where the threat comes from, when it is most likely to occur, and whether it is military or otherwise, Canada must be prepared to respond to and counter threats in its Arctic territory. Countering current and future military threats in the Arctic will be an enormous undertaking for the CAF given its current levels of readiness, posture, and the vastness that is the Canadian Arctic. The next chapter will cover the CAF's current Arctic capabilities, response forces, and the issues surrounding them.

CHAPTER 3 – THE CAF’S ROLE AND ARCTIC CAPILITY

INTRODUCTORY COMMENTS

As discussed in the last chapter, the Canadian Armed Forces (CAF) has a significant role in the defence of Canada and, by extension, North America. Canada’s *Defence Policy, Strong, Secure, Engaged* (SSE), outlines the CAF’s core missions, the first one being to “Detect, deter, and defend against threats to or attacks on Canada.”⁹⁹ In order to meet its mandate, the CAF carries out a number of operations throughout Canada and the Arctic, as shown in Figure 3.1. Despite the CAF’s efforts to revive its operational level Arctic capabilities, it remains without the ability to defend Canada’s Arctic and archipelago region from potential security challenges and threats. To examine the legitimacy of this statement, this chapter will explore several factors internal to the CAF and those that are external as well. Internal factors will focus on the CAF’s current established Arctic response plan, force readiness, infrastructure, equipment, and logistical

⁹⁹ Department of National Defence, *Strong, Secure, Engaged - Canada's Defence Policy* (Ottawa: DND Canada, 2017), 82.

support. While the external factors will focus on the CAF's role within a whole of government (WoG), and whole of society approach regarding Arctic response.

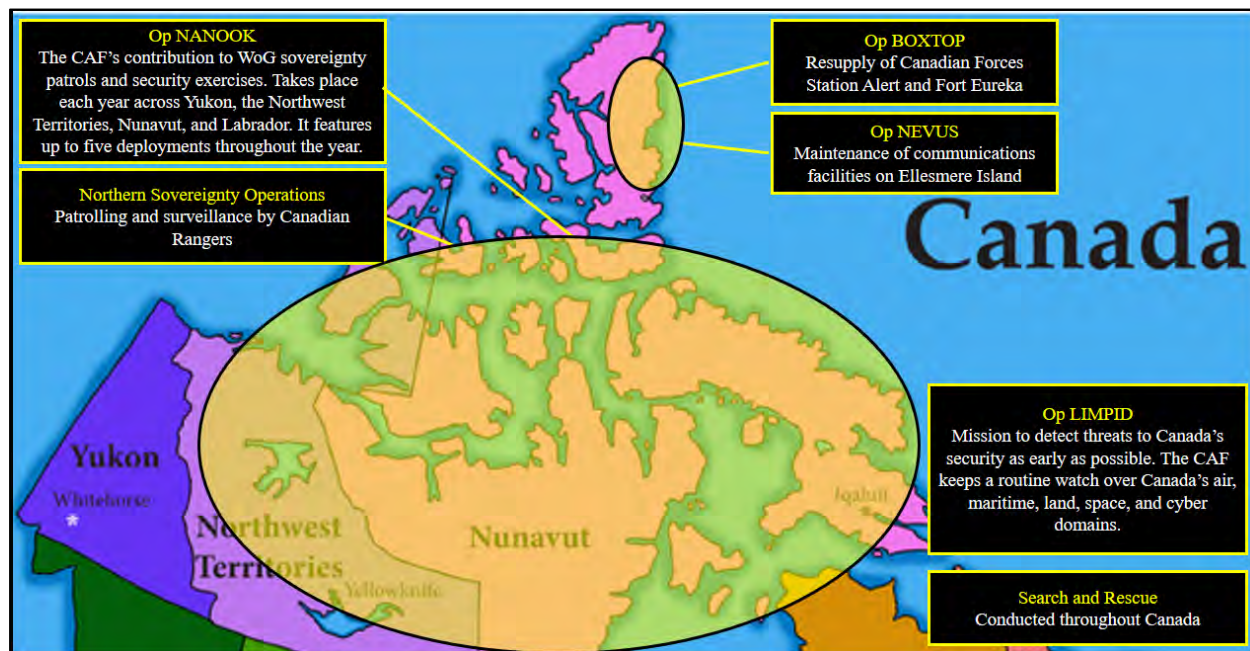


Figure 3.1- Canadian Operations In The North

This chapter will aim to maintain a balanced approach by looking at examples regarding land, air, and sea capabilities, as the majority of Arctic operations are conducted in a joint fashion.¹⁰⁰ CAF Search and Rescue (SAR) will be mentioned in some examples, but will not be discussed in detail as the focus will remain on conventional military forces. The vastness, extreme weather, and unpredictable terrain make operating in the Arctic challenging throughout most periods of the year. As the polar ice continues to melt, it changes the terrain and operating environment, increasing the requirement to employ robust joint forces across the region. In 2005, Prime Minister Stephen Harper stated the following: “You don’t defend national sovereignty

¹⁰⁰ “Joint operations. In the CAF, joint operations are operations executed by a temporary grouping of elements from at least two services [e.g. Army and Navy]. . . .” Department of National Defence, JDN 02-2014, *Command and Control of Joint Operations* (Ottawa: DND Canada, 2014), 5.

with flags, cheap election rhetoric or advertising campaigns. You need forces on the ground, ships in the sea, and proper surveillance.”¹⁰¹ Ten years later, political scientist Adam Lajeunesse, published a paper that focused on the CAF’s Arctic response role and capabilities at the time. In the article he articulated that the CAF was sufficiently able to meet its mandated missions, as set out in the 2008 Canada First Defence Strategy, and capable of working with other government departments (OGD) to manage a wide spectrum of security situations.¹⁰² Counter to the above quote from Stephen Harper, Lajeunesse stated, “. . . defending sovereignty consists of exercising effective control in response to specific needs and interests in Canadian territory and internal waters.”¹⁰³ He argues that the CAF’s capabilities were adequate to defend Canada’s sovereignty then and would be for sometime into the future. However, in 2015, the CAF was still in transition after completing 12 years in Afghanistan¹⁰⁴ and had only conducted its third annual joint training exercise in the Arctic.¹⁰⁵ Furthermore, Lajeunesse argued that the CAF’s Arctic capability should not be judged based on its combat readiness, but by its:

. . . ability to deploy and maintain appropriate mission specific teams adaptable to a variety of situations, smooth integration into joint operations, and the ability to respond quickly and decisively with appropriate force across the Canadian Arctic.¹⁰⁶

The CAF’s six core missions within the SSE, are rather similar to the six found in the 2008 Canada First Defence Strategy, and the same can be said for the analysis on future potential

¹⁰¹ The Globe and Mail, “Harper breaks ice on Arctic sovereignty,” last modified 23 December 2005, [Harper breaks ice on Arctic sovereignty - The Globe and Mail](#).

¹⁰² Adam Lajeunesse, *The Canadian Armed Forces in the Arctic: Purpose, Capabilities, and Requirements* (Calgary: University of Calgary, 2015), 1.

¹⁰³ *Ibid.*

¹⁰⁴ CBC, “Canadian military involvement in Afghanistan formally ends,” last modified 12 March 2014, [Canadian military involvement in Afghanistan formally ends | CBC News](#).

¹⁰⁵ Government of Canada, “ARCHIVED – Canada First Defence Strategy – Complete document,” last modified 7 July 2007, [ARCHIVED - Canada First Defence Strategy - Complete document - Canada.ca](#).

¹⁰⁶ Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 1.

threats, which the documents were designed to safeguard Canada from. Therefore, Lajeunesse's above arguments regarding the CAF's ability to fulfil its mandate in the Arctic are still applicable to today's CAF.

Therefore, future operations will require the CAF to be prepared to respond to situations such as aid to civil power and disaster relief because of increased maritime and air traffic throughout the Arctic. Increased shipping and natural resource extraction projects will most likely result in increased manmade disasters that will negatively affect the Arctic ecosystem.¹⁰⁷ The "grey zone" and its wide range of threats, that fall outside of common policies, was briefly touched on in chapter 2. Threats of this nature, or activities meant to obscure an actor's strategic goal, require a greater understanding of threats that fall outside of the military realm. Resulting in government partners and even civilian expertise, or local operational support, will be required when responding to grey zone threats.¹⁰⁸ By applying Lajeunesse's above judging criteria, or measures of effectiveness, is the CAF prepared to respond to an actual emergency or security situation in the Arctic? What does it currently have in place?

CURRENT CAF ARCTIC RESPONSE PLAN

Canada's latest defence policy, SSE, states that the CAF would be employed in a supporting role within a WoG approach response to a significant emergency or security threat in the Arctic.¹⁰⁹ However, there are a number of factors currently facing the CAF that make fulfilling its role in an Arctic response situation very challenging. Regardless of whether the

¹⁰⁷ Charron, *NORAD: Beyond Modernization . . .*, 27 – 33; David Perry, Opening remarks, Standing Committee on Foreign Affairs and International Development (FAAE), Ottawa, Canada, 24 October 2018. https://www.cgai.ca/canadas_sovereignty_in_the_arctic.

¹⁰⁸ North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment*, (Peterborough: Trent University School for the Study of Canada, 2020), 13.

¹⁰⁹ Department of National Defence, *Strong, Secure, Engaged . . .*, 17; Lackenbauer, *Whole of Government through an Arctic Lens . . .*, vi.

threat is military, or non-military, in nature the CAF's Arctic response forces are currently unsuitable, lack the ability to rapidly deploy to the Arctic, and are unable to independently sustain themselves during Arctic operations without prior lengthy planning and commercial contracting. The level of attention, training, and resources that are in place for emergency response in Canada's Southern regions, are not equal to those in place for the country's northern regions. Since the early 2000s, Canada's sovereignty and its northern population have become more vulnerable to foreign threats, yet the CAF still lacks the resources and capabilities to counter those that might contest Canada's sovereignty in the Arctic.

Much like the arguments of Adam Lajeunesse, Canada's Arctic Foreign Policy prioritizes the defence of Canada's sovereignty in the Arctic through the employment of regulations and law. However, Canada's Arctic foreign policy also mentions exercising sovereignty through the activities of law enforcement agencies and military presence.¹¹⁰ Presence from the Royal Canadian Mounted Police (RCMP), Canadian Coast Guard (CCG), and the CAF is minimal or intermittent throughout the Arctic. Of the three government agencies, the CCG has the most prevalent presence in the Arctic; however, its mandate is one of ice-breaking and not law enforcement or immigration services.¹¹¹ The RCMP has a persistent presence within most Arctic villages and hamlets, but are limited in terms of personnel and stretched thin by their policing and customs duties. Because of this, it would not be difficult for someone, or a group of terrorists, to enter Canada illegally through the Arctic. For instance, on 23 August 2017, after coming ashore, two Norwegian sailors attempted to clear customs by reporting to the RCMP

¹¹⁰ Government of Canada, "Statement on Canada's Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada's Northern Strategy Abroad," last modified 12 May 2017, http://www.international.gc.ca/arctic-arctique/assets/pdfs/canada_arctic_foreign_policy-eng.pdf.

¹¹¹ Government of Canada, "Canadian Coast Guard, About us," last modified 26 July 2019, <https://www.ccg-gcc.gc.ca/corporation-information-organisation/mandate-mandat-eng.html>.

station in Gjao Haven. However, the RCMP station was closed and it took them some time to locate an RCMP officer to have their passports stamped.¹¹² Situations like this are common in the Arctic; all vessels sailing in Arctic waters are mandated to follow the reporting procedures under the Northern Canada Vessel Traffic Services Zone Regulations (NORDREG), but once that is done monitoring of those ships and their crews is minimal.¹¹³ The RCMP's footprint on the ground may be permanent, but it is small, and the CCG's main purpose lies mostly with its ice-breaking task.

The CAF's presence in the Arctic has numerous layers, responsibilities, and capabilities that differ from those of the RCMP and CCG's. The CAF's primary permanent force in the Arctic are the Canadian Rangers. Over the years they have been referred to as "Canada's eyes and ears in the North" and fall under the CAF's Reserve forces.¹¹⁴ They are lightly equipped, receive limited military training, and often work along side the CAF's Regular Force members during training or SAR operations. Despite being expected to perform sovereignty and national security duties, the Canadian Rangers are an element of the CAF that cannot be sent into combat.¹¹⁵ There are approximately 5,000 Rangers throughout Canada, and approximately 1,800 of them reside and operate within Canada's North. The 1,800 Arctic Rangers are organized into 60 patrols, which fall under the command of 1st Canadian Ranger Patrol Group (1 CRPG) based

¹¹² The Globe and Mail, "Rites of passage thwart northern adventurers," last modified 8 September 2007, <https://www.theglobeandmail.com/news/national/rites-of-passage-thwart-northern-adventurers/article4092726/>.

¹¹³ Government of Canada, "Northern Canada Vessel Traffic Services Zone Regulations," last modified 7 April 2021, [Northern Canada Vessel Traffic Services Zone Regulations \(justice.gc.ca\)](https://www.justice.gc.ca/eng/1525/1525.html).

¹¹⁴ CBC, "Canadian Rangers: A closer look at our 'eyes and ears' in the North," last modified 21 April 2015, [Canadian Rangers: A closer look at our 'eyes and ears' in the North | CBC News](https://www.cbc.ca/news/canadian-rangers-a-closer-look-at-our-eyes-and-ears-in-the-north-1.3081111).

¹¹⁵ CBC, "A Canadian Rangers reset would help Armed Forces keep pace with a changing North," last modified 20 October 2020, [A Canadian Rangers reset would help Armed Forces keep pace with a changing North | CBC News](https://www.cbc.ca/news/canadian-rangers-reset-would-help-armed-forces-keep-pace-with-a-changing-north-1.5711111).

out of Yellowknife, Northwest Territories.¹¹⁶ The Rangers are mandated to report all and any unusual activities or sightings to 1 CRPG, and be responsive in the event of a local emergency.¹¹⁷ In terms of the CAF's Arctic response plan, the Canadian Rangers, based on their proximity, would be the first responding element to an emergency or security situation in the Arctic.¹¹⁸ However, due to their limited training, resources, and dispersion across the Arctic, the Canadian Rangers would require additional support from further CAF elements.

Most situations that would warrant a CAF response, such as a major humanitarian or environmental disaster, would be conducted through a WoG approach and are outlined in the CAF's 2014 Standing Operations Order for Domestic Operations (SOODO).¹¹⁹ The Regular Force CAF elements assigned to domestic response across Canada are outlined in the SOODO, which can be seen in Figure 3.2. Once a decision has been reached to employ military forces, in addition to the Canadian Rangers, one of Canada's four Immediate Response Units (IRU) would be activated.¹²⁰ IRUs are southern-based units that are temporarily assigned to the task, are scalable to the situation, and can consist of 150 to 350 soldiers.¹²¹ An IRU's notice to move schedule is as follows: eight hours for the IRU reconnaissance group, 12 hours for the vanguard, and 24 hours for the remaining follow on forces.¹²² Should the situation then call for additional CAF forces, in addition to an entire IRU, the operation would receive further augmentation from

¹¹⁶ Government of Canada, "1st Canadian Ranger Patrol Group," last modified 20 November 2020, <http://www.army-armee.forces.gc.ca/en/1-crpg/index.page>; Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 5.

¹¹⁷ Government of Canada, "Canadian Rangers," last modified 11 March 2021, [Canadian Rangers - Canadian Army \(forces.gc.ca\)](http://www.army-armee.forces.gc.ca/en/canadian-rangers/canadian-army-forces.gc.ca).

¹¹⁸ Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 6.

¹¹⁹ Lackenbauer, *Whole of Government through an Arctic Lens* . . . , vi; Standing Operations Order for Domestic Operations (SOODO) (Ottawa: National Defence Headquarters, 2014), 430.

¹²⁰ *Ibid.*; Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 6.

¹²¹ Royal United Services Institute of Nova Scotia, "Flood Relief, Operation Lentus," last modified 12 May 2019, [Canadian Armed Forces Domestic Operations - RUSI\(NS\) \(rusi-ns.ca\)](http://www.rusi-ns.ca); Standing Operations Order for Domestic Operations (SOODO) . . . , 44.

¹²² Standing Operations Order for Domestic Operations (SOODO) . . . , 430.

an Arctic Response Company Group (ARCG), normally activated from the same Division as the IRU.¹²³



Figure 3.2 – National CAF Contingency Operations Assets

Source: Standing Operations Order for Domestic Operations (SOODO) . . . , 44.

The ARCGs were first introduced in the 2008 Canada First Defence Strategy, the concept was then tested, and in 2013 the Master Implementation Directive was issued.¹²⁴ An ARCG is composed of approximately 95 southern-based Primary Reserve members, require as much as eight days to deploy post activation, and are self-sufficient for clothing and food for up to 21

¹²³ *Ibid.*; Canadian Army Today, “NOEX 20: Validating a sub-Arctic response,” last modified 13 May 2020, [NOEX 20: Validating a sub-Arctic response | Canadian Army Today](#); Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 6.

¹²⁴ Canadian Army Today, “NOEX 20: Validating a sub-Arctic response,” last modified 13 May 2020, [NOEX 20: Validating a sub-Arctic response | Canadian Army Today](#).

days once in location.¹²⁵ Between the Rangers, IRU, and ARCG, a response force from the CAF alone could consist of approximately 150 to 450 personal. This is the CAF's current Arctic response plan and although this plan may seem robust and credible, executing it would be highly problematic and potentially counter productive to supporting a WoG approach response in the Arctic.

The Royal Canadian Navy (RCN) is at a disadvantage, since Canada's warships are poor platforms for operations, when it comes to working in the ice-packed waters of the Arctic.¹²⁶ However, the introduction of the Arctic Offshore Patrol Ships (AOPS) means the RCN will be capable of operating in Arctic waters with first-year ice without the need of an icebreaker escort, providing it with access to waters previously inaccessible during certain times of the year.¹²⁷ Canada's Defence Policy provides guidance regarding the RCN's employment of its new AOPS. Additionally, it also highlights that the AOPS will, ". . . provide armed, sea-borne surveillance of Canadian waters, including in the Arctic."¹²⁸ The new ships will also support the RCN's mission of enforcing sovereignty while ". . . cooperating with partners, at home and abroad, and will provide the Government of Canada with awareness of activities in Canada's waters."¹²⁹ Therefore, the RCN's task in providing a *sense* function throughout the Arctic maritime domain, for awareness and sovereignty maintenance, is clearly laid out. RCN's role with Arctic response will also improve once the two Arctic seaports in Nunavut are operational. With maritime traffic expected to continuously rise over the years, these two new sea ports will be key in supporting

¹²⁵ Commander Canadian Army, Arctic Response Company Group (ARCG) Updated Notice to Move (NTM) (Ottawa: National Defence Headquarters, 2016), 1.

¹²⁶ Standing Operations Order for Domestic Operations (SOODO) . . . , 429; Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 7.

¹²⁷ Standing Operations Order for Domestic Operations (SOODO) . . . , 429.

¹²⁸ Department of National Defence, *Strong, Secure, Engaged* . . . , 35.

¹²⁹ *Ibid.*

RCN, CCG, Transport Canada, and Fisheries and Oceans Canada joint operations.¹³⁰ They will support maritime efforts to monitor and interdict future maritime threats within northern Canadian waters.¹³¹

The Royal Canadian Air Force (RCAF) plays a vital role in Canada's Arctic response capability with their surveillance and transport assets. By employing a layered surveillance *system of systems*, the RCAF will have access to an integrated system of crewed, uncrewed, and space surveillance data in real-time.¹³² Newly procured technologies, such as the ones found in the space-based RADARSAT upgrade, will enable better monitoring of Arctic aerospace and maritime traffic. It will also improve communications for SAR and other elements operating throughout the Arctic.¹³³ The RCAF infrastructure positioned across the Arctic, is another method it contributes to Arctic defence and the sustainment of deployed forces in the North. These RCAF assets, and those of the RCN, are discussed further in this chapter under logistics.

SHORTFALLS TO THE PLAN

In order to examine the shortfalls in the CAF's Arctic response plan, one must take a closer look at the assigned CAF elements' training and readiness, the CAF's logistical sustainment plan, and the CAF's interoperability with OGDs. This analysis will not include the Canadian Rangers, as they are already a persistent presence in the Arctic and are considered trained upon enrolment.¹³⁴ The Rangers' supplies come directly from the local economy, land,

¹³⁰ Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 7.

¹³¹ North American and Arctic Defence and Security Network, *Understanding The Future Arctic Security Environment* . . . , 57.

¹³² Department of National Defence, *Strong, Secure, Engaged* . . . , 64.

¹³³ *Ibid.*, 109.

¹³⁴ CBC, "A Canadian Rangers reset would help Armed Forces keep pace with a changing North," last modified 20 October 2020, [A Canadian Rangers reset would help Armed Forces keep pace with a changing North | CBC News](#).

and or from 1 CRPG HQ.¹³⁵ The Rangers also work with the RCMP, local municipal councils, CAF and civilian SAR, and Canada Border Services Agency (CBSA) on a regular basis, indicating higher levels of interoperability with OGDs.¹³⁶ Therefore, despite their limitations, Canadian Rangers are ahead of their southern-based CAF partners in these three areas.

Training and Readiness

Designed to respond primarily to situations that affect Canada's southern regions, such as wild fires or flooding, IRUs do not receive additional training or equipment for Arctic operations. However, IRUs do conduct annual wildfire fighting training and conduct numerous activation rehearsals at the unit level. The equipment, clothing, and training that IRUs receive prior to being declared *operationally ready*, are to counter southern-based emergencies only.¹³⁷ The ARCGs on the other hand do conduct several months of readiness training for Arctic operations prior to being declared *operationally ready*.¹³⁸ The major annual Arctic exercises, regularly featured in the media, are more focused on strategic messaging than CAF Arctic readiness.¹³⁹ Despite their repetitive nature, these annual joint exercises, which fall under the umbrella of Operation (Op) NANOOK, normally require planning to begin 12 months in advance of its execution.¹⁴⁰ For each exercise iteration, a different Regular Force Army unit is

¹³⁵ Government of Canada, "Canadian Rangers," last modified 11 March 2021, [Canadian Rangers - Canadian Army \(forces.gc.ca\)](https://www.forces.gc.ca/en/canadian-rangers).

¹³⁶ *Ibid.*; CBC, "A Canadian Rangers reset would help Armed Forces keep pace with a changing North," last modified 20 October 2020, [A Canadian Rangers reset would help Armed Forces keep pace with a changing North | CBC News](https://www.cbc.ca/news/canada/northern/canadian-rangers-reset-would-help-armed-forces-keep-pace-with-a-changing-north-1.5648444).

¹³⁷ Based on the author's own experience and knowledge regarding annual IRU training and operational planning, 30 March 2021.

¹³⁸ Canadian Army Today, "NOREX 20: Validating a sub-Arctic response," last modified 13 May 2020, [NOREX 20: Validating a sub-Arctic response | Canadian Army Today](https://www.canada.ca/en/department-national-defence/services/operations/military-operations/recently-completed/operation-nunalivut.html).

¹³⁹ Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 5.

¹⁴⁰ Lackenbauer, *Lessons In Northern Operations* . . . ,vii; Government of Canada, "Operation NUNALIVUT," last modified 7 April 2018, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/recently-completed/operation-nunalivut.html>; The Maple Leaf, "Operation NUNALIVUT 2018 wraps up in the High Arctic," last modified 25 April 2018, <https://ml-fd.caf-fac.ca/en/2018/03/11515>.

selected as the lead unit for the operation. These lead units must complete specific training prior to deploying to the Arctic. However, their training prior to and during Op NANOOK is not conducted in preparation for any sort of subsequent emergency, or contingency, response task. Once Op NANOOK is complete, the Regular Force elements return home.¹⁴¹ However, attached to that lead unit throughout the exercise, will be one of the three ARCGs. Therefore, Op NANOOK serves as an important training milestone for the ARCGs' standing contingency task under the SOODO.¹⁴² Op NANOOK is an excellent training experience for the ARCGs, as it enables them to hone their skills in an Arctic environment.¹⁴³ Although, these Arctic engagements are referred to as *operations*, they are in fact training events. A training scenario involving the response to a disaster or security threat sometimes accompanies these annual Arctic exercises.¹⁴⁴ However, the portions that are often overlooked during training are the real-time activation, deployment, and sustainment operations planning for elements that could be rapidly deployed to the Arctic. The deployment phase, during any of these training events, takes months to plan and are highly scripted, removing valuable realism for the response units, headquarters, and operational planners involved. Of course conducting an exercise at this level at a moments notice would most likely be extremely difficult, especially for an ARCG where the majority of its members work full-time civilian jobs.¹⁴⁵ However, it would provide a realistic

¹⁴¹ Based on the author's experience and knowledge regarding Arctic operations, specifically as a member of Op NUNALIVUT 2018.

¹⁴² Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 4; Standing Operations Order for Domestic Operations (SOODO) . . . , 430.

¹⁴³ Government of Canada, "Operation NUNALIVUT," last modified 7 April 2018, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/recently-completed/operation-nunalivut.html>.

¹⁴⁴ Espritdecorps Canadian Military Magazine, "Operation Nanook – Exercise Soteria (Major Air Disaster – MAJAID)," last modified 11 October 2018, [Operation Nanook - Exercise Soteria \(Major Air Disaster - MAJAID\) — espritdecorps](#).

¹⁴⁵ Department of National Defence, *Initial Operating Capability Arctic Response Company Groups* (Ottawa: Canadian Army Headquarters, 2010), 4; Commander Canadian Army, Arctic Response Company Group (ARCG) . . . , 1.

picture and uncover a number of frictions points for all elements that would be involved in the projection of forces for such a domestic response.

Logistics and Equipment

Often downplayed and overlooked, are sustainment operations for forces responding to a domestic emergency. Planning to deploy and sustain an IRU force in the Arctic is not a common factor considered during IRU planning and rehearsals. Outside of the SAR and rotary wing aircraft that are assigned to emergency operations, the CAF has one CC-177 Globemaster III transport aircraft on standby for strategic lift for contingency operations.¹⁴⁶ This CC-177 is constantly on 24 hours notice to move, but due to a number of factors this timeline could easily slide to the right. Weather and serviceability are also two major factors that can affect use of aircraft, but when considering Arctic operations, one must take into account the size and capabilities of the runways in many of the small northern communities. The CC-177 is a large aircraft and if the closest runway to the emergency scene cannot support it, CAF elements will either need to find the next closest airstrip that can, or contract smaller aircraft for the mission. Therefore, force projecting an IRU by air to the Arctic could become a complicated matter if RCAF assets become unviable, ultimately prolonging CAF assistance on the ground. Circumstances, such as weather are unpredictable, but airstrip capabilities are not. Therefore, smaller RCAF aircraft, compatible with all Arctic runways, should be incorporated into the domestic response plan for Arctic deployments.

As previously mentioned, the ARCG deployment window is eight days following its activation, allowing them a greater amount of time to coordinate movement and prepare their

¹⁴⁶ Standing Operations Order for Domestic Operations (SOODO) . . . , 44.

personnel. Following the projection of CAF forces into the Arctic comes the requirement to sustainment them during the operation. The logistical assets and framework required to sustain IRU operations are also southern-based, and would require extensive effort to redirect in support of Arctic operations. The CAF's SOODO states that, IRUs will deploy with only three days of supplies and rely on follow-on logistical support beyond this.¹⁴⁷ Mandated to have ready 21 days of supplies, ARCGs have their supplies pre-packaged in advance.¹⁴⁸ This level of preparation is useful only until these initial supplies are depleted; once that occurs, those forces will require supplies through an operational-level supply chain. However, such a supply chain, one that is flexible, responsive, and links the South to the Arctic, does not currently exist. Therefore, the CAF's current ability to sustain rapidly deployed forces during lengthy operations in the Arctic is limited, despite the amount of ongoing annual training events and existing CAF Arctic infrastructure. For the most part, the CAF's sustainment efforts are planned well in advance of training, or are conducted in accordance with a rigid schedule, such as those designed to support pre-existing Arctic installations.¹⁴⁹ This situation makes Arctic contingency sustainment operations difficult to plan and execute. For instance, Op BOXTOP, is the annual mission undertaken to resupply Canadian Force Station (CFS) ALERT, which houses approximately 60 CAF and civilian personnel. Op BOXTOP typically requires about 26 flights over a period of two weeks to complete.¹⁵⁰ Any deviation from this structured annual sustainment operation could result in CFS ALERT not receiving sufficient resources to conduct their tasks.

¹⁴⁷ Standing Operations Order for Domestic Operations (SOODO) . . . , 157.

¹⁴⁸ Department of National Defence, *Initial Operating Capability Arctic Response Company Groups* . . . , 5; Land Force Doctrine and Training System. *Training Implementation Directive – Initial Operating Capability (IOC) – Arctic Response Company Groups (ARCG) and Arctic Vanguard* (Kingston: LFDTS Headquarters, 2011), 14.

¹⁴⁹ Ernie Regehr and Amy Zavitz, *Circumpolar Military Facilities of the Arctic Five* (Vancouver: The Simons Foundation Canada, 2019), 6.

¹⁵⁰ Ottawa Citizen, "CFS Alert resupplied by RCAF," last modified 2 June 2020, [CFS Alert resupplied by RCAF | Ottawa Citizen](#).

Essentially, the sustainment of forces operating in the Arctic is time consuming and costly; which is why the CAF generally employs the use of commercial contracted services for the majority of its training exercises. This practice has made the CAF reliant on contracted services vice its own logistics capabilities. Contracted services may be suitable for pre-planned training events, but should not be relied on to support forces during an emergency. Depending on the situation and location, contracted services may not be a viable option. Some examples of contracted services that are regularly employed during Arctic training, such as Op NANOOK and NUNALIVUT, are food catering, local, civilian aircraft, vehicle and snowmobile rentals, sanitation services, and rented infrastructure to shelter CAF personnel.¹⁵¹ For instance, in order to meet training goals the CAF spent approximately \$420,000 on the rental of snowmobiles during Op ARCTIC RAM in 2012.¹⁵² In 2014, the CAF announced the concept of emplacing a network of Northern Operations Hubs (NOH) throughout the Arctic that would operate using the hub and spoke model.¹⁵³ The NOH concept was also incorporated into the CAF's 2014 national Standing Operations Order for Domestic Operations (SOODO).¹⁵⁴ The concept involved the development of NOHs in key locations, such as Iqaluit, Resolute Bay, Inuvik, and Yellowknife by 2018.¹⁵⁵ The NOH concept was to be developed around larger airfields that were C-17 capable, to facilitate the sustainment of such things as an IRU or ARCG deployment. Joint Task Force North (JTFN) was directed to exercise the NOH concept over several iterations of Op

¹⁵¹ Based on the author's own experience with Arctic operations, specifically as a member of Op NUNALIVUT 2018.

¹⁵² Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 3.

¹⁵³ National Post, "Canadian Forces to stockpile military equipment in Arctic 'hubs' for faster response in case of emergency," last modified 24 January 2015, [Canadian Forces to stockpile military equipment in Arctic 'hubs' for faster response in case of emergency | National Post](#).

¹⁵⁴ Standing Operations Order for Domestic Operations (SOODO) . . . , 431-440.

¹⁵⁵ *Ibid.*

NANOOK, using various airfields as part of the trial.¹⁵⁶ Open-source material indicating the results of any NOH trials is not yet available, and it appears that the notion has since faded away. Having an established responsive operational supply chain, which the CAF could rely on when conducting large training events, or during actual emergencies, would be ideal and potentially more cost-effective than the current model that relies heavily on contracted services.

Another element of sustainment worth noting is the CAF's current lack of serviceable vehicles and infrastructure for Arctic operations. Most Arctic communities are very limited in terms of supplies and infrastructure, and are unable to cope with temporary surges in population of 120 people or more.¹⁵⁷ Which would be a problem in an emergency involving a grounded cruise ship, such as the *Crystal Serenity*, that has over 1,000 people aboard.¹⁵⁸ Any sized force responding to such a disaster would need to be completely self-sufficient; otherwise, they could further worsen the situation by consuming needed space and resources for partner agency members, locals, and casualties.

The CAF's limitations to move and house its own personnel in the Arctic are significant issues for Canada's military. It was previously mentioned that an IRU and ARCG would arrive with three and 21 days of supplies, respectively; however, this number only applies to certain resources like clothing, water, and food. Local transport and housing are two other issues all on their own. The CAF's infrastructure outside of Yellowknife is extremely limited and would be insufficient as a Forward Operating Base (FOB) for forces as large as an IRU or ARCG. Figure 3.3 displays the RCAF's Arctic infrastructure, such as CFS ALERT, which is occupied year-

¹⁵⁶ E-mail to the author from LCol Ray Chiasson, sent on 30 March 2021. LCol Chiasson is the current Commanding Officer of 1st Canadian Ranger Patrol Group.

¹⁵⁷ Lajeunesse, *The Canadian Armed Forces in the Arctic* . . . , 4.

¹⁵⁸ High North News, "No More Crystal Serenity in the Northwest Passage," last modified 13 December 2017, <https://www.highnorthnews.com/en/no-more-crystal-serenity-northwest-passage>.

round, but is only intended to support the 50 to 60 CAF and government workers stationed there.¹⁵⁹ The RCAF, under its North American Aerospace Defense Command (NORAD) mission, also maintains four locations for fighter-jet pre-positioning known as Forward Operating Locations (FOL). These FOLs are intended to house military aircraft and approximately 200 personnel. They “...are located in Inuvik and Yellowknife, North West Territories, and in Iqaluit and Rankin Inlet, Nunavut.”¹⁶⁰ Resolute Bay, Nunavut, is home to the CAF Arctic Training Center (CAF ATC), which is not occupied all year, but is capable of housing up to 140 personnel and their equipment.¹⁶¹ Lastly, the Royal Canadian Navy (RCN), intends on having two naval support facilities operational by 2022. Despite numerous delays in construction over the past decade, Canada will soon have its first set of deep-water Arctic ports, one in Nanisivik and the other in Iqaluit, Nunavut.¹⁶² However, these ports were not designed to house large-sized groups of soldiers or otherwise.

¹⁵⁹ Government of Canada, “Canadian Forces Station Alert,” last modified 27 February 2019, [Canadian Forces Station Alert | Royal Canadian Air Force](#); Regehr, *Circumpolar Military Facilities of the Arctic Five* . . . , 7.

¹⁶⁰ Wings, “On guard for thee,” last accessed 8 April 2021, [On guard for thee - Wings Magazine \(archive.org\)](#).

¹⁶¹ Government of Canada, “Canadian Armed Forces Arctic Training Centre,” last modified 6 July 2018, <http://www.forces.gc.ca/en/news/article.page?doc=canadian-armed-forces-arctic-training-centre/hkdons6l>.

¹⁶² Regehr, *Circumpolar Military Facilities of the Arctic Five* . . . , 7-8; Nunatsiaq News, “Iqaluit deepsea port project remains on schedule for 2021 completion,” last modified 14 October 2020, [Iqaluit deepsea port project remains on schedule for 2021 completion | Nunatsiaq News](#); CBC, “COVID-19 blamed for delay on Arctic military port first promised in 2007,” last modified 3 August 2020, [COVID-19 blamed for delay on Arctic military port first promised in 2007 | CBC News](#).



Figure 3.3 – Royal Canadian Air Force Northern Infrastructure

Source: Government of Canada, “Royal Canadian Air Force map,” last modified 18 June 2020, [RCAF Map | Royal Canadian Air Force \(forces.gc.ca\)](https://forces.gc.ca/).

These locations are far spread and their capacities limited. The locations most useful in an emergency response situation, such as CAF ATC or one of the FOLs, would only be able to support approximately two thirds of a full IRU. If other government partners or an ARCG were deployed concurrently, they would need to seek shelter elsewhere, which would be extremely difficult based on the low availability within most Arctic towns. Furthermore, situations that call for the temporary housing of emergency victims needs to be taken into consideration. The CAF’s current practice to shelter its forces in locations where it has no infrastructure during Arctic training, such as Op NANOOK, is to rent uninhabited facilities, such as aircraft hangars, or bring

their own portable shelters.¹⁶³ However, the issue with this is it takes time to establish contracts for these facilities. For instance, during Op NUNALIVUT in 2018, the element training in Cambridge Bay, Nunavut, were housed in a commercial helicopter hangar that was heated by industrial-sized heaters that were contracted from a company in northern Alberta.¹⁶⁴ Portable military tents are another option, which are integral assets available to most CAF units, but still require amenities such as heat, sanitation, and transport to move them around the Area of Operations (AO). The SAR community employs a package called a Major Air Disaster (MAJAID) Kit, which is a set of palletized equipment such as "...tents, sleeping bags, food, water, heaters, generators, and a couple of ATVs."¹⁶⁵ The MAJAID Kit holds enough supplies to sustain 320 people for 72 hours. However, the CAF currently only holds one MAJAID Kit, and it requires 90 days to reconstitute following an operation.¹⁶⁶ Procuring additional similar equipment packages, such as the MAJAID kit, for the IRUs would be extremely beneficial for rapid Arctic response operations.

Lastly, the CAF is in need of a dedicated Arctic vehicle fleet. The majority of its Arctic fleet is unserviceable and spread across the country. The CAF's main mode of transportation when operating in the Arctic are snowmobiles, or light over snow vehicles (LOSV). Its current fleet was purchased in the late 1980s, and approximately one third of them have been replaced over the decades.¹⁶⁷ The majority of LOSVs are distributed across the Canadian Army, and are

¹⁶³ "To the greatest extent possible, and without adversely affecting local populations, existing commercial infrastructure will be used. Agreements will be established with OGDA partners to leverage on existing capabilities and minimize or share contract, procurement and maintenance costs." Standing Operations Order for Domestic Operations (SOODO) . . . , 441.

¹⁶⁴ Based on the author's personal experience and knowledge as a member of Op NUNALIVUT 2018.

¹⁶⁵ Standing Operations Order for Domestic Operations (SOODO) . . . , 441; Espritdecors Canadian Military Magazine, "Operation Nanook – Exercise Soteria (Major Air Disaster – MAJAID)," last modified 11 October 2018, [Operation Nanook - Exercise Soteria \(Major Air Disaster - MAJAID\) — espritdecors](#).

¹⁶⁶ *Ibid.*

¹⁶⁷ Regehr, *Circumpolar Military Facilities of the Arctic Five* . . . , 12.

exchanged between units and the CAF ATC on a regular basis, creating an issue when it comes to their maintenance and serviceability. The CAF's former main mode of Arctic transportation was the BV-206, which could carry up to 17 occupants, or over 2,000 kilograms of equipment.¹⁶⁸ However, after 35 years of service, the BV-206 has far exceeded its life expectancy and only 18 remain, out of a fleet of 108.¹⁶⁹ The CAF's Domestic Arctic Mobility Enhancement Project has been focused on procuring a new fleet of all terrain vehicles for Arctic operations since 2011.¹⁷⁰ More often than not, LOSVs and trucks are contracted for training from the local communities, consuming local resources and potentially affecting key civilian personnel in that locality.

For instance during Op NUNALIVUT 18, the CAF element consisting of 130 personnel in Cambridge Bay, Nunavut, rented every available vehicle in town, including the Mayor's personal truck. In a real situation this would have left other government agency personnel, and potentially locals, without a means of transportation.¹⁷¹ Furthermore, during an Arctic response planning exercise, focused on a WoG approach based on a scenario in Sachs Harbour, Northwest Territories, Canadian Joint Operations Command (CJOC) planners assumed deployed CAF forces could move around the AO by contracted bus. However, the only known ground transportation available for contract was a bus operated by a key community administrator, who was also responsible for emergency management within Sachs Harbour. Luckily, it is a common understanding amongst northern-based federal department representatives, that community

¹⁶⁸ Government of Canada, "BV-206 Tracked Carrier," last modified 13 December 2017, <http://www.army-armed-forces.gc.ca/en/vehicles/bv-206-tracked-carrier.page>.

¹⁶⁹ Department of Public Works and Government Services Canada, *Project Engagement plan: Domestic and Arctic Mobility Enhancement* (Ottawa: Department of Public Works and Government Services Canada, 2018), 5.

¹⁷⁰ Department of National Defence, *Strong, Secure, Engaged* . . . , 37; Regehr, *Circumpolar Military Facilities of the Arctic Five* . . . , 12; Government of Canada, "Extreme expedition: testing prototype vehicles in Canada's Arctic," last modified 7 July 2016, <https://www.canada.ca/en/defence-research-development/news/articles/extreme-expedition-testing-prototype-vehicles-canadas-arctic.html>.

¹⁷¹ Based on the author's personal experience and knowledge as a member of Op NUNALIVUT 2018.

leaders in Arctic towns often fill more than one role.¹⁷² These situations highlight the requirement to draw on more northern-based expertise when conducting operational-level Arctic contingency planning; but more importantly, they strengthen the argument that most CAF forces deployed to the Arctic must be self-sufficient for everything, including local transportation.

Interoperability with Other Government Departments

In order for any Arctic response plan to be effective, CAF planners must continue to understand that the CAF by itself cannot effectively respond to the great number of complex security situations that can arise in the Arctic. In fact, outside of CAF's SAR assets, industry, local authorities, or OGD partners have been able to resolve every domestic disaster and security challenge to date. For instance, when the Akademik Loffe sustained major haul damage after running aground in the Gulf of Boothia in August 2018, the ship was refloated the next day and all 163 passengers were safely evacuated without the need for CAF intervention.¹⁷³ The ship's crew was quick to assess the situation and create a plan with the Russian sister ship, Akademik Sergey Vavilov.¹⁷⁴ Despite the rapid reaction and communication from the ship's crew, a CAF SAR aircraft was dispatched from Trenton, Ontario to the scene several hours after the grounding. Followed by a second CAF SAR aircraft from Winnipeg, Manitoba the following day.¹⁷⁵ The total cost to send these two SAR assets, including meals and lodging for their crews in Kugaaruk, Nunavut, was just over half a million dollars.¹⁷⁶ Additionally, two CCG icebreakers

¹⁷² E-mail to the author from LCol Ray Chiasson, sent on 30 March 2021. LCol Chiasson is the current Commanding Officer of 1st Canadian Ranger Patrol Group.

¹⁷³ Government of Canada, "Marine transportation safety investigation M18C0225," last modified 15 August 2015, [Marine investigation M18C0225 - Transportation Safety Board \(tsb.gc.ca\)](https://www.tsb.gc.ca/eng/transportation-safety-board/transportation-safety-board-reports-investigation-reports-enq/20150815/m18c0225); Yale Environment 360, "In the melting Arctic, a harrowing account from a stranded ship," last modified 29 August 2018, [In the Melting Arctic, a Harrowing Account from a Stranded Ship - Yale E360](https://www.yale.edu/e360/article/in-the-melting-arctic-a-harrowing-account-from-a-stranded-ship).

¹⁷⁴ *Ibid.*

¹⁷⁵ *Ibid.*

¹⁷⁶ CBC, "Grounded cruise ship rescue in Nunavut cost Canada's Armed Forces \$513K," last modified 7 September 2018, [Grounded cruise ship rescue in Nunavut cost Canada's Armed Forces \\$513K | CBC News](https://www.cbc.com/news/canada-nunavut-1.4788888).

were also redirected to the scene; however, were also not required as they would have arrived after the incident had been resolved.¹⁷⁷ This example highlights the need for a greater level of communication between the CAF and OGDs, and how “...a lack of integration could hinder an effective collective response to a crisis or emergency.”¹⁷⁸

The CAF views logistics as the *centre of gravity* for successful actions in the Arctic at the operational-level, and the relationships between government agencies and northern industry as the *centre of gravity* at the strategic-level.¹⁷⁹ Op NANOOK has been the CAF’s main driver toward its strategic goal of enhancing its interoperability with OGDs since 2007.¹⁸⁰ Op NANOOK is intended to demonstrate the CAF’s interoperability between governmental agencies and highlight its ability to effectively operate within the Arctic.¹⁸¹ The RCN has also been conducting its own series of exercises, as far back as 2006 with Op LANCASTER. Over the years the RCN has been able to strengthen its interoperability with OGDs, such as Public Safety, Parks Canada, Emergency Preparedness Canada, and the CCG.¹⁸² Despite the CAF’s efforts to integrate OGDs in its training since the early 2000s, friction between the government agencies persist.¹⁸³ The progress has been slow, but viewed as successful by CAF leaders. However, some OGDs after having completed these training events described them as CAF exercises with OGD representation, where government partners were more like spectators when they should have been the ones leading.¹⁸⁴ Certain issues rest with the differences in structure, culture, and resources. The CAF has dedicated planners, funds, and time to coordinate and execute large

¹⁷⁷ *Ibid.*

¹⁷⁸ Lackenbauer, *Whole of Government through an Arctic Lens . . .*, 30.

¹⁷⁹ *Ibid.*, 25, 92.

¹⁸⁰ *Ibid.*, 126.

¹⁸¹ *Ibid.*, 125.

¹⁸² *Ibid.*, 23.

¹⁸³ *Ibid.*, 26-28.

¹⁸⁴ *Ibid.*, 23-25.

joints training events, where most OGDs do not.¹⁸⁵ Culture and operating framework, may be the largest issue. OGDs lack the rigid processes and doctrine that the CAF operate under, which can create issues during planning. Planning can be difficult, as OGDs typically require more time to gain approvals on certain decisions, which can be frustrating for CAF planners. Lastly, OGD and CAF planners are unsure where and how to integrate each other's personnel in their respective command structures.¹⁸⁶

CONCLUSION

In essence, the CAF's Arctic response plan, involving the Canadian Rangers, an IRU, and an ARCG is currently too problematic, and is conceptually ineffective. In terms of training and readiness, the southern-based IRUs do not receive specific Arctic operations training, which runs the risk of those soldiers becoming casualties in an Arctic environment. Given the amount of time required to force project an ARCG to the Arctic in response to an emergency, its arrival would most likely be too late to be affective in a non-military threat situation. There are only a handful of scenarios were the deployment of an IRU and ARCG would be useful, such as a prolonged environmental disaster clean up.

In the event that an IRU and ARCG are deployed to the Arctic, the next issue lies with keeping them alive to perform their task. A force the size of an IRU and or ARCG, consumes a large amount of resources and real estate, potentially leaving little room for OGDs and even casualty care. The present logistics supply chain is not responsive or robust enough to sustain a prolonged deployment of an IRU or ARCG. Redirected logistics assets to support an Arctic emergency response would affect sustainment operations elsewhere within the CAF, and would

¹⁸⁵ *Ibid.*, 25.

¹⁸⁶ *Ibid.*, 23.

not be supportable. The CAF has mitigated such situations for years, by relying on contracted services and annual rigid resupply operations to maintain its northern forces. The CAF's lack of transportation to move its forces around an area of operations in the Arctic further hinders its Arctic response capability. New serviceable and more robust vehicles are required for Arctic operations to move personnel, supplies, and casualties around.

Lastly, interoperability between the CAF and OGDs has seen slow progress over the past two decades. Military and civilian agency structure, culture, and resources are the major factors affecting what could be efficient WoG training and relationship building. To date, industry, SAR, and OGDs have been successful at handling all security challenges and emergencies that have occurred in the Arctic. However, it behooves the CAF and its government partners to continue building stronger interdepartmental linkages to be ready for a situation that warrants their collective resources and capabilities.

By applying Adam Lejeunesse's criteria, which he argues are an appropriate measure of effectiveness, to the information presented in this chapter it is apparent the CAF's Arctic capability does not yet meet the requirements. Although, the CAF can deploy adaptable and scalable teams into a wide range of situations, their integration with OGDs and lengthy deployment times are still areas requiring improvement. The CAF may have time to continue the development of its Arctic Defence capabilities against military threats, seeing as there is no current imminent threat in that regard. However, the CAF does not have the luxury of time when it comes to emergency Arctic response to a non-military threat, and must be prepared to support a WoG response to an Arctic emergency now.

Fortunately, SSE outlines a number of major initiatives and projects that, once operational, will contribute to the enhancement of Canada's Arctic capability. However, new

equipment and infrastructure will only go so far when it comes to maintaining security, safety, and sovereignty in the North. As access to the Arctic and its resources continuously become more accessible, the potential for more complex security challenges increase. Therefore, the CAF must exploit the successes it has made in the past decades and continue to push forward with the development of its Arctic response capability.

CHAPTER 4 – RECOMMENDATIONS AND CONCLUSION

INTRODUCTORY COMMENTS

This chapter will focus on proposed recommendations that, if adopted, would enhance the Canadian Armed Forces' (CAF) ability to counter and deter threats in the Arctic. This chapter will first look at ongoing CAF projects regarding procurement and concepts. This chapter will then address the issues identified in Chapter 3 by providing recommendations, under the same headings: CAF training and readiness, logistics and equipment, and the CAF's interoperability with other government departments (OGD).

The force generation¹⁸⁷ of a new permanent Arctic-based unit, by regrouping elements from across the CAF, would be one method to increase Arctic defence; similar to the method employed by Russia. However, this would be extremely challenging for Canada, as there are several significant issues surrounding such an undertaking. For one, the CAF is not large enough to pull together a new unit from its current personnel without causing major disruptions to current operations. The CAF currently has 41 ongoing operations within Canada and abroad.¹⁸⁸ These operations are either ongoing or are reoccurring throughout the year. Approximately one third of the CAF's deployable forces are either returning from, deployed on, or preparing for operations on any given day, which creates a challenge when looking to add another operation to the CAF's list. Another significant hurdle is the idea of creating, and permanently basing, a military unit in the Arctic, which is not something that is palatable to Canadian policy makers and top CAF leaders. Current public interest in Arctic security is low as there is no immediate

¹⁸⁷ "Force Generation (FG), the process of organizing, training and equipping forces for force employment." Department of National Defence, B-GL-005-300/FP-001, *Canadian Forces Joint Publication 3.0, Operations* (Ottawa: DND Canada, 2011), 70.

¹⁸⁸ Government of Canada, "Current operations list," last modified 25 February 2021, [Current operations list - Canada.ca](#).

military threat expected, making it difficult for CAF strategists to justify the need to increase defence in the Arctic to that extent.¹⁸⁹ Furthermore, CAF retention has been an ongoing concern over the past decade, and the relocation of CAF members, and potentially their families, to the Arctic would most likely worsen matters; not to mention the large impact it could have on an Arctic community. Two other major obstacles are, the current lack of equipment and funding for such an endeavour. As outlined in chapter 3, the CAF does not have enough infrastructure and equipment to support a full sized unit in any one of its locations it currently has infrastructure. Additionally, with so many high-profile projects in the procurement phase, funding would be extremely difficult to secure. Projects such as the National Shipbuilding Strategy (NSS), which encompasses the procurement of the Arctic and Offshore Patrol Ships (AOPS), the future Canadian Surface Combatants, and two Joint Support Ships (JSS).¹⁹⁰ These are only the major projects within the Royal Canadian Navy (RCN), the Canadian Army and Air Force also have several projects of their own under development, many of which were mentioned in previous chapters.

Therefore, how can the CAF prepare for a threat that might never materialize? Given the CAF's current rate of developing its Arctic capability, should a military threat immerge in the Arctic within the next two decades, Canada's military will not be prepared to counter it. The CAF has not made much progress toward the development of its Arctic defence capability since the recommencement of its major joint Arctic exercises in 2007.¹⁹¹ After 14 years of annual Arctic training, various equipment trials, and the testing of operational sustainment concepts, the

¹⁸⁹ Landriault, Mathieu. "Public Opinion on Canadian Arctic Sovereignty and Security." *Arctic Institute of North America* 69, no. 2 (June 2016): 163.

¹⁹⁰ Government of Canada, "Procurement – Navy," last modified 19 November 2020, <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/proactive-disclosure/supp-estimates-a-2020-21/other-issues/procurement-navy.html>.

¹⁹¹ Government of Canada, "Operation NANOOK," last modified 1 November 2018, [Operation NANOOK - Canada.ca](http://OperationNANOOK-Canada.ca).

CAF is not much further ahead than it was in 2007. The following are Arctic-focused projects the CAF has successfully completed since the mid-2000s:

- 2013, Arctic Response Company Groups (ARCG) established;¹⁹²
- 2013, Arctic Training Centre in Resolute Bay, Nunavut operational;¹⁹³ and
- 2020, first of six AOPS delivered, Her Majesty’s Canadian Ship (HMCS) Harry DeWolf.¹⁹⁴

In addition to this, there are still numerous Arctic projects under development and equipment being trialed, such as:

- Two deep-water sea ports, in Iqaluit and Nanisivik, both of which are expected to be operational by 2022;¹⁹⁵
- The “Domestic Arctic Mobility Enhancement Program”, which is the program responsible for the replacement of the CAF’s aging BV-206 and snowmobile fleets. Since 2011, the program has been trialing several wheeled and tracked vehicles, including stealth snowmobiles.¹⁹⁶ In 2019, the project was expected to start fielding new Arctic

¹⁹² Adam Lajeunesse, *The Canadian Armed Forces in the Arctic: Purpose, Capabilities, and Requirements* (Calgary: University of Calgary, 2015), 6.

¹⁹³ Government of Canada, “New Arctic Training Centre boosts Army’s presence in the North,” last modified 24 November 2020, [ARCHIVED - Article | New Arctic Training Centre boosts Army's presence in the North \(forces.gc.ca\)](https://www.forces.gc.ca/en/archived-article-new-arctic-training-centre-boosts-armys-presence-in-the-north).

¹⁹⁴ Government of Canada, “Arctic and Offshore patrol ships: Royal Canadian Navy,” last modified 23 December 2020, [Arctic and offshore patrol ships: Royal Canadian Navy - Large vessel shipbuilding projects – Shipbuilding projects to equip the Royal Canadian Navy and the Canadian Coast Guard – National Shipbuilding Strategy – Sea – Defence and marine procurement – Buying and Selling – PSPC \(tps-gc-pwg-sc.gc.ca\)](https://www.tpsgc-pwgsc.gc.ca/shipbuilding-projects-shipbuilding-projects-to-equip-the-royal-canadian-navy-and-the-canadian-coast-guard-national-shipbuilding-strategy-sea-defence-and-marine-procurement-buying-and-selling-pspc-tps-gc-pwg-sc.gc.ca).

¹⁹⁵ Nunatsiaq News, “Iqaluit deepsea port project remains on schedule for 2021 completion,” last modified 14 October 2020, [Iqaluit deepsea port project remains on schedule for 2021 completion | Nunatsiaq News](https://www.nunatsiaqnews.com/news/iqaluit-deepsea-port-project-remains-on-schedule-for-2021-completion); CBC, “COVID-19 blamed for delay on Arctic military port first promised in 2007,” last modified 3 August 2020, [COVID-19 blamed for delay on Arctic military port first promised in 2007 | CBC News](https://www.cbc.ca/news/canada/north/ottawa-testing-620k-stealth-snowmobile-for-arctic-1.1377270).

¹⁹⁶ CBC, “Ottawa testing \$620K stealth snowmobiles for Arctic,” last modified 18 August 2013, <https://www.cbc.ca/news/canada/north/ottawa-testing-620k-stealth-snowmobile-for-arctic-1.1377270>.

vehicles by 2022; however, the update on the project website now indicates a fielding date of 2028/2029; and¹⁹⁷

- The 2021 Federal budget identified \$163 million has been earmarked for NORAD modernization, which would see a much anticipated upgrade of the Northern Warning System (NWS). However, there is still no indication of when the replacement would be operational.¹⁹⁸

Despite the various challenges and slow pace, the CAF continues making progress towards advancing its Arctic defence capability. However, there are additional steps the CAF can take to enhance defence in the Arctic that can be achieved concurrent to its already planned project rollouts.

CAF TRAINING AND READINESS

Chapter 3 provided a glimpse of the CAF's readiness and training issues regarding Arctic operations. In order to mitigate these issues the CAF should consider the following:

- As mentioned in chapter 3, realistic activation and the rapid deployment of CAF forces to the Arctic have been overlooked in the past during training such as Op NANOOK. Granted, the focus of these training exercises is not always based on an emergency response scenario. However, for the benefit of the Arctic Response Company Groups (ARCG), which deploy as part of the training audience on these exercises, more emphasis should be placed on these aspects. Some challenges to implementing this are that these exercises are planned months in advance, are highly scripted, and many ARCG members

¹⁹⁷ Department of Public Works and Government Services Canada, *Project Engagement plan: Domestic and Arctic Mobility Enhancement* (Ottawa: Department of Public Works and Government Services Canada, 2018), 12; Government of Canada, "Domestic Arctic Mobility Enhancement," last modified 9 January 2020, <http://dgpapp.forces.gc.ca/en/defence-capabilities-blueprint/project-details.asp?id=938>.

¹⁹⁸ Global News, "'A step forward': Budget earmarks funds for upgrade of North American defences," last modified 24 April 2021, <https://globalnews.ca/news/7786059/budget-defence-canada-norad-military/>.

have fulltime civilian jobs they cannot desert at a moment's notice. However, some realism can be introduced to the deployment process if worked into the planning process at the operational level; and

- The CAF's four Immediate Response Units (IRU) are all southern-based and if deployed to the Arctic, in response to counter a domestic disaster or threat, run the risk of becoming casualties to the elements. Lengthy Arctic environmental training and acclimatization is not a viable option for IRUs given the scale of cost, time, and resources needed to properly prepare these temporality-tasked units. Another option to mitigate this risk is to develop a new line of operation within the CAF's readiness management plan. A more detailed look at this recommendation can be found further in this chapter.

LOGISTICS AND EQUIPMENT

Chapter 3 also identified a number of CAF shortfalls regarding sustainment during current Arctic operations. In order to be better prepared for future, and potential higher risk, operations throughout Canada's North, the following recommendations should be considered:

- Chapter 3 discussed issues surrounding the force projection of CAF elements Northward in an emergency. It was determined that the CAF has a CC-177 Globemaster III always assigned for contingency operations. However, the size of the CC-177 limits what Arctic airfields it can use, based on length and material the runways are made from. Of the 93 recognized runways in Nunavut, the CC-177 is only able to use 25 of them. In Yukon, the CC-177 can use 12 of the 67 runways, and 21 out of the 112 runways in the Northwest Territories.¹⁹⁹ Therefore, the CAF should consider augmenting this task by adding a smaller aircraft to the roster to mitigate this issue. Smaller aircraft, such as the CC-144

¹⁹⁹ Our Airports, "Canada," last accessed 27 April 2021, [Map of airports in Canada @ OurAirports](#).

Challenger, CC-150 Polaris, or the BE-350 King Air would enable a greater amount of versatility with Arctic airfields.²⁰⁰ Furthermore, they would be more cost effective and efficient when deploying the small IRU reconnaissance parties in advance of the main body;

- The Northern Operations Hub (NOH) concept should be revived and employed as the main means of sustainment during all future Arctic training exercises and operations. This would strengthen the CAF's operational-level supply chain across the North and reduce the CAF's dependency on contracted services during Arctic training exercises. Employing the NOH concept in training will ensure the CAF is prepared to sustain rapidly deployed forces during future domestic emergencies;
- The CAF should look to procure additional equipment packages for the four IRUs, such as the major air disaster (MAJAID) kit employed by the Search and Rescue (SAR) community. The MAJAID kit is designed to sustain 320 personnel for 72 hours, and would be ideal for rapid Arctic response operations. The kit would enable an IRU to be self-sufficient, reducing the risk of it burdening any local community for shelter and resources. The 72 hours of provisions, in addition to the three days of supplies an IRU brings with it, would allow time for operational CAF planners to finalize a mission's sustainment plan;
- Chapter 3 outlined a number of issues regarding CAF mobility challenges across the Arctic. Once deployed to the Arctic CAF elements have limited resources when it comes to maneuvering around the Area of Operations (AO). To reduce the dependency on

²⁰⁰ Government of Canada, "Royal Canadian Air Force, Aircraft," last modified 3 March 2021, [Aircraft | Royal Canadian Air Force \(forces.gc.ca\)](https://www.forces.gc.ca/en/aircraft).

contracted vehicles, the CAF has been working to procure a new forward positioned fleet of vehicles that are suitable and dedicated to Arctic operations. A procurement program has been ongoing since 2011, and as indicated above, will not see fielding of the new fleet before 2028. SSE calls for a “... larger tracked semi-amphibious utility vehicle optimized for use in the Arctic environment.”²⁰¹ The program did identify the shortfalls with troop, cargo, and casualty carrying capacity with snowmobiles, but did not specifically list requirements to mitigate these issues under “Project Requirement Description.”²⁰² Therefore, it should be captured under the project’s statement of requirements that any new vehicle platform must be able to transport a minimum of 10 personnel with personal equipment, auxiliary equipment and stores. It is recommended that they are also appropriate for the transport of casualties, and be fully enclosed to protect passengers and crew from the elements. Two vehicles that should be examined are Russian’s M-3 Combat Buddy and the tracked DT-30. The M-3 Combat Buggy is similar to the CAF’s BV-206, but can carry 22 occupants, has eight integral sleeping bunks, and can transport more cargo than the BV-206.²⁰³ The DT-30 is amphibious and can transport approximately 27,000 kilograms of personnel and equipment;²⁰⁴ and

- When it comes to infrastructure, the CAF needs more of it to support its ongoing training and future operations throughout the North. CAF elements tend to be larger, due to support personnel, when deployed to isolated locations and can be an issue in the Arctic

²⁰¹ Department of National Defence, *Strong, Secure, Engaged - Canada's Defence Policy* (Ottawa: DND Canada, 2017), 37.

²⁰² Department of Public Works and Government Services Canada, *Project Engagement plan: Domestic and Arctic Mobility Enhancement* . . . , 7.

²⁰³ Ernie Regehr and Amy Zavitz, *Circumpolar Military Facilities of the Arctic Five* (Vancouver: The Simons Foundation Canada, 2019), 72.

²⁰⁴ Military Today, “DT-30 Vityaz,” last accessed 26 April 2021, http://www.military-today.com/trucks/dt30_vityaz.htm.

where real state and resources are in short supply. The current CAF infrastructure, in locations, such as Resolute Bay, Iqaluit, or Rankin Inlet, are not sufficient to support an IRU force of 350, leaving no room for personnel from OGDs. Therefore, the procurement of greater capacity shared infrastructure with OGDs should be examined in the near future. Establishing hubs throughout the Arctic with a capacity to support up to 500 personnel would provide affective lodging for CAF and OGD personnel during northern training and operations. Such shared infrastructure would also be beneficial during natural or human caused disasters, to house displaced persons and to provide intermediate casualty care.

INTEROPERABILITY WITH OGDs

- Chapter 3 identified the need to improve coordination between the CAF and OGDs to enhance emergency response. Developing stronger links, perhaps through interdepartmental liaison representatives at the operational level, should be examined. This would provide greater communication and situational awareness between departments, especially during routine and contingency operations planning. This would also alleviate planning synchronization issues that were identified in the last chapter;
- A greater level of balance, regarding personnel and control, needs to be established between CAF and OGD partners during training. Training with OGD personnel, at the operational and tactical levels, provides the CAF with a greater understanding of their role, and vice versa. If possible, more OGD personnel should be encouraged to attend and lead training scenarios during CAF initiated training events; and
- At the institutional level, CAF and OGD training, needs to be synchronized to maximize WoG training opportunities. Most OGDs do not train in the same fashion as the CAF,

however, by applying the two previously mentioned points, CAF-OGD training opportunities can be identified. Funding programs also need to be considered and synchronized to ensure a balanced approach to each organization's training budget.

HIGH ARCTIC RESPONSE ELEMENT CONCEPT

In order to mitigate the overall concern of the CAF's current limited capacity to defend the Arctic, the CAF needs a forward positioned unit in the North. Canada does not have the means or need to develop an Arctic force to the same extent as Russia's. However, it does require a unit that can respond to situations in a more timely manner than the current model. The Danish employ a very lean force, called Sirius Patrol, which patrols the wilderness of northern and eastern Greenland by dog sled. This element consists of 12 soldiers that rotate every two years. The Danish soldiers carry weapons for self-defence and are tasked with maintaining Danish sovereignty in their AO.²⁰⁵ Since the population of Canada's North is over double that of Greenland and has a higher level of human traffic, Canada would require a larger and more rapidly deployable force in its Arctic than what the Sirius Patrol employs. Although the Danish model is too small in scope to meet Canada's needs in the North, their minimalist concept is an excellent example that the enforcement of sovereignty in isolated regions can be achieved with limited and well-placed assets.

Clearly, the development of any new permanent Canadian Arctic force would be no easy task, as it would take time and support from various Federal policy makers. However, by leveraging current programs, infrastructure, and personnel, a capability similar to the one outlined in Figure 4.1 and Figure 4.2, could be developed in stages. Figures 4.1 and 4.2, display a fictional concept created by the author, which is based around a unit called the High Arctic

²⁰⁵ Siemon Wezeman, *Military Capabilities in the Arctic: A New Cold War in the High North?* (Sweden: SIPRI, 2016), 7 – 9.

Response Element (HARE). The concept for HARE was derived from the author's research, and would require additional analysis to further develop a viable model for a future Arctic unit.

However, Figure 4.1, displays what could be referred to as *phase one*, along the development path of a future permanent CAF Arctic response force. Phase one would see the initial establishment of HARE, which could be conducted as a six month rotational tasks. Each developmental phase would see the HARE becoming a more permanent capability, until the end-state of a permanent forward positioned military Arctic unit is achieved.

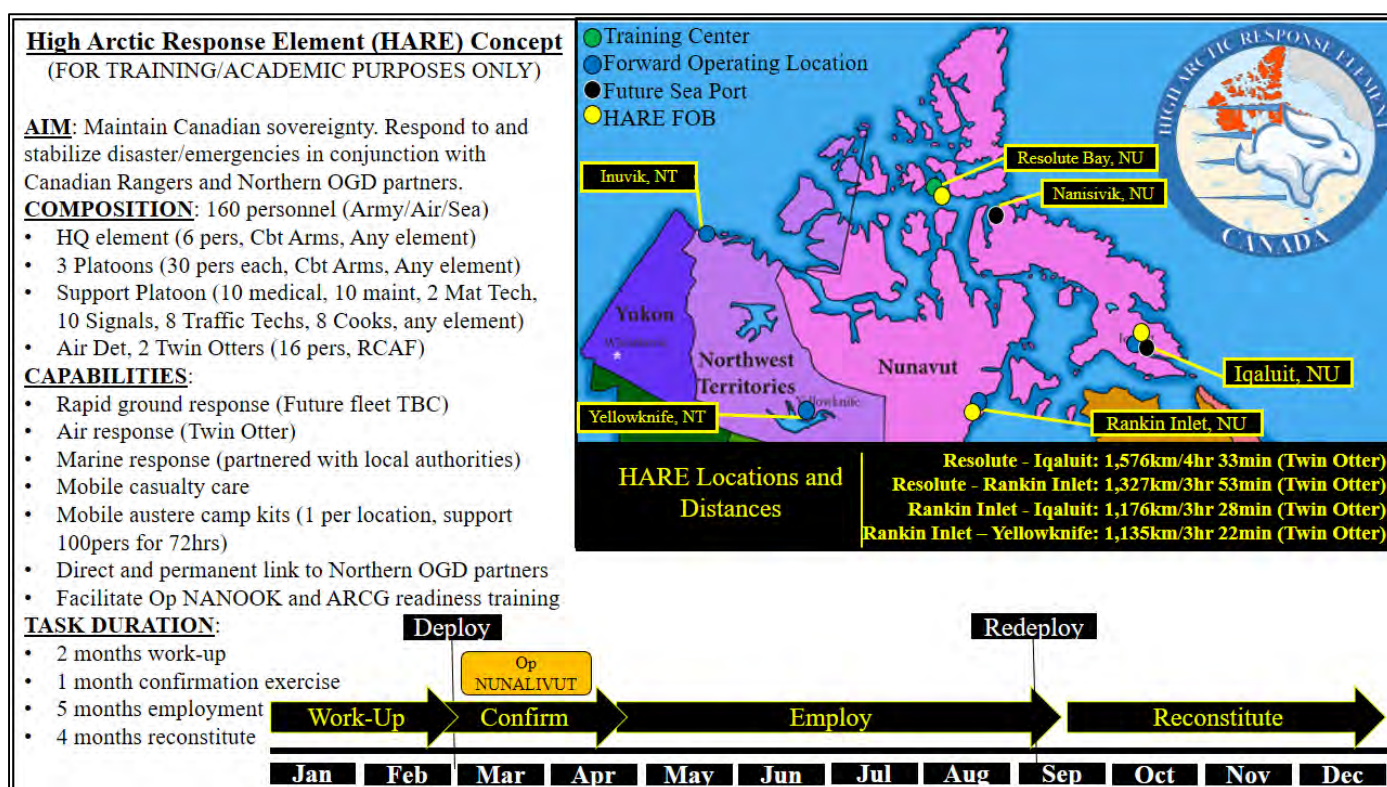


Figure 4.1 – High Arctic Response Element (HARE) Concept

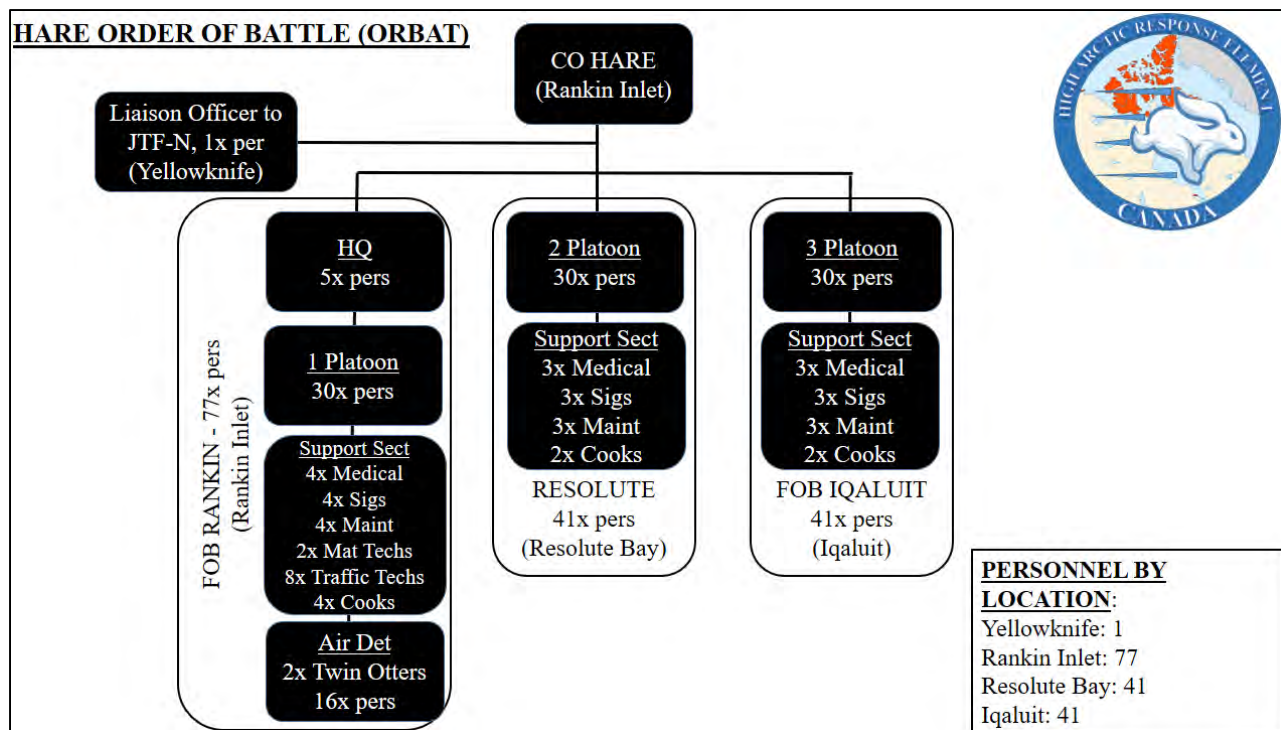


Figure 4.2 – HARE Order of Battle (ORBAT)

The aim of such a force would be to maintain Canadian sovereignty and possess the means of rapidly responding to emergencies. The forward positioned elements would be on scene in a more timely manner than the CAF's current model, and hold the responsibility of stabilizing the situation until follow-on support, from OGDs or local authorities, arrive.

The initial phase would leverage the pre-existing infrastructure in Resolute Bay, Rankin Inlet, and Iqaluit. All three locations already possess the capability of housing forces over 100 personnel in size, and are locations with airfields that the CC-177 can use. The concept would also leverage the work done on the NOH concept, and facilitate force projection and sustainment for northern operations. As for the rotation of forces, the HARE concept would operate in a similar fashion as the annual deployment of Artillery forces during Operation (OP) PALACI. Op PALACI supports Parks Canada's efforts with avalanche control and runs for six months each

year.²⁰⁶ The HARE concept would also serve on-going *real-life* efforts, in conjunction with OGDs, and deliver the extra benefit of facilitating the CAF's annual Arctic training, such as Op NANOOK.

Ultimately, the HARE concept would provide Canada with a more credible domestic Arctic capability by:

- Shortening CAF emergency response time from days, down to hours;
- Employing forward-positioned forces that are acclimatized, familiar with their AO, and robust enough to handle security and disaster situations;
- Enabling the development of a responsive CAF operational logistics supply chain from coast to coast to coast within Canada;
- Making better use of pre-existing CAF Arctic infrastructure and facilitating Arctic training, for both CAF and OGD units;
- Working more closely with northern-based Canadian Rangers and OGDs on a more frequent basis; and by
- Facilitating a more comprehensive and coordinated WoG response to better serve Canadians by meeting the aims laid out in Canada's 2017 Defence Policy.

CONCLUSION

The Arctic's natural barrier provided by its harsh climate and geography, have become less of a challenge over the past two decades for those seeking to exploit the Arctic's beauty and resources. The Arctic is still a region of peace and cooperation, where the rules-based order still holds strong amongst the international community, especially within the chambers of the Arctic

²⁰⁶ Government of Canada, "Operation PALACI," last modified 22 April 2021, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-palaci.html>.

Council. However, Canada needs to be prepared to defend its sovereignty in the Arctic, through military means in the event this period of peace comes to an abrupt end.

The CAF's current Arctic defence capability and response plan would face significant challenges if required to rapidly deploy in response to a non-military threat; and therefore, would be ineffective against a military threat in the Arctic. The conventional military forces tasked with Arctic response lack adequate readiness training and risk becoming casualties themselves due to a lack of acclimatization to the elements. Therefore, survival of these forces would be in jeopardy.

Once deployed to the Arctic, the CAF's next challenge rests with sustaining its personnel. The CAF currently lacks an operational-level responsive logistics supply chain in the Arctic, which has caused it to rely mostly on contracted services during Arctic training since the mid-2000s. The housing of personnel is another major sustainment issue for the CAF. An Immediate Reaction Unit (IRU) consists of 150 to 350 members in size, most of the CAF's limited infrastructure have maximum capacities ranging from 60 to 200 people. Even if the CAF deployed a smaller IRU to one of these locations, excess capacity for casualties, displayed persons, or partners from OGDs would be difficult to provide. Maneuvering around the AO is another hurdle facing the CAF in the Arctic. Its current vehicle fleet consists of a handful of BV-206s and snowmobiles, which come with numerous serviceability issues and lack the capacity to move large amounts of personnel and supplies around an AO. The project to procure a replacement vehicle fleet for the Arctic, was initiated in 2011 and is not expected to field a new fleet before 2028; meaning the CAF must continue to cannibalize and replace its current aging fleets for another seven years.

Lastly, the CAF's interoperability with OGDs in the North requires further time and training to mature. The CAF must remember its role is to support, not lead, within a WoG approach. The CAF has a tendency to plan alone, which has resulted in issues in the past during CAF training. Earlier integration of, and more frequent planning with, northern-based OGD representatives needs to occur at the operational-level. This will ensure better situational awareness for all parties.

Despite there being no assessed immediate military threat in the Canadian Arctic, the CAF must be prepared for one within the next 20 years. The continual disappearance of Arctic sea ice has resulted in the increase of human activity and traffic throughout the Arctic. Scholars and military strategists have emphasised the importance of Arctic security and defence for decades. Regardless of whether countering a military or non-military threat, the CAF currently has significant challenges to overcome if expected to respond to either of them. The CAF needs to address issues within itself, regarding readiness and sustainment, before it can effectively operate with agencies outside its department.

Ultimately, the CAF must ensure it is as prepared to counter threats and respond to emergencies throughout the North, to the same degree it is prepared to counter them in the South. Historically, CAF members that are familiar with operating in the Arctic, often speak of the need to survive, sustain, and maneuver.²⁰⁷ By applying these three needs to the ongoing development of the CAF's Arctic defence capabilities, many of the shortfalls identified in Chapter 3 can be mitigated. The CAF requires an Arctic response capability that can operate effectively within a WoG approach and over time, with further development, be prepared to counter military threats prior to them arriving at Canada's northern borders.

²⁰⁷ E-mail to the author from LCol Ray Chiasson, sent on 30 March 2021. LCol Chiasson is the current Commanding Officer of 1st Canadian Ranger Patrol Group.

BIBLIOGRAPHY

- BBC News. “Russian missiles ‘hit IS in Syria from Caspian Sea.’” Last modified 7 October 2015. [Russian missiles 'hit IS in Syria from Caspian Sea' - BBC News](#).
- Byers, Michael. “Does Canada Need Submarines?” *Canadian Military Journal*, 13, no. 3 (Summer 2014): 7-14.
- Canada. Commander Canadian Army. Arctic Response Company Group (ARCG) Updated Notice to Move (NTM). Ottawa: National Defence Headquarters, 2016.
- Canada. Department of National Defence. *Advancing with Purpose: The Canadian Army Modernization Strategy, 4th Edition*. Ottawa: DND Canada, 2020.
- Canada. Department of National Defence. B-GL-005-300/FP-001, *Canadian Forces Joint Publication 3.0, Operations*. Ottawa: DND Canada, 2011.
- Canada. Department of National Defence. *Canada in a New Maritime World: Leadmark 2050*. Ottawa: Commander, Royal Canadian Navy, 2016.
- Canada. Department of National Defence. *Defending Canadian Sovereignty: New Threats, New Challenges*. Ottawa: DND Canada, 2019.
- Canada. Department of National Defence. *Initial Operating Capability Arctic Response Company Groups*. Ottawa: Canadian Army Headquarters, 2010.
- Canada. Department of National Defence. JDN 02-2014, *Command and Control of Joint Operations*. Ottawa: DND Canada, 2014.
- Canada. Department of National Defence. *Strong, Secure, Engaged - Canada's Defence Policy*. Ottawa: DND Canada, 2017.
- Canada. Department of Public Works and Government Services Canada. *Project Engagement plan: Domestic and Arctic Mobility Enhancement*. Ottawa: Department of Public Works and Government Services Canada, 2018.
- Canada. Government of Canada. “Domestic Arctic Mobility Enhancement.” Last modified 9 January 2020. <http://dgpaapp.forces.gc.ca/en/defence-capabilities-blueprint/project-details.asp?id=938>.
- Canada. Land Force Doctrine and Training System. *Training Implementation Directive – Initial Operating Capability (IOC) – Arctic Response Company Groups (ARCG) and Arctic Vanguard*. Kingston: LFDTS Headquarters, 2011.
- Canada. Standing Operations Order for Domestic Operations (SOODO). Ottawa: National Defence Headquarters, 2014.

- Canadian Army Today. “NOEX 20: Validating a sub-Arctic response.” Last modified 13 May 2020. [NOEX 20: Validating a sub-Arctic response | Canadian Army Today](#).
- CBC. “A Canadian Rangers reset would help Armed Forces keep pace with a changing North.” Last modified 20 October 2020. [A Canadian Rangers reset would help Armed Forces keep pace with a changing North | CBC News](#).
- CBC. “Canadian military involvement in Afghanistan formally ends.” Last modified 12 March 2014. [Canadian military involvement in Afghanistan formally ends | CBC News](#).
- CBC. “Canadian Rangers: A closer look at our ‘eyes and ears’ in the North.” Last modified 21 April 2015. [Canadian Rangers: A closer look at our 'eyes and ears' in the North | CBC News](#).
- CBC. “COVID-19 blamed for delay on Arctic military port first promised in 2007.” Last modified 3 August 2020. [COVID-19 blamed for delay on Arctic military port first promised in 2007 | CBC News](#).
- CBC. “Grounded cruise ship rescue in Nunavut cost Canada’s Armed Forces \$513K.” Last modified 7 September 2018. [Grounded cruise ship rescue in Nunavut cost Canada's Armed Forces \\$513K | CBC News](#).
- CBC. “Ottawa testing \$620K stealth snowmobiles for Arctic.” Last modified 18 August 2013. <https://www.cbc.ca/news/canada/north/ottawa-testing-620k-stealth-snowmobile-for-arctic-1.1377270>.
- Charron, Andrea, and Jim Fergusson. *NORAD: Beyond Modernization*. Winnipeg: University of Manitoba, Centre for Defence and Security Studies, 2019.
- Charron, Andrea, James Fergusson, and Nicolas Allarie. *‘Left of the Bang’: NORAD’s Maritime Warning Mission and North American Domain Awareness*. Winnipeg: University of Manitoba, Centre for Defence and Security Studies, 2015.
- Eliot, Theodore L. *Imminent Canadian Legislation on the Arctic*. US Department of State, Washington D.C.: Information Memorandum for Mr. Kissinger – The White House, 12 March 1970.
- Espritdecorps Canadian Military Magazine. “Operation Nanook – Exercise Soteria (Major Air Disaster – MAJAID).” Last modified 11 October 2018. [Operation Nanook - Exercise Soteria \(Major Air Disaster - MAJAID\) — espritdecorps](#).
- Foreign Policy. “Here’s What Russia’s Military Build-Up in the Arctic Looks Like.” Last modified 25 January 2017. <https://foreignpolicy.com/2017/01/25/heres-what-russias-military-build-up-in-the-arctic-looks-like-trump-oil-military-high-north-infographic-map/>.

- Global News. “ ‘A step forward’: Budget earmarks funds for upgrade of North American defences.” Last modified 24 April 2021. <https://globalnews.ca/news/7786059/budget-defence-canada-norad-military/>.
- Global News. “Canada blocks Chinese Arctic gold mine takeover, citing national security.” Last modified 22 December 2020. <https://globalnews.ca/news/7537057/canada-blocks-shandong-gold-takeover/>.
- Government of Canada. "Statement on Canada's Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada's Northern Strategy Abroad." Last modified 12 May 2017. http://www.international.gc.ca/arctic-arctique/assets/pdfs/canada_arctic_foreign_policy-eng.pdf.
- Government of Canada. “1st Canadian Ranger Patrol Group.” Last modified 20 November 2020. <http://www.army-armee.forces.gc.ca/en/1-crpg/index.page>.
- Government of Canada. “ARCHIVED – Canada First Defence Strategy – Complete document.” Last modified 7 July 2007. [ARCHIVED - Canada First Defence Strategy - Complete document - Canada.ca](http://www.international.gc.ca/arctic-arctique/assets/pdfs/canada_arctic_foreign_policy-eng.pdf).
- Government of Canada. “Arctic and Northern Policy Framework: Safety, security, and defence chapter.” Last modified 10 September 2019. [Arctic and Northern Policy Framework: Safety, security, and defence chapter \(rcaanc-cirnac.gc.ca\)](http://www.international.gc.ca/arctic-arctique/assets/pdfs/canada_arctic_foreign_policy-eng.pdf).
- Government of Canada. “Arctic and Offshore patrol ships: Royal Canadian Navy.” Last modified 23 December 2020. [Arctic and offshore patrol ships: Royal Canadian Navy - Large vessel shipbuilding projects – Shipbuilding projects to equip the Royal Canadian Navy and the Canadian Coast Guard – National Shipbuilding Strategy – Sea – Defence and marine procurement – Buying and Selling – PSPC \(tpsgc-pwgsc.gc.ca\)](http://www.international.gc.ca/arctic-arctique/assets/pdfs/canada_arctic_foreign_policy-eng.pdf).
- Government of Canada. “BV-206 Tracked Carrier.” Last modified 13 December 2017. <http://www.army-armee.forces.gc.ca/en/vehicles/bv-206-tracked-carrier.page>.
- Government of Canada. “Canadian Air Defence Identification Zone now aligned with Canada’s sovereign airspace.” Last modified 24 May 2018. <https://www.canada.ca/en/departement-national-defence/news/2018/05/canadian-air-defence-identification-zone-now-aligned-with-canadas-sovereign-airspace.html>.
- Government of Canada. “Canadian Armed Forces Arctic Training Centre.” Last modified 6 July 2018. <http://www.forces.gc.ca/en/news/article.page?doc=canadian-armed-forces-arctic-training-centre/hkdons6l>.
- Government of Canada. “Canadian Coast Guard, About us.” Last modified 26 July 2019. <https://www.ccg-gcc.gc.ca/corporation-information-organisation/mandate-mandat-eng.html>.

- Government of Canada. “Canadian Forces Station Alert.” Last modified 27 February 2019. [Canadian Forces Station Alert | Royal Canadian Air Force](#).
- Government of Canada. “Canadian Rangers.” Last modified 11 March 2021. [Canadian Rangers - Canadian Army \(forces.gc.ca\)](#).
- Government of Canada. “Current operations list.” Last modified 25 February 2021. [Current operations list - Canada.ca](#).
- Government of Canada. “Evaluation of Canadian Armed Forces Operations.” Last modified 26 September 2018. <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/audit-evaluation/evaluation-canadian-armed-forces-operations.html#ftnn53>.
- Government of Canada. “Extreme expedition: testing prototype vehicles in Canada’s Arctic.” Last modified 7 July 2016. <https://www.canada.ca/en/defence-research-development/news/articles/extreme-expedition-testing-prototype-vehicles-canadas-arctic.html>.
- Government of Canada. “Marine transportation safety investigation M18C0225.” Last modified 15 August 2015. [Marine investigation M18C0225 - Transportation Safety Board \(tsb.gc.ca\)](#).
- Government of Canada. “New Arctic Training Centre boosts Army’s presence in the North.” Last modified 24 November 2020. [ARCHIVED - Article | New Arctic Training Centre boosts Army's presence in the North \(forces.gc.ca\)](#).
- Government of Canada. “Northern Canada Vessel Traffic Services Zone Regulations.” Last modified 7 April 2021. [Northern Canada Vessel Traffic Services Zone Regulations \(justice.gc.ca\)](#).
- Government of Canada. “Operation NANOOK.” Last modified 1 November 2018. [Operation NANOOK - Canada.ca](#).
- Government of Canada. “Operation NUNALIVUT.” Last modified 7 April 2018. <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/recently-completed/operation-nunalivut.html>.
- Government of Canada. “Operation PALACI.” Last modified 22 April 2021. <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-palaci.html>.
- Government of Canada. “Procurement – Navy.” Last modified 19 November 2020. <https://www.canada.ca/en/department-national-defence/corporate/reports->

[publications/proactive-disclosure/supp-estimates-a-2020-21/other-issues/procurement-navy.html](#).

Government of Canada. “Royal Canadian Air Force, Aircraft.” Last modified 3 March 2021. [Aircraft | Royal Canadian Air Force \(forces.gc.ca\)](#).

Grant, Shelagh D. *Polar Imperative: A History of Arctic Sovereignty in North America*. Vancouver: Douglas & McIntyre, 2010.

Heath, Timothy R. *China’s Pursuit of Overseas Security*. Santa Monica, CA: RAND Corporation, 2018.

Heininen, Lassi, Heather Exner-Pirot, and Justin Barnes. *Redefining Arctic Security: Arctic Yearbook 2019*. Akureyri, Iceland: Arctic Portal, 2019.

High North News. “Analysis: The Arctic conflict – truth, fantasy or a little bit of both?” Last modified 18 November 2018. <https://www.highnorthnews.com/en/analysis-arctic-conflict-truth-fantasy-or-little-bit-both>.

High North News. “No More Crystal Serenity in the Northwest Passage.” Last modified 13 December 2017. <https://www.highnorthnews.com/en/no-more-crystal-serenity-northwest-passage>.

Konyshev, Valery, and Alexander Sergunin. “Is Russia a revisionist military power in the Arctic?” *Defense and Security Analysis* 30, no. 4 (Winter 2014): 323-335.

Lackenbauer, P. Whitney, and Heather Nicol. *Whole of Government through an Arctic Lens*. Antigonish: Publications Unit Mulroney Institute of Government St. Francis Xavier University, 2017.

Lackenbauer, P. Whitney, and Peter Kikkert. *Lessons In Northern Operations: Canadian Army Documents, 1945-56*. Documents of Canadian Arctic Sovereignty and Security Number 7. Calgary: University of Calgary, 2016.

Lajeunesse, Adam. “Finding “win-win” China’s Arctic Policy and what it means for Canada.” *The School of Public Policy Publications, SPP Briefing Paper* 11, no. 33 (December 2018): 1-13.

Lajeunesse, Adam. *The Canadian Armed Forces in the Arctic: Purpose, Capabilities, and Requirements*. Calgary: University of Calgary, 2015.

Lalonde, Suzanne. “The debate over the legal status of the Northwest Passage,” Explanatory notes by Dr. Suzanne Lalonde, Université de Montréal, 2018.

- Landriault, Mathieu, and Adam MacDonald. “Debating Arctic security through a media lens – The case of NATO’s Trident Juncture operation.” *Arctic Yearbook 2019, Redefining Arctic Security* (November 2019): 58-71.
- Landriault, Mathieu. “Public Opinion on Canadian Arctic Sovereignty and Security.” *Arctic Institute of North America* 69, no. 2 (June 2016): 160 – 168.
- MacDonald, Adam P. “China Looking North: Compromising Canada’s Arctic Sovereignty and Security?” *Canadian Military Journal*, 18, no. 1 (Winter 2017): 4-15.
- MacDonald, Adam P. “Precarious existence or staying the course? The Foundation and future of Arctic stability.” *Arctic Yearbook 2019, Redefining Arctic Security* (November 2019): 19-32.
- Military Today. “DT-30 Vityaz.” Last accessed 26 April 2021. http://www.military-today.com/trucks/dt30_vityaz.htm.
- National Post. “Canadian Forces to stockpile military equipment in Arctic ‘hubs’ for faster response in case of emergency.” Last modified 24 January 2015. [Canadian Forces to stockpile military equipment in Arctic 'hubs' for faster response in case of emergency | National Post](#).
- National Post. “Three Russian nuclear submarines simultaneously break through Arctic ice in drills.” Last modified 29 march 2021. <https://nationalpost.com/news/world/three-russian-submarines-surface-and-break-arctic-ice-during-drills>.
- North American and Arctic Defence and Security Network. *Understanding The Future Arctic Security Environment, Applying NATO Strategic Foresight Analysis to Canadian Arctic Defence and Security*. Peterborough: Trent University School for the Study of Canada, 2020.
- Nunatsiaq News. “Iqaluit deepsea port project remains on schedule for 2021 completion.” Last modified 14 October 2020. [Iqaluit deepsea port project remains on schedule for 2021 completion | Nunatsiaq News](#).
- Ottawa Citizen. “CFS Alert resupplied by RCAF.” Last modified 2 June 2020. [CFS Alert resupplied by RCAF | Ottawa Citizen](#).
- Ottawa Citizen. “String of radar stations in Canadian Arctic nearly obsolete and modernizing them will cost billions.” Last modified 9 October 2018. <https://nationalpost.com/news/modernizing-warning-radars-in-the-arctic-will-cost-canada-and-the-us-billions-of-dollars>.
- Our Airports. “Canada.” Last accessed 27 April 2021. [Map of airports in Canada @ OurAirports](#).

- Perry, David. Opening remarks, Standing Committee on Foreign Affairs and International Development (FAAE), Ottawa, Canada, 24 October 2018. <https://www.cgai.ca/canadas-sovereignty-in-the-arctic>.
- Pic, Pauline, and Frédéric Lasserre. “What is ‘Arctic’ about ‘Arctic security’?” *Arctic Yearbook 2019, Redefining Arctic Security* (November 2019): 405-420.
- Regehr, Ernie, and Amy Zavitz. *Circumpolar Military Facilities of the Arctic Five*. Vancouver: The Simons Foundation Canada, 2019.
- Royal United Services Institute of Nova Scotia. “Flood Relief, Operation Lentus.” Last modified 12 May 2019. [Canadian Armed Forces Domestic Operations - RUSI\(NS\) \(rusi-ns.ca\)](https://www.cgai.ca/canadas-sovereignty-in-the-arctic).
- “Security Management in the Arctic.” *Defence Deconstructed Podcast*, 11 September 2020. <https://www.cgai.ca/security-management-in-the-arctic>.
- Speier, Richard H., George Nacouzi, Carrie Lee, and Richard M. Moore. *Hypersonic Missile Nonproliferation: Hindering the Spread of a New Class of Weapons*. Santa Monica, CA: RAND Corporation, 2017.
- Spohr, Kristina, and Daniel S. Hamilton. *The Arctic and World Order*. Washington, DC: Foreign Policy Institute/Henry A. Kissinger Center for Global Affairs, Johns Hopkins University, 2020.
- The Arctic Institute. “The Return of Great Power Competition to the Arctic.” Last modified 22 October 2020. <https://www.thearcticinstitute.org/return-great-power-competition-arctic/?cn-reloaded=1>.
- The Globe and Mail. “Harper breaks ice on Arctic sovereignty.” Last modified 23 December 2005. [Harper breaks ice on Arctic sovereignty - The Globe and Mail](https://www.theglobeandmail.com/news/national/harper-breaks-ice-on-arctic-sovereignty).
- The Globe and Mail. “Rites of passage thwart northern adventurers.” Last modified 8 September 2007. <https://www.theglobeandmail.com/news/national/rites-of-passage-thwart-northern-adventurers/article4092726/>.
- The Guardian. “Australia insists WHO inquiry into Covid origin must be robust, despite China tensions.” Last modified 28 December 2020. [Australia insists WHO inquiry into Covid origin must be robust, despite China tensions | Coronavirus | The Guardian](https://www.theguardian.com/world/2020/dec/28/australia-insists-who-inquiry-into-covid-origin-must-be-robust-despite-china-tensions).
- United Nations, Ocean Affairs and the Law of the Sea. *United Nations Convention on the Law of the Sea*. New York: UN, 1982.
- United States. Department of Defense. *Report to Congress, Department of Defense Arctic Strategy*. Washington, DC: U.S. Government Printing Office, 2019.

United States. Department of the Navy. *A Strategic Blueprint for the Arctic*. Washington, DC: U.S. Government Printing Office, 2021.

University of Alberta – China Institute. “China is the Canadian Arctic: Context, Issues, and Considerations for 2021 and Beyond.” Last modified 12 January 2021.
https://www.ualberta.ca/china-institute/research/analysis-briefs/2021/arctic_analysis_brief.html#:~:text=From%202005%20to%202017%2C%20cumulative,the%2060%20degrees%20north%20line.

Wezeman, Siemon. *Military Capabilities in the Arctic: A New Cold War in the High North?* Sweden: Stockholm International Peace Research Institute (SIPRI), 2016.

Wings. “On guard for thee.” Last accessed 8 April 2021. [On guard for thee - Wings Magazine \(archive.org\)](#).

Yale Environment 360. “In the melting Arctic, a harrowing account from a stranded ship.” Last modified 29 August 2018. [In the Melting Arctic, a Harrowing Account from a Stranded Ship - Yale E360](#).