

Edited by
P. Whitney Lackenbauer & Heather Nicol



**Whole of Government
through an Arctic Lens**

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Heather Nicol



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This book is dedicated to
Dr. Lorne William 'Bill' Bentley
(LCol retired, 1947-2017)

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This publication, like the workshop itself, represented a collaboration between CDA, RMC, DND, the SSHRC-sponsored Borders in Globalization Partnership Project (BiG), and Trent University. We wish to offer special thanks to Dr. Bill Bentley (CDA), Major-General Eric Tremblay (CDA), Dr. Christian Leuprecht (RMC), and Dr. Karen Davis (DND) who were key co-organizers and important contributors to this project from the onset. We also thank the Canadian Forces College and RMC for permission to publish chapters from Ian Livermore and LCol Darwin Ziprick based upon major research papers that they produced to satisfy the requirements of the Masters of Defence Studies degree programme.

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Acronyms

A5	Arctic Five
AANDC	Aboriginal Affairs and Northern Development Canada
AC	Arctic Council
ACIA	Arctic Communications Infrastructure Assessment
ADIZ	American Air Defense Identification Zone
ADM	Assistant Deputy Minister
AEC	Arctic Economic Council
AIC	Arctic Integrating Concept
AIMP	Aurora incremental modernization project
AIS	Automatic identification system
AMSA	Arctic Marine Shipping Assessment
AOPS	Arctic Offshore Patrol Ships
APEC	Asia-Pacific Economic Cooperation
ARCG	Arctic Response Company Group
ASFR	Arctic Security Forces Roundtable
ASIWG	Arctic Security Interdepartmental Working Group
ASWG	Arctic Security Working Group
AWPPA	Arctic Waters Pollution Prevention Act
BIRP	Bathurst Inlet Port and Road
BLOS	Beyond line of sight
CAF	Canadian Armed Forces
CAFATC	Canadian Armed Forces Arctic Training Centre
CanNor	Canadian Northern Economic Development Agency
CANSOFCOM	Canadian Special Operations Forces Command
CASARA	Civil Air Search and Rescue Association
CBSA	Canada Border Services Agency
CCG	Canadian Coast Guard
CCGA	Canadian Coast Guard Auxiliary
CCGS	Canadian Coast Guard Ship
CDA	Canadian Defence Academy
CFDS	Canada First Defence Strategy
CHARS	Canadian High Arctic Research Station
CHoD	Chief of Defence
CIC	Citizenship and Immigration Canada
CSA	Canadian Space Agency

CSIS	Canadian Security and Intelligence Service
CWS	Canadian Wildlife Service
DART	Disaster Assistance Response Team
DEW Line	Distant Early Warning Line
DFATD	Department of Foreign Affairs, Trade, and Development
DFO	Department of Fisheries and Ocean
DMVPN	dynamic multipoint virtual private network
DOD	Department of Defense (United States)
DRDC	Defence Research and Development Canada
EEZ	Exclusive Economic Zone
EMO	Emergency Management Organizations
EMPS	Emergency Measures and Protective Services
EOC	Emergency Operations Center
FAAR	Federal Aviation Authority of Russia
FCC	Federal Coordination Centre
FCN	Federation of Canadian Municipalities
FECG	Federal Emergency Coordination Group
FSB	Federal Security Service (Russian Federation)
FSC	Frontex Situation Centre
GIS	Geographic Information System
GNWT	Government of the Northwest Territories
GSAR	Ground-based Search and Rescue
HF	High Frequency
HIRA	Hazard Identification Risk Assessment
HMCS	Her Majesty's Canadian Ship
HMDS	Her Majesty's Danish Ship
HRSDC	Human Resources and Social Development Canada
IATA	International Air Transport Association
IMO	International Maritime Organization
IRS	Intelligence surveillance and reconnaissance
IRU	Immediate Response Unit
IT	Information Technology
JTFN	Joint Task Force (North)
JUSTAS	Joint Unmanned Surveillance Target Acquisition System
LOSV	Light Over Snow Vehicle
LRA	Long Range Aviation
M/V	Motor Vessel

MAJAID	Major Air Disaster
MAJMAR	Major Maritime Disaster
MMG	Minmetals Resources Ltd (China)
MRS	Mobile Radio System
MSOC	Marine Security Operations Centre
NavCan	Nav Canada
NCIS-WG	Northern Communications and Information Systems Working Group
NGOs	Non-governmental Organizations
NORAD	North American Aerospace Defence Command
NORDREG	Northern Canada Vessel Traffic Services Zone Regulations
NRCAN	Northern Resources Canada
NSR	Northern Sea Route
OGDs	Other Federal Government Departments and Agencies
PJBD	Permanent Joint Board on Defence
Plan Nord	Northern Quebec Development Plan
POLAR	Canadian Polar Commission/Polar Knowledge Canada
RCAF	Royal Canadian Air Force
RCMP	Royal Canadian Mounted Police
RCN	Royal Canadian Navy
SAO	Senior Arctic Official
SAR	Search and Rescue
SARS	Severe acute respiratory syndrome
SARTEC	Search and Rescue Technician
SSHRC	Social Sciences and Humanities Research Council of Canada
UAV	Unmanned aerial vehicle
UNCLOS	UN Convention on the Law of the Sea
US	United States
USGS	US Geological Survey
USN	US Navy
VHF	Very High Frequency
WISCO	Wuhan Iron and Steel (Group) Corp. (China)
WoG	Whole of Government

Foreword

Major General Eric Tremblay and Dr. Bill Bentley

9/11 and its aftermath points to the possible need for Canada to reassess its grand strategy and view of the utility of force. The attack produced a real and visceral feeling that we, along with our American cousins, were vulnerable, as never before, to a direct threat at home. There was very little doubt that Canada would participate in the campaign in Afghanistan especially given its legitimacy by virtue of UN authorization. Our involvement was probably as non-discretionary as one could conceive. It also reflected a sense that the threat had to be met and contained at arm's length; that is, overseas. Notably, and with important ramifications for grand strategy going forward, the Afghan campaign involved a serious effort to build and sustain a Whole of Government (WoG) approach to operations both in Ottawa and in theater to effect nation-building in that country.

Over the longer term, but starting now, Canada's grand strategy also must fully address the development and security of the Canadian Arctic. With the prospective opening of all three northern passages (the North West Passage, the Northern Sea Route and the Transpolar Route), the circumpolar region may equal or even exceed the importance of the world's traditional maritime passages/straits/chokepoints over the next two or three decades. The competition for resources, tourism, criminality of all types, social stability, and potential direct military challenges will require a much larger military capability both stationed in the Arctic and in reserve in the south. These forces, while combat-ready, will not be intended for aggressive purposes but rather to enhance comprehensive security, assist robust policing, and ensure unequivocal Canadian sovereignty over our jurisdiction.

To properly and effectively prosecute Canada's strategic missions it is imperative to adopt a Whole of Government approach that integrates all elements of national power. A few years ago, then Senator Hugh Segal advocated an approach based on the 3Ds of defence, diplomacy and

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development. “We need to develop a grand strategy for a small country that integrates military, diplomatic and foreign aid instruments that preserves security and opportunity at home, advances leverage with our allies and responds in an integrated way to the threats that are real from abroad,” he explained. “These need to be built into real plans and models that maximize the ability of each to engage constructively.”

Since then the theory and practice of Whole of Government or Comprehensive Operations (as they are called internationally) have advanced significantly. In the future such operations will call for the integration of numerous departments and agencies planning and operating with a high degree of unity of effort. In fact, what is required is the development of a robust community of practice of national security professionals. This cadre, operating at both the level of practitioner and policy analysts, must, as recently advocated in a RAND study on the topic, “integrate and educate.” Military doctrine on strategy and planning should be revised to reflect actual practices and, in particular, the dynamic and iterative nature of the process and formulating of policy and grand strategy. Civilians, as part of this community of practice, should receive a solid education in the fundamentals of national security strategy (i.e. grand strategy).

In effect, this is the purpose of this volume: to understand the concept of Whole of Government (WoG) as it applies to activities in the Canadian Arctic from a comprehensive “3D” perspective. It explores the concept broadly and deeply, shedding light on the full spectrum of activities, themes and practices which constitute a WoG approach to the defence of the Canadian Arctic. This includes a multi-perspective understanding of the legal, environmental, policy, strategic, developmental and operational perspectives that inform the Department of National Defence, the Canadian Arctic Forces, and the whole Government of Canada’s approach to Arctic defence, security, sustainable development, and environmental stewardship.

Introduction

Heather Nicol and P. Whitney Lackenbauer

The twenty-first century Arctic is in a state of transformation. Broadened international awareness and acceptance of the heightened impacts of global climate change in the Arctic, most poignantly depicted in the accelerated melting of the polar ice cap, has generated sweeping debates about present and future security and safety challenges and threats in the region. Visions of increasingly accessible natural resources and navigable polar passages connecting Asian, European, and North American markets have resurrected age-old ideas about the region as a resource and maritime frontier—as well as concomitant insecurities about the geopolitical and geostrategic impacts of growing global attentiveness to the region’s possibilities. In Canada’s case, discussions about emerging opportunities and risks resurrect longstanding anxieties about Arctic sovereignty, the defence of our borders, the security (broadly defined) of peoples living in the North, and our responsibilities as stewards of a homeland with intrinsic value to Northerners and to Canadians more generally.

The Government of Canada (GoC) has elevated the North to among its top priorities. Canada’s integrated Northern Strategy, built around four main pillars (and discussed in the following chapter), commits the federal government to helping the region achieve its full potential within a strong and prosperous Canada. Realizing this vision through a wide array of supporting objectives requires strong relationships and partnerships between federal departments and agencies, territorial governments, Aboriginal governments and organizations, Northerners, and other stakeholders. This volume explores how the Department of National Defence (DND) and the Canadian Armed Forces (CAF) fit within and contribute to a Whole of Government (WoG) or Comprehensive Approach (CA) to Arctic security. These concepts, often referenced in strategic documents and speeches by government officials, have

received limited attention in academic circles. Accordingly, this compilation of chapters by leading experts seeks to explain and refine understandings of how the WoG approach applies in an Arctic context; to contemplate how the military can make more effective and enduring contributions to addressing emerging security and safety challenges while supporting regional development more broadly; and, ultimately, to expand opportunities for collaboration and cooperation, both in policy and in practice, within and beyond the federal family.

Most academic discussions about Canada's approach to Arctic defence and security tend to fixate on the "use it or lose it" discourse circa 2006-2008 that seemed to validate a "sovereignty on thinning ice" mentality.¹ Unfortunately, this tendency fails to acknowledge or appreciate the significant broadening of the Harper Government's Northern Strategy (reflected in the 2009 document *Canada's Northern Strategy: Our North, Our Heritage, Our Future* and the 2010 *Statement on Canada's Arctic Foreign Policy*). Since that time, most Arctic policy experts, senior military officers, and scholars have sought to discredit pervasive myths about the centrality of "sovereignty threats" and a so-called "race for resources" (although certain "purveyors of polar peril"—a term coined by Franklyn Griffiths²—persist in framing of the main Arctic imperative as one related to conventional military security). Despite the considerable ink spilled on boundary disputes and uncertainty surrounding the delineation of extended continental shelves in the Arctic, official statements by all of the eight Arctic states are quick to dispel the myth of a "race" between circumpolar nations, arming in preparation for a resource-fueled conflict.³ Indeed, policy trends over the past decade indicate a strong trend toward international cooperation (a theme explored by Ian Livermore in chapter 3) and more closely integrated domestic efforts.

Although official Canadian assessments do not anticipate any conventional military threats to the region, they do foresee a rise in security and safety challenges that require an integrated Whole of Government (WoG) or Comprehensive Approach. This requires a more nuanced and multifaceted

definition of security than what typically has been a narrow, academic fixation on the possibility of inter-state conflict in the Arctic. “From a Defence perspective, successfully implementing Government policy in the North will mean setting the conditions for human safety and security as increasing economic development takes place,” the Chief of Force Development’s 2010 *Arctic Integrating Concept* explains.⁴ Towards this end, this book re-examines how Arctic security has been reconceptualized to extend beyond the neo-realist paradigms offered by some international relation scholars (defined through a normative geopolitical lens) to include broader, deeper, and more culturally-complex paradigms.⁵

Official statements stress that the WoG approach can situate and incorporate (rather than isolate) military mandates for enhancing security and asserting sovereignty within the broader strategic and policy framework designed to address the human and environmental challenges now facing the North and its resident populations. For example, the *Arctic Integrating Concept* stresses the utility of a holistic approach to operations that can solve complex problems:

The WoG approach implies exactly what it states: the mobilization of GoC resources across its breadth and to the scale necessary to succeed. Within this context, a core group of stakeholders consist of those Federal, Provincial, and territorial Departments and Agencies, as well as local civic authorities, directly mandated to deal with a specific issue.

A broader application of this concept is referred to as the [Comprehensive Approach] and is defined as “the interaction of a diverse range of actors in a cooperative, collaborative and constructive manner in order to bring coherence to the planning, implementation and evaluation of efforts to resolve complex problems.” The CA includes important advisors and non-government actors supplementing the inner groupings with Government. These organizations encompass the stakeholders who need to be closely consulted to aid both the effective planning and efficient implementation of any collective response.

From a Defence perspective, such cooperation means supporting the many stakeholders responsible for implementing the Federal, regional and local governments' policies in the North.⁶

As Whitney Lackenbauer and Adam Lajeunesse demonstrate in chapter 1, the military recognizes that lasting solutions to complex security challenges (such as natural or human disasters, environmental dumping, increased search and rescue incidents, espionage, organized crime, or pandemics) require system-wide, multifaceted responses that integrate a wide range of civilian and military resources. While other departments and agencies are mandated to lead in addressing most Northern security issues, the Canadian Armed Forces are expected to “lead from behind” in many scenarios given their capabilities and the limited resources of other potential responders in the region. This entails a reconceptualization of the Northern security landscape, moving away from a fixation on the international security environment (which strategic planners assess as low-risk) towards practical questions related to operational challenges and the need for rapid, coordinated responses.

The redefinition of military security as a collaborative activity more sensitive to cultural and ecological complexity⁷ has its origins in Canadian military security in the shifting paradigms surrounding the post-Afghanistan mandate of DND. Simply put, the increasing complexity of security operations involving a plethora of agencies and non-government actors reflects how, in Peter Gizewski's appraisal, “durable and sustainable responses to security challenges—both at home and abroad—are unlikely to be achieved through the efforts of any single agency or organization.”⁸ In an Arctic context, this redefinition process also represents an attempt to deconstruct narrow understandings of security and sovereignty and conflict models of international relations inherent in the Cold War era, and to recast these understandings to facilitate a more efficient, effective and comprehensive approach under conditions of partnership with Indigenous peoples as well as international and non-governmental actors.⁹

The Whole of Government framework has emerged as a centerpiece of federal policy in the Arctic because it offers a way to rationalize services and leverage capabilities across government(s) and to avoid costly redundancies. Emerging under several previous labels (such as the 3-D, interagency, or joined up government approaches), the concept is predicated on enhanced horizontal coordination between government departments and agencies (and, in some cases, non-government stakeholders) to cut across traditional institutional silos and achieve a shared goal. Gizewski's groundbreaking work on the Comprehensive Approach—which he considers an extension of WoG—argues that, while the ideas upon which the concept are not new, concerted efforts to develop, implement, and institutionalize it reflect a marked evolution in thinking about organizational interaction, cooperation, and coordination. The growing endorsement of WoG principles are important, and this attitudinal shift “has resulted in a clear acknowledgement that today's security challenges require a more institutionalized, less stove-piped and more inclusive multidimensional approach in order to be effective.” Over time, Gizewski hopes that the acceptance, implementation, and practice of more comprehensive approaches may produce new norms governing the conduct of future security operations.¹⁰

Although the Whole of Government concept is simple, its implementation presents academics and defence policy-makers alike with theoretical and practical challenges.¹¹ Officials have acknowledged the potential value of integrated government approaches to Arctic sovereignty, security and development since the 1940s (with the Advisory Committee on Northern Development, which met from 1948-71, serving as a prime example),¹² but efforts to create inter-departmental synergies to prepare, coordinate, and respond to practical security and safety challenges in a domestic Arctic context remain a work-in-progress. Despite the emphasis placed on WoG in official policy statements, operations over the last decade reveal myriad barriers to effective integration and linking of government, local, and private sector partners. These obstacles include a lack of designated funding for initiatives that cut across departmental or government lines, policy structures that do not

align (particularly across the civilian-military divide), and jurisdictional silos that inhibit (or prohibit) collaboration. In the case of the Canadian Arctic, implementation requires fundamentally altering military and public sector cultures, including chains of command, procedures, channels of communication, and even issues of terminology and vocabulary.¹³ While interdepartmental deputy and assistant deputy minister committees in Ottawa and the Arctic Security Working Group in Yellowknife encourage collaboration between federal departments/agencies and other stakeholders on security initiatives, gaps remain that inhibit operational efficiencies and effectiveness. Furthermore, federal stakeholders must collaborate with territorial/provincial, municipal, and Aboriginal governments that have their own priorities and needs.

Overall, the follow chapters reveal why and how the Arctic poses unique challenges requiring innovative, comprehensive approaches to synchronize efforts and address security and safety threats/hazards in a timely, efficient, and credible manner. These approaches are integral to promoting national goals of regional prosperity and stability, and are responsive to Canadian interests and values. In theory, better integrating government actions will help to achieve strategic and policy objectives and provide greater clarity and transparency in decision-making. Diverse organizational cultures must be brought together (and changed) to ensure that planning, training, and operations make efficient use of limited resources, given austere budgetary environments and the increasing tempo and complexity of activities in the Arctic. Streamlined decision-making that remains sensitive and receptive to diverse views and perspectives, reduces redundancies, leverages government and non-government resources, and produces greater operational certainty will engender a higher level of trust and credibility than can be achieved by units working in isolation.¹⁴ Finally, for an integrated, comprehensive approach to address practical security and safety issues in accordance with Northerners' interests, partnerships must also extend beyond the federal level to include territorial/provincial, Indigenous, and community-level stakeholders.

The chapters in this volume reflect a commitment to understanding how Whole of Government approaches to addressing the complexities of Arctic security and safety make new demands upon the Canadian Armed Forces and its security partners. In chapter 1, Whitney Lackenbauer and Adam Lajeunesse situate and examine the CAF's role in maintaining Arctic security within a Whole of Government framework. They discuss the complex and uncertain set of challenges expected to emerge in the coming years, emphasizing a consensus within the military and the government more generally that these challenges will be unconventional in nature. The traditional military security threats that faced the CAF during the Cold War are managed through alliance relationships and do not pose an acute threat in or to circumpolar stability. Accordingly, the authors highlight how and why the military has shifted its focus to supporting disaster response, environmental protection, and a myriad of other duties designed to cope with the anticipated surge of shipping and economic activity in the Arctic region—a focus that is consistent with and directly supports Canada's Northern Strategy. While the CAF will play an important role in managing these challenges, it is not the agency primarily mandated to respond to the vast majority of them. Rather, the CAF will have to work with other government departments and Northern partners, lending its resources and supporting civilian agencies in their duties. Although this is a departure from the CAF's traditional *modus operandi*, Lackenbauer and Lajeunesse's review of strategic and operational policy documents clearly demonstrates that the CAF recognizes the need for this approach and is working to integrate WoG principles and practice into its operations.

Understanding the present state of the Arctic region and anticipating future potentialities requires a robust appreciation of its historical evolution. In chapter 2, recent Canadian Polar Medal recipient Shelagh Grant provides a general overview of the historical contours of sovereignty and geopolitics in the circumpolar Arctic with a particular emphasis on Canada. She begins her exploration of sovereignty dynamics with the earliest Indigenous groups to settle the region, charts the burgeoning interests of European powers beginning in the eighteenth century, and interrogates ideas around "effective occupation"

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and maritime jurisdictional rights in the twentieth century. “Arctic sovereignty,” she concludes, “is more than just a legal right; it carries with it responsibility for the welfare of its inhabitants and their environment, and for the safety of ships traversing through adjacent waters.” In the end, she questions “whether existing multilateral agreements and international laws can withstand challenges from powerful non-Arctic nations” in the face of global climate change.

In chapter 3, defence analyst Ian Livermore provides a detailed analysis of the contemporary international context in the Arctic and its implications for Canadian defence and foreign relations. While Grant sees and anticipates growing tension and potential conflict in the region, Livermore identifies a strong trend towards cooperation on a range of sovereignty, security, and safety issues. His research highlights deliberate efforts by the Arctic coastal states (the Arctic-Five) to quash fears about a so-called “race” or “scramble” for Arctic resources and the idea that the region was in the midst of rampant “militarization” after 2007. Countering ideas of an alleged “Arctic arms race,” Livermore reveals how “reinvestment in Arctic-capable defence infrastructure and training manoeuvres intended to renew the ability of soldiers, sailors, and air force personnel to operate effectively in polar climates presented little in the way of objective military threats, but rather spoke volumes to fulfilling domestic and regional constabulary responsibilities.” Building upon these insights, his careful and thorough assessment of the Arctic states’ policies for the region identifies “a transition in national interests from distrust to mutual support.” While he acknowledges events and activities that have “served to undermine this cooperative trend, ... including the off-and-on interest of NATO in playing a greater role in the Arctic region and, most acutely, international reaction toward Russia’s 2014 intervention in Crimea and Eastern Ukraine,” he makes a convincing case that the overall trend has been one of deeper regional cooperation and collaboration since 2007.

Turning specifically to the Canadian Armed Forces’ capability-building efforts over the last decade, Lajeunesse and Lackenbauer examine the CAF’s Arctic

capabilities, requirements, and ongoing challenges in chapter 4. Drawing upon a wealth of official documentation, covering more than a decade of CAF policy deliberation, exercises and northern operations, the authors chart the military's evolving capabilities and anticipated needs—from the small *Narwhal* exercises in 2002 and 2004 to the more complex N-series operations that have run since 2007. Their chapter also provides a detailed and up-to-date examination of the CAF's ground, maritime, and aerospace capabilities in and for the Arctic region, as well as insight into the purpose and utility of anticipate future assets and capabilities. In so doing, they seek to answer the most essential question surrounding the CAF's Arctic presence: What is the military doing in the North and how exactly does it contribute to Canada's sovereignty and security? In the end, they argue that analysts should not judge the CAF's Arctic capabilities primarily on conventional force levels or immediate progress on major Arctic platform and infrastructure projects, but on the Forces' ability to respond to the most likely and realistic security and safety threats and challenges in the Arctic. "These missions and requirements receive less public attention than large-scale deployments or major procurement programs," Lajeunesse and Lackenbauer observe, "but they lie at the heart of the military's current approach to Arctic sovereignty and security."

The subsequent chapters provide more specific insight into the cross-cutting nature of specific Arctic sovereignty, security, and safety issues and the requirement for (and benefits of) Whole of Government partnerships. In chapter 5, Lieutenant Colonel Darwin Ziprick demonstrates why Air Mobility is a key enabler for the CAF to accomplish its domestic mandate and to the Whole of Government (WOG) approach to implementing Canada's Arctic policy. To ensure that the federal government can effectively operate throughout all areas of the Canadian Arctic, he proposes specific initiatives and investments for the Royal Canadian Air Force and its partners to develop a robust and relevant air mobility capability. "The solutions must be robust and capable of meeting the CAF's requirement as lead department in the defence role," Ziprick argues, "while also being capable of providing support to other lead departments in the safety and security domains." He suggests that the

challenges of providing a timely, effective responses over great distances and in harsh conditions require a tiered mobility and infrastructure posture, consisting of main operating bases the south, strategic airlift to regional hubs in the Arctic, tactical airlift to forward operating bases in the area of operations, and tactical aviation. Mindful of political and fiscal constraints, as well as the limited support available in Northern communities, he offers a compelling case for why “the synergies of a multi-department solution that is integrated across all stakeholders” can “provide a comprehensive and fiscally-achievable Government of Canada effect.”

A successful Northern Strategy and its supporting activities must encourage and reinforce local ownership and build legitimate local institutions. Kim Richard Nossal explains that successful comprehensive approaches “must ensure equitable access, participation, and the sharing of benefits which derive from their implementation.” Simply stated, policies, processes, and implementation must be predicated “on the ability to work *with* as opposed to simply *for* local populations if lasting progress is to be achieved.”¹⁵ As Ken Coates and Greg Poelzer note in a report produced for the Federation of Canadian Municipalities, Ottawa needs a true partnership with Northern communities and a concrete plan and timetable for investing in Northern infrastructure to achieve its strategic objectives. “By acting now and acting together,” they argue, “governments can leverage new investments and public attention to protect our long-term interests in the North and give the next generation of northerners the future they deserve.” Setting a context of sporadic government interest, poor socio-economic and health indicators, and challenges to political and economic development in the region, Coates and Poelzer explore the connections between Northern communities and DND to elucidate how well-conceived military investments can improve regional infrastructure, stimulate or support economic development, and improve quality of life for Northerners. “Well-managed military investments and commitments coordinated with northern municipal leaders can re-enforce local aspirations and activities and quality of life for Canada’s northern communities,” they argue; “poorly planned and hastily undertaken, they can

and do have severe and negative impacts on northern communities and residents.”¹⁶

Chapter 6, derived from an important report by Imaituk Inc. for the Northern Communications & Information Systems Working Group of the interdepartmental Arctic Security Working Group, provides a detailed case study on Arctic communications infrastructure and its connection to sovereignty, security, and Northern community health more generally. In assessing the communications challenges raised by a wide range of federal and territorial government departments operating in the Arctic, it reveals how and why security practitioners identify robust communications as an essential foundation for defence, emergency preparedness, government service delivery, economic development, and community sustainability. In bridging the national and the local, this chapter also highlights the central role that Northern residents play in maintaining sovereignty, facilitating resource exploration and extraction, sharing knowledge on climate change, participating in emergency response, security and reconnaissance activities. Good communications are a fundamental requirement for timely, effective responses to emergencies, and developing a strong Arctic communications infrastructure strategy across departments and levels of government should be considered “a matter of survival.”

Another major area of interest to Canadian policy-makers, security practitioners, and scholars relates to increased maritime activity associated with extractive industry and its potential security implications. While most recent assessments conclude that the Northwest Passage is unlikely to become a viable international transit route through the Arctic over the next decade, destination shipping continues to increase. In chapter 7, Frédéric Lasserre and Pierre-Louis Têtu furnish a detailed overview of mining and oil and gas activities in the Canadian North and associated transportation logistics. Drawing comparisons with the high volume and types of shipping in the Eurasian Arctic, they conclude that the current and potential scope of resource extraction has real potential to trigger a surge in maritime activity in the

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Canadian Arctic, but that this poses a modest risk owing to ongoing economic uncertainties tied to global commodities markets, logistical and environmental challenges, high operational costs, limited infrastructure, information gaps, and technological challenges. In addition to providing rich detail on the current state of exploration and development “north of 55,” their discussion encourages a re-evaluation of base assumptions about the nature and acuteness of oft-cited Arctic sovereignty, security, and safety “threats.”

In chapter 8, Meredith Kravitz and Vanessa Gastaldo integrate these themes into a broad overview of the obstacles to successful emergency management and search and rescue in the Canadian Arctic. Charting the changing nature of safety challenges in the region, they offer an important synthesis of the relationship between infrastructure, community structure, defence needs, transportation and socio-economic development. By placing a particular emphasis on the need to enhance local and territorial capacity to both prevent and respond to emergencies, Kravitz and Gastaldo cast the military and other federal departments in an important supporting role preparing for new or expanded risks associated with tourism, shipping, transpolar flights, environmental change, and shifting economic and social patterns. “The rate of change currently being experienced in the Canadian Arctic is creating an adaptability gap that is decreasing the level of reliability of traditional knowledge that has, until now, supported generations of Indigenous peoples,” they conclude. “Understanding the complex effects of a changing climate and accompanying human activities upon the existing social, economic and natural environment will be key to determining what infrastructure and resources will be needed to protect the Arctic’s residents, workers and visitors.” In turn, this will demand better integrated efforts between governments and Northerners to deal with emerging vulnerabilities.

In chapter 9, graduate students Emily Yamashita and Karen Everett summarize the main outcomes of discussions between security professionals, academics, and policy makers at the Whole of Government in the Arctic workshop held at the Canadian Defence Academy in Kingston in May 2014. These rich

discussions stimulated our interest in compiling this volume, and tag the main themes which a range of participants highlighted as inimical to DND and CAF consideration in a whole of government landscape. Like all of the chapters in this volume, this contribution places the military in a central role when it comes to coordinating diverse organizational cultures within the Arctic, all of which must be brought together to ensure that planning, training, and operations make efficient use of limited resources in fulfilling defence mandates and addressing broader human security interests in the region.

The 2010 Chief of the Defence Staff/Deputy Minister directive for the military in Canada's North notes that "new interpretive frameworks are essential to be able to respond effectively to changes occurring in the region. Until these frameworks have been established, understanding what is happening in the North, and providing options on how best to respond to crises or emerging challenges to Canadian safety and/or security may be difficult."¹⁷ We see the Whole of Government or Comprehensive Approach as a primary, emerging framework to both understand and maintain Arctic security in a manner consistent with Canada's overarching national interests and values. This volume seeks to contribute to our further understanding and conceptual elaboration of the WoG approach in the Arctic by promoting its adoption by decision-makers and practitioners, as well as encouraging academic efforts to test, refine, and debate its theoretical and practical utility and limitations. In stimulating further research, we hope that stakeholders continue to identify and share best practices that help to build, nurture, and extend trust – a prerequisite to more effective interaction, coordination, and cooperation between organizations.¹⁸ Accordingly, we hope that this book serves as a useful tool for programs aimed at educating and training military and civilian personnel in applying the ideas and practices associated with comprehensive approaches to security.

Note on Terminology

“The Arctic” and “the North” are defined in many ways. Geographer Robert Bone’s quintessential text on *The Canadian North: Issues and Challenges* gives a good sampling of approaches, from a simple political line distinguishing the North as Canada’s three territories lying above the sixtieth parallel to various physiographic demarcations predicated on vegetation zones, permafrost, or climate.¹⁹ For this book, we have adopted the Canadian military’s definitions:

- **The North** is defined as the area encompassing the sub-Arctic region [and] the Arctic region to include the Arctic Circle and High Arctic.
- **The Arctic Region** extends from Alaska in the west to Davis Strait in the east and from 60 degrees north to over 83 degrees north. It consists of the Yukon, the Northwest Territories, Nunavut, Nunavik (northern Quebec), and all of Labrador. It also includes the Arctic Archipelago and represents about 40 percent of the country’s landmass and two-thirds of its coastline.
- **The Sub-Arctic Region** is defined as the area between 55 to 60 degrees North latitude encompassing what the Royal Commission on Aboriginal Peoples identified as “Mid-North” and includes large areas of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Quebec where northern conditions prevail.
- **The Arctic Circle** is defined as being 66.5 degrees North latitude.
- **High Arctic** is defined as the region above the Arctic Circle.²⁰

For a further discussion on the concepts of Whole of Government and the Comprehensive Approach, see Bill Bentley and Grazia Scoppio, *Leading in Comprehensive Operations* (Kingston: Canadian Forces Leadership Institute Monograph 2012-02); and the edited books by Jenna Alexander and LCol Dalton Cote, *Leadership in Whole of Government Operations: A Case Study of Security in the Canadian Arctic* (Kingston: Canadian Forces Leadership Institute Monograph 2011-01); Michael Rostek and Peter Gizewski, *Security Operations in the 21st Century: Canadian Perspectives on the Comprehensive*

Approach (Kingston: Queen's Centre for International Relations, 2011); and Commander Dave Woycheshin, *The Comprehensive Approach: Perspectives from the Field* (Kingston: CDA Press, 2015).

Notes

¹ For the quintessential statement of this thesis, see Rob Huebert, "Climate change and Canadian sovereignty in the Northwest Passage," *Isuma* 2(Winter 2001-2002): 86-94. The main contours of this debate are encapsulated in Ken Coates, P.

Whitney Lackenbauer, Bill Morrison, and Greg Poelzer, *Arctic Front: Defending Canada in the Far North* (Toronto: Thomas Allen, 2008); Franklyn Griffiths, Rob Huebert, and P. Whitney Lackenbauer, *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011); and Michael Byers, *Who Owns the Arctic?* (Vancouver: Douglas & McIntyre, 2009).

² Franklyn Griffiths, "Towards a Canadian Arctic Strategy," in *New Chances and New Responsibilities in the Arctic Region: Papers from the International Conference at the German Federal Foreign Office in Cooperation with the Ministries of Foreign Affairs of Denmark and Norway, 11-13 March 2009, Berlin*, ed. Georg Witschel (Berlin: BWV Verlag, 2010), 130.

³ See, for example, P. Whitney Lackenbauer, *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World*, Foreign Policy for Canada's Tomorrow No. 3 (Toronto: Canadian International Council, July 2009), and Frédéric Lasserre, Jérôme Le Roy, and Richard Garon, "Is There an Arms Race in the Arctic?" *Journal of Military and Strategic Studies* 14/3&4 (2012): 1-56.

⁴ Chief of Force Development, *Arctic Integrating Concept* (Ottawa: DND, 2010), 1.

⁵ See, for example, Gunhild Hoogensen Gjørsv, Dawn Bazeley, Marina Goloviznina, and Andrew Tanentzap, eds., *Environmental and Human Security in the Arctic* (London: Routledge, 2014); Inuit Qaujisarvingat/Inuit Knowledge Centre, Nilliajut - Inuit Perspectives on Arctic Security (Ottawa: Inuit Tapiriit Kanatami and Walter & Duncan Gordon Foundation, 2013); Maria Tretiakova, Karen Davis, and Cassandra Kuyvenhoven, *Cultural Complexity and the Canadian Armed Forces in Canada's Arctic: Understanding the Impact and Preparing to Meet the Challenges* (Kingston: Canadian Forces Leadership Institute Monograph 2013-

01); and P. Whitney Lackenbauer, *The Canadian Rangers: A Living History* (Vancouver: UBC Press, 2013).

⁶ Chief of Force Development, *Arctic Integrating Concept*, 10.

⁷ L. Smircich, P. Frost, L. Moore, LM. Louis, M. Lundberg, J. Martin, “Is the Concept of Culture a Paradigm for Understanding Organizations and Ourselves?” in *Organizational Culture* (Beverly Hills: Sage, 1985), 55-72.

⁸ Peter Gizewski, “Discovering the Comprehensive Approach,” in *Security Operations in the 21st Century: Canadian Perspectives on the Comprehensive Approach*, ed. Michael Rostek and Peter Gizewski (Kingston: Queen’s Centre for International Relations, 2011), 14.

⁹ Lassi Heininen, “Circumpolar International Relations and Geopolitics,” in *Arctic Human Development Report* (Akureyri: Stefansson Arctic Institute, 2004), 207-225.

¹⁰ Gizewski, “Discovering the Comprehensive Approach,” 13-23.

¹¹ Tom Christensen and Per Læg Reid, “The Whole-of-Government Approach to Public Sector Reform,” *Public Administration Review* 67/6 (2007): 1059-66; and Herman Bakvis and Luc Juillet, *The Horizontal Challenge: Line Departments, Central Agencies and Leadership* (Ottawa: Canada School of Public Service, 2004).

¹² P. Whitney Lackenbauer and Daniel Heidt. *The Advisory Committee on Northern Development: Context and Meeting Minutes, 1948-67*, Documents on Canadian Arctic Sovereignty and Security (DCASS) No. 4 (Calgary and Waterloo: Centre for Military and Strategic Studies/Centre on Foreign Policy and Federalism, 2015). See also P. Whitney Lackenbauer and Peter Kikkert, *The Canadian Forces and Arctic Sovereignty: Debating Roles, Interests, and Requirements, 1968-1974* (Waterloo: Laurier Centre for Military Strategic and Disarmament Studies / WLU Press, 2010).

¹³ Peter Gizewski, “Conducting Stability Operations: Utility of the Whole of Government Approach.” Presentation to the Kingston Conference on International Security 2012: “International Security in an Age of Austerity.” These observations are also supported by ongoing research by Lackenbauer and Lajeunesse on military-led WoG operations over the last decade.

¹⁴ United States Coast Guard (USCG), *Arctic Strategy* (Washington: USCG, 2013), 32; Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska, *Managing for the Future in a Rapidly Changing Arctic* (March 2013), 45, 48; J.F.B. Halligan and Janine O’Flynn, “Experiments with Joined- up, Horizontal and Whole-of-Government in Anglophone Countries,” in *International Handbook on Civil Service Systems*, ed.

Andrew Massey (Cheltenham: Edward Elgar Publishing, 2011), 75.

¹⁵ Kim Richard Nossal, “Security Operations and the Comprehensive Approach,” in *Security Operations in the 21st Century: Canadian Perspectives on the Comprehensive Approach*, ed. Michael Rostek and Peter Gizewski (Kingston: Queen’s Centre for International Relations, 2011), 6.

¹⁶ Ken Coates and Greg Poelzer, *On the Front Lines of Canada’s Northern Strategy* (Ottawa: Federation of Canadian Municipalities, 2010).

¹⁷ DND, *CDS/DM Directive for the DND/CF in Canada’s North* (Ottawa, 12 April 2011), 10.

¹⁸ Gizewski, “Discovering the Comprehensive Approach,” 20.

¹⁹ See Robert Bone, *The Canadian North: Issues and Challenges*, 4th ed. (Don Mills: Oxford University Press, 2012), 2-4.

²⁰ Chief of Force Development, *Arctic Integrating Concept*, 14; CDS/DM Directive, 12 April 2011, 2-3; and Canadian Forces Northern Employment and Support Plan, November 2012, 5-6.

1

The Emerging Arctic Security Environment: Putting the Military in its (Whole of Government) Place

P. Whitney Lackenbauer and Adam Lajeunesse

The Canadian military has long played a central role in furthering federal government objectives in the Arctic. In part this is, and has long been, a matter of necessity; in a space so vast and sparsely populated, the military has traditionally been the only force with the resources and platforms to reliably deploy and project power across the region. Nevertheless, while there has never been any question about the importance of the Canadian Forces (CAF) in maintaining Canada's presence and ability to operate in the High Arctic, there has long been a disconnect between the military's approach to Arctic operations and the government's broader objectives and requirements.

Defining the military's role in the Arctic begins with assessing threats and requirements. In the early years of the Harper government, high natural resource prices mixed with receding ice and fears of potential sovereignty disputes produced an aggressive political response. This early approach centered on defending Canada's sovereignty with new "military investments" in the Arctic to put "forces on the ground, ships in the sea" and build up "proper surveillance."¹ In 2007, during a speech in Esquimalt, the prime minister announced that "Canada has a choice when it comes to defending our sovereignty in the Arctic; either we use it or we lose it." In the speech from the throne later that year, the government highlighted the requirement to build the "capacity to defend Canada's sovereignty," an effort that lay at "the heart of the Government's efforts to rebuild the Canadian Forces."²

Whole of Government through an Arctic Lens

The common theme in these early pronouncements was a fear that rapid changes in the North could have negative ramifications on Canada's sovereignty and security in the region. These fears were stoked by both expert and popular media commentaries pointing to the potential for either interstate or unconventional conflict in the future Arctic. In light of these seemingly valid concerns, and the uncertainty accompanying the region's rapid environmental change, a more active military presence seemed both prudent and necessary.

In the years since the Harper government formulated this policy a great deal has changed – not so much within the Arctic's itself, but in how people perceive the challenges facing the region. In spite of its resource wealth and sometimes uncertain boundary lines³ it has become clear that there is no danger of military confrontation in the Arctic – a reality highlighted by the 2008 Illulissat Declaration and a host of high-level political statements from the circumpolar states since then.⁴ While political statements should always be taken with a grain of salt, the strategic framework has not shifted (and offers no indication of shifting) to one that would support conflict. This has been clear for several years and is readily apparent to the Department of National Defence – a fact best characterized by then-Chief of the Defence Staff General Walter Natynczyk's 2009 quip that “if someone were to invade the Canadian Arctic, my first task would be to rescue them.”⁵

Instead, the security risks and “threats” facing Canada's Arctic are (and will continue to be) unconventional, with the lead management responsibilities falling primarily to other government departments and agencies (OGDs). Nevertheless, these partners often draw upon the capabilities of the CAF to help fulfill their mandates across the continuum of hazards and threats in the region (see figure 111). Strategic and operational-level documents guiding the military's Northern planning specify that these threats include:

- law enforcement challenges by various state and non-state actors (i.e. foreign fishing fleets);

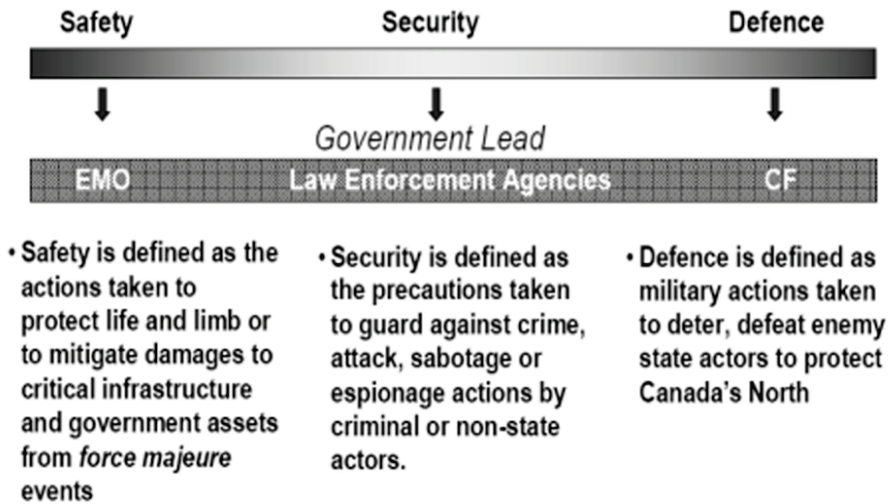
- Environmental threats such as the impact of climate change, earthquakes, floods, and other such naturally occurring events that may or may not be a result of human activity;
- Although unlikely, domestic or internationally based terrorists of various motivations willing to use whatever means possible to achieve their goals;
- Domestic or internationally based organized criminal elements primarily motivated by potential financial gain...;
- Adversary or potential adversary (state or non-state) intelligence gathering operations;
- Adversary or potential adversary (state or non-state) counterintelligence operations attempting to disrupt Canadian or allied intelligence operations;
- Attacks on critical physical/terrestrial, space and information/cyber infrastructure by adversary or potential; and
- Increase in the potential for pandemics.⁶

As such, the CAF has slowly (and with some difficulty) embraced a whole-of-government (WoG) approach in recognition that it must be prepared to provide assistance to OGDs in accordance with the Federal Emergency Response Plan and to law enforcement agencies as required.

A WoG framework is a simple operational concept: the mobilization of government resources across departments, agencies, and resources to achieve broad national objectives. The assumption is that, through effective cooperation, these separate stakeholders – spanning federal, provincial, and territorial levels, as well as local authorities – can create a whole greater than the sum of their parts.⁷ For the most part, the CAF fits into this framework by providing transport, ships, and human resources that enable OGDs to enforce Canadian jurisdiction and react to a wide array of contingencies in a rapid, coordinated manner.⁸

Whole of Government through an Arctic Lens

Figure 1.1: Operations Continuum from CF Northern Support Employment Plan (2012), 13.



Although simple in conception, WoG operations have proven extremely difficult to execute effectively in practice. Logistical and organizational challenges have long made this framework an awkward fit for the military; however, the unique challenges posed by the Arctic make such deep integration an absolute necessity. While the CAF's conventional defence capabilities are largely unnecessary in the Far North, the support they provide to OGDs will remain essential to exercising the kind of control and stewardship of the region mandated by the federal government.

The Government of Canada's Northern Strategy

The new Harper Government began to place significant emphasis on the North in its 2007 Speech from the Throne, and subsequent budgets and speeches affirmed its commitment to and priorities for the region. Accordingly, the military's place must be situated within the broader federal strategy for North and how defence activities support implementation of the four pillars of Canada's Northern Strategy:

- **Exercising Canada’s Arctic Sovereignty:** The *Northern Strategy* focuses on the need to maintain a strong presence in the North and enhance Canada’s knowledge and stewardship of the region. This domestic dimension of sovereignty pertains to the relationship between the government and the governed, including the enforcement of domestic laws and regulations, as well as the government’s commitment in the human security realm. It also includes preserving and promoting the quality of life of its people. Internationally, the government recognizes that cooperation is an important part of its efforts to exercise sovereignty, and has therefore been working with its Arctic neighbours in areas of common interest such as search and rescue, icebreaker operations, fish and wildlife conservation, transportation, research, energy and the environment.
- **Promoting Social and Economic Development:** As the economic potential of the North is unlocked, the Government is taking action to encourage future exploration and development in the region by improving regulatory systems and investing in critical infrastructure. At the same time, the Government wants to ensure that Northerners are full partners and derive maximum benefit from development. To this end, the Government has invested in skills training and education, better housing, and improved access to health care.
- **Protecting the North’s Environmental Heritage:** Canada is already at the forefront of several international efforts to study the impacts of climate change on both the Arctic and Antarctic. Moreover, the Government is making plans for a new Arctic Research Station that will help solidify Canada’s leadership in the field of Arctic science. This effort focuses on promoting clean and efficient energy technologies, reducing pollution in Arctic waters, protecting environmentally sensitive northern areas, and cleaning up environmental damage at abandoned military and mining sites.
- **Improving and Devolving Northern Governance:** The regions of Canada’s North are at different stages of political development. As a result, the federal government is working with territorial governments,

First Nations, Métis and Inuit to advance practical, innovative and efficient governance models that will help Northerners assume greater control over their political and economic destinies.

In short, the Government of Canada envisages a North in which “self-reliant individuals live in healthy, vital communities, manage their own affairs and shape their own destinies”; where “the Northern tradition of respect for the land and the environment is paramount and the principles of responsible and sustainable development anchor all decision-making and action”; where residents and governments contribute to security; and where the Canadian Armed Forces patrol and protect the territory “through enhanced presence on the land, in the sea and over the skies.”⁹

The CAF in the Arctic: Purpose and Objectives

The military’s overriding purpose and occupation in the Canadian Arctic has been laid out in various core government and National Defence policy documents. In 2008 the *Canada First Defence Strategy* characterized the military’s role in the North as ensuring “the security of our citizens and help[ing] exercise Canada’s sovereignty.” Achieving this objective meant exercising “control” and “demonstrating a visible Canadian presence” in the Arctic.¹⁰ Two years later, the *Northern Strategy* (2010) emphasized the need “patrol and protect our territory through enhanced presence on the land, in the sea and over the skies of the Arctic” and, in so doing, “[exercise] our Arctic sovereignty.”¹¹ Similar messaging is found in the *Statement on Canada’s Arctic Foreign Policy* (2010), which cites as its first and foremost pillar “the exercise of our sovereignty over the Far North.”¹²

The government has assigned the CAF the overarching tasks of “defending” Canadian sovereignty, exercising control over the Arctic, and protecting the region. While these broad objectives appear straightforward, determining how to achieve them has generated considerable debate. In large part, this is because commentators differ in their assessments of the intent of foreign actors in the Arctic, of the probability and timing of resource and maritime developments,

of general governance and geopolitical trends, and of competing domestic socio-economic and cultural priorities. Some academics and media commentators contend that the Arctic regime is solidly rooted in cooperation, while others anticipate – or already see – heightened competition and conflict.¹³

These frameworks are significant in shaping expectations for the Government of Canada and for the Canadian Armed Forces more specifically. If one expects that the region is on the precipice of international conflict, constabulary capabilities and environmental protection are insufficient. On the other hand, if the Arctic is developing as a well-governed and peaceful region, then resources spent on conventional military assets and capabilities are wasted.

Despite the considerable ink spilled on boundary disputes and the uncertainty surrounding the delineation of extended continental shelves in the Arctic, official statements by all of the Arctic states are quick to dispel the myth that these issues have strong defence components. Existing disputes, such as those with Denmark over the Hans Island and the United States over the Beaufort Sea, are longstanding and well-managed. There is no risk of armed conflict between Canada and these close allies. Similarly, managing the longstanding disagreement with the United States over the status of the waters of the Northwest Passage has consequences for Canadian defence and security in terms of transit rights and regulatory enforcement, but it holds no serious risk of precipitating a military conflict.

Although political saber-rattling rhetoric with Russia over the Lomonosov Ridge and the North Pole generates punchy headlines in both countries, it is simplistic and erroneous to draw parallels between the Russian invasion of the Ukraine (or even its increasing bomber flights in the Arctic) and the establishment of the outer limits of its sovereign rights in the Polar Basin. The five Arctic coastal states, including Russia, emphasized their shared interest in maintaining a peaceful, stable context for development in their Ilulissat Declaration in May 2008. Despite the increasingly hostile diplomatic

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atmosphere created by the Russian conquest of the Crimea and surreptitious invasion of the Eastern Ukraine, there is no indication that any Arctic state intends to move away from the existing international framework when it comes to asserting its sovereign rights or substantiating its legal claims. In fact, the 2010 maritime delimitation agreement, resolving a dispute between Norway and Russia in the Barents Sea, provides a precedent of how a longstanding dispute can be amicably put to rest when political interests demand a resolution.

The opportunities and challenges associated with Arctic resources also fire up imaginations and frame sensational narratives of unbridled competition for rights and Arctic “territory” that have little grounding in reality. Despite the wealth of hydrocarbons and mineral wealth (an image fueled by the US Geological Survey’s 2008 circumpolar oil and gas assessment), depictions of a “race” between circumpolar nations, arming in preparation for a resource-fueled conflict, is fundamentally misinformed. Exploration activities are not occurring in a legal vacuum where states might perceive a need to compete for control and access. For example, international oil majors have spent billions on leases and seismic drilling in the Kara, Beaufort, and Chukchi Seas – all within established national jurisdictions. Each Arctic coastal state has a vested interest in developing these regions (Russia in particular), so each has a vested interest in promoting and working within the existing international legal frameworks that enables this development. Any move to claim resources outside of limits prescribed by the UN Convention on the Law of the Sea (1982) would create instability and thus impede investment and slow the pace of prospective development.

Another persistent debate relates to Arctic shipping, particularly the opening of the Northwest Passage, its viability as a commercial transit route, and implications for Canadian sovereignty and security. The vigorous debate between Rob Huebert and Franklyn Griffiths a decade ago set the basic contours of these competing schools of thought. Huebert anticipated a “sovereignty-on-thinning-ice” scenario, wherein an increased volume of foreign

shipping would precipitate a challenge to Canada's sovereignty (which he later clarified as "control") over the Northwest Passage, thus necessitating immediate investments in military and security capabilities. Griffiths dismissed the idea that Canada faced an imminent sovereignty crisis, predicting that shipping interests would not flood into the passage, and arguing that national efforts would be best invested in "cooperative stewardship" focused on environmental protection and Indigenous rights.¹⁴

Activities over the past decade have confirmed Griffiths' prediction and offer little to support Huebert's. Arctic shipping has increased, but has not challenged Canadian control over the Northwest Passage – particularly in the defence domain. This situation is unlikely to change in the short to medium-term. The Arctic Council's landmark 2009 *Arctic Marine Shipping* report projected that the "Northwest Passage is not expected to become a viable trans-Arctic route through 2020 due to seasonality, ice conditions, a complex archipelago, draft restrictions, lack of adequate charts, insurance limitations and other costs which diminish the likelihood of regularly scheduled services." While destination shipping related to community resupply, resource development, and tourism has increased over the past decade, high seasonal variability and unpredictability continue to inhibit maritime operations and make the prospect of regular transit shipping through the passage remote. In Canadian Arctic waters, the AMSA noted, "ice conditions and high operational costs will continue to be a factor into the future. Irrespective of the warming climate, ice will remain throughout the winter, making viable year-round operations expensive."¹⁵

Despite media coverage highlighting intensified Arctic competition and framing Arctic challenges as seeds for potential Arctic conflict, policy trends over the past decade indicate a strong trend toward cooperation. Competition may exist, but this does not preclude cooperation in areas of common interest. Although the Ukrainian crisis has spilled over into Canadian Arctic security rhetoric since March 2014, this does not render obsolete the policy frameworks

or underlying assumptions and logic that guide Canada's integrated Arctic security strategy.

Defining the Whole-of-Government Approach

To its credit the CAF recognized these trends early on and has spent the better part of the past decade developing an appropriate Arctic strategy. Rather than focusing on combat training and kinetic operations, the military has embraced what the *Land Force Operating Concept* (2011) describes as a “comprehensive approach” to WoG integration, with the CAF providing assets and personnel to support other government departments and agencies dealing with issues such as disaster relief, pollution response, poaching, fisheries protection, and law enforcement.¹⁶ From a Defence perspective, such cooperation means supporting the many stakeholders responsible for implementing the federal, regional and local governments' policies in the North.¹⁷ This integration focuses on the more commonplace civilian aspects of northern security, but these are the areas most crucial to effective jurisdiction.

The first mention of this framework appeared in the *Canada First Defence Strategy* (2008) which asserted the need for DND to play a greater role in Whole of Government integration; however, this term was not applied specifically to the North.¹⁸ In 2010, the government released its *Arctic Foreign Policy*, which clearly situated the military within a broader WoG effort designed to exercise Canada's sovereign rights and responsibilities.¹⁹ That same year, the Chief of Force Development published the *Arctic Integrating Concept*, a strategic framework for developing future CAF Arctic capabilities and the basis of the Forces' Arctic operating concepts. This guidance paper concluded that “there are no current military threats to Canada in the Arctic” and that “the types of defence or security challenges that Canada will face over the next 10 years (to 2020) will not appreciably change from those facing the country today.” In determining how the CAF approaches these threats, the document clearly defined the Forces' strategy as a WoG approach, where Arctic ‘security’ was conceptualized in a broad and integrated manner. Within this framework, “defence” involves more than merely maintaining a presence in the region but

results from “working closely with all partners” to achieve the government’s broader Arctic objectives. By virtue of its training, material assets, and the specialized skill set held by its personnel, the military will continue to be essential to the success of government operations in the North. Because most security situations will not stem from defence threats, however, the CAF will play a supporting role.²⁰ Otherwise stated, while other departments and agencies are the mandated leads to deal with most northern security issues and emergencies, the military will “lead from behind” in all of the most likely scenarios.²¹

Whole of Government and Arctic Sovereignty

According to the *Canada First Defence Strategy* (2008), the “capacity to exercise control over and defend Canada’s sovereignty” represents the CAF’s principal objective in the Far North. Still, how to “defend” sovereignty with military force, remains a vexing question. The dispute between Canada and the United States over the status of the Northwest Passage is, at its core, a legal/political issue that cannot be resolved by demonstrations of military force. Similarly, the military does not have a role to play in establishing Canadian sovereign rights to an extended continental shelf beyond its exclusive economic zone (EEZ). Although these sovereignty issues are often tied to security questions in political and popular media discussions, they are separate issues that, if not carefully managed, set up unrealistic expectations for the military.²²

This is not a new dilemma. In April 1969, Erik Wang, an international lawyer working for the Department of External Affairs (now Foreign Affairs, Trade and Development), commented that “it is difficult to see what expanded role the Canadian Armed Forces could usefully play in support of Canada’s claim to sovereignty over water between the Arctic islands.” The problem of sovereignty in the Arctic “is not a military problem,” he concluded. “It cannot be solved by any amount of surveillance or patrol activity in the channels by Canadian forces.” There had to be a firm military rationale for CAF involvement in the North, not “presence for the sake of presence.” To develop a role merely to satisfy the “optical demands” of political sovereignty “would be

to build on shifting sands.... It would not be long before somebody noticed that one visit of the Governor General, accompanied by an enthusiastic press corps, can provide a sovereign presence to a remote area much more effectively and much more cheaply than 100 [Canadian Armed Forces] surveillance overflights.”²³

Wang conceded that the optics of control had political utility, however, and that military activities demonstrated government resolve and commitment to a domestic audience. The assumption that “boots on the ground” help to confirm or strengthen Canada’s legal sovereignty position is still held by some Canadian commentators and government officials today, as media coverage of the annual Operation Nanooks often reflects.²⁴ Demonstrating presence and maintaining the ability to defend Canada’s territorial integrity are aspects of sovereignty, but they are better seen as examples of how the country is exercising control and authority in an area over which it has recognized authority and jurisdiction. A defence presence – in the form of soldiers and warships – might be considered a comparatively inefficient way of exercising, enforcing, or demonstrating sovereign authority (control) given that there is no perceived conventional military threat and, therefore, military forces have little to actually do in the Arctic during routine operations.

The perceived relationship between control and sovereignty is best laid out in the Department of Foreign Affairs’ 2010 *Statement on Canada’s Arctic Foreign Policy*. This document states that: “Canada exercises its sovereignty daily through good governance and responsible stewardship. It does so through the broad range of actions it undertakes as a government ... We exercise our sovereignty in the Arctic through our laws and regulations, as we do throughout Canada.”²⁵ This notion, that sovereignty is strengthened by effective governance and control over an area, lies at the heart of the legal tradition governing historic internal waters. In this sense, exercising sovereignty means demonstrating that the waters of the Arctic Archipelago are historic internal waters, a status that requires both foreign acceptance of Canada’s position, and the exclusive and effective exercise of Canadian jurisdiction.²⁶

Recognition of Canadian sovereignty is best displayed by foreign operators complying with Canadian laws and regulation in Canadian waters. This, in turn, is something that the CAF encourages by maintaining enforcement capabilities tailored to supporting constabulary operations in the Arctic waters, by assisting foreign and domestic operators, and working with other departments and agencies to apply Canadian jurisdiction across the region.

Building Whole of Government Relationships: Towards a Comprehensive Approach

In order to fulfill the military's roles in leading or assisting in the response to security incidents, defence officials recognize the need to build strong, collaborative relationships with OGDs (see figure 1.2), local/regional governments, and other Northern partners. Information sharing and cooperation across government departments and with Arctic stakeholders is essential to understand evolving security and safety issues, and Northern domestic partners must be involved in the planning and enactment of policies and activities in the region. Developing and maintaining a shared vision to sovereignty, security, and safety requirements, and devising well coordinated plans, is important to make economical and efficient use of limited resources so that stakeholders can effectively address Northern challenges as they emerge.²⁷ This requires integrated efforts at the federal and inter-jurisdictional levels.

The Arctic Security Working Group (ASWG) is a biannual forum co-chaired by Joint Task Force North (JTFN) and the northern regional office of Public Safety Canada which brings together participants from federal departments and agencies, as well as territorial governments and other northern stakeholders (including partners from Alaska). Alarmed by the deterioration of military capabilities and a perceived lack of Canadian government action regarding Arctic security, a small circle of officials based in the Territorial North conceived the Arctic Security Interdepartmental Working Group (since renamed the Arctic Security Working Group) in May 1999 to examine and coordinate security policy for the region. Officials from the Canadian Forces,

Figure 1.2: Other Federal Government Departments and Agencies (OGDs) with Security and Safety Responsibilities in the Canadian Arctic²⁸

Aboriginal Affairs and Northern Development Canada (AANDC) is the lead government agency for activities in the North and supports Northern Canadians in their efforts to improve social and economic well-being to develop healthier, more sustainable communities and to participate more fully in Canada's political, social and economic development. The Department's mandate in the North is significant and far-reaching including resource, land and environmental management responsibilities. AANDC leads federal efforts and coordinates partnerships under Canada's Northern Strategy which informs AANDC's key priorities for the Department's work in the North. It chairs various interdepartmental committees, including the Ad Hoc Deputy Minister's Committee on the Arctic and the Assistant Deputy Minister (ADM) Coordinating Committee on the Northern Strategy. AANDC is responsible for the negotiation of comprehensive claims and self-government agreements on behalf of the Government of Canada and oversees the implementation of negotiated agreements.

As the lead for emergency management for the Government of Canada, **Public Safety Canada** plays a significant overarching role in the response to natural and human-made disasters across the North. In addition, the CAF may be called upon to provide assistance to law enforcement and border security tasks which also fall under Public Safety Canada's mandate. It does this by working with other levels of government, first responders, community groups, the private sector and other nations. PS also works with partners and stakeholders in the provinces and territories to develop and implement programs that target specific crime issues in regions and communities. To this end, they contribute funds for policing services in First Nations and Inuit communities in partnership with the provincial and territorial governments.

The **Royal Canadian Mounted Police (RCMP)** provides police services to the territories under the provisions of their territorial policing agreements. As a result, the RCMP maintains 57 detachments consisting of about 380 people in the three territories, divided administratively into "M" division (Yukon), "G" division (Northwest Territories), and "V" division (Nunavut). The RCMP's program for the North includes monitoring organized crime activity related to the diamond industry, drug awareness programs, search and rescue activities, and aboriginal programs.

The **Department of Fisheries and Oceans (DFO)** has well-established

partnerships with northern co-management boards which bring together local hunters and fishers, government agencies, public management boards and committees to share management responsibility for aquatic resources. When enforcing the *Fisheries Act*, Fisheries Officers are Peace Officers under the Criminal Code of Canada, and are responsible for taking the appropriate actions to deal with criminal activity when encountered. This is a shared responsibility requiring consultation with the police agency of jurisdiction.

As a Special Operating Agency of the Department of Fisheries and Oceans Canada (DFO), the **Canadian Coast Guard (CCG)** helps DFO meet its responsibility to ensure safe and accessible waterways for Canadians. The CCG also plays a key role in ensuring the sustainable use and development of Canada's oceans and waterways. Its responsibilities include aids to navigation; coordination of sealift services in the eastern Arctic; marine communications and traffic management services through the Northern Canada traffic regulation system (NORDREG); icebreaking and ice-management services (including vessel support to OGDs); channel maintenance; and marine search and rescue. The CCG is considered a key participant within the interdepartmental Marine Security Operation Centres (MSOCs) that operate on the East and West coasts, and provide vessel traffic management information in support of the preparation of a recognized Maritime Picture of Canada's coasts.

Transport Canada (TC) works to ensure that ship voyages are conducted in a safe and efficient manner and in conformity with the bilateral Canada-US Agreement on Arctic Cooperation and Canada's other legislation, including the *Arctic Waters Pollution Prevention Act*. TC also seeks to ensure that small communities continue to enjoy reliable air service and that northern airports remain safe and viable. Its activities involve minimizing the risk of environmental damage from transportation accidents, and promoting environmentally-friendly operations in the transportation sector within the context of the federal interdepartmental sustainable development strategy.

Natural Resources Canada (NRCAN) is a science-based department that works to enhance the responsible development and use of Canada's natural resources and the competitiveness of Canada's natural resources products. Many initiatives have a Northern focus in the areas of innovative technologies and infrastructure, energy, and geoscience. NRCAN's Polar Continental shelf Program (PCSP) was created in 1958 to provide logistics support to researchers and to help Canada exercise sovereignty over its Arctic territory, and has close working relationships with various federal departments and other research agencies working in the Canadian North. Under an arrangement with DND, PCSP provides accommodations and

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logistical support in Resolute Bay in support of the CF High Arctic training Centre. In relation to the ongoing work to delineate the continental shelf, NRCan, together with DFO, is responsible for the scientific work necessary for the submission to the United Nations Commission on the Limits of the Continental shelf. DFATD has the overall responsibility for the preparation and presentation of Canada's submission to the Commission.

The **Department of Foreign Affairs, Trade, and Development Canada (DFATD)** is the lead department in the implementation of Canada's Arctic Foreign Policy. DFATD therefore leads on international Arctic issues, including participation in the Arctic Council, under the direction of Canada's Senior Arctic Official. From 2013-15, Canada assumed the Chairmanship of the Arctic Council with the overriding theme of "Development for the People of the North" with three sub-themes: 1. Responsible Arctic Resource Development; 2. Safe Arctic Shipping; and 3. Sustainable Circumpolar Communities.

Citizenship and Immigration Canada (CIC) has one full-time employee in Yellowknife, and immigration services in Iqaluit are provided by Canada Customs. CIC conducts security and intelligence through its security and review division, which liaises with DND (among other departments) on relevant issues.

Canadian Security and Intelligence Service (CSIS) – CSIS has no assets in the North, but the agency carries out security clearances for federal employees in the region.

Canada Border Services Agency (CBSA) monitors, investigates, detains and removes people or goods in violation of relevant laws. The North is covered by two CBSA districts: the Northwest Territories, with offices in Yellowknife, Inuvik, and Tuktoyaktuk; and Nunavut, with an office in Iqaluit. Various Northern communities have become destinations for air travelers and cruise ship passengers.

The **Public Health Agency of Canada's (PHAC)** role is to help protect the health and safety of all Canadians. Its activities focus on preventing chronic diseases, preventing injuries and responding to public health emergencies and infectious disease outbreaks, including in Canada's North.

The **National Search and Rescue Secretariat (NSS)** is the lead agency for search and rescue in Canada. Its role is to coordinate all SAR activities, including in the North. Territorial government Emergency Measures Organizations shares responsibilities with the RCMP for ground searches in the Yukon, Northwest Territories and Nunavut.

Environment Canada (EC) is responsible for ensuring the preservation and enhancement of Canada's natural environment, renewable and water resources,

forecasting the weather and environmental change, ensuring rules concerning water boundaries are followed, and harmonizing federal environmental policies and programs. The department conducts science and technology in the North to support evidence-based decision-making in policy, program, regulatory and service elements of this mandate. The department also carries out risk assessments, regulatory activities, data collection, environmental monitoring, and preparations for environmental emergencies. To fulfill their mandate they possess various vehicles, boats, snowmobiles, and storage facilities.

Parks Canada (PC) is the largest federal landholder is the face of the federal government in many northern communities, bringing infrastructure, staff, contracts, natural and cultural research and monitoring capacity, SAR capability within National Park boundaries, tourism opportunities and other economic benefits. PC staff are trained and involved in cultural and natural resource management, public safety (search and rescue, mountaineering, and advanced First Aid), law enforcement, wilderness land and water travel skills, and communications and community liaison.

The **Canadian Space Agency (CSA)** is the lead agency for RADARSAT-2 and the RADARSAT Constellation Mission (RCM). The RCM maritime surveillance requirements are demanding in terms of mission and system requirements. DND is responsible for covering three zones extending up to 1000 nautical miles from the coast, while TC has requirements to detect ships four days before they enter Canadian waters, which involves voluntary disclosure out to 2000 nm and imaging out to 1200 nm.

the RCMP, Coast Guard, Revenue Canada, Citizenship and Immigration, the Canadian Security Intelligence Service (CSIS), and Foreign Affairs and International Trade attended the first meeting. When the third meeting was held in Iqaluit in October 2000, membership had expanded to include representatives from Natural Resource Canada, Environment Canada, Indian Affairs and Northern Development, Transport Canada, Health Canada, and the Yukon, Northwest Territories, and Nunavut governments. The list of participants grew over the next decade, both in numbers and in the government departments and agencies represented. “The Team North approach to addressing the security concerns of the Arctic is imperative because no single department, federal or territorial, works independently in the north; collectively, success will be achieved and the Government of Canada’s mandate

will be fulfilled,” Brigadier-General Chris Whitecross, the Commander of Joint Task Force North (JTFN), noted in 2007, when 60 representatives of federal and territorial departments and agencies, as well as non-governmental organizations, attended the spring meeting in Whitehorse.²⁹

By bringing together national and regional stakeholders with a strong sense of operational realities in the Arctic, the ASWG is an excellent example of how enhanced mutual understanding and awareness through Whole of Government practices strengthen government capacity. This important coordination group “allows for each department to educate the other members about security issues that they have experienced,” political scientist Rob Huebert has noted. “In this manner, it has also proved beneficial in providing for the coordination of policy and planning activities.” By 2006, he concluded that “these meetings have had three major impacts on the renaissance of Canadian Arctic security policy.” First, they encouraged participants to develop an awareness of their respective roles and responsibilities and, by extension, to build relationships. Second, the meetings enhanced coordination between officials, serving as a catalyst for joint exercises. Third, the meetings serve an educational function, with “presentations by experts from academia, business, foreign countries, NGOs, and other government departments dealing with new and emerging threats, as well as security challenges in the north,” providing ASWG members with “an opportunity to discuss and debate the issues as they are put forward.”³⁰ These observations remain applicable and relevant a decade later, with ASWG providing a forum for networking and sustained engagement that has fostered strong relationships between key security stakeholders, thus shaping the Arctic security environment (broadly defined). Presentations and discussions facilitate information exchange and improved situational awareness, allowing members to identify areas of common interest and to develop synergies across departments. This promotes a “community of competence” that encourages members to consider proactive, comprehensive, and integrated approaches to managing an evolving risk environment. Through contacts made at the meetings, ASWG members can choose to collaborate, either formally or informally, to anticipate emerging requirements and realize common goals.

“The ASWG has been instrumental in providing understanding of the scope and magnitude of Arctic challenges from a pan-government viewpoint,” one member noted in a 2011 ASWG survey. “There is no other forum that I have seen which does so much to synchronize governments in understanding and solving issues.” Another respondent explained that “it also provides northerners with an opportunity to influence federal policy-makers with regard to the northern perspective on issues facing the north.”³¹

ASWG meetings have continuously reaffirmed the central importance of building and maintaining relationships with local and regional governments in the North. “The needs of the North’s residents have often been overlooked in discussions about emergency management in the region,” a recent study concluded. Participants in a series of roundtables on the issue “expressed a desire to reorient the discussion towards the needs of those who live there.”³² Northern governments and other stakeholders must be actively involved in planning and preparations to deal with threats and crises that affect Northerners most directly. In the North, this often requires a decentralized or dispersed approach, given cultural, geographical, and demographic differences and the diversity of approaches across or within the territories. Accordingly, jurisdictional complexity requires regular discussion and coordination between responsible organizations, including national-level responders who are responsible to serve all parts of Canada.³³ This makes it important for national policy-makers to engage with territories to develop robust emergency management plans, network with officials at the community level, and “empower community governments to establish efficient and relevant decision-making processes, and ... actively support communities in becoming involved in all aspects of emergency management,” explains Eric Bussey, who served as the senior emergency management official for the Government of the NWT for more than two decades. “Building capacity in the community must become a cornerstone” of any emergency management strategy.³⁴

Relationships with Inuit and other Aboriginal peoples in the North are also pivotal to effective operations. After all, as Inuit leaders have repeatedly

emphasized, “sovereignty begins at home.”³⁵ Northern peoples see the region as a homeland and, through the Canadian Rangers and other activities, are active participants in Northern defence and security.³⁶ Given the demographics of the Territorial North, with Aboriginal peoples making up the majority of the population in isolated regions (particularly beyond the road network), this is a practical reality. Furthermore, Aboriginal peoples across the North have negotiated land claims and self-government agreements that include provisions for land ownership, protections for traditional ways of life, participation in land and resource management decisions, and a host of regional and local governance rights (amongst other things). These agreements often include clauses specifying the process for securing consent to settlement lands for military exercises.³⁷ On both moral and legal levels, the CAF has a responsibility to engage with appropriate Aboriginal governing bodies prior to, during, and following operations, exercises, training, and other military activities in order to comply with the Crown’s obligations.³⁸

In light of the government’s limited resources and the inherent constraints of operating in austere northern environments, the military must also be aware of and prepared to work with non-governmental organizations (NGOs) with interests and capacities to assist with emergencies. Examples include the Canadian Red Cross, the Civil Air Search and Rescue Association (CASARA), the Canadian Coast Guard Auxiliary (CCGA), and the Search and Rescue Volunteer Association of Canada (SARVAC). Furthermore, the military notes “opportunities to interact with and foster partnerships with elements of the mining, transportation and natural resources industries,” given the resources that stakeholders in these sectors have in place in the region. Relationships with the science and technology communities can also yield new insights and tools to respond to operational challenges in a changing climate and a fragile environment with limited infrastructure.³⁹ In short, “integration is a shared responsibility undertaken by the entire community,” Bussey observes; “it is most effective if based upon cooperation from within and outside of government.”⁴⁰

The Government of Canada's Northern Strategy also emphasizes the importance of international relationships to exerting effective leadership that promotes a prosperous and stable Arctic region based on Canadian interests and values. Defence assessments conclude that legal (sovereignty) disputes in the Arctic are not an impediment to cooperation with other Arctic countries and have no defence implications. Accordingly, Canada's comprehensive approach to Arctic defence, security, and safety benefits from relationships with its allies and circumpolar neighbours.

First and foremost, the United States represents Canada's "premier partner" in the Arctic. Although popular and public rhetoric in Canada often suggests that the region represents a major source of tension between the two close allies, Canada and the United States have enjoyed a long history of Arctic collaboration through bilateral defence and security agreements, as well as in science and technology, environmental protection, infrastructure development, and surveillance. Canadian hypernationalism and America's global geopolitical interests often obscure this enduring partnership. Brought into dialogue, the two countries' evolving strategies and overarching national security objectives are well aligned; both emphasize the advancement of security interests, pursuit of responsible stewardship, and strengthened international cooperation to "contribute to a peaceful, stable, and conflict-free Arctic Region."⁴¹ In both countries, official statements now give significant weight to environmental, economic, human and cultural security considerations and the importance of integrated strategies rooted in inter-agency/departmental and international collaboration.⁴² Given the many key bilateral agreements in place, including the *Canada Command and United States Northern Command Civil Assistance Plan*, the *Agreement between the Government of Canada and the Government of the United States on Cooperation in Comprehensive Civil Emergency Planning and Management*, and the *Tri-Command Arctic Framework*, there is no question that American partners will factor prominently when Canadian authorities respond to emergencies or crises in the Arctic.

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Canada's relationships with the seven other Arctic states also represent opportunities to improve interoperability, leverage resources, share knowledge, and promote regional confidence-building. The Arctic Council serves as the primary forum for the eight Arctic nations to coordinate research and cooperate on issues of mutual concern and, while it does not have a defence mandate (which is explicitly excluded from its founding principles), safety and security issues (which may involve military support to civilian organizations) remain within the scope of its activities. Along these lines, Canada negotiated and signed a search and rescue agreement with its Arctic Council partners in May 2011, and then hosted the first Arctic SAR table top exercise to implement the agreement later that year. Since that time, Canada and the other Arctic states have taken steps to enhance SAR capabilities within their assigned areas of operational responsibility, as well as improving their collective ability to integrate international assets in a larger event. Along similar lines, the annual Northern Chiefs of Defence (CHODs) meetings (held from 2012-14) facilitated high-level multilateral and bilateral discussions between military leaders of the eight Arctic states on issues related to safety and security.⁴³ In practical terms, Canada has also invited representatives from the other Arctic states to observe and/or participate in Northern operations and exercises, and Joint Task Force (North) in Yellowknife is enhancing its relationship with Denmark's Joint Arctic Command, its counterpart command in Greenland.⁴⁴

These relationships, which not only span the federal family but extend into other Canadian and international jurisdictions, have become a central component of Canada's defence and security posture in the North. Designing operational frameworks to accommodate various levels of interaction and cooperation amongst a wide spectrum of actors, and allocating or procuring the assets (both materiel and human) intended to work in a WoG context is the first step. Exercising it is the second. In recognition of this requirement, the military has incorporated OGDs into its northern exercises beginning in the mid-2000s to build the lines of communication, trust, and robust relationships crucial to developing and implementing a practical WoG capability.

Practicing WoG Operations

The CAF recognized this practical requirement early in its recent return to the North. During the Operation *Narwhal* (2002 and 2004) the navy made tentative efforts to develop its relationship with the Coast Guard and the RCMP. In 2005, the CAF attempted its first significant WoG operation during Operation *Hudson Sentinel*. At the time, the Department of National Defence was experimenting more broadly with a WoG framework for international operations and it seemed an appropriate fit to dealing with “asymmetric” threats, such as pandemics to terrorism.⁴⁵ Operation *Hudson Sentinel* was a baby step, however, since collaboration was largely limited to the RCMP and the Coast Guard. Still, it demonstrated the increasing importance being placed by the CAF on “combined” efforts.⁴⁶

The CAF’s 2006 deployment, Operation *Lancaster*, was the largest in nearly three decades and inter-departmental cooperation was a core component.⁴⁷ As the mission’s operational order phrased it, *Lancaster* would exercise “the synergistic relationship that must be established to react effectively to a vast majority of the contingency response situations that may arise.”⁴⁸ In perfect business jargon, the order conveyed the then accepted fact that any scenario likely to arise in the Arctic requiring CAF action, would place the force in a supporting role to civilian departments. During the operation, HMCS *Montreal* worked with personnel from the Coast Guard, RCMP, Public Safety, Emergency Preparedness Canada (PSEPC), and Parks Canada.⁴⁹ It marked the first concerted effort to integrate OGDs into the CAFs plans and to undertake, not just a joint operation, but an “integrated” one as well.

In practice, *Lancaster* was far from a fully integrated WoG operation. Rather, it was a military exercise with OGDs “represented to a lesser degree during different stages during the operation.”⁵⁰ How the OGDs were supposed to integrate themselves into the military command structure and what they were supposed to contribute remained uncertain. Some representatives from the civilian agencies, with nothing to do, simply left early.⁵¹ From 2006 onwards the time, energy, and resources invested into WoG exercises and operations

have increased. From the CAF's standpoint, these activities are intended to develop the military's capacity to operate in the North, providing training and experience, validating emerging capabilities, and deterring the emergence of a military threat in the region. Furthermore, these exercises and operations allow the military to meet its ongoing commitments, such as search and rescue, NORAD, and all-domain surveillance, that span the safety-security-defence continuum. WoG scenarios encourage the military to more effectively respond to contingencies by better communicating and operating with OGD and allied partners to achieve common goals, missions, and tasks. These exercises are also "designed to build relationships, establish conditions for partnership, and/or build capacity with partners or regions of choice."⁵²

The largest annual Arctic exercise is Operation *Nanook*, an integrated WoG exercise designed to refine interdepartmental coordination and establish a comfortable working relationship between key stakeholders, so as to avoid uncertainty and friction in the event of an emergency in the Far North. These \$10 million exercises⁵³ bring these partners together to rehearse integrated responses to likely scenarios requiring CAF assistance, such as: counter drug operations, oil spill response, hostage taking, shipboard fire response, criminal activity, disease outbreak, crashed satellite recovery, and grounded vessels. WoG is more than a component of the *Nanooks*, it is their *raison d'être*,⁵⁴ and the amount of money being put into them is indicative of the importance of broad-based Arctic operations.

The *Nanook* operations continued the slow process of building interdepartmental linkages with varying degrees of success. In 2007, the CAF was attempting to integrate OGD into every scenario being rehearsed.⁵⁵ Those scenarios were also designed to rehearse realistic security threats that the CAF would not be the lead agency in confronting. Drug-interdiction (for which the RCMP would be the lead) and an oil-spill response (for which the Coast Guard would assume the lead) were the two major components of *Nanook* 2007. In 2008, the operation focused on humanitarian assistance and disaster relief and, again OGD participation was – according to Brigadier General

David Millar – “maximized” with JTFN playing a “supporting role.”⁵⁶ In a separate report, Lt Colonel R.E. Wuerth of 440 (Transport) Squadron in Yellowknife noted that the JTFN’s “centre of gravity” had become its relationships with other government agencies and industries operating in the North.⁵⁷ While there was clear improvement in communication and inclusion, OGD officials point out that the CAF still conducted the orchestra and the OGD, who would have to lead a response to real-world events, often remained spectators or supporting players.⁵⁸

From 2008 to 2010, interdepartmental cooperation and communications appears to have genuinely improved, largely as a result of Brigadier General David Millar’s efforts as Commander of JTFN – emphasizing the importance of personnel initiative and connections.⁵⁹ While the OGD role was steadily increasing, operational friction continued to prevent really smooth integration. During Operation *Nanook* 2010 the CAF, focused its energy again on an oil spill scenario in an effort to identify equipment interoperability issues and departmental capability gaps that could be bridged by CAF assets.⁶⁰ The exercise achieved its objectives but, even after three years, there were significant gaps in the planning processes and synchronization of training objectives that prevented many OGD from fully integrating into the scenarios.⁶¹ In large part this deficiency was due to the differences in approach to *Nanook* taken by the CAF and by OGD. While the military has personnel dedicated planning and executing training exercises, many OGD lack the requisite budget and human resources. Instead, many civilian departments are forced to liaise and plan for these operations “off the side of their desks.”⁶²

The difference in resources available to the CAF and OGD to exercises remains one of the most serious impediments to WoG training and DND after action reports continue to highlight the need to involve OGD early in the planning process to ensure the civilian departments have the time to organize themselves and participate.⁶³ These differences in funding are matched by equally significant difference in planning processes, reporting structures, and corporate culture. Civilian departments traditionally do not “exercise” in the way the

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military does and lack the doctrine and tradition that the CAF uses to frame its intent and requirements from *Nanook* and other northern exercises. Likewise, the slower and more consultative style of decision making employed by most OGD is alien to the CAF and integrating these cultures and operating styles continues to cause problems and prevent WoG from really working as intended.⁶⁴ As such, *Nanook* and WoG operations in the Arctic remain a work in progress. There have been successes and real progress has been made over the past decade (see figure 1.3), however significant issues remain in establishing lines of communication and harmonizing operational styles and corporate cultures.

Figure 1.3: Operation Nanook Mission History, 2007-14⁶⁵

Year	Location	Mission
2014	Baffin Island region	<p>A search and rescue exercise was held in Davis Strait featuring a simulated fishing vessel in distress. The Joint Rescue Coordination Centre in Halifax was supported by HMCS <i>Shawinigan</i>, HMDS <i>Triton</i> (Danish Navy), and the CCGS <i>Henry Larsen</i> with associated aircraft.</p> <p>Canadian Armed Forces members also responded to a simulated 50 passenger cruise ship grounded due to mechanical difficulties in York Sound. The CAF deployed a major air disaster kit and worked with OGDs in its response.</p>
2013	Whitehorse; King William Island; Resolution Island; Cornwallis Island	<p>In Whitehorse, the CAF provided the Government of Yukon with disaster relief support as the result of a simulated wildfire threatening Whitehorse.</p> <p>The CAF also rehearsed support for Environment Canada on Cornwallis Island after a report of suspected poaching activities in the area.</p> <p>On Resolution Island the CAF worked with the RCMP to investigate simulated suspicious</p>

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		activity. On King William Island the Canadian Rangers conducted simulated patrols to report on activity in the Northwest Passage.
2012	Mackenzie Delta region; Hudson Bay/Strait	<p>In the Mackenzie Delta, CAF air and land forces worked with the RCMP and other OGD in a simulated security incident.</p> <p>In the eastern scenario, an RCMP-led WoG response to a simulated “vessel of interest” included a request for military assistance. International participants on Operation NANOOK 2012 included: a warship from the Royal Danish Navy, a U.S. Coast Guard vessel, and observers from the United Kingdom and the United States.</p>
2011	Cornwallis Island to Davis Strait	<p>This was a two phase operation. The first, conducted in cooperation with international partners from the United States and Denmark, included sovereignty and presence patrolling ashore on Cornwallis Island and at sea in Davis Strait, Baffin Bay and Lancaster Sound, and the first deployment of a UAV in the High Arctic.</p> <p>The second was an exercise using an air-disaster scenario but was cancelled to allow the engaged forces to respond to a real crisis. On August 21, First Air Flight 6560 crashed near Resolute Bay and CAF forces were first on the scene, and remained to assist the federal, territorial, and municipal authorities throughout the rescue and recovery operations.</p>
2010	Cornwallis Island to Baffin Bay	<p>This operation was divided into military (Exercise <i>Natsiq</i>) and WoG (Exercise <i>Tallurutit</i>) components.</p> <p>During <i>Natsiq</i>, an oil spill response scenario in Resolute Bay included participation by the Royal Danish Navy and the US Navy as well as over 12 Canadian governmental departments and agencies. It aimed primarily at training Canadian Rangers</p>

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		<p>and community volunteers to respond to such events and work with domestic and international partners.</p> <p>During <i>Tallurutiit</i> the CAF, with support from the CCG, deployed ARCG soldiers to Resolute Bay, Pond Inlet and Bylot Island. The RCN deployed three ships to Davis Strait, Baffin Bay, Navy Board Inlet, Admiralty Inlet, and Jones Sound.</p>
2009	Southeastern coast of Baffin Island	This operation included sovereignty patrolling, an anti-submarine warfare exercise, and WoG exercises involving more than 15 OGD. The CAF practiced an amphibious landing on Resolution Island in search of a suspected downed UAV as well as diving operations in the area.
2008	Southern Baffin Island	Scenarios undertaken focused on simulated maritime emergencies, including the evacuation of a cruise ship in distress and an oil spill.
2007	Southern Baffin Island	Included drug-interdiction and oil-spill scenarios that involved about 650 Canadian Armed Forces personnel, two surface ships, a submarine, and four types of aircraft.

Conclusions

Lieutenant-Colonel (LCol) Richard Roy, the former special advisor on the comprehensive approach to operations in the Chief of Force Development office, observed that “there is growing acknowledgement [in the federal government] that in current and future security environments, the nature of these issues is such that on its own, no single agency, government or regional organization is able to provide durable and sustainable solutions. While military forces will often be an important component, ... wider participation is necessary and these issues must be solved collectively.”⁶⁶

This is an important consideration, given that Arctic sovereignty, security and safety issues are hardly the sole preserve of the military, and the CAF alone cannot answer the myriad challenges associated with the changing Arctic in the twenty-first century. Accordingly, a “Whole of Government” or comprehensive approach to Arctic operations, involving military and civilian actors, is essential to respond effectively in a complex, adaptive system like the Arctic. The emphasis is no longer primarily on traditional military threats, with official assessments consistently emphasizing that there is a low probability of state-to-state armed conflict breaking out in the Arctic. Instead, increased activity in the North is expected to bring unconventional security challenges: more illegal fishing, maritime and aerospace accidents, dumping, pollution, trespassing, and criminal activity.

Arctic operations present a unique series of challenges to the Canadian Armed Forces and the other government departments and agencies tasked with enforcing Canadian sovereignty, maintaining security, and ensuring safety in the region. The climate and terrain are unforgiving, distances huge, logistics difficult, and infrastructure minimal. Everything done in the Arctic is constrained by these factors and, invariably, is more expensive because of them. As such, Canada faces the awkward task of having to increase its capabilities in the region in anticipation of new threats that span the security spectrum, and all on a limited budget. This complex and ever-evolving Arctic security environment gives rise to various risks, as the Chief of Defence Staff/Deputy Minister directive noted in 2011:

- a) Government of Canada programs, including those of Defence, may not be able to keep pace with environmental changes and other ongoing developments in the North;
- b) In the short term, situational awareness in the North may not be developed quickly enough to support Defence planning or enhanced responsiveness to a growing number of emerging situations resulting from increased activity in the North;
- c) New interpretive frameworks are essential to be able to respond

effectively to changes occurring in the region. Until these frameworks have been established, understanding what is happening in the North, and providing options on how best to respond to crises or emerging challenges to Canadian safety and/or security may be difficult; and

- d) While other government departments and agencies, such as the Canadian Coast Guard and the Royal Canadian Mounted Police, remain at the forefront for dealing with security issues in the North, Defence will have a significant role to play in supporting their activities. However, a lack of integration could hinder an effective collective response to a crisis or emergency.⁶⁷

Planning and preparations are complicated by the anticipation that these threats will be unconventional security- and safety-oriented, rather than conventional state-based military ones. Thus, while DND/CAF possesses much of the capacity and many of the resources – in terms of platforms, assets, and money – it does not have the primary mandate to respond to most of the anticipated challenges and dangers in the Arctic region. Rather than lead the effort to “defend” Arctic sovereignty (which is a problematic concept in its own right), the military will have to take on a support role when it comes to exercising and enforcing Canada’s longstanding and well-established sovereignty in the region. This support is crucial to enabling other government departments and agencies, as well as territorial governments and local stakeholders, to fulfill their security and safety mandates. At the same time, the Canadian Armed Forces will be expected to “show the flag” and demonstrate acts of effective control that are central to political perceptions of Canadian sovereignty and security.

Preparing for this role has required investments in new equipment, training, and operations—as well as in improving horizontal relationships within the federal family and with Northern stakeholders. Efforts to integrate specialized national, regional, and local capacities, so that planners can most rationally and effectively mobilize existing capabilities (and identify gaps and seams to fill), have been well placed. Given the challenges associated with the climate,

distance, lack of resources, and economies of scale in the region, the need to coordinate activities and seek opportunities for collaboration is essential to enable effective future operations. Furthermore, given the broad Northern Strategy objective to “[help] the North realize its true potential as a healthy, prosperous and secure region within a strong and sovereign Canada,” a focus on building regional and local capacity, better connecting Northerners and Southerners, and ensuring that strong, positive relationships animate activities in the region, is imperative. In our assessment, a Whole of Government approach, with the military “leading from behind” when necessary, provides the right foundation for future investments in Canadian Arctic defence and security so that the Government of Canada, territorial and local governments, and Northerners themselves can respond to threats, emergencies, or crises in an efficient, effective, timely, and credible manner.

Notes

¹ Stephen Harper, “Harper Stands Up for Arctic Sovereignty,” Address by the Hon. Stephen Harper, Leader of the Conservative Party of Canada (December 22, 2005).

² Speech from the Throne to Open the Second Session of the 39th Parliament of Canada, Parliament of Canada (October, 2007).

³ For instance, Canada and the US continue to dispute a maritime boundary in the Beaufort Sea, Canada and Denmark both claim tiny Hans Island, and Canada, Denmark, and Russia are expected to file competing claims to sections of the Arctic continental shelf.

⁴ Ilulissat Declaration, adopted at the Arctic Ocean Conference hosted by the Government of Denmark and attended by the representatives of the five coastal states bordering on the Arctic Ocean (Canada, Denmark, Norway, the Russian Federation and the US) held at Ilulissat, Greenland, May 27-29, 2008. The declaration stated that all states will adhere to the existing legal framework to settle overlapping claims. For access to the national Arctic strategies and statements from the Arctic states, see Arctic Council Document Archive, “Arctic Strategies,” <http://www.arctic-council.org/index.php/en/document-archive/category/12-arctic-strategies>.

⁵ Pierre-Henry Deshayes, “Arctic Threats and Challenges from Climate Change,” *Agence France-Presse* (December 6, 2009).

⁶ Chief of Force Development, *Arctic Integrating Concept* (Ottawa, 2010), 23-24; Chief of the Defence Staff/Deputy Minister Directive for DND/CF in the North (2011), appendix A: 1-2.

⁷ *Arctic Integrating Concept*, 10. Federal OGDs include Public Safety Canada (PS); Environment Canada (EC); Royal Canadian Mounted Police (RCMP); Canadian Coast Guard (CCG); the Department of Fisheries and Oceans (DFO); Canadian Security and Intelligence Service (CSIS); Transport Canada (TC); Aboriginal Affairs and Northern Development Canada (AANDC); the Department of Foreign Affairs, Trade and Development (DFATD); and the Canadian Northern Economic Development Agency (CanNor). See appendix A to this chapter for more details.

⁸ Canadian Joint Operations Command, *CJOC Plan for the North* (January 2014), 6.

⁹ Minister of Indian Affairs and Northern Development (MIAND), *Canada’s Northern Strategy: Our North, Our Heritage, Our Future* (Ottawa: Indian and Northern Affairs Canada, 2009) and CDS/DM Directive 2011, 5-6.

¹⁰ Department of National Defence, *Canada First Defence Strategy* (Ottawa, 2008), 7-8.

¹¹ MIAND, *Canada’s Northern Strategy*.

¹² Department of Foreign Affairs and International Trade (DFAIT), *Statement on Canada’s Arctic Foreign Policy* (Ottawa, 2010), 4.

¹³ For examples of this debate, see Franklyn Griffiths, Rob Huebert and P. Whitney Lackenbauer, *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011); Frédéric Lasserre, Jérôme Le Roy, and Richard Garon, “Is There an Arms Race in the Arctic?,” *Journal of Military and Strategic Studies* 14, no.3-4 (2012); and Elana Wilson Rowe, “A Dangerous Space? Unpacking State and Media Discourses in the Arctic,” *Polar Geography* (2012).

¹⁴ For the essential elements of this early debate, see Huebert, “Climate Change and Canadian Sovereignty in the Northwest Passage.” *Isuma: Canadian Journal of Policy Research* 2, no. 4 (2001): 86-94; Griffiths, “The Shipping News: Canada’s Arctic Sovereignty Not on Thinning Ice.” *International Journal* 58, no. 2 (2003): 257-282; and Huebert, “The Shipping News Part II: How Canada’s Arctic Sovereignty is on thinning ice.” *International Journal* 58, no. 3 (2003): 295-308.

For updated debates, see Griffiths, Huebert and Lackenbauer, *Canada and the Changing Arctic*.

¹⁵ Arctic Council, *Arctic Marine Shipping Assessment* (2009). See also P. Whitney Lackenbauer and Adam Lajeunesse, *On Uncertain Ice: The Future of Arctic Shipping and the Northwest Passage* (Calgary: Canadian Defence & Foreign Affairs Institute Policy Paper, December 2014).

¹⁶ J.T. Sheahan and P.J. Gizewski, “Land Force Operating Concept 2021” (January, 2011), 1. For a more detailed description of the comprehensive approach, see Bill Bentley and Grazia Scoppio, *Leading in Comprehensive Operations* (Kingston: Canadian Forces Leadership Institute Monograph 2012-02), 2-4.

¹⁷ *Arctic Integrating Concept*, 10

¹⁸ *Canada First Defence Strategy*, 4, 9, 14.

¹⁹ Statement on Arctic foreign policy, 6

²⁰ *Arctic Integrating Concept*, ix, 10, 23.

²¹ The exception is search and rescue, where DND has the lead for coordinating air and maritime SAR and providing aeronautical SAR.

²² Lackenbauer, *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World* (Toronto: Canadian International Council, 2009).

²³ E.B. Wang, “The Role of Canadian Armed Forces in Defending Sovereignty: A Paper by E.B. Wang, 30 April 1969,” ed. P. Whitney Lackenbauer, *Journal of Military and Strategic Studies*, vol. 11, no. 3 (2009): 22-23. National Defence’s reference to “presence” in its defence objectives seemed to imply that the government’s concept of sovereignty was static and symbolic, not functional. Wang insisted that the Canadian government should identify and define specific national interests, such as anti-pollution and safety of navigation, and shape policy to protect them. The military’s fixation on presence and surveillance was inconsistent with this approach. In the ensuing years, the Legal Division at External Affairs also took issue with National Defence reports and policy statements that confused “the problematic enforcement of Canada’s jurisdictional claims in the Arctic waters with the problem of the legal basis for those claims.” In short, a military presence did nothing to establish the “legal validity of Canada’s claims” in the Arctic. Memorandum, DEXAF, Legal Division, “National Defence Paper on ‘Canadian Defence Policy in the 1970’s,’” 5 August 1970, LAC, RG 25, vol. 10322, file 27-10-2-2 pt.1. For an expanded discussion, see Lackenbauer and Peter Kikkert eds., *The Canadian Forces & Arctic Sovereignty: Debating Roles*,

Interests and Requirements, 1968-1974 (Waterloo: Wilfrid Laurier University Press, 2010).

²⁴ See, for example, Klaus Dodds, "Graduated and paternal sovereignty: Stephen Harper, Operation Nanook 10, and the Canadian Arctic" *Environment and Planning D: Society and Space* 30, no.6 (2012): 989–1010, and P. Whitney Lackenbauer, "Use It or Lose It," History, and the Fourth Surge." *The Calgary Papers in Military and Strategic Studies* 4 (2011), 423-36.

²⁵ *Statement on Canada's Arctic Foreign Policy*, 5.

²⁶ See Donat Pharand, "The Arctic Waters and the Northwest Passage: A Final Revisit," *Ocean Development and International Law* 38:1 (2007), 7.

²⁷ *Arctic Integrating Concept*, 49.

²⁸ Derived from *Arctic Integrating Concept*, 53-60; *CJOC Plan for the North*, 19-23; and federal departmental websites.

²⁹ JTFN News Release NR-07.005, "16th Meeting of the Arctic Security Working Group" (May 16, 2007).

³⁰ Rob Huebert, "Renaissance in Canadian Arctic Security?." *Canadian Military Journal* (Winter 2005-06), 22-23.

³¹ ASWG Survey (2011), copy in the possession of the authors.

³² Munk-Gordon Arctic Security Program, *National Roundtable on Arctic Emergency Preparedness: Report on Proceedings* (March 2014), 3.

³³ Munk-Gordon Arctic Security Program, *National Roundtable*, 13.

³⁴ Eric Bussey, "A Search for Relevant Factors in Determining Effectiveness in Emergency Management Organizations in Remote, Isolated Jurisdictions" (unpublished M.A. thesis, Royal Roads University, 2009), 83-84.

³⁵ On Inuit views on sovereignty and security, see Inuit Tapiriit Kanatami, *Nilliajut: Inuit Perspectives on Security, Patriotism, and Sovereignty* (Toronto: Walter & Duncan Gordon Foundation, 2013) and Inuit Circumpolar Council (Canada), *The Sea Ice Never Stops: Circumpolar Inuit Reflections on Sea Ice Use and Shipping in Inuit Nunaat* (Ottawa: ICC, 2014).

³⁶ On the Canadian Rangers and Northern peoples' participation in regional security more generally, see Lackenbauer, *The Canadian Rangers: A Living History* (Vancouver: UBC Press, 2013).

³⁷ See, for example, Inuvialuit Final Agreement, 7(17). On this theme, see also Barry Zellen, *Breaking the Ice: From Land Claims to Tribal Sovereignty in the Arctic* (Lanham, MD: Lexington Books, 2008), 244-70.

³⁸ See, for example, *CJOC Plan for the North*, 9.

³⁹ Canadian Forces Northern Employment and Support Plan (November 2012), 16-17.

⁴⁰ Bussey, “Search for Relevant Factors,” 85.

⁴¹ *The United States Navy Arctic Roadmap for 2014 to 2030*. Washington: Chief of Naval Operations, February 2014: 6.

⁴² See Lackenbauer and Rob Huebert, “Premier Partners: Canada, the United States and Arctic Security.” *Canadian Foreign Policy Journal* 20/3 (Fall 2014): 320-33.

⁴³ These meetings were suspended in light of Russian aggression in Ukraine.

⁴⁴ *Canadian Forces Northern Employment and Support Plan* (November 2012), 18.

⁴⁵ DFAIT, *International Policy Statement – Defence* (Ottawa, 2005), 17, 26.

⁴⁶ Read Admiral DG McNeil, “Joint Task Force Atlantic, Operations Order 21/05 – Operation Hudson Sentinel 05,” July 21, 2005.

⁴⁷ Colonel CT Whitecross, “Operation Order 004/06 – Operation Lancaster,” August, 2006.

⁴⁸ L.Col. P Keddy, “Operation Order 001 – OP Lancaster” (July 21, 2006)

⁴⁹ Paul Dempsey and Dr Edna Keeble, “Dodging Icebergs and Talking Policy: HMCS *Montréal*’s 2006 Northern Deployment,” *Canadian Naval Review* 2:4 (Winter 2007), 22.

⁵⁰ Colonel CT Whitecross, “Operation Lancaster 2006 Post Activity Report,” December 15, 2006.

⁵¹ Interview with OGD official, Yellowknife, May 30, 2014.

⁵² *CJOC Plan for the North*, appendix A1, 1-2.

⁵³ Katrina Clarke, “Canadian Forces to Ground Cruise Ship near Iqaluit in \$10-Million Rescue Exercise,” *National Post* (August 13, 2014).

⁵⁴ “Exercice Nanook 07 – Post Exercice Report,” (2007).

⁵⁵ “Exercise Nanook 07 – Post Exercise Report,” (2007).

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⁵⁷ Lt. Colonel RE Wuerth, “440 SQN Warning Order – Op Nunavivut 08” (January 10, 2008).

⁵⁸ Interview with an OGD official involved in Operation *Nanook* 2008, conducted on May 30, 2014.

⁵⁹ Interview with an OGD official, undertaken in March 25, 2015.

⁶⁰ BGen J.R. Hamel, "Operation Nanook 2010 After Action Report" (December 8, 2010)

⁶¹ BGen J.R. Hamel, "Operation Nanook 2010 After Action Report" (December 8, 2010)

⁶² Interview with an OGD official, undertaken in March 25, 2015.

⁶³ BGen L.E. Thomas, "CJOC HQ Lessons Learned First Impressions Report OP Nanook 13" (December 10, 2013).

⁶⁴ Interview with OGD official, Yellowknife, May 30, 2014

⁶⁵ Canada, Department of National Defence, "Operation Nanook," <http://www.forces.gc.ca/en/operations-canada-north-america-recurring/op-nanook.page> and the Munk Gordon Arctic Security Program, "Operation Nanook," <http://gordonfoundation.ca/sites/default/files/images/Operation%20NANOOK.pdf>

⁶⁶ Roy quoted in Bentley and Scoppio, *Leading in Comprehensive Operations*, 3.

⁶⁷ CDS/DM Directive 2011, 10.

2

Arctic Sovereignty and International Law

Shelagh D. Grant

Rarely a week goes by without reference in the news to “Arctic sovereignty.” Yet few Canadians have given much thought as to exactly what it entails and why it is important for the future prosperity of circumpolar countries. Even fewer have considered the role played by international law in maintaining peace and stability in the region and whether it will continue to do so in the years ahead.

By current definition, “Arctic” countries are those having lands at or above the Arctic Circle, notably Canada, Russia, Denmark (representing Greenland), the United States (because of Alaska), Norway, Sweden, Finland and Iceland. Each acquired title to their Arctic lands at different times and often by different means. At the turn of the 21st century, all seemed secure in the belief that their right to assert sovereign authority was protected by international law and reinforced by close cooperation of the eight Arctic countries represented on the Arctic Council.¹

The situation changed when the warming trend in the Arctic caused a rapid melt of the sea ice. With the opening of new sea routes and greater accessibility to Arctic resources, the once secure rights of the Arctic countries suddenly faced new challenges. Hence, even before Russia’s intervention in the Ukraine, there were already signs of increasing militarization as individual Arctic coastal states resorted to unilateral measures to protect their sovereign authority.

The meaning of the word ‘sovereignty’ itself also changed over time and has taken on a variety of meanings in recent years. For purposes here, I refer to three definitions. The first – *de jure* sovereignty – is a term used in

international law and defined as having supreme power or title over a specific territory by political or legal right, recognized by other nations. *De facto* sovereignty, on the other hand, is a generic or general term referring to having power—“in fact” or in real terms -- but usually without the political or legal right inherent in *de jure* sovereignty. This term is often applied in the negative, as in the case of a loss of economic, political, or military control by a sovereign nation. The colloquial term “paper sovereignty” refers to a situation whereby two nations have signed an agreement officially recognizing one nation’s sovereign rights, even though the other nation may have “*de facto*” power or influence that diminishes the sovereign nation’s ability to exert full control.²

The first to arrive to the North American Arctic were Palaeo-Eskimos who migrated westward from Siberia across the ice on the Bering Strait around 4000 years ago, eventually reaching as far as Greenland. Over time, other migrants would follow, each with distinctive cultural attributes. The last to arrive were whale hunters from Alaska between 1000 and 1250 AD. Referred to as Thule Inuit, they had superior means of travel and weaponry, and eventually displaced existing indigenous peoples.³

Yet long before the Thule Inuit reached Greenland, Europeans had already settled in the southern portion of the island. They were Norwegian Vikings arriving from Iceland around 986 AD – over 250 years before the Thule Inuit and 500 years before Columbus allegedly discovered America. They established two large farm colonies which were overseen by a Catholic Bishop reporting to Rome. These were locally governed, but paid taxes to the King of Norway and were dependent upon trade with the Bergen merchants. At their peak, the two colonies were believed to have a combined population of over 3,000, a sizable number by New World standards. Yet by 1450 AD, the Viking farmers had disappeared without a trace. Inuit oral history suggests that when ships stopped arriving from Norway, the farmers were unable to prevent rape and pillage by foreign fishermen.⁴

Neither the Palaeo-Eskimos nor the Viking farmers survived the Little Ice Age, but the Thule Inuit did and are considered to be the ancestors of present day Inuit. The concept of sovereignty was unknown to the Inuit; their lands and waters were considered simply homelands, but the location would shift as they travelled in search of new sources of food and clothing.

Prior to the early nineteenth century, the Arctic of the New World remained relatively unknown to most Europeans. Yet competition was fierce among whalers, especially when added benefits were earned from trade in furs and ivory. Conflicts inevitably arose over the right to establish whaling stations and trading posts.

Initially, there was no thought of creating permanent settlements in the Arctic after the debacle of Martin Frobisher's alleged discovery of gold in the 1570s, but as competition increased, royal charters were granted to trading companies to protect their rights in specific areas. In 1670, for example, England granted a royal charter to a group of businessmen for all lands that drained in to Hudson Bay. In 1721, the king of Denmark/Norway granted a charter to a Lutheran missionary to create trading settlements on southern Greenland. These were re-issued until 1789 when the government took over full operation of the Royal Greenland Trading Company. And in 1799, the Russian Tsar granted a royal charter to the Russian American Company to include all of what is now Alaska.⁵

While royal charters allowed nations to stake out sovereign rights in the New World, they also met with opposition – by the French in Hudson Bay, by British and Dutch whalers in Greenland, and by British and Spanish ships in Russian Alaska. Britain and Denmark successfully used their royal navies to protect their interests, but Russia was unable to halt attacks by British ships, even after signing a treaty with Britain in 1825.⁶

Meanwhile, a rudimentary form of international law had evolved which governed the rights of nations to claim newly discovered lands. The Law of

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Nations, or international law as we know it today, was rooted in Roman Law dating back to 415 BC, also known as the Laws of the Twelve Tables. Closely paralleling the Law of Nations were the Laws of the Sea, with *Mare Liberum* referring to seas open to all nations, and *Mare Clausum*, to a closed sea under authority of adjacent nations but restricted to others.⁷

With increased exploration of the New World, the Laws of the Sea would eventually conflict with the Law of Nations requiring changes. Yet there was no attempt to codify the Law of Nations until 1632, when King Charles I of England requested terms be set down in “public writing.” And so began a series of treatises written by learned scholars, which would be tested against public acceptance and court decisions.

For the next 200 years, roughly 1650 to 1850, discovery claims of uninhabited or sparsely populated lands were considered adequate if officially declared by a nation state with sufficient naval power to protect those claims. Because of superior naval power at the end of the Napoleonic Wars, Britain was able to retain title to the Arctic Archipelago based on the numerous discovery claims made by the British Admiralty in the first half of the nineteenth century.

By 1860, Russia was virtually bankrupt after the Crimean War and unable to provide naval support to defend against further attacks on its trading posts and merchant ships. As a consequence, Russia sold Alaska to the United States in 1867 to prevent it from falling into the hands of the British.⁸ This action was perceived as a serious threat to the new Dominion of Canada established in 1867 and was still in the process of growing westward towards the Pacific. The U.S. purchase of Alaska was considered a potential threat to Britain’s title to the Arctic Islands.

Britain responded—first, in 1870 by pressuring Canada to annex the Hudson’s Bay Company’s lands, then in 1880 by transferring the Arctic Islands to Canada. As a result, the 13 year-old Dominion of Canada had mushroomed to become one of the largest countries in the world in terms of size, but with a

relatively miniscule population, and with no navy or even a government ship capable of sailing in ice infested waters to monitor its newly acquired Arctic lands.

With Britain's transfer of the Arctic Islands to Canada, there were inadvertent consequences, partly because the boundaries were not defined since the British Admiralty had no idea where they were. As a result, the British Colonial Office rejected the Canadian Government's request to legislate the transfer by an Act of Parliament, which would have required parliamentary debate and ratification. Instead, the Arctic Islands were transferred by a simple order-in-council without precise definition of their boundaries.⁹

The importance attached to discovery claims would also change. At the 1884-85 Berlin Conference on Africa, it was decreed that a discovery claim of new lands on that continent would only be considered valid if followed in reasonable time by "effective occupation." Otherwise, such a claim would be "inchoate" or temporary, thus open to challenge by other nations.

Although later interpretations of international law would modify the nature of "effective occupation" and extend the "reasonable time" requirement for remote regions, this was not the case in the early 1900s. A report on the status of the Arctic Islands by Dr. W. F. King in 1905, warned that "Canada's title to some at least of the northern islands is imperfect [and]... may be best perfected by exercise of jurisdiction where any settlement exists."¹⁰ Hence plans to establish permanent title became a high priority for Canada's Department of the Interior and later the newly formed Department of External Affairs. Government actions were also influenced by the written opinions of English scholar William Edward Hall, and after his death, by those of Lassa Oppenheim, a German born scholar living in England.

Oppenheim argued that discovery claims alone were not sufficient to maintain title to uninhabited lands, but must be followed up "within reasonable time" by "effective occupation." He claimed that this could only be accomplished by

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settlement accompanied by a formal act such as raising the flag or publishing a proclamation. Moreover, “occupation could only be accomplished by an act of a state, or performed in the service of a state, or subsequently acknowledged by a state.” Aborigines were not recognized as having any rights of ownership to their lands.¹¹

The Canadian government under Prime Minister Wilfrid Laurier took swift action. A government ship capable of sailing in Arctic waters was purchased to undertake a series of Arctic patrols from 1905 to 1911, which laid claim to the islands by raising the flag, leaving official documents in stone cairns, and taking photographs of the event.¹²

After the Great War, the Canadian government took further action, which included establishing an annual patrol and building RCMP detachments at various strategic locations, usually at the site of an existing fur trading post. A number of administrative acts were initiated, along with diplomatic negotiations to gain other countries’ acceptance of Canada’s title to the Arctic Islands.¹³

The First World War brought changes to the Arctic quite apart from aviation advances which made the region more accessible. As part of the peace process, the Permanent Court of International Justice (PCIJ) was established at The Hague in the Netherlands. The intention was to provide peaceful settlement of international disputes, based on the opinion of ten eminent jurists, elected by members of the League of Nations. As a point of interest, the Peace Palace as it was called, was purchased by and is still owned and administered by the Carnegie Foundation.

Ironically, it was only after Canada had successfully enacted a number of measures to establish permanent title to the Arctic Islands, that a new precedent was established in the 1933 judgment handed down by the PCIJ in the Norway vs Denmark dispute over ownership of northeast Greenland. In this instance, the Court granted a more lenient interpretation of the time

allowed to establish “effective occupation” and rejected Norway’s argument that Denmark’s claim to East Greenland had lapsed. As a result of this landmark case, Canada’s claims to the sparsely inhabited Archipelago were now considered secure.¹⁴

The vast majority of cases submitted to the PCIJ took place between 1922 and 1932. Unfortunately, the ability of international litigation to promote peaceful settlement of disputes required a stable situation – something that quickly disappeared when Germany again threatened aggression. The Court’s last session took place in February 1940, just before the Nazi invasion of the Netherlands.

Also concerned over signs of German aggression in the mid-1930s, American officials prepared a detailed strategy to protect the entire North American continent, including the Arctic. Thus after Denmark fell to the Germans in April 1940, the United States—although restricted by terms of the Neutrality Act—immediately assumed the right to protect Greenland citing the Munroe Doctrine as justification.

The first step was to establish the Greenland Patrol by utilizing U.S. Coast Guard icebreakers to protect the cryolite mine at Ivigtut on the southwest coast. Cryolite was a relatively rare mineral required in the manufacture of aluminum for warplanes. Abiding by terms of the Neutrality Act, selected members of the coast guard were released from service and supplied with arms to act as volunteer guards to defend the mine.¹⁵

Although the United States had been considered a potential threat to Canada’s Arctic sovereignty for the first quarter of the twentieth century, the situation reversed with the onset of the Second World War which would require close cooperation of the two countries to defend the continent against enemy invasion. Since Canada had neither the manpower, nor the financial and technical resources, the United States military would undertake the primary responsibility for construction and operation of major projects such as the

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Alaska Highway, associated airfields, oil pipelines, radar installations, radio and weather stations. Airfields and weather stations were also built in the Eastern Arctic and Greenland, to facilitate the ferrying of American built planes to Britain. At one point the number of U.S. military and civilians exceeded the population of the Yukon and Northwest Territories, prompting the media to call them “The Army of Occupation.”¹⁶

The Permanent Joint Board on Defence was the agency that coordinated approval of the projects, with a written caveat that they would not impinge on Canada’s sovereignty. This did not prevent some ‘de facto’ losses of sovereignty, whether through disregard for customs regulations, labour laws, or enforcement of US military laws on American bases located on Canadian soil.¹⁷

The Permanent Court of International Justice was officially disbanded in 1946 and replaced by the International Court of Justice (ICJ) created by the UN Charter. Sometimes called the World Court, it still operates out of The Hague and is the primary judicial branch of the United Nations. The World Court has been effective in resolving minor disputes between states over the past seven decades. In total, over 160 cases have been heard since its beginning in 1947.

The Cold War required even more advanced technologies to deal with a potential nuclear war, including sophisticated radar warning systems, ballistic missiles, nuclear powered submarines, and long range bombers. New facilities now stretched from Alaska, across Arctic Canada and Greenland. In the Canadian Arctic, approval for construction on Canadian soil was granted through the Permanent Board Joint on Defence. Initially, Canadian participation was relatively minimal at the new Arctic weather stations, airfields and radar installations (see figure 2.1), with the United States playing the major role in planning, construction and operation. Over time, however, these would revert to Canadian control based on prior agreements.¹⁸

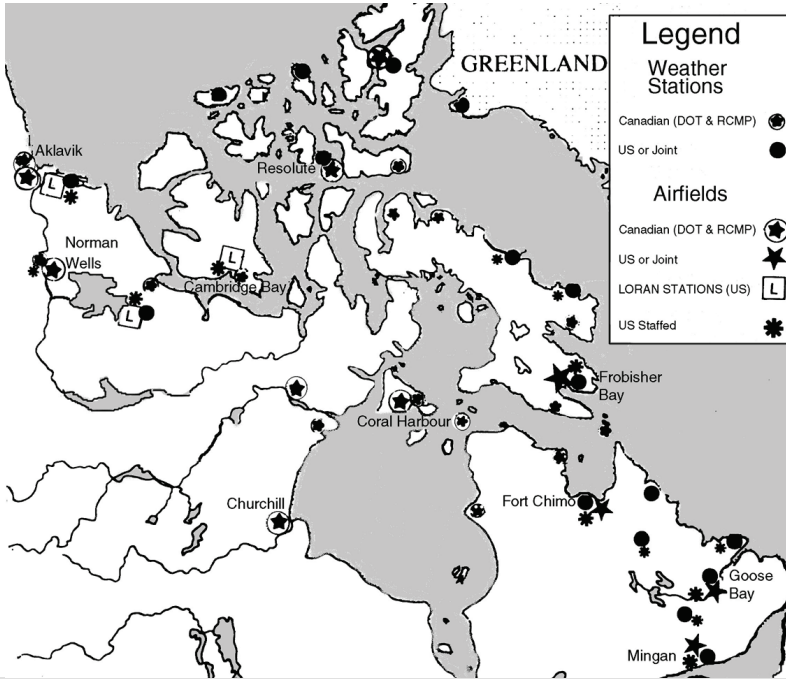


Figure 2.1: Arctic and Northeastern weather stations, airfields, Loran stations, and communications centres, summer 1948. Data from LAC, RG 2, vol. 57, file A-25-5.

To enhance Canada’s “effective occupation” the government approved the relocation of several Inuit families from northern Quebec to sites on Ellesmere and Cornwallis Island – a recommendation originating in 1920 and first implemented in 1934. At the time, this did not appear to contravene international law, but by the 1990s, the Royal Commission on Aboriginal People declared it “a travesty” and recommended a formal apology and further compensation.¹⁹

Discovery of oil in Prudhoe Bay in 1968 and the voyage of the supertanker SS Manhattan through the NW Passage in 1969 and 1970 prompted the Canadian government to pass the Arctic Waters Pollution Prevention Act (AWPPA) – a unilateral action exercised as a sovereign right to protect the Arctic environment. While there had been several efforts to codify laws of the

seas beginning in 1956, there was still a need to gain international acceptance of limits on territorial waters. Following extensive negotiations beginning in 1973, a final agreement was signed in 1982 on the United Nations Convention on the Law of the Sea (UNCLOS). Included were special provisions for Arctic coastal states because of environmental concerns, which more or less confirmed the legitimacy of the AWPPA. Terms also include extended rights to sea bed mining beyond the continental shelf.²⁰

Although 167 countries have ratified the agreement (the notable exception being the United States), the rapidly melting sea ice has raised suggestions from larger developing countries, especially China, that the terms of UNCLOS should be renegotiated, and the Arctic Ocean be considered a global commons, open for development by all nations. UNCLOS together with the International Maritime Organization, the International Whaling Commission and the International Seabed Authority are the primary bodies responsible for codifying current laws of the sea. As a result, it has become increasingly important that the Arctic coastal nations have sufficient diplomatic influence, economic and military power to protect their sovereign rights.²¹

Again in 1985, the Canadian media raised fears that the United States was not respecting Canadian authority when the USCGC Polar Sea sailed through the Northwest Passage without first requesting approval from the Canadian government. In response, Canada drew base lines around the Archipelago and declared that all waters within were internal waters and subject to Canadian laws (see figure 2.2).²²

The unity of the eight Arctic countries as expressed in the Arctic Council and in the Ilulissat Declaration in 2007 was once considered sufficient to ensure future peace and stability in the circumpolar region. Unfortunately Russia's actions in the Ukraine now threatens the close cooperation of the Arctic countries – yet another example of how wars, or even the threat of war, can affect the future of the Arctic.

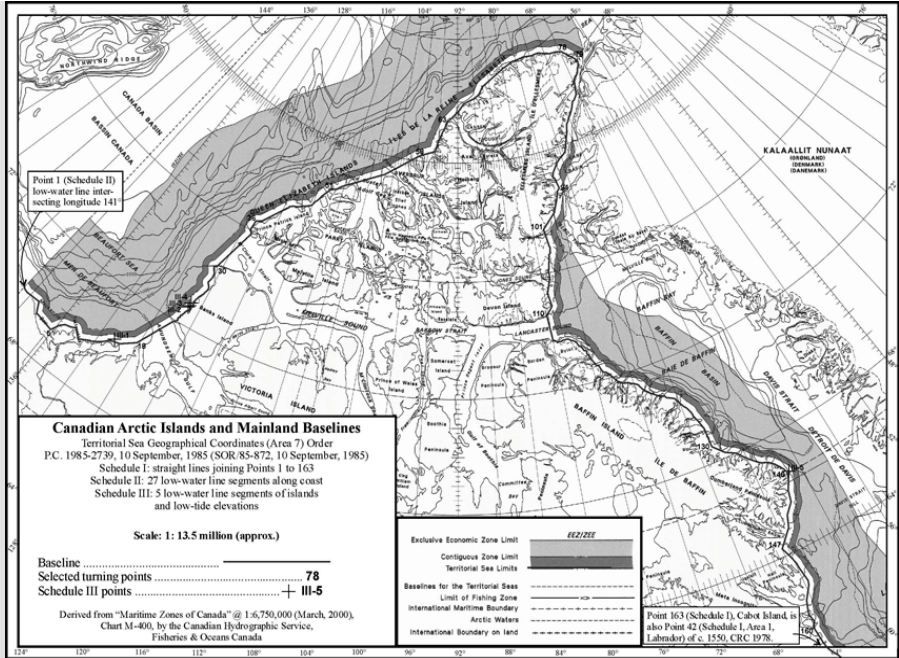


Figure 2.2: Straight baselines delineating the boundaries of Canadian internal waters, effective 1 July 1986. Source: Chart M-400 Canadian Hydrographic Services, Fisheries and Oceans, Canada.

The end of the Cold War was accompanied by a reduced presence of the Canadian Armed Forces in the far north, with the downsizing of military facilities, equipment and training exercises. Radar installations were modernized, many of them now automated. NORAD still functions with increased satellite support, but with fewer ground facilities.²³

So far, the Canadian Coast Guard has done an admirable job controlling and monitoring ship traffic in the Arctic. With sophisticated satellite radar tracking equipment operated from their new headquarters in Iqaluit, they can identify and monitor any ship entering Canadian waters. But unlike the US Coast Guard, the Canadian Coast Guard is unarmed. Thus while they are able to identify ships that disregard Canadian laws, they do not have the same ability to enforce those laws – a role which will likely be assigned to the proposed

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Arctic Patrol Boats operated by the Royal Canadian Navy. Still, as with everything in the Arctic, cooperation will be the key to success.²⁴

Finally, a reminder: Arctic sovereignty is more than just a legal right; it carries with it responsibility for the welfare of its inhabitants and their environment, and for the safety of ships traversing through adjacent waters. As the rapidly melting sea ice greatly increased mineral development in the region, so too have the number of ships multiplied sailing in and through the Canadian Arctic – hence the importance now attached to both oil clean-up and Search and Rescue (SAR) operations.

As noted earlier, interpretations of laws of the sea have evolved over the centuries with continual adjustments to define limits and uses of territorial waters, freedom of passage, international straits and more recently seabed mining. Going forward in the twenty-first century, we are faced with the consequences of global warming that include increased shipping and mineral development, historical events may seem somewhat irrelevant. Yet it is critical that we know where we came from before heading into the unknown.

Because of the warming trend in the Arctic, the future is unclear as to whether existing multilateral agreements and international laws can withstand challenges from powerful non-Arctic nations such as China and South Korea, both of whom have expressed a keen interest in participating in development of the region's resources, shipping regulations and future governance. At present, Canada's Arctic sovereignty over the Arctic Islands and adjacent waters is secure, but will remain so only as long as we can effectively administer the region and enforce Canadian laws.

Notes

¹ Shelagh D. Grant, *Polar Imperative: A History of Arctic Sovereignty in North America* (Vancouver: Douglas & McIntyre, 2010), 10-14. For information on

archival sources and a more detailed narrative on the topics covered in this chapter, please consult this book.

² Grant, *Polar Imperative*, 5-9. See also Donald R. Rothwell, *The Polar Regions and the Development of International Law*. (New York: Cambridge University Press, 1996) 324-27; Malcolm N. Shaw, *International Law, 5th edition*. (Cambridge, UK: Cambridge University Press, 2003), 455-56; Michael Byers, *Custom, Power and the Power of Rules: International Relations and Customary International Law*. (Cambridge, UK: Cambridge University Press, 1999), 3.

³ Grant, *Polar Imperative*. 30-40. See also Robert McGhee, *The Last Imaginary Place: A Human History of the Arctic* (Toronto: Key Porter, 2005).

⁴ Grant, *Polar Imperative*, 40-52. For more details about the Norse settlements, see Finn Gad, *The History of Greenland, Vol. one*. (London, UK: C. Hurst & Company: 1970) and Kirstan Seaver, *The Frozen Echo: Greenland and the Exploration of the North America, 1000-1500 AD*. (Stanford: Stanford University Press, 1996).

⁵ Grant, *Polar Imperative*, 55-91.

⁶ Grant, *Polar Imperative*, 97-123. See also P.A. Tikhamenev, *A History of the Russian-American Company* (Seattle: University of Washington Press, 1978) and Lydia T. Black, *Russians in Alaska, 1732-1867* (Fairbanks: University of Alaska Press, 2004).

⁷ Bo Johnston Theutenberg, “Mare Clausum et Mare Liberum” in Louis Rey, ed. *Unveiling the Arctic*. This set of papers were published by the Arctic Institute of North America in *Arctic* 37/4 (December 1984): 481-92. See also Olive P. Dickenson, “Concepts of Sovereignty at the Time of First Contact,” in *The Law of Nations and the New World*, eds. L.C. Green and Olive Dickenson (Edmonton: University of Alberta Press, 1989), 221-235.

⁸ Grant, *Polar Imperative*, 20, 115-133. See also G. G. Van Deusen. *William Henry Seward* (New York: Oxford University Press, 1967); for American expansionism, T. R. Hietala, *Manifest Design: American Exceptionalism and Empire*, rev. ed. (New York: Cornell University Press, 2003); and W. LeFeber. *The New Empire: An Interpretation of American Expansionism, 1860–1898*, revised edition (Ithaca, NY: Cornell University Press, 1998).

⁹ Grant, *Polar Imperative*, Chapter 7 “British Transfer of the Arctic Islands, 1870-1900,” 155-187.

¹⁰ W.F. King. *Report upon the Title of Canada to the Islands North of the Mainland of Canada*. (Ottawa: Government Printing Bureau, 1905). Copy located in Library and Arch, J.D. Craig Papers, MG 30 B 57, Vol. 1, file “Reports and Memos.”

¹¹ Lassa F.L. Oppenheim, *International Law: A Treatise*, 7th edition, H. Lauterpacht, ed. (London: Longman's, 1963).

¹² Grant, *Polar Imperative*. 204-210. See also Marjolaine Saint-Pierre, *Joseph-Elzéar Bernier 1852-1934: Champion of Canadian Arctic Sovereignty*, trans. William Barr (Montreal: Baraka Books, 2009).

¹³ Grant, *Polar Imperative*, Chapter 8, "Perfecting Sovereign Titles, 1900-1938," 193-246.

¹⁴ Grant, *Polar Imperative*, 13, 22-23, and 193.

¹⁵ Grant, *Polar Imperative*, 249-51; R. Vaughan, *Northwest Greenland: A History* (Orono: University of Maine Press, 1991); S. Grant "Why the St. Roch? Why the Northwest Passage? New Answers to Old Questions," *Arctic* 46/1 (1999). For history of US forces in Greenland, see S. Conn, R. Engelman, and B. Fairchild, *United States in World War I, Volume II: Guarding the United States and Its Outposts* (Washington: Government Printing Office for the Center of Military History, 1964), ch. 17. Autobiographical accounts add further details: Col. B. Balchen, Maj. C. Ford and Maj. O. La Farge, *War Below Zero: The Battle for Greenland* (Boston: Houghton Mifflin Company, 1944); and W. S. Carlson, *Lifelines Through the Arctic* (New York: Duell, Sloan and Pearce, 1967).

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¹⁷ Grant, *Sovereignty or Security?* 70-102.

¹⁸ Grant, *Polar Imperative*. Chapter 10, "Postwar and Cold War," 285-338. For a US perspective see J. T. Jockel, *No Boundaries Upstairs: Canada, the United States, and the Origins of North American Air Defense* (Vancouver: University of British Columbia Press, 1987). See also J.T. Jockel, *Security to the North: Canada-U.S. Defense Relations in the 1990s* (East Lansing: Michigan State University Press, 1991), and "Department of the U.S. Air Force Fact Sheet," www.elemendorf.af.mil/library/factsheets.

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3

From Cold War to North Pole Alliance: Canada and the Changing Face of Defence and Foreign Relations in the Arctic

Ian Livermore

On April 13, 2012, the chiefs of defence (CHoDs) from the eight Arctic Council states — Canada, Denmark-Greenland, Finland, Iceland, Norway, Russia, Sweden, and the United States of America — agreed to cooperate more closely on disaster responses and search-and-rescue (SAR) operations in the Arctic. The announcement of this agreement followed two days of meetings held at Canadian Forces Base Goose Bay, Labrador, where the “Northern CHoDs”¹ and other defence representatives discussed the sharing of knowledge and expertise on how to best manage the operational challenges posed by the Arctic’s geography, climate, and distances.

In announcing the agreement, the meeting’s host, Canadian Chief of the Defence Staff General Walter Natynczyk, highlighted that the event marked the first occasion when all the Northern CHoDs had the opportunity to meet as a forum to discuss issues distinctive to the region. “We were able to gain an understanding of the unique challenges each [defence organization] faces with regards to emergency response and for support to our civilian authorities,” said Natynczyk. “During our short time together, I believe we in the Canadian Forces enhanced our military-to-military relationships with our northern neighbours.”² A press release issued by the Russian Embassy in Ottawa after the forum characterized the event as collaborative and amiable, stating it laid the groundwork for future such meetings on an annual basis.³ The non-confrontational, pragmatic tone and outcomes of the Northern CHoDs meeting stand in sharp contrast to the alarmist reaction by Canadian politicians and media pundits five years earlier when a Russian miniature

submarine planted a Russian flag on the seabed of the North Pole. What changed the face of defence and broader foreign relations among the Arctic states, particularly between the NATO members and Russia, was their realization that they have had a great deal in common in the region, both politically and socio-economically. Each state wanted to protect its respective national interests as global warming and other climate changes opened the region to exploitation of its natural resource potential⁴ and to wider use by commercial shipping. Cognizant that a united front was more effective than individual action, political and military leaders worked steadily towards cooperation on a range of defence and foreign policy issues broadly encompassing sovereignty, security, and safety. By all appearances, the pivotal goal of this cooperation was to prevent non-Arctic states, intergovernmental organizations, and non-state actors from intruding in their neighbourhood. The perceived interlopers included China, the European Union (EU), and, somewhat ironically, NATO, all of which sought access to the opening Arctic to benefit their particular national or multinational interests.

For senior Arctic defence officials involved in the process, this newfound cooperation extended beyond purely military matters to supporting civilian agencies with their regulatory enforcement missions and safety programs. Accordingly, reinvestment in Arctic-capable defence infrastructure and training manoeuvres intended to renew the ability of soldiers, sailors, and air force personnel to operate effectively in polar climates presented little in the way of objective military threats, but rather spoke volumes to fulfilling domestic and regional constabulary responsibilities.

This chapter focuses on the five Arctic Ocean coastal states to identify a transition in national interests from distrust to mutual support. Focussing specifically on the “Arctic Five” helps identify how the impact of climate change in the polar region created security threats unique to them and makes clear that cooperation was their only recourse. The end of the Cold War and the international recognition of climate change had strong effects on Arctic interstate relations, including the degradation of NATO’s and Russia’s military

operational capabilities in the region, the birth of the Arctic Council, and the environmental and political-economic consequences of melting sea ice and permafrost. Events transpiring between 2007 and 2012, however, gave rise to widespread speculation that a race was on for Arctic resources, which would inevitably result in interstate conflict. Political rhetoric was often trumped up for domestic political purposes, but Arctic policy initiatives introduced between 2006 and 2012 pointed toward a future Arctic characterized by compromise and cooperation. Since that time, the general trend has been towards Arctic cooperation. Indicative efforts include the bi-national defence of the North American Arctic by Canada and the U.S., Russian proposals for greater collaboration with Canada, the greater inclusiveness of the Arctic Council, initiatives by the Arctic Five to protect the region's fisheries, and the release of additional Russian and American Arctic policy documents advocating cooperation. Events and activities have also served to undermine this cooperative trend, however, including the off-and-on interest of NATO in playing a greater role in the Arctic region and, most acutely, international reaction toward Russia's 2014 intervention in Crimea and Eastern Ukraine.

Quelling Fears of Renewed Arctic Militarization

With the U.S. Geological Survey's much-publicized *Circum-Arctic Resource Appraisal* (CARA)⁵ and the Arctic Council's Arctic Climate Impact Assessment (ACIA) serving as the combined backdrop for the global political consciousness, a series of events and policy initiatives occurred between 2007 and 2011 that provoked widespread speculation that a "rush" or "scramble" for Arctic resources had begun that would someday lead to interstate conflict. Earlier prospects for peaceful cooperation in the Arctic came under fire because of these incidents, particularly the political grandstanding and ensuing sensationalist news coverage associated with the planting of a Russian flag on the seabed of the Geographic North Pole (GNP) and the Canadian government's reaction to it. Subsequent defence procurement and military operational activities across the region served to exacerbate the media hype, which at its worst portrayed the Arctic to be on the brink of war over natural resource rights. In May 2008, the Danish government convened a meeting of

the Arctic Five foreign ministers in Ilulissat, Greenland in an effort to lay these sovereignty concerns to rest. Despite a commitment by the foreign ministers of all the states to resolve any differences between them through international legal regimes, conjecture about the likelihood of a “new Cold War” has since haunted the halls of government throughout North America, Europe, and Asia, particularly inside the capitals of the Arctic Five states. In some cases, it has persisted in spite of the governments’ own analyses to the contrary.

Russia Plants a Flag on the North Pole Seabed

On August 2, 2007, the *Arktika* scientific expedition placed a titanium replica of a Russian flag on the seabed at the GNP using two Russian owned-and-operated miniature submarines. It also took samples of the seabed to aid with Russia’s continental shelf submission. The expedition leader was Artur Nikolayevich Chilingarov, a prominent Russian polar explorer and the Deputy Chairman of the parliamentary Duma.⁶

The Canadian reaction was swift with Foreign Affairs Minister MacKay accusing the Russians of laying claim to the Arctic in the style of 15th century imperialists. The flag planting also infuriated opposition parliamentarians who criticized the Conservative government of Prime Minister Stephen Harper for not taking the Russians’ actions seriously enough.⁷ The U.S. government insisted that the flag planting had no legal bearing.⁸ The Danes dismissed the Russians’ actions as a media stunt. Much of the news coverage in the West was alarmist. The most sensationalist article appeared in the British newspaper *The Independent*, under the front-page headline “The North Pole, A New Imperial Battleground.”⁹

The international reaction was not what the Russian government had expected and it took immediate action to dispel Western concerns. Russian Foreign Minister Sergei Lavrov informed the international press that the flag planting was a publicity stunt that did not have pre-approval by the Kremlin. He added

it was not a “land grab,” but rather was akin to the Americans planting a flag on the Moon during the Apollo space mission.¹⁰

Lavrov’s efforts to smooth things over with Russia’s Arctic neighbours were undercut a few days later by Chilingarov’s angry reply to the international criticism:

I don’t give a damn what all these foreign politicians there [*sic*] are saying about this. If someone doesn’t like this, let them go down themselves... and then try to put something there. Russia must win. Russia has what it takes to win. The Arctic has always been Russian.¹¹

Chilingarov’s statement led to widespread mistrust about Russia’s intentions in the Arctic. It continues to do so to whenever it is repeated in news media articles and academic analyses in the present. What these reports fail to acknowledge is that Chilingarov has adopted a more diplomatic approach following his 2008 appointment as the president’s special envoy for international cooperation in the Arctic and Antarctic.¹²

Stephen Harper’s Nationalistic Arctic Vision - Shades of Prime Ministers Past

It should have come as no surprise that there was public outrage in Canada regarding Russia planting a flag in the North Pole seabed. Canadians have a long history of doubting the strength of the country’s Arctic sovereignty claims and being riled at perceived challenges.¹³ Indeed, on 9 July 2007, four weeks prior to the Russian flag planting, Prime Minister Harper announced that his government was firmly committed to defending Canada’s Arctic frontiers. Following up on a 2006 election campaign promise to make defence of Canadian Arctic sovereignty a significant part of his new government’s agenda, and buoyed by public opinion polling (Leger Marketing, February 2007) that showed 70 percent of Canadians favoured increased action to protect Northern interests,¹⁴ Harper stated his government would acquire eight armed Polar Class 5 Arctic Offshore Patrol Ships (AOPS) for the navy that could patrol the

length of the NWP during the summer navigation season and its approaches year-round. He also announced that the government would establish a deep-water port in the far North where the AOPS and coast guard icebreakers could fuel. In summing up his vision, Harper made his oft-cited proclamation that:

Canada has a choice when it comes to defending our sovereignty over the Arctic. *We either use it or lose it* [emphasis added]. And make no mistake, this Government intends to use it. Because Canada's Arctic is central to our national identity as a northern nation. It is part of our history. And it represents the tremendous potential of our future.¹⁵

In the wake of this announcement, parliamentary opposition criticized Harper for not going far enough to protect Canada's interests.¹⁶ While the U.S. had traditionally been viewed as the principal "bogeyman" threatening to intrude on Canada's northern rights, the decidedly pro-American Harper government shifted the public's focus onto the Russians.¹⁷ In particular, Harper zeroed in on President Vladimir Putin's commitment to renewing and expanding Russia's Arctic infrastructure.¹⁸ Harper's concerns regarding potential Russian threats in the Arctic were given credence two weeks following the flag-planting incident when Putin signed a decree authorizing the resumption of LRA strategic bomber patrols over the Pacific, Atlantic, and Arctic oceans, a practice that had been suspended since 1992. Putin claimed the decision to resume LRA patrols was forced upon his government by unspecified security threats.

Shortly before and soon after the AOPS announcement, the Harper administration took other steps to enhance sovereignty and security in Canada's North. In the early spring of 2007, the government launched Operation Nunalivut, a ground-based expedition in which Canadian Army personnel, including the Canadian Rangers, conducted a cross-country surveillance patrol in the northernmost islands of the Arctic Archipelago. The government followed this up in July and August 2007 with Operation Nanukput, an interagency surveillance and presence operation in the Western Arctic involving members of the Canadian Armed Forces (CAF), RCMP, and Fisheries and Oceans Canada. In August 2007 the military conducted

Whole of Government through an Arctic Lens

Operation Nanook, a joint force sovereignty enforcement exercise in the vicinity of Baffin Island near Iqaluit and Kimmirut. All three operations have since become annual events, with Operation Nanook expanding to include representation from several other government departments and military units from allied Arctic states.¹⁹

Prime Minister Harper, accompanied by an entourage of senior military staff, government officials, and news media, attends Operation Nanook activities annually to remind Canadians and the international community of his government's ongoing commitment to the sovereignty and security of Canada's North. During Operation Nanook 2007, Harper announced that the government would establish a Canadian Forces Arctic Training Center in Resolute Bay, Nunavut, and that the Canadian Rangers would be re-equipped and expanded in strength by 900 personnel. He also named Nanisivik, Nunavut as the site of the previously announced deepwater Arctic port.²⁰ Arctic commitments announced during subsequent Operations have included the procurement of an Arctic heavy icebreaker for the Canadian Coast Guard (2008)²¹ and the construction of the Canadian High Arctic Research Station in Cambridge Bay (2012). To date, the military training centre is the only commitment to be fulfilled. Its official opening was on August 16, 2013 during Operation Nanook.²²

The Unveiling of the Canada First Defence Strategy

The Harper government introduced its current National Defence white paper, the *Canada First Defence Strategy (CFDS)*, on May 12, 2008. While the CFDS defined the government's vision for the DND and the CAF across the broad spectrum of operations, it paid special attention to the employment of military resources in the Arctic theatre. Contrary to much of the sovereignty and security rhetoric bantered about in media and political circles following the 2007 Russian flag planting, the sections of the CFDS regarding the military's role in the Arctic were moderate and constructive. Contents of those CFDS

sections would be repeated, sometimes verbatim, in the Arctic operational doctrine publications it inspired.²³

The Arctic figures prominently in the CFDS section defining the three roles of the CAF. In order of priority, these roles are defending Canada, defending North America, and contributing to international peace and security. The CAF's capacity to exercise control over and defend sovereignty in the Arctic is described as a core mission requirement in the defence of Canada.²⁴ The CFDS also cited planned investments which, while not explicitly identified as being Arctic related, would later result in spending with a northern focus. These included increasing the size of the Primary Reserve.²⁵ On August 17, 2009, Defence Minister MacKay stood up the Yellowknife Company, an Army Reserve subordinate unit of the Loyal Edmonton Regiment and the only active reserve unit north of 60.²⁶ The Canadian Army also created the Arctic Response Company Group (ARCG) comprised of approximately 480 reservists from five units across southern Canada. The ARCG meets at least twice a year in the north to conduct cold weather training, and is on standby to support the Regular Force and Canadian Rangers in their defensive roles.²⁷

Rogue Russian Statements, Mistaken Motives, and Renewed Hype

On May 27-29, 2008, the Danish Minister for Foreign Affairs, Per Stig Møller, hosted his Arctic Five counterparts at a meeting in Ilulissat, Greenland held to discuss regional sovereignty issues and the international legal regime available to resolve them.²⁸ On the second day of the conference, the Arctic Five foreign ministers adopted a joint statement known as the *Ilulissat Declaration*, confirming their governments' commitment to work together within the existing framework of international law, principally the United Nations Convention on the Law of the Sea (UNCLOS), and through international forums, such as the Arctic Council, Barents Euro-Arctic Council, and International Maritime Organization, to resolve any differences through negotiations, rather than force of arms.²⁹

On June 24, 2008, Lieutenant-General Vladimir Shamanov, head of the Russian army's combat training directorate, told the military daily newspaper *Red Star* that the country was moving to bolster its presence in the Arctic after a negative international response to the previous year's flag planting on the North Pole seabed. Shamanov explained that "after the reaction of a certain number of heads of state to Russia's territorial claims to the continental plateau of the Arctic, the training division has immediately set out training plans for troops that could be engaged in Arctic combat missions."³⁰ He added that the deployment of 5,000 American soldiers to Exercise Northern Edge in Alaska the month prior was another cause for Russian concern.³¹ While some commentators in the West dismissed the general's comments as an aberration likely aimed at procuring defence funding without regard for current diplomatic realities, other pundits spun the incident as a pointed warning from Russia to other Arctic states that their potential claims over the seabed territory should go no further than the North Pole.³²

In June and early July 2008, for the first time in seventeen years, two NORFLT surface warships were sent on patrols well north of the Arctic Circle. While the patrols were principally sovereignty enforcement and training missions inside Russia's EEZ, they caught the West's attention as indicators of renewed Russian militarization in the Arctic.³³ Additional Russian activities in the Arctic in 2008 caused further anxiety in the West. Those activities pertained to Iceland's request for a Russian loan to bail it out of financial crisis, and rumours that Iceland was prepared to lease the former USAF base at Keflavik to the Russians in gratitude. These concerns were largely misrepresented at the time.³⁴

Moving ahead to February 2009, two Russia bombers conducted a LRA patrol into the Canadian Air Defence Identification Zone (CADIZ). Although the aircraft remained well away from Canadian territorial airspace, the timing of the patrol less than 24 hours before U.S. President Barack Obama's first visit to Canada caused Harper to declare his deep concern "with increasingly aggressive Russian actions around the globe" and vowed that Canada would defend its

airspace. Harper's tough talk was largely overblown, however, given that the flights had been scheduled months in advance and elicited no protest from the U.S. Government or undue concern by NORAD.³⁵ Russian embassy officials subsequently appeared before a House of Commons Defence Committee to refute the government's accusation, calling the flights routine training.³⁶

During the summer of 2010, Russian Tu-95 BEAR bomber aircraft conducted two LRA patrols into the northern CADIZ. The second of these missions, which flew to within 56 km of the Northwest Territories (although still within international airspace), occurred in August while Prime Minister Harper was in the north observing the annual Operation Nanook Arctic sovereignty exercise. Operation Nanook 2010 marked the first occasion that foreign military units from the U.S. and Denmark participated in the exercise. Authorities at NORAD downplayed the incidents as routine exercises of the Russian's capability to operate in the North that were no cause for alarm.³⁷ However, several analysts, including Rob Huebert, assessed that the Russians may have deliberately timed those LRA flights to occur during Operation Nanook as a form of strategic messaging that Russia was the leading power in the Arctic—and that Canada and its allies should not forget it.³⁸

Russia's New Arctic Strategy

In late March 2009, the Kremlin publicly released the full text of its new Arctic strategy approved by the Russian Security Council the previous September. The document, titled *The Foundations of Russian Federation Policy in the Arctic until 2020 and Beyond*, specified the main objectives, tasks, challenges, and strategic priorities for implementing state policy in the Arctic. It also prescribed Russia's approach to strategic planning for socio-economic development in the Arctic Zone of the Russian Federation and for maintaining Russia's national security. The strategy identified Russia's four main national interests in the Arctic; namely, to utilize the Arctic Zone as a strategic resource base to support the country's socio-economic development tasks; preserve the region as a zone of [international] peace and cooperation; protect the Arctic's unique ecological

system; and use the Northern Sea Route (NSR) as a unified, integrated transportation link connecting all of Russia with the Arctic.³⁹

One of the main goals of the state policy vis-à-vis the Arctic Zone was national security, and through that, the protection and defence of Russia's national boundaries in the region. The Strategy proclaims that the state must provide the "necessary operational wherewithal"⁴⁰ to do the job, including the maintenance of a basic fighting capability among "general purpose units" of the Russian Armed Forces in the region, as well as other troops and military formations and "agencies" assigned responsibilities there.⁴¹ These other agencies are identified as the Russian Border Guard and Russian Maritime Border Guard (Coast Guard) divisions of the civilian Federal Security Service (FSB).⁴²

Consistent with the Ilulissat Declaration, the Russian Arctic Strategy also cites guaranteeing "mutually beneficial bilateral and multilateral cooperation" between Russia and other Arctic states based on international treaties and agreements as another main goal and priority for state policy. It recommended pursuing this cooperation through the Arctic Council and the Barents Euro-Arctic Region [Council] with a focus on economic, scientific, technological, and cultural issues. International cooperation in safety and security matters was also cited as a state priority, including the coordination of SAR and cooperation in border control.⁴³ In short, the Russian government openly declared its willingness to engage in cooperative constabulary enforcement of national and international regulations governing these matters. The paramilitary Russian coast guard vice the Russian Army Forces would be the lead security agency in the Arctic. Actions taken by the Russian government within its Arctic zone and the greater global Arctic to date have been consistent with the strategy.⁴⁴

Russia's Arctic Brigades and Other Capability Renewals

When the Russian Arctic Strategy became public knowledge in 2009, it was widely interpreted by Western news media and policy hawks to signal a

probable Russian military build-up in the region, particularly in view of their goal to create general-purpose units. This perception was exacerbated by additional LRA activity and some bellicose, anti-Western statements by a few of Russia's hard-liners⁴⁵ shortly before the Strategy document's public release. The rhetorical flames were dampened only when Russia's foreign minister Lavrov and several Western military advisors pointed out that the FSB would be the principal state actor in charge of future Arctic security and defence.⁴⁶

In the months following the international release of its Arctic Strategy, the Russian government publicly reiterated many of the document's points and issued amplifying details. For example, it announced plans to establish a special military ground force to protect its Arctic interests. This force was to be in addition to existing naval infantry units and an army brigade based on the Kola Peninsula, which while trained for winter warfare in Northern Russia, were not organized and equipped for the Arctic operating environment. The Russian government said the units would help "balance the situation" of ground forces in the Arctic as the U.S. and Canada had already begun establishing similar brigades.⁴⁷ In 2012, it announced that there would be two brigades vice one but, in the end, however, personnel, funding, and equipment problems led the Russian Defence Ministry to postpone creating the Arctic brigades until 2015. Some clarity was also provided on the overall defensive measures to be taken in the Arctic region. The plan, said officials, was to deploy a "combined-arms force" by 2020 to protect Russia's political and economic interests in the Arctic region, and to guarantee Russia's military security in diverse military and political circumstances. This force would include military, border control, and coast guard units.⁴⁸

The Russian government also announced plans to upgrade or replace several of its NORFLT naval assets and construct a string of bases along its northern frontier. These bases would include a series of 10 dual-use facilities along the NSR extending from Murmansk in the east to Anadyr on the Bering Sea. These facilities would house FSB border guard outposts, search and rescue stations, and support naval operations.⁴⁹ These locations will support domestic

civilian security activities along the NSR, military sovereignty operations, and training exercises in the region. These reactivated Arctic airbases will also be the site of early warning radars and air defence batteries in support of Russia's strategic nuclear forces, which the government considers to be under potential threat by U.S. Aegis-equipped anti-missile warships and other NATO ballistic missile defence technologies.⁵⁰ On balance, these assorted military developments in the Russian Arctic appear to be primarily defensive in nature and consistent with the 2008 Arctic policy document.

Russia's leadership is strongly opposed to any NATO involvement in the Arctic beyond the activities of Canada, Denmark-Greenland, Iceland, Norway, and the United States. In 2010, then President Dmitry Medvedev stated, "The Arctic can manage fine without NATO." In early 2013, Russian Foreign Minister Lavrov affirmed this position, stating, "We believe that such a move would be a very bad signal to the militarization [*sic*] of the Arctic, even if NATO wants to just go there and get comfortable."⁵¹ President Putin has been more direct in his warning that NATO's continued pursuit of a greater role in the Arctic, including increased military cooperation between the Alliance and neutral Finland and Sweden, posed risks to regional and global stability.⁵²

While numerous academics, politicians, and media pundits throughout the West were of the opinion that the Kremlin was remilitarizing the Arctic to the peril of the other polar states, Russia expert Katarzyna Zysk of the Norwegian Institute of Defence Studies offers a temperate and more probable assessment of all these Arctic military developments. First, Zysk points out that the ship procurement announcements for the NORFLT are not explicitly Arctic military enhancements, because while the fleet is based above the Arctic Circle, its missions are global. Second, providing a credible military presence in the Arctic region is driven in part by the need to protect the country's strategic nuclear forces. This necessitates the acquisition of new frigates and destroyers for antisubmarine warfare, and surface-to-air missile systems to replace aging Soviet Era platforms. The Arctic brigades could be seen in a similar light, as ground forces capable of defending mobile strategic rocket forces staged

throughout northwest Russia.⁵³ Third, as is the case in Canada and other Arctic coastal states, the Russian military must be ready to support other government departments and civilian agencies, including the FSB Border Guard Branch with surveillance, search and rescue, policing and other regulatory enforcement relating to the expected increase in human activity in the Arctic region brought about by climate change. Given the Russian government's concerns that this activity may include maritime terrorism, drug smuggling, illegal migration, and poaching, an increased military presence aimed at support and protection of economic activity in the Russian Arctic is completely justified.⁵⁴

Further to Zysk's analysis, unless the ships constructed under the new Russian procurement programs are ice-strengthened, they are not Arctic assets in the truest sense. There are no indications thus far that any of the new vessels will be ice-strengthened except for lightly armed ships being built for the FSB's maritime border guard service.⁵⁵ Additionally, many of the aircrew who flew regular missions against North America and Western Europe during the latter years of the Cold War are now approaching retirement age. Before those pilots, air navigators, and bombardiers can start collecting their pensions, they need to train their replacements. The volume and increased frequency of LRA patrols, and the more provocative flight patterns over the CADIZ and American Air Defence Identification Zone (ADIZ), can likely be attributed to the Russian strategic air command ensuring existing expertise is maintained for the next generation. Thus, the LRA patrols do not constitute an increased threat level, but rather the maintenance of the status quo.

Canada's Northern Strategy and Arctic Foreign Policy

On July 26, 2009, the Harper government unveiled its new overarching Arctic policy titled *Canada's Northern Strategy: Our North, Our Heritage, Our Future*. Far more temperate in tone than the government's rhetoric of the previous three years, the Northern Strategy paid respect to the principles of international cooperation as described in the Ilulissat Declaration. It also

reiterated several of the security concerns for the region presented in the CFDS, and refined the government's intentions for the region going forward.⁵⁶ Through its Northern Strategy, the Canadian government seeks to exert leadership both at home and abroad to promote a prosperous and stable region based on Canadian interests and values. To achieve this vision, the government has committed itself to an integrated strategy based on four equally important and mutually reinforcing priorities: exercising Canada's Arctic sovereignty, promoting social and economic development, protecting the country's environmental heritage, and improving and devolving northern governance.⁵⁷ The first priority, exercising Arctic sovereignty, envisioned a significant role for DND and the CAF.

The Northern Strategy declares that Canada's Arctic sovereignty is longstanding, well established, and based on historic title, including the presence of Aboriginal peoples since time immemorial. It goes on to say, however, that Arctic sovereignty is not static and requires continuous effort to maintain a strong government presence in the region. The Strategy identifies the CAF as the principle instrument of state in achieving presence in the Arctic, adding that the government will ensure the military has the ongoing capability and capacity to protect and patrol the land, sea, and sky. Accordingly, the CAF will continue to undertake operations in the North, and will do so in cooperation with other federal departments and agencies.⁵⁸

The Strategy also makes allowances for international cooperation in the protection of Canada's Arctic interests, singling out the U.S. as "an exceptionally valuable partner in the Arctic" that shares a number of interests in common in the region, including security. The Strategy also identifies Arctic related Memorandums of Understanding (MoUs) on non-defence matters that the Government of Canada signed with Russia and the U.K., and the annual Northern Dialogue with Norway.⁵⁹

Further clarification of Canadian willingness to cooperate with other states on Arctic related matters came on August 20, 2010, when Foreign Minister

Lawrence Cannon released the *Statement on Canada's Arctic Foreign Policy*. Subtitled *Exercising Sovereignty and Promoting Canada's Northern Strategy Abroad*, the Statement recast the priorities spelled out in the Northern Strategy as pillars upon which to build relations with Canada's Arctic neighbours and with which to engage in a broad range of international efforts in the region. It emphasized thirteen areas of focus for international effort that included engaging with the U.S. and Denmark-Greenland to resolve existing boundary issues, securing international recognition for the full extent of Canada's extended continental shelf, and addressing Arctic governance and related emerging issues, such as public safety. These three focus areas rest on the foreign policy pillar of exercising Arctic sovereignty. Hence, in accordance with the Northern Strategy, the focus areas presented an opportunity for military engagement and diplomacy on the world stage.⁶⁰

As per the Arctic Foreign Policy, Canada would continue to exercise its Arctic sovereignty daily through a range of governance actions, including CAF operations. The Arctic Foreign Policy reiterated the point made in the Northern Strategy that the U.S. will be a key defence partner in the region through NORAD. The document also cited Operation Nanook as a mechanism for international defence cooperation in the Arctic and noted that the 2010 edition of the annual sovereignty operation would include the collaborative participation of the U.S. and Denmark "in order to increase interoperability and exercise a collective response to emerging cross border challenges."⁶¹

Although the Statement on Canada's Arctic Foreign Policy defined a supportive role for the CAF in achieving the Government of Canada's overall sovereignty objectives in the region, it did not identify any foreign threats that might necessitate a kinetic military response. Rather, it downplayed the possibility. When discussing the need to resolve boundary issues with the U.S. and Denmark, arguably the most contentious Arctic foreign policy issues for Canada at the time, the document was careful to note that "all disagreements are well managed, *neither posing defence challenges for Canada* [emphasis added]

nor diminishing Canada's ability to collaborate and cooperate with its Arctic neighbours."⁶²

Cooperation was also the catchphrase used to discuss public safety challenges in the region. Canada's Arctic Foreign Policy noted that regional solutions, supported by robust domestic legislation in the Arctic states, would be critical to meeting challenges posed by increasingly accessible Arctic shipping routes. Particular challenges cited in the policy included search and rescue, emergency response to environmental contamination, and illegal trafficking in drugs and people.⁶³

Attention Minister MacKay — Russia is not a threat

Although the Statement on Canada's Arctic Foreign Policy did not identify any foreign threats that might necessitate a kinetic military response and downplayed the potential for future threats, the Harper government remained concerned about Russian military activities in the region, particularly the planned creation of two new Arctic brigades. Accordingly, Defence Minister MacKay requested an official assessment of the nature and extent of the Russian threat. The assessment was presented to the government in a briefing note dated July 12, 2011, a censored version of which was obtained by the Canadian news media a year later under an Access to Information Act request.⁶⁴

The document said that socio-economic development is the Russian government's premier goal in the Arctic, and that security was second. It also highlighted that the Russian border guard service, vice their military, had primary responsibility for Arctic regional security. After recapping Russian activities in the Arctic that had caught the attention of the Canadian government,⁶⁵ the briefing note cited other considerations that needed to be kept in mind when judging Russian activities in the Arctic. Russia was on the verge of a presidential election when the Arctic Brigade announcement was made, and the Arctic brigade announcement was consistent with other lofty

announcements that the Russians had made about the region in recent months. Most importantly, the briefing note stated that “Notwithstanding disagreements with NATO surrounding the Conventional Armed Forces in Europe Treaty, Russia has the sovereign right to station its troops where it wants on Russian territory.”⁶⁶

Given all these points, the analysts concluded that “while many observers have commented in the media on Russia’s perceived provocative actions in the Arctic, there has yet to be any serious cause for alarm.” Moreover, given common challenges that Canada and Russia share relating to policy-making in the Arctic, the analysts noted there are several opportunities for cooperation between the two countries’ governments going forward, including on defence issues. “From a Defence perspective, in spite of disagreements over LRA flights, there is mutual interest with regard to cooperation in SAR and Arctic domain awareness,” the report observed. “Defence is continuing to explore the potential for further cooperation with Russia in these fields.”⁶⁷ After the government received this report, it toned down its anti-Russian rhetoric in the media. The government backed down further once the report was made public by the media.

Norwegian Pragmatism

Like the Russians and Canadians, the Norwegian government has been actively expanding its military capabilities in the Arctic region during the opening decade of the 21st Century. It has purchased Aegis-capable frigates,⁶⁸ is modernizing its air force through the purchase of the new F-35 joint strike fighter aircraft, and has relocated its armed forces Joint Operational Headquarters and army staff from the southern city of Stavanger to Bodø, just north of the Arctic Circle. The government’s motivation in taking these actions has been the desire to maintain robust border security⁶⁹ and readiness against possible sovereignty challenges, including the potential of future Russian aggression,⁷⁰ while also maintaining a collaborative relationship with Russia’s border security forces.⁷¹

The Norwegian government's 2006 *High North Strategy* highlighted the need to work with the Russians on issues of overlapping interest and mutual concern based on a policy of "pragmatism, interests, and cooperation." Bilateral engagement and cooperation was essential to "ensure sustainable use of resources and sound environmental management in the Barents Sea," including joint "measures to combat illegal, unreported, and unregulated fishing."⁷² Military cooperation was another cornerstone of Norway's strategy. Since 2001, the two countries have drawn up an annual bilateral military activity plan, which helps facilitate military cooperation between the Norwegian and Russian armed forces, and includes high-level meetings between senior commanders, junior officer conferences, naval ship port visits, and bilateral training events, such as the annual POMOR joint maritime exercise.⁷³

The Norwegian government published an update to its High North Strategy in 2009 titled *New Building Blocks in the North: The next step in the Government's High North Strategy*. Published in the wake of the Ilulissat Declaration, the update addressed the critical importance of international cooperation in regional management and governance.⁷⁴ The document specifically mentioned two international organizations: the EU and NATO. The Norwegian government elaborated on the issue of NATO involvement in a 2011 White Paper entitled *The High North - Visions and Strategies* which asserted that, if NATO conducts exercises in the High North in a transparent and predictable manner, it will not increase the level of military tensions. Instead, it saw an enhanced NATO role as compatible with the development of good and close neighbourly relations between Norway and Russia.⁷⁵

Norway also expanded its defensive cooperation with fellow Nordic countries Denmark, Finland, Iceland, and Sweden to create the Nordic Defence Cooperation (NORDEFECO) arrangement in 2009. NORDEFECO merged three pre-existing cooperative defence arrangements between the countries "to strengthen the participating nations' national defence, explore common synergies, and facilitate efficient common solutions."⁷⁶ Although

NORDEFECO is not specifically an Arctic-oriented organization, the mere fact that all of its members are Arctic states makes it a forum for advancing cooperation in the Arctic.⁷⁷

To Be or Not to Be an Arctic State — U.S. Reluctance in the North Subsidies

Unlike Canada, Russia, and Norway, the U.S. national identity has never been closely associated with its Arctic territory. U.S. government officials in Washington D.C. and the public of the lower 48 states have paid little attention to what happened in Alaska since it was purchased from Russia in 1867.⁷⁸ Among the few issues to draw national interest in Alaska in recent decades were the *Exxon Valdez* oil tanker accident in 1989 and the U.S. vice-presidential candidacy of former Alaska governor Sarah Palin in 2008. However, neither of these events were perceived as being Arctic issues. Ironically, many Alaskans do not view their state in Arctic terms, let alone in a global Arctic context. For example, in a recent opinion poll conducted by the U.S.-based Institute of the North, only 51 percent of Alaskans had heard of the Arctic Council.⁷⁹

It is not surprising, therefore, that when President George W. Bush signed the U.S. Arctic Region Policy (National Security Presidential Directive-66 / Homeland Security Presidential Directive-25) on January 9, 2009, his action attracted little coverage in the mainstream national news media, and that it failed to capture the public's imagination. The new Arctic policy did however catch the attention of U.S. foreign policy think tanks, Arctic special interest groups, and bloggers across the country, as well as the international press in Europe and Canada. Under development for two years, NSPD-66/HSPD-25 marked a significant departure from previous U.S. policy actions regarding the Arctic in that it dealt with that region alone, rather than in conjunction with the Antarctic. It was also more open and direct than any previous policies on the Arctic, the last one having been issued in 1994.⁸⁰

Whole of Government through an Arctic Lens

NSPD-66/HSPD-25 proclaims that it is the policy of the United States to:

- Meet national security and homeland security needs relevant to the Arctic region;
- Protect the Arctic environment and conserve its biological resources;
- Ensure that the natural resource management and economic development are environmentally sustainable;
- Strengthen institutions for cooperation among the eight Arctic nations;
- Involve the Arctic's Indigenous communities in decisions that affect them; and
- Enhance scientific monitoring and research into local, regional, and global environmental issues.⁸¹

Additionally, the Arctic Region Policy declares that the U.S. has broad and fundamental national security interests in the region that it is prepared to safeguard independently or in conjunction with other states. It declared that the Arctic Council should remain the principle high-level international forum for managing the Arctic's affairs and that no Antarctic-like treaty arrangement was necessary.⁸² Consistent with U.S. foreign policy elsewhere in the world, the Arctic Region Policy also stated that freedom of navigation on the High Seas was a top national priority, and as such, it considered the NWP and NSR to be international straits.⁸³ The inclusion of this last point affirmed that the U.S. government would remain at odds with the two largest Arctic states, Russia and Canada, even though the remainder of the American Arctic policy was highly compatible with its neighbours' own Arctic strategies.

The Presidential Directives identified several general avenues of approach for implementing the Arctic Region Policy, but they lacked specific details. The Directives left the coordination of concrete measures to the Secretary of State and the other heads of executive departments and agencies that had responsibilities relating to the region.⁸⁴ The first of these departments and agencies to take action were the U.S. Navy and the U.S. Coast Guard.

Published in October 2009, the *U.S. Navy Arctic Roadmap* provides a chronological list of navy action items, objectives, and desired effects for the Arctic region between the years 2010-2014.

The action items and objectives within this document were intended to achieve multiple effects, the principle one being the development of strong cooperative partnerships with interagency and international Arctic stakeholders.⁸⁵ The Arctic Roadmap declares that while the U.S. currently has “stable relationships with other Arctic nations,” the changing environment brought about by global warming and the resultant competition for resources in the Arctic region could either contribute to increasing tension, or, conversely, provide opportunities for increasingly cooperative solutions. Acknowledging the importance that other nations have placed upon their Arctic regions in their respective strategic guidance documents, the Arctic Roadmap considers the requirement for the governance framework provided by UNCLOS.⁸⁶

Six months after the USN published its Arctic Roadmap, it released a companion document titled *U.S. Navy Climate Change Roadmap*. Prepared in response to the U.S. Secretary of Defence’s *2010 Quadrennial Defense Review* — which identified climate change as one of several key geopolitical trends that may influence future conflict — the Climate Change Roadmap outlined the USN’s approach to observing, predicting, and adapting to climate change.⁸⁷ Formatted in the same manner as the Arctic Roadmap, the Climate Change Roadmap provided a chronological list of naval associated action items and objectives intended to achieve specific effects.⁸⁸

What is readily apparent in the two USN Roadmaps is that they are not dominated by the requirements of so-called “hard security” matters, such as strategic nuclear deterrence, missile defence, anti-submarine warfare, or other warfare disciplines. Franklyn Griffiths suggests that they appear to be informed “by the view that the Arctic will not gain new life as an arena for strategic military interaction anytime soon,” and hence, convey a strong commitment to cooperation with foreign militaries on non-military matters, such as SAR, maritime domain awareness, and disaster relief. By proposing to channel the

Whole of Government through an Arctic Lens

Arctic region's future naval interaction toward issues of safety, security, and stability, Griffiths argues that the two Roadmaps hold the promise of consensual, systematic improvement in assuring Russia that its Arctic interests are secure within the context of bilateral relations with the U.S. and the larger Arctic state community.⁸⁹

Development of the USCG's Arctic strategy began with the release of its *Arctic Strategic Approach* in April 2011. This concise, four-page document laid out the Coast Guard's Arctic Strategic vision. The vision noted that the USCG must have the capability to perform the Service's statutory missions in the demanding Arctic maritime environment to ensure the Arctic remains a safe, secure and environmentally sustainable region. The Arctic Strategic Approach identified cooperation with other Arctic states as a key requirement to developing that capability, particularly in addressing safety and security issues likely to result from the increase in international shipping in the region.⁹⁰

These considerations were incorporated in the 48-page *USCG Arctic Strategy* published in May 2013. This document describes the major dynamics shaping the region and articulates the Coast Guard's three key strategic objectives: improving awareness of maritime activity, modernizing governance, and broadening partnerships across the public and private sectors. The strategy stipulates that fulfillment of the objectives will require a collective effort both on the domestic and international level.⁹¹

Amidst what seemed like a growing spirit of cooperation, the U.S. government suddenly demonstrated resistance to the Arctic Five. At the end of March 2010, Canada's Foreign Affairs Minister Lawrence Cannon hosted a meeting of his Arctic Five counterparts in Chelsea, Quebec to discuss issues relating to mapping the Arctic continental shelf under UNCLOS Article 76, economic development, and environmental protection matters. Cannon limited the meeting invitation to Arctic Five participants because the issues pertained only to them as coastal states on the Arctic Ocean, and had no bearing on Iceland, Sweden, or Finland. In the aftermath of the meeting, U.S. Secretary of State

Hillary Clinton publicly criticized Cannon for excluding the broader membership of the Arctic Council. “Significant international discussions on Arctic issues should include those who have legitimate interests in the region,” Secretary Clinton said as she left the meeting. Clinton’s public rebuke was in response to appeals by Indigenous groups and complaints from the sidelined Nordic states,⁹² and it conformed closely to the dictates of NSPD-66/HSPD-25 which the Obama administration endorsed.

Cannon refuted Clinton’s public charge that his actions were divisive. Coming to Cannon’s defence on the issue, was his Russian counterpart Sergei Lavrov who vigorously defended the Arctic Five gathering as fully justified by the need of the coastal states to consider how their differing claims to the Arctic might be resolved. Far from undermining Arctic collaboration, said Lavrov, the Chelsea meeting had instead supported that important purpose.⁹³

In the weeks and months that followed that meeting, other U.S. government officials echoed Secretary Clinton’s comments with varying degrees of intensity.⁹⁴ The following year, the U.S. demonstrated similar resistance to a Russian proposal to host an Arctic Five coast guard forum to discuss new threats resulting from climate change, illegal immigration, narcotics trafficking, and other public security threats. Julie Gourley, the Senior Arctic Official at the U.S. State Department, kyboshed American participation in the forum, reiterating Secretary Clinton’s previous statements that the U.S. would henceforth not participate in Arctic Five events unless there is a legitimate need that prevents inclusion of the other three Arctic states, and only if such meetings are held at the working level, not at high [ministerial] levels. Gourley also took Trufanov to task for claiming that only the coastal states had a legitimate voice in Arctic Affairs, arguing that the US had “absolutely no national or foreign policy interest in excluding the other three from any Arctic issue except in the rarest of circumstances” (such as extended continental shelf delimitation activities). “There is nothing beneficial in creating a bifurcated system of “A-5” vs. “A-8.”⁹⁵

Denmark Prepares for Greenland's Future

In August 2011, the Danish government released its national Arctic strategy. *The Kingdom of Denmark's Strategy for the Arctic 2011-2020* is primarily a domestic development policy to benefit the inhabitants of self-governing Greenland. It states that cooperation between Denmark and Greenland helps in creating new opportunities for the Arctic Indigenous peoples, and that these two territories of the Kingdom will continue to work together constructively “to strengthen Indigenous people’s rights to control their own development and their own political, economic, social and cultural situation.”⁹⁶ The international aspects of the Strategy stem from Arctic Council declarations and the commitments made in the Ilulissat Declaration “to give negotiation and cooperation pride of place in handling disputes, challenges, and opportunities in the Arctic and thus hopefully once and for all dispelling the myth of a race to the North Pole.” Collectively, the desired end-state for the Strategy is a peaceful, secure, and safe Arctic, characterized by self-sustaining growth and development, respect for the Arctic’s fragile climate, environment and nature, and which has been achieved through close cooperation with the Kingdom’s international partners.⁹⁷ It is, therefore, highly compatible with the Arctic strategies and foreign policies of the other coastal states.

The Kingdom of Denmark’s approach to security policy in the Arctic is based on the overall goals of preventing conflicts, avoiding militarization of the region, and actively fostering trust, cooperation, and mutually beneficial partnerships. While the Strategy advocates peace, cooperation, and the avoidance of militarization, it states there will be an ongoing necessity to utilize the military to enforce Danish sovereignty in the Arctic in light of anticipated increases in human activity in the region, much of it foreign. As per the Strategy, enforcement will be exercised by Denmark’s armed forces through a visible presence and surveillance patrol mission in the region. In addition, the armed forces will be required to play a significant role in performing a range of more civilian-related duties. To ensure these military activities do not upset Denmark’s Arctic neighbours, the strategy places great importance on the need

for confidence-building measures and broad cooperation with neighbouring armed forces.⁹⁸

In the wake of Denmark's Arctic strategy, government officials renewed negotiations with Canada to settle the long-standing dispute over the maritime border in the Lincoln Sea, and ownership of tiny Hans Island. In November 2012, Danish Foreign Minister Villy Søvndal and his Canadian counterpart John Baird announced that negotiators had reached a tentative agreement on the location of the Lincoln Sea boundary.⁹⁹ As of mid-2012, two main options were under consideration for Hans Island. The first was shared jurisdiction of the island. The second was to run the border down the middle of the uninhabited, 1.3-square-kilometre knoll.¹⁰⁰

Recent Trends in Arctic Cooperation

In general, Russia, Canada, Denmark-Greenland, Norway, and to a lesser extent, the United States, reached a general understanding from 2006-12 about the need to work together to advance their respective interests in the Arctic region. Faced with the challenges presented by non-Arctic state interests, a sensationalist and often-hawkish international press corps, and hyperbole from within their own ranks, the Arctic Five have persevered to become a generally cohesive political bloc. The enabling effects of the new Arctic foreign and defence policies previously discussed, combined with ongoing sovereignty, security, and safety concerns about increasing human activity in the region, resulted in the establishment of tangible cooperation initiatives since 2012. Annual joint-combined military exercises are helping Arctic states develop the skills required to operate in the region and to coordinate their planning. New regional treaties, fishing regulations and shared responsibilities for SAR and oil pollution prevention are strengthening existing bonds and building new relationships. So too is the addition of six new Observer states to the Arctic Council. Collectively, all of these initiatives are building trust. Despite these positive moves, the cooperation is fragile and highly vulnerable to challenges from outside the region.

First Steps

The *Arctic Security Forces Roundtable* (ASFR) was the first of these tangible cooperation initiatives, having been established in 2010 as a joint effort of U.S. military's European Command (USEUCOM) and the Norwegian Defence Staff. This highly informal roundtable includes security force representatives from France, Germany, the U.K., the Netherlands, and the eight Arctic Council states primarily at the general officer and flag officer (GOFO) level.¹⁰¹ The ASFR evolved from the recognition by all parties involved that they shared operational challenges in the Arctic and could hence benefit from the sharing of information and best practices. The Roundtable meets semi-annually, with staff level working group sessions held in between them.¹⁰²

The ASFR has recently experienced some functional difficulties. For example, during its December 2013 working group meeting in Oslo, Norway, participants expressed concern that due to recent overlapping initiatives by the Northern CHoDs, the Roundtable seemed less relevant to them today than when it was established.¹⁰³ The resultant challenge for the group going forward will be to complement the efforts of the Northern CHoDs, not compete with it. The effectiveness of the ASFR is also constrained by limited Russian participation. In protest to the group's inclusion of four non-Arctic NATO states, the Russians have chosen to attend ASFR meetings as observers only, not as active participants. Additionally, their delegates are exclusively civilian, not military.¹⁰⁴ With the absence of more active Russian involvement in the ASFR, the forum's usefulness is lessened. Russia's involvement has subsided all the more in the wake of the Crimea/Ukraine Crisis with it not sending any representatives to the May 12-13, 2015 meeting in Reykjavik, Iceland.¹⁰⁵

On May 12, 2011, during the bi-annual ministerial meeting of the Arctic Council in Nuuk, Greenland, foreign affairs ministers and other senior government officials signed the *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic*. This new binding treaty requires Arctic Council nations to co-ordinate with each other in the event of a major

maritime or aeronautical disaster in the region, such as a plane crash or cruise ship sinking. The treaty also obliges them to conduct regular joint training exercises and to exchange information on capabilities. The Arctic SAR treaty was the first legally-binding agreement reached by the intergovernmental forum,¹⁰⁶ and it was widely hailed by foreign affairs analysts as a model for future co-operation among the circumpolar nations.¹⁰⁷ As explained by the host Danes, establishing a SAR agreement had become a practical necessity in recent years as the shrinking sea ice opened up Arctic waterways to increased vessel traffic. “As the ice melts and will continue to melt, we can expect increased human activity at sea, with the increased risks that accidents may happen,” said Danish Foreign Affairs Minister Lene Espersen during a press conference following the treaty signing.¹⁰⁸

Since the Arctic Council SAR Agreement was signed, several regional exercises have occurred to test the states’ ability to coordinate their national assets in the event of a real emergency. The first of these occurred October 5-6, 2011, when Canada hosted a tabletop training exercise (TTX) in Whitehorse, Yukon.¹⁰⁹ Subsequently, Greenland has played host to two live training exercises involving ships and aircrafts from the eight signatory states. Dubbed SAREX Greenland Sea, these exercises took place in September 2012 and 2013.¹¹⁰ Other exercises are being planned.

During the inaugural meeting of the Northern CHoDs in April 2012, the respective delegations formally acknowledged the Arctic Council as the primary forum for Arctic issues. They further decided that the Northern CHoDs meetings, while separate and distinct from the Arctic Council, should complement and maintain situational awareness of the efforts of the Council. All agreed “human activity and economic development are rapidly increasing in the Arctic region and present a range of complex challenges for government,” challenges that are exacerbated by the region’s difficult operating environment. Consequently, they concluded that international cooperation is increasingly important, and that bringing senior military officials together was a key step in facilitating transparent and collaborative approaches to operating

in the Arctic region. Agreeing that safety and security challenges will drive the agenda in the Arctic for the foreseeable future, they identified the four key areas for further discussion: developing a common operating picture; mapping each country's roles, capabilities, and ability to deploy in the Arctic; identifying joint training opportunities; and exploring enhanced cooperation in supporting civilian authorities.¹¹¹

Pax-Americana — Bi-national Defence, Security, and Cooperation in the Arctic

As previously discussed, Canada and the U.S. have shared national interests and a long tradition of continental defence in the Arctic region. The two nations are not perfectly aligned, however, with the Beaufort Sea boundary dispute and disagreement over the international legal status of the NWP remaining unresolved. Despite these two major outstanding issues and the occasional petty irritant, bilateral cooperation in the Arctic is proceeding in step with both states' Arctic foreign and defence policies.¹¹²

On December 11, 2012, the general officers commanding the Canadian Joint Operations Command (CJOC), NORAD and U.S. Northern Command signed the *Framework for Arctic Cooperation*. The Framework had the immediate goal of promoting enhanced military cooperation to prepare for and conduct defence, security, and safety operations in the Arctic.¹¹³ In doing so, the document acknowledged that the Arctic is not a region of conflict, and that the Canadian and U.S. militaries will support other departments and agencies in response to threats and hazards whenever they are tasked to do so.¹¹⁴ The Tri-Command Framework for Arctic Cooperation deals primarily with operational level military-to-military activities, but also serves to identify further challenges and emerging issues that may require resolution at a more strategic level.¹¹⁵ Among the current initiatives taking place under the Framework are the identification of all intelligence, surveillance, and reconnaissance (ISR) capabilities in the continental North, both military and

civilian, and the development of a shared all-source Arctic information database.¹¹⁶

Canada assumed the rotational chairmanship of the Arctic Council in May 2013, and turned over its responsibility to the U.S. in 2015. With the countries holding back-to-back chairmanships, the opportunity exists to promote a united North American vision and agenda.¹¹⁷ The Canadian Chair, Leona Aglukkaq, took steps towards that end by promoting cooperation with the U.S. on Arctic environmental issues.¹¹⁸ Upon accepting the Arctic Council chairmanship for the U.S. in April 2015, Secretary of State John Kerry pledged to continue some of the Canadian initiatives, including the Arctic Economic Council. Based on the Americans' published chairmanship program and its early activities, however, their tenure will contain several elements that are clearly distinct from their predecessor's, including a more conciliatory and inclusive approach toward Russia.¹¹⁹

Toward a Canada-Russia-USA Triad

Canada and Russia have many long-standing common interests in the Arctic, but until quite recently have seldom addressed them on a unified, bilateral basis. On matters of international maritime law, the countries share the legal position that their respective Arctic straits constitute internal waters. They collaborated in negotiating the inclusion of Article 234 in the UNCLOS, and more recently, on the exchange of scientific data regarding their respective continental shelf extension submissions. Canada and Russia shared common reservations about China's, NATO's and the EU's role in Arctic foreign relations. They have a long history of trade via the Murmansk-Churchill Arctic Bridge. In a similar regard, they are slowly forging a new Northern Air Bridge linking Winnipeg, Manitoba and Krasnoyarsk in central Siberia.¹²⁰ At a cultural level, Canadians and Russians are in a virtual tie for having the strongest sense of national identity with their northern territories and all the symbolism that goes along with it. In summary, if the Arctic could be considered in isolation of other foreign relations, and if the lingering socio-

psychological impacts of the Cold War could be set aside, Canadians, with their inherent, historical distrust of Americans, might embrace the Russians as their best allies going forward.

Anton Vasiliev, Russia's Arctic Ambassador-at-Large from 2008-14,¹²¹ promoted a perspective similar to this during his tenure. Ahead of a visit to Ottawa in May 2011 to attend the Canada/Russia/Norway: Dialogue and Cooperation in the Arctic Conference, Vasiliev wrote an editorial in Canada's foreign policy newspaper *Embassy*, that challenged the wisdom of Canada's Arctic Foreign Policy position that the U.S. will be Canada's principal partner on all matters pertaining to the region. After highlighting several of the previously cited bonds that link Canada and Russia in the Arctic, Vasiliev suggested Canada abandon the U.S. in favour of Russia. At the very least, he recommended that Canadian government officials consider entering into a three-way partnership.¹²²

Separate from Vasiliev, the Russian government made other overtures to Canada in 2012 and 2013 to deepen bilateral Arctic relations. In February 2012, Russia proposed that the two countries release a joint statement on Arctic cooperation on the margins of the 2012 Asia-Pacific Economic Cooperation (APEC) leaders' meeting in Vladivostok. While a statement was never issued, Prime Minister Harper and President Putin did discuss Arctic issues. On the margins of the G20 Leaders Summit in St. Petersburg from September 5-6, 2013, Russian Foreign Minister Lavrov, in his meeting with Canadian Foreign Affairs Minister John Baird, recalled the APEC conversation and underlined the fruitful prospects for Arctic cooperation.¹²³

While it is difficult to measure the influence that Russia's efforts have had on Canadian opinion, the Harper government did demonstrate increased willingness to work with them. The most dramatic example of this was the invitation that Canada extended to Russia, together with other Arctic Council states, to send military observers to Operation Nanook 2013. Russia accepted the offer sending a naval captain and a rear-admiral from the NORFLT.¹²⁴

Plans were underway to invite Russia to Operation Nanook 2014, potentially as an active participant; however these plans were cancelled in response to Russia's annexation of the Crimea in March 2014.¹²⁵

Russia's 2013 Development Strategy for the Arctic

On February 20, 2013, Russia expanded upon its 2008 Arctic strategy by approving *The Development Strategy of the Arctic zone of the Russian Federation and National Security for the Period up to 2020 and Beyond*. The 2013 document defines the “basic mechanisms, ways and means” for achieving the strategic goals and priorities for the sustainable socio-economic development of the Russian Arctic and for protecting national sovereignty and security interests in the region. The central focus of socio-economic development is upon mineral production, organization of an integrated transportation system, and raising the standard of living for residents in the northern territories. On issues of national security, the Strategy identifies the need for dual use technologies and facilities whenever possible, and the need to maintain the appropriate level of combat and mobilization readiness.¹²⁶

The document proclaims that implementation of the Development Strategy will strengthen Russia's competitive position while increasing international cooperation and forging greater international security, peace and stability. Article 17 of the Development Strategy identifies specific means to improve international cooperation and the preservation of the Arctic as a zone of peace.¹²⁷ Thus far, the actions taken by the Russian government in the Arctic region have been consistent with these commitments. This includes socio-economic and security activities in the aftermath of the Russian annexation of Crimea and its subsequent support for the ethnic Russian secessionists in Eastern Ukraine. Despite Western sanctions imposed against Russia for those interventions and it being ostracized on several Arctic diplomatic fronts outside the Arctic Council, particularly by Canada, key leadership figures within the Russian administration have called upon their fellow Arctic states to not let

their disagreement with Russia over the Crimea/Ukraine impede their cooperative ventures in their shared polar realm.¹²⁸

Official Russian comments made during and immediately following the Arctic Council's ministerial meeting in Iqaluit in April 2015, reiterated these points and chastised Canada for allowing the Crimea/Ukraine Crisis to interfere with Arctic cooperation. Sergei Donskoi, the Minister of Natural Resources and Environment who led the Russian delegation at the meeting, told other Arctic Council ministers that "No matter what is happening in the outside world, Arctic co-operation must continue," adding there is "no room for conflict and confrontation" in the region.¹²⁹ In a press conference to Russian media after the meeting, Donskoi expanded on this point, stating that "We are sorry that [the] Canadian chairmanship used [a] consensus forum which the Arctic Council is, to promote its home policy agenda in the context of events in Ukraine. It creates obstacles for the promotion of international cooperation in the Arctic." Accurately pointing out that all the other participants of the Ministerial Meeting had been critical of Canada's politicization of the forum, Donskoy added that "Russia proceeds from the fact that the Arctic is territory of dialogue, not a platform for political quarrels and settling scores."¹³⁰

The U.S. Shifts Into High Arctic Gear

In May 2013, just prior to the biannual Arctic Council ministerial meeting, U.S. President Obama signed a National Strategy for the Arctic Region. The strategy announcement was more symbolic than substantive, given that it shared the same objectives as the 2009 Bush presidential directives and signalled no significant change in policy. Within the strategy, the Obama administration outlines its plan to ratify the UNCLOS. It proclaims that accession to the Convention would protect U.S. rights, freedoms, and uses of the sea and airspace throughout the Arctic region, "and strengthen our arguments for freedom of navigation and over flight through the Northwest Passage and the Northern Sea Route."¹³¹ With the exception of the latter point regarding freedom of navigation through the NWP, the Strategy is very much

in line with Canada's general objectives in the Arctic,¹³² hence reinforcing the argument in favour of a continental approach to Arctic security and regulatory enforcement. It also aligns well with other Arctic state's regional strategies.

In late November 2013, the U.S. Secretary of Defence Chuck Hagel released the much-anticipated Department of Defence (DoD) Arctic Strategy. The Strategy identified the Department's desired end-state for the Arctic as "a secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is protected, and nations work cooperatively to address changes."¹³³ The DoD Arctic Strategy also articulates the main supporting objectives, which are to ensure security, support safety, and promote defence cooperation, and prepare to respond to a wide range of challenges and contingencies in order to maintain stability in the region, and wherever possible, doing so in conjunction with other nations.

NATO and the North

Until recently, NATO's leadership expressed strong interest in playing a greater role in Arctic security.¹³⁴ Then on 7 May 2013 Secretary-General Anders Fogh Rasmussen announced NATO was reversing course, stating that "at this present time NATO has no intention of raising its presence and activities in the High North...The Arctic is a harsh environment. It rewards cooperation, not confrontation."¹³⁵ Although five of the Arctic Council states are NATO members with the authority under Articles 4 and 5 of the North Atlantic Treaty to call upon their non-Arctic NATO allies to defend their northern territories in the event of an attack,¹³⁶ there is significant disagreement among them regarding NATO's role in the region in any circumstances short of a crisis. Norway is the strongest advocate for allowing NATO to participate in Arctic training exercises, in part as a symbolic bulwark against Russian military renewal in the region. Neutral Sweden and Finland, which are associated with NATO through its Partnership-for-Peace Program, support Norway in this.¹³⁷ Canada on the other hand, is strongly opposed to broader NATO involvement, in part to appease concerns from Russia, which

considers NATO activity in the region to be provocative.¹³⁸ Canada also has concerns that NATO involvement in Arctic security affairs would serve as a backdoor mechanism for non-Arctic members of the European Union to gain a policy foothold in the region, something Canada has been consistently opposed to for other political reasons.¹³⁹

While not angering the Russians is a valid strategic concern, denying NATO any role in the Arctic is inherently problematic. As observed by a defence attaché attending a January 2013 think tank roundtable discussion in Ottawa, if NATO is not allowed at least a training role in that environment, Canada cannot rightfully expect its allies to develop the operational expertise required to defend Canadian interests in the Arctic if future circumstances ever demand it.¹⁴⁰ As some commentators (such as John Ivison¹⁴¹ and Rob Huebert¹⁴²) have suggested, Russia's recent military adventurism in the Ukraine may give Canada cause to reconsider its position on NATO involvement the Arctic. The Harper government is likely to proceed cautiously as long as Russia's military activities in the polar region continue to focus on territorial defence and constabulary support to other government agencies. To do otherwise might provoke Russia to adopt a more offensive posture in response to perceived NATO encirclement in the Arctic.

The Kiruna Declaration and Vision for the Arctic

On May 15, 2013, during the Arctic Council's bi-annual ministerial meeting held in Kiruna, Sweden, six new states were accepted as accredited Observers — China, India, Italy, Japan, Singapore, and South Korea. The EU was left wanting on the sidelines as an ad hoc observer due to the standing objection from Canada over EU anti-sealing policies. However, Arctic Council members agreed the EU would be admitted once it resolved its differences with Canada.¹⁴³ These differences were resolved in time for the 2015 Ministerial meeting in Iqaluit, but consideration of the EU and other observer applications were deferred to subsequent meetings.¹⁴⁴

Based on the criteria for admission of accredited Observers updated by the Arctic Council in 2011, the new entries had to accept and support the objectives of the Arctic Council defined in the Ottawa Declaration, and recognize the sovereignty, sovereign rights, and jurisdiction of all of the Arctic Council Member states. They also had to recognize the supremacy of the rule of international law as governed by UNCLOS as the best framework for managing the Arctic region's affairs.¹⁴⁵

In addition to admitting new Observers, the Arctic ministers announced the *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic*, the second legally binding agreement negotiated under the auspices of the Arctic Council.¹⁴⁶ Finally, the Arctic ministers issued a separate declaration — the *Vision for the Arctic* —that confirmed that the Arctic Council is the “pre-eminent high-level forum” for dealing with Arctic issues that has made the region “into an area of unique international cooperation.”¹⁴⁷ As Norwegian Foreign Minister Eide explained to journalists covering the event, the *Vision for the Arctic* “confirms that the basic principles of the Arctic Council are to lead the way for all decisions concerning the Arctic. It confirms that all nations will focus on preserving the environment of the Arctic and it also confirms that this organisation will have Indigenous Peoples as active participants.”¹⁴⁸

The Arctic Five Take Action on Fisheries

In December 2013, the Russian International Affairs Council (RIAC) hosted an Arctic Five conference to consider the need for an international Arctic fisheries agreement to prevent the start of unregulated commercial fishing on the high seas of the Central Arctic Ocean outside the coastal states' EEZs. One of the Russian delegates, Vyacheslav Zilanov, the head of the commercial fisherman's association for northern Russia, commented that based on his country's experience it would be much easier to put a regulatory regime in place now to prevent over-fishing, than to wait until after the foreign fishing fleet have arrived. David Benton, a commissioner on the U.S. Arctic Research

Commission and former chairman of the North Pacific Fisheries Management Council, supported Zilanov's perspective, explaining how the Bering Sea between the U.S. and Russia was over-fished by other countries. "Because fishing fleets can move faster than countries can act, Russia and the United States must take advantage of this rare opportunity to get ahead of the curve in the Central Arctic Ocean," stated Benton.¹⁴⁹

On February 24-26, 2014, representatives from the Arctic Five met again, this time in Greenland, to review a draft fisheries agreement for the Central Arctic Ocean prepared by the United States. The meeting concluded with a decision to establish a moratorium on fishing in the Arctic until an appropriate regulatory system is enacted based on scientific research into the region's ability to sustain a commercial fishery.¹⁵⁰ Formal signing of the moratorium was scheduled to occur later in the spring of 2014, but was delayed until July 2015 as a result of diplomatic tensions precipitated by Russia's annexation of Crimea.¹⁵¹ Once a future fishing regulatory system is in place for the Central Arctic Ocean, it is likely that the Arctic Five will cooperate in its enforcement.

Countervailing Indicators

While present trends favour growing peace and cooperation in the Arctic, it is not without its distractions. Two challenges stand out in particular, both affecting Russia's relations with the other Arctic states, particularly the Arctic Five. The first of these challenges is ongoing Nordic lobbying, particularly from Norway, for NATO to play a greater role in Arctic defence.¹⁵² As discussed previously, Russia continues to have zero tolerance for expanded NATO involvement in the region. The conciliatory statement by NATO Secretary General Rasmussen in May 2013 that the Alliance would not be seeking to raise its profile in the Arctic was likely a direct response to the Russians' concerns.¹⁵³ However, if Norway is successful in convincing NATO to renege on Rasmussen's earlier statement, relations between the Arctic Five and Russia are likely to suffer. The chances of this happening may receive a

boost as a result of the October 2014 appointment of Norway's former Prime Minister Jens Stoltenberg as the new NATO Secretary-General .

The second challenge results from Russia's March 18, 2013 annexation of the Crimean Peninsula and Russia's subsequent support for the secessionist movement in the eastern parts of Ukraine.¹⁵⁴ As already discussed, the Russian government's actions there have spurred diplomatic protests and assorted sanctions against Russia from throughout the West, including by the governments of Canada, Denmark-Greenland, Norway, and the United States.¹⁵⁵ Senior Arctic Officials (SAOs) from all Arctic Council states have attempted to prevent the diplomatic crisis in Ukraine and the Crimea from spilling over into their bilateral and multilateral relations on Arctic regional issues. They have achieved some success at the broadest Arctic Council levels. The Arctic Council SAO meetings in Yellowknife in March 2014 and in Whitehorse in March 2015 proceeded as planned with all Member states represented,¹⁵⁶ and no one officially proposed to expel Russia from the Arctic Council.¹⁵⁷ Nonetheless, Canada boycotted an Arctic Council working group meeting in Moscow in April 2014 in protest against the Crimean annexation¹⁵⁸ and used the occasion of the 2015 Ministerial meeting in Iqaluit to criticize Russia for its interventions.¹⁵⁹ Outside the Arctic Council, Norway has suspended all bilateral military cooperation activities with Russia that were scheduled through the end of May 2014, including Exercise POMOR.¹⁶⁰ Canada has indefinitely suspended all bilateral military cooperation with Russia including dropping plans to invite Russian observers to attend Operation Nanook 2014.¹⁶¹ The U.S. took similar steps in limiting its military liaison with Russia.¹⁶² Work on establishing an Arctic Coast Guard Forum was also stalled as a result of Western government protests against Russia.¹⁶³ One of the few positive notes in the immediate aftermath of the onset of the crisis was the announcement by Norway's Border Commissioner that his agency will continue to work cooperatively with the FSB Border Guard Service as planned.¹⁶⁴

Many diplomats, scientists, business officials, and academics who deal extensively with Arctic issues caution that punitive measures against Russia in response to the Ukraine/Crimea Crisis should not be taken to an extreme, lest they severely damage long-term cooperation between the parties. Several Canadian and Russian speakers at a DFATD-sponsored academic seminar on the “Future of Russia” in March 2014 recommended concerted, maximum effort to insulate Arctic relations from the impacts of the current crisis.¹⁶⁵

Conclusion

While the Cold War period witnessed a sharp geopolitical divide in the Arctic between Soviet Russia and NATO members Canada, Denmark-Greenland, Norway, and the United States, the 1990s and opening decade of the 21st century saw a transition to a more conciliatory relationship. During this twenty-year span, the Arctic Five states, together with their Arctic Council brethren Finland, Iceland, and Sweden, came to understand that political and military cooperation amongst them was a growing necessity to respond effectively to climate change and its socio-economic impacts. Cooperation was especially important to the Arctic Five in order to meet the challenges of non-Arctic states and intergovernmental organizations seeking unbridled access to shipping routes and the potential natural resource riches in the Central Arctic Ocean — the Arctic Five’s proverbial “backyard.”

As the second decade of the 21st century dawned, however, the combined impacts of international grandstanding, domestic political intrigue, and sensationalist news media reporting threatened the Arctic Five’s fledgling resolve to collaborate on sovereignty, security, and safety issues. Amidst this, political leaders struggled at times to suppress their nationalist rhetoric that had shaped onlookers’ opinion that the Arctic region was on the verge of war over rivaling resource claims. It was often only through the efforts of key bureaucrats within the respective states’ foreign relations and defence departments that the collaboration efforts remained on track.

Following the subsequent ratification of two Arctic Council-sponsored treaties, the conduct of two successive meetings of the Northern CHoDs, and the adoption of Arctic foreign and defence policies that acclaimed international cooperation as a cornerstone principle, the Arctic Five reached a consensus by the end of 2013 that no military threat existed within the region and that the likelihood for conflict was low. The Arctic Five further agreed that should such a situation arise it would be adverse to their national and collective interests. Politicians, diplomats, government bureaucrats, and senior military officials from across the region have stated this, publicly and privately, during the past few years. Among the notables to do so have been: Russia's President Vladimir Putin,¹⁶⁶ his Foreign Minister Sergei Lavrov,¹⁶⁷ and his former Arctic Ambassador-at-Large Anton Vasiliev;¹⁶⁸ Canadian Prime Minister Stephen Harper¹⁶⁹ and his former Chief of Defence Staff General Walter Natynczyk; the former U.S. Commander of NORAD General Victor Renuart; and former Norwegian Secretary of State for Defence and Foreign Minister) Espen Barth Eide.¹⁷⁰

Accordingly, the coming years are likely to see the Arctic Five states continue their cooperation on Arctic-specific issues regardless of political conflicts and distractions elsewhere in the world, a practice that is sometimes referred to as "Arctic Exceptionalism." Confidence in this assessment is bolstered by the collective decision by the Arctic states to keep working together on the main body of the Arctic Council despite strong differences over Russia's intervention in the Crimea and Eastern Ukraine, particularly since the U.S. assumed the chairmanship under John Kerry. Should disagreements arise over conflicting resource rights or other regional interests, they are likely to be referred to arbitration or international courts for settlement, and will not be resolved by gunboat diplomacy or stronger tactics.

Political realism dictates, however, that none of the Arctic states can completely discard the possibility of limited tensions with a potential for escalation, especially when conducting their defence planning. Any number of wildcard factors could trigger these tensions, including:

Whole of Government through an Arctic Lens

- Future Russian interventions abroad that more deeply offend the sensitivities of neighbouring Arctic Five states than did the Crimean annexation and its subsequent support for the secessionist movement in Eastern Ukraine;
- The decision by Chinese or other Asian leaders to abandon their Arctic Council Observer vows to respect the sovereign rights of the Arctic states;
- A significant political falling out between Arctic Five interests on one side, and Sweden, Finland, and Iceland on the other;
- The independence of Greenland under a government radically opposed to the existing Arctic Council agenda;
- Significant advances in drilling and/or mining technologies that make it easier to extract Arctic resources;
- Global shortages in resources that spike demand for Arctic reserves; and
- A profound and unexpected acceleration or deceleration in the pace of climate change.¹⁷¹

Ultimately, what transpires in the Arctic in the future will hinge on essential enablers, without which no state action can occur. Often called the strategic “centre of gravity” in military planning terms, the first enablers are the political will and economic incentive to maintain the peace, or, if necessary, militarily defend the national interests in the region. At the operational military level, the centre of gravity will be the logistical capability to mount and sustain military operations in the harsh Arctic environment.

Notes

¹ The term “Northern CHoDs” instead of “Arctic CHoDs” was applied by the event’s organizers within Canada’s Department of National Defence (DND) in an effort to downplay the possible misperception that the meeting was associated with, or formally sanctioned by, the Arctic Council. DND, *Draft Media Response*

Line: CDS to host meeting of the Northern Chiefs of Defence in Iqaluit (Ottawa: DND ADM(PA), 13 February 2012).

² “Arctic emergency response tops Goose Bay defence talks,” *Nunatsiaq News*, 14 April 2012. See also DND, News Release 12.058, 13 April 2012.

³ Embassy of the Russian Federation in Canada, “Arctic Chiefs of Defence Staff Meeting,” Press Release, April 17, 2012. The press release also spoke to sidebar discussions that General Natynczyk and General Makarov held during the margins of the meeting in which they touched upon the condition and prospects for future collaboration between the Russian and Canadian militaries on a broader range of issues.

⁴ Chiefly hydrocarbon reserves, rare earth metals and fish stocks.

⁵ The CARA assessed that “about 22 percent of the undiscovered, technically recoverable hydrocarbon resources in the world” resides beneath the Arctic tundra and seabed. USGS, “90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic,” News Release dated 23 July 2008, last accessed 8 August 2013,

http://www.usgs.gov/newsroom/article.asp?ID=1980&from=rss_home. See also U.S. Geological Survey, “Circum-Arctic Resource Appraisal,” last modified 19 July 2013, <http://energy.usgs.gov/RegionalStudies/Arctic.aspx>.

⁶ Also onboard were Frederik Paulsen, the Swedish pharmaceuticals millionaire who had funded the expedition, Australian entrepreneur Mike McDowell, a promoter for the expedition, and the mini-sub’s Russian pilots. Despite the expedition’s international financing and the tri-national composition of the crews, the flag planting made the event 100 percent Russian in the opinion of politicians and news media around the world. Emmerson, *The Future History of the Arctic*, 81-83. Among the many news organizations to carry the story were the *New York Times*, *Washington Post*, *The Guardian*, *The Independent*, *China Daily*, *Al Jazeera*, *The Hindu Times*, *Canberra Times*, *USA Today*, BBC, and CNN. The phrase “Russia Plants Flag” was a commonly used phrase in most of the story headlines.

⁷ Doug Struck, “Russia’s Deep-Sea Flag-Planting at North Pole Strikes a Chill in Canada,” *The Washington Post*, 7 August 2007.

⁸ CNN, “Russia plants flag on Arctic floor.” U.S. State Department deputy spokesman Tom Casey sarcastically remarked, “I’m not sure whether they’ve put up a metal flag, a rubber flag, or a bed sheet on the ocean floor. Either way, it doesn’t have any legal standing or effect on this claim.”

⁹ Coates *et al*, *Arctic Front: Defending Canada in the Far North*, 163.

¹⁰ Byers, *Who Owns the Arctic?*, 88. See also Mike Eckel, “Russia defends North Pole flag-planting,” *USA Today*, 8 August 2007; CNN, “Russia plants flag on Arctic floor”; C.J. Chivers, “Russians Plant Flag on the Arctic Seabed,” *New York Times*, 3 August 2007; Emmerson, *The Future History of the Arctic*, 82. Lavrov did acknowledge, however, that the drawing of seabed samples was deliberate in support of Russia’s revised submission of its extended continental shelf claim.

¹¹ Eckel, “Russia defends North Pole flag-planting.”

¹² See, for example, Chilingarov’s statements in October 2012 disavowing belligerent, nationalistic rhetoric. “The North Pole belongs to everyone,” he told Canadian Postmedia News. “Since the dive to the bottom of the ocean at the North Pole was a great achievement, and since I am a Russian citizen, I took a Russian flag.” Matthew Fisher, “Russian explorer proposes leaders meeting at north pole,” *Vancouver Sun*, 5 October 2012. See also Gabriela Baczynska, “Veteran explorer stakes Russia’s claim over the Arctic,” *Reuters*, 27 February 2013; Arctic Info, “Chilingarov proposed organizing a meeting between Putin and the Prime Minister of Canada at the North Pole,” last modified 8 October 2012, <http://www.arctic-info.com/News/Page/chilingarov-proposed-organizing-a-meeting-between-putin-and-the-prime-minister-of-canada-at-the-north-pole>.

¹³ The controversies over the Manhattan voyages of 1969-70 and the Polar Sea in 1985 have been well-documented in the existing scholarship.

¹⁴ Coates et al, *Arctic Front*, 173-174. Interestingly, only 20 per cent favoured a build-up of military forces to achieve this aim.

¹⁵ Prime Minister’s Office, “Prime Minister Stephen Harper Announces New Arctic Offshore Patrol Ships,” News Release, 9 July 2007, last accessed 12 November 2013, <http://pm.gc.ca/eng/news/2007/07/09/prime-minister-stephen-harper-announces-new-arctic-offshore-patrol-ships>. The announcement said the AOPS would be capable of operating in first year ice up to one metre thick and cost \$3.1-billion.

¹⁶ “Harper on Arctic: ‘Use it or lose it,’” *Victoria Times Colonist*, 10 July 2007.

¹⁷ Prime Minister Harper spoke to this shift in focus being integral to his government’s Arctic nationalism during an interview with Steven Chase. See “Q&A with Harper: No previous government has delivered more in the North,” *Globe and Mail*, 17 January 2014.

¹⁸ Coates et al, *Arctic Front*, 174-175.

¹⁹ National Defence and the Canadian Armed Forces, “Operation NANOOK,” last modified 12 August 2013, <http://www.forces.gc.ca/en/operations-canada-north-america-recurring/op-nanook.page>. See also National Defence and the

Canadian Armed Forces, “Operation NUNALIVUT,” last modified 3 September 2013, <http://www.forces.gc.ca/en/operations-canada-north-america-recurring/op-nunalivut.page>. On Nanook operations, see the Lackenbauer and Lajeunesse chapter in this volume.

²⁰ David Pugliese, “Canadian Armed Forces Arctic Training Centre Opens in Resolute Bay While Chinese Cargo Ship Sets Sail On Transit of Northern Sea Route,” *Ottawa Citizen* on-line, 16 August 2013, last accessed 13 November 2013, <http://blogs.ottawacitizen.com/2013/08/16/canadian-armed-forces-arctic-training-centre-opens-in-resolute-bay-while-chinese-cargo-ship-sets-sail-on-transit-of-northern-sea-route/>. . See also Prime Minister’s Office, “Prime Minister announces expansion of Canadian Forces facilities and operations in the Arctic,” last modified 10 August 2007, <http://pm.gc.ca/eng/news/2007/08/10/prime-minister-announces-expansion-canadian-forces-facilities-and-operations-arctic>.

²¹ Richard Brennan, “Diefenbaker’ to patrol Arctic,” *Toronto Star*, 28 August 2008.

²² Prime Minister’s Office, “The Canadian High Arctic Research Station,” last modified 23 August 2012, <http://www.pm.gc.ca/eng/news/2012/08/23/canadian-high-arctic-research-station>. On US criticisms of the Canadian government to follow through on its commitments, see John English, *Ice and Water*, 5, and Campbell Clark, “Harper’s tough talk on the Arctic less stern in private,” *Globe and Mail*, 12 May 2011.

²³ Other DND and CAF Arctic operational doctrine publications include the *Arctic Integrating Concept* (23 September 2010), *CDS/DM Directive For the DND/CF in Canada’s North* (12 April 2011), *CF Employment and Support Concept for the North* (14 April 2011), and the *Canadian Forces Northern Employment and Support Plan* (November 2012).

²⁴ DND, *Canada First Defence Strategy*, 8.

²⁵ DND, *Canada First Defence Strategy*, 12.

²⁶ CBC News, “MacKay makes Arctic army reserve unit official,” last modified 17 August 2009, <http://www.cbc.ca/news/canada/north/mackay-makes-arctic-army-reserve-unit-official-1.780272>.

²⁷ Robert Smol, “When will we get serious about Arctic defence?” *CBC News* 11 May 2011, last modified 11 May 2009. <http://www.cbc.ca/news/canada/when-will-we-get-serious-about-arctic-defence-1.813981>. On the ARCGs, see the Lackenbauer and Lajeunesse chapter in this volume.

²⁸ Byers, *International Law and the Arctic*, 93; and Andrew C. Revkin, “Countries agree to talk over the Arctic,” *New York Times*, 29 May 2008.

²⁹ OceanLaw.org, “The Ilulissat Declaration,” last accessed 13 February 2013, http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf.

³⁰ Canwest News Service, “Russian general fires Arctic warning,” last modified 24 June 2008, <http://www.canada.com/topics/news/story.html?id=ac0d24df-dc10-43da-89f3-b3c3c0928ae7>; Alan W. Dowd, “Trying times with Moscow,” *Fraser Forum* (November/December 2010): 25.

³¹ “Russia plans Arctic training exercises,” *Juneau Empire*, 25 June 2008.

³² Canwest News Service, “Russian general fires Arctic warning.”

³³ Defence Update, “Russia Extends its Arctic Navalpower Base,” last accessed 2 January 2014, http://defense-update.com/newscast/0808/070802_russian_navy_in_the_arctic.html. In June and early July 2008 the Russian Udaloy class anti-submarine ship *Severomorsk* entered the Arctic Circle for about a month long deployment, replaced by the Slava class missile cruiser *Marshal Ustinov* in mid July. As Severomorsk left the area it paid a visit to the Norwegian port of Haakonsværn to continue the traditional spirit of cooperation with participation in Northern Edge 2008 - a tri-national exercise involving the Russian Fleet, US Navy and Norwegian Navy, taking place in the Norwegian and Barents seas.

³⁴ Valur Ingimundarson, “Territorial Discourses and Identity Politics: Iceland’s Role in the Arctic,” in *Arctic Security in an Age of Climate Change*, ed. James Kraska, 174-189 (Cambridge: University of Cambridge Press, 2011) 179-180. See also Yuri Zarakhovich, “Why Russia is bailing out Iceland,” *Time*, 13 October, 2008.

³⁵ Lackenbauer, “Polar Race or Polar Saga” in *Arctic Security in an Age of Climate Change*, ed. Kraska, 236. The aggressive Russian actions to which Harper referred included the August 2008 invasion of Georgia during the South Ossetia War.

³⁶ With a great touch of irony, one of Harper’s Conservative caucus members, Laurie Hawn, the parliamentary secretary to the Minister of National Defence, downplayed the whole incident. Hawn, a former CF-18 fighter pilot who had retired as a lieutenant-colonel, told the Canadian Press that Russian LRA flights like the ones in question were routine and had occurred in international air space. CBC News, “Russia bomber on routine training flight, diplomat tells MPs,” last modified 24 March 2009, <http://www.cbc.ca/news/canada/russian-bomber-on-routine-training-flight-diplomat-tells-mps-1.802243>.

³⁷ CBC News, “NORAD downplays Russian bomber interception,” last modified 25 August 2010, <http://www.cbc.ca/news/politics/norad-downplays-russian>

[bomber-interception-1.929222](#); Brian Lilley, “Canadian jets repel Russian bombers,” *Toronto Sun*, 30 July 2010; Dowd, “Trying times with Moscow,” 25.

³⁸ Murray Brewster, “Russia’s Arctic policy no cause for alarm, MacKay told,” *Globe and Mail*, 25 August 2010.

³⁹ Russian Federation Security Council, *The Foundations of Russian Federation Policy in the Arctic until 2020 and Beyond*, trans by Maxim Rusnak and Ilan Berman for the American Foreign Policy Council, 18 Sept 2008, Art. II, III, and IV. An alternate translation by Philip Burgess is available on-line at http://icr.arcticportal.org/index.php?option=com_content&view=article&id=1791:fundations-of-the-russian-federations-state-policy-in-the-arctic-until-2020-and-beyond&catid=45:news-2007&Itemid=111&lang=sa.

⁴⁰ The two translations of the original Russian Arctic strategy I have read respectively call it “favourable operating environment” and “favourable operating conditions.” I have instead opted for the word “wherewithal” in the phrase – by which I mean financial, political, and social support – to avoid potential confusion with operational conditions/environment wrought by climate and topography, etc.

⁴¹ Russian Federation Security Council, *Foundations of Russian Federation Policy*, Art. III. 6, b.

⁴² *Ibid.*, Art. IV 8 b. The FSB is the successor organization to the Soviet KGB.

⁴³ *Ibid.*, Art. III 7 b and c; Art. IV 8 b. Highlighted under border cooperation was the need for Russia to work together with its fellow Arctic states to effectively develop natural resources and protect the environment in adjoining areas, as well as coordinate the coast guards of the coastal states in fighting terrorism at sea, and stopping smuggling activity and illegal migration.

⁴⁴ Although some specific projects have been delayed due to budgetary constraints.

⁴⁵ Such as Nikolai Patrushev, the Secretary of the Security Council, and Dmitry Rogozin, Russia’s ambassador to NATO.

⁴⁶ Norwegian defence analyst Kristian Åtland noted that the publication of the Russian Arctic strategy “spurred much unnecessary concern among Russia’s Arctic neighbours, and apparently a round of inter-agency discussions in Moscow” as the military and civilian agencies competed for Arctic-related security funding. Åtland, “Russia’s Armed Forces and the Arctic,” 275-277.

⁴⁷ Few other details about the new formation were announced at the time, which caused considerable speculation about Russian intentions. It was not until May 2011 that the world learned the first Russian Arctic “special forces brigade” would most likely be based at Pechenga on the Kola Peninsula, and would in fact be comprised of existing units re-tasked and retrained to operate in severe Arctic

conditions. Siemon T. Wezeman, "Military Capabilities in the Arctic," *SIPRI Background Paper*, March 2012, 9. See also Trude Pettersen, "Russian Arctic brigades put off to 2015," *Barents Observer Online*, last modified 22 February 2012, <http://barentsobserver.com/en/topics/russian-arctic-brigades-put-2015>. The claim that their special force brigades for the Arctic were to counter balance the establishment of Canadian Arctic brigades reveals a fundamental lack of understanding by the Russians or an outright manipulation of the facts. Whereas troop numbers in a single Russian brigade are approximately 4,400 officers and men, the total strength of the ARCG numbers less than 500. Russian Defence Policy, "'New Profile' Brigades," last modified 3 December 2011, <http://russiandefpolicy.wordpress.com/tag/brigades/>.

⁴⁸ Pettersen, "Russian Arctic brigades put off to 2015." See also Alexander Chuikov, "Northern Dreams of the Defense Ministry," *Argumenty Nedeli* No. 37 (Sept. 27-Oct 2, 2012): 14.

⁴⁹ As of the beginning of 2015 only three outposts were fully constructed, those being at Naryan Mar, Dudinka, and Arkhangelsk. Chuikov, "Northern Dreams of the Defence Ministry," 14. The Russians subsequently announced that other bases would be opened on the sites of abandoned Soviet Era airbases and forward operating locations along the Siberian coast and Arctic Islands. During the fall of 2013, the Russians opened the first of these in the New Siberian Islands, at the site of the old Tempa Airfield. In 2014, the Russians reactivated the old airfield on Graham Bell Island in the Franz Josef Archipelago and began similar refurbishments on Wrangel Island, Cape Schmidt, and Novaya Zemlya. Mark Admonis, "Russia plans massive Arctic Expansion," *USNI News*, 9 August 2012; Ria Novosti, "Russia to Reopen Arctic Airbases."

⁵⁰ Global Security Newswire Staff, "Russia's Reopening of Arctic Base May Be Response to NATO Missile Defense," 17 September 2013, <http://www.nti.org/gsn/article/russias-decision-reopen-arctic-base-may-have-impact-nato-missile-defense/>. See also Conley and Rohloff, *The New Ice Curtain Russia's Strategic Reach in the Arctic*, 78-79. The America Aegis and other ballistic missile defence (BMD) systems that are perceived by the Russians to pose a security threat in the Arctic are discussed in detail in James Kraska, "The New Arctic Geography and U.S. Strategy," in *Arctic Security in an Age of Climate Change*, ed. Kraska, 253-255.

⁵¹ Mia Bennett, "Why NATO isn't establishing an Arctic presence," *Alaska Dispatch On-line*, last accessed 7 June 2013, <http://www.alaskadispatch.com/article/20130606/why-nato-isnt-establishing-arctic-presence>.

⁵² See, for example, Putin’s February 2013 address to the Defence Ministry Board, described in Thomas Nilsen, “Danger of militarization of the Arctic exists,” *Barents Observer*, last updated 27 February 2013, <http://barentsobserver.com/en/security/2013/02/danger-militarization-artic-exists-27-02>.

⁵³ Zysk, “Military Aspects of Russia’s Arctic Policy,” 101-102.

⁵⁴ *Ibid.*, 102-104.

⁵⁵ The FSB has introduced two new classes of ice-strengthened vessels for its Coastal Border Guard Service, the Project 22460 *Rubin* Class patrol ship and Project 22120 *Purga* Class corvette. There are currently four of each in service, all operating in the Northern Pacific. On November 6, 2013, Russian Defence Minister General Sergei Shoigu announced that the Russian Federation Navy would develop a new ice-class formation built around these classes of vessels. Despite Shoigu’s announcement that these vessels will be part of a 20 ship naval formation, it is probable they would remain under the operational control of the FSB’s Maritime Border Guard service and would only be seconded to the Navy in the event of a crisis. Interfax AVN, “Russian plant expected to build 20 patrol boats for Arctic Formation,” Interfax-AVN Military News Agency, 6 November 2013.

⁵⁶ While the Northern Strategy was conciliatory, it nonetheless contains several nationalist motherhood statements that speak to Canadians’ identity and their sense of pride in their northern heritage.

⁵⁷ Department of Indian Affairs and Northern Development (INAC), *Canada’s Northern Strategy: Our North, Our Heritage, Our Future* (Ottawa: INAC, 2009), 1-2, 17.

⁵⁸ Department of Indian Affairs and Northern Development, *Canada’s Northern Strategy*, 9-10.

⁵⁹ *Ibid.*, 11, 33-35.

⁶⁰ Department of Foreign Affairs and International Trade (DFAIT), *Statement on Canada’s Arctic Foreign Policy, Exercising Sovereignty and Promoting Canada’s Northern Strategy Abroad*. (Ottawa: DFAIT, 20 August 2010), 3-5.

⁶¹ DFAIT, *Statement on Canada’s Arctic Foreign Policy*, 6-7.

⁶² *Ibid.*, 8. Canada’s then Foreign Affairs Minister, Lawrence Cannon, made this point clear in a speech he delivered to Russian diplomats in Moscow on September 15, 2010, during which he underscored both the need and opportunities for all Arctic states to work together “to advance shared priorities and to address common

challenges.” Lawrence Cannon (speech, Diplomatic Academy of the Russian Ministry of Foreign Affairs, Moscow, Russian Federation, September 15, 2010).

⁶³ Department of Foreign Affairs and International Trade, *Statement on Canada’s Arctic Foreign Policy*, 10.

⁶⁴ DND, *Briefing Note for the Minister and Associate Minister: Russia’s Activities in the Arctic* (Ottawa: ADM(Pol), 12 July 2011), redacted copy posted on line at http://www.ceasefire.ca/wp-content/uploads/2012/05/0188_0011.pdf.

⁶⁵ Among the Russian activities cited in the briefing note were LRA flights near the Canadian Arctic, efforts to modernize and sustain strategic nuclear forces based in northern Russia, the conclusion of the Russia-Norway maritime boundary agreement, and Russia’s compliance with international law in its continental shelf claim actions.

⁶⁶ Ibid. These considerations were heavily censored in the copy of the briefing note released under the Access to Information Act, including their significance. However, it is probable the issue of presidential election was mentioned to point out that the timing and assertive rhetoric associated with the activities was intended for the domestic political consumption of nationalistic Russian voters, rather than to provoke other international audiences.

⁶⁷ Ibid.

⁶⁸ The Aegis Combat System (ACS) is an advanced command-and-control and weapon control system that tracks and guides weapons to destroy enemy targets, including ballistic missiles. The Russian military has expressed increasing concern about ships with this capability operating in proximity to its shores because it decreases the deterrent effect of their strategic nuclear missile program.

⁶⁹ Norway’s High North Strategy highlighted the requirement for a strong armed forces presence in the Arctic region to support the Norwegian coast guard. It stated that “most of the security challenges in the High North are cross-sectoral, and require close cooperation between the civilian and military authorities.” The High North Strategy envisioned that a key role of the Norwegian armed forces would be the provision of surveillance and intelligence to guide national decision-making. Norwegian Ministry of Foreign Affairs (MFA), *The Norwegian Government’s High North Strategy* (Oslo: Norwegian Ministry of Foreign Affairs, 2006), 19-20.

⁷⁰ The Norwegian government stated in a 2011 White Paper that it did not consider Russia’s increased level of military activity in the High North to be directed toward Norway, but rather saw it as a reflection of Russia’s strategic

objectives in the region. Norwegian MFA, *The High North - Visions and Strategies*, Report to the Storting (White Paper) (Oslo: Norwegian MFA, 2011), 70.

⁷¹ Conley, Toland, and Østhagen, *A New Security Architecture for the Arctic*, 10.

⁷² Norwegian MFA, *High North Strategy*, 18-19.

⁷³ Norwegian MFA, *High North - Visions and Strategies*, 70-72. The POMOR joint maritime exercise series began in June 2010. It is conducted in an area extending from Bergen in northern Norway to the Russian port of Severomorsk. The Norwegians and Russians also participate in annual joint combined search and rescue exercise in the Barents Sea. Exercise BARENTS 2013, for example, involved Norwegian Coast Guard and Russian naval air asset conduct a simulated recovery of 20 crew of a sunken vessel and clean up the oil slick from the wreck. ITAR-TASS World Service, “Russian-Norwegian rescue exercise Barents 2013 ends,” 6 June 2013.

⁷⁴ Norwegian MFA, *New Building Blocks in the North: The Next Step in the Government’s High North Strategy* (Oslo: Norwegian MFA, 2009), 50.

⁷⁵ Norwegian MFA, *High North - Visions and Strategies*, 70

⁷⁶ Northern Defence Cooperation, “Facts about NORDEFECO,” last accessed 10 March 2013, <http://www.nordefco.org/>. Nordic Armaments Cooperation (NORDAC) was established in 1994 to coordinate development and procurement programmes between the five Nordic countries. The Nordic Coordinated Arrangement for Military Peace Support (NORDCAPS) was established in 1997 to offer joint training for peace support operations, as well as coordinate Nordic contributions to capacity building and security sector reform. Nordic Supportive Defence Structures (NORDSUP) was established in 1998 to enable their militaries to retain the full range of military capabilities and increase cost-efficiency through greater coordination and cooperation. NORDEFECO, *Military Coordination Committee 2012 Annual Report*, (Copenhagen: Danish chairmanship of the Nordic Military Coordination Committee, February 2013), 4.

⁷⁷ When Denmark assumed the rotating chairmanship of NORDEFECO’s Military Coordination Committee (MCC) in January 2012, it made strengthening the political dialogue on cooperation in the Arctic region one of its top four priorities. NORDEFECO, *Military Coordination Committee 2012 Annual Report*, 21.

⁷⁸ Rob Huebert, *United States Arctic Policy: The Reluctant Arctic Power* SPP Briefing Papers Vol 2, No 2 (Calgary: School of Public Policy, University of Calgary, May 2009), 1-2. Huebert characterized the history of U.S. Arctic policy as “reactive, piecemeal, and rigid.” See also Huebert, *Newly Emerging Arctic Security Environment*, 19; and English, *Fire and Ice*, 192.

⁷⁹ Institute of the North, “Arctic Opinion Poll,” last accessed 23 Feb 2013, https://www.institutenorth.org/programs/arctic-advocacy-infrastructure/Arctic_Policy_Forum/arctic-public-opinion-poll/. On the positive side, when informed about its mission statement — for the eight Arctic nations to work together on common issues — 81.7 percent of respondents supported or strongly supported the Council.

⁸⁰ Huebert, *Reluctant Arctic Power*, 2, 8, 10-13.

⁸¹ Office of the President of the United States, *National Security Presidential Directive (NSPD) 66 and Homeland Security Presidential Directive (HSPD) 25 - Arctic Region Policy* (Washington DC: The White House, 9 January 2009), Art. III, A, 1-6.

⁸² *Ibid.*, Art. III, C, 2-3.

⁸³ *Ibid.*, Art. III, B, 1, 5.

⁸⁴ *Ibid.*, Articles III, B 6 a-e, C 5 a-d, D 4 a-c, E 5a-f, F 4 a-d, G 4 a-g, H 6 a-e, IV, A.

⁸⁵ United States Navy (USN) Chief of Naval Operations, *U.S. Navy Arctic Roadmap* (Washington, DC: Department of the Navy, October 2009), 3 11, 17-18.

⁸⁶ *Ibid.*, 6.

⁸⁷ USN, *U.S. Navy Climate Change Roadmap* (Washington, DC: Department of the Navy, April 2010), 3, 6.

⁸⁸ *Ibid.*, 3.

⁸⁹ Franklyn Griffiths, “Arctic Security,” 16. The USN released an update to its Arctic Roadmap at the end of February 2014. See MarineLink.com, “Navy Updates Plans for a Changing Arctic,” last modified 25 February 2014, <http://www.marinelink.com/news/changing-updates-arctic364620.aspx>.

⁹⁰ United States Coast Guard. *USCG Arctic Strategic Approach*, Commandant Instruction 16003.1 (Washington D.C., United States Coast Guard, 26 April 2011), 1.

⁹¹ *Ibid.*, 7. This document is a theatre strategy for the USCG’s operations in the Arctic region, not an implementation plan. Hence, it is intended guide efforts to accomplish organizational objectives in the region by leveraging the Coast Guard’s unique capabilities, authorities, and partnerships.

⁹² Mike Blanchfield, “Clinton rebukes Canada on Arctic meeting,” *Globe and Mail*, 29 March 2010. See also Alan Woods, “Canada gets cold shoulder at Arctic meeting,” *Toronto Star*, 29 March 2010; NBC News, “Clinton rebukes Canada on

Arctic meeting,” last modified 29 March 2010, http://www.nbcnews.com/id/36085624/ns/world_news-americas/t/clinton-rebukes-canada-arctic-meeting/#Uw9iGMqPJMs/.

⁹³ English, *Ice and Water*, 1-2.

⁹⁴ See, for example, Alaskan Republican Senator Lisa Murkowski at an April 2010 conference on U.S. Strategic Interests in the Arctic. DFAIT report, *CSIS Conference: US Strategic Interests in the Arctic*, UNGR0212 (Ottawa: DFAIT, 29 April 2010).

⁹⁵ In proposing the meeting, the head of the Russian Coast Guard, Colonel General Viktor Trofimovich Trufanov, had stated there is a practical necessity of cooperation in the Arctic region, but added that he considered there were only five nations that could legitimately be called Arctic states. Lt(N) Michelle James, NORAD-USNORTHCOM HQ J22 Analyst, “FW: Russia’s proposed meeting of “Arctic 5,” e-mail thread forwarded to author, 7 March 2011. The e-mail thread is part of the author’s archival collection of unclassified Arctic policy documents used in the course of his analytical work for DND. The U.S government’s willingness to take a more active role in global Arctic affairs was most evident during the May 2011 Arctic Council ministerial meeting. There, for the first time since the Arctic Council’s creation in 1996, the Secretary of State represented the United States. See CBC News, “Arctic ‘superpower’ leaders meeting in Greenland,” last modified 11 May 2011, <http://www.cbc.ca/news/canada/north/arctic-superpower-leaders-meeting-in-greenland-1.1072917>.

⁹⁶ Danish Ministry of Foreign Affairs (MFA), *Kingdom of Denmark Strategy for the Arctic 2011-2020* (Copenhagen: MFA, August 2011), 10. While the strategy acknowledges that Greenland is the only part of the Kingdom that is Arctic, it takes care to acknowledge that the Faroe Islands, being the third part of the realm will have an equal role in addressing Arctic issues.

⁹⁷ *Ibid.*, 11.

⁹⁸ *Ibid.*, 20.

⁹⁹ Byers, *International Law and the Arctic*, 54.

¹⁰⁰ Adrian Humphreys, “New proposal would see Hans Island split equally between Canada and Denmark,” *National Post*, 11 April 2012. See also John Ibbitson, “Dispute over Hans Island nears resolution. Now for the Beaufort Sea,” *Globe and Mail*, 26 January 2011; Byers, *International Law and the Arctic*, 10-16.

¹⁰¹ Canada did not join the ASFR until 2011.

¹⁰² DND, *Briefing Note For DCOMD Continental: Arctic Security Forces Roundtable*, (Ottawa: Canadian Joint Operations Command, 24 June 2013), 1.

See also Vice-Admiral Haakon Bruun Hanssen, “The role of the armed forces in a changing Arctic,” (Speech by Commander Norwegian Joint Headquarters to Arctic Frontiers 2013 Conference), last accessed 27 June 2013, http://www.arctic-frontiers.com/index.php%3Foption%3DCom_docman%3Fview=article&id=1049847; Major-General Mark O. Schissler, USEUCOM, “Arctic Nations Meet to Discuss Communication, Maritime Domain Awareness Strategy,” last accessed 27 June, 2013, <http://www.eucom.mil/blog-post/24109/arctic-nations-meet-to-discuss-communication-maritime-domain-awareness-strategy>. At the beginning of 2013, the two principal topics under consideration by the ASFR were establishing common all-domain situational awareness of activity in the Arctic region, and establishing a common communications system to enable cooperation between the different nations and agencies that operate there.

¹⁰³ Comment from the floor during *Arctic Security Forces Roundtable Working Group Planning Session* in Oslo, Norway, on 5 December 2013. The author was present at the meeting as a member of the Canadian delegation.

¹⁰⁴ Comment from Russian Federation representative attending *Arctic Security Forces Roundtable Working Group Planning Session*, 5 December 2013.

¹⁰⁵ United States European Command, “Leaders from 11 nations meet to discuss Arctic security,” <http://www.eucom.mil/media-library/article/33078/leaders-from-11-nations-meet-to-discuss-arctic-security>, last updated 8 June 2015,

¹⁰⁶ Arctic Council, *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic*, 12 May 2011, downloadable from <http://www.arctic-council.org/index.php/en/document-archive/category/20-main-documents-from-nuuk#>.

¹⁰⁷ CBC News, “Arctic Council leaders sign rescue treaty,” last updated 12 May 2011, <http://www.cbc.ca/news/canada/north/arctic-council-leaders-sign-rescue-treaty-1.1049847>. See also Paul Koring, “Arctic treaty leaves much undecided,” *Globe and Mail*, 11 May 2011.

¹⁰⁸ CBC News, “Arctic Council leaders sign rescue treaty.”

¹⁰⁹ DND, *Arctic SAR TTX – Post Exercise Report* (Ottawa: Canada Command Headquarters, 25 November 2011), 1-6.

¹¹⁰ Denmark, Commander Joint Arctic Command, *Minutes of the SAREX Greenland Sea 2012 Post Exercise Discussions in Nuuk, Greenland 16-17 Oct 2012* GLK CH-O300/00-174/12, (Nuuk: Commander Joint Arctic Command, 2012). See also Denmark, Island Commander Greenland, *SAREX Greenland Sea 2012 Final Exercise Report, Version 2*, (Nuuk: Command Denmark, 31 October 2012),

17-19; Commander Joint Arctic Command, *SAREX Greenland Sea 2013 Exercise Specifications*. (Nuuk: Commander Joint Arctic Command, updated 15 March 2013).

¹¹¹ DND, *Record of Discussion: Meeting of Northern Chiefs of Defence, Hosted by Gen. W. Natynczyk, 5 Wing Goose Bay, 12-13 Apr 2012* (Ottawa: DND, 7 May 2012), 1-2. On June 11-12, 2013, the Northern CHoDs met again, this time in Illulissat, Greenland, under the chairmanship of Denmark's defence chief, General Peter Bartram. Gerald O'Dwyer, "Arctic Nations Set Cooperation Guidelines," Defence News on-line, 27 June 2-13, <http://www.defencenews.com/article/20130627/DEFEG01/306270013/Arctic-Nations-Set-Cooperation-Guidelines>. The third annual Northern CHoDs meeting was scheduled for June 10-11, 2014 in Iceland, but has been postponed indefinitely due to a broad global boycott on international engagements with Russia in protest against its March 2014 annexation of Crimea from the Ukraine. Heather Exner-Pirot, "The Arctic Council immunity to the Crimean flu," Eye on the Arctic blog, <http://www.rcinet.ca/eye-on-the-arctic/2014/03/31/blog-the-arctic-councils-immunity-to-crimean-flu/>, last updated 31 March 2014. See also CBC News, "Ukraine crisis leads to Canada expelling Russian soldiers," last updated 7 March 2014, <http://www.cbc.ca/news/politics/ukraine-crisis-leads-to-canada-expelling-russian-soldier-1.2563620>.

¹¹² On the case for bilateral cooperation, see Alexander Moens, "Skating on Thin Ice: Canadian-American Relations in 2010 and 2011," *Fraser Institute, Studies in Canada-US Relations Paper* (April 2010), 7-8; and Lackenbauer and Huebert, "Premier Partners: Canada, the United States and Arctic Security," *Canadian Foreign Policy Journal* 20/3 (Fall 2014): 320-33.

¹¹³ DND, *Framework for Arctic Cooperation among North American Aerospace Defense Command, United States Northern Command, and Canadian Joint Operations Command* (Ottawa: Canadian Joint Operations Command Headquarters, 11 December 2012), 1-2.

¹¹⁴ DND, "Canadian and U.S. Commanders Sign Arctic Cooperation Framework" News Release, last updated 10 December 2012, <http://news.gc.ca/web/article-en.do?nid=712179>.

¹¹⁵ DND, *Framework for Arctic Cooperation*, 1-2.

¹¹⁶ Personal knowledge of author based on his participation in the Arctic syndicate at the tri-command staff talks held March 26-27, 2014 in Ottawa.

¹¹⁷ On February 3 and 4, 2014, she travelled to Washington D.C. to promote the Arctic Council's planned program during Canada's chairmanship and to discuss

environmental priorities and achievements. Aglukkaq also engaged with the U.S. officials about integrating Aboriginal traditional knowledge into Arctic science, stating that she “looks forward to continued work on this priority under future chairmanships.” See Kristofer Bergh, “The Arctic Policies of Canada and the United States: Domestic Motives and International Context.” *SIPRI Insights on Peace and Security*, No. 2012/1, July 2012, 1, 15-19; Munk-Gordon Arctic Security Program, *Canada as an Arctic Power: Preparing for the Canadian Chairmanship of the Arctic Council (2013-2015)* (Toronto: Walter & Duncan Gordon Foundation, May 2012), 20-21; Joël Plouffe, *Towards a North American Arctic Region* (Calgary: Canadian Defence & Foreign Affairs Institute, May 2013), 1-5; Carl Bildt, Swedish Foreign Minister (speech, SIPRI Conference: The Trans-Arctic Agenda, Reykjavik, 18 mars 2013); and Stockholm International Peace Research Institute (SIPRI), “29 Nov. 2012: The Arctic Council in Transition: Nordic to North American Leadership” (SIPRI Workshop).

¹¹⁸ Department of Foreign Affairs, Trade and Development (DFATD), “Canada Promotes Cooperation with United States on Arctic and Environmental Issues,” News Release, last updated 6 February 2014, <http://news.gc.ca/web/article-en.do?nid=814159>.

¹¹⁹ U.S. Department of State, U.S. Chairmanship of the Arctic Council, <http://www.state.gov/e/oes/ocns/opa/arc/uschair/index.htm>, last accessed 30 August 2015. For more on this see also: Bennett, Mia, “As U.S. assumes chairmanship, what’s next for Arctic Council?” *Cryopolitics* (blog), <http://cryopolitics.com/2015/05/04/as-u-s-assumes-chairmanship-what-next-for-arctic-council/>, last updated 4 May 2015; The Arctic Institute, “US’ first 100 days of its Arctic Council Chairmanship,” <http://www.thearcticinstitute.org/2015/08/081815-US-Chairmanship-100-days.html>, last updated 18 August 2015; Higginbotham, John, “is Canada ready for the latest U.S. twist in Arctic affairs?” *Globe and Mail*, 10 August 2015; Huebert, “The Canadian-American Arctic Security Relationship - Just in Time for a Three Ocean Navy,” *Starsbell* (Summer 2015), 8-10; Huebert, “Warmer relations with Russia will backfire on the U.S.,” *Globe and Mail*, 29 August 2015.

¹²⁰ Department of Foreign Affairs, Trade, and Development, *Canada-Russia Arctic Relations* (Backgrounder) (Oslo: Canadian International Centre for the Arctic Region, 19 December 2013), 1-3. See also DFATD, “International Arctic Partners,” <http://www.international.gc.ca/arctic-arctique/partners-international-partenaires.aspx?lang=eng>, last updated 8 June 2015; and Natalia Loukacheva, “Canada and Russia: Natural Partners,” *National Post*, 8 May 2013.

¹²¹ Anton Vasiliev was subsequently appointed Russia's Ambassador to Iceland in late-March 2014, taking up his position in May the same year. Hector Martin, "Vasiliev to become ambassador to Iceland," *The Arctic Journal*, <http://arcticjournal.com/politics/528/vasiliev-become-ambassador-iceland>, last updated 28 March 2014.

¹²² Vasiliev, "Russia: A Natural Arctic Partner for Canada," *Embassy*, 5 May 2011. See also Mike Blanchfield, "Canada stuck in Arctic time wart Russia says; 'Lack of knowledge of reality,'" *Halifax Chronicle Herald*, 27 May 2011; and Ian D. D. Livermore, *Conference Report: Canada/Russia/Norway Dialogue and Cooperation in the Arctic Conference, 26-27 May 2011, Carleton University, Ottawa, DND*, Canada Command Headquarters file 2000-1 (J2 Ops 4-2), 21 June 2011. On November 1, 2013, Vasiliev made similar remarks in an opinion article he submitted to the *Calgary Herald* newspaper. In it, he said the national interests of the Arctic states can be realized only in collaboration with others in the region. He added that Russia sees no issues between Arctic states that cannot be solved peaceably in accordance with national, regional, and international laws. "Russia's obvious priority in the Arctic is cooperation with our regional partners...", wrote Vasiliev. "There is even a place for military cooperation, not only in bilateral, but also multilateral format[s]" Vasiliev, "Co-operation between Canada and Russia warm the Arctic's future," *Calgary Herald*, 1 November 2013.

¹²³ DFATD, *Canada-Russia Arctic Relations* (Backgrounder), 1.

¹²⁴ Personal knowledge of the author through his work as the senior Arctic analyst at the Canadian Joint Operations Command (CJOC), the organization responsible for planning Operation Nanook 2013. See also Trude Pettersen, "Northern Fleet observers in Canadian exercise," *Barents Observer*, 9 August 2013; Heather Exner-Pirot, "Canadian PM's Arctic tour conceals shift in circumpolar politics," *Alaska Dispatch*, 2 September 2013.

¹²⁵ Personal knowledge of the author through his work as the senior Arctic analyst at CJOC, the organization responsible for planning Operation Nanook 2014. See also CBC News, "Ukraine crisis leads to Canada expelling Russian soldiers," last updated 7 March 2014, <http://www.cbc.ca/news/politics/ukraine-crisis-leads-to-canada-expelling-russian-soldier-1.2563620>.

¹²⁶ Russian Federation Security Council, *The Development Strategy of the Arctic zone of the Russian Federation and National Security for the Period up to 2020 and Beyond*, trans. International Expert Council on Cooperation in the Arctic, 20 February 2013, Art. 1-2, 10-12, 18.

¹²⁷ *Ibid.*, Art. 17 (c), (d), and (e), 33.

¹²⁸ For example, at the opening of the international conference on stable development and security issues in the Arctic region that took place in August 2014 in Naryan Mar, Russian Security Council Secretary Nikolay Patrushev delivered a message from President Putin stating Russia's unwavering desire for international cooperation in developing the Arctic region. Putin's message read, "While Russia is planning to defend firmly its geopolitical and economic interests in the Arctic zone, we also seek to strengthen the cooperation with other member countries of the Arctic Council and to turn the Arctic region into a zone of peace, stability and cooperation." RT Network, "Good neighborly relations are Russia's priority in Arctic – security chief," last modified 8 Aug 2014, <http://www.rt.com/politics/178616-russia-security-arctic-patrushev/>.

¹²⁹ Jane George, "Arctic Council ends Iqaluit ministerial meeting on conciliatory note," Nunatsiaq News, 24 April 2015.

¹³⁰ Sputnik News, "Canada Uses Arctic Council to Promote Agenda on Ukraine – Russian Minister," <http://sputniknews.com/politics/20150425/1021360046.html>, last updated 25 April 2015. Donskoi's statement about Canada attempting to "promote its home policy agenda in the context of events in Ukraine" was most likely a reference to the widely held opinion that the Harper governments' anti-Russian rhetoric and sanctions were driven by a desire to cater to Ukrainian-Canadian voters in the run-up to the 2015 federal election. The Russian Embassy in Canada reiterated these sentiments in a news release a few days later stating to "make decisions on Arctic cooperation issues dependent on these unrelated matters [such as Crimea and the Ukraine] have not promoted cooperation." Embassy of the Russian Federation in Canada, "Russian Foreign Ministry comment on the conclusion of Canada's Arctic Council Chairmanship," News Release dated 28 April 2015, <http://www.rusembassy.ca/node/996>, last accessed 1 Sept 2015.

¹³¹ Office of the President of the United States, *National Strategy for the Arctic Region*, May 2013, 9.

¹³² DFATD, *Arctic Foreign Policies / Strategies of Arctic States*. On this alignment, see also Lackenbauer and Huebert, "Premier Partners."

¹³³ United States Department of Defence, *Arctic Strategy*, 22 November 2013, 2.

¹³⁴ See, for example, Gerrard Cowan, "Polar Scares," *Jane's Defence Weekly*, 24 March 2010, 26-27; and NATO Parliamentary Assembly, *Security at the Top of the World: Is There a NATO Role in the High North?* (Committee Report 213 DSCTC 10 E), last accessed 12 December 2013, <http://www.nato-pa.int/default.asp?SHORTCUT=2082>.

¹³⁵ Gerald O'Dwyer, "NATO Rejects Direct Arctic Presence," *Defence News*, last accessed 29 May 2013,

<http://www.defensenews.com/article/20130529/DEFREG/305290022/NATO-Rejects-Direct-Arctic-Presence>.

¹³⁶ NATO, The North Atlantic Treaty, last accessed 3 February 2013,

http://www.nato.int/cps/en/natolive/official_texts_17120.htm.

¹³⁷ Gerald O'Dwyer, "NATO Rejects Direct Arctic Presence." See also Norwegian Ministry of Foreign Affairs, *The High North - Visions and strategies*, 70

¹³⁸ Norwegian defence analyst Kristian Åtland observes that any movement by NATO in that direction could reverse current positive trends. "Russia's Armed Forces in the Arctic," 281.

¹³⁹ Jorge Barrera, "While Harper talked tough with NATO on Arctic" See also Clark, "Harper's tough talk on the Arctic less stern in private."

¹⁴⁰ Comment from the floor by defence attaché attending "The Canadian Forces in the North" roundtable presentation hosted by the Canadian Defence Associations Institute, Ottawa, 30 January 2013.

¹⁴¹ Ivison, John, "Crimea crisis forcing Harper to rethink NATO, Arctic defence," *Globe and Mail*, 17 March 2014.

¹⁴² Huebert, Rob, "How Russia's move into Crimea upended Canada's Arctic strategy," *Globe and Mail*, 2 April 2014.

¹⁴³ Arctic Council, *Kiruna Declaration*, Kiruna, Sweden: Arctic Council Secretariat, 15 May 2013.

¹⁴⁴ DFATD Canada, *Iqaluit Declaration 2015*,

[http://www.international.gc.ca/arctic-arctique/final-declaration-](http://www.international.gc.ca/arctic-arctique/final-declaration-finale.aspx?lang=eng)

[finale.aspx?lang=eng](http://www.international.gc.ca/arctic-arctique/final-declaration-finale.aspx?lang=eng), last updated 24 April 2015. See also Haines, Lily, "EU bid to become Arctic Council observer deferred again," *Barents Observer*, 4 May 2015.

¹⁴⁵ Arctic Council. "Observers." Last updated 27 April 2011. <http://www.arctic-council.org/index.php/en/about-us/arctic-council/observers>. On criteria, see Arctic Council, *Arctic Council Observer Manual for Subsidiary Bodies*, May 2013, 2.

Speaking on the issue, Norwegian Foreign Minister Espen Barth Eide said the inclusion of the Arctic resource-hungry Observer states at the Arctic Council would force them to uphold the diplomatic panel's core goals of safeguarding the region. Patricia Zengerle, "Sweden: Arctic Council vote to admit China, India," *The Scotsman* on-line, last accessed 16 December 2013,

<http://www.scotsman.com/news/world/sweden-arctic-council-vote-to-admit-china-india-1-2931520>. See also Mia Bennett, "Asian States Admitted to Arctic Council, EU Forced to Wait, and Greenland Boycotts," *Foreign Policy Association* (blog),

May 16, 2013, <http://foreignpolicyblogs.com/2013/05/16/asian-states-admitted-to-arctic-council-eu-forced-to-wait-and-greenland-boycotts/>; Chris Irvine, "China granted permanent observer status at Arctic Council," *The Telegraph*, 15 May 2013.

¹⁴⁶ Arctic Council, *Kiruna Declaration*. See also MarineLink.com, "Arctic Council Sign Oil Spill Agreement," last updated 21 May 2013, <http://www.marinelink.com/news/agreement-council-arctic354728.aspx>; Andrew Quinn, "Arctic nations step up cooperation on safety, oil," *Reuters News Agency*, last accessed 13 May 2011, <http://www.reuters.com/article/2011/05/12/us-arctic-idUSTRE7490UD20110512>.

¹⁴⁷ Arctic Council, *Vision for the Arctic* (Kiruna, Sweden: Arctic Council Secretariat, 15 May 2013) 1.

¹⁴⁸ Jonas Karlsbakk, "Arctic Council's international breakthrough," *Barents Observer* On-line, last accessed 15 May 2013, <http://barentsobserver.com/en/arctic/2013/05/arctic-councils-international-breakthrough-15-05>. For a detailed analysis of the Arctic Council's Vision for the Arctic, see Mia Bennett, "Analysis: The Arctic Council's Kiruna Vision," *Foreign Policy Association* (blog), May 20, 2013, <http://foreignpolicyblogs.com/2013/05/20/analysis-the-arctic-councils-kiruna-vision/>.

¹⁴⁹ Pew Charitable Trusts, "Talking About Arctic Fisheries in Moscow," last updated 20 December 2013, <http://www.pewenvironment.org/news-room/other-resources/Talking-About-Arctic-Fisheries-In-Moscow-85899528548#>.

¹⁵⁰ Andrea Hill, "Melting ice opens Arctic Ocean to potential fishing concerns," *Ottawa Citizen*, 24 February 2014. Prior to going into the meeting Canada and Denmark/Greenland were on record as supporting the U.S. accord. Norway was neutral on the subject while Russia had not yet declared a position. Lisa Gregoire, "Five Arctic coastal states stop short of total fishing moratorium," *Nunatsiaq Online*, 27 February 2014 http://www.nunatsiaqonline.ca/stories/article/65674five_arctic_ocean_nations_stop_short_of_fishing_moratorium/. See also Pew Charitable Trusts, "Talking About Arctic Fisheries in Moscow." Arctic Journal, "WWF encouraged by Arctic fishing agreement," last updated 5 March 2014, <http://arcticjournal.com/opinion/wwf-encouraged-arctic-fishing-agreement>; Arctic Journal, "Finished business (for now)," last updated 4 March 2014, <http://arcticjournal.com/climate/finished-business-now>.

¹⁵¹ U.S. Department of State, *Arctic Nations Sign Declaration to Prevent Unregulated Fishing in the Central Arctic Ocean*, 16 July 2015. See also Galloway, Gloria, “Canada, Russia expected to unite for moratorium on High Arctic fishing,” *Globe and Mail*, 15 July 2015; and Kramer, Andrew E. “Russia and U.S. Find Common Cause in Arctic Pact,” *The New York Times*, 19 May 2015. The Arctic Five Fisheries Moratorium was met with criticism from the Government of Iceland, which objected to not being included in the discussions given the importance of the fishing industry to its national economy. Elliott, Alex, “Iceland Left Out of Arctic Fishing Accord,” *The Icelandic Review*, 23 July 2015.

¹⁵² See, for example, Thomas Nilsen, “Wants more northern NATO-exercises,” *Barents Observer*, last updated 28 February 2013, <http://barentsobserver.com/en/security/2013/02/wants-more-northern-nato-exercises-28-02>.

¹⁵³ A Russian military response to growing NATO involvement in the Arctic region is neither imminent nor guaranteed. As pointed out by Åtland, Russia has more pressing security concerns on its plate elsewhere, including in the Caucasus, Syria, and along its Far East frontier with China. Moreover, because national economic interests and private businesses closely associated with the Russian state are increasingly the driving forces behind Russia’s Arctic policy in the early 2010s, the prospects for widespread militarization in the region are unlikely because it would increase political tensions and hinder commercial prospects. See Åtland, “Russia’s Armed Forces in the Arctic,” 282.

¹⁵⁴ BBC News, “Ukrainian crisis timeline,” last updated 21 March 2014, <http://www.bbc.com/news/world-middle-east-26248275>. See also Alan Yuhas and Raya Jalabi, “Crimea’s referendum to leave Ukraine: how did we get here?” *The Guardian*, 13 March 2014.

¹⁵⁵ The sanctions included the decision by the U.S., U.K. France, Germany, Italy, Canada, and Japan to oust Russia from the Group of Eight (G8) economic and political forum. See Matthew Fisher, “G8 ousts Russia over Crimea crisis,” *Ottawa Citizen*, 25 March 2014.

¹⁵⁶ CBC News, “Russia’s Ukraine moves not yet spilling into Arctic Council,” last updated 14 March 2014, <http://www.cbc.ca/news/canada/north/russia-s-ukraine-moves-not-yet-spilling-into-arctic-council-1.2573194>. See also CBC News, “Canada continues talks with Russia as part of Arctic Council,” last updated 26 March 2014, <http://www.cbc.ca/news/politics/canada-continues-talks-with-russia-as-part-of-arctic-council-1.2587566>.

¹⁵⁷ Kevin McGwin, “Arktik Politik,” *The Arctic Journal*, last updated 6 March 2014, <http://arcticjournal.com/politics/472/arktik-politik>. Ousting Russia from the Arctic Council would be the height of ridiculousness given Russia’s rich Arctic history and the simple fact that it accounts for almost half of the region’s geographical territory.

¹⁵⁸ CBC News, “Canada boycotts Arctic Council Moscow meeting over Ukraine,” last updated 16 April 2014, <http://www.cbc.ca/news/canada/north/canada-boycotts-arctic-council-moscow-meeting-over-ukraine-1.2611964>. See also “Canada boycotts Arctic Council meetings in Moscow to protest Russian moves in Ukraine,” *Nunatsiaq News*, 16 April 2014.

¹⁵⁹ Heather Exner-Pirot, “Arctic Council ministerial -- winners and losers” *Alaska Dispatch News*, 29 April 2015. See also CBC News, “Arctic Council tensions threaten environment as Canada exits chair,” <http://www.cbc.ca/news/politics/arctic-council-tensions-threaten-environment-as-canada-exits-chair-1.3045975>, last updated 24 April 2015; and McGwin, Kevin, “The Arctic in the time of anctions,” *The Arctic Journal*, <http://arcticjournal.com/politics/1747/arctic-tim-sanctions>, last accessed 11 August 2015.

¹⁶⁰ Trude Pettersen, “Norway suspends all bilateral military activities with Russia,” *Barents Observer*, 25 March 2014.

¹⁶¹ CBC News, “Ukraine crisis leads to Canada expelling Russian soldiers,” last updated 7 March 2014, <http://www.cbc.ca/news/politics/ukraine-crisis-leads-to-canada-expelling-russian-soldier-1.2563620>.

¹⁶² Thomas Nilsen, “Crimea crisis puts Barents naval exercise on hold,” *Barents Observer*, 14 March 2014.

¹⁶³ Mark Henry, Canadian Coast Guard, “FW: Question regarding Arctic Coast Guard Forum,” e-mail thread forward to author, 24 August 2015. The e-mail thread is part of the author’s archival collection of unclassified Arctic policy documents used in the course of his analytical work for DND.

¹⁶⁴ Trude Pettersen, ““Our cooperation continues as planned,”” *Barents Observer*, 26 March 2014.

¹⁶⁵ Comments from the floor at “The Future of Russia,” academic seminar hosted by Canada’s DFATD, in Ottawa on 19 March 2013.

¹⁶⁶ Luke Harding, “Vladimir Putin calls for Arctic claims to be resolved under UN Law,” *Guardian*, 23 September 2010.

¹⁶⁷ Xinhua News Agency, “Russia sees no reasons for NATO involvement in Arctic affairs,” last modified 29 November 2011,

http://news.xinhuanet.com/english2010/world/2011-11/29/c_131277799.htm.

¹⁶⁸ Anton Vasiliev, “Co-operation between Canada and Russia warm the Arctic’s future,” *Calgary Herald*, 1 November 2013. See also China.org.com, “Russia’s return to Arctic bears no military threat to neighbors: official,” last modified 19 September 2013, http://www.china.org.cn/world/Off_the_Wire/2013-09/19/content_30076090.htm.

¹⁶⁹ Clark, “Harper’s tough talk on the Arctic less stern in private.” See also Jorge Barrera, “While Harper talked tough with NATO on Arctic, U.S. believed PM all bark no bite,” *APTN National News* on-line, 11 May 2011, <http://aptn.ca/news/2011/05/11/while-harper-talked-tough-with-nato-on-arctic-u-s-believed-pm-all-bark-no-bite/>; and Byers, *International Law and the Arctic*, 155-156.

¹⁷⁰ Michel Comte, “Canadians prepared to fight for Arctic: survey,” *Agence France Presse*, 25 January 2011. See also “Northwest Passage shipping could lead to trade rows: panel,” *Terra Daily*, last modified 21 November 2009,

http://www.terradaily.com/reports/Northwest_Passage_shipping_could_lead_to_trade_rows_panel_999.html. General Natynczyk told a Halifax defence summit in 2009 that “There is no conventional military threat to the Arctic. If someone were to invade the Canadian Arctic, my first task would be to rescue them.”

¹⁷¹ On how present-day and future climate change trends could provoke crises in intra- and inter-state relations through the mid-21st century, see Gwynne Dyer’s book *Climate Wars* (Toronto: Random House Canada, 2008).

4

The Canadian Armed Forces in the Arctic: Building Capabilities and Connections¹

Adam Lajeunesse and P. Whitney Lackenbauer

With a renewed commitment to maintaining a presence in the region and enhancing our capabilities to routinely operate in this often-inhospitable expanse, the [Canadian Armed Forces] is contributing to the Government of Canada's Northern Strategy. At the same time, exercising Canadian sovereignty in the Arctic can only be achieved through a whole-of-government approach. Therefore, the [Canadian Armed Forces] is also working closely with our federal and territorial partners, as well as with the peoples of the North, to safeguard this precious inheritance and ensure Canada remains "Our True North, Strong and Free."

- DND Backgrounder, "The Canadian Forces in the Arctic" (April 13, 2012)

Climate change. Newly accessible resources. New maritime routes. Unresolved boundary disputes. Announcements of new investments in military capabilities to 'defend' sovereignty and sovereign rights. The Arctic has emerged as a topic of tremendous hype (and deep-seated misperceptions) over the last decade, spawning persistent debates about whether the region's future is likely to follow a cooperative trend or spiral into unbridled competition and conflict. Commentators differ in their assessments of the probability and/or timing of developments, as well as general governance and geopolitical trends.²

These frameworks are significant in shaping expectations for the Government of Canada and for the Canadian Armed Forces (CAF) more specifically. If one expects that the region is on the precipice of conflict, with the “defence of sovereignty” (presumably equating sovereignty with territorial integrity) demanding new conventional military capabilities to conduct kinetic operations in the region, then investments in “constabulary capabilities” are insufficient.³ Furthermore, military activities demonstrating effective control over Canadian territory and internal waters are also frequently misconstrued with preserving the international legal basis for Canada’s Arctic sovereignty, based on the erroneous assumption that maintaining ships and soldiers in the region to “show the flag” and demonstrate “presence” helps to bolster our legal position.⁴

On the other hand, official military statements, all of which anticipate no near-term conventional military threats to the region, predict an increase in security and safety challenges and point to the need for capabilities suited to a supporting role in an integrated, whole-of-government (WoG) framework. This entails focused efforts to enhance the government’s all-domain situational awareness over the Arctic, to prepare responses to a range of unconventional security situations or incidents in the region, and to assist other government departments and agencies (OGDAs) in their efforts to enforce Canadian laws and regulations within national jurisdiction.⁵ Accordingly, the CAF has focused its short to medium-term planning and preparation on unconventional security concerns properly situated within the categories of safety and security (see chapter 1).⁶

We contend that the CAF’s Arctic capabilities should not be judged primarily on conventional force levels or immediate progress on major Arctic platform and infrastructure projects (which are relevant only insofar as they enable the military to accomplish its core responsibilities). Instead, CAF capacity should be defined and measured by the Forces’ ability to respond to the most likely and realistic threats and challenges in the Arctic. This implies the need for situational awareness; the ability to deploy and maintain appropriate mission-

specific teams adaptable to a variety of situations; smooth integration into joint operations; and the ability to respond quickly and decisively with appropriate force wherever Canada exercises jurisdiction. These missions and requirements receive less public attention than large-scale deployments or major procurement programs but they lie at the heart of the military's current approach to Arctic sovereignty and security.

The CAF has focused its attention on building these core capabilities over the last decade and, while significant gaps remain between its current abilities and desired end-state, there has been a steady improvement in its basic skill-sets. Meanwhile, slower than expected growth in Arctic shipping and resource development has afforded additional time to develop and implement an integrated program. Despite popular commentaries suggesting that CAF deficiencies in the North make Canada vulnerable, we argue that the CAF is generally capable of meeting its current and short-term requirements and is responsibly preparing to meet the threats to Canadian security that are likely emerge over the next decade.

Canada's Arctic Defence Requirements

The Government of Canada's Northern Strategy provides the overarching policy framework that guides federal priorities for the region. The military contributes to all four pillars of that strategy (see figure 4.1) but particularly to "exercising sovereignty" through the implementation of the *Canada First Defence Strategy* (CFDS). The latter document directs the CAF⁷ to "demonstrate a visible presence in the region," exercise control over and defend our Arctic territory, and provide assistance to other government departments and agencies when called upon to respond to "any threats that may arise" in the region (as well as having the capacity to conduct daily domestic and continental operations).⁸ The CFDS left the specific nature of those threats, and the manner in which the CAF was to exercise that control, unspecified. This ambiguity was necessary in the absence of a clearly-defined enemy and a continuously evolving set of hypothetical challenges to Arctic sovereignty and security. The document singles out surveillance as a central requirement – an

area of emphasis confirmed in subsequent policy statements produced by other government departments⁹ – as well as the perceived need to establish a greater military “presence” in the region.¹⁰ Strategic and operational documents produced by the Department of National Defence (DND) echo this idea that sovereignty is strengthened by effective governance, control, and the consistent application of Canadian law.¹¹

The defence of Canada is the foremost task of CAF and, accordingly, it must be prepared to respond effectively to military threats that may develop. This is a “no fail” mission. Towards this end, various observers note an increase in the

Figure 4.1: Northern Strategy: How Defence Contributes
Source: “National Defence & Canada’s North,” presentation, Associate Deputy Minister (Policy), National Defence Headquarters (2013).

<p>Sovereignty</p> <ul style="list-style-type: none"> • Conduct sovereignty operations • Maintain a visible presence • Foster relationships with Arctic states • Monitor activity in our approaches and territory 	<p>Governance</p> <ul style="list-style-type: none"> • No direct Defence contributions but supports through enablers, exercises and community programs (Cadets and Junior Rangers) • Regular consultation with Indigenous communities
<p>Economic and Social Development</p> <ul style="list-style-type: none"> • Leverage or develop shared infrastructure opportunities with OGDs • Align Defence infrastructure investment planning with OGD economic, social and development efforts • Ensure Defence projects in the North benefit communities 	<p>Environment</p> <ul style="list-style-type: none"> • Ensure CF operations meet and environmental laws and standards • Cooperate in interagency Earth observation • Assist in protecting and maintaining environmental standards throughout the Arctic • Research and development

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level of military interest and activity in the Arctic over the last decade, propelling some to promote the idea of an Arctic “arms race” (led by Russia) that could portend regional conflict or undermine regional stability and security. In popular discussions, promised investments in new Arctic capabilities are linked to “sovereignty issues” associated with boundary disputes, the uncertain limits of continental shelves, the changing environment, and competition for resources.

Although defence activities are appropriately associated with the assertion of national interest, the surveillance and monitoring of territory, and the enforcement of policies within national jurisdictions, they should not be misconstrued as inherently bellicose or aggressive. In the case of Russia, threats are already covered through more general aspects of binational continental defence planning and other bilateral and multilateral agreements. Furthermore, enhanced capabilities that deter would-be aggressors (including those posing asymmetric threats) are not necessarily destabilizing, and can actually contribute to regional stability by reducing the likelihood of a threat emerging. As the CAF *Arctic Integrating Concept* notes, “increased foreign military activity in the Arctic may also present Canada with new opportunities for cooperation and collaboration with those other Arctic states’ militaries in matters of common interest in the region.” Building or enhancing these relationships, with a particular emphasis on “soft security” initiatives, such as coordinating situational awareness, preventing and responding to natural disasters and environmental incidents, and search and rescue, afford opportunities to contribute to confidence-building in the region more generally.¹²

From a legal perspective, exercising sovereignty means demonstrating that the waters of the Arctic Archipelago are historic internal waters,¹³ a status that requires both foreign acceptance of Canada’s position and the exclusive and effective exercise of Canadian control within its jurisdiction.¹⁴ Accordingly, international recognition of Canadian sovereignty is best displayed by foreign operators complying with Canadian laws and regulation in Canadian waters. This, in turn, is something that the CAF encourages by maintaining or

enhancing enforcement capabilities tailored to supporting constabulary operations in the Arctic waters, by assisting foreign and domestic operators, and working with other departments and agencies to monitor the region and ensure adherence to Canadian regulations governing shipping, pollution, exploration, and resource exploitation.

Effective stewardship of the North can only be achieved through productive partnerships between federal and territorial departments and agencies and established relationships with northern leaders, communities, and peoples of the North. While other government departments and agencies, such as the Coast Guard and the RCMP, retain primary legal responsibility for dealing with most safety and security issues in the North, the CAF has a significant role to play in supporting them, exercising our sovereignty, and providing assistance to Canadian citizens (see chapter 1). Accordingly, DND envisages the CAF channelling its primary efforts into addressing unconventional security challenges. Increased activity in the North is, for example, expected to bring more illegal fishing, maritime and aerospace accidents, dumping, pollution, trespassing, and criminal activity. Although these are not primarily defence issues, the military – by virtue of its assets, resources, and capabilities – will provide crucial support that enables OGDs to fulfill their own responsibilities and mandates in the North.¹⁵ This includes the development of improved “situational awareness” through a “Common Operating Picture” that coordinates different information collection systems, fuses the information, and facilitates analysis and dissemination to stakeholders in a timely manner. Another example is providing “key enablers” such as command and control, personnel, technical expertise, or logistical support to OGDs responding to a specific event, emergency, or crisis.¹⁶ Effectively, the Forces will be “leading from behind” to help the government fulfill its basic responsibilities while being ready to respond to a wide spectrum of potential safety and security incidents.

The CAF in the Arctic¹⁷

The political and media focus on a perceived need to increase the CAF presence and range of capabilities in the North can overshadow the significant presence that the military already has in the region. Army, Air Force, and Navy personnel regularly conduct operations in the North, undertake regular surveillance and security patrols, while monitoring and controlling northern airspace under the auspices of the North American Aerospace Defense Command (NORAD). Furthermore, the CAF maintains a visible presence through Joint Task Force (North), based in Yellowknife with small detachments in Whitehorse and Iqaluit; 1st Canadian Ranger Patrol Group, which spans sixty Northern communities; 440 Transport Squadron, which operates throughout the region; and various facilities that span the length and breadth of the Canadian Arctic. The CAF also augments its northern-based capabilities with assets from the South. Taken together, the existing military footprint in the Arctic provides a firm foundation upon which to build capabilities that support a range of activities across the mission spectrum, from defence and crisis response to routine government activity.

Military responsibility for the Canadian North (defined as the area north of 55°N) falls under Canadian Joint Operations Command (CJOC) and, on a northern territorial level, to Joint Task Force (North). JTFN's role is to exercise Canadian sovereignty and security by conducting routine and contingency operations in the North; contribute to the growth and development of the people in the North through the youth-oriented Junior Canadian Ranger and Cadet programs; build the collective capability to respond rapidly and effectively to emergencies along with creating the positive and lasting partnerships to meet Canada's safety, security and defence objectives for the region; and actively contribute to environmental stewardship of the North.¹⁸ Approximately 250 Regular Force, Reserve Force, and civilian personnel work at JTFN to coordinate and support the wide array of military activities in the North, as well as performing a liaison function with the territorial governments and peoples of the three territories.

The North American Aerospace Defence Command (NORAD), established in 1958 to monitor and defend North American airspace (and, since 2008, has added a maritime warning mission), also has a significant footprint in the Canadian North. This binational (Canada-US) command maintains the North Warning System (NWS), a radar network for the air defence of North America strung along the Arctic coastline. Furthermore, the RCAF maintains four Forward Operating Locations (FOLs) for NORAD in Yellowknife, Rankin Inlet, Iqaluit, and Inuvik, which extend the reach of fighter aircraft by providing essential basing, refuelling and maintenance facilities. To ensure NORAD's FOLs are capable and ready, the CAF routinely conducts operations, exercises, maintenance, logistical support and security detail at these establishments. For example, the RCAF conducted Operation *Spring Forward* in April 2014 in partnership with NAV CANADA, the Canadian Air Defence Sector of NORAD, and the Alaskan NORAD Region, to test and confirm NORAD's rapid response capability.¹⁹

The Royal Canadian Air Force provides mobility support, aerial search and rescue capabilities, and intelligence, surveillance, and reconnaissance (ISR) assets that contribute to domain awareness throughout the Arctic. Canadian Forces Station Alert, the most northern CAF outpost, collects signals intelligence remotely to support military operations, as well as maintaining a geolocation capability to support search and rescue and other operations.²⁰ Dedicated to detecting threats such as illegal fishing, immigration, drug trafficking, and pollution violations, CP-140 Aurora long-range patrol aircraft regular conduct northern patrols. Four CC-138 Twin Otter aircraft, based full-time with 440 Transport Squadron headquartered in Yellowknife, support Search and Rescue operations and conduct airlift, utility and liaison flights throughout the Northern territories.²¹ Southern-based RCAF aircraft such as the CC-177 Globemaster III, CC-130 Hercules, CC-138 Twin Otter, and CH-146 Griffon helicopter resupply northern operations and military installations such as CFS Alert and North Warning System radar sites. Furthermore, the FOLs and Personnel Accommodation Barracks, maintained by the RCAF, allow NORAD to strategically place aircraft and support

personnel in Canada's North to ensure a ready and rapid response to any potential airspace threat. CF-18 Hornet fighter aircraft regularly pre-deploy to these FOLs in response to, or in anticipation of, unwelcome activity, such as the increasingly frequent bomber patrols undertaken by Russian Tupolev Tu-95 Bear "H" bombers to the edge of Canadian airspace.²²

The Royal Canadian Navy provides naval assets to support maritime operations in northern waters during the navigable season. Currently, this limited capability resides in Halifax-class frigates and Kingston-class maritime coastal patrol vessels (MCDVs) which conduct routine military operations and support federal partners through fisheries patrols, hydrographic surveys, and maritime safety missions during the navigable summer season. Furthermore, Marine Security Operations Centres (MSOCs), hosted by the RCN in Halifax and Esquimalt, maintain watch over Arctic waters. These facilities are staffed by personnel from five core partners – Canada Border Services Agency, DND/CAF, Fisheries and Oceans Canada (including the Canadian Coast Guard), the RCMP, and Transport Canada – and represent a practical, whole-of-government approach to maritime domain awareness and marine security.²³

The Canadian Army is also active in the Arctic, most consistently through the participation of northern residents in the Canadian Rangers. This sub-component of the CAF Reserve offers a cost-effective and representative means of performing security and public-safety missions in sparsely settled northern, coastal, and isolated areas across the country. 1st Canadian Ranger Patrol Group (1CRPG), based in Yellowknife, has 1,850 Rangers in sixty patrols (2014 statistics) spanning the three northern territories. These lightly-equipped, self-sufficient, mobile forces are heralded as playing a central role in exercising Canada's sovereignty through regular surveillance patrols, participation in northern operations, reporting of suspicious or unusual activities, and collecting local data useful to the military. As the "eyes and ears" of the CAF in the North, southern units rely on, and learn from, the experience and knowledge of the Rangers to survive and operate effectively in the Arctic environment. The Canadian Rangers not only benefit northern

communities in a direct social and economic sense, they also empower northern Canadians who mentor and educate other members of the CAF on how to manage, respect, and ultimately care for the North.²⁴ To further expand its presence, the Army stood up C Company (the Yellowknife Company) Loyal Edmonton regiment in August 2009. This unit provides the first Primary Reserve footprint in the Northwest Territories in decades and is expected to provide an Arctic-specific capability in due course. To respond to emerging northern requirements, the Army has also begun building capacity around Immediate Response Units (IRUs) supplemented by Arctic Response Company Groups (ARCGs) – initiatives described below in more detail.²⁵

The Canadian Army is also responsible for the CAF Arctic Training Centre (CAF ATC) in Resolute Bay, which officially opened in August 2013. This multi-purpose facility, which can accommodate up to 140 personnel, is used year-round for Arctic training and routine operations. It provides the Canadian Armed Forces with access to a state-of-the-art training hub capable of supporting individual and collective Arctic and cold weather training, with enough equipment and communication infrastructure to serve as a forward operating base or command post if required. By pre-positioning equipment and vehicles at the facility, the military increases its ability to support regional emergency operations and disaster response in the High Arctic. Because it was constructed as an expansion of the existing Polar Continental Shelf Project facility, rather than as a separate building, the Forces not only realized significant cost savings but offered a strong example of interdepartmental partnership.²⁶

Canada also continues to advance its longstanding history of defence research and the development of new technologies suited to (or integration of existing technologies in) Arctic conditions. This dovetails with core interests in improving situational awareness. Project Polar Epsilon, a \$60 million space-based initiative that achieved full operations in 2012, uses satellite ground stations to process data from Canadian satellite RADARSAT-2 to produce imagery products in near real-time to support CAF and whole-of-government

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operations, as well as monitor activity or changes in the Arctic. While Canada has never faced an acute defence problem from surface ships attempting to pass through the Northwest Passage surreptitiously, potential increases in shipping activity have renewed interest in securing a more accurate maritime picture of the region. Canada has also long worried about the possibility of Soviet/Russian submarines transiting its waters and, even twenty years after the end of the Cold War, continues to receive credible reports of foreign submarines in the Arctic waters.²⁷

To expand air, surface, and sub-surface surveillance capabilities, Defence Research and Development Canada's (DRDC) recently completed a five-year Northern Watch Technology Demonstration Project involving the development and deployment of multiple sensor technologies in a High Arctic environment. Located at Gascoyne Inlet on Devon Island, a natural chokepoint for shipping through the Arctic Archipelago and the site of one of Canada's prototype Cold War detection systems,²⁸ the prototype system tested various surface and underwater surveillance technologies including acoustic, magnetic, and electric field sensors to monitor activity with marine navigation radar, an electro-optical system, an electronic intelligence receiver, an automatic identification system (AIS), beyond line-of-sight (BLOS) communications, and remote control and operation.²⁹ The project has been rescoped to focus primarily on persistent local area surveillance of maritime sub-surface objects in the Canadian Arctic and the outcomes are likely to remain classified for the foreseeable future. Other scientific research continues, including DRDC contributions to data collection in support of Canada's submission to establish the outer limits of its continental shelf under the United Nations Convention on the Law of the Seas (UNCLOS).³⁰

As part of its mandate, the CAF frequently conducts exercises and operations in the Arctic, including "sovereignty patrols" designed to "show the flag" as demonstrations of Canadian control over its territory. These routine activities generate situational awareness, show a visible military interest and presence in the North, and prepare forces to conduct Arctic operations. For example,

JTFN conducts Operation *Qimmiq* as a continuous surveillance and presence operation involving Ranger patrols, CP-140 Aurora patrols, and RCN vessels in the summer.³¹

The ability to project force and to conduct and sustain operations requires not only planning but preparedness to endure challenges associated with harsh weather (such as the winter cold and summer fog and icing conditions), difficult terrain, and isolation. “The North is a unique environment and operating conditions vary significantly from those in the South to which the CF is more accustomed,” the *CF Northern Employment Support Plan* (2011) notes. “The variety of potential tasks, the remoteness of the region, the vast distances between operating bases, the lack of infrastructure, and difficulties in communications mean the North can be regarded as an expeditionary type theatre requiring forces to be uniquely equipped and trained, deployable, scalable, and as self-sufficient as possible.”³² Through more frequent northern operations, the CAF is expected to leverage its capabilities, improve its ability to effectively command contingency and deliberate operations, enhance its surveillance capabilities and all-domain situational awareness in the North, and increase its “capability and capacity to surge and sustain appropriate force packages into this region during contingency or crisis operations.”³³ Towards this end, the CAF conducts three main recurring joint activities annually:

- **Operation NANOOK**, the largest annual northern operation, is intended to demonstrate the CAF’s ability to operate effectively in the Arctic environment. This joint, integrated sovereignty operation (planned and directed by CJOC) highlights interoperability, command and control, and cooperation with interdepartmental and intergovernmental partners in the North. Depending on the year and scenario, international partners send observers or participate more directly in the exercise with naval or air assets. The operation usually includes land, air, and sea components, coordinated to interact with federal, territorial, and municipal safety and security responders.

- **Operation NUNALIVUT** is conducted in March and April each year by JTFN. Originally designed to take advantage of the unique capabilities of the Canadian Rangers and 440 (Transport) Squadron to undertake and support snowmobile patrols in the most remote stretches of the High Arctic, the operation has evolved in recent years to focus on opportunities for specialized groups (such as RCAF SAR units, the RCN Combined Dive Team, and ARCGs) to gain experience in the region.³⁴
- **Operation NUNAKPUT**, an annual surveillance and presence operation in the Western Arctic conducted in cooperation with the Canadian Coast Guard, RCMP, and DFO is aimed at improving interoperability and enhanced situational awareness.

These “N-series” operations represent a regular, highly visible example of government efforts to exercise sovereignty and, on a practical level, help to prepare forces for a broad range of potential missions. This contributes to the military’s efforts to reach its desired northern end state: that “with enhanced understanding and all domain awareness, integration of new capabilities, and sustained operations, the CAF will be postured to more efficiently and effectively operate in the North, rapidly responding to emerging requirements, demonstrating Canadian sovereignty across the North, and acting in partnership with local, provincial/territorial, federal, and international partners.”³⁵

While the CAF has done a good job defining its objectives and establishing a training regime, actually building the capacity to operate effectively in the Arctic has proven a difficult task. After the end of the Cold War the Forces’ Arctic capabilities were allowed to atrophy and, by the mid-2000s, it was discovered that they no longer possessed either the equipment or the corporate knowledge to deploy, move, and operate in the Arctic. At the strategic level, the CAF has focused on strengthening its ties with OGD and building out the networks and processes needed to achieve its higher-level objectives. At the

operational level, the military's efforts have focused on rebuilding basic Arctic skills needed to operate in an often inhospitable environment.

Maritime Forces

The RCN's return to the Arctic waters began in 2002 with Operation *Narwhal*, a simple deployment of two patrol ships, but a powerful reminder of how far the force's abilities had declined. During *Narwhal*, and subsequent deployments, communications between the ships, shore parties, and their air support consistently proved unreliable – in part because frequencies and equipment were not standardized and, in part, because of atmospheric and environmental difficulties.³⁶ Occasionally, this created very real dangers. During Operation *Hudson Sentinel* (2005) a deployed RHIB (rigid-hulled inflatable boat) found itself lost and unable to contact its ship. The crew was forced to locate an MCDV visually, a task that might have proven impossible had the weather turned.³⁷ Even for the RCN's MCDVs and frigates, movement was unpredictable and dangerous. These thin-skinned ships are not designed for operations in ice and have to move gingerly, lest a small growler or bergy bit puncture their expensive hulls. Making this point, Lieutenant D. Connelly noted that the “first time I ever heard a [Commanding Office] respond (justifiably I must emphasize) to direction to be somewhere at a certain time with ‘we’ll get there when we get there,’ was during *Nanook* 2009.”³⁸ Experience also showed that mechanical issues were more difficult to manage far from conventional naval supply lines and, in some instances, necessitated elaborate efforts to move emergency supplies to a ship in northern waters.³⁹

Over the past decade, annual deployments into the region have led to a gradual improvement in RCN procedures and systems, improving the Navy's ability to operate and maintain ships in the region and to coordinate their activities with the Army, Air Force, and other government departments and agencies. In spite of this, Canadian warships remain poor platforms for Arctic operations. Simply put, they are too expensive and too few in number for regular use as patrol

craft, fisheries inspectors, or constabulary vessels; and, most importantly, they are incapable of safely operating in ice-infested waters.

As such, some of the CAF's most expensive new procurement initiatives are intended to develop a genuine Arctic capability for the RCN. First amongst these are the Arctic Offshore Patrol Ships (AOPS). Announced in July 2007, the AOPS are intended to increase the Navy's ability to operate throughout the Northwest Passage and conduct armed sea-borne surveillance in Canada's Exclusive Economic Zone, support other CAF units, and assist OGDs in carrying out their mandates.⁴⁰ The Navy's guiding policy statement, *Leadmark* (2001), assumes that traffic along the Northwest Passage will continue to increase and that the government's responsibilities will grow accordingly. As is the case in Army projections, these responsibilities are connected to unconventional security threats, like criminal activity and smuggling.⁴¹

Unlike the RCN's frigates and patrol ships, these vessels will be able to operate safely in first-year ice and do more than simply pop into the Eastern Arctic during the annual Operation *Nanook*. The AOPS will be able to support the RCMP in policing of maritime traffic in the Northwest Passage while providing a platform for Transport Canada, Fisheries, and other departments with mandates in the region. Rear-Admiral David Gardam, Commander of Maritime Forces Atlantic, described the AOPS as "a big empty ship" that can "embark doctors, dentists, scientists, marine biologists, police and fisheries officers, environmentalists and many other personnel with an interest in, or a mandate for, the development and sustainment of Canada's north."⁴² Although much popular commentary has fixated on the military characteristics of this platform (and its light armaments),⁴³ Gardam's description of the ships as well-rounded, whole-of-government vessels is more closely aligned with CAF policy and intent for the region. The AOPS will likely never fire their guns in anger, nor will their presence convince the United States to recognize Canadian sovereignty.⁴⁴ They will, however, provide Canada with vital research and general use platforms, enhanced constabulary options, and better response capabilities in the event of a disaster or emergency.

Because of the AOPS' relatively limited range (6,800 nautical miles), Arctic refueling is essential for these ships – as well as the Coast Guard's icebreaker fleet.⁴⁵ To help address this requirement, the RCN is building a \$146-million re-fueling and logistics facility at Nanisivik⁴⁶ Situated on the northern portion of Baffin Island, near the eastern gateway to the Northwest Passage, the facility was originally anticipated to include refuelling services, a base to facilitate modest repairs and upgrades, temporary storage facilities, and a helicopter landing area. Soaring costs and trouble with the dock led the project to be downsized from a year-round operational hub to an unmanned fuel depot. The refueling capability, however, remains its most essential component. Design work for the Nanisivik Naval Facility was completed in early 2014, and the official ground-breaking ceremony was held on 15 July 2015. The latest projects anticipate that the facility will be operational by 2018.⁴⁷

While the AOPS and Nanisivik programs have been delayed, this has not materially damaged the RCN's ability to carry out its responsibilities in the North. After all, these programs were undertaken in *anticipation* of a need, rather than as a response to an existing requirement. If and when Arctic shipping activity increases dramatically (likely as destination shipping related to new resource development projects and tourism rather than uninterrupted transit passage),⁴⁸ the RCN may require a greater presence to monitor, police, and assist vessel traffic. That activity has not yet materialized and, by the time it does, these programs should be far more advanced. In the meantime, Canada's current naval resources are adequate to exercise all of its jurisdictional responsibilities.

These ideas are predicated on the idea that the \$3.1 billion AOPS project will yield the fleet that the government has promised. Political scientist Ryan Dean argues in a recent article that the usual debates about the roles and capabilities of the AOPS miss the more critical issue of how time and inflation are negatively affecting the programme. A 2014 Parliamentary Budget Office report noted that the project was both behind schedule and over budget, with

the result that available funding might only allow the construction of four ships (not the 6-8 ships originally intended).⁴⁹ Inflationary pressures, Dean argues, may force officials to either reduce the level of ambition of the vessels themselves, making them less capable and therefore cheaper to purchase (which he argues has already been done by reducing the top sustained cruising speed from 20 to 17 knots), or simply decreasing the number of ships purchased. In his assessment, “delays in construction have effectively hollowed out the budget to build the AOPS due to inflation, resulting in the expected delivery of fewer, less capable ships.”⁵⁰

Land Forces

The Canadian Army must always be prepared to launch on operations with little or no notice anywhere in Canada. The absence of a military threat in the Arctic is no reason to ignore the potential for natural disasters, transportation accidents, pandemics and other unforecasted events to occur across our North. It is entirely possible that a number of these events could pose challenges beyond the scope of our well trained and highly experienced local authorities. From time to time the resources of the nation will be called upon to support Canadian citizens in times of crisis. One of those resources, one that is well trained to respond to crises is, of course, the Canadian Army.

– LGen P.J. Devlin (2013)⁵¹

Although the Canadian Army has a role to play in maintaining Canadian sovereignty and security in the Far North, that role is often misunderstood or misconstrued in the media. While popular rhetoric holds that “boots on the ground” represents a display of state resolve and commitment that bolsters our sovereignty position, this is a spurious argument. Its persistence, however, harkens back to idea of “effective occupation” that suggests the need for a physical presence to show that a state “holds” territory, thus preventing competing claims from emerging or consolidating.⁵² Images of foreign adversaries coming over the Pole to invade through the Arctic, popular in early Cold War continental defence narratives before being pushed aside by the

tangible threat posed by long-range nuclear delivery systems, have also been resurrected in portrayals of a brave, new twenty-first century Arctic world.

The simple realities of climate, terrain, limited infrastructure, and (most importantly) limited military objectives render the Canadian Arctic a problematic and unattractive operational theatre for hostile ground forces. As strategists noted from the early days of the Cold War, the vast distances of land and the nature of the region (in the words of General Andrew McNaughton) “something of a defence in itself,” and Lester Pearson quickly dubbed the government’s position a “scorched ice policy,” in which a potential adversary would have nothing to conquer – and nowhere to go.⁵³ This reality has not changed. When faced with a journalist’s question about what the CAF would do if someone invaded the Canadian Arctic, the Chief of the Defence Staff, General Walter Natynczyk, quipped in 2009 that his “first task would be to rescue them.”⁵⁴ The need for the Army to conduct combined arms kinetic manoeuvre operations to address a potential adversary was hardly foremost in his mind, and the idea of garrisoning large numbers of Regular Force and Primary Reserve soldiers in the North to defend against external threats would be irresponsible.⁵⁵

The Army’s Arctic concept document, *Northern Approaches*, released in 2013, provides a reasoned overview of the capabilities that land forces can bring to “assist in meeting the Government of Canada’s objectives in the region.” According to this document, typical Army missions include “Humanitarian Assistance, Disaster Relief, support to Ground-based Search and Rescue (GSAR), Major Air Disaster (MAJAID), Major Maritime Disaster (MAJMAR), and generic support for a wide range of Government of Canada missions. Atypical missions could involve CANSOFCOM in counter-terrorism or other roles.” While acknowledging that this range of capabilities is “similar in nature to the ones that are currently available in the South,” the Army’s plan emphasizes the need for a renewed focus on general Arctic training and equipment, “a robust sustainment system, and requisite command, control, surveillance, liaison and planning capabilities” to operate “across the vast and

frequently inhospitable environment of the Arctic.” Careful to distinguish between winter warfare training and Arctic training, the Army recognizes that “extreme winter temperatures ... [are] but one aspect of the many challenges Canadian troops encounter in the Arctic.”⁵⁶

Since the mid-2000s, the Army has worked diligently to regain the Arctic capabilities that atrophied in the decade following the end of the Cold War.⁵⁷ Frequent northern exercises have confirmed the challenges posed by climate, geography, distance, limited infrastructure, and the erosion of basic land skills. For example, in December 2008, the Army sent a small force to Churchill for *Exercise Northern Bison*. A company was deployed to a forward operating base and, in temperatures ranging from -45°C to -57°C, soldiers soon lost their effectiveness. In his appraisal of the exercise, Colonel R. Poirier admitted surprise at how many basic winter warfare skills had been lost. The main lesson taken from *Northern Bison* was that most troops deployed north would quickly become liabilities rather than assets. Furthermore, tactical movement proved a serious liability and officers discovered serious deficiencies in the troops’ ability to move as a formed element.⁵⁸ This observation was confirmed during the following iteration of *Northern Bison* (2010), in Operation *Arctic Ram* (2012), and in Exercise *Stalwart Goose* (2013).⁵⁹ The shortage of over-snow vehicles proved critical, forcing the government to spend \$420,000 on *Arctic Ram* alone to rent enough snowmobiles to acquire a “modest capability.”⁶⁰ The CAF is addressing this deficiency through the Arctic Light Over Snow Vehicle (LOSV) project, designed to provide the Army with a “robust, light, winter mobility capability.” A concurrent Arctic All-Terrain Vehicle project is also designed to address mobility issues, particularly in the High Arctic, where vehicles are few in numbers and often unsuited for operations.⁶¹

Exercises have also reinforced the need for better communications equipment and training. Establishing reliable and effective communication between units in the field, headquarters, and between services remains one of the most persistent and intractable challenges associated with northern operations. New technologies, such as satellite phones and mobile internet hotspots, have helped

alleviate the situation, but the environmental and atmospheric conditions that frustrated communications in the 1970s and 1980s remain a hurdle, hindering VHF and HF radio communications depending on the time of day, solar flares, the curvature of the Earth, and rolling terrain.⁶² Furthermore, the lack of cellular or broadband coverage in the Arctic precludes the connectivity to which the Forces have grown accustomed in other theatres. Accordingly, basic intelligence, operational orders, and information needed for a mission must all be available offline.⁶³ While satellites phones have proven useful in filling communication gaps, they offer an insecure system with batteries that drain rapidly and talk-time that is significantly reduced in cold conditions.⁶⁴ This same problem has affected soldiers' global positioning systems, which have been reported as performing sluggishly in the extreme cold.⁶⁵

Sustaining deployed forces also remains a key challenge. Equipment failure is more frequent and harder to work around in the Arctic.⁶⁶ Moving parts from southern warehouses is made difficult, not only by the distances involved, but by limited shipping infrastructure that was never designed to handle more than a small stream of goods.⁶⁷ Relying on local stocks is not an answer. Many hamlets in the Arctic Archipelago have their supplies brought in once a year by ship and cannot maintain both themselves and soldiers operating in the area. A 2011 analysis of the situation revealed that few northern communities can support anything greater than a sub-unit surge.⁶⁸ Accordingly, the Army conducts its deployments and training in the region as "expeditionary operations" (thus relying on air and sea mobility), aiming to make them "entirely self-contained" and causing "zero impact on the fragile environments of the North."⁶⁹

Given these operational realities, the Canadian Army has wisely focused its efforts on building up small, self-contained, highly mobile units – particularly the Arctic Response Company Groups (ARCGs). Since 2010, the four Land Forces Areas have each generated one ARCG consisting of two rifle platoons and one administrative support platoon. Force generated from the Primary Reserves, the desired end-state for these groups is to provide "a robust and

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resilient Arctic capability ... with sufficient depth of personnel qualifications to enable Force Generation for [domestic operations] as needed.”⁷⁰ Simply put, these units are intended to offer support to first responders and provide the critical “mass” needed to manage significant disasters and other security situations.⁷¹ All four ARCGs achieved initial operating capability in 2011 with Final Operating Capability (FOC) anticipated in 2016.⁷² Accordingly, the Army’s incremental approach has proven amenable to “a rapid and coordinated advance of Arctic capabilities” aligned with government priorities in a fiscally- and resource-constrained environment.⁷³

The ARCGs are becoming involved in increasingly complex scenarios as their capabilities improve.⁷⁴ To appreciate how far the Army has come, readers should note that the terrible performance of an ARCG deployed on Exercise *Northern Bison* in 2008 demonstrated how acutely the Army needed to improve its Arctic capabilities. By contrast, an ARCG from the 5th division was declared at full operating capacity in 2014 after Exercise *Stalwart Goose*, when the unit maintained sustainment, communications, and operability over a total of 540 km in four (plus) days. This exceeded the previously stated requirement for fully operational status: self-sustaining, deployable to 300km, and a demonstrated ability to provide assistance to other government departments and local communities. Readiness targets for planned and deliberate operations have also been cut in half to include full deployment within 15 days, including a reconnaissance party at day five and an advanced party deployed at day ten.⁷⁵ Accordingly, the ARCGs have become a credible way for the Army to develop the necessary skills to provide support across the security spectrum and to work closely with joint, interagency, and public stakeholders. For example, the ARCGs always work in conjunction with the Canadian Rangers, leveraging Northerners’ expertise, knowledge of areas of operation, and networks.

As a southern-based resource sent north for short durations, the ARCGs have typically operated during “peak periods” of activity in the Arctic (summer and winter). The Canadian Rangers, however, provide the Army with a permanent, year-round presence. Since 1947, the Rangers’ official mission has been “to

provide a military presence in sparsely settled northern, coastal and isolated areas of Canada that cannot conveniently or economically be provided for by other components of the Canadian Forces.” The tasks that they perform in support of this mission have become more complex (but do not include any combat or assistance to law enforcement roles because of their limited training),⁷⁶ and the Army considers them “a mature capability” and “the foundation of the CF’s operational capability across the North for a range of domestic missions.”⁷⁷ In emphasizing their myriad contributions, the Army notes that the “Rangers will remain a critical and enduring presence on the ground, valuable in many roles, including amongst others, the CAF’s eyes and ears for routine surveillance purposes, its guides, local cultural advisors, interpreters, and the core of our liaison capacity in many locations, while remaining immediately available to support local government or other agencies.”⁷⁸ 1 CRPG represents a flexible, inexpensive, and culturally-inclusive means of having “boots on the ground,” visible demonstrating sovereignty and supporting domestic operations.

Since 2007, growing and strengthening the Rangers has featured prominently in the Harper Government’s plans to bolster Arctic sovereignty and “enhancing the safety and security of the people who live here.”⁷⁹ The government delivered on its promise to expand the Canadian Rangers from 4,000 members in 2007 to an average paid strength of 5,000 in 2013.⁸⁰ Furthermore, sustained funding has supported ongoing material “enhancement” efforts, such as the Canadian Rangers Equipment Modernization Project to provide Rangers with “light equipment of the best quality to allow them to perform their tasks effectively.”⁸¹ Patrols have received satellite phones and new radios to address communication gaps,⁸² and the military plans to pre-position more equipment (still unspecified) in communities so that Rangers can respond more quickly to emergencies.⁸³ Although Rangers are still expected to wear their own environmentally-suited clothing on operations, a “clothe the Ranger” program will supplement their famous red hoodie with new jackets, rain suits, and other accoutrements. Finally, the Rangers have been promised a new bolt-action, calibre .308 Winchester, magazine-fed rifle as part of the Army’s Small Arms

Modernization Project. This will replace the venerable .303 Lee Enfield No.4 (which was difficult to maintain owing to a scarcity of replacement parts) with initial distribution to Ranger patrols in 2017.⁸⁴ The need for more Ranger instructors and headquarters support staff in Yellowknife, however, remains a critical shortcoming that must be addressed to ensure that the Ranger organization remain effective and relevant in future operations.⁸⁵

Over the last fifteen years, 1 CRPG's range of activities has extended far beyond the original expectation that Rangers simply know their immediate environs. As a symbol of Canadian sovereignty, the Rangers attain their highest profile when patrolling the remotest reaches of the Arctic or supporting other units during N-series operations, representing a visible form of "presence," and a source of domain awareness. During these operations, Rangers have a chance to work with other members of the CAF and foreign militaries, operate in unfamiliar environments, share skills, and build confidence. They also serve as "force multipliers" during these operations and other exercises, increasing the effectiveness of Regular Force and Primary Force units operating in the North by teaching, guiding, and generally keeping these southern troops alive and active. After-action reports from Army exercises repeatedly highlight the benefits of this partnership and the need to leverage the Rangers' knowledge and capabilities to facilitate operations and further develop the Army's northern skills.⁸⁶ Furthermore, the Rangers are an important source of shared awareness and liaison with community partners⁸⁷ and, by virtue of their capabilities and location, regularly support other government agencies in responding to the broad spectrum of security and safety issues facing isolated communities. For example, they frequently conduct search and rescues, while their leadership and training makes them the *de facto* lead during states of emergency in their communities – from avalanches, flooding, extreme snowstorms, and power plant shutdowns, to forest fires and water crises. Accordingly, they are the CAF's first responders in most safety and security situations.⁸⁸

Given current readiness levels and the ability of the Primary Reserves to force generate, the ARCGs are not intended to serve as first responders for incidents or emergencies such as MAJAID, SAR, and disaster relief tasks. The Rangers, based in nearly every Northern community, would almost inevitably be the first CAF members to augment and support municipal and territorial first responders. Given their modest resources, however, the Army may need to deploy an Immediate Response Unit (IRU) to support the Rangers. IRUs are Regular Force units designed around the same model as the ARCGs, trained with the same capabilities to achieve the same objectives but on a smaller-scale and deployed in a much shorter timeframe.⁸⁹ In a situation where the CAF had to provide more support than Rangers, an IRU would deploy a four-person reconnaissance unit within eight hours, a ‘vanguard company’ of twelve people within 12 hours, and the main support body of thirty-two people within 24 hours.⁹⁰ In an event where even more sustained CAF support is required, an ARCG will be mobilized and deployed.

This layered response system makes sense and substantive progress has been made in building a basic capability, designed around realistic security threats. Land-based Arctic operations have become a “normal activity for Army units,” as has interoperability with other CAF elements and other government departments.⁹¹ The Army has a growing supply of soldiers trained up to the point that they will be useful on an Arctic deployment and it can conduct small-scale deployments and tactical movements while self-sustaining for nearly three weeks.⁹² Although this may not constitute a robust military presence in the conventional combat sense,⁹³ and media critics have accused this posture as falling short of the government’s aggressive promises,⁹⁴ the Canadian Army has created a focused and cost-effective system designed with Canada’s limited resources in mind – and the sort of security and safety challenges that the country is likely to face as activity in the Arctic continues to increase.

The Aerospace Domain

Situational awareness in the Arctic is essential to exercising effective control. During the Cold War, Canada employed surveillance craft (the CP-140 Aurora

and CS2F Tracker) to conduct periodic, but largely symbolic, flights as demonstrations of sovereignty.⁹⁵ In a top secret program, DND also spent decades experimenting with maritime detection systems in the chokepoints of the Northwest Passage.⁹⁶ The system was never operationalized but DND is attempting something similar in the twenty-first century.

In order to monitor activity beyond the range of the Northern Warning System and the region's maritime chokepoints, the government relies primarily on spaced-based surveillance. The RADARSAT II satellite is the country's eye in space, monitoring activity and ship movements and cross-referencing this information with data from the AIS system to track vessels not transmitting their identity as required under international maritime regulations. The system is extremely capable, it can collect images of the Earth, day or night, through all kinds of interference (such as cloud cover, smoke, or haze) – an important consideration in the Arctic.⁹⁷ Through the Polar Epsilon project, which is DND's mechanism for processing RADARSAT data, critical information can be incorporated into a recognized maritime picture and disseminated within fifteen minutes.⁹⁸ To further strengthen this system, Canada plans to launch a constellation of three additional RADARSAT satellites in 2018, allowing for several more passes per day over the Northwest Passage. This increase offers many advantages, including the ability to measure ship movements much more precisely.

Expanding this capacity, Polar Epsilon 2 will build upon the Canadian Space Agency-led RADARSAT Constellation Mission. This project will see DND upgrade the existing Polar Epsilon ground segment and fund the RADARSAT ship identification Space Segment payloads. Treasury Board approved the \$143 million project in January 2013, and MacDonald Dettwiler was awarded a \$706 million contract to build the RCM satellites. These satellites are expected to be launched in July 2018, with first operations that October.

In the air, Canadian surveillance is still provided by the RCAF's Aurora aircraft, which are in the midst of a \$2 billion upgrade of their mission

systems and sensors. This upgrade includes structural updates and replacement of the outer wings and horizontal stabilizers. Concurrently, the Aurora incremental modernization project (AIMP) Block III is upgrading mission systems and sensors, giving the modernized Aurora a world-class capability. These upgrades should keep the planes active until at least 2030.⁹⁹

Canada is also considering the use of drones to supplement its close surveillance capabilities.¹⁰⁰ Requiring less maintenance and manpower than traditional aircraft, UAVs could, theoretically, be used economically in a wide assortment of roles, from tracking ships to monitoring pollution incidents. The Joint Unmanned Surveillance Target Acquisition System (JUSTAS) program, launched in 2005, examines the possibility of procuring a fleet of medium-altitude long-endurance UAVs. This fleet would work in conjunction with Canada's fleet of fixed wing aircraft to provide surveillance out to 1,000 miles and support SAR efforts by dropping packages to stranded parties. At one point there were promises of an initial operating capacity in 2011, but DND is still exploring options in mid-2015.¹⁰¹

Drones, helicopters, and fixed wing aircraft will likely become more important in the Arctic as shipping and resource extraction increase the need for a robust search and rescue capacity.¹⁰² In Canada, search and rescue is a shared responsibility among federal, provincial/territorial, and municipal organizations, as well as air, ground, and maritime volunteer SAR organizations.¹⁰³ Working with international partners through the Arctic Council's 2011 *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic*, the CAF has also committed to enhance SAR capabilities within its assigned area of responsibility.¹⁰⁴ To meet these responsibilities, the military maintains a year-round SAR capability for the North using assets based further south. Various commentators have criticized this system – which tasks assets based in Victoria, Trenton, and Halifax to respond to calls coming from the Far North – as inadequate and dangerous.¹⁰⁵ Nonetheless, this system has been forced on the CAF by its limited resources and the simple fact that the vast majority of Canada's SAR requirement comes

from the South, not the North. In 2011, DND estimated that CAF aircraft or ships had been tasked in approximately 1,100 of the 8,000 annual cases triggering a response from the federal aeronautical and maritime SAR system.¹⁰⁶ Less than one percent (typically under 60 per year) of all SAR incidents occurred north of 60°N latitude.¹⁰⁷

In most Arctic SAR incidents, the first responder on scene will be a fixed-wing aircraft. This response may entail an air-drop of survival equipment and/or the parachuting of SARTECs to provide medical care and survival assistance. Parachuting operations, however, are often limited by high winds and ceiling height and are not always possible.¹⁰⁸ The lack of infrastructure in the North also limits the CAF's options, in that helicopters and boats lack the speed and range to move quickly across much of the region. As such, the tension in northern SAR remains how to economically deploy assets to the region without draining resources from the South, where they are more heavily employed. Until activity in the Arctic increases significantly, it will be hard to make a case for diverting resources from areas which are, statistically, more likely to require CAF action.¹⁰⁹

In spite of this, the CAF continues to train and prepare for Arctic SAR. This is one of the more common scenarios played out during the annual *Nanooks* and, in 2011, became a very real requirement when First Air flight 6560 crashed outside of Resolute while the CAF was rehearsing its response to exactly that kind of accident. The First Air crash demonstrated that a potent SAR capability will always be an important consideration and that the CAF must continue to harmonize its response plans with those of OGD and other first responders

While more SAR aircraft will likely be required in the years to come, the need for combat aircraft is unlikely to grow. Canada's CF-18s (and whatever may ultimately replace them) will remain an essential element in demonstrating Canadian control of its own airspace, however, they will play only a small role in Arctic security. Since the Russian invasion of Ukraine and the resulting

Western sanctions, Russian Air Force bomber flights to the margins of Canada's Arctic airspace have increased dramatically. These operations have become far more aggressive and have included practice cruise missile attacks in the Labrador Sea and several flights into Canada's Air Defence Identification Zone in the Beaufort area. At the same time as Russian backed rebels downed a Malaysian airliner over Eastern Ukraine, for instance, Russians aircraft were also operating off Alaska and Yukon.¹¹⁰

Despite the threatening nature of these operations, they are unlikely to constitute a security threat *per se*. Russia is highly unlikely to attack Canada or the United States and, even if it were to do so, it would make no strategic sense to employ these antiquated bombers in the attack. Russia would have little to gain by sending aircraft into a region possessing no strategically important targets that could not be more easily destroyed by ballistic or cruise missile attack. NORAD Commander Admiral William Gortney explained the underlying purpose of these operations, stating that Russia is "messaging us with these flights that they're a global power – which shouldn't be a surprise, we do that too."¹¹¹ Although they represent diplomatic statements more than military threats, ensuring that these bombers are met by Canadian fighters at the edge of Canadian airspace remains an essential task.

A broader question relates to the future of NORAD. This binational, tri-command relationship, has provided continental aerospace warning and control since its inception in 1957, and adopted a new maritime warning mission over North America, including the Arctic, in 2006. Although an enduring relationship, recent discussions have raised questions about the role, scope, and mission of this important joint arrangement in light of emerging defence threats and challenges.¹¹² In an Arctic context, however, political scientist Andrea Charron makes a reasoned case for why NORAD does not need to adopt a new security posture to address emerging issues in that particular region. As she notes, the US National Strategy for the Arctic Region (2013) does not mention "terrorism" or "criminals," but calls for "improve[d]

awareness of activities, conditions, and trends in the Arctic region that may affect our safety, security, environmental, or commercial interests.”

To date, increases in Arctic shipping traffic have neither been “of the scale or type to warrant more of NORAD’s attention,” thus allowing time for NORAD to improve information sharing and whole of government relationships associated with its maritime warning mission. Highlighting NORAD’s “Arctic role may be useful for a variety of reasons including as a deterrent to adversaries as well as education for domestic audiences,” Charron notes, but this should not be misconstrued as a “new game” in the Arctic requiring institutional changes to NORAD itself. The status quo, which ensures that “command and control of Canadian assets remains in Canadian hands and in Canadian territory,” is appropriate, effective, and advantageous to Canada for sovereignty and security reasons.¹¹³

The physical place of the Arctic in continental defence is also re-emerging as a topic of discussion. In the early postwar period, the main catalyst for Canadian-American cooperation in Arctic defence related to the need for Canadian sites upon which to build radar stations and other critical military infrastructure. For Canada, these projects generated anxiety because of their scale and cost. In the case of the DEW Line, the United States paid for the original construction (estimated at upwards of \$400 million) as well as the lion’s share of ongoing operational and maintenance costs. When parts of the radar network was modernized into the North Warning System, Canada agreed to pay forty percent of the cost and to operate and maintain the 47 sites within Canada.¹¹⁴ Current discussions about whether the NWS, which is reaching the end of its life, should be modernized or replaced, or whether the existing ground-based system should be abandoned in favour of space-based detection capabilities, will have implications for the defence footprint in Arctic Canada. The outcome of these discussions will also have significant financial implications for Canada, James Ferguson and Charron explain. Given the fiscal climate in the United States,

Canada cannot depend on the US to pay the lion's share of new, additional NORAD operations and capital expenses. Therefore, the North Warning System, which will reach its end of operational life relatively soon, will likely need to be financed by Canada, in large part, whether for replacement/repairs etc. Ideally, the whole system needs to be able to detect incursions farther North which may mean relocating the system and should also be all singing and dancing to provide full domain awareness for land, sea, air, space and cyber. However, successive Canadian governments show little appetite to shoulder such an enormous financial burden unless they are space-based assets (like RCM, Polar Epsilon and the Northern Watch TDP).¹¹⁵

The United States is Canada's "premier partner" in the Arctic, particularly in terms of defence,¹¹⁶ but active engagement in international fora more generally allows National Defence to contribute to Canada's Arctic Foreign Policy goals by creating new (and strengthening existing) relationships among Arctic countries and improving operational links. Mechanisms for formal engagement include longstanding institutions, such as NORAD, the Permanent Joint Board on Defence, and the Military Cooperation Committee, as well as new bodies for dialogue, such as the annual Arctic Security Forces Roundtable, Arctic Capability Advocacy Senior Leaders Forum, and Tri-Command Staff Talks.¹¹⁷ A key example of the opportunity to build relationships and trust amongst the heads of the eight Arctic states' militaries, Chief of the Defence Staff General Walt Natynczyk hosted the first meeting of Northern Chiefs of Defence (CHODs) in Goose Bay in April 2012. This meeting allowed participants to increase their mutual understanding on Arctic issues, share knowledge about regional operational challenges, and discuss ways in which militaries can support civilian authorities in the North. Although all eight Arctic states participated in a second annual Northern CHODs meeting hosted by the Danish Chief of Defence in Greenland the following year, Russia's actions in Ukraine led Iceland to cancel the 2014 meeting. There has been no announcement of a meeting for 2015 and other "important confidence-building measures, such as bilateral and multilateral military exercises, have also

been suspended for an indefinite period.”¹¹⁸ International SAR exercises, pursuant to the treaty signed by the Arctic states in 2011, are a less politically sensitive mechanism to integrate international partners and operators.¹¹⁹ They can also keep open channels of cooperation on practical responsibilities that may require international collaboration and mutual support, even if strategic tensions over developments outside of the Arctic region continue to chill relationships between key Arctic states.

Conclusions

You don't defend national sovereignty with flags, cheap election rhetoric or advertising campaigns. You need forces on the ground, ships in the sea, and proper surveillance.

-- Prime Minister Stephen Harper, Winnipeg, 22 December 2005

As National Defence documents consistently emphasize, defence issues do not drive Arctic affairs. Nevertheless, climate change and an increased tempo of air, maritime, and land-based activity in the region raise various safety and security challenges. Although direct responsibility for responding to most of these challenges falls with other government departments and agencies, DND and the CAF have an obligation to contribute as part of an integrated, comprehensive approach (articulated in the Northern Strategy) that expects the military to “lead from behind” in areas outside of the traditional defence domain. Over the last decade, the government has announced various initiatives to expand CAF capabilities and increase the Forces’ “presence” in the Arctic. “As part of a coordinated and layered [Government of Canada] response to domestic crises or emergencies, the CF will be ready to deploy rapidly and deliver strategic effect at home in support of Canadians,” the Chief of the Land Staff noted in 2011. “The CF must be prepared for the full spectrum of potential scenarios from the provision of minor services to the deployment of significant resources in a variety of roles.” As he emphasized, “failure at home is not an option.”¹²⁰

Strategists anticipate that most Arctic operations will be predominantly air or maritime focused, but this does not negate the need for an effective ground response capability.¹²¹ In spite of its limitations, the Army has made good progress. From a standing start, it has put together small but increasingly well-trained Primary Reserve and Regular Force units designed for rapid and flexible response. The Army can now, theoretically, deploy a staggered series of responders anywhere in the North to reinforce the Canadian Rangers, or deploy to an area without a Ranger patrol if required. This capability is limited in size but appropriate to the scope and type of threats envisaged over the next decade or more. Given the logistical and transportation difficulties inherent to Arctic operations, a small self-sufficient force is preferable, for instance, to the kinds of regiment-level deployments and airdrops practiced from the 1940s to the 1980s.¹²²

The Royal Canadian Navy has also stepped-up its Arctic operations to rebuild the expertise it lost after the end of the Cold War. Technical issues surrounding communications, supply, and maintenance remain, but the Navy has made real progress in regaining its Arctic “sea legs.” Meanwhile, the AOPS should provide the service with a new ice-operational capability that will be essential as increased maritime traffic demands a larger presence from not just the Navy but all the other government departments and agencies that rely on the CAF for platform support. Canada’s situational awareness will, likewise, also have to be improved as activity increases. For the moment, however, it is sufficient to meet the country’s needs. Surface ships check into Canada’s reporting system (NORDREG) and follow Canadian law and regulations. Submarines remain a wildcard, however they present no immediate sovereignty or security threat.¹²³

The RCAF, meanwhile, will continue to play an important role in environmental protection, disaster response, SAR, counter-intelligence operations, and general domain awareness. New assets, such as the modernized Auroras, CH-148 Cyclone helicopters, and UAVs, will be critical enablers in realizing the RCAF’s Arctic mission, while supporting broader CAF and

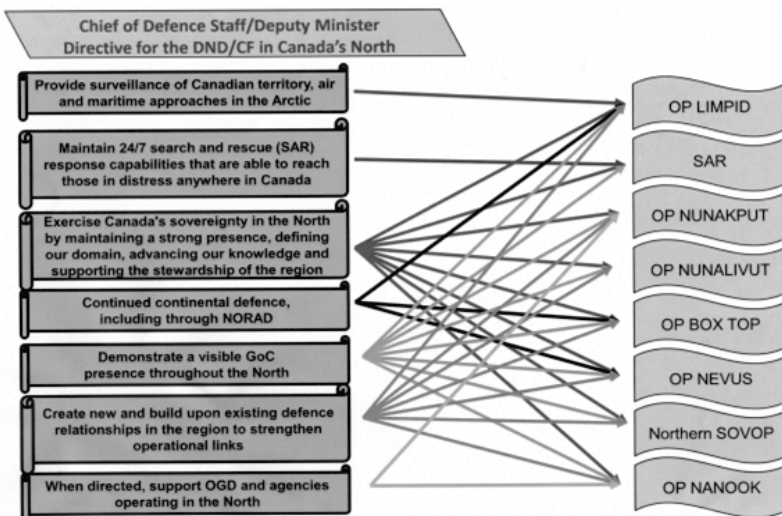
whole-of-government efforts in nearly every conceivable scenario. Combat aircraft will continue to serve a role in responding to Russian activity in the region, but the strategic situation is unlikely to evolve in such a manner as to require a larger or more technologically capable fighter presence.

As Lackenbauer has argued previously, “it is important for commentators and analysts to contemplate worst-case scenarios to identify potential risks and vulnerabilities. However, an excessive fixation on remote *potentialities* and their misidentification as *probabilities* can lead to misallocated resources (intellectual and material), unwarranted suspicion and paranoia, and messaging that can lead to a security dilemma.”¹²⁴ Despite frequent criticisms from both “hawks” like Rob Huebert and “doves” like Michael Byers, that delays in or scaling back of promised military investments put Canada in a precarious position, sober military assessments do not point to any short-term defence threat that warrants a surge of new capabilities beyond normal development and procurement processes. The more critical challenge lies in maintaining a sustained commitment to deliver on strategic commitments amidst tremendous uncertainty, speculation, and hype that outside commentators can play upon to frame whatever agenda they wish.

We argue that, rather than rushing a spate of new investments in combat capabilities to meet an impending security “crisis,” official frameworks provide the CAF with appropriate and responsible guidance to support other government departments in addressing security concerns and responding to non-military Arctic emergencies. Although several expensive capital programs remain in the project definition or design phases, or have been scaled back (in the case of the Nanisivik refueling facility), this does not mean that Canada faces a critical, combat-capability deficit that leaves it vulnerable in an increasingly hostile Arctic world. Instead, as Lackenbauer has argued, “delivering on promised investments aligned to Canada’s Northern Strategy before rashly ramping up to fight a fantastical Arctic combatant, conjured to the scene because of preconceived Cold War mentalities and international events unrelated to Arctic disputes, is a prudent and rational course.”¹²⁵

The CAF’s return to the Arctic over the past decade and a half has been a slow and difficult process. Operational limitations remain an ongoing challenge, and exercises have repeatedly reinforced the difficulties of moving and surviving in the northern environment as well as the need for better communications, equipment, and specialized training. Although routine operations and exercises, across all domains (see figure 4.2), are expensive and resource intensive, they offer important ways to develop and test CAF capabilities and to improve whole-of-government collaboration. Continuing to direct joint, integrated, and comprehensive planning and training efforts to meet specific federal government commitments and priorities is essential to secure political support for ongoing investments in a budget-constrained, limited-resource environment. Furthermore, Canadian expectations regarding respect for Northerners and environmental stewardship dictate that military activities must not “unnecessarily burden” communities with small, vulnerable populations and limited resources.¹²⁶ Instead, operations and training should strive to have positive, “enduring effects” on socio-economic life in northern communities¹²⁷, with the Canadian Rangers serving as a prime example.

Figure 4.2: Strategic Goals Linked to Northern Activities. *Source:* Canadian Joint Operations Command (2014)



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Developing modest and scalable capabilities, adequately resourced to deal with Arctic conditions, improving domain awareness, and strengthening relationships, constitutes a responsible approach, given the difficulties inherent in maintaining an Arctic presence “while striving to meet other domestic, continental, and international missions.”¹²⁸

Canada’s military capabilities, as they exist today, and as they are developing, are proportionate to the challenges and threats that the country will face in the coming decade. The CAF has a clear vision of what it needs from its forces and what it is seeking to accomplish in the Arctic. The measure of preparedness should not be a robust combat capability, since there is no adversary that it is likely to fight in the region. Furthermore, there is no need for a large permanent presence, given that military “boots on the ground” do not confirm sovereignty any more than civilian ones and there is little practical reason for troops to be in the Arctic for most of the year. The optics of a large, conventional military presence, while politically appealing, are offset by high costs and the absence of any substantive defence and security benefits or impact on Canada’s legal sovereignty position.

Sovereignty is demonstrated by operating in and asserting Canadian control over activities in the Arctic. The CAF, in partnership with other departments and agencies, will play a role in enforcing Canadian laws and regulations in the country’s Arctic waters, responding effectively to emergencies and other unconventional security threats, and maintaining the situational awareness that will enable it to undertake those key responsibilities. The learning curve in the Arctic is a shallow one where skills are developed slowly and over a long period of time. As such, the results of the CAF’s training program over the past decade are sometimes less apparent than they should be. In our assessment, the military is moving in the right direction in developing practical capabilities and enhancing core relationships that will allow it to respond efficiently and effectively in concert with WoG partners.

Notes

¹ This chapter integrates and builds upon some of the material contained in Lajeunesse, *The Canadian Armed Forces in the Arctic: Purpose, Capabilities, and Requirements* (Canadian Defence and Foreign Affairs Institute Policy Paper, May 2015) and P. Whitney Lackenbauer, “Canadian Security and Safety in the Arctic: Probable Challenges, Practical Responsibilities,” *Canadian Naval Review* 10:2 (2014), 10-15. A more expansive version was published in the *Journal of Military and Strategic Studies*, 16/4 (March 2016): 7-66, and portions from it are reprinted with permission of the publisher.

² On these debates, see Franklyn Griffiths, Rob Huebert, and P. Whitney Lackenbauer, *Canada and the Changing Arctic: Sovereignty, Security and Stewardship* (Waterloo: Wilfrid Laurier University Press, 2011); Frédéric Lasserre, Jérôme Le Roy, and Richard Garon, “Is There an Arms Race in the Arctic?” *Journal of Military and Strategic Studies* 14:3-4 (2012); and Elana Wilson Rowe, “A Dangerous Space? Unpacking State and Media Discourses in the Arctic,” *Polar Geography* (2012).

³ For a sample see: Robert Murray, “Harper’s Arctic Failure,” *Winnipeg Free Press* (September 1, 2013); Steve Mertl, “Canada Needs to do More to Back its Claims to Arctic Sovereignty,” *Daily Brew* (April 24, 2014); “Canada is Falling Short in Arctic Defence,” *Times Colonist* (September 3, 2013). Similarly, assessments like that by Paul Pryce, a research analyst at the Atlantic Council of Canada, asserting that “international observers are no doubt keenly aware of the RCAF’s and RCN’s weakened capabilities, making Canada a target,” are misleading: “Canada’s Tepid Arctic Policy” (October 28, 2014)

⁴ For a fuller account of this philosophy as it manifested in the 1970s see: P. Whitney Lackenbauer and Peter Kikkert Eds., *The Canadian Forces & Arctic Sovereignty: Debating Roles Interests and Requirements* (Waterloo: Wilfrid Laurier University Press, 2010).

⁵ On this see: P. Whitney Lackenbauer, “From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World” *CIC: Foreign Policy for Canada’s Tomorrow* 3 (July, 2009).

⁶ A third category: conventional “defence” is also recognized, however, it is seen as a potential future concern, not a current or pressing issue. Department of National Defence (DND), *Canadian Forces Northern Employment and Support Plan* (November, 2012).

⁷ At the time the CFDS was written the CAF was called the Canadian Forces (CF). For the sake of consistency the term CAF will be used throughout this chapter.

⁸ DND, *Canada First Defence Strategy* (2008), 8.

⁹ See for instance DND, *Canada First Defence Strategy*, 7; Government of Canada, *Statement on Canada's Arctic Foreign Policy* (2010), 6; Department of Indian Affairs and Northern Development, *Canada's Northern Strategy: Our North, Our Heritage, Our Future* (2009), 10.

¹⁰ See for instance: DND, *Canada First Defence Strategy*, 8; Government of Canada, *Statement on Canada's Arctic Foreign Policy*, 6

¹¹ See for instance: DND, *Arctic Integrating Concept* (August, 2010), 7, 9, 26, 3 and Canadian Army Land Warfare Centre, *Northern Approaches: The Army Arctic Concept 2021* (2013), 65.

¹² DND, *Arctic Integrating Concept*, 26, 33; Lackenbauer and Ron Wallace, "Unstoppable Momentum: The Real Meaning and Value Behind *Operation Nunaliivut* 10," Canadian Defence & Foreign Affairs Institute Policy Update Paper (May 2010).

¹³ The status of these waters remains the most significant sovereignty dispute in the Canadian Arctic.

¹⁴ For the best description of these requirements see: Donat Pharand, "The Arctic Waters and the Northwest Passage: A Final Revisit," *Ocean Development and International Law* 38:1 (2007), 7.

¹⁵ DND, *Canada First Defence Strategy*, 8.

¹⁶ DND, *Arctic Integrating Concept*, 24, 32. This document defines an emergency as a "serious, unexpected, and potentially dangerous situation requiring immediate action" and a crisis as "an event or series of events that undermines public confidence, harms an organization, or threatens public safety, security, or values," (31).

¹⁷ This section is built around DND Backgrounder 12.001, "The Canadian Forces in the Arctic" (April 13, 2012); DND, "Operations in the North," modified November 14, 2014, <http://www.forces.gc.ca/en/operations-canada-north-america/north.page>; and CJOC, *CJOC Plan for the North* (2014), 24-27, supplemented by other documents and material on the DNF website.

¹⁸ MGen Christopher Coates, presentation to Standing Senate Committee on National Security and Defence, December 9, 2013, <http://www.parl.gc.ca/content/sen/committee/412%5CSECD/51109-E.HTM>.

¹⁹ Airfields in and around Inuvik and Yellowknife, N.W.T., Iqaluit, Nunavut, and Goose Bay, N.L. were the primary hubs for aircraft activity including multiple flights from CF-18 Hornet aircraft, CC-130T Hercules and CC-150T Polaris air-

to-air refuelling aircraft, and other support aircraft. DND News Release, “NORAD Operation SPRING FORWARD concludes in Canada's North,” April 12, 2014, <http://news.gc.ca/web/article-en.do?nid=838399>.

²⁰ For a detailed overview of CFS Alert, which came under the command of 8 Wing Trenton in 2009 see: RCAF, “Canadian Forces Station Alert,” <http://www.rcaf-arc.forces.gc.ca/en/8-wing/alert.page>.

²¹ For example, the RCAF conducts Operation *Boxtop* twice annually to resupply CFS Alert. On 440 Squadron, see <http://www.rcaf-arc.forces.gc.ca/en/17-wing/440-squadron.page>.

²² See Sam LaGrone, “West: NORAD Head Says Russia Increasing Arctic Long Range Air Patrols,” *US Naval Institute News*, February 10, 2015, <http://news.usni.org/2015/02/10/west-norad-head-says-russia-increasing-arctic-long-range-air-patrols> and Steven Chase, “Russian Military Jets Flew Within 100 Kilometres of Canadian Mainland,” *Globe and Mail* (September 19, 2014).

²³ On the MSOCs, see Canadian Coast Guard, “Marine Security Operations Centres,” <http://www.ccg-gcc.gc.ca/eng/CCG/Maritime-Security/MSOC>.

²⁴ On the Rangers, see P. Whitney Lackenbauer, *The Canadian Rangers: A Living History* (Vancouver: UBC Press, 2013), and Lackenbauer, *Vigilans: The 1st Canadian Ranger Patrol Group* (Yellowknife: 1CRPG, 2015).

²⁵ Details on the role of Canadian Special Operations Forces Command (CSOFCOM), which are designed to provide agile, high readiness forces capable of conducting special operations across the spectrum of conflict, remain largely classified and thus are not discussed in this chapter.

²⁶ The Arctic Training Centre was initially projected to cost over \$62M, with an expected delivery date after 2015, but the partnership with Natural Resources Canada allowed the project to be built early for approximately \$24M. DND Backgrounder 13.036, “Canadian Armed Forces Arctic Training Centre” (August 15, 2013), <http://www.forces.gc.ca/en/news/article.page?doc=canadian-armed-forces-arctic-training-centre/hkdons6l>; Lt(N) Jessica Macdonald, “Collaboration Key at CF Arctic Training Centre,” *Western Sentinel* (June 20, 2013), 17.

²⁷ See for instance: BGen D.B. Millar, “After Action Report” (December 14, 2008) and JTFN, “Interview Assessment Report – Probable Submarine Sighting in Vicinity of Grise Fjord, NU” (October 28, 2009).

²⁸ Jean Luc Forand et al., “Surveillance of Canada's High Arctic,” presentation at ArcticNet 2007, Laval, Quebec, (December 13, 2007), <http://www.arcticnet.ulaval.ca/pdf/talks2007/Forand.pdf>.

²⁹ David Waller, Matthew R. MacLeod, and Talia McCallum, *Measuring Northern Watch: Goals Inputs, Metrics and Outputs* (Ottawa: Defence R&D Canada – Cora, 2009), 18; and DND, *Arctic Integrating Concept*, 12. For the best overall account of this program’s development see: William Carruthers, *Snake Oil Salesmen: Security under the Guise of Sovereignty in the Canadian Arctic* (M.A. thesis, University of Calgary, 2014).

³⁰ See Fisheries and Oceans Canada, “Defining Canada’s Continental Shelf,” <http://www.dfo-mpo.gc.ca/science/hydrography-hydrographie/unclos-eng.html>; and the series of newsletters by Ronald Verrall of DRDC Halifax on Project CORNERSTONE, <http://arcticnewsletters.com/>.

³¹ See DND, “Operation *Qimmiq*,” <http://www.forces.gc.ca/en/operations-regional-jtf-north/op-qimmiq.page>. This operation is a subset of Operation *Limpid*, the routine, all-domain surveillance of Canada to detect, deter, prevent, pre-empt and defeat threats aimed at the country and its interests. See DND, “Operation *Limpid*,” <http://www.forces.gc.ca/en/operations-canada-north-america/op-limpid.page>.

³² DND, Northern Employment Support Plan, 3.

³³ National Defence Headquarters, CDS/DM Directive (April, 2011), 11.

³⁴ See, for example, Capt Bonnie Wilkin, “Operation Nunavut: Shine on the Arctic Sun,” *Northern Frontline* [JTFN] (2014), 16-19.

³⁵ CJOC, *CJOC Plan for the North*, 29.

³⁶ Air Component Commander, “EX Narwhal ACC Post Ex Report” (2002).

³⁷ Lt(N) D. Connelly, “Lessons Learned Planning and Coordination – Op Hudson Sentinel Post Operation Report” (October 5, 2005).

³⁸ Martin Langford, “The Navy’s Arctic Challenge,” *Canadian Naval Review* 7:4 (Winter, 2012), 27.

³⁹ See for instance the supply of HMCS *Glace Bay* in: Lt(N) D. Connelly, “Lessons Learned Planning and Coordination – Op Hudson Sentinel Post Operation Report” (October 5, 2005).

⁴⁰ DND, “Arctic/Offshore Patrol Ships (AOPS),” <http://www.forces.gc.ca/en/business-equipment/arctic-offshore-patrol-ships.page>. The Government is working with Irving Shipbuilding Inc, which was selected through the National Shipbuilding Procurement Strategy (NSPS), to establish a design and build approach.

⁴¹ Royal Canadian Navy, *Leadmark: The Navy’s Strategy for 2020* (2001), 66, 84, 105.

⁴² David Gardam, “The Admiral’s View of the Arctic and Offshore Patrol Ship,” *Canadian Naval Review* (February 12, 2012).

⁴³ See for example, Murray Brewster, “Tory Arctic Ship Plan Should be Sunk, Replaced with Real Icebreakers: Senator,” *Toronto Star* (March 15, 2012) and Michael Byers and Stewart Webb, “Titanic Blunder: Arctic/Offshore Patrol Ships on Course for Disaster,” *Canadian Centre for Policy Alternatives* (April 11, 2013); Rob Huebert, “The Case for a More Combat-Capable Arctic Offshore Patrol Ship,” *Canadian Naval Review* 10:3 (2015).

⁴⁴ For a contrary emphasis on the need for warfighting capabilities, see Rob Huebert, “The Need, Costs and Benefits of a Canadian Naval Presence in the Arctic,” *Canadian Naval Review* 8:1 (Spring, 2012), 8.

⁴⁵ The return distance from Halifax to Nanisivik is roughly 4,830nm, leaving the AOPS less than 2,000 nm of fuel reserves without local refueling. This calculation does not take into consideration extra fuel used moving through or around ice, which will significantly increase consumption.

⁴⁶ Erin K. Barkel and Rod Story, *Budget Analysis for the Acquisition of a Class of Arctic/Offshore Patrol Ships* (Ottawa: Office of the Parliamentary Budget Officer, October 28, 2014), 4. Lee Carson observes that the supporting infrastructure required at Esquimalt, Halifax, and Nanisivik has been folded into the AOPS budget, reducing the funds available to build the ships themselves. Lee Carson, “The Perilous Route to Nanisivik,” *Vanguard* (March 6, 2013), <http://vanguardcanada.com/the-perilous-route-to-nanisivik/>.

⁴⁷ Sarah Rogers, “Nanisivik Naval Fuel Station Postponed until 2018: National Defence,” *Nunatsiaq News* (March 6, 2015); DND Backgrounder, “Canada’s North: The Nanisivik Naval Facility” (July 17, 2015), <http://news.gc.ca/web/article-en.do?nid=1002559>. Work crews are refurbishing a dock and fuel tank farm that were built in 1973 to serve the Nanisivik lead-zinc mine, which closed in 2002.

⁴⁸ The 2009 *Arctic Marine Shipping Assessment: Final Report* concluded that the Northwest Passage is not expected to become a viable transit route through 2020 owing to seasonality, unpredictable and difficult ice conditions, the complexity of the routes through the Canadian archipelago, draft restrictions, inadequate charting, and insurance issues, all of which work against regular, predictable, scheduled marine activity. See http://www.arctic.noaa.gov/detect/documents/AMSA_2009_Report_2nd_print.pdf. Recent studies confirm these findings and project them out over the next decade as well. See, for example, Lackenbauer and Lajeunesse, *On Uncertain Ice*:

The Future of Arctic Shipping and the Northwest Passage (Calgary: Canadian Defence & Foreign Affairs Institute, December 2014); Pascale Bourbonnais and Frederic Lasserre, “Winter shipping in the Canadian Arctic: Toward Year-Round Traffic,” *Polar Geography* 30:1 (2015): 70-88; and the chapter by Lasserre and Têtu in this volume.

⁴⁹ Erin K. Barkel and Rod Story, “Budget Analysis for the Acquisition of a Class of Arctic/Offshore Patrol Ships,” *Office of the Parliamentary Budget Officer* (October 28, 2014), http://www.pbo-dpb.gc.ca/files/files/AOPS_EN.pdf.

⁵⁰ Ryan Dean, “Dirty Harries: Buying 6 Arctic Offshore Patrol Vessels or Only 5?” *Canadian Naval Review* (forthcoming 2015).

⁵¹ DND, *Northern Approaches: The Army Arctic Concept 2021* (Kingston: Canadian Army Land Warfare Centre, 2013), 3.

⁵² For detailed looks at this idea in the Canadian context, see Gordon W. Smith, *A Historical and Legal Study of Sovereignty in the Canadian North, 1870-1942*, ed. P. Whitney Lackenbauer (Calgary: University of Calgary Press, 2014), and Peter Kikkert and P. Whitney Lackenbauer, eds., *Legal Appraisals of Canada’s Arctic Sovereignty: Key Documents, 1904-58*, Documents on Canadian Arctic Sovereignty and Security No. 2, (Calgary and Waterloo: Centre for Military and Strategic Studies/Centre on Foreign Policy and Federalism, 2014).

⁵³ Bernd Horn, “Gateway to Invasion of the Curse of Geography?” *Forging a Nation: Perspectives on the Canadian Military Experience* (St. Catharines: Vanwell, 2002), 321.

⁵⁴ Pierre-Henry Deshayes, “Arctic Threats and Challenges from Climate Change,” *Agence France-Presse* (December 6, 2009).

⁵⁵ Instead, the *Land Force Arctic Concept 2021* is a variation of the broader Army Force Employment Concept that “envisions an Army being based where it can most efficiently and effectively connect with and serve the majority of the Canadian population and expeditiously move and serve Canadians not residing near major population centres when a broader need arises.” LGen P.J. Devlin, CCA [Commander Canadian Army] Master Implementation Directive (MID) Arctic Response Company Groups Full Operating Capability (ARCG-FOC) (March 26, 2013), DND file 30000-1 (DLFD).

⁵⁶ DND, *Northern Approaches*, 19, 20, 24.

⁵⁷ See Canadian Forces Northern Area Headquarters, *Arctic Capabilities Study 2000: “True North Strong and Free”* (December 2, 2000), DND file NA 3000-1 (Comd) and Rob Huebert, “Climate Change and Canadian Sovereignty in the Northwest Passage,” *Isuma* 2:4 (2001), 86-94.

⁵⁸ Col R. Poirier, “Post Exercise Report, Northern Bison 2008” (March 13, 2009) and Poirier, “Arctic Response and 38 Canadian Brigade Group,” *Canadian Army Journal* 13:3 (2010), 145-6.

⁵⁹ LtCol J.R. Casey, “Lessons Learned Report Exercise Arctic Ram 2012” (March 28, 2012) and BGen J.D.G. Henley, “LFAA Lessons Learned Report – Stalwart Goose” (March 21, 2013); Col R. Poirier, “Post Exercise Report, Northern Bison 2010” (May 6, 2010).

⁶⁰ BGen P.F. Wynnyk, “Post Exercise Report – Exercise Arctic Ram 12” (June 26, 2012).

⁶¹ BGen C.C. Thurrott, “Implementation Order Arctic Light Over Snow Vehicles” (October 7, 2013). Even when the resources are available, travelling across Arctic terrain has not been a straight forward task. During operation Nanook 2013 an ARCG was tasked with assisting in a law enforcement simulation. The group was given hours to travel a few kilometers over flat ground on Cornwallis Island, so much time that planners worried there would be nothing to fill the time. Instead, the group’s ATV quickly bogged down in the muskeg and had to be rescued by helicopter. Failures like this one remind Army planners how difficult and unpredictable Arctic travel can be. This knowledge is slowly being regained, largely through the assistance of the Rangers. The Inuit know, for instance, not to travel directly behind an ATV since the vehicle in front can damage the ground and cause the follower to sink. Interview with General Christopher Coates (CJOC), Ottawa, May 23, 2014.

⁶² B. Gen PF Wynnyk, “Post Exercise Report – Exercise Arctic Ram 12” (June 26, 2012). Exercises Northern Bison, Stalwart Goose, Nanook, and Arctic Ram have confirmed that HF radio remains the most reliable means of Arctic communication. See BGen PF Wynnyk, “Post Exercise Report – Exercise Arctic Ram 12” (June 26, 2012); Colonel R.R. Poirier, “Post Exercise Report, Northern Bison 2008” (March 13, 2009); BGen JDG Henley, “LFAA Lessons Learned Report – Stalwart Goose” (March 21, 2013). While HF frequencies are also unsecure, their ability to economically operate over great distances makes the HF radio the ideal tool for basic communication. Unfortunately, HF is a specialty communication suite and the Army has neither the equipment nor the training to use it on a large scale. B. Gen. JDG Henley, “LFAA Lessons Learned Report – Stalwart Goose” (March 21, 2013). For example, during Operation Nanook 2010, the Army found that its CH-146 pilots could not communicate with the ground elements because of the ARCG’s lack of HF radio. BGen JJRG Hamel, “Operation Nanook 2010 After Action Report” (December 8, 2010). During Exercise *Arctic Ram* in 2012, the situation had improved slightly but 38 Brigade Group could still

only find one radio per company. After-action reports note that greater investments in these sets, particularly the man portable 138 HF and the 117HF with antennae capable of transmitting and receiving on the move) will be “crucial to supporting dispersed ops.” Colonel OH Lavoie, “1 CMBG Post Exercise Report Exercise Arctic Ram 12” (May 6, 2012). Equally critical will be implementing a broad training program for their use amongst ARCG soldiers and others involved in northern operations. BGen PF Wynnyk, “Post Exercise Report – Exercise Arctic Ram 12” (June 26, 2012).

⁶³ Colonel OH Lavoie, “1 CMBG Post Exercise Report Exercise Arctic Ram 12” (May 6, 2012)

⁶⁴ During *Northern Bison* in 2008, for example, soldiers discovered that battery life was little more than 10 minutes at -30°. Colonel R.R. Poirier, “Post Exercise Report, Northern Bison 2008” (March 13, 2009). Despite these shortcomings, the satellite phone is an invaluable backup that will continue to be heavily employed in the future. The Army will have to expand and upgrade its stocks. After exercise Stalwart Goose, it was suggested that each IRU be issued five devices and that the most advanced models with the strongest lithium batteries be purchased. B. Gen. JDG Henley, “LFAA Lessons Learned Report – Stalwart Goose” (March 21, 2013).

⁶⁵ Colonel R. Poirier, “Arctic Response and 38 Canadian Brigade Group,” *Canadian Army Journal* 13:3 (2010), 149-150

⁶⁶ Joan Taylor, “Op Hudson Sentinel 2005 Post Operation Report” (October 24, 2005).

⁶⁷ Ibid.

⁶⁸ MajGen D.A. Fraser, “Training Implementation Directive – Initial Operating Capability – Arctic Response Company Groups and Arctic Vanguard” (March 28, 2011).

⁶⁹ DND, *Northern Approaches: The Army Arctic Concept 2021*, 23. Current Arctic training is designed, first and foremost, to minimize the amount of effort required for a unit to sustain itself in order to maximize the energy available to provide support. Lajeunesse interview with MajGen Christopher Coates (CJOC), Ottawa, May 23, 2014. Along these lines, the RCAF and Army are establishing a series of Northern Operational Hubs to facilitate sustained operations without drawing on the region’s limited resources. David Pugliese, “Canadian Forces to Stockpile Military Equipment in Arctic ‘Hubs’ for Faster Response in Case of Emergency,” *National Post* (August 21, 2014), and LCol D. Ziprick, “Leveraging Air Mobility

to Support Canadian Arctic Sovereignty” (unpublished Master of Defence Studies paper, Canadian Forces College, December 24, 2014).

⁷⁰ Army Training Authority, “Training Implementation Directive - Initial Operating Capability (IOC) - Arctic Response Company Groups (ARCG) and Arctic Vanguard” (September, 28 2011).

⁷¹ Lajeunesse interview with MajGen Christopher Coates (CJOC), Ottawa, May 23, 2014.

⁷² LGen P.J. Devlin, “CCA Master Implementation Directive (MID) Arctic Response Company Groups Full Operating Capability (ARCG-FOC)” (March 26, 2013), DND file 3000-1 (DLFD).

⁷³ Chief of Land Staff, CLS Master Implementation Plan – Initial Operating Capability – Arctic Response Company Groups (February 2, 2010), DND file 3000-1 (DLFD).

⁷⁴ For example, during Operation *Nanook* (2010) a unit spent three days practicing basic survival skills along with zodiac and ATV movements on Baffin Island. BGen J.J.R.G. Hamel, “Operation Nanook 2010 After Action Report” (December 8, 2010). During *Nanook* (2013) one company group practiced amphibious deployment and providing support to Environment Canada during a poaching scenario on Cornwallis Island. BGen. G.D. Loos, “Operation Nanook 2013 After Action Report” (February 11, 2014). That same year, during Operation *Guerrier Nordique*, an ARCG was deployed to support the Rangers in a simulated plane crash and train derailment in remote areas of Quebec. LCol G.P.S. Faucher, “Post Exercise Report for Guerrier Nordique 2013” (April 8, 2013).

⁷⁵ Col S.P. Leonard, “Arctic Response Company Group and Land Component Command HQ Full Operating Capability (March 24, 2014). See also “CLS, Army Support Plan – Immediate Reaction Units (IRUs)” (November 23, 2011), DND file 3350-1 (Army G35 Cont’l).

⁷⁶ The original military vision saw the Rangers defending national security – protecting their communities from enemy attack – using their knowledge of local conditions. By the 1970s, their basic purpose was linked to the armed forces’ role supporting Canada’s sovereignty. Since the 1990s, the Rangers have played a prominent nation-building and stewardship role, symbolizing deep cooperation between the Canadian Forces, Aboriginal people, and other Canadians living in isolated areas. Today, their main tasks encompassed the three broad aspects of their service: conducting and supporting sovereignty operations; conducting and assisting with domestic military operations; and maintaining a Canadian Forces

presence in local communities. On the Rangers' evolving role, see Lackenbauer, *The Canadian Rangers: A Living History*.

⁷⁷ Lt.Gen. A.B. Leslie, draft, "CLS Planning Guidance -- Arctic Response" (July, 2009), DND, f. 3000-1 (A/DLFD). On the debate over the Rangers' role and the Army's justification for not making the Rangers more like Primary Reserve units, see Lackenbauer, *If It Ain't Broke, Don't Break It: Expanding and Enhancing the Canadian Rangers*, Working Papers on Arctic Security No. 6, (Toronto: Walter and Duncan Gordon Foundation and ArcticNet Arctic Security Projects, March 2013).

⁷⁸ DND, *Northern Approaches: The Army Arctic Concept 2021* (Kingston: Canadian Army Land Warfare Centre, 2013), 23.

⁷⁹ Prime Minister's Office, "Prime Minister Announces Expansion of Canadian Forces Facilities and Operations in the Arctic" (August 10, 2007), <http://www.pm.gc.ca/eng/news/2007/08/10/prime-minister-announces-expansion-canadian-forces-facilities-and-operations-arctic>.

⁸⁰ Lt.-Gen. M.J. Dumais, "Commander Canada Command Recommendation for the Expansion of Canadian Ranger Patrols" (March, 2008); DND, Canada Command, f. 3440-2 (J3 Plans 7), referencing "VCDS Report on Plans and Priorities 07/08." On the achievement of this benchmark, see Bryn Weese, "Harper Welcomes 5000th Ranger, Becomes Honorary Member," *Sarnia Observer* (August 21, 2013).

⁸¹ Harper, "Expanding Canadian Forces Operations." The new equipment list (scale of issue) includes duffel bags, ballistic eyewear, backpacks, and multi-tools. "Canadian Ranger Prioritized Individual Clothing and Equipment List as of 24 October 2007," Flag C to DND, 22 October 2007, DND, f. 100001-1 (DGL Res Sec).

⁸² The Rangers' current radios have limited range, cannot be operated on the move, and are unreliable in extreme conditions, which Rangers frequently encountered. Canadian Rangers National Working, Minutes (October 2007)

⁸³ Maj. K. Sproule, "JTFC/LFCA Response: 3rd Canadian Ranger Patrol Group Enhancements" (April 2007), DND file 3121-2-1(J5 Ops). See also "New Equipment Will Soon Be Distributed," *Arctic Exposure: 1 CRPG Newsletter* (March 1, 2010), 9.

⁸⁴ The replacement rifle is based on the SAKO T3 CTR (Compact Tactical Rifle), produced by a Finnish-company, and Colt Canada will produce the barrel, bolt and receiver for the new Ranger rifle under licence from Sako. Modifications for the Ranger pattern include: a larger bolt handle and enlarged trigger guard to

accommodate gloved hands, plus protected front and rear iron sights; orange or red colour with Ranger Crest; and a two-stage trigger with three-position safety. “Meet the Canadian Rangers’ New Sako Rifle, Built to Defend Against Large Carnivores, Extreme Temperatures,” *National Post* (June 25, 2015). Rangers will either have an opportunity to purchase or will be gifted their old rifles. See David Pugliese, “Military Confirms that Canadian Rangers will be Allowed to Keep their Lee Enfield Rifles,” *Ottawa Citizen* (August 24, 2015).

⁸⁵ On this theme, see Lackenbauer, *Vigilans: The 1st Canadian Ranger Patrol Group*, 116-17.

⁸⁶ See for example, BGen J.D.G. Henley, “LFAA Lessons Learned Report – Stalwart Goose” (March 21, 2013).

⁸⁷ Chief of Land Staff, “Army Support Plan Immediate Reaction Unit – Northern Contingency Plan” (December 14, 2011), DND file 3350-1 (Army G35).

⁸⁸ See Lackenbauer, *Canadian Rangers*; Lackenbauer, “The Canadian Rangers: A Postmodern Militia That Works,” *Canadian Military Journal* 6:4 (Winter 2005-06), 49-60; and DND, *Arctic Integrating Concept*, 23. See also MajGen. D.A. Fraser, “Training Implementation Directive – Initial Operating Capability – Arctic Response Company Groups and Arctic Vanguard” (March 28, 2011).

⁸⁹ MajGen D.A. Fraser, “Training Implementation Directive – Initial Operating Capability – Arctic Response Company Groups and Arctic Vanguard” (March 28, 2011).

⁹⁰ Chief of Land Staff, CLS Master Implementation Plan – Initial Operating Capability – Arctic Response Company Groups (February 2, 2010), DND file 3000-1 (DLFD).

⁹¹ MGen J.M.M. Hainse, Commander LFDTs Planning Guidance Land Force Arctic Strategy (May 25, 2009), DND file 3500-1 (G3).

⁹² A.T. Stack, “Land Force Arctic Master Implementation Plan – Initial Operating Capability Arctic Response Company Groups” (June 17, 2010).

⁹³ While several commentators raise this critique, readers should pay heed to the former Chief of the Land Staff’s observation that “the basic tenets of Land Warfare do not change just because we are operating in an Arctic environment.” Hainse, Commander LFDTs, “Planning Guidance Land Force Arctic Strategy” (May 25, 2009).

⁹⁴ See for instance: Robert Smol, “When will we get Serious about Arctic Defence?” *CBCNews* (May 11, 2009).

⁹⁵ See Admiral Robert Fall's assessment in: Douglas Bland, *Chiefs of Defence* (Toronto: Canadian Institute of Strategic Studies, 1995), 232-33.

⁹⁶ Adam Lajeunesse, "A Very Practical Requirement: Under-Ice Operations in the Canadian Arctic, 1960-1986." *Cold War History* 13:4 (November, 2013).

⁹⁷ William Carruthers, "Snake Oil Salesmen", 68-70.

⁹⁸ Ibid, 77.

⁹⁹ RCAF, "CP-140 Aurora," <http://www.rcaf-arc.forces.gc.ca/en/aircraft-current/cp-140.page>.

¹⁰⁰ LCol Lachance et al, (Aerospace Warfare Centre), *Projecting Power Trends Shaping Canada's Air Force in the Year 2019* (April, 2009), v.

¹⁰¹ Elinor Sloan, "Canadian Defence Commitments: Overview and Status of Selected Acquisitions and Initiatives,"

University of Calgary, the School of Public Policy, SPP Research Paper (in cooperation with the Canadian Defence and Foreign Affairs Institute), 6:36 (December, 2013) and "Canadian Military Tests Drones in High Arctic," *CBC News* (September 19, 2014).

¹⁰² This widely stated assumption remains theoretical. LCol Dany Poitras has shown that SAR requirements in the region did not substantively increase between 2005 and 2011. See: Poitras, "Search and Rescue in the Arctic: A Myth or a Reality?" (unpublished Master of Defence Studies paper, Canadian Forces College, 2013).

¹⁰³ DND, "Operations in the North," <http://www.forces.gc.ca/en/operations-canada-north-america/north.page>

¹⁰⁴ The Governments of Canada, Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden, the United States of America, under the auspices of the Arctic Council, *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic*, signed in Nuuk, Greenland, May 12, 2011.

¹⁰⁵ See, for example, Tony Balasevicius, "Toward a Canadian Forces Arctic Operating Concept," *Canadian Military Journal* 11:2 (Spring 2011), 26 and Michael Byers, "Canada's Arctic Nightmare Just Came True: The Northwest Passage is Commercial," *Globe and Mail* (September 20, 2013).

¹⁰⁶ DND, "Backgrounder: Canada's Air Force: A Proud Partner in the National Search and Rescue Program," CAS BG-11.0001 (February 17, 2011), <http://www.rcaf-arc.forces.gc.ca/v2/nr-sp/index-eng.asp?id=11505>.

¹⁰⁷ DND, "Royal Canadian Air Force in the North," <http://www.rcaf-arc.forces.gc.ca/v2/page-eng.asp?id=1512>.

¹⁰⁸ Operational jumps shall not be carried out at altitudes of less than 1,200 feet Above Ground Level/Above Water Level (AGL/AWL). The maximum surface wind speed for operational jumps shall be at the discretion of the team leader. Department of National Defence. SMM 60-130-2605, *Standard Manoeuvre Manual CC130(E/H) Search and Rescue Operations* (Winnipeg: 1 Canadian Air Division, 2010), Chapter 1, 1.

¹⁰⁹ For a solid, reasoned argument along these lines, see Poitras, “Search and Rescue in the Arctic.” See also Poitras, *Development of RCAF Future Search-and-Rescue Concept*, RCAF Future Concepts Development Project 2013-10 (Trenton: Canadian Forces Air Warfare Centre, 2013), and Brynn Goegebeur, “Canadian Arctic Search and Rescue: An Assessment” (unpublished MA Major Research Paper, University of Ottawa, 2014), <https://www.ruor.uottawa.ca/bitstream/10393/31976/1/GOEGEBEUR%2c%20Brynn%2020149.pdf>.

¹¹⁰ Thomas Frer, Lukas Kulesa, and Ian Kearns, *Dangerous Brinkmanship: Close Encounters Between Russia and the West in 2014* (London: European Leadership Network, November 2014).

¹¹¹ Bob Weber, “NORAD ready to Intercept Russian aircraft in Arctic,” *The Star* (May 28, 2015)

¹¹² On the evolution of these relationships, see Joseph Jockel, *Canada in NORAD, 1957-2007: A History* (Kingston: Queen's Policy Studies, 2007) and James Ferguson and Andrea Charron, “NORAD in Perpetuity: Challenges and Opportunities for Canada” (Winnipeg: Centre for Defence and Security Studies, March 2014).

¹¹³ Andrea Charron, “Canada, the Arctic, and NORAD: Status Quo or New Ball Game?” *International Journal* 70 (June 2015), 215-31.

¹¹⁴ The DEW Line awaits a comprehensive history. For a basic introduction to the NWS, see DND backgrounder BG-12.057, “North Warning System” (December 17, 2012), <http://www.forces.gc.ca/en/news/article.page?doc=north-warning-system/hgq87x9w>.

¹¹⁵ Ferguson and Charron, “NORAD in Perpetuity,” 37-38. On this theme, see also General Charles Jacoby, statement to US House Armed Services Committee (February 26, 2014).

¹¹⁶ Lackenbauer and Rob Huebert, “Premier Partners: Canada, the United States and Arctic Security,” *Canadian Foreign Policy Journal* 20:3 (Fall, 2014), 320-33.

¹¹⁷ The Commanders of Canadian Joint Operations Command, and NORAD/USNORTHCOM signed the Tri-Command Framework for Arctic

Cooperation in December 2012 . The framework focuses on opportunities for cooperation in domain awareness, information sharing, planning, operations, exercises and training, capability development, and science and technology. Although it deals primarily with operational level military-to-military operations, the framework also seeks to identify challenges and emerging issues that may need to be resolved at a strategic level. Through this framework, the three commands have agreed to develop an action plan to articulate specific responsibilities, deliverables and milestones for cooperation.

¹¹⁸ Ekaterina Klimenko, “Russia and the Arctic: An End to Cooperation?” Stockholm International Peace Institute Essay (March, 2015), <http://www.sipri.org/media/newsletter/essay/mar-15-russia-and-the-arctic>.

¹¹⁹ While the Arctic Council does not have a mandate for defence or military security issues, Arctic states’ Defence ministries can play a role in support of Arctic Council-led public safety efforts. For example, DND was Canada’s lead for the negotiation of the Arctic SAR Agreement, signed by Canada and the other Arctic States in May 2011 (the first binding treaty negotiated under the auspices of the Arctic Council). For overviews of some key SAR exercises, see Arctic Council, “Search and Rescue,” <http://www.arctic-council.org/index.php/en/environment-and-people/oceans/search-and-rescue>.

¹²⁰ Chief of Land Staff, Army Support Plan Immediate Reaction Unit – Northern Contingency Plan, (December 14, 2011), DND file 3350-1 (Army G35).

¹²¹ Chief of Land Staff, CLS Master Implementation Plan – Initial Operating Capability – Arctic Response Company Groups (February 2, 2010), DND file 3000-1 (DLFD).

¹²² Minimizing the size of deployed forces has the additional benefits of consuming less resources, reducing the demand for sustainment, and mitigating potential damage to fragile ecosystems. DND, *Northern Employment Support Plan*, 27.

¹²³ For a detailed analysis of this see: Adam Lajeunesse, “The Northwest Passage in Canadian Policy: An Approach for the 21st Century,” *International Journal* 63:4 (Fall, 2008), 1045-47 and Adam Lajeunesse, “A Very Practical Requirement: Under-Ice Operations in the Canadian Arctic, 1960-1986,” *Cold War History* 13:4 (November, 2013).

¹²⁴ Lackenbauer, “Canadian Security and Safety in the Arctic,” 11. For an example of a fantasy 2040 scenario in which Canada faces a defence threat in its High Arctic, see Major J. Sheahan, Nancy Teeple, and Peter Gizewski, “Canada’s Arctic Sovereignty Under Siege: The Prince Patrick Incident of 2040-An Alternative Security Future,” *Canadian Army Journal* 12:2 (Summer 2009), 37-49.

¹²⁵ Lackenbauer, “Canadian Security and Safety in the Arctic,” 10-11.

¹²⁶ CDS/DM Directive, 7.

¹²⁷ DND, *Northern Employment Support Plan*, 22.

¹²⁸ DND, *Arctic Integrating Concept*, 5.

5

Leveraging Air Mobility to Support Canadian Arctic Sovereignty¹

LCol Darwin Ziprick

The Canadian Forces (CF), in general, and the Royal Canadian Air Force (RCAF), in particular, have played, and continue to play, a high-profile role in exercising sovereign control over Canada's Arctic. Although the environmental challenges facing the CF when operating in this theatre remain daunting (from climate, to vast distances and isolation, to a lack of infrastructure), rising interest in the region may, in the future, require enhanced CF responses to defend Canadian territory, respond to emergencies and crises, support civilian organizations, and assist our allies. The Canada First Defence Strategy directs the CF to "have the capacity to exercise control over and defend Canada's sovereignty in the Arctic."

-- P. Whitney Lackenbauer and Major Bill March²

In light of global warming and the emerging commercial interest in the Arctic, Canada has made its policy for the North³ a priority over the last decade. Policy documents have clearly described the Government's expectations of the Canadian Armed Forces (CAF) as a tool for the implementation of the policy. From this high-level political direction, the Department of National Defence (DND)/CAF have focused their efforts on meeting the political and strategic intent. These policy documents, with a focus on Arctic sovereignty, act as a chapeau that encompasses the safety, security, and defence of Canada's Arctic. The CAF has important roles to play in all three domains. Clearly, the defence mandate falls squarely in the realm of the CAF and while DND also implicated in the domains of safety and security, it is more often in a supporting role to other government departments and agencies (OGDA).⁴ Given the unique

military capabilities of the CAF, however, this support, especially in the Arctic, is a key enabler to the Whole of Government (WOG) approach to implementation of Canadian Arctic Policy and sovereignty.⁵

The expectations for the CAF's role are apparent through signals from the Government of Canada on new capabilities, explicit tasks and directives in policy documents, and implicit tasks in support of the WOG approach to sovereignty in the Arctic. In order to meet the Government's policy objectives, the CAF will need to play a key role in application of Canada's sovereignty in the Arctic and be able to operate throughout the vast expanse of Canada's North. The CAF, and particularly the Royal Canadian Air Force's (RCAF) Air Mobility community, will play a crucial role in projecting Canada's sovereignty of the region. Whether in a primary CAF role or supporting a WOG effort, Air Mobility will need to be leveraged to bring limited resources to bear across the massive area of the Canadian Arctic and provide the baseline support required for the CAF to meet its northern mandate. This chapter discusses why Air Mobility will be essential and what is needed to develop a robust and relevant capability to support Government of Canada policy in response to a defence threat or support to OGDAs dealing with an emerging safety and/or security incident. It identifies the need for a tiered system of mobility options for the CAF to effectively operate throughout all areas of the Canadian Arctic.

The Government of Canada's policy objectives in the Arctic, and the expectations of Canadians, will require the CAF to be able to operate throughout the vast expanse of the country's northern region. Currently, there are only modest initial response elements located in the North. A more fulsome response to accomplish the defence tasks, or to provide support to OGDAs in the safety and security domains, would therefore require augmentation from high readiness units located in southern Canada. In order to be able to provide this augmentation, the CAF maintains high readiness units that can deploy anywhere in Canada within 24 hours or less.⁶

The response capabilities of the high readiness units have proven their value in

the southern regions of Canada.⁷ However, the Arctic poses an acute mobility challenge. The first hurdle is the challenge of deploying an immediate readiness unit to the general area requiring support. Given the great distances, not to mention the lack of ground transportation routes, this will require some type of airlift. Secondly, getting the troops and equipment to the specific area to conduct operations will most likely not be supportable by means of ground modes of transportation. Finally, the sustainment of the force will require some capability with links to the more robust resources located in southern Canada.

The main difficulty will be the projection of the force to permit a timely response of the appropriate scale. In the past, when there was little expectation of the need for extended operations in the Canadian Arctic, an ad hoc approach was accepted as sufficient. The renewed focus on the North, however, coupled with the realities of global warming and a more accessible Arctic, has increased the awareness of the new and emerging threats to Canadian sovereignty in the Arctic. As part of this understanding there is the expectation of a more deliberate response by the CAF both in the defence of Canada and in support of OGDAs for safety and security issues. The magnitude of the problem space, when combined with fiscal constraint, exposes the capability gaps created by the realities of time and space. This highlights the need for robust mobility options to access every corner of the Canadian Arctic. The RCAF, and more specifically its Air Mobility community, will play a key role in this critical element for operations in the Arctic and the Government of Canada's exercise of Arctic sovereignty. The challenges of a timely response over the great distances and harsh conditions of the Arctic will require a tiered mobility and infrastructure posture. This would consist of main operating bases the south, strategic airlift to regional hubs in the Arctic, tactical airlift to forward operating bases in the area of operations, and tactical aviation.

In order for these objectives to be achieved, several pieces must be put into place and exercised on a regular basis so that the CAF is able and ready to provide the effects to support the Government of Canada policy in the Arctic.

Canada's Northern Strategy and Arctic policies assign responsibilities to a multitude of departments. Therefore, the solutions must be robust and capable of meeting the CAF's requirement as lead department in the defence role while also being capable of providing support to other lead departments in the safety and security domains. Currently, there are gaps in the Government of Canada's ability to project the necessary capabilities throughout the Arctic to ensure Canadian sovereignty.

This chapter discusses ways to mitigate the gaps and develop an Air Mobility solution for the Arctic that will meet the mandate of Canadian Arctic policy while being mindful of fiscal realities. In light of the limited defence threat in the North and fiscal realities, there is little justification for a permanent northern presence for Canada's military other than some expressions of a consideration for a northern-based Search and Rescue capability. Any solution, however, must be able to provide a meaningful and timely response while still being achievable and sustainable in a climate of limited fiscal resources. It must also taking into account the limited support available in the local northern communities, and not unduly burden their infrastructure and economies. Accordingly, the expense and challenges of operations in the Arctic will require the synergies of a multi-department solution that is integrated across all stakeholders so as to provide a comprehensive and fiscally-achievable Government of Canada effect. The RCAF will be the key enabler with Air Mobility being the force multiplier that leads the way for the Government of Canada to put action behind the policy of Canadian Arctic sovereignty.

Context

The end of the Cold War meant that interest in the sovereignty and security concerns in the Arctic waned. It was not until the reality of global warming was accepted, and the implications for Arctic paradigm were recognized, that a renewed importance was placed on the need for a more comprehensive Canadian Arctic Policy. The pronounced impacts on the Arctic, especially with regards to greater accessibility, have raised the potential for commercially lucrative shipping routes and the commercial feasibility of the vast untapped

natural resources of the region. The changing geopolitics of the region have also generated significant discussion about real or potential threats to Canadian sovereignty, security, and safety. Accordingly, a major policy shift can be seen in the International Policy Statement (2005) of the Martin Liberal Government, and carried through to the Harper Conservative Government with the Canada First Defence Strategy (CFDS, 2008), Canada's Northern Strategy (2009), and the Statement on Canada's Arctic Foreign Policy. Through these various policy statements, the government has clearly articulated the expectations for the CAF as a key enabler of its Arctic policy. Taken together, these policy documents lay out the framework for the responsibilities assigned to the CAF as part of an integrated government approach and inform the mandate for the CAF in the Arctic.

It is not sufficient for a state to simply declare sovereignty: it must also be able to act in a way that confirms to others that it is able to exercise and enforce the responsibilities conferred in a declaration of sovereignty. Whitney Lackenbauer describes sovereignty as "a broad concept that encompasses the adoption and enforcement of laws and regulations, the adequate protection of the territory and borders, [and] all actions expected of a responsible government."⁸ Put differently, sovereignty is the complete power and authority that a state exercises over its territory. Canadians rely upon the CAF to enforce Canada's sovereignty. "There can be no greater role, no more important obligation for a government, than the protection and safety of its citizens," a Privy Council Office document notes.⁹ Threats to Canada's vast northern frontier are not necessarily conventional military threats (although there could be a case made with respect to the Russian aggression that has been playing out in 2014) but the North is vulnerable to physical, environmental, and economic security threats.

The CFDS, as clearly stated in its title, places the home game at the forefront of the CAF's mandate. Canadians expect that their government's top priority is to protect them and keep them safe and the government relies on and charges the CAF to fulfill this obligation. The CFDS emphasizes that the CAF must be

able to operate throughout Canada (including the Arctic), and specifically mentions that the CAF must conduct daily domestic operations throughout the country. More importantly, it directs that CAF will contribute to Canada's sovereignty in the Arctic through a visible presence and have the capability defend this vital piece of the country.¹⁰

To do so, the CAF must have freedom of movement throughout the country; and not so much in the sense of restriction of movement due to a traditional adversary, but due to the sparse population and the minimal infrastructure throughout the far reaches of the region. The CAF's conduct of operations must not be restricted to the south where there is well-established infrastructure. CAF presence throughout the Arctic is an essential component of exercising sovereignty in the north and it must operate throughout the Arctic in order to deter, detect, and defend against any threats to Canadian sovereignty.¹¹ However, the lack of infrastructure and the enormous distances across the vast expanse of the Canadian North will prove to be a great obstacle. The CAF is a relatively small force and the challenge lies in its ability to project a meaningful response over such a great area in a timely manner.¹² Air Mobility will be an invaluable resource as a force multiplier and will be a fundamental enabler for the CAF to meet this mandate. According to Lieutenant-General (ret) George MacDonald, "An enduring requirement for employing military capability in the North, and supporting other government departments and agencies, is air transport."¹³

Although several commentators dismiss the notion of defence or security threats to the region, this assumption warrants reconsideration. First, limiting the concept of threat to that of an armed, state adversary is too narrow. Second, the threat of terrorism in the post 9/11 world, coupled with recent Russian expansionist aspirations, pose tangible defence challenges. Asymmetric threat vectors have the potential to exploit and threaten Canada through the less secure borders of the Arctic. Furthermore, growing concerns related to economic, environmental, and social threats to the region, as well as trans-national criminal organizations, affect Arctic security. Although the primary

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responsibility for these concerns does not lie with the DND, the CAF can be expected to play a major supporting role. The challenges of addressing these threats will require the unique capabilities of the CAF as part of a WOG integrated approach.¹⁴

Overarching policy guidance is translated into orders by the Chief of Defence Staff (CDS) and the Deputy Minister (DM) of National Defence in the *CDS/DM Directive for the DND/CF in Canada's North*. It specifically directs that the DND and the CAF “leverage its capabilities in order to demonstrate sovereignty, enhance presence and help ensure the security of Canada’s Northern regions while concurrently improving its abilities to respond to crises and aid other government departments and agencies in fulfilling their mandates.” The mission statement of the directive asserts that “the CF will employ joint capabilities in Canada’s North to support the [Government of Canada] in achieving its national objectives for the region.”¹⁵ Specifically, the directive states that the CAF will:

- a. Leverage its capabilities for Northern operations in order to exercise sovereignty and contribute to the safety and security of Canada's Northern region;
- b. Improve its ability to effectively command contingency operations in the North;
- c. Increase its ability to conduct surveillance and attain a high degree of terrestrial, maritime and airspace situational awareness in the North;
- d. Increase the frequency and size of routine deployments into the North; and
- e. Create the capability and capacity to surge and sustain appropriate force packages into this region during contingency or crisis operations.¹⁶

The essential capability, at the core of this mandate, is the ability to provide a meaningful and timely response; this will require the CAF to have access to robust lines of communication. Due to the vast distances and limited to non-existent infrastructure to support such an undertaking, the CAF will need to

have an organic capability to project the response. Given the limited resources, the relatively small size of the Canadian military, and the extremely large area of responsibility, Air Mobility will be an essential force multiplier to enable the CAF to achieve this intent.

Gaps in the CAF's Northern Footprint

The Arctic represents over 40% of the entire Canadian land mass. It is sparsely populated and has very limited infrastructure. To overcome the challenges presented in the time and space context, the CAF requires an organic capability to provide mobility over large distances and in austere conditions; Air Mobility provides this capability. Even in the southern regions of the country where there is well developed infrastructure, Air Mobility is often required to cover the great distances from the physical location of the response resources to where they are needed. The most robust response is of no value if it is in garrison with no means of deploying to the area of operations in a suitable amount of time to deliver the desired effect. For responses to the North, Air Mobility is the only sure option for critical domestic operations.¹⁷

The size of the CAF is very small in relation to the size of Canada, even if the sparsely populated North is excluded. This results in gaps in the CAF's Northern footprint and its ability to project a meaningful and timely response throughout the Arctic whether as the lead of a defence task response or in support of OGDAs.¹⁸ The widely dispersed and sparse population in Canada's Arctic will require robust lines of communication if the CAF is to deliver on the expectations of Canadian Arctic policy. The sparse inhabitation and the remote locations of communities in the North infer that there is limited infrastructure which may not have sufficient capacity to support CAF operations. Support from in place infrastructure and the local economy cannot be assumed or assured as it is in the south. In many respects, the challenges of operating in the North are similar to an expeditionary deployment such as the mission in Afghanistan. Accordingly, operations in the North must take into consideration that: commercial communication bandwidth may not be able to support CAF needs; the economy may not be able to support the real life

support requirements of the response; not all airfields can support strategic airlift; and the area of operations may not be co-located with an airfield.¹⁹

The RCAF is no stranger to operating in the north or conducting expeditionary operations. Its expeditionary heritage will serve it well in the Arctic as Northern operations, although within the domestic area of operations, are akin to expeditionary due to the vast distances, harsh climate and austere conditions.²⁰ Any response to the Arctic will involve a deployment of capability (whether CAF or other government department) from the south. Due to the distance and the lack of ground transportation infrastructure connecting the southern based capabilities to the Arctic (not to mention the extreme distances), the projection of a Government of Canada response will not be unlike an expeditionary deployment outside of Canada utilizing the RCAF's Air Mobility capability. As Prime Minister Harper remarked after the First Air plane crash at Resolute Bay in 2010, "Part of the drill here is how quickly things can be moved up here and deployed from the south as well... There is no possible way in the vastness of the Canadian Arctic we could ever have all of the resources necessary close by."²¹ This has been a longstanding challenge.

Early in RCAF history, aircraft operations opened up possibilities to gaining access to remote locations in Canada's North. The Air Force first considered operations in the Arctic in the early 1920s. To test the feasibility of operating in such an austere location, the air force brass sent Squadron Leader Robert Archibald Logan as an observer on a Canadian Coast Guard Ship in 1922. His report showed great insight in the importance of being able to operate in the Arctic. "[T]he development of the Arctic and sub-Arctic flying is of the greatest importance," he noted, "not to Canada alone, but the British Empire as a whole." Logan had great vision with respect to flying in the Arctic and asserted that, even if the chance of a war with Russia was unlikely, that this "should not affect the determination to develop flying in the Canadian Arctic and sub-Arctic regions because Canada, if it considers itself worthy to be called a nation, should have enough pride and spirit to take at least ordinary

precautions and be prepared to defend itself in any emergency.”²² The RCAF’s first expedition into the Arctic was in 1927 to determine the viability of shipping routes from Churchill, Manitoba, to the Atlantic Ocean through the Hudson Strait. The experience gained from this operation serve as a foundation for RCAF Arctic operations. In particular, navigation techniques were developed for areas where magnetic compasses were unreliable and communications systems were established to support air operations. Additionally, this expedition established the expeditionary nature of Northern operations.²³ From this first foray into the North, the importance of the RCAF’s ability to be able to operate in this great frontier was apparent. As experience was slowly gained, the Air Force acknowledged the need for a deliberate campaign to raise the awareness of military flying operations in the Arctic.²⁴

Immediately after the Second World War, the RCAF activity in the north consisted of aerial mapping missions that were closely tied to several combined Canada – U.S. programmes.²⁵ Geography and the chilling post-war relationship between the U.S. and Russia left Canada and the Canadian Arctic “sandwiched between two increasingly hostile superpowers.”²⁶ The decades-old relationship of cooperation between the Canada and the U.S. and the mutual benefits of a combined defence of North America ultimately led to the establishment of the North American Aerospace Defence Command (NORAD) in 1957.²⁷ During this period, RCAF aircraft also played a significant role in aerial reconnaissance and special ‘Weather Reconnaissance’ flights. These special flights were in fact atmospheric sampling missions to monitor the Soviet Nuclear programme. Aerial intelligence missions were expanded to include electronic intelligence gathering and continued into the 1960s. These early missions developed the RCAF experience of Northern operations that enabled the next bound of an increased military presence in the Arctic.²⁸

Air Mobility provided constant support to CAF operations, including the ongoing re-supply of Canadian Forces Station (CFS) Alert at the Northern tip of Ellesmere Island. Initially re-supply was conducted by airdrop. Once the

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runway had been improved, the RCAF was able to make regular deliveries approximately every six weeks in 1958 and increased to twice a month in 1959. Eventually the operation was refined to the point where large quantities of supplies were shipped via sealift to Thule, Greenland and then two (and later three) times a year a concentrated effort called Operation BOXTOP was conducted to deliver the supplies to CFS Alert (with fresh fruits and vegetables delivered twice a month for the remainder of the year).²⁹

Air Mobility operations in the Arctic have continued unabated since the end of the Cold War. Regular sustainment flights to CFS Alert continue. The RCAF maintains responsibility for air Search and Rescue and provides a “gold standard” within the eight nations of the Arctic SAR Treaty.³⁰ Several high profile northern SAR missions also confirm the RCAF continued commitment to Arctic operations, such as BOXTOP 22 (October 1991), when a CF CC-130 Hercules crashed near CFS Alert during an Operation BOXTOP; First Air Flight 6560 (August 2010), when a First Air commercial aircraft crashed during the approach to Resolute Bay, NU; and SAR Igloodik, NU (October 2011), when SAR aircraft from Winnipeg, Trenton, and Gander were deployed to rescue a father and son stranded in a small aluminum boat in fierce weather conditions.³¹ Furthermore, the Government of Canada’s renewed focus on the north and the implications for the CAF has not been lost on the RCAF. The RCAF continues to provide leadership in CAF Northern operations through the NORAD partnership with the U.S. in the defence of North America, Search and Rescue operations, and Air Mobility as a key enabler for integrated operations and exercises throughout the Arctic.

Communications

Given the widely dispersed nature of the population in Canada’s North and the relative isolation from the southern regions, communication with the resident population can be challenging.³² The ability to maximize the effect of CAF operations throughout the Arctic requires the support of Canada’s northern population and direct contact with the First Nations, territorial, and community leadership is critical to enable CAF operations in the North. In

order to build and foster a relationship that will support the CAF's ambitions, a regular presence and dialogue is needed.³³ Establishing these lines of communication is essential to the CAF's ability to conduct operations and project its footprint throughout the Arctic. In terms of supporting the ambitions of the CAF, lines of communication include mobility and supply lines as well as the ability to transmit and receive voice and data communications and establish community relationships.³⁴ Air mobility will be an enabler on all fronts from supporting liaison visits, deploying a response, to delivering enablers such as tactical mobility and communications systems, and ensuring the flow of sustainment from the south.³⁵

The North is characterized by limited and disparate commercial communication infrastructure. Most Northern communities do not have redundant connectivity, and service interruptions are common. Accordingly, the CAF will need to bring its own communications assets to operate in the North. Spreading the footprint of the CAF across the Canadian Arctic will require the force multiplication effects of Air Mobility, which itself must leverage technology as force multiplier to enhance its effects.³⁶ Centralized control and decentralized execution is a key tenet of air power,³⁷ and resilient and multi-tiered systems must be available to maximize the effect of Air Mobility: the use of strategic airlift to move the response from the south to an operations hub in the North and tactical airlift to deliver the effect to the area of operations.³⁸ Strategic airlift is normally thought of in terms of moving personnel and material between theatres of operation; however, it can also be used to describe airlift between two areas of operation. Canada is a single theatre of operations with three areas of operation.³⁹ Due to the size of the Canadian domestic theatre of operations, airlift from southern main operating bases to the Arctic can be considered strategic.⁴⁰

Whether conducting operations in the North as the lead department, or supporting other government departments and agencies leading a Government of Canada integrated response, the CAF will be need to be able to establish communications (an essential element for airlift operations) with the south

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through organic assets due to the expeditionary nature of operations in the Arctic.⁴¹ Although great strides have been made to reduce the digital divide, there still remains a gap between CAF needs and the commercial backbone available to support operations in the North. Some communities in the Northwest Territories and all but one in the Yukon are served by land based system backbones; Nunavut is completely reliant on satellite services for outside communication (internet) connectivity with limited bandwidth.⁴²

In short, there is limited access to large data bandwidth needed to meet the communications requirements for any substantial response in the North. Operations near communities may be able to leverage the existing connectivity for a short initial response, but more substantial and sustained operations will require an organic capability. To ensure mission success throughout the Arctic, the CAF will need to be able to reach back from the deployed operating area to nodes where connections can be made to more sizeable data pipes. An example of this is the more permanent communications links that have been established for CFS Alert. This base is too far north and over the horizon for suitable geostationary satellites, so communications are achieved through microwave relays to the south where the signals are then linked up to communications satellites.⁴³

Limited Infrastructure

The most significant impediment to operating in the North is limited infrastructure. This poses significant challenges to CAF operations – not only in terms of lines of communications, but also with respect to infrastructure supporting the mobility requirements of a CAF operation. The ability to rapidly deploy and sustain a force of any size into the geographically separated and small communities of the North will challenge the CAF in responding to requests for support or conducting sovereignty operations. The possibility of ground transportation to move troops and equipment from southern-based garrisons to an area of operations in the North is for the most part non-existent due to geography and the lack of roads and, at best, limited within and around Arctic communities. Many Northern communities are only accessible via air or

seasonal ground access (waterways or winter roads).⁴⁴ These accessibility challenges only magnify the difficulty of responding to emerging requirements and further highlight the importance that Air Mobility will play in CAF responses in the Arctic.⁴⁵ Projecting capabilities to remote locations will require the full spectrum of RCAF mobility assets. This is a unique characteristic and challenge of operating in an austere environment with limited infrastructure.⁴⁶

The limited resources in the North require forces operating in nearly any location to bring equipment and supplies to be able to operate effectively. Deploying a meaningful and timely response from southern bases to Canada's northern reaches poses significant logistical challenges. For example, not all of the community airports in the North are useable by larger aircraft such as the CC-177.⁴⁷ Additionally, the location requiring assistance may not be in close proximity to an airport, thereby increasing the challenge of delivering a meaningful response in an appropriate timeframe. This requires an organic CAF capability to be able to move personnel and materiel across great distances to austere locations to conduct operations.⁴⁸ The CAF must be self-sufficient in terms of projecting its effect to any location in Canada's North where suitable infrastructure for supporting commercial or large aircraft, at the operating location, cannot be assumed.⁴⁹ The RCAF possess capabilities that cover the airlift and mobility requirements for deployment of a response from a main operating base in the south to the most austere location in Canada's North with a combination of CC-177, CC-130J, and CC-138. The synergistic effects of the RCAF's multi-fleet Air Mobility capability can be used to project a government of Canada response to any location in the Arctic.

Sustainment

The sustainment of a CAF response in the North will also be a major challenge. The majority of communities in the Territorial North are subsistence-based communities, structured to support the needs of the community with limited capacity to support additional personnel responding to an incident.⁵⁰ Accordingly, the CAF must therefore be self-reliant. The logistical challenges posed by Canada's Arctic can be seen to parallel the

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requirements of CAF's mission in Afghanistan and perhaps even to a greater extent due to the lack of a capacity for support through ground lines of communications to the south.⁵¹

As noted previously, limited infrastructure will constrain an integrated government response to a crisis (such as a natural disaster). Depending on the location of an operation, there may be limited (if any) over-land options for the CAF to deploy to the North. Sea options will have seasonal and limited port options to consider. Thus, airlift becomes the *de facto* solution to a timely response.⁵² Furthermore, any response must not become a burden on limited local resources.⁵³ Northern communities do not have the capacity to sustain a large influx of personnel and equipment that could be deployed as part of the government's integrated response.⁵⁴ Furthermore, using commercial suppliers to meet the logistical support demands of an operation could easily place undue pressures on the availability of fuel stores and has the potential to drive up the costs for local residents.⁵⁵

NORAD has invested in dedicated infrastructure and has contracts in place at its Forward Operating Locations in Yellowknife, Inuvik, Iqaluit, and Rankin Inlet. This concept is possible due to the ability of the NORAD aircraft (fighter and tanker aircraft) to execute their mission across the entire North using only these four locations.⁵⁶ A CAF deployment to the Arctic as part of an integrated government response will most likely be more localized and not necessarily near a pre-planned location. As an example, an oil tanker running aground and causing an environmental catastrophe could happen at an almost infinite number of locations throughout the Arctic and there is no way to know where or when this could happen, making the repositioning of the necessary resources impossible.⁵⁷ Currently, outside of NORAD, the CAF does not have pre-positioned materiel or contracts in place to support an extended deployment to the North. Large exercises or operations (such as Operation Nanook) require specific contract arrangements for logistical support to be made well ahead of time.⁵⁸ While this is feasible for pre-planned operations, it will not meet the need for short notice contingency operations. Aspects of the

NORAD Forward Operating Locations concept can be applied in developing a solution for the CAF to conduct and sustain operations anywhere in the Arctic. As I argue later in this chapter, the CAF can apply the FOL concept but without the permanent infrastructure. The CAF would be able to deploy a response from the south and quickly begin to deliver effects by having pre-planned the initial support requirements at strategic locations across the Arctic.

The Air Mobility Enabler

The ability for the CAF to deliver a meaningful and timely response anywhere in the Arctic, either as the lead agency for a defence response or in support of another government department or agency, will hinge on its ability to traverse over great distances to access austere locations. The requirement for this capability stems from fiscal realities that do not permit a permanent presence in the North that is sufficient to fulfill the CAF's mandate.⁵⁹ The solution for the CAF must be robust enough to meet the expectations of the government and the Canadian population for a response anywhere in the Arctic. At the same time, it must be an affordable solution that does not overwhelm the limited resources of a relatively small force. The recent investments in the Air Mobility fleet with the acquisition of the CC-177 Globemaster and CC-130J Hercules, coupled with steadfast work from the CC-138 Twin Otter fleet will offer a tiered, multi-fleet Air Mobility solution to respond to the most remote locations of Canada's Arctic. These current RCAF fleets are complimentary in terms of their capabilities for delivering effects to the North. This synergy is manifested in the tried and tested hub and spoke doctrine of Air Mobility.

In order to understand how the RCAF will enable CAF operations or support to other government departments and agencies, it is necessary to have an appreciation of the capabilities that are available and capable of operating in the extreme conditions of the Arctic. In this case, I will restrict discussion to fixed-wing aircraft, namely the CC-177 Globemaster, CC-130J Hercules, and the CC-138 Twin Otter. It should be noted, however, that the RCAF has recently taken delivery of CH-147 Chinook helicopters. The capability of this

helicopter will add another dimension of flexibility to the RCAF when it responds to Arctic incidents or emergencies.⁶⁰

CC-177

Over the past decade, the RCAF has invested considerable resources in revitalizing its Air Mobility capability. The venerable CC-130 E and H models had served the RCAF well in air transport roles (and continue to do so in the Search and Rescue role). However, the legacy Hercules fleet was often used more in a strategic role to haul cargo over long distances for both domestic and expeditionary operations than for the tactical airlift for which it was built. This reflected, in part, a lack of strategic airlift within the RCAF.⁶¹ The equation changed when the Air Force took delivery of the four Boeing C-17 Globemaster III (the CC-177 in Canadian parlance) aircraft in 2007-2008 (and a fifth in March 2015).⁶²

The CC-177 provides Canada with a strategic airlift capability that can deliver cargo from a main operating base to many Forward Operating Locations without the need to transfer the load to smaller tactical aircraft such as the CC130J. The aircraft can also perform many tactical airlift operations such as operating on semi-prepared runways such as the snow covered gravel runways that are found in Canada's North. The CC-177 will be used to support the CAF efforts in meeting its mandates for domestic and international operations. Specifically, in regards to the CAF role to protect Canada and Canadians, this aircraft will enable the increase to sovereignty efforts through the airlift of personnel and equipment for Northern presence operations.⁶³ It is ideally suited for supporting such operations. The CC-177 has a maximum range of approximately 10 000 kilometres and can carry over 72 000 kilograms. To put this in perspective, it has the ability to reach all airports across the Canadian Arctic from Inuvik (CYEV), North West Territories in the Western Arctic (a distance of 4 159 kilometres) to Alert (CYLT), Nunavut in the Eastern Arctic (a distance of 4 313 kilometres) and all points in between from its main operating base at 8 Wing Trenton (CYTR), Ontario.⁶⁴ In short, it has the

range and payload capability to quickly deploy a meaningful and timely response throughout the Canadian Arctic.

The lift capacity of the CC-177 (which is approximately three times that of a CC-130) and ability to land on semi-prepared runways is essential to meaningful and timely support to any response to the North. Specifically, the CC-177 can carry up to three CH-146 Griffon helicopters with re-fuelling tanks, 102 soldiers, or a combination of cargo and personnel.⁶⁵ Its cargo capacity and ability to use semi-prepared runways sets it apart from most other jet aircraft currently operating throughout the North; the most modern commercial jet that can operate from the gravel airfields is the Boeing 737-200.⁶⁶ With the capability to operate on semi-prepared runways, the CC-177 will serve as the strategic link to deploy and sustain an integrated response to the Arctic. However, in order to provide a footprint that can cover all of the Canadian Arctic, there are areas that will require a tiered, multi-fleet airlift solution to deploy a particular response to areas that are not near an airport that can support CC-177 operations.

CC-130J

The CC-130J Hercules forms the next level of the tiered, multi-fleet Air Mobility capability that will enable the CAF to fulfill its mandate in the North. The CC-130J provides the CAF's tactical or intra-theatre airlift capability. To fill this role, the RCAF took delivery of 17 CC-130J from 2010-2012; its main operating base is 8 Wing Trenton, ON.⁶⁷

The intended use for the CC-130J is for tactical airlift operations. In particular, it will contribute to the efforts to demonstrate and enforce Arctic sovereignty by providing airlift of personnel and equipment for Northern presence operations and continued support to CFS Alert. It is specifically intended to provide airlift for the deployment of land forces and command elements, special operations forces (SOF), and task forces anywhere in Canada.⁶⁸

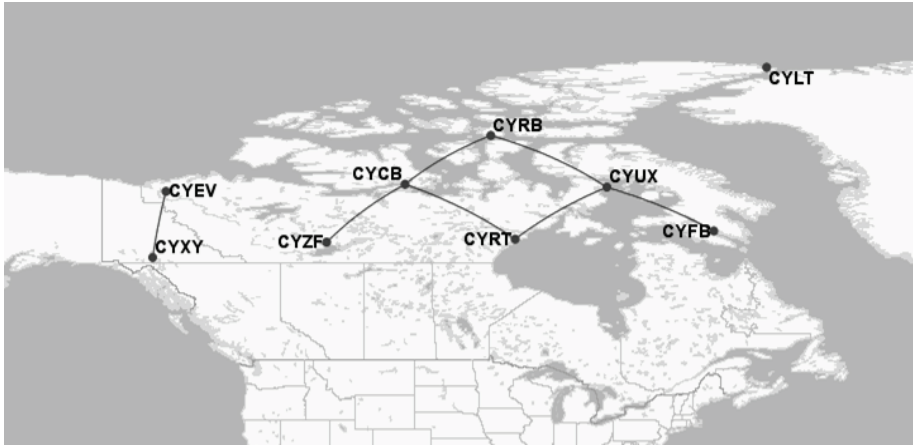


Figure 5.1: CC-130J Segments with Maximum Cargo⁶⁹

The CC-130J has a smaller cargo capacity and shorter range than the CC-177; however, it is capable of operating into smaller and more austere environments. This will be essential to ensuring that the CAF can deploy or support a response to an area that is not near an airfield capable of supporting CC-177 operations. The CC-130J has a maximum range of 6 852 kilometres and a maximum payload of 21 772 kilograms.⁷⁰ With such a capability, the CC-130J allows the CAF to extend a response from CC-177 capable airfields to more austere location throughout the Arctic. Figure 5.1 shows a network of air links that would allow for maximum cargo on CC-130J (all segments less than 926 kilometres).

While the CC-177 provides the strategic inter-theatre airlift to project a response from main operating bases to hubs in the theatre of operations, the CC-130J provides the intra-theater Air Mobility link to move the personnel and equipment forward throughout the area of operations.⁷¹ In the context of the Canadian North this will allow an expanded footprint beyond the limited number of airfields capable of supporting CC-177 operations.

CC-138

The third tier of the multi-fleet Air Mobility approach is the CC-138 Twin Otter. RCAF No. 440 Squadron has a fleet of four CC-138 based in Yellowknife. Despite its age (the RCAF's four aircraft were procured in 1970), the CC-138 plays a vital role in Air Mobility's support of CAF operations in the North. With its short takeoff and landing capability, the CC-138 is well-suited for operations in Canada's North. It can be equipped with tires, floats, or skis that allow it land virtually anywhere in the Arctic on land, water, snow, or ice. It can carry a maximum payload of 2 999 kilograms or 20 passengers and has a range of just over 1 400 kilometres.⁷² The CC-138 capability further extends the reach of the CAF beyond the CC-130 capable airfields with the capability to land on the tundra or frozen fjords.⁷³

Hub and Spoke vs. Direct Delivery

The hub and spoke is a longstanding principle of Air Mobility operations. It provides an efficient way to move large volumes of personnel and equipment into a theatre of operations via strategic airlift and then disperse them via smaller, tactical airlift aircraft that are able to operate into smaller more austere locations. The hub and spoke concept maximizes the strategic airlift capacity and gains efficiency through centralized control of limited strategic resources such as the CC-177.⁷⁴ The coordinated use of a tiered, multi-fleet approach to the application of the hub and spoke method of supporting domestic operations is a viable solution to the Arctic challenge.

The direct delivery method has the advantage of a shorter delivery time because it does not require routing through a specific hub. The point-to-point routing is shorter in distance and does not require the overhead of offloading one aircraft and re-loading onto another aircraft before being forwarded to the final destination. However, infrastructure and payload will be a determining factor on the feasibility of the direct delivery method, especially in the Arctic.⁷⁵ The CC-177 gives the CAF the capability to use the direct delivery method for

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some strategic airlift operations. However, many airfields in Canada's North are not suitable for CC-177 operations.

The choice of delivery system, hub and spoke or direct delivery, depends upon several factors. The ability of the infrastructure to support strategic airlift is a limiting factor for the direct delivery approach. As well, the availability of limited strategic airlift resources must also be factored in to the longer-term viability of each method for a particular operation; coordination and prioritization of missions is necessary to optimize the employment of limited strategic airlift resources.⁷⁶ Both of these methods were used to support the CAF mission in Afghanistan.

Initially, for the Afghanistan mission and prior to the Canada's acquisition of CC-177, the CAF used the CC-150 Polaris as the strategic airlift to deliver troops and cargo to the United Arab Emirates. From there, CC-130s were used for the onward movement into Afghanistan. The hub and spoke method was used for several reasons. The infrastructure at the various destinations in Afghanistan and the threat level were not suitable for strategic airlift and more appropriate for tactical airlift. Furthermore, due to the length of the strategic lines of communication back to Canada, it was more efficient to use strategic airlift operations between Canada and the hub and then tactical airlift operations from the hub forward into the area of operations. Later on in the mission, with the procurement of the CC-177, the direct delivery method was used for some particular inter-theatre strategic airlift operations while the CC130 continued the intra-theatre tactical airlift operations.⁷⁷

With its recently revitalized Air Mobility fleet, the RCAF is well positioned to leverage both of these concepts and enable the CAF to meet its mandate as part of the Government of Canada integrated approach to the Arctic. The CC-177 can be used for direct delivery operations to a number of airfields across the Canadian Arctic or the hub and spoke method can be leveraged with a multi-fleet approach to reach the more remote and austere locations. By adapting NORAD's Forward Operating Locations (FOLs) concept, Air Mobility can

support CAF and WOG integrated responses to safety, security, and defence issues.⁷⁸ Through a relatively modest investment of air transportable equipment to support a deployable support hub and the establishment of pre-arranged contract, Air Mobility can provide the CAF with a footprint wherever needed. The premise of this concept is to have a deployable response that can meet the demands of the required response instead of establishing permanent bases in the Arctic from which to launch the response.⁷⁹ The advantage is that this approach is not as resource intensive as having permanently stationed forces in the Arctic, yet a robust response can be projected and deliver effects much more quickly than an ad hoc approach. One such example of an ad hoc approach was Operation Morning Light, which was the response to a Soviet satellite crashing to earth and scattering radioactive debris in the Canadian Arctic. The broad multi-agency response was tasked with finding and recovering the radioactive debris in the harsh Arctic environment. It faced significant logistical and communications challenges at the outset given the short timelines available for planning such a major integrated response.⁸⁰ The solution proposed here would have mitigated some of the initial challenges of deploying the response.

The RCAF's rich history of operations in the North and Arctic air-mindedness continues today.⁸¹ Political scientist James Fergusson has suggested that "today the RCAF is a 'southern,' overseas Air Force that goes North only when necessary."⁸² This is misleading. The RCAF has remained engaged in the North, despite a high operational tempo overseas. In addition to the four CC-138 Twin Otters in Yellowknife, the CP-140 Aurora conducts regular patrols in the Arctic, CF-188 fighters carry out the NORAD mission and often operate from Forward Operating locations in the Arctic (this often entails the employment of either CC-130 or CC-150 Air to Air Refuelling aircraft), and continuous Air Mobility support to Northern operations such as the weekly sustainment flights to CFS Alert, Operation Box Top (twice yearly major re-supply of Alert), as well as airlift support to major exercises and operations throughout the Arctic.⁸³ The challenge for the CAF lies in the paradox of the requirement for a small force to project a footprint to cover an enormous area.

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The task is exacerbated by the harsh climate, sparse population, and extremely limited infrastructure.

To overcome these obstacles, the RCAF will need to rely on its experience in Northern and expeditionary operations. The NORAD Forward Operating Locations (FOLs) can serve as concept to be adapted for a Northern response and may also be leveraged to expedite the deployment of a response.⁸⁴ The model will be based on the ability to support a response to an austere location anywhere in the Arctic, balancing the frequency of use with the resources required to maintain it. Accordingly, the proposed solution would see a pre-packaged capability that is maintained at a main operating base in southern Canada that is ready for deployment, similar to the Canada's Disaster Assistance Response Team (DART).⁸⁵ Additional support may be available through local commercial contracts or deployed as a follow-on to the initial response if required.

Due to the unknown location of a required response, it is impractical and cost-prohibitive to pre-position and maintain CAF equipment and supplies, or commercially-contracted support, to cover the entire Arctic.⁸⁶ Therefore, a series of strategically-located support hubs across the Arctic constitute a more prudent solution. These hubs must be able to support strategic airlift in order to for the response to be timely and meaningful. The airfields depicted in figure 5.2 are capable of supporting the CC-177. Using the hub and spoke method of delivery, the Arctic can be covered using a combination of CC-177, CC-130J, and CC-138 aircraft. To minimize the resource requirements while maximizing the capability to respond, the solution should minimize the overlap of the footprint that each of the hubs could project. Therefore, to leverage the currently available infrastructure in the North while maximizing the efficiency of Air Mobility, the suggested solution would use four main hubs, located at Inuvik, Yellowknife, Resolute Bay, and Iqaluit.⁸⁷

By focusing the scope of this effort to four strategic airlift hubs, the necessary coordination and arrangements can be pre-negotiated and some preparatory

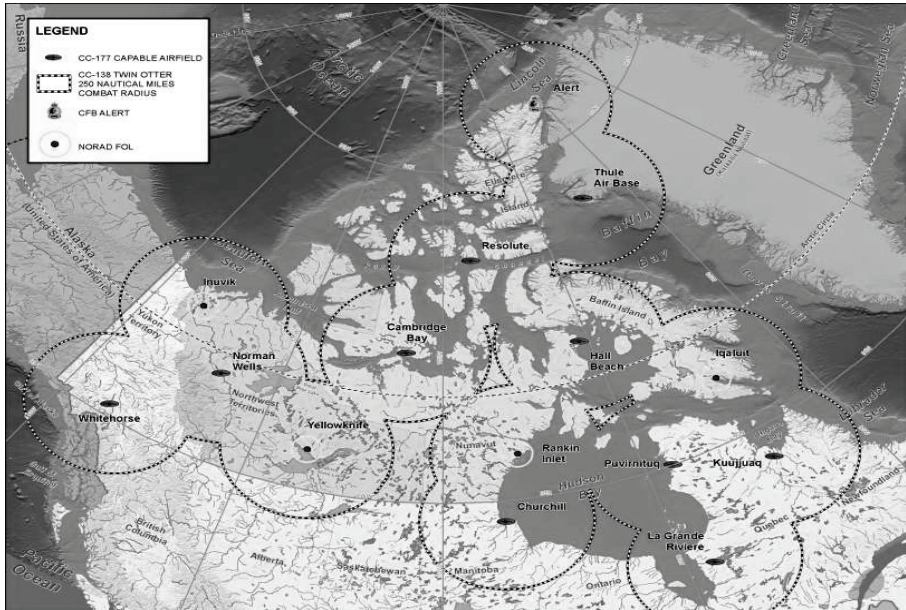


Figure 5.2: CC-177 Capable Airfields in the Arctic

work can be accomplished and exercised. The requirements for the hub can be modelled after the NORAD FOLs with the difference being that no permanent infrastructure is established; however, there is the option of the hubs to leverage existing infrastructure. Of the four locations identified, Inuvik, Yellowknife, and Iqaluit are NORAD FOL locations and Joint Task Force (North) (JTFN) is located in Yellowknife. Furthermore, Resolute Bay is home to the CF Arctic Training Centre, developed as a partnership between the Canadian Army and Natural Resources Canada.⁸⁸

The deployable support hub will operate on a concept similar to the DART. The equipment would be pre-determined and readied for air transport and the personnel identified and trained. A key component of the deployable support hub equipment would be a Relocatable Temporary Camp along with integral communications capability. A small contingent of personnel that are trained and on a high readiness posture would need to be identified to deploy with and activate the support hub. The logical place to store the necessary equipment is at 8 Wing Trenton – the home of Air Mobility. Having the equipment for the

deployable support hub co-located with the strategic airlift capability at Trenton would facilitate a rapid deployment. 8 Wing Trenton has the experience and expertise to facilitate a short-notice deployment as well as the Air Mobility resources required for the deployment.⁸⁹

The deployment of the DART to the Philippines in November 2013 is a recent example of the deployable support hub concept. The DART equipment is warehoused at 8 Wing Trenton for rapid deployment via strategic airlift. When the DART was activated, the equipment was moved from the warehouse and loaded onto CC-177 for airlift to the theatre of operations, in this case Iloilo on the south side of Panay Island in the Philippines. Once it arrived at Iloilo, the equipment was taken off of the CC-177 and put onto trucks for a road move to Roxas City on the north side of Panay Island because the runway at Roxas City was not able to support the weight of the CC-177. From there, utility airlift, in the form of CH-146 Griffon, was able to further deploy critical aid to outlying areas that were not accessible by road.⁹⁰ Likewise, in the Arctic response scenario, the deployable support hub equipment to support a Northern response would also be stored at Trenton and deployed via strategic airlift to one of the four pre-selected hubs.

The hub will provide the logistical support of the response.⁹¹ In the case where the incident site is not located near the hub or CC-177 capable airfield, it will also serve as the nexus for staging and onward movement of the response. The footprint of the hub extends out to the combat radius of the CC-138 Twin Otter, as depicted in figure 5.2.

The effective footprint of the hub is further expanded by inclusion of the CC-130J to further project the response to the many CC-130J capable airfields and the CC-138, which has the capability of providing mobility of personnel and limited equipment to unprepared landing zones. The establishment of the hub and spoke method from these four pre-selected airfields does not preclude direct delivery to operations that are located at or very nearby other CC-177 capable airfields; it simply gives a pre-planned option to support the rapid

deployment of a CAF or an integrated, WOG response. As the operation develops, other more tailored arrangements could be put into place to support the response.

As an example of the concept, consider a response to Sachs Harbour on Banks Island in the Western Arctic. This location would be a challenging area to project a response to and highlights the importance of a multi-fleet Air Mobility capability in the Arctic. The airport at Sachs Harbour cannot support CC-177 operations at this time. Upon the decision to deploy a response to Sachs Harbour, the deployable support hub and personnel would be readied for CC-177 airlift to Inuvik NT. Once on the ground, the deployable support hub would be set up and activated (including any pre-arranged support contracts). The activated support hub would facilitate the reception, staging and onward movement of the response to the area of operations. Concurrent to the deployment of the support hub, the directed response (whether a CAF-led defence task or CAF support to OGDAs) would be called upon to deploy. JTFN, in Yellowknife, would be given the task of executing the CAF mission and depending on the complexity and duration of the response may move a headquarters element forward to the area of the operation. Although JTFN, as the Regional Joint Task Force Commander under CJOC, is responsible for CAF operations in the Arctic,⁹² resources for any sizeable response would need to be provided from a southern garrison such as Edmonton. Again, Air Mobility would be the critical enabler to transport resources from a southern base to the deployed support hub in Inuvik. From Inuvik, the response would be sent to the area of operation in Sachs Harbour via CC-130J aircraft. CC-138 would provide Air Mobility support from Sachs Harbour to further extend the footprint of the deployed response if the area of operation was not accessible by land.

Conclusion

Strategic policy documents clearly define the government's expectations of the CAF as a key component of the government's integrated approach to Arctic sovereignty. To be an effective partner in the government's integrated

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approach, the CAF is expected to play a central role in supporting an integrated response. The RCAF can provide Air Mobility support enabling the CAF to support the projection of a meaningful and timely government response anywhere across Canada's vast and austere Northern region. For the most part, OGDAs will have the lead for the government response for a crisis in the Arctic. However, the CAF will be instrumental in providing unique capabilities to support such a response in the harsh and austere conditions of the Canadian Arctic and Air Mobility will be an essential enabler.

The challenge for the CAF lies in the enormous area of Canada's Arctic. The Northern region of Canada is sparsely populated and lacks the infrastructure needed to support anything more than the most basic response from the south. The challenges of operating in the North are very similar to, and in some ways more challenging than, expeditionary operations. The lack of robust lines of communications and logistical support means that any integrated response must be self sufficient so as not to be a burden the local communities. The ability to move personnel and equipment from southern based garrisons via ground transportation is, for all intents and purposes, non-existent as many of the communities are only accessible by air (or in the best case scenario by seasonal winter roads or waterways).

The small size of Canada's military, coupled with fiscal realities, make it impossible for the CAF footprint to have persistent coverage of the entire Arctic. To overcome this challenge, the CAF will rely on organic mobility resources to project a southern-based Government of Canada integrated response into the North. The RCAF Air Mobility capability can serve as a foundation to meet the challenge of projecting an integrated response from the south to any location in the Arctic. The generation of a deployable support hub and establishment of pre-arranged support contracts at four strategic CC-177 capable locations (Inuvik, Yellowknife, Resolute Bay, and Iqaluit) across the Arctic will allow the CAF to rapidly deploy as the lead of or support to an integrated response to a Northern crisis. Through the use of a multi-fleet hub and spoke approach, Air Mobility can be the critical force multiplier that

enables the response to be projected anywhere in the Arctic. The CC-177 Globemaster will provide the strategic airlift of the deployable hub as well as the resources required for the response to one of the four CC-177 capable hub locations. If the area of operations is not co-located with the hub, the CC-130J Hercules and/or CC-138 Twin Otter (and in the near future CH-147 Chinook) capability could be used to further extend the footprint of the response beyond CC-177 capable airfields. With a small investment in a pre-packaged deployable support hub and the establishment of pre-arranged support contracts, Air Mobility can be leveraged to provide the CAF with the ability to deliver or support a meaningful and timely Government of Canada response anywhere in Canada's Arctic.

As the effects of climate change are manifested, the Arctic will continue to be at the forefront of the Government of Canada agenda. Historian Richard Goette observes that, “the Arctic – and in particular, greater access to it due to a melting polar ice cap and the resulting apprehensions regarding sovereignty – will be a major concern for the Canadian government and the Canadian [Armed] Forces in the decade ahead.”⁹³ The expeditionary experience of the CAF in Afghanistan over thirteen years, and particularly the RCAF's ability to support deployed operations over great distances, will be invaluable as Canada's Arctic theatre of operations matures. Air Mobility can be expected to play a major role in the renewed focus on Arctic sovereignty and the government's integrated approach to the North.

Notes

¹ This chapter is derived from the author's Master in Defence Studies research paper on “Leveraging Air Mobility to Support Canadian Arctic Sovereignty” (Canadian Forces College, December 2014).

² P. Whitney Lackenbauer and W. A. March, “Introduction” in *De-Icing Required! The Historical Dimension of the Canadian Air Force's Experience in the Arctic*, Sic Itur Ad Astra: Canadian Aerospace Power Studies vol.4, ed. P. Whitney

Lackenbauer and W.A. March, (Ottawa: Her Majesty the Queen as represented by the Minister of National Defence, 2012), vii.

³ Throughout this study, as in many publications, the North and Arctic are used interchangeably.

⁴ Public Safety Canada, *Federal Emergency Response Plan* (Ottawa: Public Safety Canada, January 2011), A-9; Department of National Defence (DND), *Arctic Integrating Concept*, (Winnipeg: 17 Wing Publishing Office, 2010), Appendix A.

⁵ Recent Canadian policy positions indicate a more holistic WOG approach. This current approach relies upon the military to defend Canadian sovereignty as well as act as a key component of a Government of Canada integrated response to a crisis in the Arctic. The work of Whitney Lackenbauer recognized the importance of relationships in Canada's approach to the Arctic. This approach extends from the grassroots partnerships at the community level and extends to the need to combine defence and diplomacy in forging a sustainable strategy for the Arctic. P. Whitney Lackenbauer, "Introduction," in *Canada and the Changing Arctic – Sovereignty, Security, and Stewardship*, (Waterloo: Wilfrid Laurier University Press, 2011), 3. The sense is that despite the increased focus on the Arctic over the past decade, there is still much to be done. The policies of the current government are a good starting point but will require a commitment to a WOG, integrated approach in the Arctic. Ken S. Coates, P. Whitney Lackenbauer, William Morrison, and Greg Poelzer, *Arctic Front: Defending Canada in the Far North* (Toronto: Thomas Allen Publishers, 2008), 189-217.

⁶ National Defence and the Canadian Armed Forces, "Yukon count on the Immediate Reaction Unit," last modified 16 August 2013, <http://www.forces.gc.ca/en/news/article.page?doc=yukon-count-on-the-immediate-reaction-unit/hkfnhjuy>.

⁷ A recent example was the response to the flooding in Southern Alberta in the spring of 2013. This was facilitated by the relative ease of mobility on southern infrastructure and the immediate availability of tactical aviation that was in the area and at the disposal of the Joint Task Force Commander. National Defence and the Canadian Armed Forces, "Operation LENTUS 13-01," last accessed 17 Nov 2014, <http://www.forces.gc.ca/en/operations-canada-north-america-past/op-lentus-13-1.page>.

⁸ Lackenbauer lecture, "The Canadian North: Past, Present and Future," History 380 Final Lecture, slide 8, last accessed 2 October 2014, http://www.lackenbauer.ca/Hist380/PPT/11-climate_change-w14.pdf.

⁹ Privy Council Office, *Securing an Open Society: Canada's National Security Policy*

(Ottawa: Privy Council Office, 2004), viii.

¹⁰ DND, *Canada First Defence Strategy*, (Ottawa: Government of Canada, 2008), 7-8; DND, *Arctic Integrating Concept* (Winnipeg: 17 Wing Publishing Office, 2010), 45-46.

¹¹ Rob Huebert, “Canada and the Changing International Arctic: At the Crossroads of Cooperation and Conflict,” 22, last accessed 22 December 2014, <http://irpp.org/wp-content/uploads/2008/09/huebert.pdf>.

¹² DND, *Arctic Integrating Concept*, 41.

¹³ George Macdonald, “Force Requirements (Air)” in *Defence Requirements for Canada’s Arctic*, ed. Brian MacDonald (Ottawa: Conference of Defence Associations Institute, 2007), 112. LGen (ret) McDonald is former Deputy Commander-in-Chief of NORAD and Vice-Chief of the Defence Staff.

¹⁴ Rob Huebert, “Renaissance in Canadian Arctic Security?,” *Canadian Military Journal* 6, no. 4 (Winter 2005-2006): 17-29, <http://www.journal.forces.gc.ca/vo6/no4/north-nord-eng.asp>. Lackenbauer frames the Canada First strategy in the context of a WOG integrated approach. He states: “There is no conventional military threat to our Far North, nor will Canada solve its boundary disputes with the force of arms. We need to invest in military capabilities so that the CF can operate in all parts of the country and play a supporting role to civil authorities, particularly the Canadian Coast Guard (CCG) and the RCMP.” P. Whitney Lackenbauer, “From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World,” *Foreign Policy for Canada’s Tomorrow*, no.3 (Toronto: Canadian International Council, 2009): 20.

¹⁵ DND, *CDS/DM Directive for the DND/CF in Canada’s North* (Ottawa, 12 April 2011), 1.

¹⁶ *Ibid*, 11.

¹⁷ P. Whitney Lackenbauer, “From Above: The Royal Canadian Air Force and the Evolving Arctic Security Environment,” *Airforce Magazine* 37, no. 4 (2014): 7.

¹⁸ Tony Balasevicius, “Toward a Canadian Forces Arctic Operating Concept,” *Canadian Military Journal* 11, no. 2 (Spring 2011): 27, <http://www.journal.forces.gc.ca/vo11/no2/doc/05-balasevicius-eng.pdf>.

¹⁹ Imaituk Inc., “A Matter of Survival – Arctic Communications Infrastructure in the 21st Century,” 30 April 2011, 57-63, available at http://www.aciareport.ca/resources/acia_full-v1.pdf; Lackenbauer, “From Above,” 8; DND, *DRDC-CORA TM 2010-170, Modeling and analysis of Canadian Forces RSOM hub for Northern Operations* (Ottawa: DND Canada, 2010), 5.

²⁰ Anneta Lytvynenko, "Arctic Sovereignty Policy Review," Prepared for the Ad Hoc Committee of Deputy Ministers on the Arctic, (Ottawa: 5 April 2011), 14; Lieutenant-General Ken Penny, "Transforming Canada's Air Force: Vectors for the Future," *Canadian Military Journal* 5, no. 4 (Winter 2004-2005): 43, <http://www.journal.forces.gc.ca/vo5/no4/doc/5-4-07-eng.pdf>.

²¹ Mike De Souza, "Harper says full protection of Arctic impossible," Postmedia News, Nunatsiq Online, 23 August 2010, last accessed 14 December 2014, http://www.nunatsiqonline.ca/stories/article/65674harper_says_full_protection_of_arctic_impossible/.

²² Robert A. Logan, "Air Board, CAF, RCAF," Canadian War Museum Paper No. 2, (Ottawa: August 1972), 80. See also P.W. Lackenbauer and K.C. Eyre, *Unfurling the Red Ensign in the Canadian Arctic: The 1922 Eastern Arctic and 1927-28 Hudson Strait Expeditions*, Documents on Canadian Arctic Sovereignty and Security (DCASS) No. 3 (Calgary and Waterloo: Centre for Military and Strategic Studies/Centre on Foreign Policy and Federalism, 2015).

²³ Ernest Cable, "Air Force: Leader in the Arctic" in *De-Icing Required!* ed. Lackenbauer and March, 3-7.

²⁴ Richard Goette, "The *Roundel* and Building RCAF Arctic Air-mindedness During the Early Cold War," in *De-Icing Required!*, ed. Lackenbauer and March, 55.

²⁵ Sean M. Maloney, "Canada's Arctic Sky Spies: The Director's Cut," *Canadian Military Journal* 9, no. 1, 76-77, <http://www.journal.forces.gc.ca/vo9/no1/doc/11-maloney-end.pdf>.

²⁶ Coates et al, *Arctic Front*, 63.

²⁷ Joseph Jockel, *No Boundaries Upstairs: Canada, the United States and the Origins of North American Air Defence, 1945-1958* (Vancouver: University of British Columbia Press, 1987).

²⁸ Maloney, "Canada's Arctic Sky Spies," 79, 86.

²⁹ Daniel Heidt and P. Whitney Lackenbauer, "Sovereignty for Hire: Civilian Airlift Contractors and the Distant Early Warning (DEW) Line, 1954-1961," in *De-Icing Required!*, ed. Lackenbauer and March, 117.

³⁰ House of Commons, Standing Committee on National Defence, *Minutes of Proceedings and Evidences*, no. 59, Thursday, November 29, 2012, 16:30.

³¹ Dany Poitras, "Search and Rescue in the Arctic a Myth or Reality?" (Masters in Defence Studies, Canadian Forces College, 10 April 2013), 39-48. The SAR

Technician Team Lead lost his life in the rescue. These case studies are discussed further in Poitras' chapter in this volume.

³² DND, *Arctic Integrating Concept*, 14-15; Balasevicius, "Toward a Canadian Forces Arctic Operating Concept," 22.

³³ P. Whitney Lackenbauer, "Canada's Northern Defenders: Aboriginal Peoples in the Canadian Rangers, 1947-2005," in *Canadian Arctic Sovereignty and Security: Historical Perspectives*, ed. Lackenbauer (Calgary: Centre for Military and Strategic Studies, 2011), 345.

³⁴ DND, *Arctic Integrating Concept*, 44-45.

³⁵ Lackenbauer, "From Above," 8; DND, *Arctic Integrating Concept*, 44.

³⁶ DND, A-GA-007-000/AF-008, *Air Force Vectors – Abridged Version* (Ottawa: DND Canada, 2014), 17.

³⁷ DND, B-GA-400-000/FP-000, *Canadian Forces Aerospace Doctrine 2nd ed.* (Ottawa: DND Canada, 2010), 28.

³⁸ *Ibid*, 15, 28.

³⁹ DND, B-GJ-005-300/FP-001, *CFJP 3.0 Operation* (Ottawa: DND Canada, July 2010), 2-2.

⁴⁰ DND, *Canadian Forces Aerospace Doctrine*, 15.

⁴¹ *Ibid*, 14.; DND, *Arctic Integrating Concept*, (Winnipeg: 17 Wg Publishing Office, 2010), 44; Macdonald, "Force Requirements (Air)," 112.

⁴² Imaituk Inc., "A Matter of Survival – Arctic Communications Infrastructure in the 21st Century," 56.

⁴³ C.L. Gardner, *Investigation of a Photovoltaic/Battery Hybrid System for Powering the Arctic Data Communications System Final Report*, (Ottawa: DND, August 1989), 1.

⁴⁴ Balasevicius, "Toward a Canadian Forces Arctic Operating Concept," 22.

⁴⁵ Coates et al, *Arctic Front*, 169.

⁴⁶ By contrast, infrastructure and commercial services that can be leveraged in southern Canada. Such an example is the CAF response to a request for assistance by the province of Alberta in June 2013. The provincial capabilities were overwhelmed by flash flooding in the southern Alberta. While there were some Air Mobility requirements in this operation, the bulk of the response was deployed via ground lines of communication and local commercial resources could be leveraged for logistical support. National Defence and the Canadian Armed Forces, "Operation Lentus 13-1," last accessed 14 December 2014,

<http://www.forces.gc.ca/en/operations-canada-north-america-past/op-lentus-13-1.page> .

⁴⁷ DND, *DRDC-CORA TM 2010-170, Modeling and analysis of Canadian Forces RSOM hub for Northern Operations*, (Ottawa: DND Canada, 2010), 5.

⁴⁸ DND, *Arctic Integrating Concept*, 41, 45.

⁴⁹ Balasevicius, "Toward a Canadian Forces Arctic Operating Concept," 27.

⁵⁰ DND, *Arctic Integrating Concept*, 47.

⁵¹ Coates et al, *Arctic Front*, 169.

⁵² DND, *Arctic Integrating Concept*, 39.

⁵³ Ibid, 47; Lackenbauer, "From Above," 8.

⁵⁴ Rob Huebert warns that the economic impact of any military buildup must be carefully monitored as the plans are implemented. CBC News, "Canadian Forces may need U.S. help supplying the Arctic," CBC News, last updated 14 November 2011, <http://www.cbc.ca/news/politics/canadian-forces-may-need-u-s-help-supplying-arctic-1.1100050>.

⁵⁵ Ibid; DND, *Arctic Integrating Concept*, 48.

⁵⁶ Joseph T. Jockel, *Security to the North – Canada-U.S. Defense Relations in the 1990s* (East Lansing: Michigan State University Press, 1991), 120.

⁵⁷ De Souza, "Harper says full protection of Arctic impossible."

⁵⁸ Maj Marc Fortier (CJOC J5 Lead Planner for Operation NANOOK from October 2012 to June 2014), telephone conversation with author, 15 December 2014.

⁵⁹ Balasevicius, "Toward a Canadian Forces Arctic Operating Concept," 27.

⁶⁰ Ken Pole, "Not Your Grandfathers' Chinook," *RCAF Today*, Spring 2014, 46-57. The Chinook has roughly the same combat radius as the CC-138 Twin Otter, and it brings the added capability of being able to sling loads that may not fit inside of a CC-138 Twin Otter. The CH-147 Chinook is also air transportable via the CC-177 with some relatively minor disassembly. This will make it a valuable piece of the RCAF mobility capability in the years to come.

⁶¹ Normally, strategic airlift (also known as inter-theatre airlift) are those flights that move personnel and equipment between theatres of operation and tactical airlift (also known as intra-theatre airlift) are those flights that move personnel and equipment within a theatre of operations. In the case of the Canadian domestic theatre of operations, it is so large that some airlift missions, although remaining within the domestic theatre of operations, are termed strategic missions. DND, B-

GA-404-000-FP-001 *Canadian Forces Aerospace Move Doctrine* 1st ed. (November 2011), 15.

⁶² Royal Canadian Air Force (RCAF), “CC-177 Globemaster III: Transport Aircraft,” last accessed on 9 November 14, <http://www.rcaf-arc.forces.gc.ca/en/aircraft-current/cc-177.page>; T.F.J. Leversedge, *Canadian Combat and Support Aircraft: A Military Compendium*, (St. Catharines: Vanwell, 2007), 245.

⁶³ DND, *Airlift Capability Project Strategic (ACP-S) Statement of Operating Intent (SOI)*, version 1.1, (Winnipeg: 1 Canadian Air Division, 17 December 2008), 1, 4-5.

⁶⁴ T.F.J. Leversedge, *Canadian Combat and Support Aircraft: A Military Compendium* (St. Catharines: Vanwell, 2007), 245.

⁶⁵ RCAF, “CC-177 Globemaster III: Transport Aircraft.”

⁶⁶ Bob Weber, “Canada’s aging Arctic airports reducing service to northerners, pilots say,” *The Star*, 2 June 2013.

⁶⁷ RCAF web page, <http://www.rcaf-arc.forces.gc.ca/en/aircraft-current/cc-130j.page>, accessed on 9 November 2014; Leversedge, *Canadian Combat and Support Aircraft*, 247.

⁶⁸ DND, *Airlift Capability Project Tactical (ACP-T) Statement of Operating Intent (SOI)*, 5.

⁶⁹ Map generated by the Great Circle Mapper (www.gcmap.com) © Karl L. Schwartz.

⁷⁰ Ibid.

⁷¹ DND, *Canadian Forces Aerospace Move Doctrine*, 3.

⁷² Royal Canadian Air Force, “CC-138 Twin Otter: Transport / Search and Rescue Aircraft,” last accessed 9 November 2014, <http://www.rcaf-arc.forces.gc.ca/en/aircraft-current/cc-138.page>; T.F.J. Leversedge, *Canadian Combat and Support Aircraft: A Military Compendium* (St. Catharines: Vanwell, 2007), 145.

⁷³ Lieutenant-Colonel Ross Wuerth, “Commanding the 440 ‘Vampires,’” *Airforce Magazine* 37, no. 4 (2014): 26-27.

⁷⁴ DND, *Canadian Forces Aerospace Move Doctrine*, 28.

⁷⁵ Ibid.

⁷⁶ DND, *Canadian Forces Aerospace Doctrine* 2nd ed., 27, 29.

⁷⁷ Based on the author's experience as CC130 aircrew operating into Afghanistan - various periods from 2001-2005, Deputy Wing Commander for Joint Task Force Afghanistan from Feb – Nov, 2009, and 8 Wing (the home of the RCAF's Air Mobility) Operations Officer 2010 – 2012.

⁷⁸ Due to the vast size of Canada, NORAD has a series of four locations (Inuvik, Yellowknife, Rankin Inlet, and Iqaluit) that can extend the reach of NORAD fighter aircraft by providing bases for refuelling and maintenance as well as logistics support for the deployed force; Government of Canada, "NORAD Operations SPRING FORWARD concludes in Canada's North," last accessed 14 December 2014 <http://news.gc.ca/web/article-en.do?nid=838399>; Jockel, *Security to the North*, 120.

⁷⁹ Canadian Joint Operations Command (CJOC), *CJOC Plan for the North* (28 January 2014), A2-2/19 – A2-6/19.

⁸⁰ William Sparling, "SITREP: The Morning Light Has Been Extinguished," in *De-Icing Required!* ed. Lackenbauer and March, 129-139.

⁸¹ Richard Goette, "The *Roundel* and Building RCAF Arctic Airmindedness During the Early Cold War," in *De-Icing Required!* ed. Lackenbauer and March, 67.

⁸² James Fergusson, "Up in the Air, North of 60," *National Post*, 6 February 2013.

⁸³ Commander Joint Task Force (North), *Joint Task Force (North) Annual Activity Notification Letter for Fiscal Year 2014-15* (Joint Task Force (North): file 1003-1(IGA), 4 June 2014); Royal Canadian Air Force, "Operation Boxtop supplies remote Canadian station," last accessed 14 December 2014, <http://www.rcaf-arc.forces.gc.ca/en/article-template-standard.page?doc=operation-boxtop-supplies-remote-canadian-station/i1glwab3>.

⁸⁴ Jockel, *Security to the North*, 120.

⁸⁵ DND and the Canadian Armed Forces, "The Disaster Assistance Response Team (DART)," last accessed 16 December 2014, <http://www.forces.gc.ca/en/operations-abroad-recurring/dart.page>.

⁸⁶ Poitras, "Search and Rescue in the Arctic," 32, 72, 89.

⁸⁷ DND, *DRDC-CORA TM 2010-170, Modeling and analysis of Canadian Forces RSOM hub for Northern Operations*.

⁸⁸ Canadian Army, "New Arctic Training Centre boost's Army's presence in the North," last updated 15 August 2013, <http://www.army-armee.forces.gc.ca/en/news-publications/national-news-details-no>

[menu.page?doc=new-arctic-training-centre-boosts-army-s-presence-in-the-north/hkdontpd.](#)

⁸⁹ RCAF, “8 Wing Trenton,” last accessed on 14 December 2014, <http://www.rcaf-arc.forces.gc.ca/en/8-wing/index.page>.

⁹⁰ The author was on the initial Inter-Departmental Strategic Support Team reconnaissance for the Government of Canada response to the effects of Typhoon Haiyan on the Philippines. After the initial assessment and the government’s decision to deploy the DART, he remained as a Liaison officer to CJOC and then as the Canadian representative to the Multi National Coordination Centre located at Camp Aguinaldo in Quezon City (part of Metro Manila).

⁹¹ CJOC, *CJOC Plan for the North*, A2-2/19.

⁹² Canadian Armed Forces, “Canadian Joint Operations Command,” last accessed 14 December 2014, <http://www.forces.gc.ca/en/about-org-structure/canadian-joint-operations-command.page>.

⁹³ Richard Goette, “The *Roundel* and Building RCAF Arctic Air-mindedness During the Early Cold War,” in *Sic Itur Ad Astra: Canadian Aerospace Power Studies Volume 4: De-Icing Required! The Historical Dimension of the Canadian Air Force’s Experience in the Arctic*, ed. P. Whitney Lackenbauer and W.A. March, (Ottawa: Her Majesty the Queen as represented by the Minister of National Defence, 2012), 67.

6

A Matter of Survival: Arctic Communications Infrastructure in the 21st Century

Imaituk Inc.

Editor's Note: This Arctic Communications Infrastructure Report (30 April 2011) was sponsored by CanNor and prepared for the Northern Communications & Information Systems Working Group (NCIS-WG). After a serious breakdown in communications infrastructure during a 2009 exercise, the NCIS- WG was tasked by the Arctic Security Working Group to look into the communication issues evident in the North, and look at ways to help solve the problems. The NCIS-WG decided to cast a wide net - requesting that the Assessment gather input from not only emergency response, security and military organizations, but also government departments across the Arctic that struggle with providing adequate communications services. Excerpts are provided here, as edited by P.W. Lackenbauer (with permission). The full ACIA is available online at www.aciareport.ca.

The Arctic must have reliable communication networks to establish and maintain Canada's sovereignty, and to meet international obligations for ensuring safe passage for road, sea and air traffic. Emergency responders must have excellent communications ability to rapidly respond to both natural disasters such as earthquakes, and man-made tragedies that will surely occur as air and ship traffic increases with global warming. Canadians are becoming more reliant on communication services in every aspect of their lives, and the Arctic is no exception. Arctic residents must have reliable, affordable communications infrastructure to engage in 21st century opportunities -- many communities' long term survival will depend on it.

The Arctic Communications Infrastructure Assessment (ACIA) was originally inspired by emergency management and security organizations tasked with the security of the Arctic and its people. These organizations identified robust communications infrastructure as a critical foundation for establishing and maintaining the security of the Arctic. Without the ability to communicate effectively, any response to an emergency or threat of any kind would be compromised. Good communications can be a matter of survival for those involved - whether the emergency is personal, local, regional, or national. However, in an effort to look for inclusive solutions for some of the communications challenges facing the Arctic, this Assessment examines more than just emergency response and security organizations' issues. It also considers the communications challenges raised by a wide range of territorial and federal government departments operating in the Arctic. It also documents the existing infrastructure and highlights some of the concerns raised by communications service providers.

As people all over Canada become more and more reliant on communication services, the Arctic must keep pace in order to respond not just to emergencies, but to engage in all opportunities that new communications technologies bring. A reliable, affordable communication infrastructure is a fundamental requirement for all aspects of life in the Arctic today. The 100,000 Canadians living in the 75 communities across the Arctic play an important role for all of Canada. They help to maintain Canada's sovereignty over the Arctic, they provide a base and labour for resource exploration and extraction, knowledge on climate change, and are inextricably involved in emergency response, security and reconnaissance. These 75 communities provide a much-needed base for many of the activities that occur in the Arctic today. After all, when an emergency occurs in the Arctic, the people who live there are probably impacted by the emergency and are expected to be part of the solution.

The sovereign north needs a healthy, educated, connected population of Canadians living in the Arctic to be part of the solution for the rapidly changing Arctic environment for the good of the entire country -- and connectivity is a key part of the solution. Good communications in an emergency is a fundamental requirement. So too, is the requirement for routine modern communication services to Arctic communities -- it is a matter of survival.

Why an Arctic Communications Infrastructure Assessment?

In 2009, 'Exercise Operation Nanook' was conducted in the Canadian Arctic to test multi-jurisdictional response frameworks and identify opportunities for improving regional mitigation and response planning. The influx of out-of-territory personnel arriving in one community overloaded the local cell phone and Internet network, and severely hampered the communication capabilities of the emergency responders conducting the operation. One of the main issues identified by participating agencies Nanook was the vulnerability of communications networks in the Arctic. This exercise brought together the right combination of local and external emergency management and national security stakeholders to start examining ways to improve the communications infrastructure through a concerted federal-territorial effort. This Assessment is one of the results of this group's efforts to begin meeting the challenges of the Arctic's communications infrastructure.

Operation Nanook's profound communication failure kick-started the process of addressing the fragile infrastructure with the creation of the Northern Communications and Information Systems Working Group (NCIS-WG), created by the Arctic Security Working Group (ASWG). The ASWG was established to enhance the security and sovereignty of Canada's North through information sharing and cooperation among federal and territorial government departments, Aboriginal governments and organizations, NGOs, and other stakeholders operating in the North. It provides: a forum for information sharing and intelligence; a venue for the

coordination of activities; [and] a venue for planning activities and for testing response capabilities. The purpose of the NCIS-WG is to develop an understanding of communication capabilities in the North, assets that are available, identification of communications deficiencies and redundancies, and development of a timeline to address concerns/issues. It provides a forum for mutual discussion and development in the field of communications in the Arctic.

Members of the NCIS-WG recognize the fragility of the Arctic communications infrastructure affects more than military and emergency response capabilities. A fragile communications infrastructure also affects the ability of governments to properly provide healthcare and education services, build the economy, protect the environment, and provide good governance. Any successful solution to solving the communications infrastructure challenge involves many players. The NCIS-WG commissioned this Arctic Communications Infrastructure Assessment, with the hope that this report can be a stepping stone on the path to a more robust, stable, responsive Arctic communications system that can benefit both the local population and emergency responders in the future.

Government Needs Today

Federal and Territorial governments require reliable, affordable communication services within all communities and between communities to carry out their various mandates. There are approximately 2,000 federal employees working in the Arctic, with approximately 400 in Nunavut, 1,150 in the NWT and 550 in Yukon. The vast majority of Federal employees are located in the three regional capitals, with a handful of federal employees working in smaller communities (such as Parks Canada staff). The RCMP are an exception, with members stationed in almost every Arctic community, with significant numbers of staff (both members and Federal/Divisional units) in each of the three capitals.¹

Whole of Government through an Arctic Lens

The three largest federal departments (measured by full time employees) operating in the Arctic are Indian and Northern Affairs Canada with approximately 450 personnel split between the three territories, followed by the RCMP located in all communities, and the Department of National Defence with 245 full time employees mostly in Yellowknife. There are eight ‘mid-sized’ federal departments with between 50 and 100 personnel spread between the three territories, including CanNor, DFO, Environment Canada, HRSDC (Service Canada), Parks Canada, and Public Prosecution Services. Remaining federal departments with responsibilities in the Arctic have somewhere between no staff and 50, with the majority having less than 10 people spread out across all three territories.

Because of the vast differences between federal departments’ presence in the Arctic, their activities, and mandate, it is challenging to provide an overview that encapsulates the breadth and depth of federal communication needs. This proposal has divided the needs into two categories: federal departments requiring services in communities, and federal departments requiring communication services ‘in the field.’ Each section will illustrate these needs using examples raised by various departments in their efforts to meet their national objectives in the provision of federal services.

Federal Departments Requiring Services in Communities

Federal employees working in communities to deliver services need to be able to purchase affordable, robust communication services that allow them to communicate reliably with: other government agencies and the public within their community in person and via communication networks; federal offices in the south, interfacing with people, systems and software to carry out their mandate; [and the] public located in communities within their Territory via public communication networks. Federal employees who travel into communities to work (whether they are based in one of the capitals in the North, or are based in the South) need to be able to hook into local networks with their BlackBerries and laptops in order to maintain connectivity with their

head offices. Federal employees look to local commercial networks to connect to stay in touch with their head offices.

The RCMP is a unique federal agency from a communications perspective. They are the only department with permanent staff in all Arctic communities. All officers require 99.9% reliable communications capability into and out of every Arctic community no matter how small, in order for the RCMP to provide appropriate support to front line police officers. Another unique federal agency is the Canada Border Services Agency, which supports border agents along the Yukon-Alaska border in carrying out their duties. They require constant connectivity from remote border locations in order to conduct critical queries on travelers entering Canada, requiring robust networks that can communicate with southern servers. These sites are not typically located within existing communities, so CBSA cannot take advantage of any existing community-based commercial communication services.

Today, all federal employees working in Arctic communities require robust, reliable communication networks in their place of work (at their office or when visiting communities) that properly support voice and data connections in order to do their jobs.

Most of these federal departments rely on the existence of commercial services that can be purchased to meet their needs. In most cases, these connections are organized by southern IT specialists, who are responsible for providing services in many jurisdictions across the country, including the north.

Federal Departments Requiring Communication Services ‘In the Field’

Many federal departments must support seasonal researchers, emergency responders, and military personnel who travel in and out of communities and do work ‘on the land’ for extended periods of time. These staff are required to have communication services back to head office while ‘in the

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field.’ Examples of these types of activities include: collecting environmental data; responding to emergencies wherever they occur; tracking wildlife; [and] ensuring Arctic sovereignty. Additional communication networks are required for the collection and timely distribution of data so that people, ships and aircraft can travel more safely through the Arctic, such as providing navigational aid to ships and aircraft [and] monitoring weather.

These federal agencies need to be able to purchase communication services that work in all corners of the Arctic - both within communities and between communities. Examples of departments who engage in this ‘in the field’ communications work include Public Safety, Department of Fisheries and Oceans (including Coast Guard), Environment Canada (including Canadian Wildlife Services), NRCan, Parks Canada, Department of National Defence and NavCan.² Public Safety regional office needs to be able to connect with their northern/southern counterparts no matter what location they happen to be in at the time of an event. The Public Safety mandate is that of a coordination function, in which the regional office is the primary link for federal and territorial emergency management. Therefore this is why Public Safety concerns itself with ensuring emergency response organizations located throughout the territories are properly connected, and that systems used can interoperate with each other in the field in the event of an emergency. In the event of a large scale event such as a Major Air Disaster (MAJAID) or an earthquake, there are many levels of responders that would need to be coordinated and connected to ensure an efficient and timely response.

[The] Department of National Defence (DND) has over 200 staff stationed in Yellowknife as part of Joint Task Force North (JTFN). JTFN requires robust connectivity to DND headquarters in the south, similar to any other federal government office located in the north. DND has many initiatives and responsibilities that require advanced communication services in locations outside of communities. DND connects various remote Arctic military sites to DND headquarters, participates in search and rescue, and

are responsible for sovereignty up to the North Pole. DND maintains its own HF Radio system for communications, and uses a variety of satellite connections to link to headquarters.

The Coast Guard also has a wide range of responsibilities in the Arctic reliant on communication services. For example Coast Guard is required to provide internationally compliant communications system so that every vessel can report their information prior to entering and exiting Canada's northern waters. They must implement the Global Maritime Distress and Safety System in the Arctic, and provide vessel traffic services via VHF.

In Resolute Bay, Polar Continental Shelf researchers (under NRCan) use the local QINIQ service to link their researchers while in their base camp in Resolute. But due to the nature of their work, scientists returning from the field need to move many GB of data every day - reaching the bandwidth caps set by the publicly available network extremely quickly. They also need to be able to reach researchers just outside the community, outside of the local network's range. In order to solve the researchers' GB and coverage challenge, IT professionals from the Communications Research Centre (CRC) installed a custom-built network linked to a larger specialized KA band satellite dish that linked researchers to the Internet backbone over satellite. This local network was built entirely separately from the local system in order to solve the researchers' GB challenge. It is maintained by CRC staff in Resolute. The researchers also continue to maintain their local QINIQ accounts too.

In summary, federal agencies are directly responsible for activities in the Arctic that rely on both commercially-available connectivity within communities, and on communication networks outside of communities that must be developed specifically to meet Federal needs.

Yukon

Yukon has the most established communications infrastructure of the three Territories.³ Yukon is also the most road-connected Territory, with only one fly-in community. Their large network of roads also requires that they have communication services between communities to support traveling government employees, and to serve and protect the traveling public. Whitehorse, with a population of 26,761, is by far the largest community with 14 times more people than the next largest town of Dawson City with a population of 1,881. Of the remaining communities, only Watson Lake and Haines Junction has more than 500 people.

While Whitehorse dominates the territory from a population standpoint, the Yukon Government works to ensure all people in the territory have equal access to all programs offered by the government, no matter where people live.⁴ Yukon departments have implemented advanced digital government services that rely on a robust communications infrastructure. All departments are making use of their communications infrastructure to manage and deliver many programs and services. For example, Health and Social Services is implementing a digital x-ray program that relies on the movement of large digital files into and out of communities and to the south for analysis. Education connects 2,900 students and teachers in the 30 schools throughout Yukon. Justice, Health and Education all make extensive use of videoconferencing in the delivery of their programs, requiring significant bandwidth and low latency to operate. Emergency Measures and Protective Services have many initiatives that rely on robust communications, as they work to respond to, and prepare for emergencies in all locations in Yukon. This department has a vital need to connect responders between communities.

Northwest Territories

The Northwest Territories is the most populous territory, with the most significant difference in communication services within its borders.⁵ At one end of the scale, Yellowknife has the best communication access, while the 10

communities relying on satellite currently have the poorest government communication services. Yellowknife is the largest city at almost 20,000 people - almost half of the population. It is only 6 times larger than the next largest community of Hay River, which has 3,700 people. Other medium sized communities include Inuvik, Fort Smith, and Behchoko all with over 2,000 people. Fort Simpson has 1,200, and 10 other communities have between 500 and 1,000 people, some of which are served by satellite. This population distribution means that communication networks must support a good deal of traffic between communities within the NWT, as networks are required to support services to half of the population located outside of the capital.

The wide range of quality of communications services within the territory means that Government of the NWT (GNWT)⁶ efforts to launch new digital services must always consider which communities can be served and which cannot be served effectively in any new digital initiative. Many departments are working on new services that rely on robust communication networks. They would like infrastructure solutions to bring up the level of service in under-served communities, so that new services can be implemented everywhere equally. For example, Education connects over 8,000 students, teachers and parents in a Student Information System and e-learning programs. Health and Social Services have many initiatives that rely on good connectivity, and need to “bend the trend” of rising costs by looking at ways to deliver better services to everyone, at a lower cost. Efforts include increased telehealth for specialist connections, better electronic record management, increased computing radiography, and Telespeech projects in schools that link students by videoconferencing. According to the GNWT’s Technology Service Centre,⁷ Health and Education account for about 80% of all traffic on government networks.⁸

Nunavut

More than any other territorial jurisdiction, Nunavut’s government relies on a robust communication infrastructure in order to operate efficiently.⁹ Nunavut took a decentralized approach when setting up its government in 1999, to

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share government employment opportunities with as many communities as reasonably possible. So while the capital of Iqaluit has the most government employees, many departments' headquarters and regional offices are located in the ten 'decentralized' communities.¹⁰

Nunavut has an entirely different dynamic in terms of the relationship of the capital to other communities, simply because of the way the population is distributed. Iqaluit represents only 21% of the total population of Nunavut, with 7,000 people out of 33,000. The next largest community, Rankin Inlet, is just under half the size of Iqaluit, with 2,730 people. In contrast, Whitehorse has more than 75% of the population of Yukon, and has 14 times more people than the next largest community. Yellowknife accounts for almost half the population of the NWT, and has 6 times more people than the 2nd largest community. Of the 24 communities in Nunavut (not including Iqaluit), 2 communities have over 2,000 people, 8 communities have over 1,000 people, 8 have between 500 and 1,000 people, and only 5 communities have under 500 people.

Clearly, connectivity to meet government's ability to operate effectively is a top priority to carry out the internal work of government, due to the decentralized nature of the government offices. Educators need distance education tools. Human resources requires intelligent systems for managing human resources. Every department wants to make use of videoconferencing to reduce costs and improve access to services. But currently most of these initiatives are not yet implemented.

The good news is that all 25 communities face essentially the same basic infrastructure challenges, since all are served by satellite. This means that when planning service delivery, Nunavut can choose systems that if they work in Arviat, they can be made to work in Grise Fiord. The bad news is, that due to their infrastructure challenges and overall youth of their government, they have not yet been able to take advantage of many of the digital services being developed in the NWT and Yukon yet.

Nunavut also has the added challenge that the majority of people speak Inuktitut as their first language, with a significant portion of the population unilingual Inuktitut speakers. All public services must be available in Inuktitut and English, and are also often offered in Inuinaqtun and French which are also official languages in Nunavut. In addition, Inuktitut in the Kivalliq and Baffin region use a syllabic font, (not roman orthographic that is universally recognized by computers) requiring all software to recognize unicode in order for Inuktitut to be sorted and displayed properly over digital communication tools. The need for using a syllabic writing system adds another level of complexity when managing databases in Inuktitut and communicating over the Internet.

Issues Today

Government participants and service providers outlined many of the challenges and issues they face today, in attempting to use and develop a communications infrastructure that can properly serve the Arctic. To put the specific Arctic issues in context, there are three fundamental challenges that weave their way through [the main issues identified in the report].

Challenge 1: Economically Challenging Region to Serve

First and foremost, it should be recognized that the Canadian Arctic is an extremely high cost area to serve. With difficult terrain, vast distances, a short construction season, and a very low population of 100,000 people spread out over 75 distinct communities on more than 1/3 of Canada's land mass, it should be no surprise that the market cannot sustain the development and maintenance of a robust 21st century communications network. The geographic facts make the entire Arctic region a challenge from an economic perspective for building, maintaining and evolving communication services that meet users' needs at an affordable price. Over half of the Arctic communities have no road links at all, necessitating a 100% reliance on satellite. Even road linked communities suffer, as huge distances, difficult

terrain, and few customers means minimal investment in redundancy and upgrades to meet rising customer needs. This makes it very difficult for commercial service providers to deliver affordable, ubiquitous communication services across the North.

Challenge 2: Rapid Pace of Technological Change

The existing network investment models in the North are not meeting the rapid pace of increasing change and convergence of communication services available in the South. The existing subsidy models do not evolve fast enough to reflect Northern users' needs for critical modern communications services, nor allow for service providers to respond. Competition and cross-subsidy models have failed to properly provide needed funds for new networks and upgrades that support new technologies in economically challenging regions. Service providers operate in an extremely uncertain environment, with both technological change and funding changes that are unpredictable, making it difficult to invest and plan for the future. There have been targeted, one-off investments to northern networks from various government programs aiming to provide public access, or upgrade networks for government use. This has unintentionally led to uneven access within territories and between territories and the South, increasing service parity gaps in access to new communication services.

Challenge 3: No Comprehensive Arctic Communications Infrastructure Strategy

There is currently no comprehensive strategy for connecting all Arctic communities to the level of service required within communities or between communities. There is no comprehensive needs analysis across the territories, nor are there specific targets setting out the minimum level of 21st century communication services an Arctic community needs to thrive. There is no organization responsible for ensuring all Arctic communities get connected, nor are there appropriate funding models for the development of services to meet the needs of government or the public. The territories and federal

government departments buying services often work in relative isolation from each other in attempting to address their internal user needs. Economic development-focused government agencies attempting to address the needs of the public and business for affordable access work independently of the departments purchasing services to meet government needs. Without a comprehensive investment strategy that addresses the unique cost challenges for building, maintaining and evolving services for the region, communication networks will not be able to keep pace with change and user needs.

Overall Result: Inadequate Communication Services in the Arctic

Since 1996, government investors (both as users and investors for public access), service providers and community organizations have struggled to finance, upgrade and build the networks needed to use 21st century communication tools. The geographic reality, historical approach to new communications network development, and the rapid pace of technological change and its corresponding expectations have combined to create an Arctic communications infrastructure that is inadequate to meet current needs and future needs.

It is clear from the data that Arctic access to communication services is not keeping pace with southern access to communication services. This is not simply a matter of people having to wait an extra few seconds or even minutes to get a web page to load. It is the difference between being able to actually do the job at hand, or not being able to do it at all. Service availability in Yukon is somewhat faster than the other two territories, even service to Whitehorse, arguably the best-served location in the Arctic, is falling further and further behind what is available in southern communities of similar size and importance within a region. Whitehorse currently has the ‘gold standard’ of communication services in the Arctic - but it is not keeping pace with southern services.

Whole of Government through an Arctic Lens

Many federal departmental representatives in the Ottawa visioning workshops had examples of being unable to adequately support their staff in the Arctic regions to the same levels as southern federal employees. New software is often designed to run on networks assuming typical fiber speeds and latency, presenting challenges to both southern and northern IT support personnel. One southern participant reported that they frequently fly northern federal employees south to learn new virtual desktop applications for data entry and retrieval into national systems. When they return to the North, these applications do not work the way they did on southern networks because of bandwidth constraints, and so they are unable to interact with the data effectively. There are many examples of direct support from southern employees to northern employees that rely on robust communication networks. From Environment Canada and Correctional Service of Canada (CSC) staff to military personnel and Canadian Border Service Agency agents, all require access to communication support services and data that originate in the South.

Territorial governments also experienced challenges being able to take advantage of broadband tools that assume higher levels of connectivity than what is available in all three territories. Territorial governments need reliable communication networks for its citizens that are on par with southern cities. They cannot operate effectively with less.

When focusing on the gap between North and South, it is easy to overlook the challenges within the North itself, where communication infrastructure services are unequal between communities. Whitehorse and Yellowknife do not have service parity with the South in terms of speed, latency and affordability. But many of the communities within their territories have significantly poorer connections than the capitals. So when new programs are introduced by territorial governments, difficult decisions have to be made. Should the government invest in software that can work in Whitehorse to deliver a service that might not work in Old Crow? Do people in Sachs Harbour have access to the same level of government services as are available in Yellowknife?

We already accept that people in smaller communities do not have the same level of physical access to services locally, such as tertiary care hospitals, government offices or brick-and-mortar banks. But robust communication infrastructure to smaller communities offers the potential of narrowing the gap between service delivery in larger centres and smaller centres. Yet when communications services cannot support the necessary access to smaller communities, options for alternative delivery of services using new communications tools are not available.

As federal and territorial governments implement more and better services that rely on broadband networks, the gap will only expand between well-connected and poorly connected communities. If poorly-connected communities consistently do not receive basic services that become available elsewhere via high speed networks, one could argue the very existence of these communities are threatened over the long term, as traditional service delivery (paper/fax based, fly-in, or even lack of access entirely) become unacceptable or unsupported alternatives.

Access to modern networks will not necessarily result in increased opportunity in every facet of community life. However, lack of appropriate access will ensure that communities cannot take advantage of what better communications access can help to provide - including improved health care, education, business opportunities, governance, engagement in development, and the hope of a better future for residents.

Inadequate Geographic Coverage

Another issue identified by NCIS-WG was lack of geographic coverage between communities, with over 40% of survey respondents identifying it as an issue. The departments most concerned with lack of coverage between communities included emergency responders, military, environmental researchers, and some sites where government workers are required to work

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outside of communities. For example, when someone from Alaska is crossing the border into Yukon, Canada Border Service Agency agents man the remote border crossings, outside permanent communities. Agents must reference the Critical Query Service (that is served from the South) to determine a person's eligibility to cross the border. They are unable to reliably connect to the southern server with their consumer satellite service, and are routinely forced to use satellite phones to call in the request to another CBSA person to log onto the system to look up the information, causing delays and security challenges at the Yukon/Alaska borders.

Most government access to services on the land in NWT and Nunavut use Iridium satellite phones or temporary Ka-band satellite dish setups. [However,] satellite phones don't have enough bandwidth to enable use of network-based applications required for everything from highway patrol to researchers. In the NWT, bioresearch is conducted on the land. In an ideal world, researchers would be able to collect the data on site, and upload it. Instead, they cache data, and forward it when they return to communities. Much of this information is not time-sensitive, but they need to be able to connect within communities. For safety reasons, they also require communications with the researchers to ensure safety while they are on the land.¹¹

Cell coverage along highways in NWT and Yukon is not readily available. This was an issue raised by participants in Yukon, as a goal to be met in the future. In Yukon, government workers traveling the highways frequently use HF radio systems if necessary.

In emergencies, there is a huge need for connectivity between communities. In the Yukon, the government invested in a new digital MRS (Mobile Radio System) for law enforcement agencies, emergency services, health officials, and transportation services.¹² The new system was put to the test in a recent exercise simulating an earthquake in Dawson City. Technically, the MRS system worked, but users of the system had to follow specific procedures for using the system or communications quickly broke down. With frequent use of

the system by all responders, the MRS will become an important communications tool for first responders in Yukon. It will be important that the system is used widely, that there be many exercises in preparation for an event, and that strict protocols are followed to ensure the system supports the communications needed.¹³

[Canadian] Rangers and reconnaissance teams deployed by military operating in the field carry groundwave HF radio systems gear, plus Iridium phones connected by satellite. Each night Rangers are required to set up and call in their coordinates. Setting up the HF Radio takes time, but it operates at a fraction of the cost of the Iridium phones, so people in the field continue to rely on HF Radio gear for every day communications to keep costs in check. This older HF radio service covers much of the Arctic for military use, with a number of coverage holes. The military is considering putting in a new capital project to upgrade its HF radio system across the entire Arctic with a new digital HF radio system. This system could be made available to other federal and territorial government departments to use.

As governments determine they need better geographic coverage, lessons can be learned from one agency to another. For example, Yukon's MRS system is the newest mobile radio system. The service provider, together with Yukon government officials responsible for using the system may offer the NWT, the military and Nunavut some insights into how they deployed the new digital system, made use of repeater station technology in cold weather, and challenges in protocol linking non-military users of mobile radio services. [Furthermore,] emergency responders are experimenting with a wide range of satellite-connected systems which may be applicable across a wide range of users.

Emergency Response Challenges

Emergency situations are dealt with first by individuals. If they become overwhelmed they call upon local officials (i.e. ambulance professionals, hospitals, fire departments, police and municipalities). When a primary responder is called upon to respond to an emergency situation they do so as a

normal course of business. When the emergency exceeds the normal capability of primary responders or lead agency, the local government authority (such as Hamlet, Town, City) calls upon the Territorial Government to respond.

The initial assessment of the incident, the development of short and long-term action plans, the assignment of resources to priority needs and the provision of urgent care and support to the community must be coordinated. If a local government or municipality is called upon to respond to an emergency situation they may choose to activate their local Emergency Operations Center (EOC) to help manage the emergency. When an emergency is beyond the ability of the lead agency or local government, Emergency Management Organizations (EMO) becomes involved. The Director of Territorial Emergency Management Organizations may then activate Territorial Emergency Operations Centre (TEOC) and Emergency Coordination Groups in order to pool government and community resources and personnel to manage the emergency situation.

EMOs are responsible for coordinating the territory's preparedness for, response to, and recovery from, major emergencies and disasters. Historically, emergency situations in the North have involved fires, floods, power failures, toxic spills and extreme weather, although other hazards exist. As the territorial authority for emergency preparedness, it is incumbent upon EMO to provide leadership to ensure that the appropriate contingency plans are in place to deal with foreseeable risks and hazards. Under the general coordination of EMO during an emergency, departments will implement departmental plans that provide an internal system for notification of key departmental personnel and coordination of departmental responsibilities in emergencies.

Federal departments frequently manage emergencies or provide support to a territory for events related to their specific mandate, within their own authorities and without requiring coordination from Public Safety Canada. However, territorial representatives share pertinent information with the Government Operations Centre and Federal Coordination Centre in order to maintain situational awareness.

For emergencies requiring an integrated Government of Canada response, the Public Safety Regional Office coordinates the response on behalf of federal government institutions in the region. This is known as the “single window” concept. It is intended to facilitate interdepartmental and intergovernmental coordination, without unduly restricting operations.

During an emergency the respective regional Federal Emergency Coordination Group (FECG) is the primary means for consultation, emergency management planning, advice and provision/management of information flow and requests for federal assistance within a region.

The Public Communications Coordination Group is comprised of federal and territorial public communicators from affected government departments, who work together and in partnership to enable horizontal coordination in responding to an emergency. Primary activities include: information gathering, advising senior officials, providing regional context and input to public communications products being delivered, [and] providing support for and delivering their department’s activities and products.

Robust, reliable communication tools to link the various governmental agencies at all levels are the foundation to effective emergency response.

Communication Challenges in Emergency Response

Operational realities on-the-ground require first responders, territorial EMOs and federal government departments to work together when responding to a disaster event. During such times, connectivity becomes the life line (sending/receiving situational reports, risk assessments, resource requests, etc) for an emergency response and recovery effort. Communication infrastructure in the Arctic is fragile, [however,] creating a high level of vulnerability that can jeopardize the safety and security of Canadian citizens. Information is key for responders to be prepared. Early identification of requirements for emergency

services is important to avoid 11th hour problems accessing services. There are many stakeholders that have responsibilities to respond to an emergency and are based in different geographical locations across Canada. Responders at all levels must be able to connect with people quickly and efficiently using reliable, robust communication networks from wherever they are.

In order to maintain constant communications between emergency management stakeholders spread out across the country, a virtual emergency operations centre (essentially an emergency management communications platform linking various departments into a network via teleconference, video conference, GIS, etc) is required in order to aid Public Safety staff in coordinating response and recovery efforts. New hardware, like the Canadian Space Agency Ka-band dish, is small enough to be transported easily, and offers sufficient bandwidth to supply a team with both voice and data. Combined with technology like Voice over IP, DMVPN routers and wireless equipment, a hotspot could be created with all of the essential services, including connectivity back to the home department, Internet access and BlackBerry data and voice communications.

Local Capacity Overwhelmed

Basic Internet and phone services that most Canadians would expect in a community are not necessarily available across the North. There may or may not be cell phone services, or Internet connectivity at speeds that support what is required by visiting personnel. It does not take very many outside people landing in a community to crash a local cell network, crippling the ability of some responders to coordinate response efforts.

During an emergency, the local telecommunications infrastructure is often overwhelmed, even in major urban centers. In remote locations, the infrastructure is extremely fragile, and so responders try to bring what they require for communications equipment with them.

For this reason the Public Safety's Arctic regional office has created 'office to go' kits that can be deployed with staff within communities to ensure that they are self sustained with tools required to coordinate their response activities. For NWT and Nunavut kits, they have added 'Airware' wireless internet modems which provides internet connectivity in 32 NWT communities (all but Inuvik) and in all 25 Nunavut communities via the 'QINIQ' network.¹⁴

When emergency events happen, media inquiries can quickly overwhelm an organization's ability to respond. Furthermore, for an organization's reputation to remain intact, crisis communications protocols are necessary. However, in order to employ effective crisis communications protocols connectivity to the region, territory and local community would be paramount. Without connectivity and effective lines of communication media inquires would halt and public concerns would increase exponentially.

Military Communications Isolated

During an emergency the military may be called upon to provide support under the integrated government of Canada response. Once the military is deployed, they generally set up their own, temporary, satellite-enabled networks to connect to military command. For security reasons, they do not provide access to non-military personnel to their temporary systems. Once they have completed the disaster response, they remove their gear.

The military conducts annual operations, including Operation Nanook, Operation Nunavut and Operation Nanukput. While the precise objectives of each operation differ, they all share the same overarching purpose: to exercise Canada's sovereignty in the region and to advance the Canadian Forces' capabilities for Arctic operations. These operations continue to provide platforms and opportunities for interdepartmental cooperation and training. The Army also relies on a network of thousands of Canadian Rangers, who act as the local 'eyes and ears' of the military. Rangers conduct surveillance and sovereignty patrols, report unusual activity or sightings, and collect local data

of significance to the Canadian Forces. They also provide local expertise, guidance and advice during operations and exercises, conduct North Warning System patrols, and provide local assistance to search and rescue activities. Military services operate in places with civilian populations, including Resolute Bay (a new training centre), Iqaluit, Rankin Inlet, and Yellowknife (forward operating locations for the Air Force). As military makes purchasing decisions for permanent communication services in places with civilian populations, they want to find a way to ensure their investment benefits the local population wherever possible. Military also works with service providers to develop and purchase permanent communication services in locations with no civilians, such as Alert.

In responding to emergencies, military communication services need to be able to interconnect with local networks securely and reliably in order to properly coordinate with civilian agencies, [which] will almost always be deployed before military arrives. [The] military has standing offers arranged in order to purchase additional bandwidth as required when setting up communications to respond to an emergency. On average, it takes military procurement anywhere between 90 and 180 days to procure bandwidth. As one military participant said, “Whoever is required to go in and set up satellite services in an emergency situation better have bandwidth in place in order to be operational on the ground quickly. Otherwise, starting from scratch would take way too long.” [The] military also has internal staff to set up dishes, organize the connectivity, and ensure the service works. But these are temporary set ups that are removed at the completion of the exercise or emergency.

Interoperability Problems

Participants on workshops identified challenges such as differing security requirements preventing the use of shared networks, gear that does not interoperate with other jurisdictions, and a lack of practice with procedures using certain communication equipment in response to disaster.

The Communications Interoperability Strategy for Canada [released in January 2011]¹⁵ identifies some key strategies that if adopted, would assist Arctic jurisdictions in solving some of the interoperability challenges faced by emergency responders. Strategic objectives of the plan include: developing a clear governance structure; adopting Standard Operating Procedures; promoting the development of a national public safety communications systems, with open architecture and adoption of open data exchange standards; supporting integrated training and exercises; and promoting daily use of common processes so that responders are familiar with protocols and equipment during an emergency. One Ottawa participant suggested there should be the ability to prioritize access to services during an emergency, so that first responders could be guaranteed access to the spectrum they need. This ‘prioritization’ approach is being recommended by northern service providers too, so that they can harness the powerful 700 MHz spectrum for last-mile delivery of robust communication services in the future.¹⁶ In order to use the 700 MHz spectrum, last mile connectivity would have to be installed in every community at significant expense so there is an argument to be made to ensure this spectrum is well utilized at all times.

Emergency response organizations and communication infrastructure service providers can work together to identify ways to quickly link emergency responders into existing, publicly accessible networks when responders first arrive in communities. Protocols could be developed to request surge capacity, prioritization and access for first responders utilizing local networks, to avoid overloading local networks. Interoperability strategies apply in the north, and many of the participating organizations are interested in signing onto the interoperability strategy. Northern application of 700 MHz spectrum is important to service providers too, and working with emergency responders, northern solutions can be found.

Government Future Needs - Federal Departments Serving Territories

All governments are looking to take advantage of advancements in communications technology and services to improve and enhance program delivery, and to connect to people working on the land between communities. These listings are provided with the intention of highlighting the wide range of communications needs and initiatives being considered by some departments serving the Arctic, so the reader can get a sense of the road ahead, and the challenges departments face, and some of the efforts being made to improve communications for the future.

All federal departments struggle with implementing services in the Arctic that comply with national service standards. Whether they are attempting to serve the general public, communicate with head office, coordinate with other government departments, or connect on the land, there are a number of trends in communications that were brought forward in the visioning workshops and in the online survey.

Online Service to Public

A major focus at the federal level is for increasing use of online applications for public use, in an effort to bring more and better services to the public. This of course, will necessitate improved connectivity in order for the public to have access.

Real-time Access to Databases

In terms of program delivery at the federal level, the march of progress continues, regardless of whether or not the territories can keep up. Increasingly, federal government employees require real-time access to databases that are tuned to run on a fiber backbone in order to work. This trend will only continue. Many federal departments tasked with serving the Arctic try to conduct the same operations and offer the same services to the citizens of the Arctic as they do for all citizens across Canada. As one federal

participant noted, the challenges of the North should be accounted for in all federal processes but are often overlooked or ignored.

More field operations

For departments that require connectivity between communities, such as military, Environment, Public Safety, Coast Guard etc, there is a renewed call for improved coverage and bandwidth options for field support activities.

Mobile communications

The increased and ubiquitous use of mobile communications by federal employees in the South necessitates a significant investment in infrastructure for northern employees to keep up. As well, when southern-based federal employees travel to the North, their BlackBerries do not work in the vast majority of the northern communities. This will only get worse with time, as there is no current business case for installing the latest cell network technology in either the larger or smaller centres in the North.

Social Networking to Reach the Public

Finally, a number of northern federal staff raised the need for the federal government to learn to use social networking tools to reach the public. We can expect to see these kinds of initiatives start to occur in the next few years, and there will be a corresponding need for improvements to public networks as the general population connects to these new services.

New Federal Needs, Programs/Applications: Department of National Defence

When accessing new federal needs,¹⁷ the Department of National Defence has several initiatives that will require more robust communications.¹⁸ The development of a new Northern port, coupled with anticipate expansions in current military locations (eg. Nanisivik port, Alert, the shared link with Environment Canada at Fort Eureka, Forward Operating Locations in Inuvik, Iqaluit, Rankin, and Yellowknife, and the CAF training facility in Resolute

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Bay), will require increased communication capacity. Operation Nanook will be experimenting with implementing a cellular network using equipment installed in balloons (for example to respond quickly in the event of a Major Air Disaster), and the winter warfare centre being set up in Nunavut will require communications support. So will Unmanned Aerial Vehicles (UAVs), real-time maritime surveillance in next three to five years, the Polar Epsilon project (which uses information from RADARSAT-2 to produce imagery for military commanders), and a permanent ground station in the North to support satellite missions (like Norway's Svalgaard), location to be determined, which also allows for monitoring data in real time. Improved ship and aircraft terminals, as well as requirements to perform (interoperable) ship-to-ship communications. Canada Command (now Canadian Joint Operations Command) seeks to improve the sharing of classified and unclassified information between DND, other government departments and agencies, and key stakeholders, in both voice and data forms. Furthermore, Iqaluit, Whitehorse, and Resolute Bay sites will need improved communication links back to National Defence headquarters in Ottawa.

The federal government will need to prioritize service in an emergency. High frequency (HF) radio technology is evolving into sites and stations that can be remotely operated. This evolution is generating two types of system connectivity requirements. Inter-site (intra-community) connectivity is required between transmit, receive, and control sites that make up each station (resident in a community such as Yellowknife). New HF radio systems have tighter delay and latency tolerances than previously permissible. Furthermore, the military needs to provide better support packs to Canadian Rangers. The Rangers need better connections to maintain communications while on patrols. (Rangers call in using a satellite phone once every 24 hours --- usually around 7 p.m. If that call is missed, usually they have to wait 24 hours before the next communication -- too long a delay if there is a problem). Furthermore, the military needs to improve its tracking devices, given that military units are pushing farther and farther out from communities. Finally, the Department of National Defence is looking for smaller communications equipment, capable

of communicating over bigger bandwidth and at less cost. When transferring information, from small reports to imagery (e.g., photos from a disaster), it cannot afford to lose connections during transmission. Losing connections could mean losing essential files.

Community Sustainability

The Internet has become a necessity of life for much of the world's populations. Northern Canadians are no exception. Internet services make northern, remote and isolated communities more sustainable and will aid in their long-term survival. IT and good electronic communications are essential for business, employment and efficient administration; all key components that increase the likelihood that people will live in remote communities.

Over the next 10 to 20 years, the territorial economies will grow significantly, contributing a larger portion of the nation's overall wealth. Some of the growth and the socio-economic changes that it brings will affect and be affected by Internet services: population changes (most pronounced in Nunavut) will create greater demand; the development of mineral deposits throughout the North will mean more industrial demands for Internet services, generate greater wealth for Northerners who will spend it in part on or through the Internet; climate change and its impacts on (among other things) marine transportation through the Northwest Passage; and sovereignty issues. Despite the growing economy or perhaps because of it, there are real threats to the sustainability and survival of northern communities. Communication infrastructure can play an important role in mitigating these threats, such as slowing Arctic deruralization (the outflow of people from smaller to larger centres), assisting business development, and benefiting government service delivery.

Slowing Arctic Deruralization and Out-Migration

If Canada wants vibrant Arctic communities, efforts must be made to improve their attractiveness to the people who live there. We heard from participants in

workshops in Iqaluit that educated young people today are less likely to remain in an isolated community that has no physical or virtual link to the outside world.

Many Arctic communities were established on the basis of fur trading or mining, or were otherwise residential and/or administrative centres, established by the church or the government. With the fur trade gone as a viable economic pursuit, and old mines in Yukon and Nunavut decommissioned long ago, the sustainability of some communities is questionable, especially for those without a large government presence and those untouched by recent resource developments. These communities are very expensive to maintain from the perspective of public finance and given the absence of known marketable assets this fact is unlikely to change. The unemployment rate in some communities exceeds 30 per cent. Even for communities that can participate in the mining sector through the fly in/fly out work rotation, some people will be less inclined than others to pursue this. Not everyone can be a miner, or can tolerate being away from their families half the year. What's the future for these people and their communities? How long can they continue to exist?

We assume that Canada is 100% committed to Canadians living in these communities. Canadian sovereignty over the Arctic region is based largely on these people who live in remote and strategic areas and will continue to do so. In fact, some Arctic communities were created by the Canadian government specifically for the purpose of sovereignty. The federal government's Northern Strategy highlights all of these important points:

- Canada's Arctic communities are a major factor in our sovereignty claims;
- there is tremendous wealth in the natural resources found throughout the Arctic;
- there is a real opportunity for the Northwest Passage to become an international trade route; and,
- the Arctic is an important symbol of Canadian identity.

Regardless of how these communities are viewed politically or strategically, the sustainability and even existence of some are in jeopardy. Many are suffering from out migration of residents, particularly young and educated residents, who are moving to larger centers. This is a world-wide phenomenon known as “deruralization.”¹⁹

To move to a remote community that is without modern communication infrastructure, namely broadband but also things such as cellular phone coverage, is akin to moving to a community in the 1980’s that was still without telephone access. Few people would choose to make that move. [By contrast,] the prospect of moving to a remote or isolated community in Canada’s territories can be enhanced by the existence of broadband. The remote communities in all three territories struggle to attract and retain doctors, nurses, teachers, engineers, and others. For these professionals, modern communication infrastructure means they can do their job and enhances their private life as well. In the same way that business investment will gravitate toward geographic locations that offer advanced Internet services, so will people.

Internet access is making life in communities increasingly livable, which should be a positive for net migration. Community life is improved through better communications with family members and friends, through the provision of entertainment and social networking, and access to shopping. While online shopping access is convenient in southern locations, for communities with only one small store, online shopping is the way to get a wide range of products. The interest in purchasing products online will only grow, especially in communities that are benefiting from resource development and where people have more money to spend. Without these modern conveniences, people with money in these remote locations are more likely to leave. Left unchecked, this out- migration will slowly drain these communities of their most valuable resource; the people who live there.

Business Development

Several studies show that investments in IT and broadband have been favourable for social development and that countries that have invested heavily also have experienced higher productivity. The competitiveness and productivity of businesses can consequently increase through more efficient production of goods and services, logistics and new business processes. Collaboration is made easier. Access to broadband makes it easier to work remotely. It enhances the possibility of launching and running a business from anywhere. It can reduce and sometime eliminate the need for travel. It means that people are able to work where they live instead of having to live where they work.

It is a major challenge for businesses to keep up with the changes resulting from technological advances, but by doing so a business can lower its costs and improve its competitiveness. In rural areas, poor access can leave businesses without any possibility of achieving these advances and in actuality, businesses won't even know what is possible or the extent to which they are disadvantaged in terms of their technological efficiencies. Businesses in Canada's territories will always have to contend with the physical realities of their operations, but higher-quality access to services through the Internet can help compensate for that.

Benefits to Government Service Delivery

There are three principal ways that government benefits from broadband services into communities:

- 1. Day-to-day administration costs are reduced.* So much of government's service approach assumes broadband into homes. When this infrastructure is not in place, these services must be conducted in a manner that is more expensive and labour intensive. It also means government must maintain two systems: one for those with broadband and one for those without. This duplication adds to the operating cost of government. It is made more expensive when a public servant

must physically travel to a community to complete their business that could otherwise be conducted through the Internet. The lack of broadband infrastructure in remote communities in the North also increases the cost of education and health services. In both cases, broadband can have an enormous positive influence on public expenditures, with obvious benefits to children and patients.

2. Government is better enabled to provide essential services. There should no longer be any debate over whether high speed Internet service should be a public good. It might be expensive, but the reality of our world is what it is, and it includes Internet service for all. We have reached a point in the development of modern communications that the Internet is a part of our democracy. The Internet allows people to become engaged in debate and affect political change. Very soon, social pressure will be too great for government to not act, so a clear plan in this regard will save millions in the near future.

3. Improves the safety and security of the communities. Residents in Canada have the right to feel secure in their own community, regardless of where they live. Communication infrastructure is playing an increasingly greater role in the provision of safety and security everywhere, including the Arctic. With all the national and international debate over Arctic sovereignty, one might see security in that context only when in fact there are many aspects to safety and security that should be considered. One should think in broad terms when thinking safety and security. It can apply to national, regional, community or individual threats. Threats can be related to violence, property, extreme weather events, natural disasters, climate change, disease outbreaks (including pandemics) or international security threats.

There are endless examples to draw from. The fallout from Operation Nanook related to communications in the eastern Arctic was presented earlier. The need for modern, secure communication infrastructure has a significant value to national defence and Canada's Arctic sovereignty claims. But there are other stories of a break-down in communication links in Yukon and the NWT that

could have resulted in real threats to people's safety and security had the timing of those events coincided with a natural disaster of some sort. On a smaller scale, there are people in remote communities who are victims of domestic violence that feel unsafe because they cannot have call-display on their phones. During the SARS threat in 2007, we heard that a remote community without cellular coverage grew scared when they lost phone service for a short period of time and had no way of calling for a medical evacuation had they needed it. It doesn't matter that the SARS threat was not serious in the end. What matters is that over a hundred people were cut-off at a time when it was believed to be serious. Government's responsibilities in preparing for and dealing with threats rely heavily on all aspects of the communications infrastructure. It is yet another area where public demands for this infrastructure and service will continue to grow.

Recommendations: Addressing the Issues

It is clear to anyone attempting to use new communication tools in all communities in the Arctic that there is a severe gap between what is needed today and what they can affordably purchase. The gap in the future will only increase if nothing is done. There are already many extremely difficult challenges in the Arctic; an inadequate communications infrastructure cannot be allowed to cause more important things to fail, like emergency services, health, education, housing, industry, opportunity and sovereignty. It is comparatively easy to fix communications infrastructure.

The Arctic must have affordable, robust communication services for the benefit of the residents, and the benefit of all Canadians. [The ACIA report's] wide-ranging recommendations can help to close the gap in services today and tomorrow. Federal and territorial policy makers, service providers, regulators, procurement officers and NCIS-WG members will need to make a concerted effort to implement them.

The ability to communicate effectively and efficiently in order to respond to an emergency in the Arctic is, in essence, a question of sovereignty. In extreme

emergency scenarios, the existence of adequate communication networks is a question of survival.

From a southern vantage point, it can be tempting to look at Arctic emergency response in isolation, imagining responders flying into a remote Arctic site with all the communications gear they might need to respond stuffed into their suitcase. But in reality, if outside responders are required to deal with an emergency, they usually fly into established Arctic communities first, before heading out to the field (in the event of an emergency on the land). Over-all response capability is deeply intertwined with the response capability of the community closest to the emergency - whether the emergency is local, regional, or national in scope. Responders need to initially rely on local communication networks they can access, and they need those networks to be reliable.

It is entirely possible for Arctic service providers to be prepared for emergency events, if in advance, protocols and procedures could be developed that are agreed to by service providers and emergency responders in advance of a wide range of possible emergencies. Issues to be covered include: a definitive, up-to-date list of what services are actually available, by community; a rapid, defined procedure to request surge capacity from the service provider by emergency responders; security requirements; [and] a system for prioritizing use for first responders, to avoid overloading local networks.

As publicly accessible northern networks improve, emergency access will also improve.

The military typically deploys its own communication sites for its own purposes. But in emergency response, military participants of the Assessment have indicated a willingness to collaborate with civilian agencies in finding communication solutions that help the military and civilian responders as well as community residents with improved communication capacity. Challenges in security are always an issue to be examined, but with planning and foresight certain types of communication services can be shared.

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It is entirely possible to allocate the necessary public funds to support communications infrastructure development in the Arctic if the political will is in place. The cost of developing a robust communications infrastructure is an inexpensive infrastructure investment in the Arctic, when compared with other infrastructure initiatives like roads and ports. And communications infrastructure investment stands to provide the biggest payback for all citizens in all 75 communities if implemented to a standard that ensures parity.

A sovereign Canadian Arctic requires Canadian citizens to live in it. Resource exploration and extraction is made affordable in part because of the presence of communities with airstrips, hotels, and local workers. The military relies on a network of Rangers to patrol much of the Arctic. These national efforts require national support. Arctic residents are key players in the future of Arctic sovereignty and resource wealth generation that will benefit all Canadians. Much of the wealth generated from resource extraction is collected by the federal government. There is a corresponding responsibility to ensure federal support goes back into communications infrastructure that results in opportunities for all people who live in the Arctic.

Just as recent innovations in consumer products have changed the way consumers connect, recent improvements in backbone infrastructure products also offer new and better ways to connect communities, and people on the land. As vendors pitch technologies to link a handful of communities, or sell a service to one single government department, government money is sometimes spent to solve a single isolated problem when collaboration may provide better results in the long term. By developing a strong Arctic communications infrastructure strategy that includes a well-articulated investment plan, it will ensure that public money is not used to purchase services in isolation that might not meet the needs of the Arctic.

Notes

¹ Government agencies were invited to participate in one of six facilitated ‘visioning workshops’ held in Yellowknife, Whitehorse, Iqaluit and Ottawa. Every session had a mix of federal and territorial representatives. Each workshop had between 11 to 18 participants with over 75 government representatives attended. Participants detailed their department’s key responsibilities, communication services they use now and plan to use in the future, issues they face, and ideas to ensure communications services can meet their needs in the future. In addition, an online survey gathered additional details from almost 100 respondents from a wide range of departments across the three territories and federal government. Data from the questionnaire was also supplemented by documents provided by government departments, with most information on Nunavut coming from data already collected by the Department of Community Government Services.

² NavCan is now a not-for-profit private agency, but they work closely with Environment Canada to collect and distribute environmental information critical to the safe operations of aircraft in the Arctic. They participated in the assessment because of their public role in providing air traffic control services for flights over 27,000 feet traversing arctic air space. They collect and manage critical data from over 50 sites across the North, and work with every Arctic airport.

³ Many key departments participated in the Assessment. Representatives from Highways and Public Works ICT branch represented other departments in identifying specific communication needs in the visioning workshops.

⁴ Yukon has approximately 4,800 government employees, with about 3,800 of them in Whitehorse and the remaining 1,000 working throughout Yukon.

⁵ The participation rate in the survey from the NWT departments was extremely high. Representation of many departments for the visioning workshop was provided by the Technology Service Centre (TSC) within Public Works and Services.

⁶ There are 4,600 NWT government employees working in all 33 communities in NWT. Of these, almost half work in Yellowknife. The remaining 2,400 government employees work in communities all over NWT.

⁷ The Technology Service Centre (TSC) supports over 4,000 government employees with workplace support, enterprise-wide services, such as e-mail and other communication and network services and tools, and host many department applications and websites. They provide advice to departments when selecting and

implementing technology solutions. The TSC recently built a large data centre in Yellowknife to meet the growing data storage needs of the GNWT.

⁸ Environment and Natural Resources require connectivity between communities to carry out their mandate. They collect and shares data on species, publish wildlife management information, administer a remote research station, and download satellite data from collared animals. They also by collect and report on the state of forest resources, integrating geomatics, information management, fire prevention, community protection, environmental monitoring, disturbance mapping, and collaboration with national and global fire management agencies.

⁹ There was an excellent turn out of GN departmental representatives at the visioning workshops in Iqaluit. Those departments that were unable to attend were represented by Community and Government Services, which is responsible for connecting government employees across Nunavut.

¹⁰ Of the 3,800 government employees, 1,500 work in Iqaluit. The 10 decentralized communities - those with government offices - all have at least 100 government positions, with Rankin Inlet having over 400.

¹¹ Environment Canada is mandated to provide advice to those responding to an environmental issue in the field. The only option is satellite phone in NWT, and this does not always allow for the transfer of images or data that is necessary to make informed decisions on both ends of the connection.

¹² The MRS was awarded to NWTel through a competitive process in 2008 and completed in 2010. Under the terms of the 15 year contract NWTel and EF Johnson Technologies built and operate this communications infrastructure on behalf of the government of Yukon. The MRS solution replaces the Multi Department Mobile Radio System.

¹³ Also in Yukon, the Yukon Amateur Radio Association maintains remote repeater sites linked via UHF. Civilians with VHF radios are able to connect to others over much of Yukon (largely following the road system). As a not-for-profit association working with a very small budget, they have accomplished a great deal, but YARA does not claim to be an emergency response service, as they do not constantly monitor airwaves. YARA works with many organizations in partnership to keep its network going, and is working with its volunteers and partner agencies to determine its future growth and role in providing connectivity between communities. YARA formally participated in the recent simulation of the Dawson earthquake, in a back-up role. The Yellowknife Amateur Radio Association operates in Yellowknife and Rae-Edzo, with two 80 km circles centred on these communities.

¹⁴ During exercises and emergencies, additional modems have been rented temporarily to provide other federal departments with Internet capabilities as part of their coordination function and responsibility. This service allows responders to interface with decision makers and provides connectivity within communities, and sometimes up to a few kilometres outside of communities. These services are not available in Yukon and alternate solutions are required. This practical northern solution has allowed the PS team to become better prepared. However these kits need to be maintained and should be re-evaluated regularly to ensure equipment and technology is kept up to date. Financial and IT resources need to be committed to ensure they are kept current. It should be noted, that if 250 responders arrived in a community, and hooked up to the QINIQ or Airware networks, or linked into a cell phone network that normally only served 500 customers, service providers would need to increase capacity in advance in order to ensure the network could handle the additional load. With good planning, it is possible for service providers to quickly employ burst capacity that will allow for an increase in response capabilities in times of need.

¹⁵ A number of participants in visioning workshops were involved in the development of the Communications Interoperability Strategy for Canada released in January 2011. The strategy's intent is to assist the federal, provincial and territorial agencies responsible for emergency management and first responders to work in a coordinated manner to respond to emergency situations across jurisdictions.

¹⁶ Item 7 in the "Communications Interoperability Action Plan" calls for allocation of some of the 700 MHz spectrum be permanently allocated just to emergency responders. Industry Canada is currently reviewing submissions made in response to its call for consultation. Comments are sought on general policy considerations related to commercial mobile broadband spectrum use, competition issues and on the use of the 700 MHz band for commercial mobile services. In addition, Industry Canada is seeking comments on spectrum use for public safety broadband applications. This valuable commercial spectrum is sought after by communication service providers across Canada.

¹⁷ For a full list of federal and territorial government needs, see the ACIA report, chapter 6.

¹⁸ Please note that this section has been written into sentence by Whitney Lackenbauer based upon a series of bullets contained in the original report.

¹⁹ Deruralization is a term most Canadians associate with the movement of people away from rural farming communities and into larger metropolitan cities. It creates economic hardship on the small communities because of the lost tax base, fewer

children to fill the local school, less commercial activity and reduced civic activity. Many of these communities have simply vanished or are now mostly residential areas in the country offering few if any services. Deruralization, though, is not a term specific to rural farming communities, but rather is a reference to the movement of people away from small, rural communities because of declining economic and social attractiveness of these towns. Canada's northern communities will not escape this trend.

7

Extractive Industry: The Growth Engine of Arctic Shipping?

Frédéric Lasserre and Pierre-Louis Têtu¹

Melting summer sea ice in the Arctic has been widely documented and has increasingly been making headlines. This phenomenon, underlined by scientists and the media since the beginning of the century, has triggered speculation about the opening of much shorter sea routes linking Europe via the eastern coast of North America to Asia along across the Northwest Passage (NWP) and through the northern coast of Russian Federation to Asia via the Northern Sea Route (NSR). Spurred by declining sea ice that facilitate and increased access to mineral resources in this region, the interest for potential Arctic shipping became a widely discussed topic centered on transit shipping. It triggered heated debates about the possible consequences of an expanding traffic on Canadian and Russian claimed sovereignties over their respective Arctic passages. Closely integrated into the current economics of globalization, the Arctic region of the twenty-first century is the object of a growing worldwide economic, political, and scientific interest; the Arctic is currently undergoing a change of pace many would not have considered possible only a decade or so ago. It also provides options in relation to energy security and visions of new transarctic sea routes. Indeed, the prospect of growing shipping traffic in Arctic waters in recent years has led to analysis pertaining to the possibilities of expanded activities in the cruise industry, the fishing industry, as well as in cargo shipping for western and Asian commercial shipping companies. However, research and actual shipping practices underline transit shipping is unlikely to become a major feature of Arctic shipping, at least in the medium term. Arctic shipping is rather driven by the expansion of the

extractive industry and the servicing of local communities, both destination traffic. Indeed, the perspective of an Arctic resource ‘boom’, rapid climate change, environmental challenges, new options for energy security, and increased shipping traffic along the Northern Sea Route and the NWP are often cited as significant. It also entails very different legal and political consequences for Arctic states since ships must then call at local ports and then submit to the State of the Port regime. Regarding overall traffic over the past decade, it may well be that the pace of development of the extractive industry does not hint at a large surge of traffic in Arctic waters but the question remains open: is the present development of the extractive industry in the Arctic hinting at potential intense shipping in this region?

Our research team conducted an in-depth literature and statistical review of publicly available information on mining in the Arctic, ie. beyond the 55th northern parallel. Information collected from various were either geolocalized in Google Earth Pro and then inserted into the Geographic Information System (GIS), either raster images were geo-referenced first in the software, then rectified, and newly spatial information were created. Location maps and above mentioned procedure were realized with the use of the GIS program ArcGIS 10.1 (ESRI).

The geographic scope of the Arctic is defined in this chapter as the region north of the 60th parallel and extending south to include the entire Labrador Coast on the Labrador Sea and all of Hudson and James Bays. As noted by Haley et al., Iceland and the Faeroe Islands have no significant mining industry apart from sand and gravel.² Although Iceland is supplied by year-round ore shipments from Norway, we do not included it in our study. However, Scandinavian countries (Norway, Sweden, and Finland), Greenland, Russian Arctic Coast, Svalbard, Alaska, and Canada north of the 60th parallel are covered by this survey.

Mining in Canada north of the 55th parallel

Mining in Canada beyond the 55th parallel dates back to the late eighteenth century. In the eighteenth century, the British Explorer Samuel Hearne (1745-1792) undertook travel from Prince of Wales Fort in Hudson Bay, in order to ascertain the rich copper deposits rumored to lay there at that time. Mining exploration and exploitation have indeed been part of the face of the Canadian Arctic and subarctic regions for decades. Mining projects such as Rankin Inlet (1957-1962), Nanisivik (1979-2002), Polaris (1981-2002), Ulu and Lupin (1982-2004), and Jericho (2002-2008) have already been in operation in these northern latitudes,³ while exploration campaigns conducted at that time led for instance to the discovery of the Mary River ore deposit (1962).

Between 1957 and 1962, copper and nickel were exploited in Rankin Inlet, but the mine was closed in 2002 because of exhaustion of ore and low world prices⁴. The ore was shipped by sea to the port of Quebec of those of Western Europe. Finally, lead and zinc were extracted in 1981 from the Polaris mine located on Little Cornwallis Island⁵. In 2002, the mine was also closed due to the relative depletion of the ore, and the same happened in Nanisivik, because of lower commodity prices at that time. The ore was concentrated and stored in a plant barge and shipped each year by a Polar class⁶ ship to Europe or to the Port of Quebec. The MV Arctic, owned by the Canadian bulk carrier company Fednav, was used in the High Canadian Arctic to service both the Polaris and Nanisivik mines. The Ulu and Lupin gold deposit owned by Elgin Mining Inc. began operations in 1982 near Lake Contwoyto but since February 2005, due to low gold price, the company ceased production and put the mine ‘under care and maintenance.’ The reopening of the Lupin mine is a possibility,⁷ projections change rapidly and frequently. The Jericho diamond mine led by Shear Diamonds Ltd. closed in 2008 after two years of production, but the company said it is assessing the viability of reopening the mine.⁸ While few development projects were on the table to upgrade the remaining facilities such as port infrastructure in Bathurst Inlet to support mining operations, all these plans are currently on hold. In 2008, Shear Diamonds Ltd closed its Jericho diamond mine. Finally, basic port

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infrastructure exists in Nanisivik (Nunavut); a mining camp was built in 1975 to support the lead zinc mining and mineral processing operations of the Nanisivik Mine. While it was in production between 1976 and 2002, the Nanisivik mining site was later cleaned up and a few development projects were on the table to upgrade the remaining facilities but all these plans are currently on hold (see figure 7.1).

Figure 7.1: Main Mining Sites in the Arctic—Coal and Base Metals. Resources depicted on this map are coal, iron ore, bauxite, titanium, nickel, lead, lithium, beryllium, and rare earths.⁹



Realized by: Pierre-Louis Tétu, Université Laval, 2015
Graphic editing: Department of Geography, Université Laval, 2015

In 1997, Falconbridge operated the Raglan's copper and nickel mine in Nunavik, in the far north of Quebec, before being acquired by Xstrata in 2006, which then merged with Glencore in May 2013 to form Glencore Xstrata Plc. The ores are crushed, ground, and processed into nickel and copper concentrates in Raglan. The nickel concentrate is then trucked into the Deception Bay seaport, 100 km to the west. At Deception Bay, it is stored in a dome until undertaking a sea travel of 2 600 km on the MV Arctic, a Polar Class 4 vessel, to the port of Quebec during ice-free months, at least six times a year.¹⁰ Then, the concentrate is transferred by train to Glencore's smelter in Sudbury (Ontario). Only after this last trip of 950 km, the nickel concentrate is melted in cast matte, returned to Quebec by train, from where it is finally shipped by boat to the Nikkelverk refinery in Norway, in the coastal town of Kristiansand, where nickel concentrate is converted into high-quality metal that will be sold worldwide.¹¹ At Deception Bay, Glencore Xstrata Plc built its own dry bulk terminal in the early 1970s. Rebuilt nearly 40 years later in 2007, the new terminal has two docking facilities that can accommodate Polar Class ocean-going vessels.

In Labrador, the Voisey's Bay nickel-copper-cobalt development project, owned by the Brazilian Vale Inco Ltd., initiated ore processing in 2005. The ore concentrate is shipped to the Port of Quebec as well as in direction of Scandinavian ports and to China (Bayuqyuan Port). The port/terminal located 11 km away from the mine's concentrator at Edward's Cove in Anaktalak Bay, includes facilities like a dock, storage building, and conveyor system for loading concentrate (see table 7.1).

Located a few kilometers from the Raglan mine, the objective of Nunavik Nickel with its new mine in 2012 was to produce 150 000 tons of nickel concentrate to ship in Finland. However, 2013 proved a difficult financial year for project's owner Jilin Jien Nickel Industry Co. Ltd., and the company transferred its operation to an investment bank based in Toronto. Finally, at

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the end of 2013, the copper ore was shipped from the new terminal developed by Jilin Jien Nickel, which is located 1.5 km southeast of Glencore Xtrata Plc's

Table 7.1. Marine transportation logistics of active mines in the Canadian Arctic based on exportation of raw materials through the Arctic Sea Routes, in May 2015.

Active mines	Owner	Expected lifetime	Marine transportation logistics (vessels, destination)
Base/industrial metals mining activities			
Raglan	Glencore Xstrata Plc (Anglo-Swiss)	1997-2023	<ul style="list-style-type: none"> • Vessel: MV Arctic (Polar Class 4) • Deception Bay to Quebec City, then Sudbury to Quebec City and then shipped to Norway
Voisey's Bay	Voisey's Bay Nickel Company Ltd. (Brazil) – subsidiary of Vale Inco Ltd. (Brazil)	2005-2035	<ul style="list-style-type: none"> • Vessel: MV Umiak I (Polar Class 4) and MV Arctic (Polar Class 4) • Voisey's Bay to Quebec city (Zinc) and to six ports, mostly of northern Europe and Bayuquan (china) (Nickel)
Nunavik Nickel	Jilin Jien Nickel Industry Co., Ltd. (China) – subsidiary of Jilin HOROC Nonferrous Metal Group Co., Ltd (China)	2014-20??	<ul style="list-style-type: none"> • Vessel MV Nunavik (Polar Class 4) and MV Arctic (Polar Class 4) • Deception Bay to Finland (nickel) and to China (copper)

Source: Pierre-Louis Têtu, Jean-Sébastien Pelletier, and Frédéric Lasserre, "The mining industry in Canada north of the 55th parallel: a maritime traffic generator?" *Polar Geography* 38(2): 107-122, accessed June 2015, doi: 10.1080/1088937X.2015.1028576.

facilities. In March 2014, Fednav commissioned the MV Nunavik, sister ship of the Umiak 1, built at JMU's Tsu Shipyard in Japan, to export the

concentrate produced at the Nunavik Nickel mine at Deception Bay in northern Quebec. It also should be contracted to supply the marine carriage capacity for the Baffinland Project. In April 2015, there were rumors that the leaders of the Chinese company Jilin Jien Nickel Industry had requested and obtained a meeting with the Prime Minister of Quebec, Philippe Couillard, and his Minister of Economy, Jacques Daoust, the previous October in Beijing, even though the company did not have a registered lobbyist in Quebec.¹²

New mining projects in the Canadian Arctic: a future boost for Arctic shipping?

Among the ten mines currently active in the Canadian Arctic north of the 55th parallel, the above mentioned mines are the only three active mines that have opted for transportation logistics through Canada's Arctic Waters. Indeed, few active mines currently support their export of extracted raw materials through Canada's Arctic waters. However, according to the information collected, several new mining projects - at the stage of exploration or of the construction and development of related infrastructures – will base their exportation logistics on the Canadian Arctic shipping routes. The commodities would be shipped to international markets, including Chinese ports, and the logistics of these mining projects involves logistic and marine transportation activities through the Canadian Arctic waters.

The Baffinland Iron ore project, also called Mary River project, is located about 100 km south of Milne Inlet where cargo and supplies are shipped by rail south to Steensby Inlet where it will be loaded on the MV Nunavik, a new Polar Class 4 vessel owned by Fednav, and will carry it on the European Market year-round (see Table 7.2). On August 31 2008, Baffinland Iron Mines Corporation announced the arrival in Europe of the first (and the last since) shipment of high grade lump iron ore from its Mary River project at the port of Vlissingen, the Netherlands. A second shipment arrived to the port of Bremen in Germany in September 2008. A final and third cargo of high grade fine iron ore arrived at the port of Vlissingen on September 21 2008. However,

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due to both demand and price fluctuations for this commodity since 2012, the scope of Mary River project was temporarily reduced in 2013. In line with the world demand for iron ore and corresponding market prices for this commodity in 2012, the construction of the railway to Steensby Inlet was delayed to the end of the current decade. Until then, the ore will be shipped by truck to Milne Inlet where it will be shipped to international markets between mid-July and mid-October. While the mine is actually in a stage of development, the first regular shipment of iron ore is expected to occur during the open water season of 2015.¹³

When in operation, the Roche Bay Iron mine, in Foxe Basin, will export its products to China and international markets. Chinese investors Xinxing Ductile Iron Pipes Co. Ltd., one of China's largest steel grating producers, a subsidiary of Xinxing Cathay International Group and affiliated with the State-Owned Assets Supervision and Administration Commission of the State Council of Xinxing¹⁴, and Private Shandong Fulun Steel Company Ltd are both, respectively, entitled to 14% and 19% of the Roche Bay iron mine production. When in operation, the iron ore will take the road to the port of Qingdao, in China, or to the port of Rotterdam, the Netherlands. While the exact logistics remain unclear, the vessels used would be large ice-strengthened ore carriers ranging between 180 000 and 240 000 deadweight tons (dwt).

The prefeasibility study for the Hopes Advance Bay project (Ungava Bay) led by Oceanic Iron Ore Corp's and released in October 2012 shows that the management team is looking for a Chinese or other global steel company looking to secure a long-term high-quality iron ore supply. According to Humphreys (2012),¹⁵ there are 30 to 50 companies capable of partnering with a project like this, and the company is currently engaged in discussions with 10 to 12 parties.

The Otelnuke Lake project, potentially the largest mining project in the Canadian mining history,¹⁶ will rely on the port facilities in Sept-Îles, Quebec, to ship the ore to global markets. Within the framework of the government-led

Northern Quebec Development Plan (Plan Nord), the assessment of potential sites by the Quebec Government to build a deep-water harbor in the Kuujuaq

Table 7.2. Marine transportation logistics of mining project not yet in production

Mining project	Status ¹	Owner	Expected lifetime	Marine transportation logistics (vessels, destination)
Iron ore mining activities				
Mary River	DEV	Baffinland Iron Mines Corp. (Canada), ArcelorMittal (50%) and Nunavut Iron Ore (50%).	2017–2038	<ul style="list-style-type: none"> • Vessel: MV <i>Nunavik</i> (Polar Class 4). • Ore railed south to Steensby Inlet projected deep-water port to the European Market (to the Netherlands and Germany in 2008), then shipped across Canadian Arctic waters.
Roche Bay	DEV	Roche Bay Plc Holding and Advanced Explorations Inc. (both from Canada); Chinese Investments in Advanced Explorations Inc. from a) Xinxing Ductile Iron Pipes Co. Ltd. - a subsidiary of Xinxing Cathay International Group, b) Shandong Fulun Steel Company Ltd. (China), a subsidiary of Chinese Shandong Jinyang Enterprise Group, and c) China Mining Finance Partners (China).	2017–2032	<ul style="list-style-type: none"> • Vessel: routing unavailable. • On the shore of Foxe Basin: marine logistics probable. • To China and to international markets.
Hopes Advance Bay	DEV	Oceanic Iron Ore Corp. (Canada)	2017–2040	<ul style="list-style-type: none"> • Vessel: information unavailable. • On the shore of Ungava Bay: marine logistics probable.

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Otelnuik Lake	EXPL	Adriana Resources (Canada; 40%) – Wuhan Iron and Steel Corp. Ltd. (China; 60%)	2016–2116	<ul style="list-style-type: none"> • Ore shipped to China (Qingdao Port) or to Rotterdam. • Ore should be railed south to the Port of Sept-Îles (Qc) and then shipped to international markets and to China (60% of the production in 15 years...).
Base/industrial metals mining activities				
Izok and High Lake (Izok Corridor)	DEV	MMG Ltd. (China), a subsidiary of China Minmetals Nonferrous Metals Co. Ltd. (China)	2017–2029	<ul style="list-style-type: none"> • Vessel: information unavailable. • Arctic sea shipping considered. • Shipping season will likely be limited to 100–120 days per year – From Gray’s Bay to Belgium (Antwerp) and to Japan.
Hackett River	EXPL	Glencore Xstrata Plc (Anglo-Swiss) and Sabina Gold and Silver (Canada)	2020–2035	<ul style="list-style-type: none"> • Vessel: information unavailable. • Arctic sea shipping considered. • Shipped to overseas markets by using the shipping route to the east.
West Raglan	EXPL	True North Nickel (subsidiary of Royal Nickel Corporation; Canada)	N/A	<ul style="list-style-type: none"> • Unknown information. • Located in the Cape Smith nickel belt in Northern Quebec. • Rail link south unlikely and sea port probable.

¹ Status: Exploration and Feasibility Study (EXPL); Development and construction of the infrastructure (DEV).

Source: Pierre-Louis Têtu, Jean-Sébastien Pelletier, and Frédéric Lasserre, “The mining industry in Canada north of the 55th parallel: a maritime traffic

generator?”, *Polar Geography* 38(2): 107-122, accessed June 2015, doi: 10.1080/1088937X.2015.1028576.

area (Ungava Bay) seems to be on hold, although this option would have suited the promoters.¹⁷ Adriana Resources, the Canadian partner of the Chinese company WISCO, therefore decided to invest in the construction of a railway connecting the mine to the existing Quebec North Shore and Labrador Railway network – itself connected to the Port of Sept-Îles, ice-free twelve months of the year and able to accommodate Chinamax vessels, the second largest type of bulk carrier, just behind the Valemax carriers. The iron ore from the Otehluk Lake mine will then be shipped to international markets the first fifteen years. Then, it will be China’s turn to be entitled to 60% of the production from that mine. Adriana Resources is expected to produce 50 million tons of iron ore concentrate per year up to 100 years.

Mining projects related to basic industrial metals also all rely on the Canadian Arctic navigable waterways to export their productions. Proposed by Minmetals Resources Ltd. (MMG Ltd.), the Izok Corridor (which comprises Izok and High Lake mines) production would be carried overland to Grays Bay (Coronation Gulf) where port infrastructure is to be constructed. As mentioned above, MMG Ltd wished to begin site preparation activities in 2014 with mine operations beginning 2017. According to MMG Ltd.,¹⁸ the planned port facility would be capable of handling 50 000 dwt Handymax bulkers and the ore would then be shipped to the port of Antwerp (Belgium) and to Japan. It would also include a 350 km all-weather road with 70 bridges that would stretch from Izok Lake to Grays Bay on the Central Arctic Coast.¹⁹

In collaboration with Sabina Gold and Silver Corporation, Glencore Xstrata Plc has also invested in the Hackett River Zinc and Gold Project. Glencore Xstrata Plc contemplates the idea of building a deep-water port in Bathurst Inlet and an all-weather road connecting the port of existing ice roads which service both Ekati and Diavik mines from Yellowknife, NWT.²⁰ Significant infrastructure as contemplated within the Bathurst Inlet Port and Road (BIPR) project necessary for the shipping of concentrates from the proposed Hackett

River project could also be used to support operations at the company's proposed Back River gold project. According to Glencore Xstrata Plc, the port could offer year-round accessibility and have the potential to accommodate other users.²¹ These other users could notably provide fuel distribution to communities because the port project includes a 220 million-liter tank farm. All these facilities are part of the BIPR project. The lack of infrastructure is the issue most often stated by consulted stakeholders. Except in Nunavik where the Government of Quebec recently completed a marine infrastructure program with the building of access ramps and breakwaters, and in Nunatsiavut where docks are available, nearly all communities of Northern Canada lack basic infrastructure.²²

In Greenland, the Nalunaq gold mine, the only active mine of the island, closed in 2013 due to financial problems.²³ According to advisers and scientists, however, mineral potential in Greenland is substantial. But, drilling for oil and mining is expensive and complicated in the polar seas, and falling commodity prices seems to have discouraged investors. Indeed, if there are a number of promising projects – the Bureau of Minerals and Petroleum of Greenland²⁴ lists mineral and petroleum licences in Greenland and is weekly updated –, none of them received secure funding. Currently, about 50 exploration companies are operating in Greenland and they are almost all foreigners except NunaMinerals, a local business that has conducted mining exploration and drilling since 1999.

While there is not much scientific literature conducted on Alaska, Haley et al. (2011) underlined that the state's share of total US mineral production by value increased dramatically from less than 1% in 1980 to nearly 13% by 2006. On 21 February 2015, the US Government announced it will mark the first step in supporting oil and gas production off Alaska as well as a special support for infrastructure and logistical support capabilities that are lacking in these remotes locations.²⁵

Oil in Canada

Oil exploitation is not new to the Canadian Arctic, with the Norman Wells opening in 1933 (discovered in 1920). Oil from the NWT is sent southwards through a pipeline (1985) to northern Alberta. When oil was discovered in Alaska, project to develop and ship oil from the Beaufort Sea across the Canadian Arctic emerged (the Arctic Pilot project) but never materialized.²⁶

Extensive drilling was done in the Canadian Arctic during the 1970s and 1980s by such companies as Panarctic Oils Ltd., Petro Canada and Dome Petroleum. After 176 wells were drilled (most of them in the Beaufort Sea, several in the high Arctic), at billions of dollars of cost, approximately 1,9 billion barrels (300×106 m³) of oil and (560 billion cubic meters of natural gas were found. These discoveries were insufficient to justify development, and all the wells which were drilled were plugged and abandoned. With only 5% of the Arctic oil & gas reserves to be discovered,²⁷ Canada is not the most attractive place for oil firms to invest.

Only the Bent Horn field on Cameron Island was exploited between 1985 and 1996, when Petro-Canada abandoned it. A total of 2.8 million barrels were produced at the field, a modest volume that attests to the difficulty of Arctic oil exploitation. The field was serviced by Fednav with the ice-strengthened MV Arctic to Montreal.

Drilling in the Canadian Arctic archipelago proved expensive and dangerous. Although oil is thus known to exist in the archipelago, especially in the Sverdrup area,²⁸ the geology of the Canadian Arctic turned out to be far more complex than oil-producing regions like the Gulf of Mexico. It was discovered to be gas-prone rather than oil prone, thus leading to less interest from oil companies.²⁹ More recently, the falling oil prices further reduced the interest of oil companies for drilling offshore in the Canadian Arctic. Chevron announced on 17 December 2014 that it indefinitely put on hold plans for drilling in the Beaufort Sea.³⁰

Arctic mining in Eurasia: an industry much more turned to shipping

In Arctic Scandinavia and Russia, minerals and oil have been shipped across Arctic seas for decades and in considerable volumes. Three main factors account for this: the fact that Arctic Norway and the Barents Sea are ice-free year-round facilitates shipping. The other reason is the fact resource exploration dates back to several decades ago, sometimes to the eighteenth century in northern Norway and Sweden. Plans to develop minerals in Svalbard and Arctic Scandinavia date back to the end of the nineteenth century, while in the Kola Peninsula or Siberia, under the planned economy of the Soviet regime as early as the 1930s, exploration was very active. Apatity was founded in 1930, Nikel/Kolosjoki (in Finland at the time) and Norilsk in 1935.³¹ Transport infrastructures also largely facilitate shipment through the Arctic: if pipelines usually draw oil and gas southwards, they also feed Arctic export terminal like Arkhangelsk and Murmansk through connections with railways. And, precisely, the railway network played a dual role, facilitating the shipment southward when the distance to markets is not too great (as for instance in Vorkuta or Kostomuksha³²), but also making the exploitation of large fields profitable through the connection to sea terminals in the Kola Peninsula or the Swedish hinterland. In Finland, according to Haley and al. (2011)³³ Arctic Finland is therefore not dependent on mining [...] and faces an uncertain future where old mines yield fewer new discoveries, "but where easy transportation exists, and new investment continues."

Coal has been exploited in the Svalbard archipelago since the end of the nineteenth century. The first mine was opened by Norwegian citizen Sören Zachariassen at Bohemanflya, the first shipment taking place in 1899. Typically, due to limited access to financial resources, early Norwegian mining and prospecting mining companies failed to open larger scale, all-year coal mining. At the beginning of the 1900's, Norwegian companies sold their claims to international companies. The Norwegian company A/S Bergen-Spitsbergen Kullkompani sold its claims to the British Spitsbergen Coal & Trading company. At the same time, in 1906, the American citizen John M.

Longyear founded the Arctic Coal Company by the purchased of the claims of another Norwegian company. He founded Longyearbyen on the island of Spitsbergen. The company was purchased ten years later by Norwegian Store Norske Spitsbergen Kullkompani (Store Norske). Coal has also been exploited by Swedish, Russian and Dutch coal companies. Now, two Norwegian (one of them, Store Norske is active in Svea, and in Mine 7 in Adventdalen) and one Russian companies still mine coal in Svalbard and shipped 1,77 million tons in 2011³⁴. Nowadays, production at Adventdalen has been much reduced, and some of the coal from this site is used to cover Longyearbyen's own consumption. Commercial mining now takes place primarily at Svea, where a new mine, Lunekefjell, opened in 2014.³⁵

Iron ore exploited from Kiruna (1898) and Malmberget (1888) in Sweden is largely shipped by rail to the Norwegian port of Narvik,³⁶ and then by sea. In 2009, Malmberget produced 17,7 million tons of iron-ore products and together, both Kiruna and Malmberget produced 32,5 million tons of iron ore.³⁷ The copper and base metals mine in Aitik (Garpenberg, Kankberg, Kristineberg, Maurlinden, Maurlinden Ostra and Renstrom fields) is one of Europe's largest and output is also largely shipped through Narvik. In 2011, 18 million tons of iron ore were shipped from the port of Narvik. Several mining projects in northern Norway would like a rail link to be built to subarctic ports Narvik or Tromsø or Arctic port Kirkenes to ship their ore by sea.³⁸ Iron ore from the Børnevatn mine in northern Norway is shipped from the port of Kirkenes on the Barents Sea, with a production/shipment targeted at about 3 million tons per year since 2009 when the operations resumed (the mine was shut down since 1996),³⁹ but traffic actually was reduced as iron ore prices have dipped down in 2014. The Norwegian government's High North Strategy (2006) dedicates a brief passage to mining, but it is merely a token compared to the attention devoted to marine resources and petroleum activities in the same document. However, mining definitely generates marine traffic and the volume could increase in the future if rails links are built northwards.

Murmansk has had a long history of shipping minerals (coal with 11,6 million tons in 2012 or 74% of total traffic⁴⁰; apatite with 986 000 tons) and ore (nickel, non-ferrous metals with 326 000 tons; iron, mainly concentrate with 1,63 Mt). Mining activity is intense in the Kola Peninsula, and a large part of the production is shipped from the port of Murmansk, free of ice year-round. Kola MMC JSC, a subsidiary of Norilsk Nickel, is the leading production company in Murmansk region and is completely integrated into the transport infrastructure of the North-Western Federal District.⁴¹ In the Taimyr Peninsula, on the 69th latitude, the polar division of Norilsk Nickel – MMC Norilsk Nickel JSC Polar Branch – produce sulfide copper-nickel ores at Oktyabrskoye, Talnakhskoye and Norilsk-1 fields. These fields contain nickel, copper, cobalt, platinum group metals, gold, silver and other components. The Taimyr region is linked with the country's other region by inland waterways (Yenisey River), marine transport by the Northern Sea Route and air transport. Dudinka in Siberia is acting as the sea port for the mining town of Norilsk, where nickel ore is mined. In 2010, Dudinka shipped 124 200 tons of nickel⁴² mainly for domestic purpose, export nickel in the Far East. From Dudinka, Norilsk Nickel shipped 43 700 tons of iron ore to China in 2010 on the MV Nordic Barents and a shipment of 18 500 tons of non-ferrous metals to Shanghai via the MV Monchegorsk.⁴³ The Murmansk Shipping Company's vessel Norilsk shipped 19 400 tons of scrap metals to Taiwan, from Dudinka, in September 2010. There is no rail alternative for nickel shipment since the Salekhad-Igarka railway built by Gulag prisoners between 1947 and 1953 was never completed and the opened sections were abandoned in 1990.

Coal has been mined in Vorkuta since 1932 and was shipped through the railway built by Gulag prisoners in 1941. In 2014 the mine produced a total of 11,4 Mt, a decrease of 7% from 2013, because of obsolete equipment. Inta, another coal mine in the Komi Republic, produced 1,7 Mt of coal in 2014 but is also in a dire financial situation.⁴⁴ The largest coal field of Russian Federation is Kuznetskiy bituminous field at Kemerovskaya Oblast, which represent nearly 25% of Russian coal resources. A titanium field was supposed

Table 7.3. Overview of Mining in the Arctic Region North of the 55th Parallel.

Arctic States/ Commodities	Stage of mining development		
	Exploration	Development	Active mines
Canada			
Iron Ore	1	3	0
Base/Industrial Metals	2	3	5
Uranium	2	1	0
Precious Metals	3	2	5
Greenland			
Iron Ore	9	1	-
Base/Industrial Metals	15	2	-
Precious Metals	18	1	1
Rare Earth Metals	13	1	-
Others	18	-	-
Norway			
Iron Ore		15	2
Base/Industrial Metals		18	1
Precious Metals		3	-
Others		10	1
Sweden			
Iron Ore	-	6	5
Base/Industrial Metals	-	9	8
Precious Metals	4	3	3
Rare Earth Metals	1	1	0
Finland			
Iron Ore	-	2	-
Base/Industrial Metals	-	4	5
Precious Metals	-	1	5
Rare Earth Metals	-	1	-
Russia			
Iron Ore		Information unavailable	
Base/Industrial Metals	-	-	10
Precious Metals	-	-	13
Coal	-	-	14
Alaska			
Iron Ore		Information unavailable	
Base/Industrial Metals/Coal		5	1
Precious Metals		2	4
Svalbard			
Coal			3

Source: Data compiled by authors from various sources

to be developed in Pizhemscoe (Komi Republic) in 2008 but the project seems to be halted.⁴⁵

The Arkhangelsk Oblast has large bauxite reserves (120 Mt) and the North Onezhsky bauxite mine is the largest in Europe,⁴⁶ though its production capacity is still on hold (0,1 Mt in 2014⁴⁷). The Sredne-Timan bauxite mine (in the Komi Republic)⁴⁸ is also exploited (2,4 Mt/y⁴⁹ and reserves of 260 Mt⁵⁰) and is conveniently located close to the Northern Railway. Although a smelter was planned to be built nearby at Sosnogorsk (Komi Republic), the bauxite ore are apparently now shipped by rail to smelters in Sverdlovsk and Chelyabinsk.⁵¹

Eurasian oil and gas fuel shipping in the Norwegian, Barents and Kara Seas

Natural gas is already shipped since 2007 from the Snøhvit terminal at Hammerfest (Norway). Annual production is about 5,36 million cubic meters per year. Oil production from the Barents and Kara Seas (from the Prirazlomnoye field for instance, the first Russian Arctic offshore oil field put in commercial production, which entered production in 2013) presently transits through the Varandey terminal (in the Pechora Sea), which shipped 7 Mt of oil in 2009, and shipments have begun from Prirazlomnoye in 2014,⁵² but Murmansk is also experiencing a strong increase in oil shipments following the development of new oil infrastructure and terminals in the Russian North. The volume of petroleum products shipped through the Barents Sea has increased from 4 Mt of crude oil in 2004 to 15 Mt of oil, gas and oil products in 2010.⁵³ It should keep increasing with the production increase at Prirazlomnoye and pipeline projects to Varandey, given that Lukoil plans to increase oil shipment volumes by building an 8 Mt-capable pipeline from Kharyaga (onshore, south of Varandey) to Varandey.

About 50 Mt of crude oil and petroleum products can be delivered by rail to the Murmansk port terminals (Barents Sea), and Vitino (Kandalaksha Bay) and Arkhangelsk (White Sea), all the more so as in 2005, the electrification of the

October railway (Moscow-St-Petersburg-Murmansk) was completed, increasing cargo capacity by 50%; and in 2010, Gazprom opened the Polar Line (the northernmost railway in the world) from Obskaya to Bovanenkovo and Karskaya stations to connect the Northern railway with the Bovanenkovo gas field. The Northern Railway notably feeds the oil terminal in Arkhangelsk. It is also planning to build a line from Sosnogorsk in the Republic of Komi to Indiga in the Nenets Autonomous District, with a new port on the Barents Sea. Another rail line should go from Vorkuta to Ust-Kara on the Kara Sea. In addition, up to 20 Mt of oil are soon expected to come from the northern Timano-Pechora oil fields – 12,5 million via the Varandey terminal, and 7,5 million from Prirazlomnoye field. Dolginskoye oil field, which is estimated to be three times as big as Prirazlomnoye, should be the next large offshore field in the Pechora Sea put on stream.⁵⁴

LNG should also be exported by ship using the NSR from the Sabetta port now being built by the Russian oil company Novatek; the port and the liquefied gas plant should open in 2016. The port of Sabetta could also be used for further development of hydrocarbon fields located in the Yamal Peninsula and the Gulf of the Ob River. The port could also be used for shipping goods other than hydrocarbons and the promoters expect traffic will reach 15 Mt in 2018.⁵⁵ Nevertheless, the bulk of gas from the Siberian Arctic, mostly exploited in the Yamal area or the Ob delta, is sent through gas pipelines to Europe, from Ukhta or Novy Urengoi.

Discussion

Contemporary mining activities that take place in the Arctic north of the 55th parallel is highly concentrated in the European and Russian Arctic part and date back to the twentieth century; mining exploration and exploitation have indeed been part of the face of the Arctic for decades in Scandinavia and Russia.

In Eurasia, in the Barents's sea region, there is a strong shipping activity in northern Norway and the fact that this part of the Arctic is ice-free year-round

definitely facilitates shipping. Transport infrastructure also largely facilitates shipment through the Arctic and feeds Arctic export terminals like Arkhangelsk and Murmansk through railway connections. The rail network plays a dual role, facilitating the shipment southward when the distance to markets is not too great, but also making the exploitation of large fields profitable through the connection to sea terminals in the Kola Peninsula or the Swedish hinterland. Mining activity is also intense in the Kola Peninsula, and a large part of the production is shipped from the port of Murmansk, free of ice year-round and well connected to air, rail and roads networks. In Russia's Kara Sea region, because there is no rail alternative for nickel shipment, Dudinka in Siberia is acting as the sea port for the mining town of Norilsk. However, many examples mentioned in this paper show that a large share of mining ores and concentrates is shipped by rail south. In the Komi Republic, the large coal fields, including the largest coal field of Russian Federation (Kuznetskiy, Kemerovskaya Oblast), which represent nearly 25% of Russian coal resources, are serviced by rail southwards. In the Arctic, and it is mainly the case in the Russian part, the well connected port of Murmansk, notably since the electrification in October 2005 of the railway Moscow-St-Petersburg-Murmansk, increased cargo capacity. However, many projects were put on hold or being halted due to obsolete equipment, dire financial situation, and global economic health. It is also the case for some mines in northern Norway, including the Bjørnevatn mine, which were put in "care and maintenance" due to low iron ore prices. Nowadays, in Svalbard, production at Adventdalen has been much reduced, and some of the coal from this site is used to cover Longyearbyen's own consumption. On the other hand, mines in central Sweden and central Finland are considering extending a rail link to Arctic or subarctic ports rather than shipping through Baltic ports: the geography of mining logistics is evolving fast and depends on location, costs and markets. Mines located within a reasonable distance to a seaport ship through Arctic or subarctic seas, and the equation is still relevant nowadays in Canada or Scandinavia, where mining firms consider whether to send ore southwards overland or to develop a link to a seaport.

In Northern Canada, metallic ore flows essentially originate from Voisey's Bay on the Labrador coast and Deception Bay in Nunavik (Raglan and Nunavik Nickel mines); the transportation logistics of gold and diamond mining products rely most of the time on air transportation. While metallic ore flows can be very volatile and are subject to international market demand and the resulting commodity prices, regulatory measures can also have an impact on cargo flows. Despite its significant expansion, the scope of mining in the Canadian subarctic region has nothing in common with the scale of mining in Scandinavia or in the Russian Federation, where mining was developed under the centrally-planned Soviet Union, arguably a quite different economic system. The high level of infrastructure development and intense mining activity in both the Kara Sea Region and the Kola Peninsula are partly the reflection of the Soviet government-controlled economy that decided to develop Arctic resources despite high financial and human costs.

Therefore, the capacity of mining and oil & gas activities to trigger a growth of maritime influx is real, but still modest. The large mining project of Mary River, set to be one of the largest iron ore mine, will be serviced with only six to eight ships. As more mining sites open up, on a pace linked to world prices, traffic will definitely increase, but it is unlikely it will ever reach thousands of ships. A comparison between the Northwest Passage and the Russian Arctic is relevant here (see table 7.4). The NSR benefits from a long Russian experience, the presence of many viable ports located along the length of the Northeast Passage, a strong icebreaker fleet and a network of S&R bases.⁵⁶ While the Russian ice-breaker fleet is aging and will require significant investment during the coming years, Canada's fleet pales by comparison; Canada's heaviest icebreaker is the CCGS Louis S. St-Laurent with a PC3 (Arctic Class 4),⁵⁷ whereas Russia boasts several heavier, stronger icebreakers. This partly explains the attractiveness and the higher number of cargo vessels in transit through the Northern Sea Route, in comparison with the Northwest Passage where commercial cargo transits remain minimal. However, even with these advantages,⁵⁸ the expansion of destination traffic,⁵⁸ figures remain much smaller than along classic waterways like Suez or Panama.

Whole of Government through an Arctic Lens

Table 7.4. Transit traffic on the Northern Sea route and Northwest Passage, from 2011 to 2014.⁵⁹

	2014 ¹		2013		2012		2011	
	# of Vessels	Volume (GRT)	# of Vessels	Volume (DWT)	# of Vessels	Volume (DWT)	# of Vessels	Volume (DWT)
Northern Sea Route transits (Russia)	53 transits		71 transits		46 transits		34 transits	
Total Cargo volume :	568 881 GRT		1, 35 M DWT		1, 25 M DWT		N/A	
Liquid Cargo	27	434 624	31	911 867	26	895 000	17	N/A
Bulk Cargo	1	41 071	4	276 939	6	359 201	4	N/A
Liquefied	0	--	1	66 868	0	--	0	--
Natural Gas								
General Cargo	15	93 186	13	100 223	0	--	2	N/A
North-West Passage transits (Canada) ^{2,3}	25 transits		30 transits		29 transits		27 transits	
Total Cargo volume :	69 682 GRT		104 584 DWT		53 160		99 836	
Liquid Cargo	3	22 311	1	17 080	1	53 160	4	65 610
Bulk Cargo	1	24 997	1 ⁴	75 603	0	--	0	--
Liquefied	0	--	0	--	0	--	0	--
Natural Gas								
General Cargo	2	22 374	2	11 901	0	--	3	34 226

¹ For 2014, the statistics on total volume provided by the Northern Sea Route Information Office are only available in Gross Tonnage. The Canadian Coast Guards statistics offered both, GRT and DWT. This use of competing units is a problem; for example GRT is a volume unit - one register ton is equal to a volume of 100 cubic feet (2.83 m³), a volume that, if filled with fresh water, would weigh around 2 800 kg or 2,8 tons. Deadweight tons is the weight of cargo, or the displacement of the ship, at any loaded condition, minus the lightship weight. Figures are thus very difficult to compare.

² Most of the traffic in Canadian Arctic Waters is destination traffic.

³ Most of transits (at least half) is the result of pleasure crafts (adventurers) that did not report to NORDREG. On the NSR, the picture is very different as transit figures do not display any pleasure craft.

⁴ In 2013, the *Nordic Orion* (owned by the Danish company Nordic Bulk Carrier) was the first cargo ship to transit across the Northwest Passage, travelling with a Canadian Coast Guard icebreaker, from Vancouver (Canada) to Pori (Finland), with a coal shipment of 71 000 tons.

Growth in transportation demand, particularly relating to resource development project, is obviously an opportunity for the Arctic marine transportation sector. This growth in demand for marine shipping may encourage new shipping lines to enter the market and increase competition in transportation services. Nevertheless, the economic uncertainties related to project development, and the difficult logistics surrounding their implementation, challenge several mining and shipping companies' enthusiasm. The Arctic remain a costly and difficult place where to operate a development project. The viability of northern mineral developments is related to a wide variety of conditions, including access to capital and direct foreign investment for the development and construction of infrastructure; international market conditions and shifting demand that largely determines commodity prices and the profitability of a project; the prospect of alternate mineral sources (competitiveness); harsh environmental conditions and high operating costs in northern latitudes; operational conditions including a short drilling season, remoteness, storms, icing, darkness in winter, changing sea-ice conditions; as well as several conditions including regulatory and permit processes and the requirement for negotiation with Indigenous land-claim organizations. While this is beyond the scope of this paper, it is important to keep in mind that mining in the north increases risks and hazards posed by maritime transportation, both at the regional and local scale. Concerns raised by local communities and the impact of increased shipping on marine life, the prospects of groundings and collisions, pollution of the marine environment from ballast water and fuels are also important constraint to mining in the Arctic. Then, it appears that the long-term viability and benefit of such investments remain an open question. In addition to operational challenges in the Arctic, significant logistical, technological and infrastructural problems remain to be solved to improve accessibility to natural resources and make extraction and transport of hydrocarbons and minerals a safer operation. Similarly, improvements include arctic vessels, namely a fleet of ice-strengthened cargo ships and specialized vessels operating in the harsh Arctic environment.

In the early twenty-first century, despite all these uncertainties, demand for minerals in some emerging countries of the world is still growing fast, albeit slower than it used to until a few years ago. It cannot be denied that this international demand, driven mainly by China and India, has an impact on market prices and this result in an increased interest for northern resources. While industrial mining demand should generate demand for additional vessels, the limited northern marine infrastructures, mainly in the Canadian part of Arctic, environmental realities, as well as institutional capacity constraints including insufficient information, planning challenges, as well as regulatory barriers all increased the cost of doing business in the North.

Notes

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² Sharman Haley, Matthew Klick, Nick Szymoniak, and Andrew Crow, "Observing Trends and Assessing Data for Arctic Mining," *Polar Geography* 34(1): 37-61, accessed June 2015, doi: 10.1080/1088937X.2011.584449.

³ Pierre-Louis Têtu, Jean-Sébastien Pelletier, and Frédéric Lasserre, "The mining industry in Canada north of the 55th parallel: a maritime traffic generator?", *Polar Geography* 38(2): 107-122, accessed June 2015, doi: 10.1080/1088937X.2015.1028576.

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⁵ Léa-Marie Bowes-Lyon, Jeremy P. Richards, and Tara M. McGee, "Socio-economic impacts of the Nanisivik, and Polaris mines," in *Mining, Society, and Sustainable World*, ed. Jeremy Richards, 371-396 (Berlin: Springer-Verlag Berlin Heidelberg, 2010).

⁶ A polar class ship is one to which a Polar class has been assigned. There are seven classes ranging from Polar class 1, which is capable of year-round operations in all type of polar waters, to Polar class 7, which is typically a ship that works during summer and autumn operations in thin first-year ice.

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¹⁰ The Polar class selection depends on an analysis of ice statistics, owners experience, ice-expertise, and financial and economic considerations. The Polar Rules give on general guidance and all Polar classes can find ice that will damage

the structure. Class selection is a balance among ice conditions, operational requirements, and costs. While various Classification Societies have had their respective requirements for Polar Class ships, the International Association of Classification Societies harmonized the rules which came into effect in March 2008¹⁰. It is interesting to note that this Polar Class vessel is ranked higher than any Canadian Coast Guard Vessel in terms of Ice Class. However, it is not new to see Polar Class 4 ranked vessel with a Russian flag.

¹¹ Têtu et al, “Mining industry in Canada north of the 55th parallel.”

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²² CPCS, “Marine Transportation North of the 55th Parallel.”

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8

Emergency Management in the Arctic: The Context Explained

Meredith Kravitz and Vanessa Gastaldo

This chapter highlights key issues and obstacles to successful emergency management and search and rescue in the Canadian Arctic. These include regional geography, population density, infrastructure, communications needs, and climate change and its potential to create shifts in Arctic socioeconomic structure. Our study also takes stock of existing emergency management structures and procedures in Canada's Arctic across federal, sub-national and local jurisdictions, highlighting areas of strength and success, as well as those areas that are in need of improvement.

Despite the changing nature of emergency challenges in Arctic region, traditional emergency risks, in the form of weather events and natural disasters, are still the most common at the local level. Forest fires and flooding remain the most prominent risks in both Yukon and the Northwest Territories, while extreme weather emergencies (particularly storms and blizzards) rank high in Nunavut. Some of the potential impacts from recent shifts in the Arctic's social and economic environment, such as increased tourism and commercial shipping, have yet to materialize. Still, it is clear that there is a need to proactively address how the potential outcome of these changes may impact existing emergency management policies well in advance.

Context

The Canadian Arctic comprises 40 per cent of Canada's landmass. It extends over 15 million square kilometres of land and sea. For the purposes of our study, we have divided Canada's Arctic into two distinct geographical regions

with unique features that can impact emergency risks and response needs. The first area includes the western Canadian Arctic and is nested in a larger international region which includes Alaska, Chukotka (Russia) and adjacent sea areas. In this area, biological diversity is most at risk from climate change. Major threats from forest disturbances and coastal erosion will increase the vulnerability of community infrastructure.¹ The second geographical region is composed of the central and eastern Canadian Arctic and their adjacent seas, as well as Western Greenland. This region will experience the most intensive effects of the melting Greenland Ice Sheet. Rising sea levels and storm surges are projected to inundate coastal areas.² Such changes would pose a particular challenge to the territory of Nunavut, as all 25 of its communities are located along on the coast. Although the projected environmental impact differs for the regions, both are expected to experience climate change activity that will put stress on communities and infrastructure. These changes will likely cause more frequent states of emergency.

The human geography of the region is equally complex. Dozens of languages are spoken over a vast and complex terrain that stretches across one sixth of the Earth's landmass. Population densities in the circumpolar North are generally low. Indigenous Peoples account for approximately 10 per cent of the total population. In the Canadian North, of a total population of about 100,000, just under half of the population is Indigenous. Nunavut, the largest of Canada's northern territories and has the highest proportion of Indigenous peoples (about 85%), while the Yukon has the least (about 25%).³ The Northwest Territories, which has the largest overall population, is about 50% Indigenous.

One unique feature of human geography which has potential to exacerbate regional security issues is the degree to which Arctic Indigenous peoples, in particular those outside of urban centres, rely on the land for subsistence. Country food is an integral part of their food and cultural security. In rural parts of the Canadian Arctic, for example, country food can account for as much as 40 per cent of a family's diet.⁴ Barriers to hunting for country foods

or a decrease in the availability of country foods have negative consequences on health.⁵ The role of country foods makes both moving and travelling on the land to access these sources of nutrition and the potential for their contamination an important consideration for emergency management policy in all regions of the Arctic.

Other considerations in the landscape for emergency management within the region include the state of transportation and communications infrastructure. Canada's sparsely inhabited northern territories and provinces experience unique challenges and vulnerabilities with regard to mobility and accessing transportation infrastructure. This, in turn, has impacts upon the region's socioeconomic conditions.⁶ For example, less than one per cent of Canada's two lane roads are located in the territories, 70 per cent of which are unpaved (about 7,000 kilometres). None of these paved roads are in Nunavut.⁷ Similarly, Canada's northern territories have a mere 0.2 per cent of Canada's rail lines, all of which are located in the Northwest Territories.⁸ There are numerous communities that can only be accessed by air: 10 fly-in communities in the Northwest Territories, one in Yukon, and all 25 communities in Nunavut. These remote communities rely on air transportation for goods and services, therefore disturbances in transportation routes can lead to shortages of food and other essential supplies.⁹ Such an infrastructure deficit, experienced by northern Canadians, curtails options for emergency management, and creates unique policy implementation problems when emergencies arise.

There are similar problems with communications in Canada's North. Reliable communications networks are necessary for everyone in the region, from local hunters to large cruise and cargo ships. Communications infrastructure plays a large role in the lives of residents in Canada's Arctic. It supports economic development, access to social services and reduces isolation. Access to efficient high-speed internet can be an important differentiator in the lives of Canada's northern residents, but rapid, reliable access is even more crucial during an emergency.¹⁰

Communications for emergency response purposes is fundamental to the initiation and administration of an effective response. Being able to instantly communicate over the internet is particularly difficult in Canada's North, as most telecommunications information is routed through a larger northern community (i.e. Yellowknife or Whitehorse), and redirected to the desired destination, as opposed to moving from where the information is generated directly to the destination. For example, during Operation Nanook 2009, increased use caused a communications infrastructure failure, during which an electrical failure shut off power to Iqaluit for two hours and impacted communications during the exercise. During the outage, businesses were closed and activity on the ground came to a halt. It was found that the influx of out-of-territory personnel arriving in one community overloaded the local cellphone and Internet networks.¹¹

A breakdown in communications infrastructure during a true emergency— as opposed to an exercise – could have calamitous consequences. Personnel from multiple government agencies would not be able to communicate with each other, nor with community residents. Since communities can only move goods to neighbouring communities by air, and the first phases of emergency response must be done on the ground, the ability to communicate with community members is crucial.¹² If additional assistance is warranted, Canada's Arctic communities must wait for it to arrive from Southern Canada, usually by air. Not being able to call for this support could increase the risk of injury to people and property during an emergency.

In the case of an emergency, information being communicated via Internet networks may need to bounce between multiple locations before being successfully delivered (depending on location and intended destination).¹³ The indirect flow of online information can cause emergency responders to lose crucial time during an emergency. Delays can also be the result of increased use of bandwidth. Too much information trying to move to the same place at the same time during an emergency can create bottlenecks inside the network, further decreasing the speed of information.¹⁴ A secondary effect of local

networks becoming overwhelmed is the potential breakdown in proper emergency response protocol. Interagency communication can be limited when different systems are used by different government agencies to pass data back and forth.¹⁵ An example of when this might occur is when the military's information system has higher security clearance requirements than a civilian one, preventing military information from getting to civilian responders. In addition, the design of communications networks in the Arctic has no protocol for allowing priority communication. As such, there is no way to ensure that emergency communication would be prioritized over general communication traffic. The communications infrastructure of Canada's Arctic communities is fragile and is heavily dependent on only a few centralized points, which decreases stability. Investments in communications infrastructures can contribute to decreasing the overall vulnerability of a community.

Canada's Emergency Management Structure

Under Canada's federal structure, provincial governments are responsible for preparing for and responding to emergencies contained within their borders. However, because territories are defined through federal legislation, and in the case of Nunavut includes a land claim process, this provision does not necessarily apply. Instead, rights and responsibilities of territories are granted through federal regulation. Responsibilities for emergency management are therefore shared between the territorial and federal governments, creating a unique set of complexities in the burden sharing relationship between Canada and its territories.

Intergovernmental co-operation is essential to a successful emergency response. Also, local law enforcement and community members must remain highly flexible to meet the diverse emergency response needs. Community members often play an informal role in emergency response, including everything from aiding in the search and rescue operation to providing blankets and food to emergency response teams. This section provides an overview of Canada's emergency management structures, including local, sub-national and federal areas of responsibility and preparedness.

Emergency Management at the Local Level: First Responders

In the Canadian Arctic, local capacity for emergency preparedness is of the utmost priority. At the local level, communities play an active role in both the prevention and response phases of emergency management. During search and rescue (SAR) or a local emergency, the initial response will be generated from inside the community. The roles of communities in emergency response are vast and dependent on the type of emergency involved. They can include:

- being first responders;
- gathering travel information from local hunters in the event that a search needs to be initiated;
- coordinating care of people, animals and goods during an evacuation; and
- providing local knowledge to emergency responders who are foreign to the community or region.

It is crucial that the first wave of responders be prepared to initiate a response without reliance on external resources. The speed of arrival of the second wave of emergency responders (such as military or territorial resource support) is dependent upon the same factors that make Arctic communities particularly vulnerable: remoteness and weather conditions that inhibit travel. These factors can halt or delay second- wave response.¹⁶

During a local-level emergency the SAO is responsible for declaring a local state of emergency and co-ordinating the emergency response. Depending on the size of the community, the SAO is assisted by local-level committees responsible for specific aspects of emergency response, such as managing logistics, finance and communication with the public. Although emergency management is a municipal function, the RCMP has jurisdiction over ground SAR events. In addition to land-based SAR responsibilities, the RCMP often act as first responders during local level emergencies. For example, if a cruise ship runs aground, the RCMP initiates the initial response because they are the only ones on the ground and therefore able to begin a response immediately.

Although the RCMP will call on the military for help if necessary, it may take six to eight hours for military aid to arrive from Trenton, Ontario. Not only does the RCMP play an integral role in ensuring that emergency responses are swift, they also act as communication centres for community members.

The Canadian Rangers are the other key response group to emergencies in the Arctic. The Rangers are a component of the Canadian Forces Reserve that provide patrols for national security and public safety in Canada's Arctic and other isolated areas. They draw on the indigenous knowledge of its members and are managed at the community level. There are approximately 5000 Canadian Rangers located in over 200 remote communities across Canada, with more than 1800 Rangers in 59 patrols in the northern territories.¹⁷

Though the traditional role of the Canadian Rangers is based on sovereignty and surveillance activities, their responsibilities are evolving to include more day-to-day activities. Rangers are considered an integral part of emergency management and search and rescue in the Arctic. Due to their extensive knowledge of travel and survival in the Arctic, they are often deployed as first responders in emergency scenarios.

Although the RCMP and Canadian Rangers play vital roles, there is also a strong reliance on local, mayoral, and municipal committees for action during emergencies. These local players act as the key point of support for preparedness and practice scenarios as well.

Military Support and the Coast Guard

The federal government plays an operational role during emergencies in the Arctic that require search and rescue. When the Joint Rescue Co-Coordination Centre (JRCC) is involved in an emergency, aerial and marine resources are dispatched from multiple locations across Canada.

JRCC Trenton reaches across three time zones and seven provinces and territories. It directly borders two other countries: the United States and Greenland (Denmark), with a third, Russia, in close proximity. The responsibilities of coast guard and military units in Canada's Arctic are not only within JRCC Trenton's SAR region. Victoria SAR and Halifax SAR have responsibilities for components of Canada's western and eastern regions, respectively.

The only permanent search and rescue assets based in the Arctic are four twin otter aircrafts in Yellowknife, NWT. However, these assets are not primarily called upon for search and rescue purposes. This is because of their limited capacity due to range and size.¹⁸ The shortage of aerial SAR equipment in the Arctic creates a significant lag time in responding to emergencies. According to the Standing Senate Committee on National Security and Defence, preparation and travel times after a distress call in the arctic is received are too long.¹⁹ For example, it is often suggested that it takes approximately six hours for aid to arrive by air from Trenton to Resolute, however eight to 12 hours is not uncommon. Most of the aerial resources dispatched during an emergency are located in Southern Canada.

According the Department of Protective Services at the Government of Nunavut, the operating cost of dispatching a C-130 Hercules SAR aircraft is \$31,000 an hour.²⁰ If the average time to fly from Trenton to an Arctic destination is between six and 12 hours, it can be argued that the cost of getting a C-130 Hercules there and back is approximately \$372,000 – \$744,000 (see table 8.1). However, the C-130 cannot complete all functions necessary during a search and rescue. When an evacuation is involved, a CH-146 Griffon or a CH-149 Cormorant are also dispatched. The costs can add up quickly when multiple aircrafts are involved, as seen when 24 people had to be rescued from an ice floe near Arctic Bay in August 2013. *The National Post* reported that the cost of the rescue to the Canadian government was \$2.7 million.²¹

Table 8.1. Aircraft Used in Search and Rescue in Canada and their Operating Costs

Aircraft	Use	Operating Cost (per hour)	Operating Cost (per 12 hours)
C-130	Long range transport and rescue	\$31,000	\$372,000
Hercules			
CH-146	Tactical airlift, multi- purpose helicopter	\$11,000	\$132,000
Griffon			
CH-149	Medium duty, SAR- dedicated helicopter	\$32,000	\$384,000
Cormorant			

Conversely, coast guard vessels that are dispatched during an emergency are icebreakers or other ships that are already working in Canada’s Arctic. During the summer season, the Arctic has nine primary search and rescue vessels and six inshore rescue boats that are generally operational, although at any given time some may be under repair.²² Canada currently has two heavy icebreakers and one medium icebreaker stationed in the Arctic, and three icebreakers in Quebec. One additional polar icebreaker is expected to be built and commissioned by 2017.²³

The length of time that it takes for a marine vessel to arrive at the scene of an emergency is dependent on several factors. The Canadian Coast Guard predicts that its icebreakers can be available to vessels needing icebreaking services in the Canadian Arctic within 10 hours. However, this time frame varies depending on ice conditions and the departure location of the icebreaker, which could be anywhere in the Canadian Arctic region. But Marine support can take multiple days if the weather and location of resources are not favourable. This time lapse makes air support even more critical, as marine vessels often cannot adequately respond to time-sensitive emergencies.

Emergency Management at the Sub-National Level

In Canada, the development of an emergency management plan brings many governmental and non-governmental actors together in order to assess leadership, responsibility and capacity issues that influence how the community responds to an emergency. The relationship between communities and territories is dynamic, with larger communities having more resources, therefore being less reliant on territorial supports during an emergency. Territories have several primary responsibilities in the emergency management process:

- Each territory is responsible for developing its own territorial-level emergency plan, to be implemented in the event an emergency is not contained in a single community;
- Territories are responsible for ensuring that their communities create emergency plans applicable to local-level emergencies;
- Territories must provide capacity support for communities unable to cope with an existing emergency; and
- Territories are accountable for estimating the likelihood that territorial-level resources will be called upon, and prepare accordingly.

Representatives from territorial governments work with community leaders to determine the types of emergencies that are likely to impact their community. Known as a “hazard identification risk assessment,” or “HIRA,” these assessments provide the basis on which all community emergency preparations take place. The table below details primary and secondary risks impacting Canada’s Northern territories. Data was gathered from the HIRAs of Yukon and Nunavut, and the emergency management assessment completed by the Munk-Gordon Arctic Security Program in Yukon and the Northwest Territories.

It is evident from existing emergency management provisions and procedures that Canada’s Arctic residents are aware of the risks they are most likely to face, and are taking steps to become more prepared. Yet the level of remoteness experienced by a community limits the potential for effective measures.

Table 8.2: Primary and Secondary Risks in Canada’s Territories²⁴

	Yukon	Northwest Territories	Nunavut
Primary Risks	<ul style="list-style-type: none"> - Forest fire/wildland fire - Flooding - Earthquake - Electrical power outage (especially in winter) 	<ul style="list-style-type: none"> - Forest fire/wildland fire - Flooding 	<ul style="list-style-type: none"> - Major infrastructure fire - Health emergency - Major power loss - Storm surge/extreme cold
Secondary Risks	<ul style="list-style-type: none"> - Chemical contamination spill - Automobile accident blocking Alaska Highway - Communications outage - Major frost or freeze 	<ul style="list-style-type: none"> - Power outages - Fuel shortage - Fuel spills 	<ul style="list-style-type: none"> - Loss/contamination of water supply - Hazardous materials/chemical spill - Aircraft emergency (casualties, loss or runway)

Emergency Management at the Federal Level

At the federal level, the *Emergency Management Act* defines regulations for emergency preparedness and response.²⁵ The Act establishes what constitutes a federal emergency and the hierarchy of decision-making that should be implemented, and gives power to the minister of public safety to develop regulations for the preparation, maintenance, and training surrounding emergency plans.²⁶ The Act also gives power to the minister of public safety to develop joint management plans with the minister of foreign affairs and relevant international authorities, as was done with the Arctic Council-negotiated *Agreement on Aeronautical and Maritime Search and Rescue*.²⁷

The Government of Canada has a separate act for the declaration of emergencies that require management from the federal level. The *Emergencies*

Act gives the Canadian government the power to take special measures to protect Canadian sovereignty and its citizens during a national state of emergency, defined as: incidents that either endanger the lives, health, or safety of Canadians, and where resources required exceed the ability of the province or territory to provide; or incidents that threaten the ability of the Government of Canada to protect its sovereignty, security or the territoriality of Canada.²⁸

Together, the *Emergency Management Act* and the *Emergencies Act* outline federal powers to provide resources during an emergency. In order for these pieces of legislation to be implemented, an emergency has to be of national significance.

Disparities Between Planned Scenarios and Real-time Emergencies

The practice scenarios created by the Canadian Forces to test Arctic readiness, while valuable, have one critical operational difference when compared to real-time search and rescue or local level emergencies: the assumption that large air and marine resources are already positioned in Canada's Arctic region. Not only are such resources normally positioned in Southern Canada, these practice scenarios are carefully orchestrated, with months of planning to position personnel and equipment. During a real-time emergency, these luxuries obviously do not exist. The limitations of these exercises need to be recognized when trying to use them as evidence of preparedness.

These limitations include:

- **Pre-positioning of Assets:** Military operations that move resources closer to the exercise before it commences do not effectively address the conditions faced during a real emergency where they must travel significant distances.
- **Enhanced Inter-Agency/Department Co-operation:** Operation NANOOK is a whole-of-government exercise highlighting combined, joint and integrated military maneuvers. In these SAR exercises, military officials are already positioned in the North and are communicating during the first component of manoeuvres, creating an artificial situation that would not occur during a real emergency.

- **Additional Resources:** The resource-enhanced structure of the military exercises does not address how Canada’s Arctic infrastructure creates vulnerabilities that would significantly impact the outcome of the response.

It is clear that the time it takes to bring in outside resources has a predominant impact on local emergency planning. For the 2013 Arctic Emergency Management Assessment, the Munk-Gordon Arctic Security Program asked respondents how the length of time for outside emergency services to arrive influences emergency planning. Several respondents said that the lag between declaring a state of emergency and the arrival of outside resources have led to an increased need for self-sufficiency. Lagging response times by outside resources seemed most detrimental when it came to evacuation times. According to a respondent from the Northwest Territories: “Our plan takes [the length of time for outside emergency services to arrive] into consideration. We, as part of preparation and mediation, have built options into our plan that focus on self-resilience.”

Increasing Activities in the Arctic and the Implications for Emergency Management

Climate change, diminishing sea ice and the attractiveness of newly accessible natural resources will draw increased maritime traffic, tourism and other activity to the Arctic region. The combination of climate change and increased human activity/enterprise will increase the hazards and vulnerabilities that can contribute to an emergency event in the Arctic. This section highlights three key changes in human activity expected to impact emergency management procedures in the Arctic: commercial shipping, travel/tourism, and changes to local social and economic ways of life.

Commercial Shipping

The disappearance of sea ice is opening previously inaccessible areas of the Arctic and creating new opportunities for commercial shipping. International corporations are seeking shorter distances between Asia and North America, and destination transport shipping is increasing. As a result, there is a rising

global interest in the utility of two main Arctic sea routes: the Northwest Passage and the Northern Sea Route.

Both shipping routes, however, do not enjoy the same potential for economic development in the commercial shipping industry, with the Northern Sea Route currently seen as the more viable route. The Northern Sea Route runs from Murmansk to Vladivostok on Russia's Pacific Seaboard. The Northwest Passage runs through the Bering Strait, Chukchi Sea, Beaufort Sea and then through the Canadian Arctic Archipelago. The Northwest Passage is not one direct route, but is composed of five different routes.²⁹ The number of these routes considered navigable by large ships is disputed.

These shipping routes present commercial prospects for both Canada and Russia. International laws allow for both opportunities and responsibilities as the Arctic ice continues to recede. The *United Nations Convention on the Law of the Sea* (UNCLOS) states to claim escort fees and other tolls through channels within a state's territorial waters.³⁰ That being said, whether or not Canada's Northwest Passage is, in fact, an international strait or internal waters is still currently up for debate. Although Canada claims the latter, various other states argue that the Northwest Passage is an international strait. To date, there has been no resolution to this question. In any event, the 1979 Convention on Search and Rescue requires that states provide "adequate" maritime search and rescue services along their coastlines.³¹ International obligations require that commercial shipping traffic be met with complementary emergency management and search and rescue policy.

Canada's Northwest Passage

The Northwest Passage, along with the Transpolar Sea Route – a potential commercial shipping route that goes directly across the Arctic Ocean – is unlikely to become a busy trans-Arctic shipping route anytime soon. Based on 37 years of observations, climate change does not affect sea ice conditions enough to enable increased commercial shipping in this area. Although open water has increased in the Northwest Passage, hazardous ice conditions and

choke points remain. This change is the result of multi-year ice moving into the Passage's channels. In addition, many models used to forecast sea ice hazards are short-term in nature, and fail to address issues specific to narrow channels.³² We have seen an increase in the number of transits along the Northwest Passage. However, these have predominantly been transport shipping to Arctic communities for resupply or adventure activities.³³

Michael Byers, Canada Research Chair in Global Politics and International Law at the University of British Columbia has remarked that only 10 per cent of Arctic waters have been charted to a modern standard.³⁴ Even the main Canadian Arctic shipping routes were, by 2012, only charted between 25 and 35 per cent. According to the director of the Canadian Hydrographic Service, it is not realistic at this point to fully chart the area to a modern standard.³⁵

Despite all of the dangers, limitations and caveats, shipping corporations anticipate being able to use first-year ice-capable ships on the Canadian Arctic routes within the next few decades.³⁶ This increase in economic activity will mean a larger “human footprint” in the Arctic region. It may also lead to risk-taking behaviour by mariners who are not prepared to deal with shifting blocks of multi-year ice in the shipping lanes that remain frozen during the summer months, creating unforeseen hazards.³⁷

Search and rescue capacities must be able to handle the increased volume of commercial traffic. Emergency planning will need to anticipate the impact a rise in traffic will have on communities. Other requirements include positioning assets to control environmental pollution, as well as public health issues stemming from the exposure to new contagions and invasive diseases, such as viral respiratory infections.³⁸

Tourism

Climate change has been a catalyst for increased tourism in the Arctic region, and federal, territorial and local governments have all been keen to raise the international profile of the Canadian Arctic to attract tourists. In 2011,

tourism was up in Nunavut by 13 per cent, generating \$40 million in revenue for the territory.³⁹ Winter tourism in Yukon increased by 300 per cent from 2012 to 2013. Yukon's rich history, combined with winter tourism and road travel opportunities, make it an increasingly popular destination for tourists. As a result, *Up Here Business* magazine reports that 25 per cent of Yukon businesses now say their revenue is somehow tied to tourism.⁴⁰ In the Northwest Territories, Aboriginal tourism and the sharing of traditional knowledge has been identified as an important source of economic development activity. Visitors can hunt, fish, and even participate in survival courses. They also flock to see the Northern Lights.⁴¹

Risks associated with the expansion of the tourism industry are significant for the study of emergency management in Canada's northern communities. An increase in visitor traffic creates new risks for small communities. A major health emergency ranks in the top three hazards for each administrative region in Nunavut.⁴² Further, a high number of visitors can increase the complexity and magnitude of an emergency, as visitors will have little to no experience dealing with the northern environment. Ideally it is the responsibility of tourists to educate themselves about the environment in order to take life-saving precautions in the of an emergency, though in reality this is not always the case.⁴³

Cruise Tourism

Cruise tourism comprises a large component of Canadian Arctic tourism strategies. In 2009, "Canada's North" – a working consortium to market the North to international travelers – was created by the Canadian Tourism Commission and the governments of Yukon, Northwest Territories and Nunavut.⁴⁴ In addition to this overarching tourism organization, multiple tourist initiatives are geared toward providing opportunities for international travel unique to Canada's Arctic region.

A lack of infrastructure in Nunavut impacts upon the ability of communities to capitalize on tourist-based economic development. Cambridge Bay, Nunavut, for example, is well equipped to accept tourists, and the community has witnessed a 30 per cent increase in tourism over the past five years. However, many other destinations in the Arctic are lacking in basic amenities for visitors, and their tourism industry is still fledgling. While tourism in the Arctic struggles to provide the basics, emergency response for incidents remains a great concern.

Increased cruise tourism creates opportunities for economic development. However, these opportunities for growth must be coupled with resources that can be dedicated to responding to an associated increased risk of emergencies caused by an influx of visitors unfamiliar with life in the North. This, in turn, creates additional search and rescue challenges for the Canadian Coast Guard, which, as noted previously, is already limited in its Arctic capacity.⁵³⁴⁵

A particular consideration for SAR needs in Canada's Arctic are the demographic characteristics of those who are interested in pursuing travel in the Arctic. The typical background of those who undertake Arctic cruises is one of "well educated, well- travelled, in their more advanced years and having high levels of disposable income."⁴⁶ There are adventure cruise companies that specialize in cruises for people over 50 years of age, and which include trips through the Arctic region.⁴⁷ The predominance of older passengers creates additional challenges for emergency management, due to their potentially higher rates of reduced mobility.

Land-based Tourism

Tourism on land has also been identified as an opportunity for economic growth. Tourist experiences appeal to the adventurous traveler; yet this increased sense of adventure comes with increased risk. Tourism options advertised in northern communities include, for example, ice road driving, dogsledding, fly-in fishing expeditions, cross-country skiing, ice-fishing and

snowshoeing.⁴⁸ Visitors who are either new to these activities or unfamiliar with the area will not have the skills necessary to deal with emergencies resulting from the changing northern environment. Tourists who are uneducated about what to do if they find themselves in distress will undoubtedly put increased pressure on SAR resources.

Polar Flights

Another consideration for emergency management policymakers is the increased use of “polar routes” – that is, international flights that use the world’s highest latitudes to reduce cost and time. For example, flights from New York City to Beijing fly north over Canadian airspace and then across Arctic Russia. In 2000, NAV Canada and the Federal Aviation Authority of Russia (FAAR) released a polar routes feasibility study, which found that polar routes decrease flying time, saving airlines fuel and money.⁴⁹

Transpolar traffic is predicted to increase considerably in the near future.⁵⁰ Since opening in 2002, polar routes have become the top choice for airlines operating between North America and Asia. By 2007, the International Air Transport Association had taken steps to alleviate congestion of cross-polar routes.⁵¹ Though the Russian government remains enthusiastic and continues to expand polar flights,⁵² this policy initiative will have a direct impact on Canada, as three of the four polar routes transit Canadian airspace. However, it is likely that an increase in polar flights will contribute to policy considerations for Arctic emergency management personnel, as emergency landings in the Arctic pose difficulties, not only for delayed passengers, but also for resource-strapped communities. There is danger in such an event due to the substantial weight of the plane from fuel left in its tank, which would normally not be the case during routine landings. Delays can also be lengthy, as large planes must be inspected for damage.⁵³ Since emergency management procedures will not always allow passengers to remain on the plane, formal procedures addressing on-the-ground needs require development, especially if a plane flying over a polar route needs to be evacuated following an emergency landing.⁵⁴

The Canadian government and its agencies must be prepared for an emergency landing or rescue operation of a plane in distress. Medical diversions happen once or twice a year in Iqaluit, the capital of Nunavut. The runway at Iqaluit International Airport used on polar routes.⁵⁵ However, the current size of the airport could be too small to accommodate travelers once they are evacuated from the plane. Additionally, an event such as a plane crash would require a large-scale evacuation, a time-sensitive operation for search and rescue personnel, as passengers will be unlikely to come prepared for Arctic weather.

Changes to Indigenous Economic and Social Patterns

The changing ecology and weather patterns in the Arctic have been cause for reflection among Indigenous communities. The vulnerabilities associated with travel, economic and social patterns have implications for emergency management planning. Indigenous people have depended on their knowledge and skill for survival, being able to read the signs that show changes in the ice, snow and weather.⁵⁶ Studies on the impact of climate change on the use of traditional survival skills are beginning to emerge, and the consistency of responses from communities indicate climate change is challenging these skills, making them less reliable.

The complex effects of climate change have forced Indigenous communities to adapt traditional ways of life to new environmental and ecological contexts. A recent case study completed by Tristan Pearce and Barry Smith, in conjunction with the town of Ulukhaktok, Northwest Territories, was initiated to determine how changing weather and climate patters have created new vulnerabilities, and to understand how the community has responded to them. Traditional knowledge has an important role in emergency responses for Ulukhaktok, as the community has a population of 430 individuals, 96 per cent of whom are Inuit.⁵⁷

The two main vulnerabilities established in resident interviews were increased travel risks and compromised travel routes. Rapid seasonal transitions and increased storms and wind lead to hazardous travelling conditions. The potential for rapid weather changes makes it difficult for residents to know when conditions are suitable to travel. Earlier spring melt (flooding rivers), incomplete freeze-up and changing wind-ice patterns all serve to compromise travel routes. According to community residents, consequences of these changes include snow machines becoming stuck in the snow, high rivers blocking access to spring hunting and fishing areas and reduced access to hunting areas only accessible over winter roads. These occurrences have increased in magnitude and frequency.⁶⁵ As the landscape changes, there will need to be adaptations and new learning to address emerging risks in the community.

Adaptive strategies are required in order to keep the number of search and rescue emergencies to a minimum. In the film *The Land of our Future*, Michael Miltenberger, Minister of Environment and Natural Resources for the Northwest Territories, summarized the impact of climate change on the use of traditional knowledge on the land: “Things aren’t freezing the way they used to...the levels of ice thickness... the temperatures are not as cold, the breakups are different, a lot of the traditional knowledge, based on centuries of knowledge and practise, are being called into question.”⁵⁸ In response to the changes to their environmental surroundings, adaptive measures reflect the tight-knit nature of Indigenous communities. Hunters take extra precautions, including travelling with extra supplies, staying closer to the community and travelling with a GPS or satellite phone, or SPOT devices, which are shared within the community.

These adaptations have non-emergency management consequences on the community. Changing transportation and hunting routes can lead to a change in diet, and create a disparity in traditional knowledge between youth and elders in the community.⁵⁹ Although adaptation techniques exist, the net loss of Indigenous knowledge will decrease the community’s overall capacity to

come up with local emergency mitigation measures that are specific to community resources and knowledge.

The weather is important for planning daily activities. Changing weather patterns can impact a community's ability to respond to emergency situations. Communities are vulnerable to hazards because the infrastructure that exists to protect themselves from winter storms have weakened. Other infrastructure concerns include damage to drinking water pipelines, requiring public officials to make an emergency trip to fix the damage.⁶⁰ These observations demonstrate that the dangers of climate change to Arctic communities are not limited to when residents leave their communities. Emergency management practices in a climate-altered Arctic will also have to include provisions for dealing with time sensitive, local-level infrastructure emergencies in order to mitigate health and security problems.

Some changes are the result of new opportunities for ice tourism and marine travel. Economic changes to the region brought about by climate change impact upon traditional movement patterns. Those who engage in traditional lifestyles also feel the two-sided Impacts of tourism and destination shipping. While these vessels bring much-needed supplies and tourism dollars into the region, they can also disturb wildlife and marine mammals. Late season shipping can also require the breakup of ice, compromising Inuit ice travel patterns.⁶¹ The changes that will be observed in ice breaking and tourism will translate to a greater need for Indigenous Peoples to adapt their hunting and harvesting practices.

Conclusion

The changing Arctic will require more emergency management planning for new types of emergency events. Governments' responsibility to provide adequate emergency response resources in the Arctic must address increased traffic in the region, and respond to the changes impacting the Arctic's physical geography. The rate of change currently being experienced in the Canadian Arctic is creating an adaptability gap that is decreasing the level of reliability of

traditional knowledge that has, until now, supported generations of Indigenous peoples. Understanding the complex effects of a changing climate and accompanying human activities upon the existing social, economic and natural environment will be key to determining what infrastructure and resources will be needed to protect the Arctic's residents, workers and visitors. It will also support efforts to develop responsible and effective emergency management policies that accurately reflect all components of the changing Arctic.

Notes

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⁸ "Percentage distribution of Canada's rail network by province and territory, 2007," Statistics Canada (2009): <http://www.statcan.gc.ca/pub/16-002-x/2009001/tbl/transpo/tbl002-eng.htm>.

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¹⁰ Strategic Networks Group, *An Assessment of the Socioeconomic Impact of Internet Connectivity in Nunavut* (Iqaluit: Nunavut Broadband Development Corporation, 2012), 30.

¹¹ Imaituk Inc., *A Matter of Survival: Arctic Communications Infrastructure in the 21st Century*, (Yellowknife, Canada: Canadian Northern Economic Development Agency, 2011), 15. See chapter nine in this volume for excerpts from this report.

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¹⁸ Royal Canadian Air Force, “RCAF in the North,” Ministry of National Defence (Canada) (15 March 2012): <http://www.rcaf-arc.forces.gc.ca/v2/page-eng.asp?id=1512>

¹⁹ Standing Senate Committee on National Security and Defence, *Sovereignty & Security on Canada’s Arctic*. (Ottawa: Senate of Canada, 2011), 12.

²⁰ Peter Varga, “With searches on the rise, Nunavut urges travellers to be prepared,” *Nunatsiaq Online* (16 August 2013).

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²² “Search and Rescue,” Canadian Coast Guard (2012): http://www.ccg-gcc.gc.ca/eng/Central_Arctic/Sar_Home.

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²⁵ Emergency Management Act, Statutes of Canada 2007, c. 15. The Emergency Management Act can

be found at: <http://www.laws-lois.justice.gc.ca/eng/acts/E-4.5/page-1.html>.

²⁶ Emergency Management Act: s.6.

²⁷ Emergency Management Act: s.5. An example of the utilization of this provision is the Agreement on Aeronautical and Maritime Search and Rescue.

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⁵³ “American Airlines plane makes emergency landing in Iqaluit,” CBC News (4 September 2012).

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⁵⁶ Henry Huntington and Shari Fox, “The Changing Arctic: Indigenous Perspectives,” In Chapter 3 of Arctic Climate Impact Assessment (Cambridge University Press, 2008): 64.

⁵⁷ Tristan Pearce and Barry Smit, “Inuit vulnerability and adaptive capacity to climate change in Ulukhaktok, Northwest Territories, Canada,” *Polar Record* 46, no.237 (2009): 159, 162.

⁵⁸ Launched in 2013 by the Institute for Circumpolar Health Research, *The Land of our Future* is a 15-minute documentary film funded by the First Nations Inuit Health Branch and the Munk-Gordon Arctic Security Program. Over the course of a year, four high school students - Clayton Pielak, Jackii Edwards, Kyra Sangris, and Taylor Pagotto – interviewed local hunters, elders, and municipal and territorial government leaders to get a sense of how the land has changed over the past 30 to 40 years, and how they will have to adapt to the new landscape climate change is creating. The video is available to view at: <http://vimeo.com/66203406>.

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9

Whole of Government in the Canadian Arctic

Karen Everett and Emily Yamashita

In May 2014, an Arctic Security Whole of Government Research Workshop was held in Kingston, Ontario, to bring together Northern experts to discuss the role of Whole of Government in ensuring regional security. Participants came from the military, different federal government departments, and academia. Topics covered a range of issues including the role of the military, economic development, Indigenous inclusion, and food security. This chapter summarizes the major themes of the workshop. Although it does not provide an in-depth analysis of the issues, its purpose is to identify challenges to Whole of Government in the Arctic raised by workshop participants and to provide insights on ways to move forward.

This chapter begins by highlighting current understandings of Whole of Government (WoG) and how it was brought into practice in Canada. We show how this approach has been “militarized” over time and identify barriers to its effective application. These include inadequate funding, limitations of the current policy structures that guide activity in the North, and the resulting departmental silos. The chapter then explores the roles and opportunities for fostering partnerships both horizontally across federal departments and vertically with territorial and Indigenous governments. In addition, we discuss the importance of collaborating with non-government parties, such as local Indigenous groups and academics. We then look to the way forward as we address identified obstacles to effective WoG operations. Finally, this chapter concludes with an argument for the establishment of a Whole of Government institute that would bring these solutions into realization.

Whole of Government

Building on the Australian understanding of Whole of Government, the Canadian Defence Academy (CDA) states that the “Whole-of-Government denotes public service agencies working across portfolio boundaries to achieve a shared goal and an integrated government response to a particular issue. Approaches can be formal or informal. They can focus on policy development, program management and service delivery.”¹ This approach first emerged in Canada during the 1970s in the context of developing a Northern economy and expanded in the 1980s as federal, territorial, and Northern Indigenous organizations worked cooperatively to address environmental contaminants in the Canadian North.² Yet, as changes in the political climate prioritized strengthening the military presence in the region, the WoG approach changed as well.³ As a result, WoG now has a strong military focus. To further understand the changes that have affected WoG, the following section will discuss the operational barriers and limitations that hinder its effective practice.

Operational Problems

There are three main operational barriers to developing effective WoG practices. First, the current political climate is one in which government spending is being reduced. Second, federal government departments operating in the North are bound by policy frameworks that can either encourage or challenge their ability to collaborate with others. Third, as each department has their own priorities and mandates, departmental silos can prohibit collaboration.

In general, funding for all types of programming has become more difficult to obtain.⁴ This reduces the likelihood that departments would spend their limited funds on a project that does not directly fall within their mandate. Additionally, due to the North’s physical and environmental conditions,⁵ financial challenges are further exacerbated by poor infrastructure and communications, both of which are essential for development. For these reasons, obtaining the required funding to develop WoG in the North is quite challenging. This issue is further complicated by a lack of common

understanding amongst some government representatives that investment in the North and its peoples will not only benefit the region, but Canada as a whole. As such, there is a lack of designated funding for WoG efforts, and if adequate funding is not received, this approach will not be successful.⁶ The North needs to be repositioned as a site of investment, not only because of the economic benefits of doing so, but because the region is a vital part of the country.⁷

All work done by the government is grounded in policy.⁸ Department of National Defence (DND) activity is guided by the *Canada First Defence Strategy* which states that DND is committed to a WoG approach to ensure they can complete their duties in the areas of “personnel, equipment, readiness and infrastructure.”⁹ In terms of activity in the North, the policy states that the Canadian Armed Forces “must also work closely with federal government partners to ensure the constant monitoring of Canada’s territory and air and maritime approaches, including in the Arctic, in order to detect threats to Canada’s security as early as possible.”¹⁰ Defending sovereignty is a central aspect of DND operations in the region, and the Canadian Armed Forces do so through exercises like Operation Nanook, under the guidance of Canadian Joint Operations Command (CJOC) and Joint Task Force North (JTF-N).¹¹ The Canadian Armed Forces also collaborate with local communities through the Canadian Rangers. The Rangers are a volunteer reserve force¹² and can be found in over sixty communities throughout the North. They play an essential role in demonstrating military presence in the region¹³ and are a significant partner in Northern search and rescue operations.¹⁴ Furthermore, in order for the Canadian Armed Forces to successfully continue to operate outside of the Ranger organization in the North, they intend to develop strong relationships with other Northern partners that can be leveraged in a time of need¹⁵

The *Northern Strategy* is another significant document that guides military operations in the Arctic. The strategy is responsible for directing the work of non-military federal agencies in the region through socioeconomic development and is comprised of four pillars that provide more focused

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direction for departments to follow. These include: 1) Exercising our Arctic Sovereignty; 2) Promoting Social and Economic Development; 3) Protecting our Environmental Heritage; and 4) Improving and Devolving Northern Governance.¹⁶ The *Strategy*, however, is not without challenges. For example, the Canadian Northern Economy Development Agency's (CanNor) mandate falls under the second pillar as it specifically works toward fostering the Northern economy. While different departments and agencies work towards meeting the goals of a specific pillar, they are kept isolated as their investments are narrowly defined to only one aspect of the broader picture. As such, the *Northern Strategy* does not support a WoG approach.

The disparity between the two documents clearly demonstrates the militarization of WoG that was mentioned earlier. Seemingly, the Canadian Armed Forces is operating in a WoG manner as a result of the defence strategy mandate, while non-military departments and agencies are left without such guidance; the decision to work in a WoG manner remains in the hands of individual departments. This can pose problems for implementing effective WoG practices in the North when it comes to non-military issues. While this relationship supports military efforts, the ability of other Northern partners to leverage the military for their needs remains unclear.

It is easy for departments to stay insulated within their own priorities and mandate(s). For instance, Major General Coates stresses that "There is no single focal point for domestic federal Arctic efforts."¹⁷ With no clear overarching mandate, issues in the Arctic are currently being perceived by government leadership as independent from one another.¹⁸ Without inter-departmental collaboration on these efforts, departmental silos are maintained¹⁹ and different groups miss opportunities to benefit. This not only prohibits effective WoG in the region, but also complicates a comprehensive understanding of the needs in the Arctic. For example, there is a mandate for the Canadian Armed Forces to build infrastructure, although solely for their operations.²⁰ The general lack of infrastructure in the region remains a prominent issue and recently built infrastructure has brought little direct

benefit for local communities. If the military were to move past their departmental silo, the money and time put into their infrastructure might benefit the wider community.

The phrase “if it ain’t broke don’t fix it” seemingly encapsulates the operational aspect of the Canadian Armed Forces’ mind-set towards WoG in the North.²¹ While it is true that the military has been operating in the manner for some time, there is room for improvement. When analyzing WoG from a non-defence perspective, the need for clearer direction is evident. For instance, the above discussion focused mostly on federal level cooperation although WoG includes multiple stakeholders at different levels. Thus, best practices for inter-level governmental and non-governmental collaboration need to be addressed.

The Need for Partnerships

At the federal level, collaboration currently occurs with the DND, the Royal Canadian Mounted Police (RCMP), Public Safety Canada (PSC), the Canadian Coast Guard (CCG), the Canada Border Service Agency (CBSA), and Transport Canada (TC) on a number of security initiatives.²² While the fact that these departments have moved away from their silos is a positive sign of progress, what remains unclear is if they are collaborating with territorial governments who have their own priorities and needs.²³ Returning to our example of the environmental efforts of the 1980s, the multilevel partnerships that were once developed should again be reconsidered and re-prioritized.

Furthermore, the population of Northern Canada is largely comprised of Indigenous peoples,²⁴ thus making this group a significant stakeholder in Arctic decision making. There is a pressing need for both levels of government to work closely with local Indigenous governments and communities. In so doing, cultural awareness of Indigenous leadership structures is required as they can function differently than in other government settings. To be sure, there are multiple leaders within a community who collaboratively work together for problem solving.²⁵ Without an understanding of this structure, there is an increased likelihood that federal and territorial departments are excluded from

acquiring critical information and from making much needed connections with local communities. This is further exacerbated by mistrust between local communities and the federal government due to the government's lengthy history of acting on the belief that it knew what was best for the region and its peoples. For this reason, an acute understanding and cultural awareness is of the utmost importance for fostering relationships.

Working with local Indigenous governments can prove to be beneficial as they are experts on the region. With a strong relationship, community members can provide both territorial and federal governments with valuable information on significant issues, such as changes to the environment. They also have innovative ways for finding solutions to different challenges.²⁶ The Indigenous method for problem solving draws not only on the insights of leaders, but is also significantly reinforced by the perspectives of locals in communities. Indeed, Inuit are experts in their own food security as they have an in-depth awareness of how their food sources have been affected over time.²⁷ A problem, however, remains in bridging the gap between the two knowledge sets.

Obtaining access to Indigenous knowledge has proven difficult. The Social Sciences and Humanities Research Council (SSHRC) is the only research body that adheres to strict ethical guidelines concerning Indigenous research and knowledge as they "support research by and with First Nations, Metis and Inuit Peoples."²⁸ Despite this effort, there is still a need to gain access to Indigenous knowledge to advance research.²⁹ The Canadian Polar Commission (now Polar Knowledge Canada or POLAR), a clearinghouse for Northern research, may just prove to be the place for Indigenous knowledge to reach a wider audience. The Polar Commission currently has a highly academic focus, but if they develop partnerships with Indigenous knowledge holders, greater access to this information is possible.

WoG in Practice

To better understand how WoG works in practice, two issues must be addressed in terms of WoG leadership in the Arctic. First, what department

should take a leadership role in the Arctic? This is a complex question as there can be leaders from all levels of government who have to deal with a variety of issues and priorities. Nevertheless, the Canadian Armed Forces has seemingly taken on this role in the past through their presence in the region. Until the end of the Cold War, concerns regarding the Arctic largely focused on potential military threats.³⁰ This, however, began to change in the 1990s as the nature of security threats had begun to evolve more generally.³¹ For instance, the types of threats to the region have expanded to include environmental, food, and human security,³² as well as the potential for organized crime, terrorism, weapons of mass destruction, illegal immigration, and so on.³³ As a result of these changes, leadership needs to be more inclusive of departments in which these issues are a priority.

As the political climate is rapidly changing, the second issue concerns who should take the lead in WoG initiatives. The Canadian Armed Forces are not in a position to take on sole leadership,³⁴ given the expanding nature of security threats to include non-military issues. Even if the Canadian Armed Forces were able to expand their mandate to include these new threats, they also need to be able to mobilize quickly when the government requires their presence elsewhere in the world, meaning that they cannot maintain a fixed presence in one location. More pointedly, DND leadership has indicated that it would not be appropriate for the military to take on this role. Instead, the department remains supportive of WoG operations, “leading from behind.”³⁵ That being said, there is a place for the Canadian Armed Forces to be a part of the leadership structure. With their increased physical presence in the Arctic, the military will have valuable insight into current and emerging non-military security threats and other issues affecting the Northern populations and environment. While they may not be able to deal with such issues, they can use WoG systems to communicate their concerns to other departments. Such a system may already be taking shape as CJOC has recently created a five-year plan that establishes guidance on collaboration with regional partners.³⁶

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As well, a WoG approach is also taking place through the Arctic Security Working Group in which the Canadian Armed Forces plays a co-leading role. Within this group, the military collaborates with the “Canadian Coast Guard, other federal government departments and agencies, the territorial governments, aboriginal peoples organizations and other Northern stakeholders.”³⁷ The Working Group meets twice a year and is an excellent venue for the Canadian Armed Forces to address non-military concerns with their partners.³⁸ While the forum provides the space for WoG discussions to take place, six months between meetings is a long time. What remains unclear is how time-sensitive issues are addressed between meetings.

The above discussion demonstrates that organizations collaborate in various ways. The answer to the question of who leads, however, is not explicitly apparent. There needs to be clear and concise direction at the strategic level from high ranking government officials to put in the necessary structures and systems that allow WoG to take place. Under their direction, ongoing horizontal and intergovernmental collaboration at the operational level should support relationships necessary to ensure that WoG is effective. In short, the WoG approach requires leadership at all levels of the system.

The Way Forward

While WoG clearly operates in the Arctic, there is still room for improvement. This approach needs to be more clearly defined and structures need to be established that provide guidance on how to best leverage relationships. Moving forward, diverse organizational cultures that include compatible leadership and professional development need to be at the forefront in order to achieve success.

Each department and level of government has their own unique set of needs and priorities. This complicates cooperative work as harmonized understandings of expectations and outcomes may not be established. For example, some members of the Canadian Armed Forces admittedly are not fully aware of what occurs horizontally with others.³⁹ To best avoid this

challenge, each department must better grasp the needs of their partners. In this, each party would gain knowledge regarding the organizational cultures of the involved partners.⁴⁰ In addition to establishing a common understanding at the federal level, the organizational cultures of territorial and local governments, as well as non-governmental stakeholders, must also be realized. As previously mentioned, Indigenous government leadership structures often differ from those in the federal government. The chief is not the only leader who needs to be consulted; council members and Elders hold significant authority due to their knowledge and prominence within their community.⁴¹

In order for an effective relationship to be established, an understanding of this structure must be developed. In addition to developing a heightened understanding of diverse organizational cultures, a commonality must also be met with regards to leadership approaches. Just as each stakeholder has their own needs, they also have their own ways of acting on those priorities. Therefore, compatible leadership is equally as significant to cross-organizational knowledge and collaboration.

The concerns identified above are best addressed through professional development. Courses can be developed to specifically train government employees on WoG approaches and best practices. The end goal of professional development and training is to build individuals into security professionals that can take on leadership roles in WoG projects. For example, the Canadian Defence Academy is updating their programming to include a WoG approach to their training courses by seeking expertise from outside organizations and expanding their training to include topics such as cultural intelligence, change management, and systems thinking. Furthermore, course designers recognize that now is the time to develop external partnerships to enhance their curriculum.⁴² For the most effective training, the foundation of new programming should be developed through a combination of cross-departmental training exercises,⁴³ in-class learning, and seminars.⁴⁴ Training would benefit not only those who have experience working in either the Arctic or security and defence, but also individuals who are either moving into new

portfolios and/or are new employees. All security professionals receiving this training would gain knowledge that would assist with their on the job training and best equip them to work in WoG structures.

Ultimately, professional development will lead to the making of security professionals. They do not necessarily need to be members of the Canadian Armed Forces; rather they will represent a multitude of government departments. Through their heightened knowledge of diverse organizational cultures, these individuals will be effective leaders in WoG operations.

Conclusion

As this chapter synthesizing the May 2014 workshop suggests, Canadian Armed Forces members seem to believe that WoG is currently operating to its fullest capacity. Major barriers to effective WoG practices remain, however, particularly in the Arctic. These include a lack of designated funding for WoG initiatives, policy structures that do not necessarily partner well with one another (especially in terms of the role of non-military organizations), and finally departmental silos that can prohibit collaboration.

The need for partnerships to expand beyond the federal level and become inclusive of Indigenous governments and communities was made evident through the identification of these obstacles. Therefore, leadership needs to encompass all Arctic stakeholders as the nature of security, especially in the Arctic, is changing. To best address these issues, diverse organizational cultures must be brought together to ensure that operations and programming do not overlap and that challenges in the North are approached in the most comprehensive manner. This should take place through professional development that results in the creation of security professionals who are best equipped to oversee the operations of WoG projects.

While all of the above ideas have merit, direct action must be taken to ensure WoG is effectively practiced. For this reason, the establishment of a Whole of Government institution is warranted. This institution would become the

centre for turning theory into practice through the use of experts in a wide range of government policies. For example, there would be experts in the Arctic who would identify areas for collaboration through their knowledge of the *Northern Strategy* and the *Canada First Defence Strategy*. These policy specialists would help set the agenda for WoG activities and play a significant role in the development of well-versed security professionals. Ultimately, the establishment of this institution is of the utmost importance as the WoG approach has wider application than just in the Arctic. The approach is versatile, highly inclusive, multifaceted, and ensures that all issues are addressed with minimal redundancies. For this reason, Whole of Government should be encouraged for all government activity.

Notes

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- ²² Major General J.G.E. Tremblay, Opening Remarks at the Arctic Security Whole of Government Research Workshop, May 6, 2014, and Wade Spurrell, Presentation at the Arctic Security Whole of Government Research Workshop, May 6, 2014.
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- ²⁴ Parliament of Canada, "The Arctic: Northern Aboriginal Peoples," at <http://www.parl.gc.ca/content/lop/researchpublications/prb0810-e.htm>, 2008, Accessed 3 July 2014.
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10

Arctic Defence and Security: Transitioning to the Trudeau Government

P. Whitney Lackenbauer

Spanning three Territories and stretching as far as the North Pole, Canada's North is a sprawling region, encompassing 75 percent of the country's national coastlines and 40 percent of its total land mass. The sheer expanse of Canada's North, coupled with its ice-filled seas, harsh climate, and more than 36,000 islands make for a challenging region to monitor – particularly as the North encompasses a significant portion of the air and maritime approaches to North America.

Although Canada's North is sparsely populated, the region is spotted with vibrant communities, many inhabited by Canada's Indigenous populations. These communities form an integral part of Canada's identity, and our history is intimately connected with the imagery and the character of the North. Economically, Northern Canada is also home to considerable natural resources, industries, and growing tourism – with the potential for further exploration, including transit through Canada's Arctic Archipelago.

... The Arctic is also becoming more relevant to the international community. Climate change is increasingly leading to a more accessible Arctic region. While operating in the region will remain a difficult challenge for the foreseeable future, Arctic and non-Arctic states alike are looking to benefit from the potential economic opportunities associated with new resource development and transportation routes.

Strong, Secure, Engaged (2017)¹

On 19 October 2015, Justin Trudeau’s Liberal party won the Canadian federal election with a sweeping majority. The change in government certainly represented a *political* departure² – even if the main substantive elements of Canada’s Arctic policy, which have remained remarkably consistent since the 1970s, are likely to remain intact. By offering a short overview of emerging messaging on Arctic policy under the new government, this afterword suggests how a domestic focus on Indigenous rights, conservation, and the health and resiliency of Northern communities is complemented by a renewed commitment to global climate change mitigation, a “return” to multilateralism, and a more constructive relationship with the United States.³ Through bilateral statements with President Barack Obama, Prime Minister Trudeau articulated a model for Arctic leadership that placed a clear priority on “soft security” and safety issues and abandoned the sovereignty-focused messaging of his predecessor. Similarly, the Liberal government’s commitment to produce a new Arctic Policy Framework to replace the Northern Strategy introduced by the Harper government anticipates a shift in emphasis to environmental protection and socio-cultural health of Northern Indigenous peoples. These priorities affirm the relevance and importance of a Whole of Government (WoG) or Comprehensive Approach to Arctic defence and security, as does the Trudeau government’s defence policy (*Strong, Secure, Engaged*) which balances investments in defensive capabilities to deter would-be adversaries with the development of capabilities to support unconventional security and safety missions in the Arctic. Thus, while the change in government has introduced a new political discourse on Arctic affairs that avoids the hard sovereignty and defence rhetoric that marked the early Harper era,⁴ a focus on WoG cooperation to deal with a broad array of security and safety challenges in the Canadian Arctic remains operationally and politically relevant.

The Trudeau Government’s “New” Arctic Priorities

Immediately upon taking office, Prime Minister Trudeau took bold steps to demonstrate that Canada “is back” when it comes to joining global efforts to mitigate climate change.⁵ While the Harper government emphasized climate change adaptation measures in its Arctic agenda rather than global mitigation efforts, the Liberals chastised their predecessors’ alleged “refusal to take meaningful action on climate change,” their lack of funding for science and

their “muzzling” of government scientists, and their prioritization of economic growth over environmental protection.⁶ By signing the Paris Agreement on climate change in November 2015, Canada signalled its commitment to shift course, reduce greenhouse-gas emissions in concert with the international community, and promote a clean-energy future.⁷ Although Canada’s formal statements in these climate change negotiations did not reference the Arctic explicitly,⁸ this new global posture has influenced both domestic and international policy agendas.

Along these lines, the U.S.-Canada Joint Statement on Environment, Climate Change, and Arctic Leadership of March 2016 articulated “a common vision of a prosperous and sustainable North American economy, and the opportunities afforded by advancing clean growth.” Both Trudeau and Barack Obama cited the Paris Agreement as a pivotal moment and committed to reduce methane emissions from the oil and gas sector, as well as advancing climate change action globally. They also “reaffirm their commitment to working together to strengthen North American energy security, phase out fossil fuel subsidies, accelerate clean energy development to address climate change and to foster sustainable energy development and economic growth.” Both countries also promise to “continue to respect and promote the rights of Indigenous peoples in all climate change decision making.”⁹

Respect for and reconciliation with Indigenous peoples lies at the heart of the Liberal agenda. “No relationship is more important to me and to Canada than the one with Indigenous Peoples,” Trudeau highlighted in his publicly-released mandate letter to each of his Cabinet ministers in November 2015. “It is time for a renewed, nation-to-nation relationship with Indigenous Peoples, based on recognition of rights, respect, co-operation, and partnership.”¹⁰ Accordingly, Canada will place the highest priority on ensuring that its activities in the Arctic (both domestic and international) acknowledge, protect and promote Indigenous peoples’ rights—and, by extension, will insist that other Arctic stakeholders do the same.¹¹ In May 2016, Canada officially lifted the qualifications to its endorsement of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), which the Conservatives had registered over the requirement for “free, prior and informed consent” from Indigenous peoples on issues that affected them. While disavowing the notion

that this new position gives Indigenous groups a “veto” over development projects,¹² Canada’s unqualified support of UNDRIP affirms a strong commitment to welcome “Indigenous peoples into the co-production of policy and joint priority-setting” within the Canadian political community.¹³

The appointment of Inuit leader Mary Simon as special representative to Minister of Indigenous and Northern Affairs Carolyn Bennett in July 2016 affirmed the Trudeau’s government’s commitment to bring Northern Indigenous leaders into the centre of policy-making. Fitting with the new government’s plans to consult widely with Canadians prior to taking substantive action on most files, Simon’s formal role is to seek out the views of Northerners and provide advice to the federal government on future conservation and sustainable development goals that would support efforts to devise a new Shared Arctic Leadership Model. As a longstanding champion of Inuit rights, she set out to conduct consultations with Northerners to frame a new policy agenda that would replace the Harper government’s Northern Strategy. Given her mandate, as well as her previous critiques of “militaristic” Arctic strategies,¹⁴ it is no surprise that her efforts to date have emphasized environmental and human security considerations. Her interim report on conservation goals, released in October 2016, identified marine conservation opportunities – and revealed how broadly she interpreted her mandate to tackle Northern (and particularly Inuit) cultural, socio-economic, and political challenges. “I want to caution you that conservation was not what the majority of northerners I spoke to wanted to talk about first,” Simon explained in her report. “While conservation concerns inform many aspects of northern land claims agreements, Arctic peoples and their representative organizations and governments are far more preoccupied with issues related to supporting strong families, communities and building robust economies.... Closing [the basic gaps between what exists in the Arctic and what other Canadians take for granted] is what northerners, across the Arctic, wanted to speak to me about as an urgent priority. Reconciliation is inextricably tied to this reality.”¹⁵

Relationship-building also extended to the international sphere, with the Trudeau government emphasizing multilateral and bilateral cooperation in line with a more “nuanced” foreign policy. Building on the new prime minister’s promise that Canada would have a more “compassionate and constructive

voice in the world” under the Liberals after a decade of Conservative rule, newly-appointed Minister of Global Affairs Stéphane Dion called for renewed “engagement” with Russia in November 2015, despite Canada’s ongoing displeasure with Russian expansionism and aggression in the Ukraine. While the Harper Conservatives had suspended almost all bilateral contact with Russia after the latter invaded Crimea in March 2014, Dion stressed that this extreme stand deviated from the actions of the US and other G-7 partners. “We also need to think about our national interests because Russia is our neighbour in the Arctic,” the minister explained.¹⁶ This revised stance provoked debate amongst Canadian commentators, some of whom worried that this would send the wrong signals to an increasingly assertive Putin already “pivoting” towards the Arctic as a “strategic frontier.”¹⁷ Others suggested that the intention to resume cooperation on areas of common ground in Arctic affairs was sensible and responsible.¹⁸

Canada’s most important international relationship is with the United States, with bilateral announcements affirming that they would remain “premier partners” and would play a joint leadership role in Arctic (particularly North American Arctic) affairs. The Trudeau-Obama Joint Statement on Environment, Climate Change, and Arctic Leadership of March 2016 articulated several priority areas that flowed logically from the work that Canada had promoted as chair of the Arctic Council from 2013-15.¹⁹ Emphasizing Indigenous rights and knowledge, as well as “natural marine, land and air migrations that know no borders,” the joint statement conceptualized the Arctic as “the frontline of climate change” and articulated four main objectives:

1. *Conserving Arctic biodiversity through science-based decision making* by achieving national goals for land and marine protected areas, and working “directly with Indigenous partners, state, territorial and provincial governments” to set “a new, ambitious conservation goal for the Arctic based on the best available climate science and knowledge, Indigenous and non-Indigenous alike.
2. Collaborating with “Indigenous and Arctic governments, leaders, and communities to more broadly and respectfully” *incorporate Indigenous science and traditional knowledge into decision-making.*

3. *Building a sustainable Arctic economy* based on scientific evidence, with commercial activities occurring “only when the highest safety and environmental standards are met, including national and global climate and environmental goals, and Indigenous rights and agreements.” Sub-priorities include: establish *low impact shipping corridors* and consistent policies for ship operations, taking into account important ecological and cultural areas, vessel traffic patterns, Indigenous and Northern Arctic input, and increased coast guard cooperation of our Coast Guards; seek a binding international agreement to *prevent the opening of unregulated fisheries in the Central Arctic Ocean*, building “on a precautionary, science-based principle to commercial fishing that both countries have put in place in their Arctic waters”; and ensure that *oil and gas development and exploration* activities “align with science-based standards between the two nations that ensure appropriate preparation for operating in Arctic conditions, including robust and effective well control and emergency response measures.”
4. *Supporting strong Arctic communities* by “defining new approaches and exchanging best practices to strengthen the resilience of Arctic communities and continuing to support the well-being of Arctic residents, in particular respecting the rights and territory of Indigenous peoples.” This objective stresses that “all Indigenous Peoples in the Arctic are vital to strengthening and supporting U.S. and Canadian sovereignty claims,” and both countries “commit to working in partnership to implement land claims agreements to realize the social, cultural and economic potential of all Indigenous and Northern communities.” Priority areas include “innovative renewable energy and efficiency alternatives to diesel”; community climate change adaptation; “innovative options for housing and infrastructure”; and “greater action to address the serious challenges of mental wellness, education, Indigenous language, and skill development, particularly among Indigenous youth.”²⁰

Indigenous and environmental organizations in Canada applauded the statement, with national Inuit leader Natan Obed stating that “the final language in this document really spoke to Inuit” and heralding it “a tremendous breakthrough for Indigenous people who live in the Arctic.”²¹ Mary Simon also described the statement as offering “real promise in its scope and in its focus on a collaborative process. Taken seriously, alongside the implementation of the United Nations Declaration on the Rights of Indigenous Peoples and the Truth and Reconciliation Commission of Canada: Calls To Action, it will open a new chapter in Indigenous to non-Indigenous relationships and partnership.”²²

Canada’s Oceans Protection Plan, unveiled in November 2016, contained several provisions to enhance Canada’s marine safety system that flowed naturally from the safe shipping objectives promoted in the joint statement. “For residents of Canada’s North, marine transportation is an essential lifeline,” the plan observed. “Ships bring food and other goods necessary for survival, while representing critical jobs and employment opportunities. Through the Oceans Protection Plan, the Government of Canada will make investments to make Arctic resupply operations faster, safer and more efficient for remote communities.” The government committed to invest in Canadian Coast Guard (CCG) Auxiliary units in Arctic communities, thus “bolstering capacity to respond to emergencies and pollution incidents,” as well as setting up a seasonal inshore rescue boat station to enhance Northern search and rescue capacity. Furthermore, CCG icebreakers would extend their operating season in the Arctic, and Canada would improve the northern operations of its National Aerial Surveillance Program. “Doing so will improve local marine pollution reporting, search and rescue capacity and satellite monitoring of vessels offshore, which also supports Canadian sovereignty,” the plan noted. It also emphasized the importance of better coordinating federal emergency responses to marine emergencies and pollution incidents on all three coasts, in close cooperation with Indigenous and local communities.²³

This explicit emphasis on building stronger partnerships with Indigenous peoples and with coastal communities dovetails with WoG approaches to safer

shipping, environmental security, and economic development. “Indigenous coastal communities share ties to Canada’s oceans that span generations,” the official announcement explained:

They rely on them as a source of livelihood, food security, and valuable transportation routes. The Oceans Protection Plan provides Indigenous coastal communities with new opportunities to protect, preserve, and restore Canada’s oceans and sea routes.

The Government of Canada needs the traditional knowledge and expertise of Canada’s Indigenous peoples and coastal communities to protect its coasts and waterways more efficiently. They have been safeguarding Canada’s waters for years. They are often the first to respond to marine emergencies and can be the most affected when a marine pollution incident occurs. They have valuable insights and expertise to contribute to more effective response and protection of our coasts. Their partnership in the Oceans Protection Plan is a critical element of Canada’s marine transportation system.²⁴

In acknowledging the value of regional partnerships with Indigenous and local communities to prepare for emergency response and manage waterways, the plan also serves as a model for WoG partners to consider when framing proposals for investments in enhancement Arctic security and safety capabilities more generally.

Trudeau and Obama followed up with a Joint Arctic Leaders’ Statement on 20 December 2016 that sought to advance the objectives that they had outlined the previous March. This follow-up announcement launched concrete actions “ensuring a strong, sustainable and viable Arctic economy and ecosystem, with low-impact shipping, science based management of marine resources, and free from the risks of offshore oil and gas activity,” that would “set the stage for deeper partnerships with other Arctic nations, including through the Arctic Council.”²⁵ While framed in a bilateral and international context, the statement again provides strong insight into Canada’s domestic Arctic policy goals. “The overall objective is to support Canada’s commitments to reconciliation and renewed partnerships, strong Arctic communities,

Whole of Government through an Arctic Lens

sustainable Arctic economies, acting within the realities of climate change, and ensuring a healthy Arctic environment,” supplemental information from Indigenous and Northern Affairs Canada explained. In the Canadian context, the statement laid out a long list of measures designed to promote “a strong, sustainable and viable Arctic economy and ecosystem”:

- a new process to build an Arctic Policy Framework co-developed with Indigenous, territorial and provincial partners, that will replace Canada’s Northern Strategy;
- a second phase of northern engagement by Minister Bennett’s Special Representative, Ms. Mary Simon, to further inform the government’s approach to Shared Arctic Leadership.
- a 1-year project working with northerners to build a vision and a plan to build up abundant Arctic fisheries and jobs for Northerners;
- investments that will enable Northern communities to acquire basic marine infrastructure and safety equipment to help sea-lifts and community re-supply operations;
- a dedicated 5-year project to engage Northern communities in developing a shared governance and management model for the Northern Marine Transportation Corridors and Arctic marine shipping, in a way that is environmentally and socially responsible, including respecting modern northern treaties;²⁶
- additional Marine Safety and Security inspector jobs to ensure all vessels operating in the Canadian Arctic meet all marine shipping and navigation safety requirements;
- direct support to establishing training and certification programs for ships operating in polar waters at Canada’s Northern Marine School, including a new transfer payment program to support Northern and Indigenous people entering marine jobs (crew members for the Canadian Coast Guard, Marine Safety and Security inspectors for Transport Canada, and workers for the marine sector at large);
- reaffirming the creation of a new Coast Guard Auxiliary unit in the Arctic, including new funding for Northern communities to purchase boats and emergency response equipment;

- reaffirming increased icebreaking services by the Canadian Coast Guard, to ensure safe passage of vessels through Arctic waters;
- reaffirming extended coverage of hydrographic charting and navigational information to Canada's 23 highest priority ports and waterways with significant coverage in the Arctic;
- launching a new process with Northern and Indigenous partners to explore options to protect the "last ice area"²⁷ within Canadian waters, in a way that benefits communities and ecosystems;
- reaffirming commitment to complete a plan and timeline to deploy innovative renewable energy and efficiency alternatives to diesel in the Arctic;
- announcing all of the Canadian Arctic waters as indefinitely off limits to new offshore oil and gas licences, to be tested every 5 years by a science-based review taking into account marine and climate change science;²⁸ and
- announcing a 1-year consultation with existing offshore oil and gas permit holders on their interests.²⁹

Most of these measures, designed to promote low-impact shipping, sustainable fisheries, and science-based resource management, have strong implications for WoG approaches to the Arctic safety and security issues identified by the contributors to this book.

The most controversial element of the December 2016 joint statement related to the federal-level decision to suspend the issuance of new Arctic offshore oil and gas licences. "This is due to the irreplaceable value of Arctic waters for Indigenous and Northern communities' subsistence and cultures," an official statement explained. "The vulnerability of communities and the supporting ecosystems to an oil spill, as well as the unique logistical, operational, safety and scientific challenges to oil extraction and spill response in Arctic waters also represent unprecedented challenges."³⁰ Given that there was little to no offshore activity at the time of the announcement, it did not immediately affect local and regional economic interests. Nevertheless, the government's failure to consult with territorial officials prior to the announcement upset the Northern premiers – particularly in light of all the federal government's messaging about

the centrality of partnerships with territorial governments and Indigenous organizations in its new approach to intergovernmental relationships.³¹ Arctic commentator Heather Exner-Pirot suggested that the December 2016 statement “departs from Canada’s prioritization of Northerners in its Arctic policy, ... align[ing] Canadian Arctic foreign policy more squarely with American inclinations” as well as demonstrating the influence of “environmentalist groups such as WWF and Oceans North Canada, whose agendas are clearly evident in the documents and who boast alumni currently in senior Canadian government roles.”³²

Exner-Pirot also highlighted that the commitment to co-develop a new Arctic Policy Framework with Northerners, territorial and provincial governments, and First Nations, Inuit, and Métis people, included the promise of “an Inuit-specific component” in this policy. In her assessment, this revealed how the government “privileges the Inuit” over other Northern Indigenous peoples.³³ The signing of an Inuit-Crown Partnership agreement between Trudeau and Inuit Tapiriit Kanatami president Natan Obed in February 2017, coupled with the release of Mary Simon’s vision for an Arctic Policy Framework the following month, could be considered evidence of this privileged status. Simon explained that she interpreted her advisory mandate as seeking answers to two overarching questions: “Why, in spite of substantive progress over the past 40 years, including remarkable achievements such as land claims agreements, constitutional inclusion and precedent-setting court rulings, does the Arctic continue to exhibit among the worst national social indicators for basic wellness? Why, with all these hard-earned tools of empowerment, do many individuals and families not feel empowered and healthy?” In response, she categorized the main challenges inhibiting Arctic development into four categories: education and language, research and Indigenous knowledge, infrastructure gaps (particularly broadband, housing, and energy), conservation and the need for Indigenous protected areas. “There is no other region of Canada that has experienced the breadth and pace of geo-political development in the last 50 years than the Arctic,” Simon noted. Despite obvious linkages to global and national drivers, she emphasized her belief “that answers will be found in programs, processes, and policies that enable Arctic leaders to craft

Table 10.1: Principles of Partnership

1. Understanding and honouring the intent of Section 35 of the *Constitution Act of 1982*: All partners should understand and honour Canada's commitment to upholding Section 35 of the *Constitution* and strive to achieve forward momentum in defining how Section 35 can be applied to evolving policy and program initiatives.
2. Reconciliation: Reconciliation in partnerships and policy-making involves, at a minimum, a commitment to restoring relationships, seeing things differently than before, and making changes in power relationships.
3. Equality, trust, and mutual respect: A true partnership has to be built on equality, trust, transparency and respectful disagreement.
4. Flexible and adaptive policy: Nation-building in the Arctic will not be found in one-size-fits-all policy solutions. Policies need to adjust and adapt to circumstances.
5. Arctic leaders know their needs: Recognize that Arctic leaders know their priorities and what is required to achieve success.
6. Community-based solutions: Local leadership must be recognized and enabled to ensure community-based and community-driven solutions.
7. Confidence in capacity: An effective partnership has confidence in, and builds on, the capacities that are brought into the partnership, but also recognizes when capacity gaps need addressing.
8. Understanding and honouring agreements: The signing of an agreement is only the beginning of a partnership. Signatories need to routinely inform themselves of agreements, act on the spirit and intent, recognize capacity needs, respect their obligations, ensure substantive progress is made on implementation, expedite the resolution of disputes, and involve partners in any discussions that would lead to changes in agreements.
9. Respecting Indigenous knowledge: Indigenous and local knowledge must be valued and promoted equally to western science, in research, planning and decision-making.

Source: Mary Simon, Minister's Special Representative on Arctic Leadership, *A New Shared Arctic Leadership Model*, March 2017, <https://www.aadnc-aandc.gc.ca/eng/1492708558500/1492709024236>.

and support their own community-based and community-driven solutions.” Her bottom-up approach, to be devised by Arctic leaders and funded by federal money, was based on her vision of an “inclusive, mutually respectful and trustful process” that adhered to various “principles of partnership” (see table 10.1) that privileged Indigenous rights and Indigenous knowledge. The only reference to sovereignty related to “a concerted effort to promote and protect Canadian sovereignty in the Arctic” in the previous forty years, and the only references to security related to food security.³⁴

These elements of Trudeau government’s Arctic agenda indicate a return to the primacy of socio-cultural and environmental priorities over the more hard security, resource development emphasis attributed to the Harper government.³⁵ Although conventional sovereignty-security rhetoric is conspicuously absent, the few political speeches that its representatives have given on international Arctic issues have resurrected romantic, nationalistic images that extol Canada’s pride and unique responsibilities as a Northern nation — similar to those that featured so prominently in the Harper government’s speeches (and those of his political predecessors).³⁶ For example, Parliamentary Secretary for Global Affairs Pamela Goldsmith-Jones, delivering a speech on behalf of Minister Dion to mark the twentieth anniversary of the Arctic Council in September 2016, proclaimed:

Yes, we have a northern soul: ‘The true north strong and free.’ Few places on earth evoke more glorious images than the North. It is the land of the aurora, where the northern lights dance across the darkened sky at nightfall, and the land of the midnight sun and of polar days that go on forever under light that never fades. Our northern belonging fills us with pride—a pride that we owe first and foremost to the Canadians who actually live in the North. ... It is all the more important to remember that the well-being of northern people is being challenged by great shifts in the North’s physical and economic environments. The Arctic is attracting more and more economic activity. It will be the site of major, new economic projects. Its resources are increasingly

coveted. Its navigation routes are opening. All the while, its ecosystem remains as fragile as ever.

The North is an essential part of our future and a place of extraordinary potential. More than ever, the world will count on Canada as a responsible steward of this great barometer of our planet. Northern resources, explored responsibly, offer huge potential for increased economic development. But if these resources are exploited irresponsibly, it will be a disaster not only for us but for all of humanity.³⁷

A few weeks later, Goldsmith-Jones told the Arctic Circle in Reykjavik that, “for Canadians, the North captures our imagination like no other part of our country.”³⁸ This Arctic exceptionalism, which firmly embeds the North in national identity politics, inspires a sense of responsibility, serving as a call to action to protect Northerners and the environment from emerging threats—an obligation that all Canadians are asked to bear.

While the priorities articulated in the US-Canada joint statements on the Arctic in March and December 2016 reflect Canadian political interests, they are less likely to find support from the new administration of President Donald Trump than they did with the Obama administration. “The joint statement marked Obama’s final push to use his executive powers to lock his legacy of Arctic climate change, environmental and sustainable development into law, but unfortunately without the backing of Congress or the new president-elect,” Arctic commentator John Higginbotham noted. Trump’s election, however, promised to slow “the momentum of these historic bilateral Arctic understandings.” Trump had committed to “sharply reverse Obama’s policies on climate change, environment and international investment and trade flows,” placing Canada in a precarious position to suffer “collateral damage from American measures.” Higginbotham suggested that Canada faced the challenge of “educat[ing] the Trump administration that it needs continued strong partnership with Canada on North American Arctic issues of common interest because of the region’s size, location, resource potential, history of partnership and shared values.” Priority areas included transportation and resource infrastructure, modernizing the North American Aerospace Defense

Command (NORAD), and improved marine systems.³⁹ The joint statement released by President Trump and Prime Minister Trudeau when they met in February 2017 made no mention of the Arctic whatsoever, although it did emphasize their partnership as “indispensable allies in the defense of North America and other parts of the world, through NATO and other multilateral efforts,” with NORAD illustrating “the strength of our mutual commitment.”⁴⁰ What roles should we anticipate for the Canadian Armed Forces, as well as other government departments and agencies, in Arctic defence, security, and safety as the region’s political, strategic, socio-economic, and physical landscapes continue to evolve?

Strong, Secure, Engaged: Situating the Arctic in Canada’s New Defence Policy

Everything the Defence team does to better anticipate threats, understand the complex security environment and adapt to a rapidly changing world is done with a single objective in mind: ensuring the Canadian Armed Forces achieves success on operations. The Canadian Armed Forces is fundamentally focused on delivering results, whether it is battling through harsh conditions to save someone in distress in the Canadian Arctic, working with other Canadian government partners to help deliver life-saving assistance after a natural disaster at home or abroad, or engaging in combat to defeat potential adversaries or protect vulnerable populations from those seeking to harm them, in the context of United Nations or other peace operations.

Strong, Secure, Engaged, p.81

The Liberals promised in their 2015 election platform to maintain current National Defence spending levels, pledging “a renewed focus on surveillance and control of Canadian territory and approaches, particularly our Arctic regions,” and an “increase [in] the size of the Canadian Rangers.”⁴¹ Rather than repudiating Harper’s promised investments in enhanced Arctic defence

capabilities, the Trudeau Government seemed prepared to deliver on and even extend them.

Canada's new defence policy, *Strong, Secure, Engaged*, released in June 2017, showed that the Arctic remains an area of particular interest and focus. "To succeed in an unpredictable and complex security environment," DND committed to "increase [its] presence in the Arctic over the long-term and work cooperatively with Arctic partners."⁴² The defence policy statement reiterates longstanding images of the Arctic as a region undergoing massive change. "The Arctic region represents an important international crossroads where issues of climate change, international trade, and global security meet," it describes. Rather than promoting a narrative of inherent competition or impending conflict, the narrative points out that "Arctic states have long cooperated on economic, environmental, and safety issues, particularly through the Arctic Council, the premier body for cooperation in the region. All Arctic states have an enduring interest in continuing this productive collaboration."⁴³ This last sentence suggests that Russia (described elsewhere in the policy document as a state "willing to test the international security environment" that had reintroduced "a degree of major power competition") does not inherently threaten Arctic regional stability given its vested interests. Accordingly, the drivers of Arctic change cited in *Strong, Secure, Engaged* emphasize the rise of security and safety challenges rather than conventional defence threats, thus confirming the line of reasoning that has become well entrenched in defence planning over the last decade (as several chapters in this book reveal):

Climate change, combined with advancements in technology, is leading to an increasingly accessible Arctic. A decade ago, few states or firms had the ability to operate in the Arctic. Today, state and commercial actors from around the world seek to share in the longer term benefits of an accessible Arctic. Over time, this interest is expected to generate a corresponding rise in commercial interest, research and tourism in and around Canada's northern territory. This rise in activity will also bring increased safety and security demands related to search and rescue

and natural or man-made disasters to which Canada must be ready to respond.⁴⁴

In the context of being “strong at home,” *Strong, Secure, Engaged* explains that the Canadian Forces will “maintain a robust capacity to respond to a range of domestic emergencies, including by providing military support to civilian organizations on national security and law enforcement matters when called upon, engaging in rapid disaster response, and contributing to effective search and rescue operations.” As a desired end state, the policy anticipates that, once implemented, Canada’s military “will have improved mobility and reach in Canada’s northernmost territories,” and established a “greater presence in the Arctic over the longer-term.” This is not described as presence for the sake of presence. Instead, “Canadians can be confident that the Canadian Armed Forces will remain ready to act in the service of Canadians – from coast to coast to coast – and sustain a continuous watch over Canada’s land mass and air and sea approaches, an area of more than 10 million square kilometers, ensuring timely and effective response to crises.”⁴⁵

Towards these ends, the new defence policy places an explicit emphasis on a WoG approach to achieve its national security and public safety objectives. “While operating in Canada’s North, we often work in close partnership with other federal, territorial, and local partners,” the statement observes. “As such, we will leverage our new capabilities to help build the capacity of whole-of-government partners to help them deliver their mandates in Canada’s North, and support broader Government of Canada priorities in the Arctic region.”⁴⁶ This echoes the messaging from previous DND/CAF Arctic strategic and operational documents over the last decade, which plan and prepare to support activities such as search and rescue (SAR), major transportation disasters, environmental disasters, pandemics, loss of essential services (i.e., potable water, power, fuel supplies), organized crime, foreign state or non-state actor intelligence gathering activities, attacks on critical infrastructure, food security and disruptions to local hunting, and transportation practices caused by shipping or resource development. In resonance with the broader thrust of Canada’s Arctic policies, *Strong, Secure, Engaged* also highlights that

“Indigenous communities are at the heart of Canada’s North” and commits “to expand and deepen our extensive relationships with these communities, particularly through the Canadian Rangers and Junior Canadian Rangers.” This also entails “engaging local populations as part of routine operations and exercises”⁴⁷ — a practice that has been adopted over the last decade and connects to the emphasis on local empowerment espoused by Mary Simon and other Northern leaders.⁴⁸

The new policy also specified ongoing or new investments in Arctic capabilities across the three armed services that will be integrated “into a ‘system-of-systems’ approach to Arctic surveillance, comprising air, land, sea, and space assets connected through modern technology.”⁴⁹ Identifying the Royal Canadian Navy’s principal domestic challenge as “the need to operate in the Arctic, alongside the Canadian Coast Guard, and alongside allied partners,” the government confirmed that it would acquire five or six Arctic and Offshore Patrol Ships (AOPS) to “provide armed, sea-borne surveillance of Canadian waters, including in the Arctic. They will enforce sovereignty, cooperating with partners, at home and abroad, and will provide the Government of Canada with awareness of activities in Canada’s waters.”⁵⁰ The Canadian Army will receive “a new family of Arctic-capable land vehicles” (all-terrain vehicles, snowmobiles and larger tracked semi-amphibious utility vehicles) to improve its operational capabilities in the North.⁵¹ To meet joint intelligence, surveillance, and reconnaissance requirements, the Royal Canadian Air Force will implement “sensor and communication solutions that are specifically tailored to the Arctic environment,” as well as a new Canadian multi-mission aircraft to replace the CP-140 Aurora Long-Range Maritime Patrol Aircraft and new space-based communications and surveillance systems.⁵² Building on previous investments to bolster Arctic capabilities (discussed in this book), these new platforms, vehicles, and systems should serve as critical enablers to deliver positive effects across a broad spectrum of defence, security, and safety missions.

Rather than adopting unilateralist messaging suggesting a need for Canada to defend its Arctic interests independently (owing to potential sovereignty

Table 10.2: Enhancing Arctic Capability

To enhance the Canadian Armed Forces' ability to operate in the Arctic and adapt to a changed security environment, the Defence team will:

106. Enhance the mobility, reach and footprint of the Canadian Armed Forces in Canada's North to support operations, exercises, and the Canadian Armed Forces' ability to project force into the region.
107. Align the Canadian Air Defence Identification Zone (CADIZ) with our sovereign airspace.
108. Enhance and expand the training and effectiveness of the Canadian Rangers to improve their functional capabilities within the Canadian Armed Forces.
109. Collaborate with the United States on the development of new technologies to improve Arctic surveillance and control, including the renewal of the North Warning System.
110. Conduct joint exercises with Arctic allies and partners and support the strengthening of situational awareness and information sharing in the Arctic, including with NATO.

Source: *Strong, Secure, Engaged*, p.20, 113.

threats), *Strong, Secure, Engaged* affirms the compatibility between exercising sovereignty and collaboration with international partners. "Canada remains committed to exercising the full extent of its sovereignty in Canada's North, and will continue to carefully monitor military activities in the region and conduct defence operations and exercises as required," the policy explains. Concurrently, "Canada's renewed focus on the surveillance and control of the Canadian Arctic will be complemented by close collaboration with select Arctic partners, including the United States, Norway and Denmark, to increase surveillance and monitoring of the broader Arctic region."⁵³ Commitments to "renew the North Warning System (NWS) and modernize elements of NORAD" flow from Canada's longstanding bilateral defence arrangements with the US to jointly monitor and control the air and maritime approaches to the continent.⁵⁴ The policy also notes that while the eight Arctic states

(Canada, the US, Denmark/Greenland, Iceland, Norway, Sweden, Finland, and Russia) “rightfully remain the primary actors in the Arctic, Canada recognizes the increasing interest of non-Arctic states and organizations and will work cooperatively with all willing partners to advance shared interests on safety and security.”⁵⁵

While careful to acknowledge Russia’s rights and interests as an Arctic state, the defence policy also notes its role in the resurgence of major power competition globally and concomitant implications for peace and security.⁵⁶ “NATO Allies and other like-minded states have been re-examining how to deter a wide spectrum of challenges to the international order by maintaining advanced conventional military capabilities that could be used in the event of a conflict with a ‘near-peer,’” the policy notes in the “state competition” section that immediately precedes the discussion about “a changing Arctic.” Highlighting that “NATO has also increased its attention to Russia’s ability to project force from its Arctic territory into the North Atlantic, and its potential to challenge NATO’s collective defence posture,” the policy makes clear that “Canada and its NATO Allies have been clear that the Alliance will be ready to deter and defend against any potential threats, including against sea lines of communication and maritime approaches to Allied territory in the North Atlantic.”⁵⁷ Despite Canada’s reticence to have NATO adopt an explicit Arctic role over the past decade,⁵⁸ the inclusion of this reference – as well as the commitment to “support the strengthening of situational awareness and information sharing in the Arctic, including with NATO”⁵⁹ – indicates a significant shift in official position.⁶⁰

Although *Strong, Secure, Engaged* appropriately links Canadian defence and security considerations to rising international interest in the Arctic, it does not depict a regional threat environment that warrants a deviation from developing and integrating DND/CAF capabilities in a WoG context that prioritizes preparations to address security and safety risks. Ernie Regehr, a longstanding observer of Arctic security issues, concluded that the policy statement “sensibly portrays Arctic security challenges as rooted largely in significant public safety

challenges rather than in traditional, or primarily military, challenges to the defence of Canada.” He noted that:

The new Canadian defence policy does not envision any significant changes in the Arctic security environment – either in threat perceptions or in defence requirements. While the focus is on improving the Canadian Forces’ domain awareness and operational capacity in the Arctic, no new policy directions are identified, and the Arctic is not portrayed as a place where sovereignty is fragile and in constant need of being shored up. For the Arctic, it is not really a “new” Canadian defence policy. The basic themes of Canadian defence policy have been consistent over multiple decades and multiple Canadian governments, and the current Government continues to highlight the traditional roles of defending Canada and North America (the latter in cooperation with the US), and contributing to international peace and security.⁶¹

Michael Byers concurred that “the policy on the Arctic continues to be one of regarding the region as a peaceful region where cooperation between allies is the appropriate response and where investments in the military are relatively moderate and focused on search and rescue and surveillance.... It’s pretty much a continuation of what we had before under Stephen Harper and the last year and a half under Mr. Trudeau.” Rob Huebert found it “quite striking ... in terms of the Arctic ... that there wasn’t any scaling back of some of the initiatives that Harper had brought forward,” nothing “a bit of a bipartisan agreement in terms of the centrality and importance of the Arctic.”⁶²

Final Reflections

As the chapters in this book reveal, implementing a Canadian Arctic security policy that reflects a comprehensive, Whole of Government approach does not require a fundamental reappraisal of Canada’s existing framework.⁶³ Important questions and debates related to Russia’s intentions and investments in reinvigorating its Arctic defence forces, NATO’s role in the circumpolar world, and Canada’s long-standing continental defence relationship with the United States need not push “soft” security and safety considerations to the margins.

Indeed, given the multi-dimensional nature of emerging Arctic challenges, the Government of Canada has already adopted definitions of Arctic security that move beyond traditional frameworks fixated on military conflict to emphasize broader human and environmental issues—the most pressing Arctic security and safety concerns according to government and Northern representatives.

Before promoting new solutions to the most probable threats, hazards and challenges to Canadian security and safety, the Trudeau government is well advised to look at what has been proposed or considered in the past, as well as best practices over the past decade. The Arctic poses unique challenges that require innovative, comprehensive approaches to synchronize efforts and address security and safety threats/hazards in an efficient and credible manner that promotes national goals of regional prosperity and stability and is responsive to Canadian interests and values. Better integrating government actions will help to achieve strategic and policy objectives and provide greater clarity and transparency in decision making — key objectives of the Trudeau government. Diverse organizational cultures must be bridged to ensure that planning, training and operations make efficient use of limited resources, given austere budgetary environments and the increasing tempo and complexity of activities in the Arctic. In turn, streamlined policy and decision making that remains sensitive and receptive to diverse views and perspectives, reduces redundancies, leverages government and non-government resources, and produces greater operational certainty will engender a higher level of trust and credibility among stakeholders and Indigenous rights-holders than can be achieved by units working in isolation.

While strategic assessments do not perceive direct threats to Canada's territorial integrity or anticipate any major changes to traditional defence roles, the policy community is attentive to emerging security and safety challenges associated with new environmental, human and cultural security risks. We hope that this book supports ongoing efforts to devise innovative frameworks that help inform WoG approaches, consistent with Canada's Northern and national interests, and address security and safety needs in a culturally- and

environmentally-appropriate manner. Policies also must remain sufficiently flexible to accommodate a high degree of uncertainty about future access to and activity in the region, changing fiscal realities, popular pressures for symbolic action to showcase Canadian sovereignty and the interests and priorities of Northern communities — the most important variable of all.

Notes

¹ Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy* (2017), 79. <http://dgpapp.forces.gc.ca/en/canada-defence-policy/docs/canada-defence-policy-report.pdf>.

² See, for example, Amelia Hadfield, "Maple Leaf Zeitgeist? Assessing Canadian Prime Minister Justin Trudeau's Policy Changes." *The Round Table* 106: (2017): 23-35.

³ See, for example, Matthew Bondy, "Justin Trudeau is Putting the 'Liberal' Back in 'Canadian Foreign Policy,'" *Foreign Policy*, 21 October 2015, <http://foreignpolicy.com/2015/10/21/justin-trudeau-liberal-canadian-foreign-policy-syria-climate-change/>; Lee Berthiaume, "A Return to Multilateralism," *National Post*, 29 December 2015; and Stéphane Dion, "On 'Responsible Conviction' and Liberal Foreign Policy," *Macleans*, 29 March 2016, <http://www.macleans.ca/politics/ottawa/stephane-dion-how-ethics-inspires-liberal-foreign-policy/>. On the new government's main priorities and their relationship to the North, see Thomas Axworthy, "In the North, Justin Trudeau Can Accomplish Great Things," *Toronto Star*, 6 March 2016.

⁴ See, for example, P. Whitney Lackenbauer and Ryan Dean, *Canada's Northern Strategy under the Harper Conservatives: Key Speeches and Documents on Sovereignty, Security, and Governance, 2005-15* (Calgary: Centre for Military, Strategic and Security Studies/ Arctic Institute of North America, 2016). On Harper's early vision, see for example Klaus Dodds, "We are a Northern Country: Stephen Harper and the Canadian Arctic," *Polar Record* 47:4 (2011): 371-374, and Dodds, "Graduated and Paternal Sovereignty: Stephen Harper, Operation Nanook 10, and the Canadian Arctic," *Environment and Planning D: Society and Space* 30:6 (2012): 989-1010.

⁵ Jason Fekete, "Justin Trudeau says Canada 'is back at climate-change meeting,'" *National Post*, 30 November 2015.

⁶ Liberal Party of Canada, "A New Plan for Canada's Environment and Economy" (August 2015), <https://www.liberal.ca/files/2015/08/A-new-plan-for-Canadas->

[environment-and-economy.pdf](#). On the muzzling of government scientists, see for example Verlyn Klinkenborg, “Silencing Scientists,” *New York Times*, 21 September 2013; Jonathon Gatehouse, “When Science Goes Silent,” *Maclean’s*, 3 May 2013; Margaret Munro, “Unmuzzling government scientists is just the first step,” *Globe and Mail*, 26 October 2015; and Mark Hume, “Federal scientists eager to share their research now that muzzles are off,” *Globe and Mail*, 8 November 2015.

⁷ Canadian Press, “Trudeau on climate targets: ‘Canada’s efforts will not cease,” *Maclean’s*, 22 April 2016, <http://www.macleans.ca/politics/ottawa/trudeau-on-climate-targets-canadas-efforts-will-not-cess/>.

⁸ Tahnee Prior and Whitney Lackenbauer, “COP21: Why Are We Leaving the Arctic Out in the Cold?,” *Nunatsiaq News*, 2 December 2015.

⁹ “U.S.-Canada Joint Statement on Climate, Energy, and Arctic Leadership,” 10 March 2016.

¹⁰ Prime Minister of Canada, “Ministerial Mandate Letters,” <http://pm.gc.ca/eng/ministerial-mandate-letters>.

¹¹ The *Statement on Canada’s Arctic Foreign Policy* adopts the phrase Canadian “Aboriginal People,” thus emphasizing individuals living in the North, rather than the plural “peoples” connoting group rights. This reflects a longstanding debate in Canada about Indigenous rights to self-determination under international law. According to some strands of international law, and especially Article 1 of the Covenant, the word “peoples” opens up the prospect of unqualified acceptance of self-determination. See, for example, Andrew F. Cooper, *Tests of Global Governance: Canadian diplomacy and United Nations world conferences* (Tokyo: United Nations University Press, 2004), 122-51. The Trudeau Government, however, seems fully prepared to acknowledge Aboriginal peoples as collective entities as well.

¹² Gloria Galloway, “Canada drops opposition to UN indigenous rights declaration,” *Globe and Mail*, 9 May 2016;

¹³ Ken Coates and Bill Favel, “Embrace of UNDRIP Can Bring Aboriginal Canada and Ottawa Closer Together,” iPolitics, 19 May 2016, <http://www.macdonaldlaurier.ca/embrace-of-undrip-can-bring-aboriginal-canada-and-ottawa-closer-together-ken-coates-and-blaine-favel-for-ipolitics/>.

¹⁴ See, for example, Mary Simon, “Militarization and the Aboriginal Peoples,” in *Arctic Alternatives: Civility or Militarism in the Circumpolar North*, ed. Franklyn Griffiths (Toronto: Science for Peace/Samuel Stevens, 1992), 55-67; and Mary Simon, “Does Ottawa’s Focus Look Backwards,” *Nunatsiaq News*, 11 April 2008.

¹⁵ Mary Simon, Interim Report on the Shared Arctic Leadership Model, 31 October 2016, <https://www.aadnc-aandc.gc.ca/eng/1481656672979/1485800424490>. Simon had previously served as president of the Inuit Circumpolar Council, president of Inuit Tapiriit Kanatami, and Canadian ambassador for circumpolar affairs, and led Canada's negotiations that created the Arctic Council.

¹⁶ Lee Berthiaume, "Canada ready to re-engage with Russia, Iran, despite differences, Dion says," *Ottawa Citizen*, 11 November 2015. During the election campaign in October 2015, Trudeau had told reporters that, if he became prime minister, he would "tell off" Putin "directly to his face" after accusing the Russian leader of "being dangerous" in eastern Europe, "irresponsible and harmful" in the Middle East, and "unduly provocative" in the Arctic. Canadian Press, "Justin Trudeau would tell off 'bully' Vladimir Putin 'directly to his face' if he becomes prime minister," *National Post*, 13 October 2015.

¹⁷ In January 2016, Dion reiterated that Canada hoped to resume dialogue with Russia, despite that country's military aggression in the Ukraine, and cited the Arctic as a region where Canada would benefit from re-engagement with its circumpolar neighbour. Scott Borgerson and Michael Byers, "The Arctic Front in the Battle to Contain Russia," *Wall Street Journal*, 8 March 2016. See also Matthew Fisher, "Allies wait for great defence commitment from Canada while Russia militarizes the Arctic," *National Post*, 4 February 2016; Eva Salinas & Hannah Hoag [in conversation with Rob Huebert and Heather Exner-Pirot], "Canada Wants to Reopen Dialogue with Russia," *Arctic Deeply*, 17 February 2016, <https://www.newsdeeply.com/arctic/articles/2016/02/17/canada-wants-to-reopen-dialogue-with-russia>;

¹⁸ See, for example, Kari Roberts, "Why Russia will Play by the Rules in the Arctic," *Canadian Foreign Policy Journal* 21/2 (2015): 112-128; Adam Lajeunesse and P. Whitney Lackenbauer, "Canadian Arctic Security: Russia's Not Coming," *OpenCanada/Arctic Deeply*, 19 April 2016, <https://www.opencanada.org/features/canadian-arctic-security-russias-not-coming/>; and Lackenbauer, "Canada & Russia: Toward an Arctic Agenda," *Global Brief* (Summer/Fall 2016): 21-25.

¹⁹ See Canada, *Iqaluit 2015: Development for the People of the North—Results Achieved during Canada's Arctic Council Chairmanship, 2013-2015* (Ottawa: Minister of Foreign Affairs, 2015); Heather Exner-Pirot, "Canada's Arctic Council Chairmanship (2013-2015): A Post-Mortem," *Canadian Foreign Policy Journal* 22:1 (2016): 84-96; and P. Whitney Lackenbauer, "Conceptualizing 'One Arctic' as the 'Canadian Arctic'? Situating Canada's Arctic Council Chairmanship (2013-

15),” in *One Arctic: The Arctic Council and Circumpolar Governance*, ed. P. Whitney Lackenbauer, Heather Nicol, and Wilfrid Greaves (Ottawa: Canadian Arctic Resources Committee / Centre on Foreign Policy and Federalism, 2017), 46-78. The “Safe Arctic Shipping” theme built upon previous Council recommendations, such as the landmark *Arctic Marine Shipping Assessment* (2009), as well as the ongoing work of multilateral mechanisms like the International Maritime Organization (IMO) through which Canada and other countries negotiated the International Polar Code that entered into force on 1 January 2017. See David VanderZwaag, “The IMO and Arctic Marine Environmental Protection: Tangled Currents, Sea of Challenges,” in *The Arctic in World Affairs* ed. Oran Young, Jong Deog Kim, and Yoon Hyung Kim (Seoul: Korea Maritime Institute and Honolulu: East West Center, 2012): 99-128; Jiayu Bai, “The IMO Polar Code: The Emerging Rules of Arctic Shipping Governance,” *International Journal of Marine and Coastal Law* 30:4 (2015): 674-699; and IMO, “Shipping in Polar Waters,”

<http://www.imo.org/en/MediaCentre/HotTopics/polar/Pages/default.aspx>. These initiatives reflect Canada’s consistent advocacy for the protection of the Arctic environment, and reflect its interests as both a maritime nation and an Arctic coastal state that welcomes navigation in its waters, so long as maritime activities comply with domestic and international rules and regulations.

²⁰ “U.S.-Canada Joint Statement on Climate, Energy, and Arctic Leadership,” 10 March 2016, <http://www.pm.gc.ca/eng/news/2016/03/10/us-canada-joint-statement-climate-energy-and-arctic-leadership#sthash.XjRoT2R7.dpuf>

²¹ Sima Sahar Zerehi, “Trudeau-Obama shared Arctic leadership model a hit with Inuit and environmental groups,” CBC News, 11 March 2016, <http://www.cbc.ca/news/canada/north/trudeau-obama-washington-visit-arctic-promises-1.3486076>.

²² Simon, Interim Report on the Shared Arctic Leadership Model.

²³ “Canada’s Oceans Protection Plan: What it means for Canada’s regions,” 7 November 2016, <http://pm.gc.ca/eng/news/2016/11/07/canadas-oceans-protection-plan-what-it-means-canadas-regions>

²⁴ “Oceans Protection Plan : Creating Stronger Indigenous Partnerships and Engaging Coastal Communities,” 7 November 2016, <http://pm.gc.ca/eng/news/2016/11/07/canadas-oceans-protection-plan-creating-stronger-indigenous-partnerships-and>.

²⁵ “United States-Canada Joint Arctic Leaders’ Statement,” 20 December 2016, <http://pm.gc.ca/eng/news/2016/12/20/united-states-canada-joint-arctic-leaders-statement>.

²⁶ See also Louie Porta, Erin Abou-Abssi, Jackie Dawson, and Olivia Mussells. "Shipping Corridors as a Framework for Advancing Marine Law and Policy in the Canadian Arctic." *Ocean & Coastal Law Journal* 22 (2017): 63-84.

²⁷ The "last ice area" is a marine and terrestrial area covering Canada’s high Arctic islands (north of Lancaster Sound) and the northern portion of Greenland and the North Pole.

²⁸ The US-Canada Joint Arctic Leaders’ Statement explained that "taking into account the respective obligations of the United States and Canada under international law to protect and preserve the marine environment, these steps also support the goals of various international frameworks and commitments concerning pollution, including those reflected in the 1990 International Convention on Oil Pollution Preparedness, Response, and Cooperation, the 2013 Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, and the U.S.-Canada Joint Marine Pollution Contingency Plan. Furthermore, with respect to areas of the Beaufort Sea where the U.S.-Canada maritime boundary has not yet been agreed, these practical arrangements are without prejudice to either side’s position and demonstrate self-restraint, taking into account the principle of making every effort not to jeopardize or hamper reaching a final maritime boundary agreement.”

²⁹ INAC, "FAQs on Actions being taken under the Canada-US Joint Arctic Statement," 20 December 2016, <http://www.aadnc-aandc.gc.ca/eng/1482262705012/1482262722874>.

³⁰ INAC, "FAQs on Actions.”

³¹ Peter Taptuna, the premier of Nunavut, told the Canadian Broadcasting Corporation that "We do want to be getting to a state where we can make our own determination of our priorities, and the way to do that is gain meaningful revenue from resource development. And at the same time, when one potential source of revenue is taken off the table, it puts us back at practically Square 1 where Ottawa will make the decisions for us." Bob McLeod, the premier of Northwest Territories who found out about the moratorium on the day of the announcement, explained that: "It feels like a step backward. We spent a lot of time negotiating a devolution agreement, and we thought the days were gone when we'd have unilateral decisions made about the North in some faraway place like Ottawa, and that northerners would be making the decisions about issues that affected northerners." John Van

Dusen, "Nunavut, N.W.T. premiers slam Arctic drilling moratorium," CBC News North, 22 December 2016, <http://www.cbc.ca/news/canada/north/nunavut-premier-slams-arctic-drilling-moratorium-1.3908037>. See also Sarah Rogers, "Nunavut disappointed in Trudeau's 'spur of the moment' plans for Arctic," *Nunatsiaq News*, 21 December 2016,

http://www.nunatsiaqonline.ca/stories/article/65674nunavut_disappointed_in_trudeau_s_pur_of_the_moment_plans_for_arctic/; Rob Huebert, "Trudeau's Arctic Oil Decision a Fresh Example of Canada Ignoring the North," *Globe and Mail*, 6 January 2017, <https://beta.theglobeandmail.com/opinion/trudeaus-arctic-oil-decision-a-fresh-example-of-how-canada-ignores-the-north/article33534313/?ref=http://www.theglobeandmail.com&>; and "Northern Premiers want a say in Trudeau's New Arctic Policy," *Nunatsiaq News*, 30 January 2017,

http://www.nunatsiaqonline.ca/stories/article/65674northern_premiers_want_say_in_trudeaus_new_arctic_policy/. On intergovernmental relations, see Christopher Dunn, "Harper Without Jeers, Trudeau Without Cheers: Assessing 10 Years of Intergovernmental Relations." *Institute for Research on Public Policy Insights* 8 (September 2016), <http://irpp.org/wp-content/uploads/2016/09/insight-no8.pdf>.

³² Heather Exner-Pirot, "Six Takeaways from this Week's U.S.-Canada Joint Arctic Statement," Arctic Deeply, 22 December 2016, <https://www.opencanada.org/features/six-takeaways-weeks-us-canada-joint-arctic-statement/>.

³³ Exner-Pirot, "Six Takeaways."

³⁴ Mary Simon, Minister's Special Representative on Arctic Leadership, *A New Shared Arctic Leadership Model*, March 2017, <https://www.aadnc-aandc.gc.ca/eng/1492708558500/1492709024236>.

³⁵ On this characterization of the Conservative government's agenda, see for example: Lisa Williams, "Canada, the Arctic, and Post-National Identity in the Circumpolar World," *Northern Review* 33 (2011): 113-31; Whitney Lackenbauer, "Harper's Arctic Evolution," *Globe and Mail* (August 20, 2013); Petra Dolata, "A New Canada in the Arctic? Arctic Policies under Harper," *Études canadiennes/Canadian Studies - Revue interdisciplinaire des études canadiennes en France* 78 (2015): 131-154; Jerald Sabin, "North's Liberal Vote a Rebuke of Harper's Arctic Policy," CBC News (October 21, 2015), <http://www.cbc.ca/news/canada/north/opinion-sabin-arctic-policy-election-1.3280899>; Wilfrid Greaves, "Thinking Critically About Security and the Arctic in the Anthropocene," The Arctic Institute (March 22, 2016), <http://www.thearcticinstitute.org/thinking-critically-about-security-and-the-arctic-in-the-anthropocene/>; and Heather Nicol, "Ripple Effects: Devolution,

Development and State Sovereignty in the Canadian North,” in *Future Security of the Global Arctic: State Policy, Economic Security and Climate*, ed. Lassi Heininen (Basingstoke: Palgrave Macmillan, 2016), 99-120.

³⁶ See P. Whitney Lackenbauer and Ryan Dean, eds., *Canada's Northern Strategy under the Harper Conservatives: Key Speeches and Documents on Sovereignty, Security, and Governance, 2006-15*, Documents on Canadian Arctic Sovereignty and Security (DCASS) No. 6 (Calgary and Waterloo: Centre for Military, Strategic and Security Studies/Centre on Foreign Policy and Federalism/Arctic Institute of North America, 2016).

³⁷ Address by Parliamentary Secretary Goldsmith-Jones, on behalf of Minister Dion, marking the 20th anniversary of the Arctic Council, Ottawa, 29 September 2016, <http://news.gc.ca/web/article-en.do?nid=1131189>.

³⁸ “The Arctic Council at 20 Years: More Necessary than Ever,” address by Parliamentary Secretary Pamela Goldsmith-Jones at Arctic Circle Assembly, Reykjavik, Iceland, 8 October 2016, <http://news.gc.ca/web/article-en.do?nid=1139819>.

³⁹ John Higginbotham, “Perspective on the US-Canada Statement on the Arctic,” Centre for International Governance Innovation, 9 January 2017, <https://www.cigionline.org/articles/perspective-us-canada-statement-arctic>.

⁴⁰ White House, “Joint Statement from President Donald J. Trump and Prime Minister Justin Trudeau,” 13 February 2017, <https://www.whitehouse.gov/the-press-office/2017/02/13/joint-statement-president-donald-j-trump-and-prime-minister-justin>. Reports of subsequent conversations between the two leaders through to September 2017, as published on the prime minister’s website (<http://premierministre.gc.ca>), do not suggest any discussions of Arctic issues. On NORAD in this context, see Andrea Charron, “North American Aerospace Defense Command and the Arctic: Beyond the Santa Tracker,” in *North of 60: Toward a Renewed Canadian Arctic Agenda*, ed. John Higginbotham and Jennifer Spence (Waterloo: Centre for International Governance Innovation, 2016), 83-88.

⁴¹ In highlighting the need for “an agile, responsive, and well-equipped military force that can effectively defend Canada and North America,” and by mentioning the Arctic in particular, there was no indication that Arctic defence, security, and safety would be downgraded in importance. Instead, the Liberal party promised to make investments in the Royal Canadian Navy to be a “top priority,” including completing the six Arctic and offshore patrol ships (AOPS) announced by the Conservatives and the construction of more icebreakers (presumably for the Canadian Coast Guard). Liberal Party of Canada, “Defence Platform [2015],”

<https://www.liberal.ca/realchange/royal-canadian-navy/>, last accessed 21 October 2015.

⁴² *Strong, Secure, Engaged*, 14.

⁴³ *Strong, Secure, Engaged*, 50. Most Canadian academic experts seem to have reached a consensus about the prospects of “resource” or “sovereignty wars” emanating from Arctic disputes. Previous proponents of the “sovereignty on thinning ice” school have largely abandoned their earlier arguments that Canadian sovereignty will be a casualty of climate change and foreign challenges. Instead, academic narratives anticipating potential conflict now emphasize how other international events (such as Russian aggression in the Ukraine) could “spill over” into the Arctic or how new non-Arctic state and non-state actors might challenge or undermine Canadian sovereignty and security. See, for example, Rob Huebert, “Why Canada, US Must Resolve their Arctic Border Disputes,” *Globe and Mail*, 21 October 2014; Huebert, “How Russia’s Move into Crimea Upended Canada’s Arctic Strategy,” *Globe and Mail*, 2 April 2014; Huebert, “Is Canada Ready for Russia’s Hardball Approach to the North Pole,” *Globe and Mail*, 30 January 2014; Derek Burney and Fen Osler Hampson, “Arctic Alert: Russia is Taking Aim at the North,” *Globe and Mail*, 9 March 2015; Michael Byers, “The Northwest Passage Dispute Invites Russian Mischief,” *National Post*, 28 April 2015; Chris Sorensen, “The World’s First Ice-Busting Yachts Open the High Arctic,” *Macleans*, 30 December 2015; Scott Borgerson and Michael Byers, “The Arctic Front in the Battle to Contain Russia,” *Wall Street Journal*, 8 March 2016. For a less alarmist view of Russia, see Adam Lajeunesse and Whitney Lackenbauer, “Canadian Arctic Security: Russia’s Not Coming,” *ArcticDeeply*, 14 April 2016,

<https://www.opencanada.org/features/canadian-arctic-security-russias-not-coming>.

⁴⁴ *Strong, Secure, Engaged*, 51.

⁴⁵ *Strong, Secure, Engaged*, 60.

⁴⁶ *Strong, Secure, Engaged*, 80.

⁴⁷ *Strong, Secure, Engaged*, 80.

⁴⁸ See, for example, Paul Kaludjak, “The Inuit Are Here, Use Us,” *Ottawa Citizen*, 18 July 2007; Inuit Tapiriit Kanatami, *Nilliajut: Inuit Perspectives on Security, Patriotism and Sovereignty* (Ottawa: Inuit Qaujisarvingat, 2013); and Walter & Duncan Gordon Foundation, *National Roundtable on Arctic Emergency Preparedness: Report of Proceedings* (Toronto: Munk-Gordon Arctic Security Program, 2014),

[http://gordonfoundation.ca/app/uploads/2017/03/2014_NationalRoundtableReport WEB.pdf](http://gordonfoundation.ca/app/uploads/2017/03/2014_NationalRoundtableReport_WEB.pdf).

⁴⁹ *Strong, Secure, Engaged*, 80; see also 15, 39, 64.

⁵⁰ *Strong, Secure, Engaged*, 35.

⁵¹ *Strong, Secure, Engaged*, 37, 102, 109.

⁵² *Strong, Secure, Engaged*, 39, 64, 65, 71, 71, 109, 110, 111.

⁵³ *Strong, Secure, Engaged*, 90.

⁵⁴ *Strong, Secure, Engaged*, 80. For historical perspectives, see Joseph Jockel, *No Boundaries Upstairs: Canada, the United States, and the Origins of North American Air Defence, 1945-1958* (Vancouver: UBC Press, 1987); P. Whitney Lackenbauer and Rob Huebert, "Premier Partners: Canada, the United States and Arctic Security," *Canadian Foreign Policy Journal* 20:3 (Fall 2014): 320-33; and Adam Lajeunesse, *Lock, Stock, and Icebergs: A History of Canada's Arctic Maritime Sovereignty* (Vancouver: UBC Press, 2016).

⁵⁵ *Strong, Secure, Engaged*, 90. Given Canada's longstanding position that its sovereignty in the Arctic is well-established, there is unlikely to be any reversing of its basic stance on the rights and roles of Arctic states in regional governance. With Prime Minister Trudeau having criticized his predecessor for allegedly politicizing the scientifically-informed legal process to delineate the outer limits of Canada's continental shelf in the Arctic, Canada is likely to emphasize openness, transparency, the rule of law, and science-based decision-making as it navigates the process established by article 76 of UNCLOS for claims to extended continental shelves. See Elizabeth Riddell-Dixon, *Breaking the Ice: Canada, Sovereignty, and the Arctic Extended Continental Shelf* (Toronto: Dundurn, 2017). Similarly, the Liberal government is unlikely to succumb to alarmist narratives suggesting that military threats warrant a deviation from our established approach to managing outstanding sovereignty and status of water disputes. See, for example, Borgerson and Byers, "Arctic Front in the Battle to Contain Russia"; and Levon Sevunts, "Canada's defence review and the Arctic," Radio Canada International, 8 April 2016, <http://www.rcinet.ca/en/2016/04/08/canadas-defence-review-and-the-arctic/>.

⁵⁶ As Ernie Regehr notes, "the Russia-related alarms raised by officials, analysts, and Parliamentarians through the Senate and House of Commons reports [released in recent years] were not carried over into the Government's new defence policy statement. It has only three references to Russia, and only one of those is linked to the Arctic, though even it doesn't suggest a threatening posture within or toward the Arctic itself. Instead, it notes a NATO concern that Russia is once again expanding its capacity to project force from the Arctic into the North Atlantic. The statement does not treat Russia as benign. It points to the 'illegal annexation

of Crimea,’ notes Russia’s ‘willingness to test the international security environment,’ and acknowledges the return of ‘a degree of major power competition... to the international system.’ Notably, the Government defence policy statement makes no reference to the Russian bomber threat.” Ernie Regehr, “Arctic Security and the Canadian Defence Policy Statement of 2017,” 31 August 2017, <http://thesimonsfoundation.ca/highlights/arctic-security-and-canadian-defence-policy-statement-2017>.

⁵⁷ *Strong, Secure, Engaged*, 79-80.

⁵⁸ A U.S. diplomatic cable released through Wikileaks revealed that PM Harper opposed the inclusion of the Arctic on NATO’s agenda, warned NATO’s secretary-general that the alliance has “no role” in the Arctic, and suggested that pressure for involvement is coming from nations who want to exert their influence in a region “where they don’t belong.” Canada also apparently asked NATO to remove Arctic from all future agendas. Quoted in John Ivison, “Canada Under Increasing Pressure to Come Up with Co-Ordinated NATO Response to Russia in Arctic,” *National Post*, 23 April 2014, <http://news.nationalpost.com/news/canada/canada-under-increasing-pressure-to-come-up-with-co-ordinated-nato-response-to-russia-in-arctic>. Canadian media and academic opinion is divided. Some commentators suggesting that Canada should maintain its stance against NATO involvement on the grounds of alienating/antagonizing Russia (or at least playing into Putin’s hands by appearing to validate his suggestion of Western aggressive intentions against Russia’s Arctic). See, for example, P. Whitney Lackenbauer, “Canada & Russia: Toward an Arctic Agenda,” *Global Brief* (Summer/Fall 2016): 21-25. Others see it as promoting greater European Union involvement in Arctic affairs writ large, such as Robert W. Murray and Tom Keating, “Containing Russia Should Not Mean Bringing NATO to the Arctic,” *Globe and Mail*, 25 April 2014. Others worry that NATO involvement would amplify the misconception that Arctic regional dynamics (eg. boundary disputes, continental shelves, Arctic resources, shipping lanes) are likely to precipitate conflict between Arctic states. Others push for stronger NATO involvement to meet heightened Russian military threat, stand up to Russian intimidation, and show strong deterrent. See, for example, Aurel Braun, “Canada Needs to Counter Russian Aggression with Arctic Security,” Macdonald-Laurier Institute, 25 September 2014, <http://www.macdonaldlaurier.ca/canada-needs-counter-russian-aggression-arctic-security/>; Murray Brewster, “Join Ballistic Missile Defence, Involve NATO in Arctic, Experts Tell Trudeau,” *Global News*, 3 November 2015, <http://globalnews.ca/news/2315862/join-ballistic-missile-defence-involve-nato-in-arctic-experts-tell-trudeau/>; Huebert in Levon Sevunts,

“Canada’s Defence Review and the Arctic,” Radio Canada International, 8 April 2016, <http://www.rcinet.ca/en/2016/04/08/canadas-defence-review-and-the-arctic/>; Rob Huebert, “How the Warsaw NATO Summit Altered Arctic Security,” 18 July 2016, <https://www.newsdeeply.com/arctic/community/2016/07/18/how-the-warsaw-nato-summit-altered-arctic-security>; and Huebert, “NATO, NORAD and the Arctic: A Renewed Concern,” in *North of 60: Toward a Renewed Canadian Arctic Agenda*, ed. John Higginbotham and Jennifer Spence (Waterloo: Centre for International Governance Innovation, 2016), 91-99.

⁵⁹ *Strong, Secure, Engaged*, 113.

⁶⁰ Political scientist Stephen Saideman suggests that “Trudeau is probably less hostile to NATO discussing the Arctic than his predecessor. Stephen Harper used the Arctic to play to Canadian nationalism and to those hostile to multilateralism in his constituency—his Canada First Defence Strategy. Trudeau is more inclined towards multilateral solutions, although there have been no signals yet of a change in Canada’s stance on NATO and the Arctic.” Saideman, “NATO Summit Special Series: Canada,” NATOSource, 27 June 2016, <http://www.atlanticcouncil.org/blogs/natosource/nato-summit-special-series-canada/>.

⁶¹ Ernie Regehr, “Arctic Security and the Canadian Defence Policy Statement of 2017,” 31 August 2017, <http://thesimonsfoundation.ca/highlights/arctic-security-and-canadian-defence-policy-statement-2017>. Regehr criticized “the failure of the government’s new security policy to make an overt commitment to the broad but foundational objective of building a stable and sustainable pan-Arctic security community... By now it should be clear that pursuing mutuality and stability in a region that includes Russia should not focus security cooperation on NATO.”

⁶² Byers and Huebert quoted in Levon Sevunts, “Search and Rescue and Surveillance Top Canada’s Arctic Defence Priorities,” Radio Canada International, 9 June 2017, <http://www.rcinet.ca/en/2017/06/09/search-and-rescue-and-surveillance-top-canadas-arctic-defence-priorities/>.

⁶³ This final section is based upon P. Whitney Lackenbauer, “Towards a Comprehensive Approach: Defence, Security, and Safety,” in *North of 60: Toward a Renewed Canadian Arctic Agenda*, ed. John Higginbotham and Jennifer Spence (Waterloo: Centre for International Governance Innovation, 2016), 43-47.

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Whole of Government through an Arctic Lens

Edited by P. Whitney Lackenbauer and Heather Nicol

From the Foreword: This volume seeks to understand the concept of Whole of Government (WoG) as it applies to activities in the Canadian Arctic from a comprehensive “3D” (defence-diplomacy-development) perspective. It explores the concept broadly and deeply, shedding light on the full spectrum of activities, themes and practices which constitute a WoG approach to the defence of the Canadian Arctic. This includes a multi-perspective understanding of the legal, environmental, policy, strategic, developmental and operational perspectives that inform the Department of National Defence, the Canadian Arctic Forces, and the whole Government of Canada’s approach to Arctic defence, security, sustainable development, and environmental stewardship.



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