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CANADIAN ARCTIC SOVEREIGNTY: NOT SO STRONG AT HOME

Major Joshua Leveque

JCSP 45

Exercise Solo Flight

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CANADIAN ARCTIC SOVEREIGNTY: NOT SO STRONG AT HOME

INTRODUCTION

Strength, speed, patience, curiosity and maternal devotion are qualities inherent in the Polar Bear and are the reasons it is revered among the Inuit peoples of the Arctic.¹ The Government of Canada (GoC) adopted the arctic as a defining characteristic of Canada. In 1958, Prime Minister John G. Diefenbaker, stated “I see a new Canada - a Canada of the North.”² The affinity towards the arctic has only burgeoned over time and Canadians more than any other Arctic State, an Arctic state being one of the eight countries claiming sovereignty over a portion of the arctic³, desire their government to actively defend its arctic region.⁴ The GoC displays its desire to maintain its identity as an Arctic State by adopting the Polar Bear image and its qualities and prominently placing its image on the face of the *Toonie*, its two dollar coin.⁵ The GoCs Arctic Foreign Policy states “the first and most important pillar towards recognizing the potential of Canada’s Arctic is the exercise of our sovereignty over the Far North.” The inherent challenge is to first define sovereignty and then establish what steps are required to secure and maintain it over the arctic region. The exercising of sovereignty also has significant implications for the Canadian Armed Forces (CAF).

¹The Great Canadian Travel Group Inc. “Indigenous Culture.” Accessed 10 April 2019, 6. <http://polarbear-experience.com/incredible-polar-bears/indigenous-culture/>

²Canada History, “John G. Diefenbaker: His Northern Vision.” Canada History, Accessed 10 April 2019, 2. <http://www.canadahistory.com/sections/documents/Primeministers/diefenbaker/docs-the-northern-vision.htm>

³Arctic Council, “The Arctic Council: A backgrounder.” Arctic Council, Last modified 13 September 2019, 3. <https://arctic-council.org/index.php/en/about-us>

⁴John English *et al*, “The myth of Arctic sovereignty: Do we really need to defend the North?” The Globe and Mail, last updates 11 May 2018, 5.

⁵The Royal Canadian Mint, “Balance and composition – the 2-dollar coin.” The Royal Canadian Mint, Accessed 10 April 2019, 1. <https://www.mint.ca/store/mint/about-the-mint/2-dollars-5300016#.XK5qIvZFyUk>

The GoC has recognized the CAFs requirements in its efforts to exercise sovereignty in the arctic within the defence policy *Strong, Secure and Engaged* (SSE). SSE stipulates that Canada will be “Strong at home, its sovereignty well-defended by a Canadian Armed Forces also ready to assist in times of natural disaster, other emergencies, and search and rescue.”⁶ Although both Canadian Army (CA) and the Royal Canadian Navy (RCN) have significant capabilities identified to support arctic sovereignty the Royal Canadian Air Force (RCAF) has a particularly heavy load to bear. With the expansion of the Canadian Air Defence Identification zone (CADIZ) to encompass the entire Arctic Archipelago the RCAF must be situated to detect all objects approaching this region and maintain the capability to respond to those who could potentially violate Canadian arctic airspace.⁷

The Capabilities required by the RCAF to meet the mandate within SSE to support arctic sovereignty and appropriately monitor, control and respond within the newly expanded CADIZ are vast. This paper will show that the RCAF's current capabilities within the arctic are not sufficient to enforce sovereignty. To adequately prove this it is essential to first identify a suitable definition of sovereignty and the requirements to enforce it. Then an understanding of the arctic and the potential sovereignty threats will highlight the need for robust military support in the region. From here it will outline the capabilities which are currently deficient in RCAF. Finally, the paper will propose solutions which can significantly improve the RCAF's presence and response capabilities in the arctic.

⁶National Defence. “Strong, Secure, Engaged: Canada’s Defence Policy.” 2017, 34.

⁷Canada, National Defence and the Canadian Armed Forces, 2018-19 Departmental Plan, Planned Result 1.4. Last accessed 11 April 2019. https://www.canada.ca/content/dam/dnd-mdn/migration/assets/FORCES_Internet/docs/en/about-reports-pubs/dnd_2018-19_departmental-plan.pdf

SOVEREIGNTY

To grasp the immense challenge of maintaining sovereignty over a vast, inhospitable and sparsely populated territory it is important to first define what sovereignty means and then explore the powers which need to be brought to bear to enforce it. The concept of sovereignty has evolved significantly since its origins in medieval Europe where kings became sovereigns “with supreme power.”⁸ From these origins the concept of sovereignty has evolved to suit modern day states.

Thomas Hobbes, an English philosopher from the 17th century, surmised that “Political authority is justified by a hypothetical social contract among the many that vests in a sovereign person or entity the responsibility for the safety and well-being of all.”⁹ This shows a careful evolution of the sovereign from being restricted to a single being and introduces the concept of individual peoples bestowing sovereignty to one entity in exchange for protection and security. Robert Jackson, Professor of International Relations and Political Science at Boston University, expands on Hobbes deduction stating “The sovereign state is charged with the heavy responsibility of providing security for its people.”¹⁰ The concepts of state sovereignty and security are central themes which are essential when exploring Canadian sovereignty in the arctic.

The Peace of Westphalia in 1648 saw the resolution of the Eighty Years’ Wars in Europe and by many scholars represented the creation of the state system and territorial sovereignty.¹¹ Modern state sovereignty as defined by Thomas Biersteker, Professor at

⁸The Editors of Encyclopaedia Britannica, “Sovereignty.” Encyclopaedia Britannica, 2014, Accessed 19 Apr 2019, 1. <https://www.britannica.com/topic/sovereignty>

⁹Tom Sorell, "Thomas Hobbes." Britannica Academic, Encyclopædia Britannica, 2017, Accessed 19 April 2019, 1. <https://academic-eb-com.cfc.idm.oclc.org/levels/collegiate/article/Thomas-Hobbes/40659>

¹⁰Robert Jackson, “Sovereignty: Evolution of an Idea.” Polity Press, 2007, 17.

¹¹The Editors of Encyclopaedia Britannica, “Peace of Westphalia.” Encyclopaedia Britannica, 2014, Accessed 19 Apr 2019, 1. <https://www.britannica.com/event/Peace-of-Westphalia>

Graduate Institute of International and Development Studies, and Cynthia Weber, Professor of International Relations at Sussex University, consists of “authority, territory, population (society, nation), and recognition.”¹² The territorial aspect can be further broken down to a states “legal control of territory, territorial waters and national air space, as well as its legal power to exclude other states from these domains.”¹³ These definitions imply that essential aspects of sovereignty is a state’s ability to actively control all aspect of its territory; land, air and sea. Another important aspect of state sovereignty which has implications in Canada’s arctic is the population and its inherent link to the concept of security.

Invariably tied, security has implications on but is not synonymous with sovereignty. Following the thinking of Hobbes, the state is responsible for the safety and well-being of the people, thus the provision of security to counter not just external threats but also domestic threats like natural disasters, harm to individuals, and access to health care, hunger and all individual well-being concerns. These priorities are key components of the National security of most states. The Canadian National Security Policy states that “The first priority of the Government of Canada is to protect the safety and security of Canadians both at home and abroad.”¹⁴ Failing to provide essential human security capabilities can have severe consequence for sovereignty. Neil McFarlane, professor of international relations at Oxford University, and Natalie Sabanadze, Georgia’s ambassador to the Belgium and the European Union, state “in conditions where there is

¹²Thomas Biersteker and Cynthia Weber, “State and Sovereignty as Social Constructs.” Cambridge University Press, 1996, 46.

¹³Edward Watson Mcwhinney, "Sovereignty". In The Canadian Encyclopedia. Historica Canada. Article published February 07, 2006; last modified October 09, 2018. <https://www.thecanadianencyclopedia.ca/en/article/sovereignty>

¹⁴Public Safety Canada, “National Security.” Government of Canada, Accessed 19 April 2019, 1. <https://www.publicsafety.gc.ca/cnt/ntnl-scrtr/index-en.aspx>

little prospect of protection of particular communities within an existing state, human rights and protection norms may challenge the principle of territorial integrity through remedial secession.”¹⁵ It follows that to maintain sovereignty a state must be capable of defending its territory, be it land, sea or air, and assure the security of its entire population. This understanding is important when looking at Canada’s Sovereignty over its arctic region.

Canadian Arctic Sovereignty

Canada became a Sovereign Nation in 1867 following The British North American Act. This was the answer provided by 74 percent of Canadians when polled in 2016.¹⁶ This seems to be the easy answer to the Canadian sovereignty question, however the question is anything but simple. The question of Canada’s arctic sovereignty is even murkier. In 1909, Captain J.E. Bernier claimed the entire Arctic Archipelago on behalf of Canada.¹⁷ This claim was based on the *Sector Principle* where lines are drawn along longitudinal parallels from a countries borders to the North Pole. The Sector Principle did not stand the test of time as most global entities agreed that for sovereignty over a territory to exist the nation must perform functions of government.¹⁸ Seeking to further its arctic claim the GoC sent Royal Canadian Mounted Police officer Captain Henry Larson

¹⁵Neil MacFarlane and Natalie Sabanadze. “Sovereignty and Self-Determination: Where Are We?” *International Journal* 68, no. 4, 2013, 609.

¹⁶Joe Lofaro, “Most Canadians think Canada became independent nation in 1867, poll finds.” *Ottawa Citizen*, Last Modified 30 December 2016, 3. <https://ottawacitizen.com/news/local-news/most-canadians-think-canada-became-independent-nation-in-1867-poll-finds>

¹⁷Alan MacEachern, “J.E. Bernier’s Claims to Fame.” *Scientia Canadensis: Canadian Journal of the History of Science, Technology and Medicine / Scientia Canadensis : revue canadienne d’histoire des sciences, des techniques et de la médecine* , vol. 33, n° 2, 2010, p. 43-73. <https://history.uwo.ca/People/Docs/MacEachern-BernierClaimsToFame.pdf>

¹⁸Andrew Hund, “Antarctica and the Arctic Circle: a Geographic Encyclopedia of the Earth’s Polar Regions.” Santa Barbara, 2014, 647.

on a voyage through the North West passage to show GoC control of the region.¹⁹

Although these were great news stories they were still insufficient to legitimize the sovereignty claim in the international community.

The United Nations Convention on the Law of the Sea (UNCLOS) provided the GoC with a legitimate sovereignty claim over the Arctic Archipelago. The first United Nations (UN) Convention was ratified in 1958 and included the *Convention on the Continental Shelf* which provided GoC with a legal basis for the arctic coastal territory.²⁰ The third and final UN conference in the development of UNCLOS was held from 1972-1983 and was ratified with the inclusion of the *Exclusive Economic Zone*. Within this zone “the coastal state exercises sovereign rights to explore, exploit, conserve, and manage the living and non-living resources in the water column and seabed.”²¹

Although Canada now has legal claims on the arctic does it satisfy the requirement laid out in the basis of sovereignty doctrine? Does it have the capability to provide security to the inhabitants of the arctic from both internal and external threats? During a 2006 speech in Nunavut then Prime Minister Stephen Harper observed about the previous government that “They have failed to provide enough resources to comprehensively monitor, patrol and protect our northern waters.”²² To explore Canada’s current capabilities in the arctic it is essential review SSE and the CAFs ability to project force, both from exterior threats and from internal threats, in the region.

¹⁹Daphne Bramham, “Daphne Bramham: Forget Franklin, Henry Larsen is Canada’s true Arctic hero.” Vancouver Sun, Last Updated 26 August 2016, 11. <https://vancouver.sun.com/opinion/columnists/daphne-bramham-forget-franklin-henry-larsen-is-canadas-true-arctic-hero>

²⁰Elizabeth Riddell-Dixon, “Breaking the Ice: Canada, Sovereignty, and the Arctic Extended Continental Shelf.” University of Toronto, 2017, 43.

²¹*Ibid.*, 49.

²²Government of Canada, “Securing Canadian Sovereignty in the Arctic.” Government of Canada, 2006, 4. <https://www.canada.ca/en/news/archive/2006/08/securing-canadian-sovereignty-arctic.html>

Indigenous Sovereignty

An essential discussion when considering Canada's arctic sovereignty is the relationship between the GoC on the Inuit peoples. Having been residents of the northern regions long before North America had been discovered provides pretty strong grounds for claiming the territory.²³ The Inuit population in Canada, as of 2016, was over 65,000 of which over 78% live (an overwhelming majority of the total population) in the arctic region.²⁴ Thus ensuring a stable political situation with the Inuit peoples is essential for any GoC sovereignty claim to exist.²⁵

When looking at the prospect of stability the United Nations Declarations on the Rights of Indigenous Peoples (UNDRIP) and the final report of the Truth and Reconciliation Commissions (TRC) of Canada are essential documents to explore. Although true understanding goes well beyond the scope of this paper there are important themes which can be garnered from them. First, from UNDRIP, Article 4 states "Indigenous peoples, in exercising their right to self-determination, have the right to autonomy or self-government in matters relating to their internal and local affairs, as well as ways and means for financing their autonomous functions."²⁶ This obligates countries who adopt UNDRIP, which Canada did in 2016, to recognize many indigenous peoples rights but particularly in the sovereignty context the right to self-government and land.²⁷

²³Milton Freeman, "Arctic Indigenous Peoples in Canada". The Canadian Encyclopedia. Historical Canada. Article published March 15, 2007; last modified October 16, 2018, 1. <https://www.thecanadianencyclopedia.ca/en/article/aboriginal-people-arctic>

²⁴Inuit Tapiriit Kanatami, "Inuit Statistical Profile 2018." Inuit Tapiriit Kanatami, 2018, 7. <https://www.itk.ca/wp-content/uploads/2018/08/Inuit-Statistical-Profile.pdf>

²⁵Barry Zellen, "On thin Ice: The Inuit, The State, and the Challenge of Arctic Sovereignty." Lexington Books, 2009, xii.

²⁶United Nations, "United Nations Declarations on the Rights of Indigenous Peoples." United Nations, 2008, 4. https://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf

²⁷Tim Fontaine, "Canada officially adopts UN declaration on rights of Indigenous Peoples." CBC, Last Updated 2 August 2016, 1. <https://www.cbc.ca/news/indigenous/canada-adopting-implementing-un-rights-declaration-1.3575272>

These rights are further emphasized within the TRC report which defines reconciliation as “establishing and maintaining respectful relationships.”²⁸ The TRC’s central conclusion predicates that the GoC and non-indigenous Canadians must support the indigenous people’s right to self-determination which is grounded within self-governance.²⁹

The impact of reconciliation is tremendous when discussing arctic sovereignty, the increasing ability for Canada and the Inuit to work harmoniously, through self-governance, only strengthens the bonds and further legitimizes the GoC’s claim. Best said by Barry Zellen, research director of the Arctic Security Project at the Center for Contemporary Conflict at the Naval Postgraduate School, “a shared commitment and mutual sovereignty is the most viable path to a secure north land.”³⁰

THE EVOLVING ARCTIC

Why is arctic sovereignty so important and why would the international community challenge Canada’s claim of sovereignty? These fundamental questions require concrete answers prior to exploring the amount of resources the GoC should expend towards solidifying and protecting its claim. The answers are predicated upon the effects of climate change opening the arctic to industrialization and tourism.

Climate Change

“Canada warming at twice the global rate” was a recent article in CBC news raising concerns over recent studies that hypothesize that Canada’s arctic is warming at a

²⁸Truth and Reconciliation Commission of Canada, “Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada.” Truth and Reconciliation Commission of Canada, 2015, 16.

http://nctr.ca/assets/reports/Final%20Reports/Executive_Summary_English_Web.pdf

²⁹*Ibid.*, 181.

³⁰Barry Zellen, “On thin Ice...xii.

much greater speed than the rest of the world's arctic regions.³¹ Sea ice in historically unnavigable waterways is receding on a yearly basis. NASA's has observed that "Arctic sea ice is now declining at a rate of 12.8 percent per decade, relative to the 1981 to 2010 average."³² With studies predicting the Northwest Passage (NWP) being regularly navigable by 2050 using annual temperature increases significantly less than those identified in the latest reports it can be presumed that the arctic will be more accessible than ever in the near future.³³ In addition to the opening of sea routes the receding ice is simultaneously opening up access to natural resources previously inaccessible, like oil, natural gas and minerals.³⁴ These factors combine to set the stage for increased arctic industrialization and tourism and consequently exterior security threats.

The changing weather patterns caused by climate change is increasing the rates and risks of internal security threats. Sara French, Senior Negotiator for the Government of Yukon, observes "Climate change is having a considerable impact on the ability to travel on the lands, creating an increased demand on search and rescue systems. It is also leading to increased incidents of emergencies like floods, forest fires and avalanches."³⁵ These additional security concerns enhance the ever present interior threats posed by the harsh arctic region and present a significant challenge for the CAF and enforcing arctic sovereignty.

³¹CBC News, "Canada Warming at twice the global rate, leaked report finds." Canadian Broadcasting Corporation, Last Updated 4 April 2019, 1. <https://www.cbc.ca/news/technology/canada-warming-at-twice-the-global-rate-leaked-report-finds-1.5079765>

³²NASA. "Global Climate Change: Vital Signs of the Planet". Last updated 3 Oct 2018. <https://climate.nasa.gov/vital-signs/arctic-sea-ice/>

³³Christian Haas and Stephen Howell, "Ice thickness in the Northwest Passage." AGU Publications, 2015, 2.

³⁴Franklyn Griffiths, Rob Huebert, and P. Whitney Lackenbauer, "Canada and the Changing Arctic: Sovereignty, Security, and Stewardship" Wilfred Laurier University Press, 2011, 148.

³⁵Sara French. "Search & Rescue: When Disaster Strikes: Emergency Management in the Arctic." Northern Public Affairs, 2015, 2. <http://www.northernpublicaffairs.ca/index/volume-2-issue-3-arctic-search-rescue/search-rescue-when-disaster-strikes-emergency-management-in-the-arctic/>

Industrialization

The Arctic is exceptionally rich in natural resources with an estimated “90 billion barrels of oil, 1,669 trillion cubic feet of natural gas.”³⁶ The Canadian arctic also contains an abundance of diamonds, iron ore and other base metals.³⁷ The increased access resulting from climate change is becoming a lodestone for industry in a region which has historically been economically unfeasible. There are currently 10 mines operating in the arctic with only three among them currently able to exploit maritime transport to ship their resources south.³⁸ Presumably the receding ice and opening waterways is only going to increase investment interest by both domestic and foreign industry.³⁹ The navigable waterways is even more significant when looking at the economic advantage of the NWP.

The infamous NWP has been a prized trading route since European explorers commenced the century’s long search in the 15th century.⁴⁰ Finally, in 1906, Norwegian explorer Roald Amundsen became the first to successfully traverse the NWP proving it was possible.⁴¹ The NWP has become navigable during summer months and has been shown as an economically viable alternative to Global routes via either the Suez or Panama Canals. The bulk cargo ship Nordic Orion saved 4 days and over US\$200,000 utilizing the Northwest Passage in 2013 to transport coal from Vancouver to Finland.⁴² The GoC has stated that the NWP is internal waters, a view point not shared amongst

³⁶Franklyn Griffiths, Rob Huebert, and P. Whitney Lackenbauer, “Canada and the Changing... 148.

³⁷Natural Resources Canada, “Geology of Energy and Mines.” Government of Canada, Last modified 15 December 2017, 1. <https://www.nrcan.gc.ca/the-north/science/geology-energy-minerals/10717>

³⁸Pierre-Louis Têtu, Jean-François Pelletier & Frédéric Lasserre, “The mining industry in Canada north of the 55th parallel: a maritime traffic generator?” *Polar Geography*, 2015, 107-122.

³⁹Whitney Lackenbauer, Adam Lajeunesse, Frederic Lasserre, and James Manicom, “China’s Arctic Ambitions and What They Mean for Canada.” Calgary: University of Calgary Press, 2018, 2.

⁴⁰History.com Editors, “Northwest Passage.” *History*, Last updated 21 August 2018, 1. <https://www.history.com/topics/exploration/northwest-passage>

⁴¹*Ibid.*

⁴²Naomi Powell, “Northern Exposure: Can the Northwest Passage Live up to Its Billing as a Maritime Superhighway?” *Financial Post*, 2018, 11. Last Modified 28 Dec 2019.

international entities. The United States, Canada's closest ally and trading partner, does not share the same point of view seeing the NWP as an international waterway generating a challenge to Canada's sovereignty.⁴³ Canada's sovereignty claim must be backed by capabilities which can enforce its foreign policy.

Another polar transportation highway which has burgeoned in the last couple decades and has implications on Canadian arctic sovereignty is through the arctic airspace. Technological advancements in aviation has made transpolar air routes increasingly busy. Nav Canada stats indicate "Air traffic operating on polar routes has shown a marked increase over the years, increasing 15-fold between 2003 and 2015."⁴⁴ Canada's decision to expand its ADIZ to include the entire Arctic Archipelago has created a significant challenge to detect and intercept potential threats, through terrorism or foreign military, in its most northern regions.⁴⁵

Tourism

The accessibility of the arctic has created a new global tourist destination as people are drawn to the arctic to view what is increasingly being seen as a landscape on the verge of extinction.⁴⁶ Jackie Dawson, Professor and holder of the Canada Research Chair in Environment, Society and Policy, writes, "Tourism ships, including passenger vessels (cruise ships) and pleasure craft (yachts), have increased by 75 and 400 percent

⁴³Whitney Lackenbauer, Adam Lajeunesse, Frederic Lasserre, and James Manicom, "China's Arctic Ambitions...3.

⁴⁴Nav Canada, "Polar routes – past, present and future." Nav Canada, Last modified 27 April 2017, 14.

⁴⁵National Defence. "Strong, Secure...80.

⁴⁶Aurora D'Aprile, "Arctic tourism: How The Great North Is Becoming The New Exotic." Foresight: The CMCC observatory on climate policies and future, Accessed 20 April 2019, 2. <https://www.climateforesight.eu/future-earth/arctic-tourism-how-the-great-north-is-becoming-the-new-exotic/>

respectively in Arctic Canada since 2005.”⁴⁷ With this increased traffic in the arctic the threat of injury and distress of isolated people becomes a significant concern. Should a cruise ship run aground or stall in the NWP the ability for Canada and by extension the CAF to respond becomes paramount when assuring the security of individuals within its sovereign territory.

RCAF ARCTIC DEFENCE CAPABILITY DEFICIENCIES

As previously shown, Canada has long claimed sovereignty over the arctic region and has continually strived to both legitimize that claim and enforce it through governance and control. One of the premier entities to maintain a presence and control in the region is the CAF. In SSE the GoC makes it resoundingly clear that one of the main focuses of the CAF over the next decade will be the sovereignty of the arctic, including the intent to purchase new capabilities geared towards surveillance, defence and Search and Rescue (SAR).⁴⁸ The Royal Canadian Navy with its Arctic Offshore Patrol Ships and Victoria-class long range patrol submarines will play key roles in securing Canada’s arctic maritime approaches.⁴⁹ However, the Navy’s ability to operate in the high North is limited by landfast multiyear ice (MYI) and unnavigable approaches at northern edge of the Arctic Archipelago.⁵⁰ Having access to the entire archipelago throughout all four seasons leaves the Royal Canadian Air Force (RCAF) as a key contributor to Canada’s Arctic Sovereignty.⁵¹

⁴⁷Jackie Dawson, “Arctic Shipping: Future Prospects and Ocean Governance.” *The Future of Ocean Governance and Capacity Development*, Brill, 2018, 485.

⁴⁸National Defence. “Strong, Secure...80.

⁴⁹*Ibid.*

⁵⁰Christian Haas and Stephen Howell, “Ice thickness...1.

⁵¹Richard Goette and P. Whitney Lackenbauer, “Northern Skytrails: Perspectives on the Royal Canadian Air Force in the Arctic from the Pages of The Roudel, 1949-65.” *The Roundel*, 2017, xii. <https://cmss.ucalgary.ca/sites/cmss.ucalgary.ca/files/dcass10.pdf>

The key themes derived from the sovereignty theories revolve around the control and security of a state's territorial domains and the well-being of the people. The RCAF's unfettered access to the arctic make its capabilities paramount in enforcing sovereignty. Two capabilities where the RCAF is not/will be imminently failing in meeting Canada's arctic sovereignty requirements are defence /control of the ADIZ and SAR.

Defending the ADIZ

The Russian Bear crossing the polar region and attacking the North is not just a wild tale but constitutes a real threat to Canadian Sovereignty. RCAF fighter aircraft are frequently called upon to intercept Russian bombers encroaching on Canada's arctic ADIZ with the latest intercept occurring in January of this year.⁵² The replacement of the RCAF's aging CF-18 fleet has been highlighted as a top priority in SSE as a means to enforce sovereignty. SSE states "The fighter aircraft fleet is a critical Canadian Armed Forces capability necessary to enforce Canada's sovereignty, enable continental security, and contribute to international peace and stability."⁵³ What is not mentioned within SSE is the GoC's plan to replace the soon to be retired tactical Air-to-Air Refueling (AAR) capability.

The RCAF's only tactical AAR platform, the CC-130HT, is embroiled with the Fixed Wing Search and Rescue (FWSAR) transition and the only means to ensure appropriate manning for the transition is to retire the AAR capability in 2020.⁵⁴ SSE

⁵²Global News staff, "Canadian Jets Intercept 2 Russian Bombers near North American Coastline: NORAD." Global News, Last Updated 2 February 2019, 1. <https://globalnews.ca/news/4894339/norad-russian-bombers-canada/>

⁵³National Defence. "Strong, Secure, Engaged: Canada's Defence Policy." 2017, 38.

⁵⁴Mike Wolter, "'Fueling the Fire': 435 Squadron delivers air-to-air refueling for a quarter century." Royal Canadian Air Force, Last modified 6 July 2018, 13. <http://www.rcaf-arc.forces.gc.ca/en/article-template-standard.page?doc=fueling-the-fire-435-squadron-delivers-air-to-air-refueling-for-a-quarter-century/jhf5ovvy>

recognizes the importance of AAR stating the intent to “Recapitalize next generation strategic air-to-air tanker-transport capability.”⁵⁵ However, there is no mention of a replacement Tactical AAR platform. When requiring to support a next generation fighter force operating in the vast and unforgiving arctic airspace the key tactical AAR enabling function is essential.

The intent of AAR is to “extending the range, payload and endurance of receiver aircraft. It allows Air Power to be projected over greater distances.”⁵⁶ With the RCAF’s fighter Wings being located in Cold Lake, AB, and Bagotville, QC, located 1869 Nm and 2064 Nm respectively from Canadian Forces Station (CFS) Alert, located at the Northern tip of Canada’s Arctic Archipelago, a rigorous AAR capability is essential to respond to threats to all portions of the ADIZ.⁵⁷ The great distance involved also make it essential to deploy fighter and AAR assets to Forward Operating Locations (FOLs) to allow for rapid response and recovery. The challenge when operating aircraft in the arctic is the scarcity of useable runways and airport infrastructure to support larger aircraft. In Canada’s entire Arctic region there are only 10 paved runways (only one of which is located on the Arctic Archipelago, in Iqaluit) which is significant when discussing the viability of strategic AAR assets supporting arctic sovereignty.⁵⁸

The RCAF’s strategic AAR capability resides with its 2 CC-150 (civilian A310) aircraft. The CC-150 requires a paved runway approximately 7500’ in length to be able

⁵⁵*Ibid.*, 39.

⁵⁶Joint Air Power Competence Center, “Air-to-Air Refuelling Flight Plan: An Assessment.” JAPCC, 2011, 3. http://www.japcc.org/wp-content/uploads/JAPCC_AAR_Flight_Plan_web.pdf

⁵⁷Sky Vector Aviation Charts, “Flight Plan.” SkyVector.com, Accessed 21 April 2019. <https://skyvector.com/>

⁵⁸Kayle Hatt, “Isolated Communities and Inadequate Airstrips: The Challenge of Airport Infrastructure in Northern Canada.” Northern Public Affairs, 2018, 4. Accessed 21 April 2019. <http://www.northernpublicaffairs.ca/index/volume-3-issue-2-building-new-partnerships/isolated-communities-and-inadequate-airstrips-the-challenges-of-airport-infrastructure-in-northern-canada/>

to take-off.⁵⁹ There are only 3 runway in the Canadian arctic which meet these requirements – Yellowknife, Whitehorse and Iqaluit.⁶⁰ With all three runways located in the southern reaches of the arctic they are not viable options for national sovereignty missions in the high arctic. The additional challenge of harsh arctic weather make mission success highly unlikely with only three usable runways spread the width of the arctic (distance between Whitehorse and Iqaluit is 1790 Nm)⁶¹when required to save sufficient fuel to fly to destination and then an alternate aerodrome meeting minimum weather requirements.⁶² The RCAF's strategic AAR assets are ineffective in the arctic outside of potentially ideal weather conditions and operations in the vicinity of the three usable aerodromes whereas the tactical AAR capability provided by the CC-130HT is built for operations in these austere environments.

As depicted in Figure 1, Canada's ADIZ now surrounds the Arctic Archipelago requiring RCAF AAR assets to be able to support sovereignty operations potentially north of CFS Alert.⁶³ The CC-130HT has a long and proven history supporting arctic operations being able to operate from the many short gravel runways spotted throughout the region.⁶⁴ The loss of the tactical AAR capability combined with the expansion of the ADIZ serves to cripple to cripple Canada's ability to monitor and control its sovereign airspace jeopardizing its claim in the arctic.

⁵⁹Skybrary, "Airbus A-310." Flight Safety Foundation, Last modified 15 August 2017. <https://www.skybrary.aero/index.php/A310>

⁶⁰Nav Canada, "Canada Flight Supplement." Nav Canada, 2019.

⁶¹Sky Vector Aviation Charts, "Flight Plan...1.

⁶²Transport Canada, "Suitable Enroute Alternate Aerodromes." Transport Canada, Accessed 21 April 2019, B-2. https://www.tc.gc.ca/media/documents/ca-publications/appendixb_1.pdf

⁶³Cynthia Claros, "Expanded Canadian ADIZ." Ops Group, Accessed 21 April 2019, 2. <https://ops.group/blog/expanded-canadian-adiz/>

⁶⁴U.S. Air Force. "C-130 Hercules." U.S. Air Force, 2011, 12. <https://web.archive.org/web/20130710110223/http://www.af.mil:80/information/factsheets/factsheet.asp?id=92>

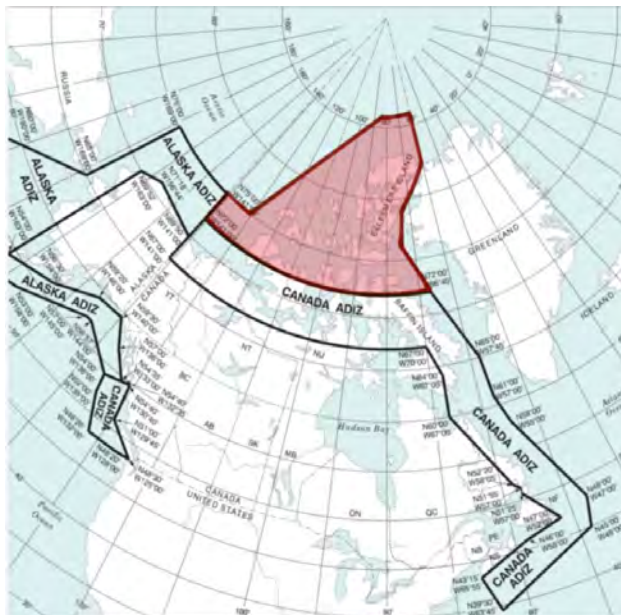


Figure 1 – Expanded Canadian ADIZ

Source: Claros, *Expanded Canadian ADIZ*, 2.

Let Others Defend Our Sovereignty?

Canada-United States relations have been instrumental in defending North America since the founding of the North American Aerospace Defense Command (NORAD) in 1957.⁶⁵ NORAD's mission is to “conduct aerospace warning, aerospace control and maritime warning in the defense of North America.”⁶⁶ Canada is also a member of the North Atlantic Treaty Organization (NATO) which comes with the assurance of collective defence and the requirement to indirectly fund the organization by committing “a minimum of two percent of their Gross Domestic Product (GDP) to spending on defence.”⁶⁷ This firmly entrenches Canada within two strong alliances

⁶⁵North American Aerospace Defense Command, “A Brief History of NORAD.” NORAD, 2013, 5. [https://www.norad.mil/Portals/29/Documents/A%20Brief%20History%20of%20NORAD%20\(current%20as%20of%20March%202014\).pdf](https://www.norad.mil/Portals/29/Documents/A%20Brief%20History%20of%20NORAD%20(current%20as%20of%20March%202014).pdf)

⁶⁶North American Aerospace Defense Command, “About NORAD.” NORAD, Accessed 22 April 2019, 3. <https://www.norad.mil/About-NORAD/>

⁶⁷North Atlantic Treaty Organization, “Funding NATO.” NATO, Last modified 27 June 2018, 4. https://www.nato.int/cps/en/natohq/topics_67655.htm

constructed and the concept of mutual defense forms the basis for arguments that Canada does not need to invest a significant amount in arctic defence as it can leverage the support of its allies.

On 10 April 2019, a House of Commons released a report urging the GoC to “work with NATO to determine Russia’s military intentions in the North and get help to protect the country’s Arctic sovereignty.”⁶⁸ Also contained within the report is the assertion by some critics “that NORAD is responsible for protecting and securing Canada’s Arctic.”⁶⁹ Whilst leveraging these alliance seems like a means for Canada to ensure arctic sovereignty there are significant national interest amongst allied nations which conflict with respect to the arctic and alliance participation. Two of the most significant issues which isolate Canada from some of the most powerful allied nations are the status of the Northwest Passage and NATO funding.

The United States as the most powerful nation in both NORAD and NATO has frequently opposed Canada’s claim that the NWP is internal waters.⁷⁰ As the usage of the NWP increase the importance of this debate will increase proportionally. Within NATO there is a long standing concern that Canada is not pulling its weight by falling well short of the defence funding requirement, as shown on figure 2, over the last two decades.⁷¹

The most recent US administration has made it quite clear that it demands NATO

⁶⁸The Globe and Mail, “Commons committee urges Ottawa to co-ordinate with NATO on question of Russia’s Arctic intentions.” The Globe and Mail, Last updated 10 April 2019, 1. <https://www.theglobeandmail.com/canada/article-commons-committee-urges-ottawa-to-co-ordinate-with-nato-on-question-of/>

⁶⁹House of Commons Committee, “Canada and NATO: An Alliance Forged in Strength and Reliability.” Parliament of Canada, Accessed 22 April 2019, <http://www.ourcommons.ca/DocumentViewer/en/42-1/NDDN/report-10/page-108>

⁷⁰Jeremy McCoy, “The Northwest Passage: A Trump Card for US Arctic Policy.” History Today, Accessed 22 April 2019, 2. <https://www.historytoday.com/northwest-passage-trump-card-us-arctic-policy>

⁷¹Stockholm International Peace Research Institute, “Military expenditure (% of GDP).” The World Bank, Accessed 22 April 2019, 1. <https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS?locations=CA&view=chart>

countries to respect the funding guidelines.⁷² Given these opposing views on the ownership of the NWP and concern of insufficient contributions to alliances by Canada's closest ally it would be irresponsible to rely on exterior alliances for the assurance of sovereignty. Canada must invest in capabilities like tactical AAR to avoid reliance on foreign entities.



Figure 2 – Canadian Military Expenditure (% of GDP)

Source: Stockholm International Peace Research Institute, *Military expenditure (% of GDP)*, 1.

Arctic SAR

In addition to defending its people and territory from external threats this paper has shown a sovereign state must also ensure security by defending against internal threats. In the context of the arctic security this defence is primarily in the form of SAR. As will be highlighted later, the harsh nature of the arctic environment makes the

⁷²Peter Armstrong, “Sure, we could spend 4% of GDP on the military — with huge cuts or tax hikes.” CBC, Last updated 13 July 2018, 1. <https://www.cbc.ca/news/business/armstrong-military-spending-trump-1.4743967>

requirement to respond quickly to those in distress paramount to the protection of life. The CAF and by extension the RCAF holds the primary responsibility for aeronautical SAR in Canada,⁷³ however when it comes to the arctic the RCAF's SAR response is not adequate to provide the necessary security to support sovereignty in the region.

The RCAF's has both Fixed Wing (FW) and Rotary Wing (RW) assets allocated to SAR duties spread across five bases in Southern Canada (Comox, Winnipeg, Trenton, Greenwood and Gander). These assets are mandated to provide 24/7 and 365 SAR coverage across Canada's three SAR Regions (SRRs), which comprise the entirety of Canada's sovereign territory and all the way to the North Pole.⁷⁴ The RCAF's FWSAR assets are the CC-130H and CC-115 which are both in the process of being replaced by the CC-295. The RWSAR assets consist of the CH-149 and CH-146 helicopters.⁷⁵ Both possess the capability to deploy Search and Rescue Technicians (SAR Techs) (rescue and medical specialists) however helicopters are the only means to extract them and any potential victims from the rescue scene.

The current capability including the new FWSAR set to become operational in December 2019 is not sufficient to adequately respond to persons in distress disasters (both man-made and natural) in the arctic region based on human survival times in both extreme cold land environments and frigid maritime conditions. With the significant increase in Trans-polar air routes the risk of a Major Air Disaster (MAJAD) occurring in

⁷³Department of National Defence and Department of Fisheries and Oceans Canada. "Canadian Aeronautical and Maritime Search and Rescue Manual." Government of Canada, 2014, 62. Accessed 22 April 2019. <https://ccga-pacific.org/training/manuals/CAMSAR-2014-english-signed.pdf>

⁷⁴*Ibid.*

⁷⁵National Defence and the Canadian Armed Forces, "About Search and Rescue." Government of Canada, Last Modified 11 Oct 2018, 5. <http://www.forces.gc.ca/en/operations-canada-north-america-current/sar-canada.page>

the arctic has also significantly increased. As climate change continues to open waterways to increased traffic incidents requiring the assistance of SAR assets will also increase.⁷⁶ Given these potential dire situations it becomes necessary to quantify what an adequate SAR response time would look like.

Understanding that passengers on trans-polar flights are generally not dressed for the extreme weather, Figure 3 would give them a survival time of 6 hours at -35°C .⁷⁷

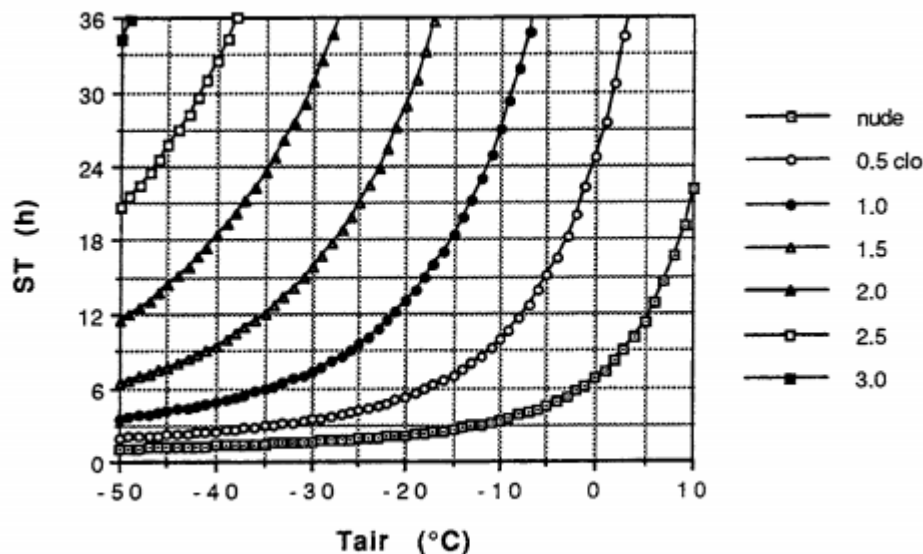


Figure 3 – Survival Time versus Air Temperature

Source: Tikuisis, *Prediction of Survival Time For Cold Exposure*, 161.

In the event of a maritime distress the survival time, from Figure 3, of a sailor or tourist who falls from a cruise or container ship while transiting the North West Passage, given

⁷⁶Ron Wallace, “Emerging Canadian Priorities And Capabilities For Arctic Search And Rescue.” Canadian Defence and Foreign Affairs Institute, 2012, 3.
https://d3n8a8pro7vbm.cloudfront.net/cdfai/pages/43/attachments/original/1413677199/Emerging_Canadian_Priorities_and_Capabilities_for_Arctic_Search_and_Rescue.pdf?1413677199

⁷⁷Peter Tikuisis, “Prediction of Survival Time For Cold Exposure.” DCIEM Report, 1994, 161.

the summer water temperature of the Arctic Ocean remains steady around 0 °C,⁷⁸ would be approximately 45 minutes.⁷⁹

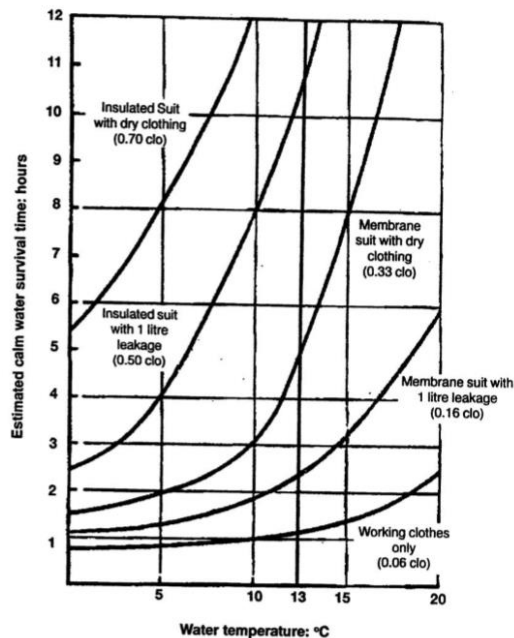


Figure 4 - Survival time versus temperature at different levels of protection.

Source: Brooks, *Survival in Cold Water*, 13.

Historical examples of SAR responses in the high arctic have shown that the RCAF's SAR capabilities are unable to meet these timelines. The October 1991 *Boxtop 22* rescue in the vicinity of Canadian Forces Station Alert, on Elsmere Island, demonstrated that it took the nearest RCAF SAR asset, a CC-130 Hercules over 8 hrs to arrive on scene.⁸⁰ This response falls outside the six hours survivability time which has implications on potential

⁷⁸Ashanti Johnson Pyrtle, "Oceans Polar." Water Encyclopedia, Accessed 11 Apr 2019, 11. <http://www.waterencyclopedia.com/Oc-Po/Oceans-Polar.html>

⁷⁹C.J. Brooks, "Survival in Cold Water." Survival Systems Limited, 2001, 13. Accessed 3 Mar 2019. https://www.nts.gov/news/events/Documents/fishing_vessel-5-Hiscock-CBrooks-Survival-In-Cold-Water-2001.pdf

⁸⁰Joanna Calder, "Boxtop 22 Commemorative Cairn: A Place of Memory and Healing." Royal Canadian Air Force, 2016, 3. Accessed 11 Apr 2019. <http://www.rcaf-arc.forces.gc.ca/en/article-template-standard.page?doc=boxtop-22-commemorative-cairn-a-place-of-memory-and-healing/iv9iz9zw>

survivors. Although 14 people survived the initial crash, only 13 survived the rescue as one of the crew members died of exposure.⁸¹ Things are not improving, the new FWSAR aircraft, although superior in sensors and avionics, has a lower cruising speed and less range than the CC-130 further decreasing the RCAF's response time in the arctic.^{82,83}

For maritime rescues the situation can become increasingly dire due to the survival time being potentially as low as 45 minutes (based on Figure 4) meaning the RCAF would require a FWSAR asset on scene within 45 minutes in order to deploy a SAR Tech and survival equipment to potential survivors. Then in order to extract the SAR Tech and victim a RWSAR assets would need to be on scene within 3hrs (again using Figure 4 – Based on the SAR Tech having an insulated submersion suit).⁸⁴ Again turning to history, the Igloolik rescue in 2011 ended in tragedy in part due to the time it took for a CH-149 to arrive on Scene. In this case the CH-149 took over 4 hrs to arrive and was unable to prevent the loss of life due to exposure of a SAR Tech in the arctic waters.⁸⁵ Both these rescues highlighted involved very few victims, but in the potential cases of a MAJAIID resulting from a trans-polar flight or a sinking cruise ship in the NWP the implications on Canadian arctic sovereignty would be dire when we would have to ask for international entities to intervene.

⁸¹Dany Poitras, "Search and Rescue in the Arctic." Canadian Arctic Operations, 1941-2015: Lessons Learned, Lost, and Relearned. 2017, 406. Accessed 3 Mar 2019. <https://www.unb.ca/fredericton/arts/centres/gregg/what/publications/CdnArcticOps2017.pdf>

⁸²U.S. Air Force. "C-130 Hercules."...12.

⁸³Airbus Military. "C295 Search and Rescue: the proven, reliable and low risk solution." Airbus Military, 3. Accessed 22 April 2019. <https://archive.is/20130115192346/http://www.c295.ca/c-295-canadian-sar/specifications/>

⁸⁴C.J. Brooks, "Survival in Cold Water." Survival Systems Limited...13.

⁸⁵Royal Canadian Air Force, "Flight Safety Investigation Report: Igloolik SAR incident of October 27, 2011." Government of Canada, 2014, 2-4. Accessed 22 April 2019. <http://www.rcf-arc.forces.gc.ca/en/news-template-standard.page?doc=flight-safety-investigation-report-igloolik-sar-incident-of-october-27-2011/hsvrekfw>

Lack of Arctic SAR Justified by Southern Demands

The increased activity in the arctic is widely recognized and proven in 2016 when the Cruise ship *Crystal Serenity* sailed through the NWP.⁸⁶ Critics highlight the pressure this puts on Canada's SAR capabilities in the arctic but accept it because the amount of traffic in the arctic is still dwarfed by that in the southern region.⁸⁷ The concept that a less than ideal arctic SAR response does not warrant the resources required to enhance it is irresponsible. It fails to fulfill Canada's obligations within the Arctic Councils Agreement on Cooperation on Aeronautical and Maritime Search and Rescue to provide an adequate SAR capability within its arctic region.⁸⁸ It also falls short of Canada's sovereign requirement to provide security to its people from internal threats. A legitimate sovereign claim requires appropriate governance by a state over its territory and whilst the vast majority of Canada's population lives within 160Km⁸⁹ of the Canada-US border this does not negate the responsibility to the northern communities.

PROPOSED SOLUTIONS

As previously highlighted, the ways to ensure Canada's Arctic sovereignty lie in assuring security from both external and internal threats and through reconciliation and mutual sovereignty with the indigenous peoples. Although, some CAF capabilities are lacking in the arctic there are efficiencies which could be exploited to further both the

⁸⁶Arctic Energy Center. "What's the big deal with the Northwest Passage?" Accessed 22 April 2019. <http://arcticenergycenter.com/whats-the-deal-with-the-northwest-passage/>

⁸⁷Adam MacDonald, "The Canadian Armed Forces and the Arctic: Maintaining a Suitable and Sustainable Role." CDA Institute, 2016, 5. https://cdainstitute.ca/wp-content/uploads/Analysis/MacDonald_Analysis_May_2016.pdf

⁸⁸Pierre Leblanc. "Canada's Northern People Deserve Better Arctic SAR Capabilities." The Maritime Executive, last updated 03 Oct 2018, 2. <https://www.maritime-executive.com/editorials/canada-s-northern-people-deserve-better-arctic-sar-capabilities>

⁸⁹CBC News, "By the Numbers." Canadian Broadcasting Corporation, 2009, 12. Last Modified 15 May 2009. <https://www.cbc.ca/news/canada/by-the-numbers-1.801937>

GoC and indigenous relationship and increase security particularly in the realm of SAR.

The Rangers are an organization within the CAF comprised of mostly indigenous populations whose roles include, patrols, sovereignty duties and ground based SAR in Canada's remote locations, primarily the north.⁹⁰ The program has how effective partnerships between the indigenous people and the GoC can be.⁹¹ With direction in SSE to increase both the training and capabilities of the Rangers the CAF should strive to expand their responsibilities from primarily the land domain to include the maritime and air domains.⁹² Creating an arctic Air Wing is challenging not only due to the unforgiving environment and high cost, but also establishing the workforce willing to live and work within the far north. Creating efficiencies through expanded Ranger programs to generate local pilots and maintainers could create an arctic home grown Search and Rescue force capable of providing the necessary security for civilians to enforce sovereignty. These programs would only further enhance the mutual sovereignty concept and provide the much needed addition legitimacy for Canada's claim.

CONCLUSION

Absolute power, control of territory, protecting the welfare of the people are concepts inherent in the ever evolving definition of sovereignty. Some common themes which have not changed through time revolve around security. One on side its security against external threats that would bring harm to a nations population or annex its territory. On the other hand, it is against internal threats either man made or natural, which could adversely affect the population. In the context of Canada's arctic, there is

⁹⁰Canadian Army, "Canadian Rangers." Government of Canada, Last modified 13 March 2019, 1. <http://www.army-armee.forces.gc.ca/en/canadian-rangers/index.page>

⁹¹Barry Zellen, "On thin Ice...xii.

⁹²National Defence. "Strong, Secure,...80.

the added dimension of the indigenous population which has owned the land as long as they have lived on it. In this regard the answers to security can start to be seen within documents like UNDRIP and Truth and Reconciliation. A secure indigenous population seems to be a nation of peoples who have the freedom of self-determination and self-government. Although it may seem that this would decrease Canada's influence in the arctic, strong arguments suggest that a solution involving mutual sovereignty will only serve to enhance the legitimacy of the claim.

There other significant challenges to arctic sovereignty and the CAF has a significant piece to play. The vast arctic landscape demands a robust air capability to both defend from air space incursions by foreign entities and to provide adequate civil support to those in distress in an increasing busy landscape. The RCAF's lack of a future tactical AAR capability will severely limit the options of FOL to the very southern reaches of the arctic which will be insufficient to control the expanded ADIZ. Canada SAR capability, including the new FWSAR platform, is unable to adequately respond to the extents of the arctic to assure the prevention of loss of life. These capability deficiencies should be further explored to determine the true impact to arctic sovereignty.

If Canada and the CAF is to be truly strong in our own back yard it needs to seek new partnerships with the northern inhabitants. An arctic which is defended by a Ranger Corps which is capable to operate in all domains within their historic homelands and protecting their people and all other users of the vast and rich reaches of the territory is a truly sovereign arctic.

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