

Canadian  
Forces  
College

Collège  
des  
Forces  
Canadiennes



## ARCTIC POLICY AND THE SMART APPLICATION OF AIRPOWER

Maj S.K. Dennis

**JCSP 42**

***Exercise Solo Flight***

**Disclaimer**

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

© Her Majesty the Queen in Right of Canada, as represented by the Minister of National Defence, 2016.

**PCEMI 42**

***Exercice Solo Flight***

**Avertissement**

Les opinions exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

© Sa Majesté la Reine du Chef du Canada, représentée par le ministre de la Défense nationale, 2016.

CANADIAN FORCES COLLEGE – COLLÈGE DES FORCES CANADIENNES  
JCSP 42 – PCEMI 42  
2015 – 2016

EXERCISE *SOLO FLIGHT* – EXERCICE *SOLO FLIGHT*

**ARCTIC POLICY AND THE SMART APPLICATION OF AIRPOWER**

Maj S.K. Dennis

*“This paper was written by a student attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions, which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied, except with the express permission of the Canadian Department of National Defence.”*

Word Count: 4751

*“La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale.”*

Compte de mots: 4751

Canadian policy concerning the contested Arctic region will be the focus of this paper. Navigation within the region is becoming easier with receding ice as well as exposing valuable raw resources for exploitation and economic development. By contributing to key organizations such as the Arctic Council, Canada can leverage its diplomatic position of having a legitimate sovereign claim of the Arctic including the Northwest Passage (NWP). Canada has expressed this legitimacy through policies such as Canada's Northern Strategy by stating that it is, "exercising sovereignty in Canada's Arctic, promoting social and economic development, protecting our environmental heritage, and improving and devolving northern governance."<sup>1</sup> An expression of sovereign right implies ownership and control. Exercising control necessitates the will and resources to exert it, without which Canada has no strength of argument. Concurrently, as the Arctic continues to expand and become more accessible to material and biological resources, its increasing value will make it vulnerable without regulation and enforcement jeopardizing the security of the region as well as its sovereignty.

Despite the remote and inhospitable nature of the region, it can be considered, "a theatre of operations and as a route of attack."<sup>2</sup> The region has long been an area of military interest concerning strategic bombers and nuclear submarines. But as the region gradually warms increased consideration must be given to pollution control, smuggling and Search and Rescue. Canada is ill resourced to permanently situate large military and police forces in the Arctic. Airpower provides a means to maintain a presence in the region without permanence, exercising sovereignty and enhancing security. Existing Forward Operating bases (FOBs) could support not only aircraft from the Canadian

---

<sup>1</sup> Canada., *Canada's Northern Strategy: Our North, Our heritage, Our Future*, (Ottawa: Minister of Public Works and Government Services Canada , 2009), 9.

<sup>2</sup> Group Captain V.H. Patriarche, "The Strategy of the Arctic", *The Roundel* 2, no 6 (April 1950): 38-42.

Armed Forces (CAF) but other agencies such as the Canadian Coast Guard (CCG), Royal Canadian Mounted Police (RCMP), Canadian Border Service Agency (CBCA), Department of Fisheries and Oceans (DFO), and Environment Canada in a whole of government approach.

The definition of smart power is, “an approach that underscores the necessity of a military, but also invests heavily in alliances, partnerships and institutions at all levels.”<sup>3</sup> Canada can reinforce its legitimate sovereign claim and control of the Arctic by fostering a soft power approach through diplomatic functions such as the Arctic Council and the increased use of the Canadian Rangers while using the hard power of the CAF and other departmental air resources at minimal residual cost to establish security. This paper will first explore sovereignty and security and explain why neither soft nor hard power is the option best suited to Canadian objectives. It will then examine the use of airpower as the most efficient means to utilize a whole of government approach to manage the Arctic as it expands to commercial use and economic investment by providing presence in the region without requiring permanence. An approach to balancing smart power in a way to capitalize on diplomatic credibility while leveraging limited military capabilities in support of all agencies of the government is the option most suitable to aligning Canadian objectives and policies. The strategic landscape of the Arctic is complex but the latent potential is massive. Canada’s future will only be prosperous and secure through deliberate and careful management.

---

<sup>3</sup> Joseph Nye, “Get Smart”, *Foreign Affairs* Vol.8 Issue 4 (Jul/Aug 2009):, 162, <http://web.a.ebscohost.com/ehost/detail/detail?vid=1&sid=b9b6b83c-fb41-4c31-a073-34aa1d7b1671%40sessionmgr4004&hid=4207&bdata=JnNpdGU9ZWlhvc3QtbGl2ZQ%3d%3d#AN=42120095&db=a9h>

The initial explorers of the Arctic and of the NWP used smaller boats necessitated staying close to land. As the Arctic was explored for its potential commercial value, ships eventually became larger in order to navigate further inland from the ocean. By 1969, the *SS Manhattan*, a reinforced oil tanker, tested the viability of using the NWP as a means through which to navigate from the Atlantic to the Pacific Ocean with the intent of saving time and money instead of the Panama Canal. The voyage was successful but was ultimately considered not to be cost effective. However, it sparked considerable issue amongst the Canadian public who saw it as a transgression of territorial waters. Not interested in jeopardizing the bilateral relationship with the United States of America (US), Canada did not pursue any diplomatic recourse. In 1985, when the United States Coast Guard ship, *Polar Sea*, successfully navigated the NWP it again raised the issue of Canadian sovereignty. Reacting to public demand, in 1989, the Canadian government initiated the Arctic Cooperation agreement with the US, which was essentially an agreement in that the US would always declare its intention to use the NWP for transient purposes and the Canadian government would universally allow it as, “a practical solution that is consistent with the requirements of Canadian sovereignty in the Arctic.”<sup>4</sup>

The US argues that the NWP is an international straight rather than territorial Canadian water. The practice of drawing baselines joining irregular points of coastal land to determine territorial integrity is in keeping with the United Nations Convention on the Law of the Sea (UNCLOS), ratified in 1982.<sup>5</sup> As such, as a coastal nation Canada is legally justified in drawing its baseline around the entirety of its archipelago and has,

---

<sup>4</sup> Canada and the United States, *Agreement Between the Government of Canada and the Government of the United States of America on Arctic Cooperation*, No. 31529, 1988.

<sup>5</sup> Francis Ngantcha, *Right of Innocent Passage and the Evolution of the International Law of the Sea* (London: Printer Publishers, 1990), 15.

...sovereign and jurisdictional rights over exploration and management (e.g. scientific research and protection of the marine environment), and economic exploitation of living and non-living resources in the waters above the seabed, in the seabed and beneath the seabed.<sup>6</sup>

As an Arctic State, the US is the only member that does not recognize the baseline method as the legal means of establishing territorial sea.<sup>7</sup> Sovereignty has been defined as, “a legal concept that entails ownership and a right to control over a specific area regulated by a clearly defined set of international laws.”<sup>8</sup> Thus, according to the parameters defined by UNICLOS, Canada rightly maintains jurisdictional control over the NWP defined as per the recognized baseline. Were the NWP to be considered an international straight, Canada would lack the authority to impose enforcement and regulation of the territory or of the resources contained therein. Canada must therefore insist that its claim of sovereignty over the region is valid, legal and legitimate in order to exercise control. As defined by the Statement on Arctic Foreign Policy, the first pillar of the Arctic Strategy is, “the first and most important pillar towards recognizing the potential of Canada’s Arctic in the exercise of our sovereignty over the far North.”<sup>9</sup> Resolving disputes is a priority of the first pillar stating that, “in accordance with international law, our sovereignty over the Canadian Arctic lands, including islands, is undisputed.”<sup>10</sup> Regardless of the existing disagreement concerning maritime territory, the dispute is managed in such a way that it does not pose a hindrance to economic or

---

<sup>6</sup> Department of Fisheries and Oceans. “Canada’s Ocean Estate: A Description of Canada’s Maritime Zones,” accessed 29 Oct 2015, <http://www.dfo-mpo.gc.ca/oceans/canadasoceans-oceansducanada/marinezones-zonesmarines-eng.htm>

<sup>7</sup> Donet Pharand. *Canada’s Arctic Waters and International Law* (New York: Cambridge University Press, 1988), 158

<sup>8</sup> Canada. Standing Senate Committee on National Security. *Sovereignty and Security in Canada’s Arctic*. Interim Report. March 2011, 1.

<sup>9</sup> Canada. Minister of Public Works and Services Canada. *Statement on Canada’s Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada’s Northern Strategy Abroad*. (Ottawa 2009), 4.

<sup>10</sup> *Ibid*, 6.

defence collaboration between members of the Arctic states.<sup>11</sup> The Arctic states include Canada, the US, Denmark, Norway, Russia, Iceland, Sweden and Finland, and these states make up the Arctic Council. While the policy reaffirms Canada's position toward Arctic sovereignty it does so diplomatically and in consideration of the other members of the Council. Regarding the vast natural raw resources contained in the Arctic, the Statement prioritizes, "secure international recognition for the full extent of the continental shelf wherein we can exercise our sovereign rights over resources of the seabed and subsoil."<sup>12</sup> The Council allows a diplomatic means for Canada to legally assert its sovereignty of the region. However, while the CCG plays a key role in the Arctic as the lead regulatory agency representing the authority of the government by monitoring sea-going traffic and rendering aid to vessels when required, it is limited in the small amount of ships required to adequately provide coverage of such a vast area. Additionally, the Royal Canadian Navy (RCN) currently lacks ships capable of safely navigating the region due to ice coverage. Thus, Canada's actual ability to exert control is limited and ultimately contested.

The NWP is not unique as a point of territorial contention between the US and Canada. Examples include the Strait of Juan de Fuca and the Dixon Entrance between the state of Alaska and British Columbia, an island between Maine and New Brunswick, and the San Juan Islands between Victoria Island and the state of Washington. The difference is that the NWP represents a significant route of commerce and it is in the best interest of the US to contest our sovereign claim. Located in the Beaufort Sea, a small wedge of territory between Alaska and the Canadian Yukon exists another area that

---

<sup>11</sup> Canada. Minister of Public Works and Services Canada. *Statement on Canada's Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada's Northern Strategy Abroad*. (Ottawa 2009), 6.

<sup>12</sup> *Ibid*, 7.

possesses great potential and has thus attracted the interest of both the US and Canadian governments. It is estimated by the National Energy Board that within the Beaufort Sea there exists almost five thousand million barrels of oil and over nine trillion cubic feet of natural gas.<sup>13</sup> Regardless of the economic value of these raw resources and existing territorial disputes, Canada has always been careful to maintain an amicable relationship with the US knowing that if the North can be developed, Canada will benefit from the industrial engine of the US. Development of the North is of equal importance to the US with the United States Navy stating that the region, “offers opportunities for growth, but also potential sources of competition and conflict for access and natural resources.”<sup>14</sup> The thickness of the ice has been the determining factor in the size of ship that can traverse the NWP. Climate change and receding ice is creating an environment with, “an overall transition toward both less ice and less coverage.”<sup>15</sup> As this continues, use of the NWP for commercial use will only increase. The *MS Nordic Orion* became the first commercial bulk vessel to transit the passage in 2013, reigniting interest in high volume commerce by not only tankers but cruise ships as well. An increase in shipping raises ecological concerns. In 1989, the *Exxon Valdez* spilled eleven million barrels of oil, devastating Prince William Sound, Alaska. Canada must be able to regulate the volume of shipping and the cargo carried through the North in order to better protect against a similar disaster. As the ice recedes, biological resources will migrate and natural resources will be further exposed. Along with the CCG, DFO and Environment Canada

---

<sup>13</sup> National Energy Board. Briefing Note, “*Assessment of Discovered Conventional Petroleum Resources in the Northwest Territories and Beaufort Sea*”. November 2014.

<sup>14</sup> Tony Balasevicius. “Toward a Canadian Forces Arctic Operating Concept”, *Canadian Military Journal* Vol. 11 No. 2 (Spring 2011): 25.

<sup>15</sup> Marc C. Serreze, and Roger G. Barry. *The Arctic Climate System*, 2nd Ed. (New York: Cambridge University Press, 2014), 214.



would be well suited to provide stewardship of the natural resources and could enforce environmental regulations concerning cargo and technical requirements of ice-going vessels. However, limited infrastructure in the North inhibits these departments from realistically being able to conduct such tasks at this time.

The chair of the Arctic Council rotates every two years amongst members of the Arctic states. When the Ottawa Declaration was signed in 1996, formalizing agreements of the Arctic Council, Canada was coincidentally the chair. This was advantageous allowing Canada to capitalize on its position to be able to shape Arctic policy to its advantage such as the Arctic Monitoring and Assessment Plan, the Arctic Action Plan, the Protection of the Arctic Maritime Environment and Sustainment Working Group, the Conservation of the of the Arctic Flora and Fauna and the Emergency Prevention Preparedness and Response. These sub-groups of the Council are aimed at development and management of the North rather than security issues. Given Canada's limited resources, the Council allowed it to diplomatically influence the Arctic States toward shared environmental and scientific endeavours in its best interest. As an example, the Declaration was supported by Russia because it, "enhances similar...claims along the Northern Sea Route."<sup>16</sup> Soft power is explained by Joseph Nye in that it uses, "an attraction to shared values and the justness and duty of contributing to the achievement of those values."<sup>17</sup> As opposed to threat or coercion, soft power persuades others to align to ones objectives through shared values. In doing so Canada justifies the legitimacy of its sovereign claim by enhancing its credibility as a shared partner of the Council toward the

---

<sup>16</sup> Caldwell, Nathaniel French Jr. *Arctic Leverage: Canadian Sovereignty and Security* (New York: Praeger Publishers, 1990), 94.

<sup>17</sup> Joseph S. Nye Jr. *Soft Power* (Cambridge: Perseus Books Group, 2004), 7.

productive management of the North. Nye further explains that, “when policies are seen as legitimate in the eyes of others, our soft power is enhanced.”<sup>18</sup>

In addition to the Arctic Council, Canada also utilizes soft power in the form of the Canadian Rangers. According to former Prime Minister, Steven Harper, the Canadian Rangers, “significantly strengthen Canada’s sovereignty.”<sup>19</sup> An indigenous force of nearly five thousand self-sufficient scouts permanently live in numerous northern communities further providing leverage to our argument of sovereign legitimacy by physically occupying the land. While technically not soldiers, they receive training, funding and supplies from the government to act as scouts and guides to the Canadian Army (CA) when it operates in the Arctic. They adamantly identify themselves as Canadians and have developed a niche role in, “operational, sociopolitical and representative functions”.<sup>20</sup> As much as the Canadian Rangers are situated in the region, they are too dispersed to provide adequate coverage of the Arctic. While the Arctic Council is undoubtedly beneficial in the advancement of Canadian sovereignty interests, it has no power to enforce or exert control. In fact, as part of the Ottawa Declaration, it specifically notes that it, “should not deal with matters related to military security.”<sup>21</sup> However, while Canada has adeptly capitalized on soft power in support of its argument concerning sovereignty, it has little effect in deterring criminal acts or military aggression.

When the *MS Manhattan* and the *Polar Sea* traversed the NWP, Canada was careful to deescalate the events. Key to this is not only the close economic ties with the

---

<sup>18</sup> Thomas L. Ilgen, Ed., *Hard Power, Soft Power and the Future of Transatlantic Relations* (Burlington Ashgate Publishing, 2006), 26.

<sup>19</sup> Whitney P. Lackenbauer. *The Canadian Ranger: A Living History* (Vancouver: UBC Press, 2013),

<sup>20</sup> *Ibid*, 454.

<sup>21</sup> *Ibid*, 1(a) footnote, 2.

US, but also our bilateral defence cooperation. As part of North American Aerospace Defence Command (NORAD), Canada benefited from the Distant Early Warning (DEW) Line in the Arctic. Funded by the US and operational until 1993, it provided early warning against long range strategic bombers that threatened North America.<sup>22</sup> The geographical location of the DEW-Line was convenient for Canada in that it had to be situated as far North as possible in order to identify potential incoming threats because, “both the maintenance of nuclear deterrence and the conduct of war if deterrence failed depended heavily on what happened with the Arctic.”<sup>23</sup> One of the six core missions defined within the Canada First Defence Strategy is to, “conduct daily domestic and continental operations, including in the Arctic and through NORAD.”<sup>24</sup> While the DEW-Line is no longer operational, Canadian and American aircraft are still deployed to Forward Operating Bases (FOBs) to intercept Russian bombers that continue to test the fortitude of NORAD and its response effectiveness.

Perhaps more dangerous to Canadian northern security are nuclear submarines, which have the capacity to stay submerged for long durations allowing them to remain undetected under the Arctic ice. Lacking nuclear submarines of our own we rely on allies to patrol under the ice. However, this is problematic both from a sovereignty and security perspective. US submarines have been patrolling the Arctic since the 1960s as part of doctrine concerning nuclear deterrence.<sup>25</sup> This affects Canada’s ability to assert control in the region thereby drawing scrutiny to our sovereign claim. Furthermore, it is assumed that not only have US submarines been in the Canadian Arctic but so too were (are)

---

<sup>22</sup> David Neufeld, “*The Distant Early Warning (DEW) Line: A Preliminary Assessment of its Role and Effects upon Northern Canada*”, May 2002.

<sup>23</sup> Rob Huebert, “Submarines, Oil Tankers and Icebreakers”, *International Journal*, (Autumn 2011), 810.

<sup>24</sup> Canada. Prime Ministers Office. *Canada First Defence Strategy*. 2008: 10.

<sup>25</sup> Rob Huebert, “Submarines, Oil Tankers and Icebreakers”, *International Journal*, (Autumn 2011), 810.

French, Russian and British boats.<sup>26</sup> This is highly concerning as Canada has no way to detect submarines beneath the ice. However, admitting this strategic and operational weakness only further erodes our ability to establish security in the region. Rob Huebert explains that, “if Canada had knowledge of the incursions but was unable or unwilling to stop them, it was not able to assert control.”<sup>27</sup>

As the ice warms, an increase to maritime commercial shipping may bring a respective increase in smuggling and trafficking. The RCMP and CBSA do not currently have the resources to respond to these prospective security issues. As a result, the limited capacity of the CCG and RCN to operate in the expansive northern environment is further inhibited by the requirement to take on security tasks as well as exercising sovereignty. One way to counter this would be to increase RCMP marine detachments to the North for constabulary purposes to dissuade criminal activities and to assign army units to the region on a permanent basis to deter potential acts of terrorism. Unfortunately, the reality is that the CA cannot permanently base substantial forces in the Arctic without risk to other capabilities elsewhere. The sheer size of the region coupled with limited troops presents the same issue faced by the Canadian Rangers - dispersal in depth. Furthermore, the CA is oriented toward expeditionary operations rather than domestic defence and a dramatic shift in both policy and doctrine would be required to adjust that, which is unlikely considering the current governments intention to re-establish a focus toward peacekeeping. Joseph Nye defines hard power as the ability to exert influence via, “the use of coercion and payment”<sup>28</sup>. XXX In fact, Russia currently utilizes its strategic

---

<sup>26</sup> Rob Huebert, “Submarines, Oil Tankers and Icebreakers”, *International Journal*, (Autumn 2011), 810.

<sup>27</sup> *Ibid*, 822

<sup>28</sup> Joseph Nye, “Get Smart”, *Foreign Affairs Vol.8 Issue 4* (Jul/Aug 2009), 160.

<http://web.a.ebscohost.com/ehost/detail/detail?vid=1&sid=b9b6b83c-fb41-4c31-a073->

bombers as a demonstration of power rather than being employed as a legitimate threat through, “use of military forces in the Arctic to enhance diplomatic and political advantage.”<sup>29</sup> However, without permanent defence systems in the North to thwart bombers, an inability to locate nuclear submarines and lacking the capacity to field a permanent ground force in the Arctic, Canada lacks the ability to exert itself through hard power in its strategic interests in the North. The reality is that CCG and RCN ships need to return to southern ports and the turn-around time is long. Army units depend heavily on sustainment demanding a huge support bill while conducting operations in the region. In that respect, their presence of the CCG, CA and RCN is impermanent and the lack of capacity and resources severely restricts their ability to support other departments. These limitations conspire to detract from the degree of presence that the government can provide to the region. Regardless of Canada’s strategic concerns and despite its favourable diplomatic maneuvering, it lacks the ability to exercise true control of the North and to maintain security against a determined threat.

Only one resource is able to provide any semblance of presence to a geographical mass as expansive as the Canadian Arctic – airpower. Aircraft are able to fly over obstacles and terrain providing transportation, reconnaissance, armed deterrence, Search and Rescue (SAR), and communication and coordination while supporting all departments and agencies in a whole of government, mutually supportive approach. By way of speed and reach, large numbers of aircraft do not need to be permanently based in the Arctic but rather conduct their missions from southern bases achieving presence

---

34aa1d7b1671%40sessionmgr4004&hid=4207&bdata=JnNpdGU9ZWwhvc3QtbGl2ZQ%3d%3d#AN=42120095&db=a9h

<sup>29</sup> Tony Balasevicius. “Toward a Canadian Forces Arctic Operating Concept”, *Canadian Military Journal Vol. 11 No. 2* (Spring 2011): 25.

without permanence. Their versatility acts as force projection and force enhancement of the CCG, CA and RCN in addition to supporting drug enforcement, environmental protection, and counter smuggling efforts. Airpower accomplishes this through helicopters on-board CCG and RCN ships, medium lift helicopters to support the CA and the Canadian Rangers, fixed-wing Search and Rescue aircraft able to travel anywhere in the Arctic without refuelling and by fighters supported by air to air refuelling aircraft.

Normally, CCG vessels carry a compliment of one helicopter, the Messerschmitt-Bolkow-Blohm (BO-105), which enhances the scope of the capability of the CCG operating in the region.<sup>30</sup> The BO-105 increases the communication and visual range of the ship itself enabling for better coordination and early detection of other vessels. Being much faster than the ship itself, it allows for more efficient monitoring of marine traffic in questionably chartered waters. While not a primary SAR asset, the helicopter allows for rapid first- response and limited hoist capability. Presently being the only Canadian ice-capable force, the CCG ships are essential to Canada's sovereignty interests and the small helicopter is able to support this role granting the CCG flexibility, speed and range. Similarly, the RCN is advancing its plans to build a small number of ice-capable Arctic Offshore Patrol Ships (AOPSs). They will function as an armed force multiplier to the CCG and, "enforce sovereignty in Canada's waters where and when necessary"<sup>31</sup> They will be capable of carrying the new CH-148 Cyclone helicopter, which can operate at night and through inclement weather providing much greater range, speed and payload of the BO-105. Most importantly, the helicopter will be armed and also have the ability to

---

<sup>30</sup> Canadian Coast Guard. "Fleet: Helicopters," accessed 10 Feb 2016, <http://www.ccg-gcc.gc.ca/Fleet/Messerschmitt-Bolkow-Blohm-BO-105-CBS-Helicopter>

<sup>31</sup> "Lockheed Martin Canada; Strengthening Canada's Capability in the Arctic". *Defence and Aerospace Week*. NewsRx LLC. April 22, 2015 :57.

detect submarines where water is not ice covered. As the region warms, this capability will provide a profound enhancement of both sovereignty and security in countering sub-surface strategic threats in support of the RCN. The BO-105 and CH-148 provide a means for the CCG and RCN to go farther and faster by traversing over unbreakable ice and around impassible terrain. Thus, while other nations may be able to travel through the thick Arctic ice in purpose built vessels, Canada can still function in roles of enforcement and regulation by literally reaching above and beyond the capabilities of their mother ships.

SAR continues to be at the forefront of the Canadian public image concerning the CAF. Primary SAR assets include the CH-149 Cormorant helicopter and venerable CC-130 Hercules aircraft. What the CH-149 lacks in speed it more than makes up for in range and payload. The CC-130 is deployed quickly to provide early response carrying vast stores of survival equipment, food, water, rafts, pumps, flares for night illumination and the ability to dispatch parachute-rescue specialists if required while the CH-149 follows on to provide focused support. The CC-130 is a large aircraft that requires semi-prepared runways however, this restriction is overcome by the ability of the helicopter to land anywhere or hoist as required. Having a range of 500 nautical miles and a payload of over 11000lbs, the helicopter can transport injured persons, equipment and personnel.<sup>32</sup> Through increasing the safety in the region, it supports the Royal Canadian Air Force (RCAF) doctrine of Personal Recovery.<sup>33</sup> These assets greatly enhance the safety of commercial operations in the Arctic and increase the credibility of Canadian sovereignty

---

<sup>32</sup> Royal Canadian Air Force. "Aircraft: Helicopters: CH-149," accessed 10 Feb 2016, <http://www.rcf-arc.forces.gc.ca/en/aircraft-current/ch-149.page>

<sup>33</sup> Canada. *Canadian Armed Forces Air Doctrine, draft*. B-GA-400-000/FP-000. (Canadian Aerospace Warfare Center, 2015). 5-5.

in the region. Supplementing the SAR mission is the CC-138 Twin Otter light transport. Already situated in the Yellowknife, it primarily provides VIP transport in the region and supports the Canadian Rangers and CA while on operations by resupplying small amounts of fuel, food and ammunition. However, with only four airframes their impact is limited. Better equipped to support the CA is the medium lift CH-147 Chinook helicopter. Purchased for combat missions in Afghanistan it is ideally suited for the Arctic. In the event of an oil spill or environmental disaster, it can lift a great deal of equipment and personnel directly on-scene. Perhaps the most important element of this helicopter however, is its ability to transport and sustain a combat force. Also night and icing weather capable, with a range exceeding 700 nautical miles and a payload of 21000lbs, the helicopter can sling heavy loads underneath, such as artillery, and has a drive on/off capability for light vehicles.<sup>34</sup> The CA cannot deploy, sustain, fight or even move any great distance in the deadly environment of the Arctic without continuous sustainment and support from either air-droppable stores via transport aircraft or delivered by helicopter. The CA is acutely aware of this limitation and has adjusted future doctrine such that, “as a force becomes more dispersed, it is assumed that a sustainment system will need to transition from a primary ground based system to one that contains more air-based support.”<sup>35</sup> A significant force enabler, the CH-147 also acts as a Forward Area refueling Point (FARP) allowing it to act as a fuel bowser for both vehicles and equipment such as stoves and heaters or as a staging node for smaller

---

<sup>34</sup> Royal Canadian Air Force. “Helicopters: CH-147 Chinook,” accessed 16 Feb 2016, <http://www.rcaf-arc.forces.gc.ca/en/aircraft-current/ch-147f.page>

<sup>35</sup> Major Andrew B. Godefroy, Peter Gizewski. B-978-1-100-11775-1. *Toward land Horizons 2021: Studies in Support of the Army of Tomorrow, Force Employment Concept* (Kingston: Directorate of Land Concepts and Design), 2009. 9-2.



helicopters such as the CH-146 Griffon.<sup>36</sup> The versatility of medium lift helicopters supports the RCAF doctrine of Move.<sup>37</sup>

There exist four FOBs located at Rankin Inlet, Iqaluit, Yellowknife and Inuvik. Military relics of the Cold War era, they were historically employed as part of the DEW-Line system where fighter and refueling aircraft could forward deploy as part of Canada's contribution to continental defence. These FOBs continue to be used today as part of Northern Sovereignty Operations (NSO) in support of NORAD as a reaction to persistent Russian attempts at testing our airspace with strategic bombers, as indicated earlier. While maintained, they have not been modernized and are intended for short term periodic use. They include a usable runway for the CF-18 fighter and CC-130T air to air refueling aircraft, as well as barracks, communications, hangers and support infrastructure. Located next to established communities, they have access to supply routes and can depend on the local economy when supporting ongoing operations. FOBs increase the operational range of the CF-18 and CC-130T by pre-positioning in the Arctic.<sup>38</sup> With some minor modernization and improvements to infrastructure, these FOBs could be utilized as hubs for all governmental departments working in the region including the RCMP, CBSA, DFO, Environment Canada, the Department of Natural Resources among others. Airpower also sustains smaller military stations such as Canadian Forces Stations Eureka and Alert, which are totally dependent on aircraft as

---

<sup>36</sup> Boeing. "Soldiers Conduct Fat Cow Operations", accessed 16 Feb 2016. [http://www.boeing.com/chinooknews/2009/issue\\_01/field\\_s5\\_p3.html](http://www.boeing.com/chinooknews/2009/issue_01/field_s5_p3.html).

<sup>37</sup> Canada. *Canadian Armed Forces Air Doctrine, draft*. B-GA-400-000/FP-000. (Canadian Aerospace Warfare Center, 2015). 5-5.

<sup>38</sup> Royal Canadian Air Force. "Aircraft: Transport: CC-130," accessed 16 Feb 2016, <http://www.rcfaf-arc.forces.gc.ca/en/aircraft-current/cc-130.page>

they act as environmental stations and intelligence gathering locations.<sup>39</sup> FOBs allow airpower to operate out of the North with existing infrastructure without necessitating being permanently based. The CP-140 Aurora, normally used for surveillance and reconnaissance, could be rotationally based at FOBs to significantly increase the ability to conduct anti-pollution missions or utilize its new enhanced sensors to scrutinize vessels from a distance without alerting them in support of other departments as required. Reconnaissance and fighter aircraft based in the Arctic support the RCAF doctrine of Sense and Act respectively.<sup>40</sup> FOBs provide the critical basing requirement of aircraft for refueling and crew rest. Turn-key in concept, they are kept heated and supplied to use when required. Currently used only by the CAF, all governmental agencies and departments, be they regulatory, enforcement, scientific or defence, can benefit from them in allowing airpower to even further provide the government of Canada the ability to exercise sovereignty and to ensure security of the Arctic.

Not explored in this paper were the effects of an increased use of satellite technologies and un-manned aircraft, which will undoubtedly have great effect on how the Arctic states will look at the management and development of the North. Nor did it explore how the cyber domain is increasingly shrinking the planet, which will likely have increased effect in a region as large as the Arctic. Instead it focussed on the nuances of how Canada applies soft and hard power through its domestic and foreign policies and argued that aircraft are the best tool to accomplish its strategic objectives as they apply to the North. Hillary Clinton, partly responsible for the term “smart power”, argued that it is

---

<sup>39</sup> Royal Canadian Air Force. “Wings and Squadrons: 8 Wing Trenton: CFS Alert,” accessed 17 Feb 2016. <http://www.rcaf-arc.forces.gc.ca/en/8-wing/alert.page>

<sup>40</sup> Canada. *Canadian Armed Forces Air Doctrine, draft*. B-GA-400-000/FP-000. (Canadian Aerospace Warfare Center, 2015). 5-5.

the best form of state power in that it allows for the full range of tools at its disposal.<sup>41</sup> Canada has been keen to utilize a soft power approach to diplomacy by managing territorial disputes with the US in a mutually satisfying fashion and through mechanisms such as the Arctic Council by situating a credible rapport amongst all its key members benefiting from the outcomes. Additionally, by continuing to sponsor the Canadian Rangers it reinforces ownership of the Canadian Arctic in that the Rangers represent Canadian citizens who inhabit the land. In doing so, Canada has solidified its claim of sovereignty in the Arctic establishing a right to legally exercise control within the region. Problematically, legal ownership and right of control has little to do with establishing security against criminal or military threats. Hard power utilizes political will through the threat of force and force itself. Canada has long enjoyed the benefit of an established bilateral military relationship with the US, and continues to be a benefactor of its military oversight but also suffers from an inability to dissuade US commercial shipping or to deter sub-surface activity. For its part in NORAD, Canada continues to patrol the northern expanse and to sustain its northern bases and stations. While some resources are situated in the Arctic, due to the expansive inhospitable nature of the region these resources are rotational, technically insufficient and too limited in number. Thus, Canada cannot solely depend on either soft or hard power as a strategic means of accomplishing the policy and doctrinal objectives of the government.

Aircraft provide a way for Canada to capitalize on its diplomatic strengths while acting as an enabler to the CAF thereby offsetting its military weakness. In doing so,

---

<sup>41</sup> Joseph Nye, "Get Smart", *Foreign Affairs Vol.8 Issue 4* (Jul/Aug 2009). 160.  
<http://web.a.ebscohost.com/ehost/detail/detail?vid=1&sid=b9b6b83c-fb41-4c31-a073-34aa1d7b1671%40sessionmgr4004&hid=4207&bdata=JnNpdGU9ZWlhvc3QtbGl2ZQ%3d%3d#AN=42120095&db=a9h>

sovereignty and security are enhanced in a whole of government approach. As the Arctic opens up all departments of the government will become increasingly active in the region through environmental protection, counter-criminal operations, the exploitation of raw resources and managing the expected increase in commercial traffic. On account of speed and reach, as well as the ability to fly above the rock and ice that inhibit other vehicles, aircraft are able to be continuously present in the region without requiring the expensive resources to permanently base them. The use and potential improvement of existing FOBs only further enhances the ability of aircraft to conduct their assigned tasks in a cost efficient manner accomplishing great strategic effect. If smart power is the use of diplomacy persuasion while applying a military force in a measured coercive manner, then airpower is the ideal means through which to do so, especially in an environment of restricted resources.

## BIBLIOGRAPHY

- Arctic Council. *Declaration on the Establishment of the Arctic Council*. Sept 19, 1996.
- Atkinson, Carol. *Military Soft Power*. United Kingdom: Rowan and Littlefield, 2014.
- Balasevicius, Tony “Toward a Canadian Forces Arctic Operating Concept”, *Canadian Military Journal* Vol. 11 No. 2 (Spring 2011): 21-31.
- Boeing. “*Soldiers Conduct Fat Cow Operations*”, accessed 28 Jan 2016, [http://www.boeing.com/chinooknews/2009/issue\\_01/field\\_s5\\_p3.html](http://www.boeing.com/chinooknews/2009/issue_01/field_s5_p3.html).
- Caldwell, Nathaniel French Jr. *Arctic Leverage: Canadian Sovereignty and Security*. New York: Praeger Publishers, 1990.
- Canada. Department of Fisheries and Oceans. “*Canada’s Ocean Estate: A Description of Canada’s Maritime Zones*,” accessed 29 Oct 2015, <http://www.dfo-mpo.gc.ca/oceans/canadasoceans-oceansducanda/marinezones-zonesmarines-eng.htm>.
- Canada. Prime Ministers Office. *Canada First Defence Strategy*. 2008.
- Canada. Standing Senate Committee on National Security. *Sovereignty and Security in Canada’s Arctic*. Interim Report. March 2011.
- Canada. Minister of Public Works and Services Canada. *Statement on Canada’s Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada’s Northern Strategy Abroad*. Ottawa 2009.
- Canada. Minister of Public Works and Government Services Canada. *Canada’s Northern Strategy: Our North, Our Heritage, Our Future*. Ottawa, 2009.
- Canadian Armed Forces Air Doctrine, draft. B-GA-400-000/FP-000. Canadian Aerospace Warfare Center. 2015.
- Canada and the United States, *Agreement Between the Government of Canada and the Government of the United States of America on Arctic Cooperation*, No. 31529, 1988.
- Dufresne, Robert. *Controversial Canadian Claims over Arctic Waters and Maritime Zones*. Ottawa: Library of Parliament, Law and Government Division, 2008.
- Godefroy, Andrew B. Major, Gizewski, Peter. B-978-1-100111775-1. *Toward Land Horizons 2021: Studies in Support of the Army of Tomorrow, Force Employment Concept*. Kingston: Directorate of Land Concepts and Design. 2009, 9-2.

Huebert, Rob. "Submarines, Oil Tankers and Icebreakers", *International Journal*, (Autumn 2011), 809-824.

Ilgel, Thomas L. Ed., *Hard Power, Soft Power and the Future of Transatlantic Relations*. Burlington: Ashgate Publishing, 2006.

Lackenbauer, Whitney P. *The Canadian Ranger: A Living History*. Vancouver: UBC Press, 2013. "Lockheed Martin Canada; Strengthening Canada's Capability in the Arctic," *Defence and Aerospace Week*. NewsRx LLC. April 22, 2015 :57.

"Lockheed Martin Canada; Strengthening Canada's Capability in the Arctic," *Defence and Aerospace Week*. NewsRx LLC. April 22, 2015,57.

National Energy Board. Briefing Note, "*Assessment of Discovered Conventional Petroleum Resources in the Northwest Territories and Beaufort Sea*". November 2014.

Neufeld, David. Parks Canada. "*The Distant Early Warning (DEW) Line; A Preliminary Assessment of its Role and Effects upon Northern Canada Revised for the Arctic Institute of North America*". Parks Canada, May 2002.

Ngantcha, Francis. *Right of Innocent Passage and the Evolution of the International Law of the Sea*, London: Printer Publishers, 1990.

Nye, Joseph S. Jr. *Soft Power*. Cambridge: Perseus Books Group, 2004.

Nye, Joseph S. "Get Smart", *Foreign Affairs* Vol.8 Issue 4 (Jul/Aug 2009):, 160-163, <http://web.a.ebscohost.com/ehost/detail/detail?vid=1&sid=b9b6b83c-fb41-4c31-a073-34aa1d7b1671%40sessionmgr4004&hid=4207&bdata=JnNpdGU9ZWwhvc3QtbGl2ZQ%3d%3d#AN=42120095&db=a9h>.

Patriarche, V.H., Group Captain. "The Strategy of the Arctic", *The Roundel* 2, no 6 (April 1950): 38-42.

Pharand, Donet. *Canada's Arctic Waters and International Law*. New York: Cambridge University Press, 1988.

Pigott, Peter. *From Far and Wide: A Complete History of Canada's Arctic Sovereignty*. Library and Archives Canada Cataloguing in Publication, 2011.

Poitras D. Major. "*Search and Rescue in the Arctic: A Myth or Reality?*" Master's thesis, Canadian Forces College, 2013.

Royal Canadian Air Force. "Aircraft: Helicopters: CH-149," accessed 10 Feb 2016, <http://www.rcaf-arc.forces.gc.ca/en/aircraft-current/ch-149.page>

Royal Canadian Air Force. "Helicopters: CH-147 Chinook", accessed 16 Feb 2016, <http://www.rcaf-arc.forces.gc.ca/en/aircraft-current/ch-147f.page>

Royal Canadian Air Force. "Aircraft: Transport: CC-130," accessed 16 Feb 2016, <http://www.rcaf-arc.forces.gc.ca/en/aircraft-current/cc-130.page>

Royal Canadian Air Force. "Wings and Squadrons: 8 Wing Trenton: CFS Alert," accessed 17 Feb 2016. <http://www.rcaf-arc.forces.gc.ca/en/8-wing/alert.page>

Serreze, Marc C, and Barry, Roger G. *The Arctic Climate System*, 2cd Ed. New York: Cambridge University Press, 2014.

Williams, Glyn. *Arctic Labyrinth*. Los Angeles: University of California Press, 2009.