

THE
**NORTHERN
FLANK**

THE ARCTIC:
IMPLICATIONS FOR SOF

BERND HORN, HOWARD G. COOMBS & TONY BALASEVICIUS
EDITORS

ARCTIC REGION



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THE ARCTIC: IMPLICATIONS FOR SOF



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Canadian Special Operations Forces Command
101 Colonel By Drive
Ottawa, Ontario K7K 7B4

Produced for CANSOFCOM Education & Research Centre
by 17 Wing Winnipeg Publishing Office.
WPO32495

FRONT COVER PICTURE – CANSOFCOM

BACK COVER PICTURE – Bernd Horn

Maps, unless otherwise annotated, by 17 Wing Publishing Office.

ISBN 978-0-660-75695-0 (Paper)

ISBN 978-0-660-75694-3 (PDF)

Government of Canada Catalogue Number D2-694/2025E (Paper)

Government of Canada Catalogue Number D2-694/2025E-PDF (PDF)

Printed in Canada.

1 3 5 7 9 10 8 6 4 2

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INTRODUCTION

WHAT IS THE BIG DEAL ABOUT THE ARCTIC?

The Arctic, with its unique beauty and allure, has always held a special place in people's imagination. Distant, seemingly inaccessible, untamed and inhospitable to the unprepared, it also possesses a certain allure. To many, it seems like an unspoiled frontier that remained aloof from the myriad of geo-political issues burning around the globe. Not surprisingly, due to the difficulties of operating in the Arctic, it persisted as a region of relative cooperation between Arctic nations, as well as others. For decades, the general consensus was to protect the fragile Arctic ecosystem and avoid competition or conflict.

However, that state of affairs has collapsed. Climate change, which has affected climatic conditions throughout the world, particularly in the Arctic, has changed how competing nations see the Far North. With sea ice retreating dramatically and projections indicating that in time there will be seasonally open waters, economic interest in natural resources and shortened shipping routes have transformed a previous area of benign disinterest into one of growing strategic competition and antagonism.

In light of the transformation of the Arctic from a sphere of cooperation to one of aggressive competition, Special Operations Forces (SOF) must ensure they take the necessary actions to prepare themselves for operations in the vast, barren region. Military deployments to the Far North require preparation and training. Military forces not adequately trained, equipped and prepared to deal with the environment are no match for the unforgiving harsh conditions. As such, governments will increasingly turn to SOF for crisis management or deliberate operations in the Arctic.

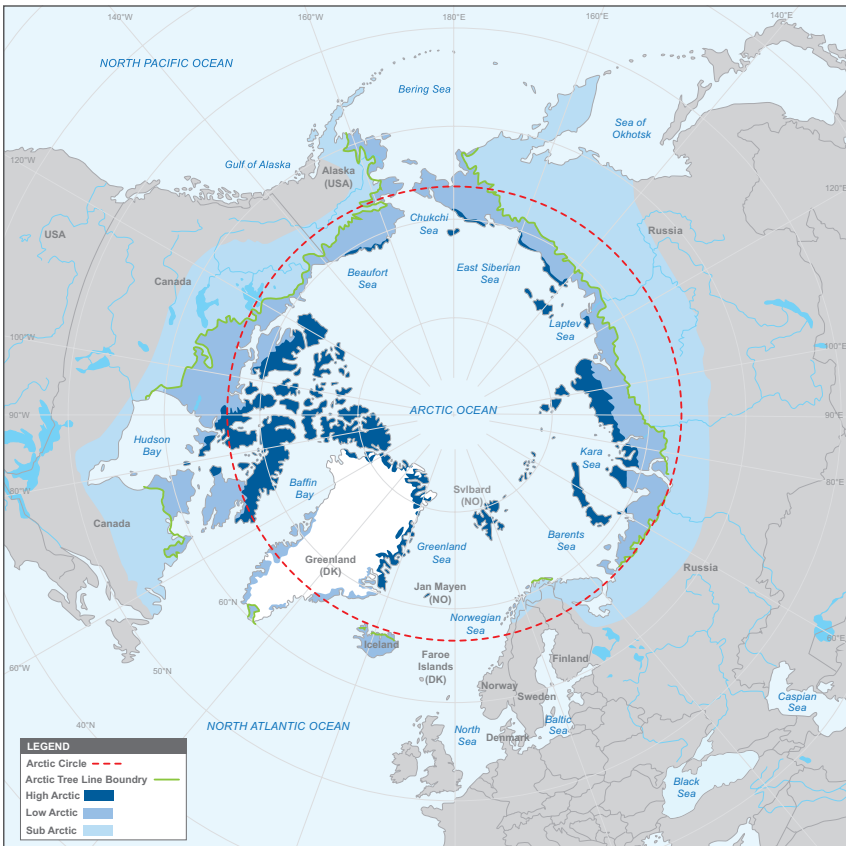
WHAT IS THE ARCTIC?

The Arctic, also known as the High North, is a region of unparalleled significance. It encompasses the area within the Arctic Circle, approximately 66.5° north of the Equator.¹ It is 21 million square kilometres, covering

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one-sixth of the planet's landmass, and spans 24 time zones.² The region is characterized by a unique polar climate and distinct plant and animal life. The ice-covered Arctic Ocean dominates the entire area.³

A remote and inhospitable region, the name "Arctic" comes from the Greek word "arktikos," meaning near the Great Bear Constellation.⁴ This area includes parts of Canada, Denmark (i.e. Greenland and the Faroe Islands), Iceland, Russia, Scandinavia (i.e., Finland, Norway, Sweden) and the U.S. state of Alaska.⁵



WHY HAS THE ARCTIC BECOME SO IMPORTANT NOW?

Climate change has seemingly unlocked the gates to the Arctic. The intensifying trend toward seasonally open waters is driving increased interest and investment in the High North. There is no question that the Arctic

landscape is undergoing rapid changes, with temperatures increasing two to four times as fast as the rest of the globe.⁶ This warming has led to a decline in year-round sea ice at a rate of nearly 13 per cent per decade.⁷ Estimates reveal that approximately 41 per cent of the permanent Arctic ice has completely disappeared, “and every year a further million square miles or so vanishes, shrinking the ice cap to around half of the size it covered in the mid-twentieth century.”⁸ The recession of polar ice is accelerating so quickly that some experts project that the Arctic will be completely free of summer sea ice as early as 2035, if not sooner.⁹

Additionally, the warming temperatures are rapidly thawing the permafrost. The melting permafrost, compounded by increased rainfall, has created larger Arctic rivers and unstable ground conditions.¹⁰ Furthermore, the increase in substantial moisture to the coastal Arctic air is predicted to induce fog, particularly low-altitude evaporation fog that will “limit the use of helicopters, as well as other technology such as night vision, because foggy conditions remain some of the most difficult to operate in. Such conditions will also complicate amphibious operations along the dangerous coastlines that exist in the Arctic.”¹¹

These changing conditions are attracting significant attention. A Canadian Department of National Defence (DND) spokesman revealed, “Competitors are not waiting to take advantage – seeking access, transportation routes, natural resources, critical minerals, and energy sources through more frequent and regular presence and activity. They are exploring Arctic waters and the seafloor, probing our infrastructure and collecting intelligence.”¹²

Military experts seem to agree that the Arctic is a rapidly growing arena for strategic competition. They explain that as the polar ice melts, it creates new corridors for sea transportation, and opens opportunities for extended extraction of resources, such as seafood, oil, gas, and minerals.¹³ Former U.S. Secretary of State Mike Pompeo asserted the Arctic was “an arena for power and for competition” over natural resources and sea routes.¹⁴

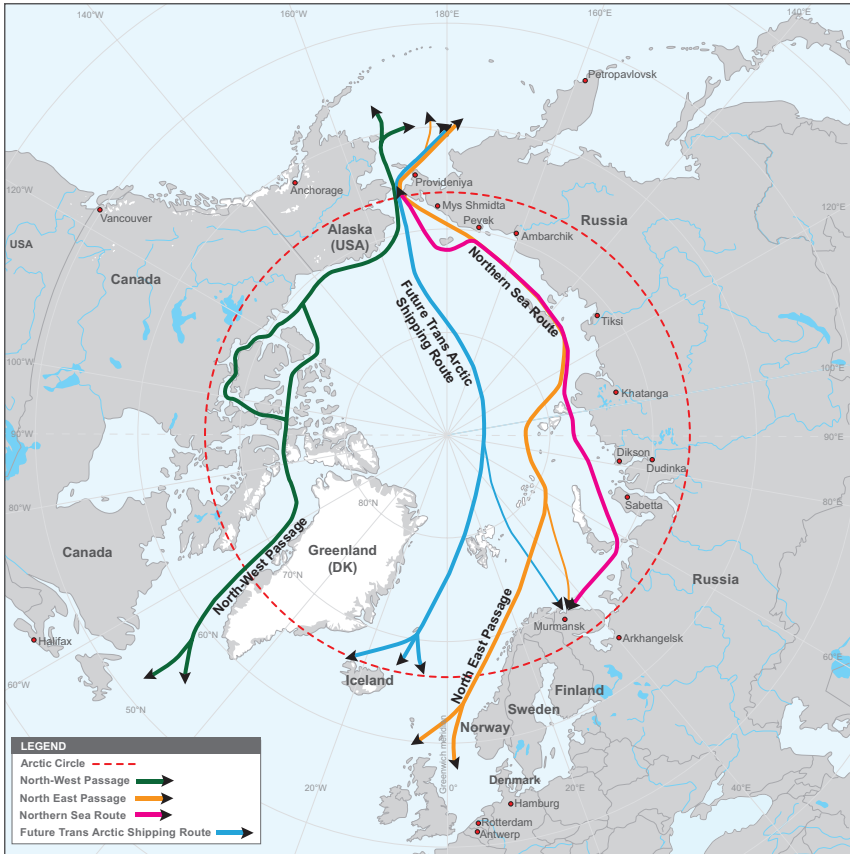
The increased interest by international actors is not difficult to understand. The United States Geological Survey (USGS) estimates that

approximately 13 per cent of the world's untapped oil and 30 per cent of the world's undiscovered gas, primarily offshore, are under less than 500 metres of water.¹⁵ The U.S. Department of Defense (DoD) estimates that "the Arctic holds 90 billion barrels of undiscovered oil, 1,669 trillion cubic feet of undiscovered natural gas, and 44 billion barrels of undiscovered liquid natural gas, which account for 30 per cent of the world's undiscovered natural gas and 13 percent of the world's undiscovered oil."¹⁶ Moreover, the region's mineral resources (e.g., iron ore, copper, nickel, zinc phosphates, diamonds) have been valued as high as \$1 trillion.¹⁷

Natural resources are not the only driver for an increased focus on the Arctic. Currently, 90 per cent of all trade travels across the world's oceans. Importantly, seaborne trade is expected to double over the next 15 years. As such, the U.S. DoD predicts, "Arctic waters will see increasing transits of cargo and natural resources to global markets along with military activity, regional maritime traffic, tourism, and legitimate/illegitimate global fishing fleets."¹⁸

According to U.K. Ministry of Defence (MOD) calculations, increased ice melt and longer seasonal open waters in the Arctic "will create shorter transit routes to Asia, provide easier access to proven substantial reserves of unexploited natural resources, and see a continued increase in tourism and visitor numbers."¹⁹ Their assessment is not surprising. Already, it is possible for ships to sail through the Arctic to and from Europe and northern Asia during the summer months. These new routes are significantly shorter than the classic trade routes via the Suez or Panama Canal. As a result, the Arctic has the potential to connect nearly 75 per cent of the world's population.²⁰

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Additionally, the melting sea ice has opened tourism. Cruise ships began navigating the Northwest Passage in 2016. China is one of many entities that offer luxury cruise ship tours to the High North. This trend will only increase as sailing seasons extend due to decreasing pack ice.

Finally, there are several strategically significant maritime chokepoints in the Arctic. Predictably, reducing sea ice due to climate change will make these chokepoints (e.g., the Bering Strait between Alaska and Russia and the Barents Sea north of Norway) more navigable and economical. It will also make these bottlenecks militarily significant.²¹

The strategic / military aspect cannot be understated. The changes in the Arctic, compounded by geo-political realities, further fuel the increased interest, as well as tension, in the High North. In the aftermath of

President Vladimir Putin's invasion of Ukraine in February 2022, as well as his continuing threats to neighbouring countries, Russia was suspended from the Arctic Council. Additionally, Sweden and Finland's accession to NATO further stoked Russia's isolation and security concerns.²² In many ways, it is a self-fulfilling prophecy, but Moscow's perspective of the NATO "enlargement" is that NATO is now even closer to Russian borders.²³ This viewpoint "is feeding a sense of not only vindication but also increased conventional vulnerability." Moreover, melting ice in the Arctic Zone of the Russian Federation (AZRF) is no longer a reliable source of protection along Russia's northern border. This reality only further strengthens Russia's Arctic insecurities.²⁴

Russia's security concerns in the Arctic are not inconsequential. Russia controls 53 per cent of the Arctic coastline and it represents 10 per cent of Russian GDP and 20 per cent of its exports.²⁵ In addition, it has a significant military footprint in the region.²⁶ Encumbered with a costly war in Ukraine, Russia has sought assistance in its desire to both secure and exploit its position in the Arctic. As a result, at the end of September 2024, senior Chinese and Russian officials met in Beijing to discuss strengthening their bilateral cooperation in the Arctic under what they called "the new political conditions" to form "a comprehensive strategic partnership" to advance their joint interests. They agreed to form this partnership in the Arctic to develop the region economically, exploit mineral resources, and promote the use of the Northern Sea Route (NSR).²⁷ This partnership was rooted in desperation. Russia has been forced to shift conventional defence spending away from the Arctic and to the war in Ukraine. As a result, Russia has turned to China to help maintain its military and economic presence in the Arctic.²⁸

Not surprisingly, this Sino-Russo partnership also took on a military bearing. In July 2024, a four-ship joint patrol "effectively expanded the scope of the [Chinese] Coast Guard's ocean-going navigation" and tested their ability "to carry out missions in unfamiliar waters."²⁹ That same month, the Russians and Chinese also flew four bombers in formation into Alaska's Air Defense Identification Zone.³⁰

In response to the signing of the strategic partnership between Russia and China, Canada and the countries of Northern Europe formed a new

security alliance in the Arctic. These decisions by all actors simply increase the tension in the region.³¹

One example of increasing friction is China's growing assertiveness in gaining a foothold in the Arctic. Increased accessibility due to climate change prompts non-Arctic nations (e.g., China and India) to inject themselves into the region.³² China has the largest embassy in Iceland, a significant presence in Greenland, and, since 1925, a permanent scientific presence in Norway. In addition, China, Japan, and South Korea have developed ice-breaking capabilities to enable Arctic transport, research, and resource exploitation.³³ A DND spokesman revealed, "Our Arctic is now warming at about four times the global average, making a vast and sensitive region more accessible to foreign actors who have growing capabilities and regional military ambitions."³⁴

China, however, remains the greatest danger of the non-Arctic nations. For years, China has sought to increase its footprint in the Arctic. In fact, it has declared itself a "near Arctic state" and has amassed an impressive array of icebreakers and research capabilities in the region.³⁵ In its 2018 Arctic Policy, China articulated its vision for a "Polar Silk Road," which linked Asia to Europe by developing shipping routes like the Northern Sea Route across the Arctic and down to China.³⁶

With the growing interest, activities, and tensions in the Arctic, the implications for SOF are considerable. Due to SOF's high readiness, training, strategic communications, capacity to operate in hostile environments, and adaptability, its strategic utility to its national government has become massive. SOF can provide crisis response, as well as act as a strategic sensor, signaller, and weapon system. However, despite SOF's capabilities, consideration must be given to the difficulties of operating in the High North.

Quite simply, the Arctic presents unique challenges from an operational perspective. The remoteness and size of the region cannot be overstated. And despite the common perception of stable snow and ice, the environmental conditions can change significantly from month to month in the entire region. Significantly, the Arctic is not a homogenous area. Terrain, vegetation, and climatic conditions vary throughout the High North.

“The environment is always trying to kill you in the Arctic,” the commanding officer of the U.S. Air Force’s Arctic Survival School asserted.³⁷

In essence, the Arctic is a multidomain environment that requires a comprehensive approach to compete and operate within its boundaries effectively. The Arctic’s immense size, harsh climate and lack of infrastructure create monumental difficulties for militaries. Although numerous potential military threats exist, most experts agree that “the likeliest and most-consequential threats will come from the Arctic’s physical environment and the present lack of capability, capacity, and preparedness for dealing with these challenges.” They explain, “The dangers of navigating through vast, poorly charted areas with extreme weather conditions; operating in a data vacuum with limited communications; and lacking personnel trained and ready to persist in a harsh, logistics poor environment are—and will continue to be—formidable.”³⁸ General Terrence John O’Shaughnessy, the commander of U.S. NORTHCOM and North American Aerospace Defense Command, declared, “in the Arctic simple things become hard.”³⁹

The challenges are no surprise for anyone who has operated in the Arctic. Everything freezes. Oversized bulky clothing impedes movement, efficiency and speed. Vehicle lubricants freeze, and materials become brittle (e.g. plastic shatters). Engines do not start, roads (if they exist), and runways get covered with thick ice. Batteries lose their charge. Moisture accumulating inside a rifle can lock the weapon’s action, rendering it useless. Compasses cannot be relied on, and polar magnetic disturbances in the atmosphere mean communications are patchy. Minor injuries, even scratches, can quickly become life-threatening as usually insignificant wounds, often unnoticed in the extreme cold, can become gangrenous. Moreover, personnel are at risk of frostbite. Significantly, hypothermia can set in within minutes for casualties.⁴⁰

Furthermore, the sustainment of operations requires enhanced and tailored logistical capabilities. All military logistics, such as fuel, lubricants, spare parts, and food, need to be self-sustained because relying on Arctic communities, particularly those that are very remote, diminishes their stock, which may only come several times a year if the required items even exist. Consequently, thought needs to be given to the forward

positioning of stockpiles or providing sufficient strategic lift to move sufficient supplies at short notice.

The American experience has demonstrated that even “Arctic-ready” Special Forces units struggle in Alaska. They have determined that “elevating a unit from basic cold weather competency to four-season Arctic capability requires a significant investment of time and resources that leaves little room for other priorities.”⁴¹ The lesson for NATO SOF is that specialized equipment, dedicated training and doctrine for polar warfare are essential. Moreover, alliances and partnerships are critical in the Arctic. Quite simply, no one nation has sufficient infrastructure or capacity to operate alone. Interoperability and cooperation amongst alliance members, as well as other government departments, will be critical. The lack of transportation infrastructure and the vulnerability of sustainment lines necessitates collaboration and the forward stocking of necessary equipment, rations, fuel, etc.

Clearly, the Arctic has become a region of opportunity, but also competition. Moreover, operating in the Arctic is replete with monumental challenges. Therefore, as the global Great Power Competition (GPC) continues, SOF will become an increasingly important player in the High North. This volume is intended to provide perspective and insight into SOF’s roles and challenges as it navigates the murky gray zone of hybrid warfare in competition and conflict, as well as preparing for high-intensity war should regional conflagrations erupt into a global war.

ENDNOTES

1 See <https://arcticportal.org/education/quick-facts/the-arctic/3448-arctic-definitions>; and <https://www.nationalgeographic.org/encyclopedia/arctic/>, accessed 21 June 2024.

2 Stephanie Pezard, Stephen J. Flanagan, Scott W. Harold, Irina A. Chindea, Benjamin J. Sacks, Abbie Tingstad, Tristan Finazzo, Soo Kim, *China’s Strategy and Activities in the Arctic* (Santa Monica, CA; RAND, 2022), 6.

3 See <https://www.bing.com/search?q=arctic+definition&form=ANNT1&ref=86d5ab7edc8c43f6953d1a4beae15a80&pc=HCTS&showconv=1>, accessed 21 June 2024.

4 Arctic | Definition, Climate, People, & Facts | Britannica, <https://www.britannica.com/place/Arctic>, accessed 6 January 2025.

5 Ibid.

6 United Kingdom, *The UK's Defence Contribution in the High North* (London: Ministry of Defence, ND), 4; Susan Joy Hassol, *Impacts of a Warming Arctic* (Cambridge, UK: Cambridge University press, 2004), 10; and Tamara Lorincz, "Canada's militarization of the Arctic threatens Indigenous communities and the climate," *Canadian Dimension*, 17 June 2024, <https://canadiandimension.com/articles/view/canadas-militarization-of-the-arctic-threatens-indigenous-communities-and-the-climate>, accessed 26 June 2024.

7 Michael Brodka, "Arctic Competition, Climate Migration, and Rare Earths: Strategic Implications for the United States Amidst Climate Change," *The Strategy Bridge*, 1 September 2021, <https://thestrategybridge.org/the-bridge/2021/9/1/arctic-competition-climate-migration-and-rare-earth-strategic-implications-for-the-united-states-amidst-climate-change>, accessed 5 September 2021.

8 Kevin D. Stringer, "The Arctic Domain: A Narrow Niche for Joint Special Operations Forces," *Joint Force Quarterly* 78, July 2015, <https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-78/Article/607569/the-arctic-domain-a-narrow-niche-for-joint-special-operations-forces/>, accessed 19 April 2022. The warming of the Arctic is also impacting the globe. The polar regions are heating up far faster than the rest of the planet which is destabilizing weather patterns (e.g., the jet stream). Moreover, the melting polar ice raises sea levels, a threat to 40 per cent of the world population that live within 100 kilometers of a coastline.

9 Alex Gatopoulos, "What is behind Russia's interest in a warming Arctic," *Al Jazeera*, 28 March 2022, <https://www.aljazeera.com/features/2022/3/28/what-is-behind-russias-interest-in-a-warming-arctic>, accessed 23 July 2024; and Department of Defense (DoD), *The Arctic Through 2035* (Fort Leavenworth, KS: U.S. Army Training and Doctrine Command G-2, 2020), 17.

10 The melting permafrost is making building stable infrastructure on land more difficult. The softer ground is causing roads to buckle and buildings to list. The Pentagon recently revealed that the effects of warming are damaging its military installations in the Arctic. Onshore drillers have even had to chill the ground under their rigs to stabilize them so they can continue drilling. Umair Irfan, "Russia's invasion of Ukraine is fracturing the delicate peace in the Arctic," *Vox*, 25 April 2022, <https://www.vox.com/22993194/russia-ukraine-invasion-arctic-council-climate-change>, accessed 26 April 2022.

11 John Dzwonczyk and Joel Radunzel, "The Past and Future of Land Warfare in the High North," *Strategy Bridge*, 5 May 2020, <https://thestrategybridge.org/the-bridge/2020/5/the-past-and-future-of-land-warfare-in-the-high-north>, accessed 5 May 2020.

12 Todd Coyne, "Canadian military encounters Chinese research vessel in the Arctic, warns competitors are 'probing' infrastructure," *CTV News*, 31 July 2024, <https://bc.ctvnews.ca/canadian-military-encounters-chinese-research-vessel-in-arctic-warns-competitors-are-probing-infrastructure-1.6984965>, accessed 1 August 2024.

13 Marc Grdovic, “Why USSOCOM should develop an Arctic Strategy,” *Stratagem*, 17 January 2022, <https://www.stratagem.no/arctic-strategy/>, accessed 21 January 2022; and Dr. James L. Regens and John S. Beddows, “Warming Arctic— Geopolitical Rivalries Risks to Continental Defense for North America and NATO’s Northern Flank in Europe,” *Journal of Indo-Pacific Affairs*, Vol. 7, No. 4 (July-August 2024): 119-120.

14 Tamara Lorincz, “Canada’s militarization of the Arctic threatens Indigenous communities and the climate,” *Canadian Dimension*, 17 June 2024, <https://canadiandimension.com/articles/view/canadas-militarization-of-the-arctic-threatens-indigenous-communities-and-the-climate>, accessed 26 June 2024.

15 Rob Huebert, *Climate Change & International Security: The Arctic as a Bellwether* (Arlington, VA: Center for Climate and Energy Solutions, 2012), 5; Andreas Østhagen, “Geopolitics and security in the Arctic: what role for the EU,” *European View*, Vol. 16, Issue 2 (2017): 241, <https://journals.sagepub.com/doi/10.1007/s12290-017-0459-1>, accessed 12 June 2024; and Gatapoulos, “What is behind Russia’s...” <https://www.aljazeera.com/features/2022/3/28/what-is-behind-russias-interest-in-a-warming-arctic>, accessed 23 July 2024.

16 DoD, *The Arctic Through 2035*, 11.

17 Hollie McKay, “A Russia-China Show of Force in the Arctic,” *The Cipher Brief*, 30 April 2024, <https://www.thecipherbrief.com/a-russia-china-show-of-force-in-the-arctic>, accessed 30 April 2024.

18 DoD, *A Blue Arctic. A Strategic Blueprint for the Arctic* (Washington D.C.: Department of the Navy, 2021), 3.

19 UK, *The UK’s Defence Contribution*, 4. The MoD also warns, “While offering economic benefits to the region, there will be a greater risk of accidents and environmental disasters such as oil spills, which will require close cooperation with all Arctic states and Arctic communities to ensure safety at sea.”

20 “New Navy, Marine Corps Strategic Blueprint for the Arctic,” [news.usni.org/ 2021/01/05/new-navy-marine-corps-strategic-blueprint-for-the-arctic](https://news.usni.org/2021/01/05/new-navy-marine-corps-strategic-blueprint-for-the-arctic), accessed 8 January 2021.

21 DoD, *2024 Arctic Strategy* (Washington D.C.: DoD, 2024), 2.

22 Finland has a 1,300 km border with Russia. Sweden’s Gotland Island is only 300 km from the home of Russia’s Baltic Fleet.

23 Mathieu Boulegue, “The militarization of Russian polar politics. Addressing the growing threat of tension and confrontation in the Arctic and Antarctica,” Chatham House, 6 June 2022, <https://www.chathamhouse.org/2022/06/militarization-russian-polar-politics>, accessed 10 June 2022.

24 Mathieu Boulegue and Duncan Depledge, “The Face-off in a Fragmented Arctic: Who Will Blink First?” *RUSI*, 24 May 2024, <https://www.rusi.org/explore-our-research/publications/commentary/face-fragmented-arctic-who-will-blink-first>, accessed 10 June 2024.

25 Ryan R. Duffy, Jahara Matisek, Jeremy M. McKenzie and Chad Pillai, “More NATO in the Arctic Could Free the United States up to Focus on China,” *War on the Rocks*, 21 November 2024, <https://warontherocks.com/2024/11/more-nato-in-the-arctic-could-free-the-united-states-up-to-focus-on-china/>, accessed 22 November 2024.

26 In 2020, Russia began reopening 50 Soviet-era bases north of the Arctic Circle. In fact, Russia has “resurrected its Soviet-era ‘bastion concept,’ an echeloned defence using multi-domain capabilities to protect its ballistic missile submarines and ensure second-strike nuclear capability. The Northern Fleet integrates anti-access/area denial (A2/AD), ballistic missile defence, and surface-to-air missiles at bases along the Northern Sea Route. It also regularly patrols Arctic waters with aircraft and surface vessels with hypersonic missiles and long-range artillery in support. These bastions will likely expand from their defensive mission to a power projection role as shipping lanes thaw to extend Russia’s influence in the Northern Sea Route and economic exclusion zones in the greater Arctic.” Its ice-capable fleet is also the largest in the world, with 61 icebreakers and ice-hardened ships. Michael Brodka, “Arctic Competition, Climate Migration, and Rare Earths: Strategic Implications for the United States Amidst Climate Change,” *The Strategy Bridge*, 1 September 2021, <https://thestrategybridge.org/the-bridge/2021/9/1/arctic-competition-climate-migration-and-rare-earths-strategic-implications-for-the-united-states-amidst-climate-change>, accessed 5 September 2021; and Charles Faint and Richard Liebl, “Arctic Defense: The US Needs Polar Special Operations Forces Aligned with the 5 SOF Truths,” *Irregular Warfare Initiative*, 2 May 2024, <https://irregularwarfare.org/articles/arctic-defense-the-us-needs-polar-special-operations-forces-aligned-with-the-5-sof-truths/>, accessed 1 June 2024.

27 Paul Goble, “China and Russia Expand Strategic Cooperation in Arctic Against West,” *Eurasia Daily Monitor* Vol. 21, Issue 145, 8 October 2024, <https://jamestown.org/program/china-and-russia-expand-strategic-cooperation-in-arctic-against-west/>, accessed 20 November 2024. The NSR stretches 5,600 kilometres from Murmansk to Vladivostok along Russia’s Arctic and Pacific coastlines. Severe climactic conditions frequently complicate the route use; navigation in the NSR’s eastern sector from Taymyr to the Bering Strait is impossible during winter without icebreaker escorts, as the ice thickness there can reach 3 metres. John C.K. Daly, “NATO’s Concerns Mount as Russia Increases Commercial and Military Activity in Arctic,” *Eurasia Daily Monitor*, Vol. 19, Issue 186, 14 December 2022, <https://jamestown.org/program/natos-concerns-mount-as-russia-increases-commercial-and-military-activity-in-arctic/>, accessed 19 June 2024.

28 From January 2022 to June 2023, 234 Chinese-owned companies were registered to operate in Russian-controlled Arctic territory. This was an 87% increase compared with registrations in the previous two years. As of June 2023, 359 Chinese-owned companies operate in the region. Robert Fife and Steven Chase, “Beijing and Moscow’s no-limits partnership gives China major foothold in Arctic, report finds,” *The Globe and Mail*, 7 February 2024, <https://www.theglobeandmail.com/politics/article-china-arctic-russia-war/>, accessed 18 June 2024.

29 Simone McCarthy, “China’s Coast Guard claims to have entered the Arctic Ocean for the first time as it ramps up security ties with Russia,” *CNN*, 3 October 2024. The Russians and Chinese operated together in international waters off the Alaskan coast already in 2022 and 2023.

INTRODUCTION

- 30 Duffy et al., “More NATO in the Arctic...”.
- 31 Laura Dhillon Kane, “Canada working with Nordic allies to form Arctic security group to counter Russia, China.” *National Post*, 3 October 2024, <https://nationalpost.com/news/canada/canada-allies-arctic-security>, accessed 26 November 2024.
- 32 Dr. James L. Regens and John S. Beddows, “Warming Arctic—Geopolitical Rivalries Risks to Continental Defense for North America and NATO’s Northern Flank in Europe,” *Journal of Indo-Pacific Affairs*, Vol .7, No. 4, (July-August 2024): 119-120.
- 33 DoD, *The Arctic Through 2035*, 12.
- 34 Todd Coyne, “Canadian military encounters Chinese research vessel in the Arctic, warns competitors are ‘probing’ infrastructure,” *CTV News*, 31 July 2024, <https://bc.ctvnews.ca/canadian-military-encounters-chinese-research-vessel-in-arctic-warns-competitors-are-probing-infrastructure-1.6984965>, accessed 1 August 2024.
- 35 Malte Humpert, “China Deploys Three Icebreakers to Arctic as U.S. Presence Suffers After ‘Healy’ Fire,” *gCaptain*, 20 August 2024, <https://gcaptain.com/china-dispatches-three-icebreakers-to-arctic-us-suffers-healy-fire/>, accessed 30 August 2024.
- 36 McCarthy, “China’s Coast Guard...”.
- 37 Amy McCullough, “Flexing in the Arctic,” *Air Force Magazine*, 1 September 2020, <https://www.airforcemag.com/article/flexing-in-the-arctic/> accessed 7 October 2020.
- 38 Abbie Tingstad, “Enhancing Security in a Changing Arctic,” RAND, Testimony submitted to the U.S. House Committee on Homeland Security, 29 November 2023, 2.
- 39 Shawn Snow, “NORTHCOM Commander Says US Needs Arctic Early Warning System,” *Army Times*, 26 November 2019, <https://www.armytimes.com/flashpoints/2019/11/26/northcom-commander-says-us-needs-arctic-early-warning-system/>, accessed 5 June 2024.
- 40 Gatopoulos, “What is behind Russia’s ...”
- 41 Thomas Boehm, Nathan Carada and Patrick Tomaszewski, “Arctic Tourism: An Army Special Forces Problem with a National Guard Solution,” *The Fletcher Forum of World Affairs*, Vol. 48, No. 1 (Winter 2024): 52-53.

CHAPTER 1

MOSTLY AN AFTERTHOUGHT: CANADA AND THE ARCTIC

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*What is important to Canadians is not what we think the Russians will do; it is what we think the Americans think the Russians will do.*¹

The Arctic has a very special hold on the Canadian psyche even though very few Canadians have ever seen the North. Strategist Kenneth Eyre observed that the “North to Canadians is more of an idea than a place.”² For the Canadian Government, the North has largely been an afterthought. Seen more as a barrier or strategic depth than an actual vulnerable flank, Canadian politicians have remained aloof to the North, that is, until a perceived violation of Canadian sovereignty transpires. These occurrences ignite national indignation and an outpouring of promised action to solidify Canada’s claim to its Arctic territory, which comprises 40 per cent of the nation’s land mass and 75 per cent its coastline. However, once the perceived “threat” has receded, the promises dissipate as quickly as the political interest in the North. It has never been a real concern about national defence but rather sovereignty.

Currently, a hyper-concern and interest in the Arctic has once again shifted to the forefront. A Department of National Defence (DND) spokesman explained:

Our Arctic is now warming at about four times the global average, making a vast and sensitive region more accessible to foreign actors who have growing capabilities and regional military ambitions. Competitors are not waiting to take advantage – seeking access, transportation routes, natural resources, critical minerals, and energy sources through more frequent and regular presence and activity. They are exploring Arctic waters and the seafloor, probing our infrastructure and collecting intelligence.³

Alas, the Canadian Arctic, if not the Arctic overall, seems once more under siege. In response, the Canadian Government has once again sprung into action to take the necessary steps to defend our North.

The most current interest in the Canadian North is not a new phenomenon. It was not until the Second World War that Canadian apathy towards its Arctic was initially broken. The war led to a continental alliance that dictated the close cooperation between Canada and the United States in the defence of North America. It was also the catalyst that sparked a new surge of interest in the North. The looming Japanese threat to Alaska and the fear of a Nazi-occupied Siberia, only a short distance away across the Bering Strait, raised American anxiety regarding its security to an unprecedented high. The subsequent American mobilization to meet the perceived peril quickly spilled into Canada and transformed its North into a hive of activity. Unfortunately, the Americans placed little weight on the formalities of ownership. They executed their tasks with a single-mindedness that raised the concern that the long-neglected Canadian North was actually under the control of the United States.

The growing American presence, coupled with their dominating attitude, worried Canadian politicians. This fear soon led to action to safeguard Canadian sovereignty. Canada had always been defensive of its claim to ownership of the Arctic Archipelago and the growing occupation of the North, by the United States, was seen as a direct threat to Canadian proprietorship. The American presence, argued Canadian governmental officials, could be seen as *de facto* control. As a result, a policy was implemented to reimburse the Americans for their wartime developments in the North, regardless of whether the Canadian government had originally supported or wanted the subject projects.

It was not lost on the politicians that sovereignty has a price. Equally clear were the consequences of not paying that price. Canada's new wartime defence partnership underscored another inescapable reality. It became evident that any threat to the security of the United States (U.S.) perceived by the Americans, whether realistic or not, represented a genuine danger to Canada. The national political and military leadership promptly realized that it was critical that Canada be seen by its southern neighbour to be taking adequate steps to secure Canadian borders from any intrusion that could subsequently threaten the United States.

This geographical reality was exacerbated at the end of the Second World War. New technology, weapons of immense potency and the emergence of two diametrically opposed superpowers – with Canada sandwiched between them – fueled what would become a continuing challenge to Canada's efforts to maintain the security and sovereignty of its Arctic regions. As a result, Canadian defence policy in the North became focused more on frustrating the erosion of sovereignty and minimizing American expansion into the Canadian Arctic, than it was on meeting any real danger to its territory from hostile invasion. Although a degree of potential threat was consistently recognized, more so by the military than the political leadership, decisions taken on defence of the North were primarily geared to countering American encroachment.

This theme, initiated by Prime Minister Mackenzie King in the Second World War, continues. Before 1939, Canadian politicians and their military commanders placed very little emphasis on the Arctic. The primary stimulus of the limited northern development conducted by the government during this period resulted from a select few individuals. Patrons such as J.A. Wilson, the Controller of Civil Aviation, and Major-General A.G.L. McNaughton, the Chief of the General Staff (CGS), sponsored initiatives that included the survey of suitable landing fields in the Arctic Archipelago; a program of aerial photography for mapping purposes; and the establishment of a series of northern radio stations.⁴

Not surprisingly, the vast majority of growth in the North was primarily civilian in nature. Canadian Airways and Mackenzie Air Service, two commercial airlines that commenced operations in the Arctic in the late 1920s, were instrumental in opening up the North.⁵ Nonetheless, a series of civilian airfields and emergency landing strips, supported by DND and the Department of Transport, were eventually established across the entire Dominion. These fields were primarily used by Trans-Canada Airlines but also yielded a network that could be used to concentrate military air strength in time of crisis.⁶

Much of this development was due to depression-era relief projects. However, continuing interest in an air route to Alaska and Europe over the Arctic was always prevalent and by 1935, technological and economic conditions had merited a closer examination of its viability.⁷ Consequently, the government-sponsored survey of northern airfields was conducted

to determine whether expansion of existing sites was required and what additional landing fields were necessary.⁸ Construction on this network of airfields was undertaken in 1939 and continued well into the war. It eventually became known as the Northwest Staging Route and proved instrumental in Alaska's defence and in the supply of aircraft and equipment to the beleaguered Soviet Union.⁹

Despite the remarkable strides in aviation and the limited but growing commercial development of the North, both the military and political leadership shared the belief that the Canadian Arctic represented a negligible security threat to the "fire-proof house" of Canada. In 1938, Prime Minister King asserted, "May I point out that undoubtedly Canada is the most secure of all countries."¹⁰ He dismissed "the launching of fantastic expeditions across half the world [by belligerents intending to attack Canada]" and stated that "at present danger of attack upon Canada is minor in degree and second-hand in origin. It is against chance shots that we need immediately to defend ourselves."¹¹

The Minister of National Defence (MND), Ian Mackenzie, agreed. "There is danger," he acknowledged, "but so far as Canada is concerned, it is, as I have already pointed out, an incidental contingency."¹² He asserted that the direct defence of Canada entailed the defence of "our coastal areas, our ports, our shipping terminals, our territorial waters, the focal areas of our trade routes adjacent to our harbour mouths."¹³ Specifically, he felt that the threat consisted primarily of raids by submarine, aircraft or other craft for the purpose of creating diversion and panic.¹⁴

The military perception was little different. "The idea of our having to fight a major war on our own soil," wrote Lieutenant-General Maurice Pope, "was absurd...As the forms and scales of attack to which it was judged Canada might be exposed in the event of even a major war comprised only limited naval and air bombardment and minor raids against our defended ports."¹⁵ This judgement changed little even with the commencement of hostilities. An Army appreciation in February 1941 stated that "Canada's front line lies in and around the British Isles."¹⁶

The apparent lack of concern of any menace to Canada's security emanated from the nation's geographic endowment. A military analysis of Canadian defence problems noted, "The direct defence of the national

territory ... owing to our fortunate geographical position ... has not been given a high degree of priority."¹⁷ General Charles Foulkes reinforced this theme. "Prior to 1939," he explained, "Canada was able to derive a considerable amount of security from her geographical position. The then available weapons precluded a direct attack on Canada."¹⁸ Geography and history provided Canada with another essential element in its defence, namely, a powerful neighbour to the south. The close proximity to the United States prompted Colonel E.L.M. Burns in 1936 to write that "we believe, reasonably or unreasonably, that our Southern neighbour would go to war before she would allow a foreign nation to establish itself on our territory."¹⁹

The renowned Canadian historian C.P. Stacey repeated this thesis in his examination of Canadian defence policy in 1940. "It has long been generally recognized in Canada," he insisted, "that the most elementary regard for the security of the United States itself would render it impossible for that country to permit any aggressive power to gain a foothold on Canadian soil."²⁰ These conclusions were not entirely visionary. In 1936, President Franklin D. Roosevelt raised the image of a benevolent neighbour by stating, "We can defend ourselves, and we can defend our neighbourhood."²¹ Two years later he erased any doubt with his famous declaration at Queen's University in Kingston, Ontario. "The Dominion of Canada," he announced, "is part of the sisterhood of the British Empire. I give to you assurance that the people of the United States will not stand idly by if domination of Canadian soil is threatened by any other empire. We as good neighbours are true friends."²² Two days later King responded. "We, too," he declared, "have our obligations as a good friendly neighbour, and one of these is to see that, at our own instance our country is made as immune from attack or possible invasion as we can reasonably be expected to make it, and that should the occasion ever arise, enemy forces should not be able to pursue their way, either by land, sea or air, to the United States across Canadian territory."²³

These courageous words were uttered at a time when there were no perceived threats to Canada because of its geographical location and the naval might of both Britain and the United States. As a result, King's pledge to guard the flanks of his neighbour seemed effortless and easily enforced. However, his words would return to haunt him and take on the essence

of a curse. World events and technological developments soon changed Canada's outlook on security forever, particularly concerning its Arctic regions. The Second World War dramatically altered Canada's perception of its security and fueled an unprecedented concern for its North. Paradoxically, the emphasis on northern security became focused primarily on protecting national sovereignty from the perceived encroachment of an ally rather than guarding an unprotected flank from a hostile invasion.

The catalyst was the renewed American focus on Alaska. American politicians and military leaders originally shared a common apathy with their Canadian counterparts regarding their northern territory. "In the halls of Congress, Alaska was described as a 'frozen waste,' much as strategic Guam was passed off by some Representatives as a 'grain of sand.'"²⁴ The military leadership shared a similar view. An official report tabled just prior to the American entry into the war argued that "there appears at present to be no necessity, from the viewpoint of national defense, of increasing the military garrison of Alaska."²⁵ Few acknowledged Brigadier-General Mitchell's observation that Alaska, "as the most central place in the world of aircraft," was subsequently the most strategic location on earth. He reasoned that "whoever holds Alaska will hold the world."²⁶

It took the Axis juggernaut to galvanize American action in the North. The German attack on the Soviet Union in June 1941 "muddied the already seething situation in the Far East and seemed to bring closer to Alaska the danger that Alaskans had been advertising for years."²⁷ Adding to the heightened anxiety was the Japanese attack on Pearl Harbor. Herbert Hilscher, the editor of the leading Alaskan territorial magazine captured the predominating attitude when he stated:

All Alaskans and the U.S. Army and Navy know that if the flags of the Nazis and the Japanese fly over Siberia our position in the Northland will be extremely grave...Alaska must be made into an arsenal of democracy. It must be made as impregnable a fortification as Gibraltar. For if Russia falls, who can say at what unannounced hour bombers, parachutists, and air-borne troops may not descend on Alaska?²⁸

The realization that "in the possession of the enemy Alaska will furnish a jumping-off point for invasion by air of the United States" soon resulted

in the restoration of money to expand Alaskan defence.²⁹ The Permanent Joint Board for Defence (PJBD) concluded on February 26, 1942, "that the effective defence of Alaska is of paramount importance to the defence of the continent against attack from the West, since Alaska is the area most exposed to an attempt by the enemy to establish a foothold in North America."³⁰

Canadians quickly absorbed the idea of a northern threat via Alaska. "It was easy to believe," wrote Canadian military historian Desmond Morton, "as Japanese power spread irresistibly across Southeast Asia ... that it could also reach out easily to seize a foothold in North America. If the threat was far-fetched militarily, it was politically all too real."³¹ Even Mitch Hepburn, the Premier of Ontario at the time, "predicted a Japanese assault on Alaska, and [he] visualized the enemy infiltrating down the western coast of Canada."³² Prime Minister King also believed that the Japanese represented a real danger. He warned his military officials that it would be foolish to discount their strength. Moreover, King cautioned his generals not to rule out the possibility of more significant or serious operations.³³

Despite the dire admonitions, the military was not overly alarmed. Even the Japanese seizure of the islands of Atu, Agatu, and Kiska in the Aleutians in the early summer of 1942 failed to change their outlook. Their analysis reaffirmed that "the forms and scales of attack envisioned on the entry of Japan into the war remained unchanged."³⁴ The confidence of the military commanders rested on the premise that there were no military objectives of sufficient importance to justify other than small hit-and-run raids, the effect of which would have little military significance. In addition, the generals emphasized that the Japanese were already over-committed. The Chiefs of Staff Committee clearly stated that an invasion of Canada's West Coast by Japanese forces was considered highly remote.³⁵

Nonetheless, the military chain-of-command took into account the anxiety of the public. "The question of increasing protection in British Columbia," asserted an Army appreciation, "is one of vocal and increasing concern on the part of the civilian population. In view of the immense length of the coastline, greater mobility of Army personnel would seem a matter of urgent consideration and might do much to allay the present

feeling of apprehension.”³⁶ As a result, the West Coast was reinforced with artillery and manpower.³⁷ Lieutenant-General Pope, however, noted the nature of the real threat. “It was clear that if ... Canada should attempt to remain neutral and aloof,” he explained, “our American neighbours would ride roughshod over us and make use of our territory and facilities as it pleased them.”³⁸

Pope’s observation was the more accurate. The response of the United States to the new northern menace was representative of the energy and seemingly unlimited resources of a great power. The American reaction was swift and all-encompassing. It created an intricate web that eventually entangled Canada. The expeditious American mobilization resulted in a massive influx of personnel to reinforce the Alaskan garrison and establish the logistical infrastructure required to support the new defensive effort in the North. By June 1943, more than 33,000 American soldiers and civilian workers had poured into northwestern Canada.³⁹ The American “invasion” was driven by their perception of the defensive steps required to protect the North. These included the expansion and upgrading of the Northwestern Staging Route, the construction of a land route to Alaska, and the assurance of petroleum for military forces in the North.

These projects all encompassed development on Canadian territory and were, theoretically, subject to consultation and agreement between the two nations in accordance with the Ogdensburg Agreement.⁴⁰ The Ogdensburg Agreement was signed in haste – almost in panic – as a contingency for Britain’s imminent collapse in 1940. As the tide of war began to shift, the consequences of the agreement soon became apparent.⁴¹ Nonetheless, although the projects signed under the auspices of the agreement were grounded in the noble pursuit of mutual defence, they quickly highlighted the dangers of a relationship between two unequal partners. What were trumpeted as “projects of vital importance” to the security of North America very quickly captured Canadian attention. One such project, the construction of the Alaska Highway, was representative of the difficulties facing Canada. As early as 1928, Americans and Canadians had thought about a land route to Alaska; however, the exorbitant cost and “negligible military value” precluded any official support.⁴² American military planners viewed a road link to Alaska as of little strategic importance and primarily of economic benefit to civilians.⁴³

The Japanese attack on Pearl Harbor abruptly changed the American perspective.⁴⁴ Overnight, the construction of an all-weather road was seen as “one of the most important steps toward making Alaska defensible.”⁴⁵ Once the Americans decided what was necessary, they took prompt action with little regard for Canadian sensitivities. On February 12, 1942, the Under-Secretary of State for External Affairs informed the Cabinet War Committee that the Americans had concluded that constructing a land route to Alaska on Canadian soil was necessary for continental defence. Still, they had not yet submitted a formal request to do so.⁴⁶ It was not until February 26, 1942, that the PJBD, as its twenty-fourth recommendation, advised that the construction of the Alaska Highway should be undertaken.

The Canadian dilemma was evident. The government was reluctant to proceed with the project. Nevertheless, a secret External Affairs memorandum conceded that “the United States Government is now so insistent that the road is required that the Canadian Government cannot possibly allow itself to be put in the position of barring the United States from land access to Alaska.”⁴⁷ It commented that the Canadian government would be in a completely untenable position if it prevented the construction of land communications to Alaska. Subsequently, as unlikely as it may be, the Japanese could deny the United States access by sea.⁴⁸ The alternative, however, was daunting. It required Canada “to expend some \$80,000,000.00 on the construction, and about \$1,000,000.00 per annum on the maintenance of a road that would be a monument to our friendship for the U.S. but would otherwise be pretty much of a ‘White Elephant.’”⁴⁹ The Cabinet concluded that Canada had little choice but to agree. War Cabinet Committee approval was subsequently given on March 5, 1942.⁵⁰

But the Cabinet’s approval was irrelevant. The actual decision to proceed had already been made in the United States. President Roosevelt considered the matter a *fait accompli*. Consequently, he had allocated \$10 million for the project from his emergency fund as early as February 11th.⁵¹ As a result, American engineers arrived in Dawson Creek to begin construction on the road two days before Cabinet approved the request.⁵² The highway eventually proved insignificant. By the autumn of 1943, only 54 tons of supplies had been delivered to the Alaska Defense Command by road.⁵³ Nonetheless, the American presence

quickly struck a chord with Canadians, particularly Prime Minister King. Alarming reports emanating from the North painted a grim picture for a country that laboured at maintaining a decorum of autonomy and independence. One account acknowledged that "the Americans in Edmonton are openly describing themselves as an 'Army of Occupation.'"⁵⁴ To King the spectre of American encroachment was very real. "I said," he wrote in his diary, "I was not altogether without feeling that the Alaska Highway was less intended for protection against Japan than as one of the dangers of the hand which America is placing more or less over the whole of the Western Hemisphere."⁵⁵

The Alaska Highway was not the only source of concern. The CANOL project provided similar hazards to the Canadian hosts. It aimed to provide a guaranteed fuel supply to Alaska and military traffic en route by means of a pipeline from Norman Wells, in the Northwest Territories, to a refinery in Whitehorse, Yukon, from where subsequent distribution would be made. By the time the project was completed, it had expanded to include a series of airfields, numerous construction camps, pumping stations, supplementary pipelines and additional roads.⁵⁶ Its utility, as well as efficiency, were questioned from the beginning and it has since been labelled a "junk-yard of military stupidity."⁵⁷ Lieutenant-General Pope, a Canadian member of the PJBD, later commented that "the CANOL project as a defence measure has always seemed to me so far-fetched as to be absurd."⁵⁸

Of greater concern was the fact that the decision to proceed with the project was once again taken before receiving the requisite approval from the Canadian government. Canadian historian Donald Creighton observed that "the United States army authorized the pipeline and signed a contract with Imperial Oil more than a fortnight before the Canadian government signaled its approval."⁵⁹ Furthermore, additional airfields were built in support of the project without consulting the Canadian government.⁶⁰

The American insensitivity to Canadian control prompted Vincent Massey, the Canadian High Commissioner in England, to comment that the Americans "have apparently walked in and taken possession in many cases as if Canada were unclaimed territory inhabited by a docile race of aborigines."⁶¹ His diary entries noted further disquieting observations.

"The Americans," Massey recorded, "who unfortunately under cover of the needs of the war effort are acting in the North-West as if they owned the country ... We have for too long been far too supine vis-à-vis Washington and the only threat to our independence comes from that quarter."⁶²

As the war progressed, all perceived threats to the North American land mass, particularly in the Arctic, diminished dramatically; suspicions of American intentions, however, did not.⁶³ Malcolm MacDonald, the British High Commissioner in Canada, visited the northern projects and reported to the Canadian Cabinet War Committee that "it was quite evident that these vast undertakings were being planned and carried out with a view to the post-war situation. Canadian representatives in the area were few and unable to keep control or even in touch with day-to-day developments."⁶⁴

Civilian entrepreneurs also questioned the long-term motives of the Americans. Edmonton businessman J.K. Cornwall said, "I visualize the U.S.A. controlling to a large extent the development of Canada's north land, due to their financial power and experience."⁶⁵ But no-one was more suspicious than the Prime Minister. "Despite his close friendship with Roosevelt," disclosed the Prime Minister's secretary, J.W. Pickersgill, "Mackenzie King was never without suspicions of the ultimate designs of the Americans ... He referred to 'the efforts that would be made by the Americans to control developments in our country after the war.'"⁶⁶ King's diaries testify to these misgivings. "I viewed the Alaskan Highway," he wrote, "and some other things growing out of the war, which was clear to my mind that America had had as her policy, a western hemisphere control which would mean hemispheric immunity, if possible, from future war but increasing political control by United States Forces greater than those of any one country working to this end."⁶⁷

Moreover, he confided in Vincent Massey that "he had grave doubts whether international agreements [on U.S. withdrawal from bases and installations on Canadian soil] on this which Canada had secured from the United States [would] provide any practical guarantee against the United States' claims and pretensions."⁶⁸ King went on to say that "Canadians were looked upon by Americans as a lot of Eskimos."⁶⁹ This fear of "possible domination of post-war Canada by the Americans" led King to believe that it was necessary to displace the Americans from

further development in the North and “keep control in our own hands.”⁷⁰ The prevailing perception of American encroachment into Canada’s North led directly to new initiatives to regain control and assert ownership.

The Canadian government “now embarked on a vigorous program intended to ‘re-Canadianize’ the Arctic.”⁷¹ Clearly, the new focus on the Arctic was not inspired by security concerns but rather by fear of losing jurisdiction over its territory. A military appreciation asserted that “it is of great importance that Canada should carefully safeguard her sovereignty in the Arctic at all points and at all times, lest the acceptance of an initial infringement of her sovereignty invalidate her entire claim and open the way to the intrusion of foreign interests of a nature which might create an ultimate threat to national security.”⁷²

Specific action to reclaim the North began with the appointment of a Special Commissioner for Defence Projects in Northwest Canada. His task was to supervise and coordinate the activities of the government and “to maintain close and continuous cooperation with all agencies of the United States government in the area.”⁷³ However, the government’s most influential initiative was the policy of reimbursing the Americans for the cost of construction and development that was undertaken in the North.⁷⁴ The tight-fisted King government realized that retention of clear ownership and title to its North required payment for those bases and facilities of a permanent nature that the Americans built. What made this decision more painful was that most of the projects were never supported as necessary by the Government, and almost all were constructed to standards far in excess of Canadian requirements. Despite these realities, the need to buy back control was seen as primordial and a new financial agreement was reached between the two nations in June of 1944. It resulted in the acceptance of a further war debt of \$123.5 million to reimburse the Americans for work that had been done.⁷⁵

The principle in question was simple. Before the war King himself pronounced that “domestic ownership, maintenance and control of all military stations and personnel is one of the really indispensable hall marks of national sovereign self-government.”⁷⁶ In the interest of sovereignty, this fundamental belief led the government to buy back the North and ensure clear title of Canadian ownership. The Final Report of the

Advisory Committee on Post-Hostilities reported in January 1945: "As time went on, it became increasingly apparent that the existence of major military installations in Canada built, paid for and operated by the United States might impair Canada's freedom of action. This difficulty has been mitigated, if not eliminated, by the Canadian Government's decision, agreed to by all the United States, to reimburse the United States for construction costs of all airfields and certain other facilities of continuing value erected in Canada by the United States."⁷⁷

The lessons learned through painful experience during the war were not lost. "The war," wrote Desmond Morton, "had taught Canadians how swiftly the Americans could move when their minds were made up and how little weight Ottawa's appeals really carried in Washington."⁷⁸ A government report frankly stated that "if Canada had refused or failed to undertake projects which formed part of United States plans or measures in Canadian territory for the special protection of the United States, the United States was willing and even anxious to proceed alone."⁷⁹

Clearly, the realization that American security concerns represented a genuine threat to Canadian sovereignty was entrenched by the end of the Second World War. Nowhere was this more evident than in the Canadian North. "We had to discharge our obligations to make sure that nobody attacked the U.S. over our territory," explained General McNaughton. "If we had not done so there was the danger that the U.S. might have taken over the Canadian North in the interest of their own security."⁸⁰ This fear led to a new focus on the North and the acceptance of an enormous debt for unwanted infrastructure. The motive was primarily to preserve control and sovereignty of Canadian territory and not the result of a security concern.

The new geo-political reality was that Canada and the United States formed a strategic unit. As a result, American security was of vital interest to Canada.⁸¹ "Because of the gateway that Canada opens to an enemy," King noted, "the defence of this continent is bound to be increasingly that of the United States itself."⁸² This awareness, combined with the dramatic improvements in technology and the growing antagonism between the newly emerged superpowers, cast Prime Minister King's pre-war pledge in a new light. It now took on the likeness of a curse. Sandwiched

geographically between the two rivals, Canadians quickly deduced the hazards and the potential penalty of attempting to remain aloof. A Canadian diplomat underscored the danger by pointing out that “the United States military men refer, whether nervously or menacingly, to the ‘undefended roof of North America’ and claim the right to return en masse to the Canadian Northland which they left so recently.”⁸³

If the Second World War forced the nation’s political and military leadership to take a direct interest in the North because of a fear of losing Canadian control and ownership, then the post-war era burned the issue of Arctic sovereignty into their very soul. Any respite from American encroachment in the North that the Canadian politicians had hoped to gain at the cessation of hostilities in 1945 quickly disappeared. The geographical reality was also highlighted in a 1946 classified American military appreciation of the problems of joint defence in the Arctic. It concluded that “the physical facts of geographical juxtaposition and joint occupation of the North American continent have at all times carried the implication that the defence of Canada and the defence of the United States cannot be artificially divorced. Recent technological developments rendering Canada’s Arctic vulnerable to attack and thereby exposing both Canada and the United States to the threat of invasion and aerial assault across the northernmost reaches of the continent have greatly heightened the compulsion to regard the defence of the two countries as a single problem.”⁸⁴

The Canadian assessment, although similar, was blunter. Norman Robertson, the Under-Secretary of State for External Affairs, wrote: “To the Americans the defence of the United States is continental defence, which includes us, and nothing that I can think of will ever drive that idea out of their heads. Should then, the United States go to war with Russia they would look to us to make common cause with them, and, as I judge their public opinion, they would brook no delay.”⁸⁵ Prime Minister Louis St. Laurent quipped that “Canada could not stay out of a third World War if 11,999,999 of her 12,000,000 citizens wanted to remain neutral.”⁸⁶

Once again Canada was caught in the vortex of American security concerns. The North was perceived as an unprotected gateway to invasion that required immediate and costly measures to minimize its vulnerability.⁸⁷ Canadian politicians and their military commanders quickly

supported the new emphasis on the defence of the North, but they did so to minimize American encroachment in the Arctic. The motive behind Canadian defence policy in the North remained one of countering perceived American penetration in the interest of sovereignty – not security. Although an element of menace was recognized, Canadians consistently questioned their ally's risk assessments.

This difference in the threat perception is an important indicator that reinforces the true motive behind the government's focus in the North. By 1946, joint military planning committees warned of a serious threat, within a few years, to the security of Canada and the United States by means of attacks on North America by manned bombers equipped with atomic weapons. The updated Canada-U.S. Basic Security Plan (revised ABC-22) more accurately reported that "up to 1950, the Soviets could use subversion and sabotage by internal groups; covert biological and chemical attacks; air attacks against Alaska, Iceland and Greenland and the use of airborne irregular forces ranging throughout the continent."⁸⁸ By 1952, military planners projected "the use of the atomic bomb delivered by long-range aircraft and the occupation of Newfoundland, Alaska and Greenland for the forward basing of Soviet bomber aircraft and airborne forces."⁸⁹ The Americans, therefore, maintained a worrisome interest in the Canadian Arctic. This American interest in the North, more than the threat posed by possible invasion, concerned Canadian politicians. Their view of the risk of Soviet invasion was somewhat different. Scholars have pointed out that Canadian defence analysts were "less alarmist" than their American counterparts about Soviet intentions and the pace of technological advancements.⁹⁰ A Canadian intelligence report assessed that "the USSR [Union of Soviet Socialist Republics] is not considered capable at the present time of endangering, by direct action, the security of Canada and the United States."⁹¹ It bluntly stated that the present American outlook gave an impression of a more significant threat to the security of Canada and the United States than actually existed. It specifically disagreed with the American claim of increased enemy capability that ascribed to the Soviets the potential to seize objectives in Alaska, Canada, or Labrador, from which they could strike strategic targets in North America. The report commented that the Americans "credit a potential enemy with greater capabilities than we consider reasonable."⁹²

The British Foreign Office concurred. They affirmed that "Russia, so far as we can judge, is neither prepared for nor in the mood for war, and Stalin is a sober realist."⁹³ Canadian diplomats supported this viewpoint. Norman Robertson acknowledged "the scales of attack, to which it could reasonably be held we were exposed, were, are, and will be, almost insignificant."⁹⁴ The nation's military commanders agreed. "I feel," conceded the Deputy Chief of the General Staff, "[that] there is often a tendency for the Americans to place the worst picture before us in our discussions, with the result that our thinking is often along the lines of 100% protection and does not take into account a more realistic policy of calculated risk."⁹⁵ Significantly, Brooke Claxton, the MND, shared the same belief. He felt strongly that Canada faced no imminent threat. "On the information as is available to the Canadian Government," he wrote, "it appears most unlikely that the Soviet Union would be in a position to wage another war in the near future, and for this reason it is highly improbable that the Soviet Government would run the risk of deliberately provoking such a war."⁹⁶ Claxton postulated that the Soviet Union required a period of 15 years before it would be physically capable of war.⁹⁷

The skepticism of the actual risk was not a function of blind ignorance. The politicians maintained a belief that there was no peril to Canada even at a time when the bogey of communism reached its zenith in the early 1950s. They recognized an international threat but not one to Canada itself. Gordon Graydon, the Parliamentary Advisor to the Canadian delegation to the United Nations, spoke on Soviet intentions and warned of the "undisguised steps towards [Soviet] world domination."⁹⁸ Prime Minister St. Laurent and Lester Pearson both went on record as stating "the international situation was never more serious."⁹⁹ Other Parliamentarians were representative of the prevailing climate, viewing communism as "a diabolical dynamic thing ... aiming at the destruction of all the freedoms and the inherent hard-won rights of man" and describing it as "the darkest and direst shadow that has ever fallen upon this earth."¹⁰⁰

The international threat was such that Canada expanded its armed forces and dramatically increased its defence expenditures. However, this was done to facilitate the dispatch of an expeditionary force to fight the evils of communism in Korea, as well as to raise a special brigade for

service in Europe as part of the North Atlantic Treaty Organization (NATO).¹⁰¹ Despite these concrete actions to combat the growing international menace, the actual danger to the Canadian Arctic was seen as minimal. "The danger of direct attack upon Canadian territory," declared Claxton, "was extremely remote ... any attack on North America would be diversionary, designed to panic the people of this continent into putting a disproportionate amount of effort into passive local defence."¹⁰²

This confidence was based on an assessment of practicality, probability and risk. Claxton explained the factors that were important in determining Canada's defensive posture. He insisted that consideration must be given to "the geographical position of Canada; the capacity of any possible aggressor to make an attack; the disposition of friendly nations; and what may be called the international climate."¹⁰³ Based on these criteria, the northern threat was quickly discounted. The government asserted: "We have to discard from any realistic thinking any possibility of an attack by ground forces on the area of Canada either by air or by sea. Anyone who has any knowledge of the terrain of the outlying parts of this country will realize that such an attempt would be worthless and useless and is not likely to be part of any aggressive plans which may be launched against Canada."¹⁰⁴

Furthermore, the government emphasized that invading the North "would in no way destroy our war-making potential nor would it have any decisive effect on winning a war on this continent by invasion ... you have only to look at this vast continent to see how formidable such a task is."¹⁰⁵ R.J. Sutherland likened Canada's Arctic region to a strategic desert separating the two bastions of polar defence, Alaska and Northern Greenland. He concluded the Canadian Arctic had no particular strategic value.¹⁰⁶

The military assessment was similar. Army appreciations considered the likelihood of enemy airborne attacks as extremely slight because of the difficulties of re-supply and re-embarkation of the attacking force.¹⁰⁷ The official assessment regarding the direct defence of Canada, contained in Defence Scheme No. 3, concluded that due to the extremely limited base facilities in Eastern Siberia, the Soviets were not capable of more than isolated airborne operations, none totaling more than a few hundred

men. Furthermore, it explained that the lack of fighter escort would make sustained operations impossible. More importantly, the official defence plan identified only Western Alaska and the Aleutian Islands as targets of potential enemy airborne forces.¹⁰⁸ Joint Intelligence Committee assessments clearly remarked that the data available “implies that the Soviet Union cannot land any airborne forces on Canadian territory.”¹⁰⁹

The marginalization of the North as a potential ‘gateway to invasion’ was further advanced by the Cabinet Defence Committee. It rationalized that “if the Soviets attempted to use a Canadian Arctic station as a bomber base, warning would be received and it was expected that such a base, which would have immense supply problems, could be immobilized rapidly.”¹¹⁰ The double-edged nature of establishing facilities in the North was now exploited. Prime Minister King carefully weighed the Governor General’s observation that bases in the Arctic “may become bases from which the enemy himself may operate were they not there.”¹¹¹ He subsequently formulated the strategy that “our best defence in the Arctic is the Arctic itself.”¹¹² Claxton reiterated the belief when he stated: “In working out the doctrine of defence of our north, the fewer airfields we have the fewer airfields we have to defend against the possibility of the enemy using them as stepping stones from which to leapfrog toward our settled areas. Indeed, were it possible the greatest single defence throughout our northland would be the rough nature of the ground and the extent of the territory itself.”¹¹³

General McNaughton agreed with the concept that “ice is something of a defence in itself,” and Lester Pearson quickly dubbed the government’s position the “scorched ice policy.”¹¹⁴ Despite the government’s position on the actual threat to its North, or lack thereof, it continued to funnel resources into the Arctic. During the period 1945-1956, it increased the number of weather stations in the Arctic; increased arctic research and developed a permanent research facility in Fort Churchill; escalated the number of northern exercises; based the army permanent force establishment on an air portable / air transportable brigade (Mobile Striking Force) with a specific task of countering enemy lodgements in the North; formed the Canadian Rangers to increase northern patrols; and cooperated in the construction, financing and manning of a series of early warning radar networks.¹¹⁵

These actions were not based primarily on security concerns, but were rather part of the government's active "re-Canadianization" program aimed at "keeping the Canadian Arctic Canadian."¹¹⁶ Government reports highlighted the necessity of ensuring effective protection of Canadian sovereignty because of the fear of American penetration. One note from the Privy Council Office remarked that "our experiences since 1943 have indicated the extreme care which we must exercise to preserve Canadian sovereignty in remote areas where Canadians are outnumbered and outranked ... Of much greater concern is the sort of de facto U.S. sovereignty which caused so much trouble in the last war and which might be exercised again."¹¹⁷

An editorial in *The Canadian Forum* aptly described the Canadian concern for the North. "We must be certain," it wrote, "that we defend it [Canada] as much from our 'friends' as from our 'enemies.'"¹¹⁸ Action was taken, despite the absence of a legitimate security concern, because "what we have to fear," explained Norman Robertson, "is more a lack of confidence in [the] United States as to our security, rather than enemy action ... If we do enough to assure the United States we shall have done a good deal more than a cold assessment of the risk would indicate to be necessary."¹¹⁹

This motive was the reason for the continuing Canadian focus on its Arctic region. The immediate post-war concern for the perceived northern Achilles heel eventually began to wane. By the mid-1950s the menace from the Arctic was seen almost exclusively as an air threat. Political and military leaders generally agreed that "the only probable method of attack is by air,"¹²⁰ and "that in the final analysis the task of Canadian defence is defence against aerial attack over the north pole."¹²¹ The new assessment provided Canadian politicians with a welcome respite. The emphasis of military activity in the North shifted from focusing on active "defence" to simply "surveillance." DND annual reports documented the subtle switch. The stated threat no longer postulated potential surprise attacks in coordination with a campaign of aerial bombardment of North America. The yearly summaries now narrowly defined the danger as an air threat based on the manned bomber.¹²²

The air threat itself evolved, due to technological advancements, and the manned bomber was seen as being primarily replaced by the intercontinental ballistic missile (ICBM). By 1963, Paul Hellyer, the MND, believed

“the air threat to North America consists of long-range ICBMs, submarine or ship launched intermediate range ballistic missiles and manned bombers.”¹²³ The new ICBM threat relegated the Arctic’s importance simply to one of strategic depth. General Charles Foulkes explained this new reality meant that “we will have to rely on the deterrent and retaliatory effect of the U.S. strategic [nuclear] force. So that with the passing of the bomber, the Canadian contribution to the defence of North America will be greatly diminished and the importance of Canadian air space and territory ... will be seriously reduced.”¹²⁴

As prophesied, American interest in the Canadian North declined dramatically during this period. Not surprisingly, as the threat of American encroachment in the Arctic disappeared, so did the Canadian interest. The Navy gradually stopped its northern cruises in the summer. Surveillance flights were pared down. Army exercises ceased. Furthermore, the radio system and the Alaska Highway were turned over to civil departments of the government. Finally, the Canadian Rangers were allowed to languish.¹²⁵ The lack of concern was further evidenced in the 1964 White Paper. It did not include a single reference to the Arctic. This omission is not surprising and would seem logical by strategist Colin Gray’s observation that “since the mid-1960s there has been no military incentive to urge the Canadian Forces to be active in the North. Reference to ‘foreign incursions,’ let alone ‘lodgments,’ should be treated with the contempt they merit.”¹²⁶ But Gray missed the point. “Military incentive” was never the motive.

Another perceived American challenge underlined this. In 1969, the Americans announced that the supertanker *Manhattan*, belonging to the Humble Oil Company, intended to conduct a voyage through the Northwest Passage as part of an experiment to study the feasibility of transporting Alaskan crude oil through the northern waters year-round. The Americans did not seek Canadian permission. They considered the Northwest Passage international waters. The Canadians, however, fervently asserted that the Passage was strictly territorial waters. As a result, the *Manhattan* incident sparked another frenzy of politically directed military activity in the North. Maxwell Cohen captured the essence of the challenge. “*Manhattan’s* two voyages,” he wrote, “made Canadians feel that they were on the edge of another American steal of Canadian resources and rights which had to be dealt with at once by firm governmental action.”¹²⁷

This response included increased activity in the North. The military was once again given the principal role of protecting Canadian authority in the Arctic. "Our first priority in our defence policy," asserted Prime Minister Pierre Elliott Trudeau, "is the protection of Canadian sovereignty."¹²⁸ This affirmation was later followed by the External Affairs Minister's admission that the future role of Canadian forces would be "in the surveillance of our own territory and coastlines in the interests of protecting our sovereignty."¹²⁹ Changes were rapidly implemented. Year-round training of soldiers in the North was re-introduced in March 1970.¹³⁰ A new permanent northern headquarters to coordinate northern military activities was established the following month Yellowknife.¹³¹

Furthermore, a new defence White Paper, tabled in 1971, emphasized sovereignty protection as the prime commitment of the Canadian Armed Forces (CAF).¹³² The government cleverly used the requirement to bolster its ability to defend its territory and sovereignty in the North to help explain the withdrawal of half of its forces from NATO Europe. Critics viewed the "whole emphasis on the North" as a sham and one editorialist wrote that "while [Prime Minister] Pierre Trudeau didn't invent the Arctic, he certainly seems determined to re-discover and exploit it for political purposes."¹³³

The crux of the accusation was appropriate. The White Paper emphasized the perennial distress over American encroachment instead of any security concern. The military threat was never a serious issue. The National Defence Headquarters (NDHQ) Directorate of Strategic Planning insisted that "apart from the threat of aerospace attack on North America, which can be discounted as an act of rational policy, Canada's geographic isolation effectively defends her against attack with conventional land or maritime forces."¹³⁴ Predictably, once the storm over the *Manhattan* incident died away, and the cuts to the Canadian Forces in Europe had been implemented, the emphasis on Arctic sovereignty was allowed to dissipate.

Concern for the Arctic ebbed with the tide and generated little interest until the Americans triggered hypersensitive nationalist sentiments again in 1985. The announcement, with no accompanying request, of the impending voyage through the Northwest Passage of the U.S. Coast Guard cutter *Polar Sea* incited a shrill cry for protection of Canadian sovereignty.¹³⁵ The

military once more mobilized to meet the non-military threat to its North. The Canadian Strategic Review 1985-1986 noted that the government's decision "to underscore Canadian sovereignty in the north with an increased air and naval presence was reminiscent of the steps taken by the Trudeau government during the late 1960s and early 1970s."¹³⁶

Melvin Conant linked the U.S. Coast Guard *Polar Sea* moving through Canadian waters to the "political receptivity of an increased defense effort."¹³⁷ The 1987 White Paper, *Challenge and Commitment*, highlighted the magnified emphasis on defence. Like its predecessor, the White Paper established as "its first priority the protection and furtherance of Canada's sovereignty as a nation."¹³⁸ It stated: "After the defence of the country itself, there is no issue more important to any nation than the protection of its sovereignty. The ability to exercise effective national sovereignty is the very essence of nationhood."¹³⁹ The government initiatives included the North American Air Defence Modernization Program,¹⁴⁰ a proposed new Northern (Army) Training Centre, the designation of five northern airfields as Forward Operating Locations, the construction of the Polar 8 icebreaker, and a new fleet of nuclear submarines.¹⁴¹

These programs were rooted in a response to a perceived challenge to sovereignty and not due to a concern for security. The White Paper commented that technology had nullified the Arctic Ocean as a historic buffer between the superpowers and had made the Arctic more accessible. "Canadians cannot ignore," it stated, "that what was once a buffer could become a battleground."¹⁴² But the underlying motive was explained by Perrin Beatty, the Minister of National Defence. "Our sovereignty in the Arctic," he admitted, "cannot be complete if we remain dependent on allies for knowledge of possible hostile activities in our waters, under our ice and for preventing such activities."¹⁴³ This concern was used to justify the cost of a fleet of submarines. It was not in response to the belief in a potential Arctic battleground.

This point of view is shared by Canadian military strategists who "have privately mused that ... it seems safe to assume the threat of attack on or through the ice of the Arctic Ocean against Canada is indeed negligible."¹⁴⁴ Joseph Jockel asserted, "it is important not to overrate the importance of Canadian Arctic waters To the north, there are very substantial

limitations to the firing positions SLCM [submarine launched cruise missiles]-carrying submarines could take up."¹⁴⁵ Jockel underscored the actual stimulus behind the government programs when he remarked that "the Canadian emphasis on sovereignty protection places a premium on the presence of Canadians, rather than on the fulfilment of a defence mission."¹⁴⁶

Fiscal realities and the end of the Cold War quickly dampened the latest surge of interest in the Arctic. Many of the programs proposed, such as the fleet of nuclear submarines and the Polar 8 icebreaker, were never implemented, and the northern training centre was not completed until decades later. However, the emphasis on sovereignty did not wane. The 1994 Defence White Paper echoed the sentiments of its predecessors and emphasized sovereignty as a vital attribute of a nation-state.¹⁴⁷ This was reinforced in DND's Defence Planning Guidance documents that reiterated that although Canada faces no direct military threat, it must be able to protect its sovereignty.¹⁴⁸

It was not until 2000, that DND conducted a broad survey of its Arctic capabilities and perceived requirements. This Arctic Capabilities Study (ACS) concluded that the CAF's capacity to monitor and respond to threats in the North had decreased to the point that it was virtually non-existent. While the region faced no immediate military threats, these deficiencies were still a problem in the face of what the ACS described as the "many significant security/sovereignty challenges" in the North.¹⁴⁹ The awareness that the Danes planned a trip to Hans Island, a terrain feature in the Nares Strait claimed by both Canada and Denmark spurred this assessment. In the summer, of 2002, the Royal Canadian Navy (RCN) deployed *HMCS Goose Bay* and *Summerside* on Exercise Narwhal into the Canadian Arctic. This was the first RCN northern deployment since 1989.¹⁵⁰

In 2005, DND, under the Liberal government of Prime Minister Paul Martin, released its International Policy Statement on Defence. The document highlighted the Arctic as a region of increasing importance and called for a larger CAF "presence" in the region. Opposition leader Stephen Harper quickly retorted, "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."¹⁵¹

When Harper's Conservatives formed the government in 2006, he followed through on Arctic measures. That year the CAF conducted Operation Lancaster, the largest northern deployment in nearly 30 years. The Maritime Coastal Defence Vessels (MCDV) *Goose Bay* and *Moncton* and the frigate *HMCS Montreal* were deployed alongside a platoon of soldiers from the Royal 22nd Regiment and a detachment of Canadian Rangers. The RCAF provided air support while the Coast Guard contributed *CCGS Henry Larsen* and *Terry Fox* icebreakers. In addition, representatives from other government departments (OGD) were included to further integrate OGDs into CAF northern operations.¹⁵²

Other developments occurred in 2007, when the CAF created the Arctic Response Company Groups (ARCG). These were company-sized units (100 to 200 soldiers) generated by each Land Force Area from the Primary Reserves. The concept was to create light and flexible forces suited to an "expeditionary type theatre." These forces were "uniquely equipped and trained, deployable, scalable, and as self-sufficient as possible" and could provide a presence when and where the CAF needed it most. The ARCG mission set included:

- Affirm national sovereignty in the North through, northern exercises, and unforeseen operational requirements;
- Assist law enforcement agencies;
- Provide support to disaster relief, Major Air Disaster (MAJAD) and Search and Rescue (SAR);
- Patrolling and presence operations;
- Foster relationships with provincial and territorial agencies through Canadian Joint Operations Command (CJOC) and applicable Regional Joint Task Forces;
- Community out-reach;
- Trial new concepts and tactics, techniques, and procedures for Arctic and remote region operations; and
- Continue concept of operations development with external stakeholders.¹⁵³

In addition, the CAF commenced Operation Nanook in 2007, which became the most extensive annual northern operation intended to demonstrate the CAF's ability to operate effectively in the Arctic environment. This operation was a joint, integrated sovereignty operation (planned and directed by CJOC) that highlighted interoperability, command and control, and cooperation with interdepartmental and intergovernmental partners (e.g., Canadian Coast Guard, Royal Canadian Mounted Police (RCMP), Department of Fisheries and Ocean) in the North. 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 evolved to focus on opportunities for specialized groups (e.g., RCAF SAR units, the RCN Combined Dive Team, and ARCGs) to gain experience in the region.¹⁵⁴

In 2008, the Harper government released its defence white paper, the *Canada First Defence Strategy (CFDS)*. This document retained many of the objectives previously laid out by the Liberals, again calling for a more significant military presence in the North. The Arctic was a central theme throughout the *CFDS*. This policy document stated the Arctic was part of the military's preeminent core mission of defending Canada. In many instances, equipment purchases were justified in part to provide the CAF with enhanced northern capabilities, such as the acquisition of new maritime patrol aircraft, radar systems, satellites to provide for Arctic surveillance, and a fleet of Arctic/offshore patrol ships (AOPS).¹⁵⁵

Since the release of the *CFDS* the broad requirement for CAF to defend the Arctic appeared in numerous other statements, strategy papers, and internal directives from the Departments of Foreign Affairs and International Trade (DFAIT, now Global Affairs Canada), DND, and Aboriginal Affairs and Northern Development Canada (now Indigenous and Northern Affairs Canada). This political need to demonstrate "presence" was nothing fundamentally new.¹⁵⁶

Living up to his election promises, Prime Minister Harper adopted a tough line on Canadian rights in the Arctic. Harper boldly proclaimed, "Canada has a choice when it comes to defending our sovereignty in the Arctic; either we use it or we lose it."¹⁵⁷ In 2009, the Government issued its

Canada's Northern Strategy, which stated, "The Government of Canada is firmly asserting its presence in the North, ensuring we have the capability and capacity to protect and patrol the land, sea and sky in our sovereign Arctic territory. We are putting more boots on the Arctic tundra, more ships in the icy water and a better eye-in-the-sky."¹⁵⁸

Despite the apparent renewed interest in the North, the task was sovereignty protection. Although the military performs three primary missions in the North, namely, demonstrating national presence, monitoring the Arctic region and responding to emergencies, including conducting search and rescue operations, few, if any, key decision-makers perceived a viable security threat. In fact, in 2009, then-CDS General Walter Natynczyk quipped, "If someone were to invade the Canadian Arctic, my first task would be to rescue them."¹⁵⁹

Nonetheless, some progress, albeit glacial, was made. Twenty-five years later, the Arctic Training Centre (ATC) announced in the 1987 White Paper was finally officially opened in Resolute Bay in August 2013. The facility was designed as a multi-purpose year-round edifice, accommodating up to 140 personnel for Arctic training and routine operations. It provides the CAF access to a state-of-the-art training hub capable of supporting individual and collective Arctic and cold weather training. If required, it has enough equipment and communication infrastructure to serve as a forward operating base or command post. 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.

The Arctic appeared to be an important policy platform for Harper's Conservative government. However, they lost the October 2015 election. The victorious Liberal government under Justin Trudeau failed to champion its predecessor's focus on the Arctic. The federal government's long-promised Nanisivik Naval Facility designed to serve as a refueling station for the RCN and other government ships is a perfect example. Harper first announced the project in 2007, and it was supposed to open in 2015. After numerous delays, ground was broken for the project in July 2015 but work was stopped after the election. After more delays, the Government announced in 2017 that the project was on track and on budget to open in fall 2018. No construction work was completed in

2021.¹⁶⁰ Starting in 2025, the RCN began using the Baffin Island facility, ten years after it was initially set to open and 18 years after it was first announced. Moreover, although the Canadian Government detailed the need for the North American Aerospace Defence Command (NORAD) modernization in its 2017 defence policy, no budget was allocated for the multi-billion-dollar project even though the strategy acknowledged the “rising international interest in the Arctic” and “Russia’s ability to project force from its Arctic territory into the North Atlantic.”

The foot-dragging goes on. In August 2019, the Trudeau government promised that it would procure six purpose-built icebreakers for the Coast Guard. The promise was made just before the federal election campaign, and as of December 2019 no contract had been signed. Notably, the Coast Guard’s icebreakers were 42 years old, on average.¹⁶¹ Finally in May 2021, the Government announced it would build two new heavy icebreakers that would allow the Coast Guard to have a year-round presence in the Arctic. Delivery of the first of these ships was scheduled for 2030.¹⁶² Since then, in July 2024, Canada entered into the Ice Pact with the U.S. and Finland. The agreement calls for the construction of seven heavy icebreakers and two large hybrid-powered ferries.

In 2022, the CDS proclaimed that “protecting the country’s Arctic region is a key priority for the Armed Forces, warning that Russia has reoccupied abandoned Cold War bases in its Far North.”¹⁶³ Two years later, the CDS underlined the concern by warning that Canada’s “tenuous hold” on its Arctic territories will come under increasing challenge in the decades ahead as China and Russia expand their presence in the region.¹⁶⁴

Despite the cautioning, experts have assessed that the CAF’s “limited capabilities to operate in the Arctic are completely inconsistent with the government’s rhetoric emphasizing the need to safeguard the country’s sovereignty in the waters and islands of the Arctic Archipelago.”¹⁶⁵ Those sentiments, combined with the increasing deployment of countries venturing into the Arctic to exploit the ravages of climate change have triggered the historical approach of the Canadian Government to mobilize DND to demonstrate control of the North.

The latest defence policy update, *Our North, Strong and Free*, issued by the Liberal Government in 2024, clearly states, “*The most urgent and important task we face is asserting Canada’s sovereignty in the Arctic and northern regions, where the changing physical and geopolitical landscapes have created new threats and vulnerabilities to Canada and Canadians*”¹⁶⁶

The defence policy explains:

To better protect our Arctic and northern regions from emerging and existing threats—such as advanced submarines, hypersonic and cruise missiles, surveillance activities—and to enhance our ability to respond to emergencies and disasters, we will establish greater presence, reach, mobility and responsiveness across Canada, including our Arctic, through a network of northern operational support hubs, a fleet of airborne early warning aircraft, deployable sensors on our coasts and underwater, a satellite ground station in the High Arctic, enhanced foreign intelligence capabilities, and new tactical helicopters.¹⁶⁷

The document lists ambitious, expensive and wide-ranging plans to secure the North. For instance, *Our North, Strong and Free* outlines \$38.6 billion over 20 years to modernize NORAD, including purchasing new weapons systems and the building of new military infrastructure across the northern territories and Labrador. It also details the establishment of forward operating bases in Inuvik, Yellowknife, Iqaluit, and Goose Bay, with a permanent presence of Canadian and American soldiers at each base. Moreover, it includes new integrated radar and missile systems, surveillance platforms, maritime sensors, and cyber operations that will be installed. The acquisitions do not stop there. The Government has also detailed that it will construct or expand runways, hangars, and roads for military vehicles and aircraft, and to move fuel, supplies, and munitions for DND. Additionally, it has signed contracts for 140 new, American-made tactical aircraft including F-35 fighter jets, P-8A Poseidon anti-submarine aircraft, attack helicopters, and MQ-9 Reaper armed drones and CC-330 strategic tanker aircraft. In addition, the Government will also spend \$60 billion on new diesel-powered surface combatant warships and is exploring the procurement of submarines.¹⁶⁸

Additionally, the Government of Canada released its Arctic Foreign Policy on 5 December 2024. The policy document reveals that Canada will open consulates in Alaska and Greenland, appoint an Arctic ambassador and continue its boundary negotiations with the United States over the Beaufort Sea as well as “initiate Arctic security talks with foreign affairs ministers in other northern countries, and support science and research co-ordination in the Arctic.”¹⁶⁹ The new policy has four pillars:

1. Asserting Canada’s sovereignty;
2. Advancing Canada’s interests through pragmatic diplomacy;
3. Leadership on Arctic governance and multilateral challenges; and
4. Adopting a more inclusive approach to Arctic diplomacy.¹⁷⁰

All of these recent announcements are rooted in the various threat vectors that are emerging in the Arctic. “It is clear that Russia has no red lines,” Foreign Affairs Minister Mélanie Joly affirmed, “The Arctic is no longer a low-tension region.”¹⁷¹ As a result, the updated Defence Policy clearly explains the renewed focus on the North:

We must place particular focus on defending the Arctic and North and its approaches against new and accelerating threats through credible deterrence. We will secure our Arctic and North by increasing the presence, reach, mobility and responsiveness of the Canadian Armed Forces in the region, and along our coasts and maritime approaches. We will also develop greater striking power to deter adversaries and keep threats farther from our shores.¹⁷²

Importantly, tying back to the opening quote, the defence policy clearly articulates, “our Arctic waters, airspace, and territory cannot be vulnerable to intrusion or used as an avenue to harm Canada, our closest ally, the United States, or other NATO allies.”¹⁷³ Alas, the Canadian Arctic, if not the Arctic overall, now appears to be under siege. In response, the Canadian Government has once again sprung into action to take the necessary steps to defend our North. Their action is in line with the Canadian public opinion. According to an Ipsos poll, Canadians feel the military should play a larger role in the Arctic. In fact, 83 per cent responded in favour

of the military monitoring all ship traffic through the Northwest Passage. Additionally, 73 per cent of Canadians surveyed want to see more military bases in the Arctic, and 51 per cent were on board with Canada buying nuclear submarines to defend the region.¹⁷⁴

However, the latest threat is not simply one of protecting sovereignty. Climate change, as noted earlier, has made the Arctic more accessible. As result, economic exploitation has become another key motive driving interest in the North by Canada and other foreign entities. This reason may propel a longer, lasting focus and commitment on the Arctic. Only the fullness of time will determine whether it is another transient effort, or a substantive investment in the Canadian North.

ENDNOTES

1 Canada, *Canada's Territorial Air Defence* (Ottawa: Department of National Defence, 1985), 35.

2 Kenneth Eyre, "Forty Years of Military Activity in the Canadian North, 1947-87," *Arctic*, Vol. 40, No. 4 (December 1987): 293.

3 Todd Coyne, "Canadian military encounters Chinese research vessel in Arctic, warns competitors are 'probing' infrastructure," *CTV News*, 31 July 2024, <https://bc.ctvnews.ca/canadian-military-encounters-chinese-research-vessel-in-arctic-warns-competitors-are-probing-infrastructure-1.6984965>, accessed 1 August 2024.

4 Trevor Lloyd, "Aviation in Arctic North America and Greenland," *The Polar Record*, Vol. 5, No. 35-36 (January-July 1948): 164; and John Swetenham, *McNaughton Vol 1* (Toronto: Ryerson Press, 1968), 210-214. In 1941, this established network of radio stations and airfields proved invaluable in providing communications for the many quickly undertaken defence projects. See also Shelagh D. Grant, *Sovereignty or Security?* (Vancouver: UBC Press, 1988), 15. The cost of the radio stations was shared between the Department of the Interior and DND.

5 H.W. Hewetson, "Arctic Survey," *Canadian Journal of Economic & Political Science*, Vol. 11 (1945): 462-463. See also Vilhjalmur Stefansson, "The American Far North," *Foreign Affairs*, Vol. 17 (April 1939): 517-521; and J.A. Wilson, "Northwest Passage by Air," *Canadian Geographical Journal*, Vol. 26, No. 3 (March 1943): 107-115.

- 6 C.P. Stacey, *The Military Problems of Canada: A Survey of Defence Policies and Positions Past and Present* (Toronto: Ryerson, 1940), 112. See also Canada, *House of Commons Debates* (hereafter *Debates*), 28 February 1944; and Vilhjalmur Stefansson, "Routes to Alaska," *Foreign Affairs*, Vol. 19, No. 4 (July 1941): 869.
- 7 The perceived importance of a transpolar route was rekindled in 1937, when three Soviet airmen flew nonstop from Moscow to Vancouver in 63 hours and 17 minutes. W.M. Franklin, "Alaska, Outpost of American Defense," *Foreign Affairs*, Vol. 19, No. 1 (October 1940): 247. It was quickly noted, "On the maps of tomorrow's air age Canada holds a strategic position that can shape our future as a world power..In practice every plane from Europe or Asia reaching the United States by great circle courses will cross the Dominion." Trevor Lloyd, "Canada: Mainstreet of the Air," *Maclean's*, 3 April 1943, 34.
- 8 C.P. Stacey, *Arms Men and Governments: The War Policies of Canada 1939-1945* (Ottawa: Queen's Printer, 1970), 379-380. See also F.H. Ellis, "New York to Nome and Back," *The Beaver* (September 1949): 28-32.
- 9 Stacey, *Arms Men and Governments*, 380. See also Stan Cohen, *The Forgotten War, Vol I* (Missoula, Montana: Pictorial Histories Publishing Company, 1988), 10-22.
- 10 W.L. Mackenzie King, "Canada's Defence Policy," *Canadian Defence Quarterly* (hereafter *CDQ*), Vol. 15 (October 1937-July 1938): 135.
- 11 *Debates*, 16 May 1938, 3179.
- 12 *Debates*, 24 March 1938, 1644.
- 13 *Debates*, 24 March 1938, 1644. See also *Debates* 19 May 1936, 2979; and "Royal Canadian Air Force," *The Royal Air Force Quarterly*, Vol. 9, No. 1 (January 1938): 10-13.
- 14 *Debates*, 24 March 1938, 1650, and 26 April 1938, 3236-3237.
- 15 M.A. Pope, *Soldiers and Politicians: The Memoirs of Lt.Gen. Maurice A. Pope* (Toronto: University of Toronto Press, 1962), 83 & 93. See also C.P. Stacey, *Six Years of War: The Army in Canada, Britain and the Pacific* (Ottawa: Queen's Printer, 1966), 30-31.
- 16 "CGS Appreciation of Military Situation, February 1941," Directorate of History and Heritage (hereafter DHH), File 112.3M2 (D496).
- 17 Joint Staff Committee, DND, 5 September 1936 (Army Records), as quoted in James Eayrs, *In Defence of Canada: Appeasement and Rearmament* (Toronto: University of Toronto Press, 1965), 213.
- 18 Charles Foulkes, "Canadian Defence Policy in a Nuclear Age," *Behind the Headlines*, Vol. 21, No. 1 (May 1961): 1.
- 19 E.L.M. Burns, "The Defence of Canada," *CDQ*, Vol. 13, No. 4 (July 1936): 379.
- 20 Stacey, *Military Problems of Canada*, 29-30.
- 21 *Ibid.*, 29.
- 22 Monica Curtis, ed., *Documents on International Affairs 1938*, Vol. 1 (London: Oxford University Press, 1942), 416. See also *Canadian Annual Review of Politics & Public*

Affairs, 1937-1938, 141; and *Debates*, 12 February 1947, 346. FDR's speech was made in Kingston, Ontario on 18 August 1938. There was a degree of pragmatism involved. It has been well established that "the American Army has always taken the position that an attack on Canada is equivalent to an attack on the United States. For it is axiomatic that such an invasion... would merely be the prelude to an assault on the industrial heart of this country." Edgar P. Dean, "Canada's New Defence Program," *Foreign Affairs*, Vol. 19, No. 1 (October 1940): 236.

23 *Debates*, 12 February 1947, 346. The reliance on American protection led King to retort in Parliament, "The talk which one sometimes hears of aggressor countries planning to invade Canada...is, to say the least, premature. It ignores our neighbours..." *Debates*, 24 May 1938, 3179. This is not to say that some alarmists did not raise the issue. The advances in aircraft technology and the development of transpolar routes raised the concern of aerial bombardment. It was postulated that industrial centres in Canada could conceivably be attacked from Europe by aircraft using the Arctic routes. These concerns; however, were largely ignored. See *Debates*, 13 February 1939, 861-871; Flight Lt. A. Carter, "It Can be Done," *CDQ*, Vol. 16 (October 1938-July 1939): 54-58; and E.L. H-W, "The Trend of Air Power," *The Royal Air Force Journal*, Vol. 10, No. 1 (January 1939): 1-6.

24 Jean Potter, *Alaska Under Arms* (New York: Macmillan Company, 1942), 35.

25 Franklin, "Alaska, Outpost of American Defense," 247.

26 Potter, *Alaska Under Arms*, 74. Despite Alaska's strategic geographic location, it was the last of the overseas departments to receive combat planes. S. Conn, R. Engelman, R.C. and B. Fairchild, *The U.S. Army in World War II. The Western Hemisphere. Guarding the United States and Its Outposts* (Washington D.C.: Department of the Army, 1964), 247.

27 Conn, *Guarding the United States and Its Outposts*, 392. Alaska was described as, "Not exactly a sot under belly but rather the big toe an enemy can stand on while he slugs you." M. Young, "Defence Dilemma on North Frontier," *Saturday Night*, 13 October 1951, 28.

28 Potter, *Alaska Under Arms*, 23. The Vice-President of the United States warned the American people in May 1941, to be prepared for an attack on Alaska by Japan. E.R. Yarham, "The Alaska Highway," *RUSI*, Vol. 87, No. 547 (August 1942): 227.

29 Potter, *Alaska Under Arms*, 35-36. Potter noted that it took less than four hours to fly in a bomber from the southern Alaskan bases to Seattle.

30 Canada, *Documents on Canadian External Relations* (hereafter *DCER*) 9, 1942-1943 (Ottawa: External Affairs, 1980), 1180.

31 Desmond Morton, *Canada and War: A Military and Political History* (Toronto: Butterworths, 1981), 110.

32 Yarham, "The Alaska Highway," 227.

33 Galen R. Perras, "An Aleutian Interlude: Canadian Participation in the Recapture of the Island of Kiska" (Unpublished RMC War Studies MA Thesis, April 1986), 9.

34 "An Appreciation of the Military World Situation with Particular Regard to its Effect on Canada," (as of 31 July 1942), completed by the General Staff (GS), 4 August 1942, 7, Library, Archives Canada (hereafter LAC), Ralston Papers, MG 27, III B11 37.

35 "Brief Appreciation of the Situation as of 24 Feb 1941," GS estimate 25 February 1941, 2; and "Japanese Occupation of the Aleutians Islands," GS estimate 15 July 1942, 3. LAC, Ralston Papers, MG 27, III B11 37.

36 "Appreciation Re Air Landing Troops," 24 January 1942, 2. DHH 112.3M2 (D232).

37 Stacey, *Six Years of War*, 174-175. At its peak in June 1943, the Army attained a strength of 34,316 men on the West Coast. See also Perras, "Aleutian Interlude," 3-4.

38 Pope, *Soldiers and Politicians*, 91.

39 Colonel Stanley W. Dziuban, *The U.S. Army in World War II. Special Studies. Military Relationships Between the United States and Canada 1939-1945* (Washington D.C.: Department of the Army, 1959), 199. The United States military strength in North-west Canada in late 1942 exceeded 15,000. The following year, when civilian workers had replaced some of the troops, U.S. civilians alone exceeded that figure.

40 The Ogdensburg agreement (18 August 1940) was a result of discussions, relating to the mutual problems of defence, between President Roosevelt and Prime Minister King. King stated, "The common approach of the governments of Canada and the United States to the problems of North American defence was formally recognized in the Ogdensburg agreement." *Debates*, 10 May 1943, 2504. The PJBD consisted of "four or five members from each country, most of them from the services." See J.W. Pickersgill, and D.F. Forster, *The Mackenzie King Record* Vol. 1 (Toronto: University of Toronto, 1960), 137-142; and Dziuban, *Military Relationships*, 22-30. See also "Canada-U.S. Permanent Joint Board on Defence – Twenty-Fifth Anniversary," *External Affairs*, Vol. 17, No. 9 (September 1965): 384-388; and H.L. Keenleyside, "The Canadian / U.S. Permanent Joint Board of Defence, 1940-1945," *Behind the Scenes*, Vol. 16, No. 1 (Winter 1960-61): 51-75. Regarding the North-West Staging Route, Howe described it as, "One of Canada's most important airways...composed of a chain of main aerodromes, with intermediary fields, extending from Edmonton to Alaska." *Debates*, 28 February 1944. A northeastern staging route, code named Crimson, was also developed that was used to ferry aircraft and supplies to Europe via northern Canada (The Pas, Churchill, Fort Chimo, Frobisher Bay, Northern Quebec), Labrador and Greenland. See Conn, *Guarding the United States and Its Outposts*, 399-403; and Dziuban, *Military Relationships*, 130-133.

41 Adrian Preston, "Canada and the Higher Direction of the Second World War 1939-1945" in B.D. Hunt and R.G. Haycock, eds., *Canada's Defence. Perspectives on Policy in the Twentieth Century*, (Toronto: Copp Clark Pitman Ltd., 1993), 116. J.T. Jockel echoed this assessment, noting: "Canada had been prepared to accept U.S. direction of continental defences in early plans which assumed a defeated Britain and a retreat to Fortress North America." Jockel, "The Military Establishments and the Creation of NORAD," in *Canada's Defence*, 166. See also Grant, *Sovereignty or Security?* 131. The impression of a "sense of panic" at the imminence of Britain's collapse (as well as a perceived lack of faith and loyalty) caused Prime Minister Winston Churchill to initially look upon the

Ogdensburg Agreement in an unfavourable light. This was reflected in an uncomplicated telegram to King. See *Pickersgill, Record*, Vol 1, 139- 143; and Stacey, *Canada and the Age of Conflict*, Vol. 2 (Toronto: University of Toronto Press, 1984), 312.

42 Grant, *Sovereignty or Security?* 46.

43 K.S. Coates, and W.R. Morrison, *The Alaska Highway in World War II* (Toronto: University of Toronto, 1992), 25- 26. This source provides an unrivalled account of the social impact of the "American invasion" on the Canadian North.

44 Dziuban, *Military Relationships*, 53-54; Cohen, *Forgotten War*, Vol. 1, 16-17; Yarham, "The Alaska Highway," 227; G.L. Smith, "War Unlocks Our Last Frontier – Canada's Northern Opportunities," *Maclean's*, 3 April 1943, 11.

45 Stefansson, "Routes to Alaska," 868.

46 *DCER* 9, 1942-1943, 1175.

47 *DCER* 9, 1942-43, 1183. The author, H.L. Keenleyside noted, "I do not like the idea of Canada allowing the U.S. to construct a highway on Canadian territory (thereby acquiring a moral if not a legal right to its continued use, at will, in peace or war).

48 *DCER* 9, 1942-43, 1183. See also Keenleyside, "Canadian-U.S. Permanent Joint Board of Defence," 54-55.

49 Stacey, *Arms, Men and Governments*, 383.

50 *Ibid.*, 348; and Dziuban, *Military Relationships*, 220-221.

51 Stacey, *Arms, Men and Governments*, 348; Grant, *Sovereignty or Security?* 74-78; and Dziuban, *Military Relationships*, 41.

52 Grant, *Sovereignty or Security?* 76.

53 Stacey, *Arms, Men and Governments*, 383.

54 Grant, *Sovereignty or Security*, 123.

55 Mackenzie King Diaries, Queen's University Archives (QA), File (Microfiche) T172 (21 March 1942).

56 Grant, *Sovereignty or Security?* 82-86; O.B. Hopkins, "The 'CANOL' Project," *Canadian Geographical Journal*, 27/5 (November 1943), 241; Cohen, *Forgotten War*, Vol 1, 34-38; and W.O. Kupech, "The Wells and CANOL: A Visit after 25 Years," *Canadian Geographical Journal* (1968), 137-139. The eventual price tag for the project was \$134,000,000.00.

57 Coates and Morrison, *Alaska Highway*, 36. See also Dziuban, *Military Relationships*, 229; and Cohen, *Forgotten War*, Vol 2, 30.

58 Pope, *Soldiers and Politicians*, 219.

59 Donald Creighton, *The Forked Road* (Toronto: McClelland & Stewart, 1976), 73. See also D. Grant, "CANOL – A Ghost from the Past," *Alternatives*, Vol. 9, No. 2 (Spring 1980): 23.

60 Grant, "CANOL," 23; Dziuban, *Military Relationships*, 214; and R.S. Finnie, "The Origin of CANOL's Mackenzie Air Fields," *Arctic*, 33/2 (June 1980), 274-277.

61 Vincent Massey, *What's Past is Prologue* (Toronto: Macmillan Company of Canada Ltd., 1963), 371.

62 *Ibid.*, 372. Creighton commented, "All too often they behaved as if they were on their own soil, or on a separate but tributary and submissive part of the Empire of the United States..." Creighton, *The Forked Road*, 73. Stacey noted, "Canadian officials were often troubled by a tendency on the part of Americans to disregard Canadian sovereignty. American officers and officials...were sometimes as little disposed to worry about respecting Canadian national rights...and acted as if they were on their own soil." Stacey, *Arms, Men and Governments*, 385.

63 Stacey, *Six Years of War*, 145-183. Lieutenant-General Pope stated, "The threat to Canada was less than minor, and insignificant as it was, it was created almost entirely by the overwrought imagination of too many of our otherwise sane and sensible people." Pope, *Soldiers and Politicians*, 180, 219. See also Nils Orvik, *Canada's Northern Security: The Eastern Dimension* (Kingston: Queen's University, 1982), 2.

64 Stacey, *Canada and the Age of Conflict*, Vol. 2, 362. Trevor Lloyd, assigned to the Wartime Information Board, reported that it was apparent that the Americans were far advanced in their study of the Canadian Arctic. He noted that the American Army "was deeply entrenched in the north and that they have first class research facilities and an Arctic information centre." He added, "We have nothing." Grant, *Sovereignty or Security?*, 122. Norman Robertson exclaimed, "The American presence had been allowed to grow in a fit of absence of mind" and he recommended that "a good, competent Canadian staff would have to be sent to the area, capable of collaborating with and controlling American development activities." J.L. Granatstein, *Canada's War: The Politics of the Mackenzie King Government 1939-1945* (Toronto: Oxford University Press, 1975), 322.

65 Coates and Morrison, *Alaska Highway*, 36.

66 Pickersgill, *Record*, Vol. 1, 396.

67 Mackenzie King Diaries, QA, File T172 (18 March 1942).

68 Massey, *What's Past is Prologue*, 396. Minutes from the Cabinet War Committee meeting on 7 April 1943 recorded, "It was feared that despite these agreements the United States, after the war, might seek to base an equitable claim to special concessions upon these large expenditures in Canada. DCER 9, 1942-43, 1259. King also noted a similar conversation with Malcolm MacDonald in his diary. He wrote, "I said we're going to have a hard time after the war to prevent the U.S. attempting control of some situations. He [MacDonald] said already they speak jokingly of their men as an army of occupation." Mackenzie King Diaries, 29 March 1943.

69 Massey, *What's Past is Prologue*, 396.

70 Pickersgill, *Record*, Vol 1, 644.

71 DCER 18, 1952, 1201.

72 "Sovereignty in the Canadian Arctic in Relation to Joint Defence Undertakings," 29 May 1946, DHH 112.3M2 (D213).

73 *Debates*, 10 May 1943, 2504. The commissioner, Brigadier W.W. Foster, reported directly to the War Cabinet Committee. See also Grant, "CANOL," 24.

74 Prime Minister King stated, "To carry out joint plans for the defence of this continent, and to facilitate the transportation of war materials to fighting fronts, the Canadian government has agreed to the stationing of United States military units at certain places on Canadian territory...It is not contemplated that the contributions which the United States is thus making to the common defence will give that country any continuing rights in Canada after the conclusion of war." *Debates*, 29 January 1943, 20-21.

75 Grant, *Sovereignty or Security?* 132; Conn, *Guarding the United States and Its Outposts*, 403-404; and Stacey, *Arms, Men and Governments*, 381.

76 *Debates*, 1 July 1938, 4527.

77 *DCER 11*, 1944-45, 1570. See also L.B. Pearson, "Canada Looks 'Down North,'" *Foreign Affairs*, 24/4 (July 1946), 641-643. In 1969, SCEAND reiterated the importance of "paying your own way" and denounced the "free ride theory." The committee was convinced that Canada must be prepared to incur reasonable expenditures for its own defence to maintain its independence and freedom of action as a nation, and to ensure that Canadian interests are taken into account when continental defence measures are considered. Cited in E.J. Dosman, ed., *The Arctic in Question* (Toronto: Oxford University Press, 1976), 90.

78 Morton, *Canada and War*, 156.

79 *DCER 11*, 1944-45, 1570. Defence analyst R.J. Sutherland echoed those same observations seventeen years later when he observed, "Canada must not become through military weakness or otherwise a direct threat to American security. If this were to happen, Canada's right to existence as an independent nation would be placed in jeopardy." "Canada's Long Term Strategic Situation," *International Journal*, 17/3 (Summer 1962), 202. A group of twenty influential Canadians (politicians, scholars, bureaucrats) reached this same conclusion in July 1940. They wrote A Program of Immediate Canadian Action, which stated in part, "A United States bent on large-scale preparations for its own defence and that of the hemisphere would be determined to take adequate measures wherever they might be needed. If concerned about the inadequacy of the meagre Canadian defences, it might and probably would insist on acting to augment them. Canada would have to co-operate voluntarily or involuntarily." Cited in Dziuban, *Military Relationships*, 18.

80 Swettenham, *McNaughton*, Vol 1, 176.

81 P. Buteux, "NATO and the Evolution of Canadian Defence and Foreign Policy," in D.B. Dewit and D. Leyton-Brown, *Canada's International Security Policy* (Scarborough, ON: Prentice Hall, 1995), 160-161.

82 Pickersgill, *Record*, Vol 1, 203.

83 Grant, *Sovereignty or Security?* 156.

84 "USAAF Study on Problems of Joint Defence in the Arctic," 29 October 1946, cited in Grant, *Sovereignty or Security?* 302-311.

85 *DCER 11, 1944-45, 1535.*

86 M.A. Conant, *The Long Polar Watch: Canada and the Defence of North America* (New York: Harper and Brothers, 1962), 73. General Foulkes wrote, "Canada cannot negate geography. Canada is physically joined to the United States just like Siamese twins. If one of the twins gets hurt the other one suffers." "Canadian Defence Policy," 10. Even Soviet premier Nikita Khrushchev later stated, "This time Canada would not be geographically secure." Norman Hillmer, and J.L. Granatstein, *Empire to Umpire: Canada and the World to the 1990s* (Toronto: Copp Clark Longman, 1994), 221. Pearson observed, "In 1946 there is no isolation – even in the Arctic ice." Pearson, "Canada Looks Down North," 647.

87 The new perceived vulnerability was the result of "the principal advancements in the science of war," namely, "The increased range of application of destructive power and armed force resulting from the development of modern aircraft, amphibious technique, guided missiles, and advancement in technique of submarine warfare, as well as the increased destructive capacity of weapons such as the atomic bomb, rockets, and instruments of biological warfare." *DCER 12, 1946, 1617-1618.* 86 During the 1947 May Day flyover of Red Square, the Russians revealed that they now had bombers (copied from an American B-29 that made an emergency landing in the U.S.S.R. during the war) capable of striking the United States. J.T. Jockel, "The Canada/United States Military Co-operation Committee and Continental Air Defence, 1946," *Canadian Historical Review*, 64 (1983): 352, 355. See also House of Commons *Debates Official Report – The Defence Programme*, 5 February 1951, 1; *DCER 12, 1946, 1618-1623*, and 15, 1949, 1560-1561, 1566-1567. See also Sean M. Maloney, "The Mobile Striking Force and Continental Defence 1948-1955," *Canadian Military History*, 2/2 (Autumn 1993): 76.

88 *DCER 12, 1946, 1618-1623 and Vol. 15, 1949, 1560-1561 & 1566-1567.*

89 Maloney, "Mobile Striking Force," 76. See also "If the Russians Attack Canada," *Maclean's*, 15 June 1951, 8-9, 68.

90 See Ron Purver, "The Arctic in Canadian Security Policy," in *Canada's International Security Policy*, 82. Colin Gray also stated, "There is no doubt that in the late 1940's Canadian-United States differences over the scale of 'the threat' were quite considerable." Colin Gray, *Canadian Defence Priorities: A Question of Relevance* (Toronto: Clarke, Irwin & Company, 1972), 71. Stacey observed, "Canadian ministers, officials and officers were probably somewhat less disposed than their American opposite numbers to believe that the USSR intended to attack the West..." *Canada and the Age of Conflict*, Vol. 2, 406.

91 *DCER 14, 1948, 1581.*

92 *DCER 14, 1948, 1581-1582.* A memorandum from the MND to PM, in 1947, reiterated this belief. He wrote, "... war is improbable in the next five or even ten years..." *DCER 13 (1947), 1482.* Furthermore, Ernest Ropes of the U.S. Department of Commerce stated that Russia's industrial production would be "insufficient to support a war against the U.S.A. for at least 25 years." J.W. Warnock, *Partner to Behemoth* (Toronto: New Press, 1970), 50.

- 93 James Eayrs, *Defence of Canada. Growing Up Allied* (Toronto: University of Toronto Press, 1985), 6.
- 94 *DCER 11, 1944-45*, 1534.
- 95 "Intelligence Aspects – PJBD Canada – U.S.A.," 15 October 1946, DHH 112.3M2 (D213).
- 96 "Political Appreciation of the Objectives of the Soviet Foreign Policy," 30 November 1946. LAC, Claxton Papers, MG 32 95, Box 5, File: Canada – U.S. Defence Collaboration.
- 97 "Political Appreciation," 30 November 1946.
- 98 *Debates*, 5 February 1951, 77.
- 99 *Debates*, 12 February 1951, 267.
- 100 *Debates*, 8 May 1951, 2833. The shrill screams of fear included such manifestations as claims that "We also have no reason to believe that the Russians have not at this time, somewhere in the north, set up camouflaged rocket installations. It is not entirely beyond the realm of possibility;" and "We have no reason to believe they could not send suicide bombing missions, and if they did central Canada would make a beautiful target." *Debates*, 8 May 1951, 2834.
- 101 *Debates*, 12 February 1951, 260. The government program called for an armed force of 115,000 men and an expenditure of \$5 billion. See also House of Commons *Debates Official Report – The Defence Programme*, 5 February 1951, 1-7; *Canada's Defence Programme 1951-52*, 5-10; and Desmond Morton, *A Military History of Canada*, 3rd ed. (Toronto: McClelland and Stewart, 1994), 233-237.
- 102 Eayrs, *Peacemaking and Deterrence*, 100, 107, 401. See also D.J. Bercuson, *True Patriot: The life of Brooke Claxton* (Toronto: University of Toronto Press, 1993), 195; and *DCER 11, 1944-45*, 1583.
- 103 *Debates*, 9 July 1947, 5270; and Canada, *Canada's Defence* (Ottawa: DND, 1947), 7.
- 104 *Debates*, 17 June 1955, 4925. One military officer stated, "In Canada's northern regions there was no place to go from a military point of view and nothing to do when you got there." Cited in Dosman, *Arctic in Question*, 23.
- 105 *Debates*, 8 May 1951, 2834-2835.
- 106 Sutherland, "Canada's Long Term Strategic Situation," 209.
- 107 "Composition of Mobile Striking Force for Defence of Canada," 3 December 1948; and "Appreciation on the Mobile Striking Force," 13 May 1949, DHH, File 112.3M2 (D369).
- 108 Defence Scheme No. 3 – Major War, Chapter V, "The Direct Defence of Canada," 16 September 1948, Appendix A, 2 & 4, DHH, File 112.3M2 (D10).
- 109 "The Employment of the MSF for Reduction of Enemy Lodgments in Canada," 2 May 1950, DHH, File 112.3M2 (D400).

- 110 *DCER* 17, 1951, 1249.
- 111 Pickersgill, *Record*, Vol. 3, 370.
- 112 Eayrs, *Peacekeeping and Deterrence*, 344.
- 113 *Debates*, 15 April 1953, 3920.
- 114 Alan Harvey, "Scorched Ice Policy," *Globe and Mail*, 27 November 1948.
- 115 *DCER* 12, 1946, 1560; *DCER* 14, 1948, 1518; Canada, *Report on the Department of National Defence, 1949* (Ottawa: DND 1939), 12; Canada, *Winter Warfare Research Program, Exercise Eskimo* (Ottawa: DND, 1945); H.A. Halliday, "Recapturing the North. Exercises 'Eskimo,' 'Polar Bear,' and 'Lemming' 1945," *Canadian Military History*, 6/2 (1997), 29-38; and Canada, *Winter Exercise Musk-Ox 1946* (Ottawa: DND, 1947); *Debates*, 24 June 1948, 5785 and 21 May 1954, 4953; *Canada's Defence Programme(s), 1949-1957*; and *The Defence of Canada, 1955*. See also J. Honderich, *Arctic Imperative: Is Canada Losing the North?* (Toronto: University of Toronto Press, 1987), 31-33; Canada, *Canada's Territorial Air Defence*, 5; J.J. Sokolsky, "A Seat at the Table: Canada and its Alliances," in *Canada's Defence*, 150-152; Purver, "Arctic in Canadian Security Policy," 85-87; Morton, *Military History*, 240. Participation in the DEW Line project elicited great storms of protest which raised the issue of military vassalage. A *Maclean's* editorial stated, "DEW is on Canadian soil, but it will serve primarily American rather than Canadian defence purposes." 6 August 1955, 2. Another article stated "For a sum of money that has been officially estimated at four hundred million dollars we have at least temporarily traded of our northern frontier. In law we still own this northern frontier. In fact, we do not...In return for the luxury of not spending money on the Dewline we Canadians have surrendered something that for the last generation we have regarded as our greatest necessity, our independence." Ralph Allen, "Will Dewline Cost Canada Its Northland," *Maclean's*, 26 May 1956, 16-17, 68-70.
- 116 *DCER* 15, 1949, 1471.
- 117 *DCER* 18, 1952, 1197-1198. It was noted that "U.S. activities now far surpass those of Canada, and there have been numerous incidents of U.S. military personnel throwing their weight about." *DCER* 18 (1952), 1117, 1195-1196. G.W. Smith noted, "a massive and quasi-permanent American presence in the Canadian North such as we have seen during and since World War II could in due course lead, gradually and almost imperceptibly, to such an erosion or disintegration of Canadian sovereignty that the real authority in the region, in fact if not in law would be American." In R.St.J. Macdonald, ed., *The Arctic Frontier* (Toronto: University of Toronto Press, 1966), 213. During a briefing to Cabinet, the Secretary of State for External Affairs reiterated the danger of de facto American control as a result of increased American activities in the Arctic which would "present greater risks of misunderstandings, incidents and infringements of Canadian sovereignty." *DCER* 19, 1953, 1048.
- 118 *The Canadian Forum* 27/318 (July 1947), 75. Colin Gray claimed that "the only plausible challenger to the writ of Canadian law in the Arctic is Canada's principal ally, the United States." *Canadian Defence Priorities*, 128.
- 119 *DCER* 11, 1944-45, 1535.

120 *Debates*, 21 May 1954, 4951. See also Canada, *The Defence of Canada* (Ottawa: DND, 1955), 2; and Canada, *Defence 1959* (Ottawa: DND, 1959), 10. The emphasis on air was obvious. Proportion of monies, for the different services was broken down as follows: Navy – 15.7%; Army – 15.7%; Air Force – 41.4% (remainder spent on mutual aid, research, and other), 6. *House of Commons Debates Official Report – The Defence Programme*, 20 May 1954.

121 *Debates*, 17 June 1955, 4925. It was also stated, “we have to discard from any realistic thinking any possibility of an attack by ground forces on the area of Canada either by air or by sea.” The belief was that “any attack on Canada will be in essence part of an attack on the United States,” and it would be part of “a world war, a total war.” *Debates*, 17 June 1955, 4925, and 24 June 1948, 5783. See also *Canada’s Defence Programme 1949-50*; Sutherland, “Canada’s Long Term Strategic Situation,” 271; and A. Brewin, *Stand on Guard. The Search for a Canadian Defence Policy* (Toronto: McClelland & Stewart, 1965), 53-54.

122 The change was reflected in the Canadian Defence Programme annual reports. Reports from 1949-1955 spoke of the need to repel “surprise attacks.” In 1956, the wording was changed and reflected the downgraded danger. It now stated that forces were required to an ambiguous “deal with possible enemy lodgments.” Another subtle change was the change in focus of the aim of Canada’s defence programme. Wordage changed from “defence of Canada from direct attack” to “provide for the security of Canada.”

123 “Statement by the Honourable Paul T. Hellyer, MND, to the Special Committee on Defence, June 27, 1963,” 1. See also Canada, *Territorial Defence*, 5-7.

124 Canada, *Special Committee on Defence – Minutes of Proceedings and Evidence*, 22 October 1963 (Ottawa: Queen’s Printer, 1963), 503.

125 Eyre, “Forty Years of Military Activity,” 296.

126 Gray, *Canadian Defence Priorities*, 185.

127 Maxwell Cohen, “The Arctic and National Interest,” *International Journal*, Vol. 26, No. 1 (Winter 1970-1971): 72. The Government tried to place a favourable spin on the event. Both Prime Minister Pierre Elliott Trudeau and External Affairs Minister Mitchell Sharp stated publicly that they “concurred with the project.” Nevertheless, their approval was never sought and the research information was never shared. See *Debates*, 15 May 1969, 8721; and *Globe and Mail*, 18 September 1969, A7. Sharp explained that a large part of the problem lay in Canada’s fear that its claims to the Arctic Archipelago and adjacent waters, specifically the Northwest Passage, which the Americans disputed, may be defeated in an international tribunal. Sharp stated, “the government continued to feel that a blunt declaration of sovereignty would invite a challenge from the United States, a challenge for which Canada, equipped only with legal and historical arguments of less than conclusive force, might be ill-prepared.” *Canadian Annual Review for 1970*, 350. External Affairs had always candidly noted, “Due to the desolate nature of the areas in question, these claims have little support on the grounds of effective occupation, settlement or development. Thus, while Canada’s claims to sovereignty to these regions have not heretofore been seriously challenged, they are at best somewhat tenuous and weak.” *DCER 12* (1946), 1556. See also Grant, *Sovereignty or Security?*

178 & 307; L.C. Green, "Canada and Arctic Sovereignty," *Canadian Bar Review*, Vol. 68, No. 4 (December 1970): 740-775; *Globe and Mail*, 12 March 1970, A1; and Dosman, *Arctic in Question*, 34-57.

128 *External Affairs*, Vol. 21, No. 6 (June 1969): 253.

129 *Globe and Mail*, 18 September 1969, A7.

130 The Army introduced the "New Viking" exercise series of training activities in the North. These encompassed company size deployments in the High Arctic for so-called sovereignty exercises, as well as Arctic warfare training.

131 *Canadian Annual Review for 1970*, 362; *Debates*, 21 May 1971, 6054; and *Canada, Defence 1971* (Ottawa: DND, 1972), 59-60. General J.V. Allard confirmed that the establishment of the new headquarters was a direct result of the Manhattan incident. J.V. Allard, *The Memoirs of General Jean V. Allard* (Vancouver: UBC Press, 1988), 291. See also Dan G. Loomis, *Not Much Glory* (Toronto: Deneau, 1984), 69; Purver, "Arctic in Canadian Security Policy," 88-90.

132 *Canada, Defence in the 70s*. See also *Canada, Canada's Territorial Air Defence*, 31; and Nils Orvik, *Canadian Defence Policy: Choices and Directions* (Kingston: Queen's University, 1980), 1-2. He felt that the "so-called 'northern orientation' in Canadian defence policy was never well defined in terms of defence objective and deployments." Joel Sokolsky commented, "the general thrust of the Trudeau policies was to de-emphasize collective defence in favour of national sovereignty protection." *Defending Canada* (New York: Priority Press Publications, 1989), 5.

133 *Canadian Annual Review for 1970*, 363. Professor Bland revealed that Donald Macdonald, the MND, "found military advice unhelpful, if not antagonistic. He directed the preparation of the 1971 White Paper without military advice." D. Bland, *The Administration of Defence Policy in Canada 1947-1985* (Kingston: R. P. Frye & Co., 1987), 213.

134 A Draft Study of the Future International Scene," 5 April 1968, 4 & 8. DHH File 112.11.003 (D3), Box 3.

135 R.B. Byers and M. Slack, eds., *The Canadian Strategic Review, 1985-1986* (Toronto: CISS, 1988), 126-128; Sokolsky, *Defending Canada*, 13; and J.T. Jockel, *Security to the North: Canada-U.S. Defence Relationships in the 1990s* (East Lansing: Michigan State University Press, 1991), 30-31.

136 Byers, *Strategic Review 1985-1986*, 130.

137 M.A. Conant, "The Long Polar Watch: An American Perspective on Canada's Defence of Its Arctic," *American Review of Canadian Studies*, Vol. 18, No. 3 (Autumn 1988): 373.

138 *Canada, Challenge and Commitment – A Defence Policy for Canada* (Ottawa: DND, June 1987), II.

139 *Ibid.*, 23.

140 *Ibid.*, 55-56. Erik Nielsen (MND 1985) stated, "I want to emphasize the importance of fully exercising sovereignty in our north. The DEW Line has served Canada

well, but Canadians do not control it...The North Warning System will be a Canadian-controlled system - operated, maintained and manned by Canadians. Sovereignty in our north will be strengthened and assured for the future." *Debates*, 13 March 1985.

141 *Challenge and Commitment*, 50-55 & 60; Byers, *Strategic Review 1985-1986*, 128-131, and 1987, 106; and Honderich, *Arctic Imperative*, 78-80.

142 *Challenge and Commitment*, 6.

143 Paul George, "Arctic defence too hard to handle?" *Globe and Mail*, 12 March 1987, A7.

144 Honderich, *Arctic Imperative*, 90.

145 Jockel, *Security to the North*, 162. For a description of the difficulties of submarine operations in the North see W.G. Lalore, "Submarine Through the North Pole," *National Geographic Magazine* (January 1959): 2-24; and J.F. Calvert, "Up Through the Ice of the North Pole," *National Geographic Magazine* (July 1959): 1-41.

146 Jockel, *Security to the North*, 193. He also stated that "the emphasis on sovereignty protection can pose two long term future problems for the United States. First, Canada can devote its very scarce military resources to presence rather than military mission, knowing that the United States can be counted on, in the final analysis, for defence."

147 Canada, *1994 Defence White Paper* (Ottawa: DND, 1994), 15.

148 Canada, *Defence Planning Guidance 1998* (Ottawa: DND, 1997), 1-1. 55.

149 Adam Lajeunesse, "The CAF Returns to the Arctic, 2000-2006," in Adam Lajeunesse and P. Whitney Lackenbauer, eds., *Canadian Armed Forces Arctic Operations, 1941-2015* (Fredericton, NB: The Gregg Centre, 2017), 308.

150 *Ibid.*, 307.

151 Cited in P. Whitney Lackenbauer and Adam Lajeunesse, "The Canadian Armed Forces in the Arctic: Building Appropriate Capabilities," *Journal of Military and Strategic Studies*, Vol. 16, Issue 4 (2016): 60.

152 Lajeunesse, "The CAF Returns...", 321.

153 Adam Lajeunesse, "The Arctic Response Company Groups: Presence and Mass," in Adam Lajeunesse and P. Whitney Lackenbauer, eds., *Canadian Armed Forces Arctic Operations, 1941-2015* (Fredericton, NB: The Gregg Centre, 2017), 334-336. Lajeunesse explained, "The potential for actual combat in an Arctic environment was dismissed, with the focus placed instead on providing support to those OGD with the response mandate in most of the situations in which the ARCGs might participate. At its most basic level, the ARCGs were designed to provide the CAF with a strategic reserve of soldiers trained and equipped for Arctic operations. As the CAF discovered over the decades, the average untrained soldier is worse than useless in harsh Arctic conditions. Untrained and poorly equipped men deployed north are net consumers of energy, meaning that the time and energy spent keeping them alive is greater than the energy that those troops can contribute to any operation. Deploying inexperienced soldiers to assist a stranded cruise ship or

downed aircraft could make a dangerous situation even worse. The ARCGs' training is intended to create units comfortable enough with the Arctic environment that they can take care of themselves and retain enough energy to render assistance to others, essentially to be net contributors in an emergency."

154 DND operates three Forward Operating Locations (FOL) in Yellowknife, Inuvik, and Iqaluit, which can accommodate fighter aircraft and other assets supporting NORAD operational requirements and exercises on a temporary basis. The country's two main air bases in the Arctic, in Inuvik and Iqaluit, are over 2,800km apart. The NORAD FOL at Inuvik Airport has hangar space for up to six fighter aircraft, and was activated for service in 1994. The airport is the only one in Canada with a paved runway that lies north of the Arctic Circle. See Steve Chase and Robert Fife, "Ottawa buys Arctic hangar next to NORAD base after Chinese, Russian interest," *The Globe and Mail*, 8 July 2024, <https://www.theglobeandmail.com/politics/article-ottawa-buys-arctic-hangar-next-to-norad-base-after-chinese-russian/>, accessed 10 July 2024.

155 Canada, *Canada First Defence Strategy* (Ottawa: DND, 2008), 4, 6, 17-18.

156 Lajeunesse, "The Arctic Response Company Groups," 331.

157 "Harper on Arctic: 'Use it or lose it.'" *Times Colonist (Victoria)*, 10 July 2007, cited in Paal Sigurd Hilde, "The 'New' Arctic: Military Implications," in P. Whitney Lackenbauer, Ryan Dean and Rob Huebert, eds., *(Re)Conceptualizing Arctic Security* (Calgary, AB: University of Calgary, 2017), 101.

158 Canada, *Canada's Northern Strategy: Our North, Our Heritage, Our Future* (Ottawa: Indian & Northern Affairs, 2009), 9, <http://www.northernstrategy.gc.ca/cns/cns.pdf>. The strategy had four pillars:

- Exercising our Arctic sovereignty;
- Promoting social and economic development;
- Protecting the North's environmental heritage; and
- Improving and devolving northern governance.

159 Michael Byers and Nicole Covey, "Opinion: This is what Canada needs in the Arctic," *National Post*, 16 December 2019, <https://nationalpost.com/opinion/opinion-this-is-what-canada-needs-in-the-arctic>, accessed 21 December 2019.

160 "Nanisivik Naval Facility was first announced in 2007," *CBC News*, 19 January 2023, <https://www.cbc.ca/news/canada/north/nanisivik-naval-base-nunavut-2023-update-1.6717971>, accessed 26 June 2024.

161 Michael Byers and Nicole Covey, "Opinion: This is what Canada needs in the Arctic," *National Post*, 16 December 2019, <https://nationalpost.com/opinion/opinion-this-is-what-canada-needs-in-the-arctic>, accessed 21 December 2019.

162 Canadian Coast Guard, "Government of Canada announces Polar Icebreakers to enhance Canada's Arctic presence and provide critical services to Canadians," News Release, 6 May 2021, <https://www.canada.ca/en/canadian-coast-guard/news/2021/05/government-of-canada-announces-polar-icebreakers-to-enhance-canadas-arctic-presence-and-provide-critical-services-to-canadians.html>, accessed 5 July 2024.

163 Cited in Marie Woolf, “Canada’s defence chief warns Russia has reoccupied Arctic bases,” *Global News*, 10 March 2022, <https://globalnews.ca/news/8674752/canada-defence-minister-russia-cold-war-bases/>, accessed 12 March 2022.

164 Steve Chase and Robert Fife, “Ottawa buys Arctic hangar next to NORAD base after Chinese, Russian interest,” *The Globe and Mail*, 8 July 2024, <https://www.theglobeandmail.com/politics/article-ottawa-buys-arctic-hangar-next-to-norad-base-after-chinese-russian/>, accessed 10 July 2024.

165 Piotr Szymanski, *NATO’s Polar Quartet. The US, Canada, Denmark and Norway in the Arctic* (Warsaw: Centre for Eastern Studies (OSW) Report, March 2023), 38.

166 Canada, *Our North, Strong and Free: A Renewed Vision for Canada’s Defence* (Ottawa: DND, 2024), viii.

167 *Ibid.*, viii.

168 Tamara Lorincz, “Canada’s militarization of the Arctic threatens Indigenous communities and the climate,” *Canadian Dimension*, 17 June 2024, <https://canadiandimension.com/articles/view/canadas-militarization-of-the-arctic-threatens-indigenous-communities-and-the-climate>, accessed 26 June 2024.

169 The policy also states that the Canadian government will enter boundary negotiations with the U.S. over the Beaufort Sea, as well as finalizing a boundary agreement with Denmark regarding Hans Island. Emma Tranter, “Canada to open consulates, appoint Arctic ambassador under new foreign policy officially launched Friday,” *CBC News*, 6 December 2024, <https://www.cbc.ca/news/canada/north/canada-launches-arctic-foreign-policy-1.7402759>, accessed 17 December 2024; and Sean Boynton, “Canada to release new Arctic foreign policy for ‘tougher’ world: Joly,” *Global News*, 5 December 2024, <https://globalnews.ca/news/10903682/arctic-foreign-policy-melanie-joly/>, accessed 6 December 2024.

170 Tranter, “Canada to open consulates.”

171 *Ibid.*

172 *Our North, Strong and Free*, 11. The defence policy situates the requirement as follows:

In our North, we need to confront the reality of climate change. Our Arctic is warming at four times the global average, opening the region to the world, which was previously protected by the Polar Ice Cap year-round. By 2050, the Arctic Ocean could become the most efficient shipping route between Europe and East Asia. We are seeing greater Russian activity in our air approaches, and a growing number of Chinese vessels and surveillance platforms are mapping and collecting data about the region. Meanwhile, states are rapidly building up their military capabilities in ways that impact our security in the Arctic—including submarines, long-range aircraft and hypersonic missiles that move faster and are harder to detect. As the Arctic becomes more accessible to foreign actors, we need to ensure our military has the tools to assert our sovereignty and protect Canada’s interests.

Canada, *Our North, Strong and Free*, iv, 4.

173 Ibid., 4.

174 David Baxter, "How Do Canadians View the Military? Most See It As 'Old and Antiquated,' Poll Finds," *Global News*, 5 August 2023, <https://globalnews.ca/news/9874896/canadian-armed-forces-ipsos-poll-august-2023/>, accessed 18 June 2024.

CHAPTER 2

SOF ADAPTATION TO OPERATING IN THE ARCTIC: WHY AND HOW

Lieutenant-General (retired) D. Michael Day

It would be overly simple to suggest that SOF must adapt because nation states are adapting, but at the very core of the argument this is the harsh reality.¹ Inarguably militaries around the world have enjoyed, and used, the false luxury of ignoring the Arctic as a harsh inhospitable place (albeit beautiful) that is impermissible to military operations, as opposed to accepting that it is inevitable as a future operating environment.

A combination of three macro elements has forced a re-examination of those perceptions. Firstly, the reemergence of great power struggle or merely the realization that it never disappeared has once again accentuated the Arctic's strategic geolocation.² The Arctic region will be one of the domains in which the renewal of this struggle is played out. Secondly, climate change is changing the accessibility to, and use of, the Arctic.³ Whilst deliberately ignoring the attribution of cause and the false cloudiness associated with that debate, year over year, decade over decade, records indisputably show the Arctic is experiencing the impacts of climate change at a relatively accelerated rate.⁴

These changes provide a challenging dynamic between the acceleration of such change and the time it takes for a military to develop new capabilities. Measuring these two factors against each other results in the conclusion that the opportunity to work in a Phase 0 type setting has passed us by and that we are no longer in the preparation phase: we are reacting. Never a good place to be on the battlefield.

Thirdly and lastly, technology has enabled the use and exploitation of the Arctic in two ways. The ability to, with increasing confidence, identify that the material / mineral worth of the region has soared and with it so too has the ability to access this region. Essentially, we know more and can do more as enabled by technology.⁵

Under the pressures of great power competition, climate change and rapid technological evolution, the Arctic region is seen to have two macro values: firstly, as a transit route and secondly as a physical domain, ripe to be exploited for its potential natural resource wealth.⁶ Both elements pose specific security challenges that despite having been much discussed have not resulted in any fundamental change to the force structure and associated capabilities of western militaries. This oversight is not to ignore the opportunity cost of developing Arctic capabilities and does not suggest that other alligators considerably closer to the boat should be ignored but rather to highlight that climate and a lack of technological wherewithal are no longer the insulating factors that once “allowed” tokenism.

Time is no longer on our side. Two time vectors are driving towards each. The acceleration of climate change and technology evolution motivated by the ever-evolving great power dynamic is pitted against the considerable amount of time militaries need to conceive, design and implement new capabilities. This is not merely a SOF issue as SOF’s internal challenge is exacerbated by the reluctance of conventional forces to reorient, an amplifying impact given SOF’s reliance on enablers from their sister services. Each of these elements deserves an, albeit brief, examination to underscore the imperative to adapt and subsequently shape, the evolution of force structure, including capabilities,⁷ towards Arctic operations and to do so on an accelerated timeline.

Despite the added challenge, and somewhat distractive nature, that violent extremist organizations (VEO) have introduced over the first two decades of the millennium, great power competition has unceasingly remained the backdrop for international engagement.⁸ The Arctic security challenge is analogous in this regard in that it has suffered from the redirection of attention and resources to address both the VEOs around the globe and more recently the rewarming of proxy conflicts in the great power struggle such as Ukraine and Russia, Syria, the ever-weeping sore of North Korea and an increasingly belligerent China on the Taiwan issue to name but a few.

No value judgement is attempted with regards to identification of priority but rather to observe that in the zero-sum game of finite resources the seemingly endless appetite of feeding the political imperative of addressing the VEO threat resulted in a starving of any effort to meet other

strategic objectives for the first 15 years of this millennium and more recently has been wholly absorbed by a refocusing on regional conflicts that have strategic consequences. It is unsurprising that the strategic, previously argued longer-term threats and vulnerabilities associated with the Arctic, have been reduced to a severe economy of effort where there was no assessment of a “clear and present danger.”

Since this primary focus on VEOs, a lingering consequence of 9/11 and U.S. actions in both Afghanistan and Iraq, the world has seen the global Financial Crisis in 2008, a COVID pandemic, a Russian invasion (in stages) of Ukraine, and increased Chinese assertiveness in the South China Sea, amongst other events, which resulted in an explicit reemergence in the U.S. National Security Strategy of designating China and Russia as strategic competitors in 2017,⁹ and the AUKUS agreement (2021)¹⁰ to counter China in the Indo Pacific.

Concurrently, China has, amongst other initiatives, included in its Belts and Roads Initiative (BRI) specific reference to it being a “near-Arctic state” and identifying the Polar Silk Road (to include Arctic Trade routes) as being integral to their global infrastructure.¹¹ Russia remains a global leader in overall tonnage and activity in the Arctic but China, despite not having any ice bound ports, is “snapping at Russia’s heels.”

When viewed through the lens of the Arctic as a transit corridor it is clear that using the Northern Sea route provides a massive cost and time savings.¹² Measured by today’s standard there are many who will point to the extant challenges the use of such routes entail. This approach of course misses the point. Northern routes were not accessible 20 years, today they are being used, albeit sporadically, and any modelling of Arctic ice and weather patterns virtually guarantees an exponentially larger window of time during which such voyages can be undertaken.¹³

Increasingly Canada’s north will become a part of the contested international commons. To underline Canada’s, euphemistically, lack of urgency one need only review the decades long discussion on heavy ice breakers.¹⁴ In terms of transit routes all the supporting capabilities are under development that result in the Arctic being added to the list of the previously seven but now inarguably eight maritime strategic chokepoints.

But getting through the Arctic is not the sole element in which great powers are interested. What was often speculated upon has now increasingly been verified by increasingly sophisticated surveillance and assessment capabilities: The Arctic is a natural resources mother lode. "The U.S. Geological Survey and Norwegian company StatoilHydro estimate that the Arctic holds as much as one quarter of the world's undiscovered oil and gas deposits."¹⁵ By comparison Saudi Arabia, a dominant player in the global energy markets has 17 per cent of the world's proven petroleum reserves.¹⁶ The normal citizen may have an abiding affection for polar bears but global powers make decisions based, in part, on energy sources. Despite Canada's claims of ownership, given the reality of what ownership means in terms of access to future wealth for those who do not accept Canada's claim, it would be a sound planning assumption that the requirement to demonstrate sovereignty will require more than dramatic political rhetoric can achieve.

With the basis of the expansion of great power competition to the Arctic and the rationale formed on its value as both a transit and deposit resource the element of climate change can be superimposed to further accentuate the importance of timelines whilst concurrently underlining the feasibility of increasing viability of transit and extraction of resources. "During the last 43 years the Arctic has been warming nearly four times faster than the globe... areas in the Eurasian sector of the Arctic Ocean have warmed even up to seven times as fast."¹⁷ There appears to be a great deal of work in admiring the problem this evolution has created but little to no work, at least in Canada and other members of the Arctic council, of preparing for what appears to be the inevitable consequences. For example, the Arctic Council's work reveals a great deal of study to scope and understand the issue and little if anything to address the consequences.¹⁸

Canada's recently released Arctic Foreign Policy placed a premium on establishing Consulates and even more fora for better diplomatic conversation.¹⁹ Not the type of activity that would, at first glance, appear to prepare Canadian for actual operations in the Arctic. What is clear is that the Arctic is getting warmer, staying warmer for longer and that permanent ice is rapidly shrinking and being replaced by seasonal ice.²⁰ All of these consequences not just allow, but rather encourage, state actors to reconsider the viability of operating in the Arctic and reassess that the

cost / benefit analysis which previously has dissuaded any meaningful action. The dynamic has changed so significantly as to force a fundamental change in their overall strategies. Having said that, the cost / benefit analysis has concluded that extraction is not yet commercially viable.

In 2013, the Arctic council noted that global prices, extraction costs and regional tensions all contribute to this dynamic.²¹ But, there remain clear trend lines that suggest that the first two factors will continue to tilt in favour of increased investment. One of the dominant elements in reducing the extraction costs remains the rapidly changing, and therefore (relatively) increasingly hospitable conditions. Although some governments have moved to protect the Arctic environment from exploitation, such as the Biden administration's restrictions on drilling and mining in the western arctic,²² there is little doubt these should be seen as temporary measures that will be overturned under a Trump presidency that has promised to "Drill, Drill, Drill."

Despite what would appear to be hard scientific observations concerning climate change, reactions remain ideological and therefore subject to change with political preferences. This reality plays out in two different ways, climate change realities are allowing for greater exploitation of natural resources in the Arctic, and climate change deniers reject the purported impact of further fossil fuel extraction and move to enable an accelerated schedule. It is ironic that the consequence of climate change now appears to be greater environmental exploitation opportunities enabled by fewer restrictions.

Technological development provides the third leg of the stool that supports a rapid advancement of the Arctic as a strategically critical domain. At the core of this progress is the combination of better technological analysis fueled by better modelling, increased attention to the shortfall in communications in the north, and improved construction methodologies enabling the establishment of supporting infrastructure. The digitization and automation of much of the extractive industry provided an "explosion of growth in the United States during the shale revolution ... with the most significant production technologies including ... deepwater water drilling."²³ Like many sectors that were challenged by operating environments, technology has been effectively adopted to

not just cut costs but also increase the viability of extracting resources from what were previously inaccessible locations.

It may be reasonably asked if consideration of great power competition, climate change and technological evolution are actually germane to SOF. In response one must return to the core question of the strategic relevance SOF aspires to maintain. To do so SOF must firstly be able to anticipate what is strategically relevant and why and thereafter develop, in a timely manner, responses that are relevant to their governments. The inescapable planning assumption must be that the Arctic will continue to increase in real and relative importance to governments around the world and most especially those physically implicated in this region, including those involved in the great power competition. Superimposing the unvoiced but always active rule that “what interests our governments must fascinate us” and combined with an ever-accelerating time scale, the inescapable conclusion is that it is time to get ready.

WHAT TO DO / HOW TO DO IT?

Whenever a military force considers evolving to address new challenges there has always been a challenge to determine how much of the old to keep, what to discard, how much to adapt and what new elements must be brought in. History is rife with dinosaurs arguing against change. Armies loved their horses and massed bayonet charges; Air Forces remain in a committed relationship to airbreathing platforms; Navies struggled to transition from sail to steam. SOF has internally suffered its own internal debates. Shifting between being kinetic strike masters or hearts and minds influencers has often and needlessly distracted us. At the core of it all, these were, and remain, merely tasks of varying importance based on need and occasion.

The more central question is how the core capability sets can be considered through an Arctic lens. Historically SOF have excelled based on a disproportionate impact relative to limited resources, an ability to operate and take advantage of asymmetric warfare, the political and psychological impact that comes with small elements achieving great success, and inherent flexibility where governments have come to believe that SOF are capable of responding to anything. These elements combine to be a

fungible symbol of national power projection. There is always a message sent with the awareness that SOF elements have been deployed.

Coupled with these core abilities, consideration of a potential task list can be measured against strategic need. Several elements seem to define the operating environment: massive swathes of geography,²⁴ intensively variable weather,²⁵ extraordinarily low population densities, little to no supporting infrastructure, and finally, the still underdeveloped communications architecture.²⁶

So, there are three elements of a strategic equation to solve in order to identify what can be done: National Strategic Interest, Historic / Proven Core Capabilities, and Operating Environment. But a fourth element helps inform the value proposition: why SOF and not some other element? Specifically, what can SOF do that others can't, or perhaps more accurately that others can't do as well without a significant retooling of capability sets and culture. These four elements create a conceptual manoeuvre box.

To fit into this conceptual manoeuvre box, we have created what appears to be a ready-made start point based on what should be a universally accepted truism. Any assessment of the Arctic as an operating environment and the capabilities needed to operate there, should invariably and quickly lead to the acceptance that no amount of training will allow any military force, including SOF operators, to replicate let alone improve on the Indigenous population's ability to live and operate in the Arctic. Recognizing the combination of permanent residency and the accumulated wisdom of countless generations more than suggest the idiocy of such a notion.

However, what can be done is to augment those innate skills (whilst concurrently learning from them) with SOF-specific talents. Embedding SOF teams into Indigenous communities to work with Elders and Ranger patrols allows for a capturing of best practices on both sides. If we pause for a moment and consider what defines SOF²⁷ and then consider the Indigenous Ranger Patrols,²⁸ we would find a remarkable similarity.²⁹ Our SOF operators can learn from Indigenous elements while bringing to them assessment, planning, surveillance, communication, medical, and community support skill sets.

As with any integrated team, this would appear to be most effective when based on long-term personal relationships where mutual trust, understanding and confidence is developed over an extended period. An evolution of the Unconventional Warfare (UW) / Foreign Internal Defence (FID) model but in a domestic sense is a viable option. This combined capability set can then be tailored to any number of scenarios. After creating this environment, specific and unique combined expertise, subsequent consideration of mission sets and consequential needed capabilities could be initiated from an immeasurably better start point.

The Arctic is a rapidly changing environment. This alteration is affected by multiple vectors impelled by great power competition, climate change and technological development. Each of these factors has momentum and a degree of inevitability that has been ignored for far too long. Although the law of finite resources, the associated real life opportunity cost and the individual and collective aversion of working in the Arctic has encouraged us to look elsewhere, the reality is that SOF is not prepared to operate in the north and we are playing catch up.

Notwithstanding the Arctic's rapidly growing strategic value, today's situation and demand pales in comparison to what SOF will face as a strategic imperative in 20 years' time. Going forward we need SOF elements who are not adapting to this dynamic but rather who view operating in the Arctic as a core, fundamental skill set without which they are incomplete. SOF has repeatedly proven its ability to adapt to new challenges and environments. There is no more demanding environment than the Arctic where mere survival is sometimes the mark of success. Fortunately, there is an opportunity to leapfrog over the gap that has been created by a lack of attention. We can reasonably expect to operate in the Arctic on an ever more frequent basis and at some stage, in the future, on a permanent basis. With a growing strategic imperative and a ready-made partner uniquely designed to enable this transition, SOF's main challenge is internalizing this reality. When elected political leadership comes demanding capability, we have the choice of responding based on some level of preparation or to respond reactively and therefore sub-optimally and with less strategic relevance. The former approach allows us to shape our environment and employment, the latter leaves us at the mercy of immediacy and all the associated pitfalls.

ENDNOTES

- 1 Greg Smith, "NATO Adapting: A Return to Peer Competition," in Marc Ozawa, ed., *The Alliance Five Years after Crimea: Implementing the Wales Summit Pledges* (Rome: NATO Defense College, 2019), <http://www.jstor.org/stable/resrep23664.9>.
- 2 Scott Savitz, "Strategic Competition in the Arctic," *European Security and Defence, International Security and Defence Journal*, October 2022.
- 3 Lassi Heininen, "Climate Change and the Great Power Rivalry in the Arctic," *Insight Turkey*, Vol. 24, No. 2 (2022): 25-38, <https://www.jstor.org/stable/48678904>.
- 4 Reviewing and comparing the science from the early millennium to that produced in the last two years indicates that even the most dramatic claims of 20 years ago made about the timeframe of climate change impact in the Arctic have been demonstrated to be at the low end of current day projections. See Melinda A. Webster, Ignatius Rigor, and Nicholas C. Wright, "Observing Arctic Sea Ice," *Oceanography*, Vol. 35, No. 3/4 (2022): 29-37, <https://www.jstor.org/stable/27182692>.
- 5 Rasmus, G. Bertelsen, "Space Science & Technology in the Arctic: Promises of Cooperation and Development amid New Security Challenges," *IFAC-Papers OnLine*, Vol. 54, Issue 13 (2021): 19-22, <https://doi.org/10.1016/j.ifacol.2021.10.411>.
- 6 Moe Arild, "Arctic Minerals and Sea Routes," *Konrad Adenauer Stiftung*, 18 April 2023, <https://www.kas.de/en/web/auslandsinformationen/artikel/detail/-/content/bodenschaetze-und-seewege-in-der-arktis>.
- 7 For the purposes of this chapter the development and provision of military capabilities result from the following "Personnel x Training x Equipment x Supporting Services and Infrastructure." Although it is possible to compensate, to some degree, a relative lack in one area by an enhancement in another, there is a minimum level required in each and should one element in the equation be zero then there is no capability whatsoever. At the moment, one could argue that, with the exception of Scandinavian countries, no Western power has an Arctic SOF capability.
- 8 Alexander L. Vuving, ed., "Great Power Competition: Lessons From The Past, Implications For The Future." *Hindsight, Insight, Foresight: Thinking About Security in The Indo-Pacific*, (Honolulu: Daniel K. Inouye....Studies, 2020), <http://www.jstor.org/stable/resrep26667.7>.
- 9 *National Security Strategy of the United States of America*, (Washington D.C.: White House, December 2017), <https://trumpwhitehouse.archives.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905-2.pdf>.
- 10 House of Commons Library, "The AUKUS Agreement," <https://commonslibrary.parliament.uk/research-briefings/cbp-9335/>.
- 11 James McBride, Noah Berman, "China's Massive Belt and Road Initiative," *Council on Foreign Relations*, 2 February 2023, <https://www.cfr.org/backgrounder/chinas-massive-belt-and-road-initiative>.

- 12 Adrian Piecky, "A Bridge Across Two Oceans: The Arctic Challenge to Panama Canal Shipping," *The Arctic Institute*, 7 January 2012, <https://www.thearcticinstitute.org/bridge-across-two-oceans-arctic-challenge-panama-canal-shipping/>.
- 13 Luke Copeland et al., "Changes in shipping navigability in the Canadian Arctic between 1972 and 2016," *Facets*, 30 June 2021, Volume 6, <https://www.facetsjournal.com/doi/10.1139/facets-2020-0096>.
- 14 Michael Byer, "Why Canada's search for an icebreaker is an Arctic embarrassment," *The Globe and Mail*, 21 January 2014, <https://www.theglobeandmail.com/news/national/the-north/why-canadas-search-for-an-icebreaker-is-an-arctic-embarrassment/article16425755/?login=true>.
- 15 Scott G. Borgerson, "Arctic Meltdown: The Economic and Security Implications of Global Warming," *Foreign Affairs*, Vol. 87, No. 2 (2008): 63-77, <http://www.jstor.org/stable/20032581>.
- 16 See: <https://investingnews.com/daily/resource-investing/energy-investing/oil-and-gas-investing/top-oil-producing-countries/>.
- 17 M. Rantanen, A.Y. Karpechko, and A. Lipponen, "The Arctic has warmed nearly four times faster than the globe since 1979," *Commun Earth Environ*, Vol. 3, No. 168 (2022), <https://doi.org/10.1038/s43247-022-00498-3>.
- 18 See: <https://arctic-council.org/explore/topics/climate/>.
- 19 See: <https://www.international.gc.ca/gac-amc/publications/transparency-transparence/arctic-arctique/arctic-policy-politique-arctique.aspx?lang=eng>.
- 20 See: <https://americanscience.org/article/view?id=1595>; and <https://www.pbs.org/newshour/science/the-arctic-has-seen-worrying-rapid-changes-in-just-a-couple-of-decades-2024-report-shows>.
- 21 Andreas Osthagen, "Arctic Oil and Gas: assessing the potential for Hydrocarbon Development in the Polar Region," 16 April 2013, <https://www.thearcticinstitute.org/arctic-oil-gas-hype-reality/>.
- 22 U.S. Department of the Interior, "Biden-Harris Administration Takes Critical Action to Protect Alaska Native Subsistence, Lands and Wildlife," 19 April 2024, <https://www.doi.gov/pressreleases/biden-harris-administration-takes-critical-action-protect-alaska-native-subsistence>.
- 23 "New Oil and Gas Production Technologies," <https://www.strausscenter.org/energy-and-security-project/new-oil-and-gas-production-technologies/>.
- 24 Canada's Arctic geography is some 40 per cent of its total land mass and is some 4.4 million Km². If it was a standalone country it would be the seventh largest in the world, massing more area than India!
- 25 Notwithstanding the aforementioned discussion on climate change the average temperature in Resolute Bay is 16.2 degrees Celsius with a variance of between 36 degrees in February and 8 degrees in July, <https://www.timeanddate.com/weather/canada/resolute/climate>.

26 Lack of effective communications has been a generational challenge and is changing. In the foreseeable future reasonable space-based infrastructure will be in place and therefore will be less of a restraint on the planning and conduct of operations, <https://oaarchive.arctic-council.org/server/api/core/bitstreams/08f2791c-5157-48f2-a340-917d1ec3cfd6/content>.

27 Special operations are military activities conducted by specially designated, organized, trained and equipped forces using distinct techniques and modes of employment. These activities can be conducted independently or in conjunction with conventional forces, interagency partners, or local or surrogate forces. Most SOF operations require non-SOF support, https://www.nato.int/cps/en/natohq/topics_105950.htm.

28 See: <https://www.canada.ca/en/ombudsman-national-defence-forces/education-information/caf-members/career/canadian-rangers.html>.

29 The underlying commonality of a specially trained, equipped and selected cadre, underpinned by a reliance on a team effort and culture, readily fits both communities.

CHAPTER 3

SOF IN THE NORTH AMERICAN ARCTIC: MEETING 21ST CENTURY SECURITY NEEDS

Dr. James R. Morton, Jr., Troy J. Bouffard and
Dr. P. Whitney Lackenbauer

In recent years, North American defence experts have initiated discussions about how SOF could be employed as a strategic resource to protect national interests and communicate to the international community the commitment of Canada and the United States in defending their homelands. This requirement means that special operations forces (SOF) must be effective in conducting their range of capabilities and responsibilities under extreme environmental, adversarial, and cultural circumstances. However, there is scant literature that examines SOF readiness and posture to operate in the Arctic (and on the role of defending the homeland of the North American region more specifically).

Our project sought to develop a baseline understanding of how Canadian and U.S. special operations commands can meet the emerging security needs, challenges, and threats to the North American Arctic in the 21st century. The initial literature review began in the fall of 2021 and then segued into a discussion among subject matter experts about emergent perspectives on the role and readiness of SOF to defend the North American continent and adjacent waters. The Center for Arctic Security and Resilience (CASR), in partnership with the North American and Arctic Defence and Security Network (NAADSN), secured funding from the Department of National Defence (DND) Mobilizing Insights in National Defence and Security (MINDS) program to engage researchers from Canada and U.S. academic institutions who concentrated on a regional strategic level rather than individual SOF commands or units.

This overview chapter outlines the findings of our analytical effort into discerning how SOF are positioned to meet security needs in the North

American Arctic, currently and in the near future. Our primary data source came from the discussions with the SOF community during a roundtable convened (on a non-attribution basis) with key military leaders and senior SOF scholars in April 2022. A larger report¹ defines essential terms and then presents a basic orientation to SOF organizations in North America,² the historical background of SOF in the Arctic, as well as articulating a theoretical framework and our methodology for collecting and analyzing data. Our discussion in this chapter lays out four general themes that emerged from our literature review and expert discussions: exceptionalism of the Arctic environment; keeping pace with Arctic security threats and concerns; addressing gaps in SOF Arctic doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policies (DOTMLPF-P); and engaging Arctic security cooperation. We end with a short reflection on how our findings can contribute to the larger conversation on how SOF could build on current efforts to prepare and secure the northernmost expanses of North America.

In general, special operations forces are military units organized and sourced to conduct special operations that execute precise, discreet, and scalable options that can be synchronized with activities as part of a government's objectives.³ Special reconnaissance, precise direct actions, information operations, and civil engagements are examples of SOF missions. The discreet nature of their missions differentiates SOF from conventional forces who have larger operational footprints, a longer support chain, and greater sustainment requirements. Because SOF have a smaller tactical footprint, operate with limited resources, and have comparably light logistical support, they can tailor operations that may otherwise be too difficult for conventional forces to execute with requisite precision and discretion.⁴

The essential understanding here is the intimate nature and need for integration into existing structures to enable SOF to establish effective relationships to gain a greater understanding of the sensitive social, cultural, and political dynamics of an operational environment. More substantive relationships translate into greater knowledge and understanding of the context and climate of a given environment. Furthermore, SOF adapt their tactics, techniques, and procedures (TTPs) according to time, space, purpose, and conditions. As the North American Tripoint

(Canada, the United States, and Denmark) looks to expand its operational footprint in the Arctic and improve its capacity to operate in extreme cold, SOF will be critical for gaining the requisite knowledge and skills to thrive in the Arctic.

EXCEPTIONALISM OF THE ARCTIC ENVIRONMENT

There is a general consensus in the scientific community that the climate in the Arctic is warming three to four times faster than in other regions.⁵ This in and of itself is exceptional when comparing historical climate influences on the Arctic. Furthermore, global warming has increased commercial and military interests, including changing patterns and volume of vessel traffic in and through the Arctic. The Arctic maritime domain will likely become more accessible as technologies advance and higher temperatures further degrade the sea ice in the future.

This theme captures how Arctic variations and challenges pose distinct challenges to sustaining human activity, which we group into three subthemes: a) climate challenges in the Arctic, b) expanding economic activities, and c) operating in Arctic conditions. These are common themes throughout this volume, so we will keep our discussion general.

Despite significant warming in the Arctic, extreme cold weather in the winter and shoulder seasons makes the region exceptionally demanding for operators.⁶ Forces require significant planning, preparing, conditioning, executing, and recovering from operational activities in Arctic cold weather conditions.⁷ Additionally, there is an entire problem set associated with the constitution of material composites and operations systems that can tolerate and adequately function in temperatures below -40°C. This is a critical vulnerability to SOF operations in the Arctic. One senior leader commented how “the harsh Arctic environment poses extreme operational challenges that constrain our options and need to be considered at every stage of decision-making.” Another leader identified how the climate and weather are dynamic in the region, necessitating that SOF “flex rapidly to an evolving Arctic environment.”

Experts also emphasized that “the Arctic” is not an undifferentiated geophysical space. Different Arctic subregions have distinct characteristics.⁸ “The Alaskan Arctic is different than the European High North,”

one participant noted, “and being able to operate one does not mean you’re ready to upgrade to another.” The same was echoed for Canada’s Arctic area as well. Participants also highlighted how a combination of warmer weather and advanced technologies are making the Arctic more “accessible,”⁹ heightening the region’s strategic and economic importance. Because of the perceived increased accessibility of the Arctic, the region is attracting greater interest from non-Arctic nation states, scientists, and commercial interests. One senior leader observed that “we’re seeing an increase in economical as well as tourist activity in the north, and a lot of cruise ship companies have invested in quite expensive Arctic cruise ships.” This trend was noted to be due, in part, to ideas about a more accessible Northwest Passage,¹⁰ which “raises the specter of increased traffic, competition, and conflicting sovereignty claims.”

This dynamic environment has implications for how SOF consider, plan for, approach, and work in the Arctic. Environmental changes influence nation state and commercial activities which may generate environmental crises, conflicts over the control of resources, and incidental mishaps that could emerge from increased activity. Accordingly, the highly dynamic climate, extreme cold weather, and increased military and economic activities in the Arctic make multi-domain awareness essential to keep up with conditions and activities within the region. The most significant aspect of this finding is not that such dynamics exist but rather the implications for how nation state behaviours will be tracked, rules of law enforced, and how others will react.

KEEPING PACE WITH ARCTIC SECURITY THREATS AND CONCERNS

SOF leaders and planners must wrestle with the variability of what constitutes threats and concerns. Global warming has stimulated more activities by nation states, commercial enterprises, and other actors who aim to capitalize on perceived regional accessibility while promoting their self-interests. From the North American security lens, concerns involve near-peer competitive nations’ activities in the Arctic, sovereign rights claims to extended outer continental shelves beyond 200-nautical mile exclusive economic zones (EEZ), and commercial activities and

resource controls.¹¹ We delineated three subthemes: a) nation state systems, b) vulnerable populations, and c) sovereignty. Participants identified a change observed in how nation state actors influence and shape activities in the Arctic, as well as the vulnerability of populations living in the High North in Canada and Alaska – Indigenous communities in particular.

Participants distinguished between what Dr. Whitney Lackenbauer has characterized as threats “through, to, and in” the Arctic.¹² The Arctic is a longstanding avenue of approach to North America in the air and sea domains, and Russia’s further invasion of Ukraine in February 2022, has exacerbated concerns about Russian behaviour in the Arctic. One senior leader noted how “the Arctic has just taken a new strategic significance with the advance in Ukraine,” with “strategic competition ... driving many Arctic states, including Canada, to reevaluate defence policy and posture.” For some participants, the concerns centered around military threats, particularly in light of recent Russian aggression and revanchism. For others, concerns revolved around sovereignty and the ability of the North American allies to assert control over their territories and internal waters.

Russian Federation and the People’s Republic of China (PRC), the strategic competitors of the United States and Canada, are of primary interest. Participants emphasized how much territory Russia controls as an Arctic nation. A senior leader commented that “if we’re concerned [about Arctic security], which is not illogical, with Russia as the primary occupant of the Arctic, then we really need to pay a lot of attention.” Another participant reinforced this message, commenting on how “the folks up there living in Russia’s near-abroad, in close proximity to the Russian border, [are] genuinely concerned about nefarious activities with Russia.” Experts also highlighted increased Chinese activities in the Arctic as a source of concern. While China is not a “peer” in the Arctic,¹³ one participant highlighted how China’s 2018 Arctic White Paper “outlines an active role for itself in the Arctic and its economic ambitions including a polar growth and participation in the development of Arctic infrastructure.”

Not all participants, however, expressed concern about elevated military-to-military competition. Instead, some experts insisted that sovereignty issues (not strategic competition) in the form of overlapping extended

outer continental shelf claims and differing legal positions on the status of Arctic maritime routes may threaten national security.¹⁴ Canada's control of the Northwest Passage, which it considers historic internal waters, is a case in point. If the disappearing sea ice makes the region more accessible to vessel traffic,¹⁵ will other nation states challenge ownership to secure freedom of navigation in those waters? How will Canada respond in a manner that is proportionate to the challenge?

Commercial relations and associated activities are another grouping of concerns to consider when operating in the North American Arctic. First, it is necessary to build infrastructure and resources to support SOF operations, as conducting operations in the North requires a great deal of logistical support. Communities may be pressed to draw on their scarce resources to support military training or exercise activities. SOF and other military planners must consider what kind of burden this could have on local communities. Second, SOF must be prepared to address concerns related to commercial activities that may require rescue or intervention. Cruise ship activities, transportation of oil, and academic research are activities that could experience a mishap that would require some form of response. SOF involvement would more likely happen as a second or tertiary order of effect. Third, tracking and communication networks could be further developed to identify foreign entities engaging in commerce activities for intelligence collection or political leveraging purposes. Commercial activities can serve as a cover for foreign intelligence service (FIS) collection efforts, a common practice among state-sponsored intelligence agencies collecting information under the guise of conducting business or local commercial activities. This could pose a threat to SOF units as they train or exercise in the High North.

Maintaining multi-domain awareness is a complex and layered effort that SOF commanders, planners, and operators may need to further develop within the North American Arctic. Concerns about low-level collection efforts should be considered, and SOF units should sensitize their operators about possible FIS activities in their training or exercise areas.

The sovereign rights of Indigenous communities are another area that warrants greater attention. China has strategically forecasted mineral and protein needs as part of its global Belts and Roads Initiative, and some participants expressed concern about the prospect of Arctic Indigenous

communities or companies entering into an agreement with a PRC-controlled company. Such an arrangement could provide footholds for the PRC to secure resources or a sensor position to gather information in the area. The implications for national security are obvious.

Various participants emphasized the need to provide more support to Indigenous communities in the North American Arctic. A senior leader explained that “by [SOF] being up there [in the Arctic] on a regular basis, [it] really provided assurance to that particular population [northerners] that we do see a lot of value in the Arctic, we are going to be up here, and we are here to make sure that our collective defence between Canada and the United States is adequately protected from a military standpoint.” This reflection stems from his communications with Indigenous communities and the assessment that a military presence helps to address concerns related to military threats as well as human security and well-being.

ADDRESSING GAPS IN SOF ARCTIC DOTMLPF-P

The doctrine, operations, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) construct or model serves as an appropriate frame readying SOF to secure and defend the North American Arctic. The theme was organized into two subthemes: a) preparation for SOF to conduct operations in the Arctic and b) ensuring that SOF have the appropriate legal authority to conduct operations within their home country and among their own citizens.

Senior leaders explained the significant developments in positioning SOF to contribute as part of a larger effort to secure and defend the northern territories of North America. References were made to the increased service component of Arctic strategies, increased training in Arctic and sub-arctic conditions, and continued collaboration between different national forces. Other participants expressed a weightier concern about SOF being prepared to operate effectively in the Arctic in their current posture. The following comment illustrates that sense of frustration and concern:

There are challenges across the DOTMLPF-P spectrum, with the overall challenge being what is the SOF mission requirement in the Arctic or near-Arctic regions. To truly understand the SOF

requirement, one must have an understanding of the enemy threat and the operational environment. Compounding these overall challenges is the challenge of competing requirements. Arctic tourism has failed. To truly have a capability in this environment requires large investments of time, money, and effort. It will take sustained and high-level emphasis of this being a priority to truly address it.

The large investments, the participant argued, reflect the cumulative effect of not having SOF be prioritized to conduct operations in the Arctic.

SOF have a history of conducting cold weather operations, particularly during the Cold War.¹⁶ Nevertheless, meeting the challenges directly tied to the Arctic's climate and geopolitical dynamics requires a high degree of commitment. If defending the North American Arctic with SOF represents one of the strands of recent national strategic articulations about the importance of Arctic defence and security, the preparation of SOF units appears to require a substantial shift in prioritization to make them Arctic-ready.

When asked to identify challenges in preparing to conduct SOF operations in the Arctic, some respondents noted an absence of Arctic warfare doctrine that outlines roles, responsibilities, and metrics for readiness to conduct such operations. One U.S. participant stated that "no doctrine exists to guide training and validation pathways for SOF units in an Arctic environment, to include incorporating multi-domain operations in the Arctic." The same person highlighted that U.S. Special Forces units are validating their preparedness in sub-arctic conditions.

Canadian SOF experts echoed a similar need for doctrine and delineation of responsibilities for SOF, with one senior leader stating that "we are still figuring out the specific roles and tasks." Considering future SOF personnel, one participant posed the rhetorical question: "Are we going to readjust our force development mechanisms and our processes to make sure that the capabilities that we have today and will have in the future are fit for a purpose in the Arctic?" While we often only pay attention to force employment and force generation, "we need to apply enough thinking capacity towards the impact on force development, force

sustainment of our troops up north, and force management and how we support our troops.”

Another area related to funding to support SOF being Arctic-ready, a U.S. SOF leader stated that “while the different [service] components across the Department of Defense [DoD] have written Arctic strategies, we have yet to see these strategies fully funded which is creating a challenge.” Another leader expressed concern about equipping U.S. SOF units. He explained that there “obvious equipment issues exist in P2 and P11 funding.”¹⁷ He argued for “a somewhat standardized SOF equipment package that is a program of record, developed by Arctic experienced SOF leaders... [which] should be separated by Winter equipment and Summer equipment packages to address the vast differences.”

Despite the absence of an Arctic doctrine and force structure that is attuned to regional contexts, some U.S. and Canadian SOF participants indicated a continued focus “on maintaining high readiness, force projection capability in order to accomplish our SOF tasks which include counterterrorism, Maritime Special Operations, special reconnaissance, and direct action.” In short, SOF maintain a high degree of proficiency to meet SOF-related demands, irrelevant of location, but the absence of doctrine, force alignment, and evaluative criteria in Arctic conditions remains to be addressed.

Similar to the doctrinal gap, participants noted the absence of infrastructure capacities to facilitate the employment and sustainment of SOF in the Arctic. As noted by a senior leader, there is a growing concern on how local northern communities are affected when SOF units conduct training or exercises in proximity to these communities with limited resources. Drawing on fuel supplies, renting warm storage areas, and needing mechanical support strain these local communities, particularly when it may take weeks to replenish critical supplies.

Lastly, the North American Arctic involves Canadian, American, and Greenlandic citizens with rights and legal protections. For the U.S., there is a seam between preparing the operational environment and the conduct of war where some authorities are absent. The operational capabilities of U.S. Special Forces units have a unique capacity to develop

networks in foreign countries to support military action. Some American participants commented on a need to have authorities and permissions to prepare the North American Arctic operational environment and maintain domain awareness of it. One such person commented on the “lack of authorities to conduct SOF-specific tasks in [Alaska] during training and operations...” A senior leader reinforced that “a lesson learned is working with local law enforcement, which must continue to be developed and authorities and permissions must be addressed.”

It is worth noting that Canadian participants did not make any reference to particular challenges about legal authorities to conduct SOF operations on Canadian soil and amongst Canadian citizens. This could be a result of the issue already being remedied or of the clarity that the Canadian Special Operations Forces Command (CANSOFCOM) is gaining as it incorporates SOF mission sets in Canada. Nonetheless, it is beyond the scope of this project to illustrate this set of legal frameworks and the associated conflicts. Suffice to say, legal authorities and doctrinal maps are needed to position SOF to have domain awareness, prepare the operating environment, and understand legal boundaries given the unique position of SOF in defending their citizens on homeland soil.

ENGAGING ARCTIC SECURITY COOPERATION

For special operations to be effective in achieving strategic impact, they must develop and sustain critical relationships for more effective outcomes. The need for non-SOF unit support, collaborations with other intragovernmental agencies, and partnerships with foreign defence forces are just a few dimensions that SOF tie into, and rely on, to conduct their missions. The data reflected these considerations. SOF units typically undergo specialized training, have significant practical experience, and are robust in understanding and being effective in building essential relationships with the aim of understanding the operating environment, communicating with local citizens, and executing their tradecraft.

Participants identified and emphasized the central role of partnerships and relationships within the framework of security and defence across three subthemes: a) Indigenous Peoples, b) allies and governments, and c) other relationships.¹⁸ A senior SOF leader stated that, “in sum, we see

relationships as an integral component of SOF power. It's likely one of the most powerful tools that we can bring to bear."

Participants referenced the criticality of Indigenous communities being integrated into SOF efforts to prepare for and defend the Arctic. A senior SOF leader stated, "without the ability to leverage Indigenous [People] ... that are up there we would just be surviving, and we need to thrive in those environments." Another participant commented how SOF are learning how "the Indigenous [People] approach extreme cold weather." Because Arctic Indigenous Peoples live and function in an extreme cold weather on a persistent basis and understand the seasonal cycle in their homeland, there is much to learn for those who do not. Accordingly, experts highlighted the need for governments to expand and enhance collaborative relationships to build greater capacity with Indigenous communities and organizations at more localized levels.

References were made to how Indigenous communities are important to building SOF networks that include training and operations. A SOF operator explained that "Indigenous communities are the repositories of thousands of years of experience on how to effectively survive, live, and operate in these extremely harsh environments. This knowledge should be leveraged (similar to the Canadian Rangers...) to train SOF operators." The Canadian Rangers, which are the subject of a distinct chapter, are a Reserve organization comprised of individuals who live in remote communities and serve as a strategic reconnaissance screen, provide up-to-date information on activities within their areas of responsibility, respond to crises near them, and educate military forces on how best to thrive within the region.¹⁹

A SOF operator stated that "Indigenous communities are key both for securing the [North American] Arctic and for potential infiltration into the adversary's Arctic territories. This cooperation will have to be done through engagement with the tribal corporations, Indigenous governments, and the communities themselves." This partnership requires having "authorities and permissions in place to leverage Indigenous access and placement to increase domain awareness." This teamwork requires robust relationships. One participant noted that by "looking at Indigenous people and partners, we recognize that operations and exercises will only be possible through that mutually beneficial relationship."

When considering building more SOF presence in the Arctic, another senior leader emphasized that relationships need to be mutually beneficial, with communities benefitting from activities that address security needs. For instance, a Canadian participant noted that “when we do northern contracting, we try to ensure that there’s [effort made] for Indigenous companies that may be interested to compete in, as we’ve seen with North Warning System maintenance contract.”²⁰ Various participants noted that when planning, preparing, and operating in the Arctic, Indigenous rightsholder organizations must be consulted ahead of any planned exercise or training event. For example, Joint Task Force North (JTFN) coordinates with land claim organizations and other rightsholders to coordinate the timing and location for future training events.

Relationships among allied special operations commands represent another beneficial security arrangement. In particular, the relationship between Canada and U.S. SOF units can be seen as early as the Second World War, as the scholarship of Bernd Horn makes clear.²¹ Although members of DSOKOM (Danish Special Operations Command) were unable to accept the invitation to attend our roundtable, Danish special operations members are eager to collaborate and share knowledge and skills related to Arctic operations. Considering future special operations exercises is one avenue where SOF operators can engage in collaborative learning, understand how the other approach TTPs, and identify lessons that can be learned and applied to future special operations in Arctic conditions.

A senior SOF leader explained that “overall success or failure rests on our ability to unify our efforts and integrate our capabilities.” Key topics included SOF units being sustained through others, interoperability between forces, and capitalizing on combined training and exercises to inform, practice, and learn lessons to improve capabilities. A senior SOF leader emphasized the importance of integrating with partners and allies to defend the homeland, stating:

As we continue to sharpen the tip of our Special Operations spear in the North American Arctic for the 21st century we will be pursuing key opportunities that allow us to work by, with, and through our partners and allies to compete below the level of armed conflict, deter conventional and irregular threats, and

set conditions to execute contingency operations in order to defend our national interests.

At present, SOF are positioned to be a resource to various agencies within government. For instance, a senior SOF leader highlighted that, “from an Arctic perspective, [SOF operators] can play an important role as a partner with the interagency partners, specifically acting as a strategic sensor, a strategic signal, and a strategic weapon.” The value of messaging to other nation states also bolsters allied partnerships. Another senior SOF leader explained:

Being able to message that to our adversaries really speaks to this strong relationship, and I think in particular as we look at Russia, that’s something that they simply don’t have. I think our alliance in NATO and non-NATO partnerships is the secret sauce of democratic-minded countries and how they band together for a values-based network and connective tissue. Being able to message we are working together for interoperability and that the relationship is strong is something simply Russia cannot ever do. It’s more transactional with their relationships with other countries, and we’re values based. I think that’s going to go a long way in the future as we evolve more towards an integration focusing on competition, and I think, frankly, in the Arctic and high north keeping it conflict-free. It’s just demonstrating that we are able to and will protect through our relationships and partnerships. I think that goes a long way, so that’s how I see us evolving as we go forward into the future.

Another participant concurred that “partnerships are vital to the north, and we always talk about the fact that you can’t go at it alone.” The array of partnerships includes “territorial governments, Indigenous governments, other federal partners, international allies, northern communities, academia, and of course private partnerships that we have with the private sector.” One senior leader noted that “commercial actors are grounded with the local culture, so it’s very important to build that relationship with them” given their knowledge of the environment and how to operate effectively in it.

RECOMMENDATIONS

Protecting the sovereignty of a nation's boundaries is a global norm. The North American Arctic is the continent's northern-most border, requiring the North American Tripoint to build a defensible posture to deter potential aggression and defend if necessary. A strategic resource for military leaders and planners must include experienced SOF units interlaced with partners and allies to conduct special operations in the North. This project provides a glimpse into how SOF leaders, operators, and scholars see the way ahead to improve the preparedness and integration of SOF into the strategic plans to deter, defend, and succeed at protecting the sovereignty of the North American Arctic. The following recommendations align with the major themes that emerged from this project.

First, research and other forms of scholarship require more investment. The level of understanding and modeling of climate and weather changes require greater degrees of accuracy than are currently available. Arming SOF planners and leaders with better critical knowledge and prediction models to assess and manage risk will improve the planning and preparations necessary to operate effectively in the North American Arctic. For instance, under what temperatures should SOF anticipate operating, and how do cognition, material continuity, and human interface with equipment function under extreme conditions? Materials and operator-equipment interfaces require significantly more investigation and improvement, such as conducting uncrewed aerial system (UAS) operations below -12°C .

Scientists and other academics also must improve technologies and analytical perspectives for understanding regional actors. For instance, having effective and varied sensors that can withstand Arctic conditions serve as one way to maintain situational awareness in the region. Additionally, scholars must be encouraged and engaged to better understand the intent, behaviour of, and resources available to, different actors. Commercial activities such as tourism and resource extraction could lead to crises in which theatre-level commanders may want to employ SOF assets. Improving domain awareness provides more decision space to combatant commanders and civilian leaders alike.

Second, the development of SOF spans multiple attributes. The DOTMLPF-P offers a useful reference when assessing the effectiveness of SOF capacities in conducting sustained and varied operations that allow commanders to have the full array of tools that SOF can offer. Given that special operations are global and mostly oriented toward foreign countries, one area that may be useful for further inquiry is how current authorities and permissions may need to be modified for SOF to conduct operations among their own citizens. It is imperative that SOF do not violate domestic laws. Some SOF doctrines are oriented toward foreign countries, such as foreign internal defence (FID), to promote a host nation's internal security. SOF could employ a similar approach; however, such efforts would need to tailor SOF conduct to work within the legal boundaries of each nation's laws and warfare rules that incorporate its own citizens. SOF communities examining the implications associated with the authorities needed to conduct certain SOF mission sets could aid in revising doctrinal approaches to preparing the operational environment and providing a road map on how to game the utility of special operations mission sets, ranging from steady state to war and recovery.

Third, there is a paucity of understanding of what knowledge, skills, and abilities (KSA) are needed for SOF to thrive in the North American Arctic. "SOF Truths," as published in the USSCOCOM's *Fact Book 2022*, offer a means for others to consider SOF preparedness to operate in the Arctic.²² Those truths are:

- Humans are more important than hardware;
- Quality is better than quantity;
- SOF cannot be mass produced;
- Competent SOF cannot be created after emergencies;
- Most special operations require non-SOF support.

Prefacing each SOF Truth with the phrase "In the Arctic, ..." helps to develop a framework for thematic examination when studying regional implications on Arctic SOF understanding and preparations.

Fourth, defending the North American Arctic will have some strategic objectives and an enduring end state that the North American Tripoint will share. These objectives tie allies together, and partners could construct an agreed-upon framework for policymakers and defence leaders to build and resource campaign and operational plans. Additionally, despite the current service components in the United States with Arctic strategies in place, the funding and prioritization to develop resources and capabilities are not necessarily commensurate to or aligned with achieving that end state. Nonetheless, SOF commands must be further resourced to assess, build, and engage vectors or approaches that aim to meet the strategic end state.

By synchronizing an allied-aligned North American Arctic strategy, a more cohesive defence network is possible. Joint or combined exercises and periodic training activities improve interoperability between components and nation-level special operations commands. The U.S. DoD's Arctic Edge, a biannual joint exercise hosted by USNORTHCOM, provides a useful venue – the Joint Pacific Alaska Range Complex (JPARC) – that provides exceptional opportunities to develop and test operational training objectives. So too does Canada's Operation Nanook series, and particularly the Nunavut and Nunakut activities. Recurrent operational exercises improve relationship building, encourage connectivity between special operations communities, and inform operational plans on existing gaps and associated risks. Furthermore, these types of activities contribute to the strategic messaging effort to deter encroachments into the North American Arctic.

From an international relations perspective, further examination of nation state relations, related accords, and legal precedents warrant higher prioritization. International law regarding the navigation routes, Indigenous relations, and cross-border activities are just a few topics requiring deeper attention. If enforcement of the rule of law is to be a foreign policy approach, legal scholars and security advisors must identify and clarify those seams that are not clearly delineated but are revealed during exercises and scenario development. Identifying what authority a nation state has regarding access and control for who is permitted to sail through a particular sea route is just one example of a seam needing further assessment to identify and avoid, where possible, potential conflicts.

Indigenous Peoples and businesses represent a distinctive feature of the North American Arctic. Specialized knowledge on how to operate and sustain operations, for example, are categories to which Indigenous communities could contribute as part of the collective effort to prepare SOF units for Arctic operations while simultaneously advancing nation-to-nation relationships. Furthermore, Indigenous leaders and communities must be consulted to further develop situational awareness of the North, build essential skills to thrive in the Arctic, and interlace with governance and commerce activities for the seamless networking of resources and access. Recognizing the sovereignty of Indigenous Peoples and learning from Indigenous Knowledge on how to be in the Arctic improves relationships and the preparedness of the forces. SOF must rely on many partners to be effective in their role, and Indigenous Peoples are key rightsholders. The relationships and activities between defence forces and Indigenous communities must be mutually supportive so that defence forces can improve domain awareness, develop critical Arctic-related skills, and foster and protect economic and commercial opportunities for Indigenous citizens.²³

CONCLUSION

The project aimed to establish a current understanding of how SOF are positioned to defend and secure the North American Arctic. The approach was to review the current scholarship and then approach senior SOF leaders, planners, and scholars through a qualitative research design. Although the literature revealed a paucity of knowledge of SOF in the Arctic, such recognition set the stage for an extensive roundtable event to pose questions to the audience. The responses served as the data for analysis, yielding four major themes.

The findings from this project reinforce that the Arctic is a dynamic and exceptional region that demands constant attention and agility to pivot accordingly. Keeping pace with the changing behaviours of the various players will aid policymakers and military planners on how best to leverage SOF commands to prepare the operational environment. However, several areas require further assessment of the attributes associated with a DOTMLPF-P lens. Examining, prioritizing, and addressing the various gaps will position SOF commands to address

those related challenges and concerns. As several roundtable participants emphasised, this cannot be done in a vacuum but must be approached through mutually beneficial partnerships and relationships. By maintaining awareness of a dynamic environment, different security bodies can track and prioritise emerging threats, challenges, and concerns. Enduring relationships with valued partners and allies can only improve the potential for success in deterring malevolent interests, building effective and synchronised responses, and contributing to regional cohesion.

ENDNOTES

1 Center for Arctic Security and Resilience (CASR), “Special Operations Forces and the Arctic,” <https://www.uaf.edu/casr/projects/arctic-sof-minds.php>; *Special Operations Forces in the 21st Century Arctic Roundtable*, virtual event co-hosted by CASR and the North American and Arctic Defence and Security Network (NAADSN), University of Alaska Fairbanks, 21 April 2022.

2 Denmark’s Special Operations Command (DKSOCOM), Canadian Special Forces Command (CANSOFCOM), and U.S. Special Operations Command (USSOCOM).

3 Joint Chiefs of Staff, *Special Operations JP 3-05* (Washington D.C.: DoD, 2020), I-1.

4 The activities associated with special operations range from executing highly kinetic missions (direct action, lasering targets for bombing), conducting special reconnaissance (a named area of interest), developing a foreign insurgency (unconventional warfare), strategic interdiction, or reinforcing a host nation force (foreign internal defence). There are more types of missions that SOF can conduct, such as civil affairs and psychological operations, but they typically lay outside a conventional force mission set. Special operations are an effort to resolve, as economically as possible, narrower problem sets that are within operational or strategic levels in which conventional forces would have difficulty solving. One unique application that special operators tend to focus on is communicating with local people to better understand an environment or to engage to facilitate change.

5 M. Rantanen, A.Y. Karpechko, A. Lipponen, *et al.*, “The Arctic has warmed nearly four times faster than the globe since 1979,” *Communications Earth & Environment*, Vol. 3, No. 168 (2022), <https://doi.org/10.1038/s43247-022-00498-3>. See also reference in Department of National Defence (DND), *Our North, Strong and Free: A Renewed Vision for Canada’s Defence* (April 2024), 3, <https://www.canada.ca/content/dam/dnd-mdn/documents/corporate/reports-publications/2024/north-strong-free-2024-v2.pdf>.

6 Whitney Lackenbauer and Justin Barnes, *NAADSN Canadian Arctic Climate Change and Security Impact Assessment* (Peterborough: NAADSN, November 2024), <https://www.naadsn.ca/wp-content/uploads/2024/11/2024-Canadian-Arctic-Climate-Change-and-Security-Impact-Assessment.pdf>.

7 See, for example, Adam Lajeunesse and P. Whitney Lackenbauer, eds., *Canadian Armed Forces Arctic Operations, 1945-2015: Historical and Contemporary Lessons Learned* (Fredericton: Gregg Centre for the Study of War and Society, 2017), <http://www.unb.ca/fredericton/arts/centres/gregg/what/publications/CdnArcticOps2017.pdf>.

8 Andreas Østhagen, “The Arctic Security Region: Misconceptions and Contradictions,” *Polar Geography*, Vol. 44, No.1 (2021): 55-74, <https://doi:10.1080/1088937X.2021.1881645>.

9 For a recent discussion of how “accessibility” differs across domains, see P. Whitney Lackenbauer, “Arctic Pan-Domain Employment Workshop (APDEW24): Concepts and Context,” report to Joint Task Force North (JTFN) and Canadian Joint Operations Command (CJOC), July 2024, <https://www.naadsn.ca/wp-content/uploads/2024/09/APDEW24-PWL-briefings-summary.pdf>.

10 On the debate over the Northwest Passage, see P. Whitney Lackenbauer, Suzanne Lalonde, and Elizabeth Riddell-Dixon, *Canada and the Maritime Arctic: Boundaries, Shelves, and Waters* (Peterborough: NAADSN, 2020), <https://www.naadsn.ca/wp-content/uploads/2020/03/CanadaMaritimeArctic-PWL-SL-ERD-2020.pdf>; and Suzanne Lalonde, “The Debate over the Legal Status of the Northwest Passage,” *NAADSN Policy Primer* (September 2023), https://www.naadsn.ca/wp-content/uploads/2023/10/23sep-Lalonde-NWP_Policy-Primer.pdf.

11 See Michael Byers, *International Law and the Arctic* (Cambridge: Cambridge University Press, 2013), and Lackenbauer *et al*, *Canada and the Maritime Arctic*.

12 P. Whitney Lackenbauer, “Threats through, to, and in the Arctic: North American Defence and Security through a Canadian Lens.” *Canadian Army Journal*, Vol. 19, No. 2 (Fall 2021): 6-17, https://www.army.gc.ca/assets/ARMY_Internet/docs/en/canadian-army-journal/caj-19-2-en-sp.pdf.

13 P. Whitney Lackenbauer, Adam Lajeunesse and Ryan Dean, “Why China is Not a Peer Competitor in the Arctic.” *Journal of Indo-Pacific Affairs* Vol. 5, No. 5 (September-October 2022): 80-97, <https://www.airuniversity.af.edu/JIPA/Display/Article/3172586/why-china-is-not-a-peer-competitor-in-the-arctic/>.

14 For an overview see P. Whitney Lackenbauer, Suzanne Lalonde, and Elizabeth Riddell-Dixon. *Canada and the Maritime Arctic: Boundaries, Shelves, and Waters* (Peterborough: North American and Arctic Defence and Security Network, 2020), <https://www.naadsn.ca/wp-content/uploads/2020/03/CanadaMaritimeArctic-PWL-SL-ERD-2020.pdf>.

15 For a recent study demonstrating that multi-year ice flushed southward from high-latitude regions into the Northwest Passage maintains choke points along certain route sections, reducing overall shipping season length, see Alison Cook, Jackie Dawson, Stephen Howell, Jean Holloway, and Mike Brady, “Sea ice choke points reduce the length

of the shipping season in the Northwest Passage,” *Communications Earth & Environment* Vol. 5, No. 1 (2024): 362-373, <https://www.nature.com/articles/s43247-024-01477-6.pdf>.

16 For a Canadian overview, see Bernd Horn, *Bastard Sons: An Examination of Canada's Airborne Experience 1942-1995* (St. Catharines: Vanwell, 2001).

17 Referring to MFP-2 and MFP-11, these are Major Force Programs funding categories. See: McGarry, Brendan W., and Heidi M. Peters. “Defense Primer: Future Years Defense Program (FYDP).” Library of Congress, Washington DC, December 2021; and Loreda, Elvira N., John E. Peters, Karlyn D. Stanley, Matthew E. Boyer, I. V. Welsler, and Thomas S. Szayna, *Authorities and Options for Funding USSOCOM Operations* (Santa Monica, CA: RAND National Defense Research Institute, 2014).

18 These are also consistent themes in Canada and U.S. defence strategies and policy statements. See, for example, DND, *Our North, Strong and Free*; Department of Defense, *2024 Arctic Strategy* (July 2024), <https://media.defense.gov/2024/Jul/22/2003507411/-1/-1/0/DOD-ARCTIC-STRATEGY-2024.pdf>.

19 For recent studies, see P. Whitney Lackenbauer, *A History of the Canadian Rangers of Quebec: 2nd Canadian Ranger Patrol Group* (Saint-Jean and Peterborough: 2nd Canadian Ranger Patrol Group and NAADSN, 2022); Lackenbauer, *The Canadian Armed Forces' Eyes, Ears, and Voice in Remote Regions: Selected Writings on the Canadian Rangers* (Peterborough: NAADSN, 2022); Lackenbauer, *The Canadian Rangers @ 75: Key Documents, 1947-2022*, Documents on Canadian Arctic Sovereignty and Security (DCASS) No.19 (Calgary: Arctic Institute of North America, 2022); and Lackenbauer and Peter Kikkert, *Measuring the Success of the Canadian Rangers* (Yellowknife: 1st Canadian Ranger Patrol Group, 2020), <https://www.naadsn.ca/wp-content/uploads/2020/10/Rangers-Success-Metrics-Lackenbauer-Kikkert-high-res.pdf>. Although the United States does not have a parallel organization, relationships between the military and Indigenous communities, tribes, and organizations are essential. Several participants commented on the importance of these relationships and emphasized that they should be mutually beneficial. In Alaska, federally recognized tribes and Alaska Native corporations, for example, have established working relationships with the military in Alaska. Consultations are expected between tribal communities and the military when interests are shared or when military activities could influence Native communities, cultures, or lands. SOF units contract Native corporations to provide supplies and services to support training and exercises.

20 In 2022, Nasittuq Corporation, an Inuit majority-owned corporation, won the \$592M Government of Canada contract to operate and maintain the North Warning System (NWS) for seven years. Nasittuq Corp., “Nasittuq Wins 7-Year North Warning System Operations and Maintenance Contract,” 31 January 2022, <https://www.nasittuq.com/2022/01/31/nasittuq-wins-north-warning-system-operations-maintenance-contract/>.

21 Bernd Horn and Michael Wyczynski, *Of Courage and Determination: The First Special Service Force, “The Devil’s Brigade,” 1942-44* (St. Catharines: Dundurn, 2013); and Horn, *Bastard Sons*.

22 USSOCOM Office of Communications, *2022 Fact Book* (Tampa: MacDill Air Force Base, 2022), <https://www.socom.mil/FactBook/2022%20Fact%20Book.pdf>.

23 See, for example, Dalee Sambo Dorough, Bridget Larocque, Kaviq Kaluraq, and Daniel Taukie, *Voices from the Arctic: Diverse Views on Canadian Arctic Security* (Peterborough: NAADSN, 2020), <https://www.naadsn.ca/wp-content/uploads/2021/01/20-nov-ArcticVoicesProceedings-upload.pdf>; and P. Whitney Lackenbauer with Peter Kikkert, *Canadian Inuit and North American Defence Modernization: Background Considerations* (Peterborough: NAADSN, 2023), <https://www.naadsn.ca/wp-content/uploads/2023/07/23jun-Inuit-NA-defence-modernization-report-PWL-final.pdf>.

CHAPTER 4

A TRANSFORMING ARCTIC LANDSCAPE: STRATEGIC CONSIDERATIONS FOR SPECIAL OPERATIONS FORCES

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This chapter aims to provide a primer on how environmental changes alter the landscape of the greater Arctic region and how that impacts the U.S. Special Operations Forces (SOF). SOF's future success in Arctic and sub-Arctic environments hinges on adaptability and ingenuity to address and operate in this transforming region successfully. As melting ice, thawing permafrost, and shifting temperatures reshape geo-economics and politics, they also change the operational landscapes across land, sea, and air in an inherently complicated natural setting. SOF must develop along a dual track of traditional and advanced skills to operate in the region. Training and preparation must include extensive traditional Arctic survival skills and the ability to competently operate a range of low to advanced technological equipment, develop redundant logistics, and physical, mental, and medical resilience.

The constantly evolving Arctic demands preparedness for emerging and re-emerging concerns and environmental hazards such as ocean salinity, wildfires, cyclones, and cloud cover, among others, and the potential for chemical, biological, and nuclear risks. Research on environmental changes and historical precedents can aid SOF with insights to operate effectively in a dynamic and contested region where nature is integral to defining the battlefield.

A CHANGING ARCTIC RE-EMERGES AS A ZONE OF CONTENTION

In the last decade, once considered a geopolitical backwater, the Arctic has rapidly transformed into a strategic hot spot due to the region's changing natural environment, resulting in expanded accessibility.

Environmental changes include melting sea ice, which opens maritime routes for expanded economic opportunities, such as ice-free shipping routes. The reduction in ice cover renders chokepoints such as the Bering Strait between Alaska and Russia and the Barents Sea north of Norway more navigable, thus, economically, and militarily significant.¹ Furthermore, as terrestrial accessibility increases, partly due to thawing permafrost, advancing technology allows for the possibility of extracting massive reserves of untapped natural resources. Arctic nations seek to exploit oil, gas, and minerals on land and from the ocean rendering the region a prize in global great power competition.²

Russia is increasingly focused on the region, bolstering its military and civilian economic infrastructure. However, the conflict in Ukraine is hampering some of Moscow's ambitions.³ To control these new economic opportunities, the Kremlin has invested in re-opening Soviet-era bases as well as building new military infrastructure, modernizing air defense systems, re-structuring Arctic forces and increasing border security.⁴

Meanwhile, China, which declared itself a "near-Arctic nation," developed a "Polar Silk Road" strategy, thus positioning the country as a major stakeholder. China invested in terrestrial and oceanic monitoring and research stations, resource extraction, and transportation infrastructure projects.⁵ In July 2024, the U.S. intercepted two Russian and Chinese bombers in the U.S. Air Defense Identification Zone in Alaska, highlighting their economic and military collaboration in the region.⁶

Beyond these powers, nations like South Korea, Japan, and NATO member states are intensifying their Arctic interest, securing trade, promoting scientific exploration and research, and seeking ways to claim a stake or counter rising tensions.⁷ These dynamics underscore the Arctic's growing strategic importance, both as a hub for economic opportunities and a potential flashpoint in global power competition.

Adding to this complexity is the involvement of rogue states in broader geopolitical conflicts, hinting at the possibility of unexpected third-party actors in the future. In 2024, North Korean troops are reported to be fighting in Ukraine, a development that signals the unpredictable reach of rogue regimes into conflicts far from their borders.⁸ This development comes on the heel of, prior to 2024, Russia shuffling migrants from

primarily Middle Eastern and African countries to northern border posts in Norway and Finland as part of their gray-zone warfare, combining military and non-military as well as covert and overt means, against NATO.⁹ These dynamics further raise concerns about the Arctic becoming a theatre for resource conflicts and shadow war activities, including sabotage operations, such as the recent 2024 undersea cable cutting – a tactic already attributed to China and Russia.¹⁰

SOF operators are the primary tool for conducting and countering gray zone and hybrid warfare.¹¹ In 2024, these actions signify Russia's Arctic ambitions extend beyond economic dominance to covert operations designed to disrupt Western infrastructure and communications, amplifying tensions. For all stakeholders, the combination of environmental transformation, great power rivalry, gray-zone warfare activities, and the potential for the involvement of nefarious actors in the future, place the Arctic at the nexus of strategic uncertainty. These regional developments catalyze an increase in SOF employment as a strategic force.

PERSPECTIVES ON THE ARCTIC AND SOF

The 2024 U.S. Department of Defense (DoD) Arctic Strategy outlines a three-pronged approach to the region: enhancing joint capabilities and monitoring, engaging with national and international allies and partners, and conducting exercises to build skills, experiences, and power projection.¹² The document highlights the need for SOF expertise and capabilities in the extreme Arctic environment, particularly in collaborating closely with Arctic allied forces. U.S. force participation in multinational exercises is intended to improve domain awareness, early warning systems, and forward posture. Moreover, the U.S. and Allied SOF are to drive innovation, routinely advancing Arctic-specific capabilities through experimentation and training. The strategy addresses the Arctic's evolving landscape and the need to account for this dynamic in planning and preparation.¹³

U.S. SOF use small units specially trained to conduct, often politically sensitive, unconventional, direct, and indirect military actions on land, sea, and air, primarily for strategic or operational effect.¹⁴ SOF require highly trained personnel with routine capabilities that surpass conventional forces, including advanced technology and tactics. To succeed, SOF need clear objectives and effective command and control, often

ensured by robust and redundant communication channels. All forces require domain awareness, detailed planning, and intelligence, yet these requirements are more specialized and focused for SOF missions.¹⁵ Thus, to conduct their respective tasks, SOF operators also require specialized training, lightweight yet highly functional gear, and extremely detailed intelligence.

The extreme setting of the Arctic's changing natural terrain challenges SOF in meeting these needs. However, SOF operators have a unique advantage over conventional forces because they are generally more capable of operating autonomously if needed. Furthermore, SOF are selected for their physical, mental, and emotional abilities, a cornerstone of surviving in arduous conditions. In recent decades, SOF have engaged in various mission sets, particularly counterterrorism. While seemingly juxtapositioned, the skills the SOF Enterprise gained in recent decades are transferrable to the Arctic mission set.¹⁶ While in 2024, rotations of conventional units were permanently stationed in the Arctic to gain relevant expertise, once postured to execute and establish a permanent base in the region, SOF can quickly establish specialized training and partnerships, enabling operators and staff to gain domain awareness and execute missions in the Arctic's extreme environment.¹⁷ Nevertheless, in 2024, due to the Arctic region's relatively recent re-emergence as a strategic high-stakes arena, the number of SOF highly trained and proficient in the Arctic domain is minimal and SOF has no permanent presence in the region.

The research literature on SOF in the greater Arctic frontier is sparse. In their 2024 article "Arctic Defense: The US Needs Polar Special Operations Forces Aligned with the 5 SOF Truths," retired Lieutenant Colonels Charles Feint and Robert Liebl argue for the establishment of a polar-capable Special Operations Force specialized and uniquely trained, equipped, and dedicated to conducting operations exclusively in northern polar expanse.¹⁸ In 2024, the U.S. lacks SOF personnel solely dedicated for the Arctic environment.

In 2022, a Center for Arctic Security and Resilience (CASR) team at the University of Fairbanks Alaska published "Special Operations Forces and the Arctic: Meeting North America's 21st Century Security Needs." The

researchers argued that the exceptionalism of the Arctic environment – meaning the region is undergoing rapid changes – evolving security threats and force-gaps in doctrine, organization, training, materiel, leadership and education, personnel, facilities and policies (DOTMLPF-P) pose a challenge to operations, and require international partnerships and engaging Arctic security cooperation.¹⁹ Other subject matter experts echo the same sentiments.²⁰

In “The Arctic Domain: A Narrow Niche for Joint Special Operations Forces,” Colonel (retired) Kevin Stringer maintains that the Coast Guard and naval forces will be the predominant services securing the region, with SOF playing a narrow role.²¹ He correctly points out that SOF forces are uniquely suited for extreme environments where survival is key to operational success. Stringer outlines SOF’s role in special reconnaissance, aiding in the security of military bases and infrastructure, including those connected to the hydrocarbon industry and research stations. He authored his article in 2015, before Russian aggression in Ukraine, which resulted in Sweden and Finland joining NATO. Thus, he likely underestimated the missions SOF forces could have in addressing NATO and, by implication, the U.S.’s opportunities to secure its own and allied borders. SOF support may include aid in safeguarding the long, terrestrial Finnish-Russian border and international undersea cables. Moreover, SOF’s strength in shaping the operational theatre through partner-building and security cooperation efforts and power projection by open and surreptitious activities is vital.

In “Ensuring Survivability for Naval Special Warfare Operations in the Arctic,” Lieutenant (Navy) Steven Domingo argues that SOF operators require technically advanced, innovative equipment during operations and recommends specific gear he terms “The Arctic Survivability Package.”²² As previously stated, gaps in SOF equipment exist, and his observations are on point, yet equipment is prone to failing due to the extreme environment of the region. Moreover, given the diverse polar environmental conditions, a “one-fits-all solution” for the requirements of a specific mission is difficult to devise. Lessons from history exemplify that equipment alone is not necessarily a defining factor in securing success precisely because of the inherently unique and harsh conditions of the circumpolar landscapes. In the unforgiving polar environment,

low-tech equipment is often preferred due to its simplicity and reduced risk of malfunction. Along the technological continuum, reliability and durability outweigh sophistication, as even minor failure can have severe consequences.



FIGURE 4.1 – Arctic and sub-Arctic Geographic Area and Associated Waters²³

THE ARCTIC: EXTREME ENVIRONMENT WITH COMPLEX DEFINITIONS

Eight nations have sovereignty over Arctic territory: Russia, the United States, Canada, Iceland, Denmark, Norway, Finland, and Sweden.²⁴ Over half of the circumpolar lands are Russian.²⁵ These eight countries with Arctic lands form the Arctic Council, an inter-governmental forum dedicated to Arctic issues and Indigenous peoples.²⁶ Despite its vast area, the northern circumpolar zone is sparsely populated, with only about four million people living there. Many Indigenous populations, like the Inuit and Sámi, have inhabited the region for thousands of years.²⁷

There is no clear definition of the Arctic as a region. The name “Arctic” derives from the Greek word “Arktos,” meaning bear, and the largest star constellation in the Northern Hemisphere, “Ursa Major,” is Latin for greater bear.²⁸ The North Star, also known as Polaris, dominates the clear northern night sky. The visibility of these celestial bodies provided informal references to the area before definitions were formalized.²⁹ In modern times, the region is defined in multiple ways, including geographic, geopolitical, physical, and biogeographical parameters.³⁰ This means the Arctic’s boundaries are not uniform and can extend differently in various longitudes. The Arctic can be defined by the Arctic Circle (66.5 degrees North latitude) with sub-Arctic areas located above 50 degrees North latitude up to the Arctic Circle.³¹ Another definition is the 10-degree Celsius July isotherm, which scientists often use to mark the northern tree line.³² Given ongoing temperature changes, the latter classification is subject to continuous change. This chapter uses no precise definition; instead, the region is addressed in its greater sense, focusing on physical aspects and the gravity and impact of ongoing environmental changes.

DYNAMICS OF CHANGE IN THE NORTHERN POLAR REGION

Scientists estimate that the Arctic is warming two to four times faster than the global average, which has both positive and negative effects.³³ There are multiple causes, and in 2024, the interplay between these factors still needs to be fully understood. Arctic amplification is the term describing how near-surface air temperatures in the Arctic rise at a much greater

rate (two to four times) than the global average.³⁴ One reason is that with the loss of sea ice, darker surfaces, like water or soil, absorb more heat.³⁵ Moreover, changes in the longwave radiation trap – the process where greenhouse gases absorb and re-emit Earth’s infrared radiation, confining heat in the atmosphere, at times exacerbated by cloud cover – heat the northern pole’s near surface.³⁶ Hydrocarbon burning also deposits more black carbon elements on the surface, darkening it and increasing amplification.

The Albedo effect is another key factor in the warming trend.³⁷ The Albedo effect is the ability of a surface to reflect solar radiation and it occurs in the Arctic summer. Lighter-colored surfaces, like snow and ice, reflect most of the sun’s energy back into space, keeping the planet cooler.³⁸

These dynamics trigger a positive feedback loop: less ice means lower reflectivity, more heat absorption, and even faster melting.³⁹ The Arctic acts like the corner of a room nearest a blazing fireplace: while the entire space eventually warms, the corner closest to the heat feels the effects most intensely.

THE FACTORS THAT SHAPE THE ARCTIC EXTREMES

The circumpolar region is shaped by the delicate interplay of both abiotic (non-living) and biotic (living) influences, which interact and impact the region’s ecosystems and climate. Climate is usually measured by a 30-year trend of data from various variables.⁴⁰ Understanding the atmospheric and physical processes in the Arctic is a prerequisite for comprehending its transformation.

Solar Dynamics

Unlike lower latitudes, the Arctic receives less solar energy due to the Earth’s spherical shape. This limitation causes sunlight to strike at a shallow angle and spread over a larger area, resulting in colder temperatures.⁴¹ The area’s extreme seasonality is driven by Earth’s axial tilt of 23.5 degrees, leading to polar nights of complete darkness and summer periods of continuous daylight (Midnight Sun), with the North Pole experiencing six months of each.⁴²

The polar region is also prone to space weather events. Space weather refers to the dynamic conditions of the sun and the solar wind within Earth's magnetosphere, ionosphere, and thermosphere, which affect technology and human safety.⁴³ These phenomena can disrupt the performance and reliability of space-based and ground-based systems, leading to service disruptions, degraded sensors, data loss, and, ultimately, mission failures due to affecting communications, global positioning, and radar, among other impacts.⁴⁴ Unmitigated space weather is a risk to operational readiness and effectiveness.

The Forces of Weather: Temperature, Precipitation, Clouds and Winds

Arctic weather is deeply influenced by extreme weather events such as blizzards, cyclones, and anticyclones, the latter of which play a critical role in transporting atmospheric energy between warm low latitudes and cold high latitudes.⁴⁵ Cyclones, or low-pressure systems with counterclockwise winds, bring clouds and precipitation through warm and cold fronts. In contrast, anticyclones, high-pressure systems with clockwise winds, are generally associated with clearer, calmer weather. Cyclones dominate the Arctic's weather patterns, particularly in winter when strong temperature gradients between sea ice and open water in regions like the North Atlantic drive their frequency. Summer sees cyclones over the central Arctic Ocean with less precipitation due to limited atmospheric moisture.⁴⁶

Local Arctic weather phenomena include blowing snow, whiteouts, and thunderstorms. Whiteouts, caused by low clouds over a snowy surface, eliminate the horizon and pose significant travel risks. At the same time, Arctic thunderstorms are surprisingly common over land in summer, often triggering lightning-induced forest fires.⁴⁷ The region has also seen unusual heat waves events when North Pole temperatures reached melting point, driven by cyclones transporting warm air poleward.⁴⁸ These dynamic weather patterns highlight the complexity and evolving nature of the Arctic climate.

The northern polar realm exhibits significant temperature variability, with distinct seasonal and spatial patterns. The Arctic has five seasons (see Table 4.1). Winter temperatures are coldest in the Arctic Ocean, Siberia, and Canada, while the Atlantic side remains comparatively warmer due to ocean currents like the North Atlantic Drift.⁴⁹ In summer, land areas

warm more rapidly as snow-free surfaces absorb solar energy, contrasting with the cooler, ice-covered Arctic Ocean.⁵⁰ Melting sea ice moderates temperatures as heat is absorbed during the melting process rather than warming the air. Additionally, winter temperature inversions, where temperatures rise with altitude, are common, inhibiting air mixing and sometimes worsening air quality even in the icy wilderness comparable to industrialized areas.⁵¹

Clouds dominate the far northern sky, with persistent cloud cover blanketing 60-80 per cent of the central Arctic Ocean and over 80 per cent of the Atlantic side throughout the year.⁵² Even during 24-hour summer sunlight, clouds dominate. They reflect solar radiation and emit longwave radiation, influencing surface energy exchanges.⁵³ Arctic clouds, composed of liquid droplets, ice crystals, or both, play a vital role in warming the surface through radiative effects.⁵⁴ The northern landscapes experience considerable variation in precipitation, with some areas resembling polar deserts due to their dryness and isolation from moisture sources, while regions on the Atlantic side receive much higher precipitation levels.⁵⁵ Most precipitation falls as snow. Rain and fog occur in the summer when the water gathers in bogs and ponds.

Polar winds vary significantly, with stronger winds typically found in the Russian and Atlantic sectors due to frequent storms, while winds in the Canadian Arctic are generally lighter.⁵⁶ Gravity-driven winds off the Greenland ice sheet can be exceptionally strong. While winds in the region are often mild, gales lasting several days can occur, lifting snow from exposed areas and creating large drifts in sheltered zones. Intense winds also increase wind chill, accelerating heat loss by thinning the body's insulating boundary layer of still air. This effect intensifies the cooling impact of low temperatures, posing significant risks to unprepared individuals in Arctic conditions.⁵⁷

The Arctic Ocean: Depths, Currents, and Change

Diverse ecosystems surround the Arctic Ocean on its bordering lands. As a body of water, it has a complex hydrography. Particularly along the Russian coast of the Arctic Ocean are shallow shelf seas, while deeper areas such as the Canada and Nansen Basin can reach depths of up to 4,000 metres or more.⁵⁸ Warmer Pacific water enters the Arctic Ocean via the Bering Strait and the Atlantic undercurrent, mixing in fresh water and nutrients from the northern Bering Sea.⁵⁹ For naval considerations, the

waters surrounding the geographic North Pole consist of a deep central basin; the peripheral shallower Bering, Chukchi, East Siberian, Laptev, Kara, Barents, and Norwegian seas; the ice-covered portions of Greenland and surrounding seas; Baffin Bay, Canadian Archipelago, Seas of Japan and Okhotsk; and the continental margins of Canada and Alaska; and the Beaufort Sea are of importance (see Figure 4.1).⁶⁰

The Arctic Ocean features an intricate hydrography with depth variations that are fundamental to understanding the Arctic's unique navigation and resource extraction dynamics. Despite being a critical connector between the Pacific and Atlantic Oceans, the Arctic Ocean remains relatively isolated due to limited connections like the shallow Bering Strait and deeper Fram Strait, leading some to liken it to a Mediterranean-type sea. However, key distinctions exist, such as its vast freshwater inflow from massive rivers.⁶¹

Rivers like the Ob, Yenisei, and Lena from the Russian Territory and the Canadian Mackenzie drain into the Arctic Ocean. These drainage areas are larger than the ocean itself, significantly impacting its surface salinity and temperature.⁶² These rivers maintain a relatively fresh surface layer, which inhibits the mixing of warmer waters below, preserving conditions conducive to sea ice formation.⁶³ Vertical salinity and temperature structures are defined by phenomena like thermocline and halocline, where rapid increases in temperature and salinity occur with depth, underscoring the interplay of freshwater input and Atlantic water inflows.⁶⁴

Thus, sea ice, river, and lake dynamics in the Arctic exhibit extreme variability in thickness and extent, fluctuating seasonally. Maximum ice coverage typically occurs in March, with a minimum in September.⁶⁵ Over the years, however, the September minimum has shown a notable decline, illustrating long-term trends of ice retreat.⁶⁶ Ice thickness varies dramatically by location, with the heaviest ice concentrated along the Canadian Arctic Archipelago. The Beaufort Gyre is a clockwise motion of surface sea ice north of Canada and Alaska and is partly responsible for ice accumulation along the Canadian coast.⁶⁷ (See Figure 4.1) The transpolar drift stream is primarily wind-driven; ice and cold water from Siberia across the poles exit via the Fram Strait, a narrow band between Greenland and Svalbard.⁶⁸ (See Figure 4.1) The ice is constantly in motion, shrinking in all months, and is getting thinner and younger. The volume

is declining. The downward trend has been recorded via satellite since 1979; the change amounts to approximately 13 per cent per decade.⁶⁹ The altered conditions require estimating the thickness and stability of an ice sheet or frozen waterbodies prior to and during operations.

The Greenland Ice Sheet: The Heart of the Arctic

The Greenland Ice sheet, a frozen vastness atop the world's largest island, is a critical component of Earth's cryosphere. Greenland, with a population of about 60,000 under Denmark's administration with home rule, is dominated by this ice sheet, which reaches a staggering thickness of 3,200 metres.⁷⁰ This colossal ice mass is not static. It is losing volume through melting and iceberg calving, contributing significantly to rising sea levels.⁷¹

An ice sheet is a dynamic system defined by two primary zones: the accumulation zone at higher elevations, where snowfall exceeds summer melting, and the ablation zone at lower elevations, where ice loss surpasses winter gains.⁷² These zones are divided by the equilibrium line, and the steady flow of ice from higher to lower elevations ensures the ice sheet's structural integrity.⁷³ Outlet glaciers drain vast portions of the ice sheet, calving icebergs into the ocean. Less sea ice also changes ocean dynamics as the sheet can lessen the impact of waves.⁷⁴ With a warming ocean, waves become more extensive and intense.⁷⁵ The notion of storms becoming stronger in 2024 is spotty and requires additional documentation and investigation. The ocean temperature has a clear warming trend.

Surface melt is a growing concern, occurring primarily in summer and intensifying in recent decades.⁷⁶ Notable melt events, such as those in 2012 and 2019, highlight the increasing extent and intensity of melt across the ice sheet, even reaching higher elevations.⁷⁷ Meltwater ponds formed during these events often drain suddenly through moulins, which are vertical shafts that channel water to the ice sheet's base. These shafts pose significant risks to soldiers or scientists operating near these unstable features.

Temperature profiles across Greenland reflect its harsh environment. In winter, interior areas can plummet to -40° Celsius (C) or lower, while summer brings slightly warmer conditions near the lower elevations.⁷⁸ Despite

the seasonal variability, even the warmest months rarely see temperatures above freezing at higher altitudes. This extreme climate and ongoing ice loss exemplifies the delicate balance of this icy ecosystem.

Since 2002, the Greenland Ice Sheet has been losing mass at an average rate of 270-277 gigatons annually, a trend monitored by satellite gravitational measurements.⁷⁹ While the seasonal cycle of winter gains and summer losses persists, the overall mass balance remains negative, reinforcing its role as a key driver of sea level rise. Alongside shrinking Arctic glaciers and ice caps, Greenland's ice loss is a stark reminder of the profound changes underway in the Arctic region.

Keeper of Ancient Secrets and Modern Risks: Permafrost

Permafrost, a defining Arctic feature, is ground that stays below 0°C for at least two years, with or without ground ice.⁸⁰ In non-bedrock areas, it includes an active layer that thaws in summer and re-freezes in winter, usually 30 centimeters to a metre deep.⁸¹ Permafrost is categorized as continuous, discontinuous, sporadic, or isolated, with large areas also found beneath Arctic shelf seas as sub-sea permafrost.⁸²

The Northern Hemisphere hosts most permafrost, with 47 per cent in Russia and 29 per cent in Canada, reflecting these countries' extensive Arctic regions.⁸³ Unique features like patterned ground and pingos – mounds formed by ice pushing up the soil – mark its surface, while ground ice within permafrost creates wedges and lenses that shape the landscape. Permafrost lenses are isolated layers or pockets of ice-rich permafrost that form within soil or sediment due to localized freezing and water migration. In 2024 and beyond rising temperatures will thaw permafrost, destabilizing ecosystems, and increasing coastal erosion. Thawing permafrost – which acts like a sediment glue – reduced sea ice, and warmer waters along the Beaufort Sea drive erosion rates of up to 25 feet per year.⁸⁴ Thawing also alters landscapes dramatically, with ground collapses and slumps creating new terrain. Increased precipitation results in thicker layers of snow, which can function as insulation and may hasten the warming of permafrost. Thawing sub-sea permafrost can also have a negative impact on sub-sea cables, shifting, burring, or, in extreme cases, disrupting them. Degraded permafrost impacts infrastructure, pipelines, roads, airfields, and other structures. Depending on the

degree of permafrost thawing, even elevated structures may be impacted as the ground warms. A 2023 assessment of U.S. military infrastructure in the Arctic found eight installations susceptible to permafrost thaw, including Pituffik Space Base in northwestern Greenland and the Alaska Radar and North Warning Systems.⁸⁵

Arctic Lands: Between the Tree line and the Tundra

Often associated with treeless tundra, the Arctic features a diverse landscape, including areas with trees. The word tundra means “treeless plain,” and its distribution is largely dictated by summer warmth.⁸⁶ Generally, regions with July average temperatures above 10°C can support trees, while areas below this threshold remain tundra. However, this is only a guideline, as the transition between tundra and boreal forest, known as the tundra-taiga ecotone, is gradual rather than sharply defined.⁸⁷

Tundra itself varies significantly. Polar desert tundra, found in areas like northern Ellesmere Island and parts of coastal Greenland, is dry and sparse due to limited moisture and cold air’s low capacity to hold water vapor. By contrast, maritime tundra, as seen in Svalbard, is lush, while shrubby tundra dominates southern Arctic regions, with species like willow trees thriving near the tree line.⁸⁸

While often linked to the 10°C isotherm, the tree line is irregular and influenced by local factors.⁸⁹ For instance, the tree line transitions sharply in Alaska’s Brooks Range due to topography that traps cold Arctic air to the north.⁹⁰ The tree line shift is more gradual elsewhere, with sparse tree cover blending into dense boreal forest. The boreal forest, or taiga biome, lies south of the tundra and is characterized by species like black spruce in North America and larch in Eurasia.⁹¹ Mapping efforts, often conducted via drones, highlight the diffuse nature of the tundra-forest boundary, with tree cover decreasing progressively toward the Arctic.⁹² However, this dynamic zone shifts as warming temperatures drive the tree line poleward. These changes underscore the complex interplay between Arctic landscapes and the climate, where tundra and forest coexist in a delicate, evolving balance.

Winners and Losers: Terrestrial and Marine Ecosystems

Arctic terrestrial ecosystems are undergoing significant changes closely tied to the physical transformations of the region. Shrubification is expanding into formerly treeless tundra, in the boreal forest's trees are bending (drunken forest); thawing permafrost is reshaping landscapes, and species like beavers and moose are moving northward into newly hospitable habitats.⁹³ At the same time, caribou (reindeer are the same species) face challenges from shrub species with anti-browsing defenses and rain-on-snow events that create icy layers, hindering foraging and causing die-offs.⁹⁴ These changes increase human-wildlife conflict and, for forces, introduce a greater degree of uncertainty in calculating when and where they may encounter species that can threaten humans, such as polar bears or more inconspicuous species like ticks.

Mosquitoes and ticks are often overlooked hazards in Arctic operations, but they are becoming increasingly problematic as warming temperatures extend their range and activity.⁹⁵ Mosquitoes are known for their persistence and swarming behaviour during the brief Arctic summer. These insects can severely impact personnel by causing distractions, physical discomfort, and health risks. As temperatures rise, mosquitoes and ticks will likely carry diseases like West Nile virus or encephalitis, previously uncommon in the region, creating new medical concerns for Arctic operators and local populations.⁹⁶ Climate change, prolonged thaw periods, and expanding wetland habitats provide ideal breeding conditions, making mosquitoes a nuisance and a growing operational and public health hazard in the Arctic.

Ocean warming is rapidly transforming the Arctic's marine ecology, with impacts spanning the entire food chain, from phytoplankton to top predators.⁹⁷ Reduced sea ice drives stronger phytoplankton blooms due to increased sunlight, enhancing primary productivity at the base of the food web. At the top, iconic species like polar bears and walrus face declining habitats, challenging their ability to hunt and survive. In contrast, others, like bowhead whales, benefit from reduced ice, improving their mobility and access to food.⁹⁸ These shifts mirror changes in terrestrial ecosystems, with clear winners and losers emerging as the Arctic climate warms, underscoring the complexity of ecological responses to environmental change. Changing marine ecology affects the fishing industry,

ultimately increasing or decreasing the variety of species. Declining or increasing fish stocks have the potential to trigger resource conflict.

Nature's Tricks: Polar Phenomena

The Arctic can be an eerie landscape, and sound behaves in extraordinary ways due to unique atmospheric conditions, creating sensory experiences that can aid or harm operators.⁹⁹ Ice crystals suspended in the air scatter and refract light, creating optical illusions as rays bounce off clouds, water, and ice. For example, light pillars are vertical columns of light extending above or below a light source, such as the sun or moon. Arctic Mirages render icebergs or mountains appear closer or taller. Sea smoke or burning ocean sea smoke is a mist due to frozen water vapor.¹⁰⁰ Sound, too, travels differently in the Arctic, often carrying much farther than in other regions. The cold, dense air near the surface bends sound waves downward, unlike in temperate zones where they dissipate upward. This bending allows sounds like voices to travel astonishing distances, up to three kilometers (approximately two miles) under the right conditions. The surface also plays a role: soft snow dampens the sound, while hard-packed snow and smooth ice reflect it remarkably.¹⁰¹

Seasons of the North: Navigating Seasonal Shifts

Conventionally, the Arctic experiences two primary seasons: a long, harsh winter and a brief, cool summer. Winter lasts approximately nine months and is extremely cold, marked by pervasive darkness and minimal precipitation, classifying it as a cold desert.¹⁰² Summer lasts about three months and offers milder temperatures and continuous daylight. Yet, a more precise classification is the five distinct Arctic seasons: winter, spring, summer, autumn, and a transitional period known as “freeze-up.”¹⁰³ This freeze-up phase occurs between autumn and winter, during which temperatures drop, and sea ice begins to form, significantly affecting marine navigation and ecosystems.¹⁰⁴

Understanding and experience in operating during the five Arctic seasons is essential for military operations in this dynamic environment. Each season's transitions define operational windows, such as freeze-up enabling ice-supported logistics before stable winter conditions set in.

Season (Months)	Land Impacts	Sea Impacts	Air Impacts	Select Operational Impacts
Winter (Mid-November to Late March)	Stable frozen terrain, limited mobility without specialized equipment, extreme cold risks, no daylight. Light from snow amplification.	Thick ice cover limits navigation in some areas; submarine activity benefits from ice cover for concealment, ambient noise masks the sounds of the submarine. Sea ice can render optical and infrared sensors ineffective and reflect or scatter laser beams and can scatter acoustic waves.	Limited visibility and extreme cold challenge aerial operations; reliance on de-icing systems and airbases requires constant maintenance, near total darkness.	Requires specialized cold-weather equipment and extensive preparation to prevent frostbite and, hypothermia, no daylight & the possibility of cyclones, all can impact mobility and survivability.
Spring (Late March to Early June)	Thawing permafrost creates unstable ground and mud, increased wildfire risk, disrupted mobility. High risk of flooding. Season with the highest impact on mobility.	Ice breakup creates hazardous conditions; increased freshwater runoff alters salinity; salinity layers can scatter sounds close to discharges of freshwater from rivers & melting glaciers, sound channels and shadows, or acoustic blind zones are possible. High risk of floating ice chunks.	Winds and storms disrupt flights; increasing visibility improved reconnaissance and strike capability, but weather remains volatile requiring constant.	Unstable ground disrupts mobility; wildfires and thawed biohazards complicate operations, environment requires observer and real-time monitoring to predict changes in ice cover, permafrost stability, and weather patterns.

cont...

Summer (Early June to Mid-September)	24-hour daylight, accessible terrain, cyclone season, but exposure to biohazards from thawing permafrost, heightened wildfire risks, exposure to pathogens or thawed contaminants/ radio active materials.	Ice-free waters enable maritime activity; shifting salinity and underwater thermoclines affect equipment such as sonar.	Extended daylight supports operations; turbulence from warming disrupts stability.	Increased activity across domains; threats from wildfires due to thunderstorm lightening; pathogen exposure increase; rain-dominant, heightened surveillance of environmental changes and movements needed.
Autumn (Early November to Mid-November)	Transition from rain to snow creates mud, limiting movement; unstable ground before freezing.	Ice formation begins; reduced maritime access and unpredictable conditions.	Peak season for strong winds and storms. Short, volatile period with rapidly declining visibility; aerial missions constrained.	Preparation for winter conditions begins; increased unpredictable freezing complicates staging, possibility of cyclones. Conditions severely affect equipment.
Freeze-Up (Mid-September to Early November)	Hardening ground offers brief mobility window, risks from sudden snowstorms and rapid freezing.	Ice reforming restricts navigation; temporary hazards from ice.	Rapid cooling challenges aerial operations; reduced visibility with storm onset.	Compressed operational windows; unstable ground, unstable ice on wetlands, logistical challenges with sudden freeze events.

TABLE 4.1 – Seasons and Select Operational Impacts¹⁰⁵

CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR (CBRN): POLLUTANTS, PATHOGENS, AND ARCTIC HEALTH RISKS

During the Cold War and continuing into the present, Russia has maintained a significant military presence in the Arctic, including the storage and deployment of nuclear weapons at key strategic locations. The Kola Peninsula, near Murmansk, is a critical hub for Russia's Northern Fleet, hosting a substantial portion of its nuclear-armed submarines at bases like Zapadnaya Litsa.¹⁰⁶ Nearby, Andreyeva Bay, a refueling point, is a ticking time bomb of nuclear contamination, its rusting storage tanks and leaking radioactive waste poised to unleash a toxic ripple effect across the fragile Arctic ecosystem if left unchecked.¹⁰⁷ The Novaya Zemlya archipelago, known as a Soviet-era nuclear testing site, including the infamous 1961 detonation of the Tsar Bomba, also houses facilities for nuclear material storage.¹⁰⁸ Modern bases, such as Nagurskoye Air Base in Franz Josef Land, exemplify Russia's recent Arctic militarization, blending new infrastructure with refurbished Soviet-era facilities.¹⁰⁹ Additionally, Severodvinsk, in the Arkhangelsk region, remains a key centre for the constructing, maintaining, and storing nuclear-powered submarines, vessels, and waste.¹¹⁰ In addition, Russia is building floating nuclear power plants for deployment in the Arctic. The first, Akademik Lomonosov, has been operational since 2019. These plants can pose a contamination risk.¹¹¹ This strategic deployment underscores the role of Russian nuclear weapons in the Arctic as geopolitical tensions rise. Further nuclear weapon stationing can complicate international efforts to balance security and environmental concerns in the region.

Camp Century, built beneath the Greenland Ice Sheet in the 1960s, housed a nuclear-powered research station and was part of the U.S. secretive Project Iceworm, an abandoned plan to deploy nuclear missiles under the ice.¹¹² When the base was decommissioned, the U.S. left behind radioactive waste, diesel fuel, and other hazardous materials, assuming the ice sheet would entomb them indefinitely.¹¹³ However, climate change and accelerating ice melt now raise the risk of these materials resurfacing and leaching into Arctic ecosystems.¹¹⁴

Overall, the region faces a growing risk from contaminants beyond nuclear waste, including chemical pollutants, biological hazards, and the potential

for zoonotic or sapronotic disease outbreaks. Sapronotic diseases, caused by environmental pathogens that thrive in soil or water, and zoonotic diseases, which can jump from animals to humans, could increase as warming temperatures alter habitats and migration patterns, endangering humans, and wildlife.¹¹⁵

The 2016 anthrax outbreak in Siberia, triggered by thawing permafrost, killed thousands of reindeer and dozens of humans, and underscores this threat as dormant pathogens become reactivated.¹¹⁶ Persistent organic pollutants (POP), and heavy metals like mercury have accumulated in Arctic ecosystems through long-range atmospheric transport. These pollutants bio-magnify in food chains and pose health risks to wildlife and Indigenous communities reliant on subsistence hunting.¹¹⁷

Thawing permafrost exacerbates risks by releasing toxins and pathogens after they have remained dormant for centuries. Combined with increasing industrial activity, resource extraction, and the fragility of Arctic ecosystems, these factors create a perfect storm for contamination and disease risks, demanding vigilant monitoring and mitigation efforts and collaboration with CBRN-trained response units from various U.S. and international agencies.

NAVIGATING A CHANGING OPERATING ENVIRONMENT

Rapid environmental changes in the Arctic are compressing and altering traditional seasonal patterns, presenting significant challenges for military operations. Shortened and variable seasons demand precise timing, redundant supply chains, and specialized equipment to address hybrid terrain, unpredictable ice conditions, and extreme weather. Space-based sensors, predictive models, and local observers will be critical for monitoring real-time changes such as ice formation, wildfire activity, ocean warming, and security threats, enabling better decision-making across domains.

Health risks, including pathogens released by thawing permafrost and psychological strain from volatile conditions, necessitate advanced medical logistics and resilience-focused strategies. Seasonal accessibility to previously frozen regions creates opportunities and risks, as thawing

exposes unstable terrain and requires hybrid mobility solutions. Thus, survival in the polar environment requires advanced technical solutions, operator adaptability, and ingenuity in applying time-honoured extreme winter warfare training.

LESSONS FROM THE PAST: HOW THE ENVIRONMENT CAN INFLUENCE OPERATIONS IN THE ARCTIC

On the morning of 28 October 1982, perplexed Swedish Fishermen detected a Soviet S363, Whiskey-class coastal patrol submarine stuck on a rock in the middle of a sea bottom mine field in a restricted military coastal area more than 12 nautical miles within Swedish territorial waters close to the subarctic Baltic coast city of Karlskrona.¹¹⁸ Karlskrona is home to Sweden's largest naval base. Inclement weather and the submarine's inability to turn in time likely pushed it into the boulder.¹¹⁹ While the Swedish authorities questioned the submarine commander, a storm obscured Swedish radars. When the storm cleared, two vessels were detected approaching Swedish waters. A renewed Soviet incursion was suspected and Swedish naval fighters and coastal guns were placed on standby to open fire in defence of territorial waters. Soon after, it was discovered that the contacts were German merchant ships.¹²⁰

Subsequently, on 5 November, the then-Swedish Prime Minister announced to the press that the surfaced submarine likely had nuclear explosives aboard with Uranium 238 detected.¹²¹ The incident, soon dubbed "Whiskey on the Rocks," drew on the sharpest diplomatic notes ever written from Sweden to Russia after World War II (WWII).¹²²

The previously outlined constantly shifting environmental conditions – such as variable salinity, shallow seabeds and unpredictable thermoclines – create a dynamic underwater battlefield in the Barents Sea where submarines are forced to engage in a high-stakes game of hide-and-seek. Salinity changes bend sound waves unpredictably, complicating sonar detection and requiring submarines to adapt their stealth tactics on the fly. Shallow seabeds amplify noise and limit manoeuvrability, where even the smallest sound can betray a position. Seasonal shifts, including ice cover and fluctuating temperature layers, further blur the lines between

concealment and exposure, offering both risk and opportunities for evasion. During the 1980s Cold War rivalry, these conditions forced NATO and Soviet submarines into a silent, tactical chess match leveraging natural barriers and acoustic masking to outmanoeuvre each other. Abundant wildlife can add another layer of complexity, further complicating detection efforts.

For some 15 years during the Cold War, Sweden rightly believed it was under threat from enemy submarines, suspecting Soviet incursions into its territorial waters. In 1982, unusual acoustic signals were detected in the Baltic Sea, which Sweden believed came from Russian submarines, sparking military alerts and naval operations.¹²³ However, the source of the mysterious sounds turned out to be an unexpected culprit: herring flatulence.¹²⁴ The unique conditions of the cold northern waters, where sound travels more efficiently, amplified the noises of large schools of herring releasing gas from their swim bladders.¹²⁵

During the Winter War (1939–1940), Finnish forces employed psychological tactics that unsettled Soviet soldiers operating in the unfamiliar boreal forests. One such method involved propping up the frozen bodies of fallen Soviet troops in lifelike positions, creating an unnerving atmosphere intended to intimidate and demoralize the enemy. Additionally, the Finns utilized the “motti” tactic of encircling, isolating, and cutting down Soviet units in the dense forests, leading to confusion and fear among the troops.¹²⁶ Heavy equipment falling or getting stuck in the snow slowed down the Soviet progress, at times rendering them sitting ducks. These strategies reflected the Finnish ability to exploit the challenging terrain and harsh winter conditions to gain a psychological edge over the Soviet invaders. Moreover, during the Winter War, some 60,000 Soviet soldiers succumbed to cold weather illnesses. Frostbite was one of the most common injuries among all forces.¹²⁷ Survival is a key part of the mission in the polar realm.

In WWII, during Operation Gunnerside on the evening of 27 February 1943, nine Norwegian commandos infiltrated the German-held Vemork plant, a hydroelectric generating station outside of Rjukan, Norway.¹²⁸ Their mission was to destroy the water pipes in this plant’s basement. The commandos did not know the significance of their mission at the time,

but they later learned that it played a part in sabotaging Germany's atomic bomb program. The commandos' stealth relied heavily on the snowy environment absorbing sound.¹²⁹

These events highlight how the region's peculiarities can be an asset or a detriment. The challenges of operating in a complex environment where natural phenomena can mimic strategic threats and vice versa underline the importance of domain to avoid misidentifications that could potentially spark tension, if not worse conflict.¹³⁰ Force preparedness and domain awareness are the keys to mitigating hazards and turning obstacles into opportunities.

FINAL REFLECTIONS: SOF'S ROLE ON THE ARCTIC FRONTIER

The U.S. Army, Navy, and Air Force have each developed nested strategies aligned with the Department of Defense *Arctic Strategy*, but their implementation will require time. Specializing select conventional units or rotating forces through Arctic-specific training programs to achieve even a baseline level of expertise will also be a gradual process, demanding sustained focus and investment.¹³¹ While in 2024, U.S. SOF have neither a ready-built Arctic capability nor a permanent presence in the region, they have the capability to bridge the gap and, in a shorter time frame, develop a cadre of experienced Arctic warfare experts.

SOF units have historically trained for cold weather, mountain, and winter warfare operations. In winter warfare, the 10th Special Forces group is the most experienced and there are other naval and air units with specialized capabilities.¹³² Yet, winter and Arctic warfare differ notably in scale, environmental conditions, and requisite expertise.¹³³ Arctic warfare involves operations in consistently harsh conditions, with temperatures often plummeting below -30°C, limited infrastructure, necessitating extremely reliable logistics, training and equipment.¹³⁴ Specialized equipment, including vehicles, gear, and weapons, does not equate to mission success in the Arctic. Survival is the key.

Special Operations Command North (SOCNORTH) supports the integrated North American Arctic. SOCNORTH has developed a platform for SOF to enhance their Arctic capabilities through operations, activities, and

investments (OAIs) focused on homeland defense.¹³⁵ These OAIs allow SOF components, including the United States Army Special Operations Command (USASOC), the United States Navy Special Warfare Command (USNSWC), the Air Force Special Operations Command (AFSOC), and the Marine Corps Forces Special Operations Command (MARSOC), to refine and test concepts, tactics, and equipment, directly supporting their mandate to man, train, equip, and educate the force for evolving Arctic operational demands.¹³⁶

The previous pages outlined how the northern polar environmental variability impacts all operational domains: land, sea, air, and space. On land, thawing permafrost destabilizes infrastructure and releases previously frozen contaminants, including radioactive materials and bio-hazards, while shifting weather patterns, such as fog, and temperature fluctuations challenge flight operations and airborne reconnaissance in air and space. At sea, reduced ice expands maritime routes but alters underwater acoustic conditions, complicating submarine operations and sonar reliability among other equipment impacts. Additionally, increased ionospheric disturbances in the Arctic disrupt satellite communications and GPS accuracy, complicating space-based navigation, and operational coordination. These interconnected changes demand adaptive and innovative strategies and training to ensure operational effectiveness in the evolving Arctic environment. The considerable variability and diversity of local landscapes coupled with overarching unpredictable environmental conditions during shifting seasons, demand logistical flexibility, as supply chains must adapt to rapidly to accommodate these circumstances.

Operating in the varied landscapes of the Arctic and sub-Arctic expanses can be like navigating into a surreal hall of mirrors, where occurrences can masquerade as strategic threats, and the reflections of actual or perceived danger can amplify misunderstandings. The historical incidents described underscore the critical importance of maintaining domain awareness, as the line between reality and misinterpretation can be perilously thin. Without precise intelligence and careful analysis, misidentification risks transforming a spark of tension into conflict.

SOF partnership-building capabilities can support domain awareness and resilience efforts as they did in the past. Operators can achieve immediate impacts by collaborating with partners, allied nations, and

indigenous populations. Collaboration with partner nations, allied forces, and indigenous populations is often highlighted as a strategic priority but faces significant practical challenges. Bureaucratic and institutional hurdles frequently slow or complicate collaborative activities, creating a gap between stated intentions and tangible outcomes. This disconnect can lead to perceptions among stakeholders that U.S. efforts in collaboration are more aspirational than operational. Furthermore, despite shared objectives, differing institutional cultures and occasional interpersonal or organizational mistrust can further hinder effective coordination. Addressing these issues requires a renewed focus on streamlining processes and building trust to ensure collaborative efforts translate into actionable results.

For millennia, the local indigenous peoples have excelled in survival, navigation, and adaptation to extreme conditions, continuing to thrive despite shifts in traditional lifestyles. During WWII, the Alaska Territorial Guard safeguarded Alaska's 6,640-mile coastline as a critical reserve force for the U.S. Army.¹³⁷ Today, stakeholders are considering reviving an indigenous scout force.¹³⁸ Local tribes partnered with SOF would combine SOF expertise with indigenous knowledge. SOF is uniquely positioned and trained to create mutually supportive, robust networks to address modern Arctic challenges and security issues.

Multi-domain, joint U.S. SOF combined with partner nation integration can be a force multiplier in shaping the Arctic strategic scene. The relatively small size of the U.S. SOF compared to the conventional force allows for adaptive and innovative approaches in the everchanging Arctic geophysical, economic, and political landscapes. The Arctic is no longer merely a terrain but a dynamic, shifting battlefield. By integrating local knowledge, monitoring along the technological spectrum and leveraging historical lessons in adapting to multi-hazard conditions, and by creative planning and preparation with and through partners and allies, SOF can support maintaining strategic dominance in this critical region. Integrating local knowledge and effective monitoring and preparation requires a permanent SOF presence. Adaptability, resilience, and innovation will define operational success as the Arctic continues to transform. Monitoring and engaging with partners and allies, ensuring the force is exercised to the highest level of proficiency in Arctic warfare, is beneficial and may be essential for peace and stability.

Cry Sabotage after Two Internet Cables Are Cut in the Baltic Sea,” *CNN*, 19 November 2024, <https://www.cnn.com/2024/11/19/europe/sabotage-undersea-cables-cut-baltic-sea-intl/index.html>.

11 Vaczi, “Hybrid Warfare.”

12 DoD, *2024 Department of Defense Arctic Strategy*.

13 Ibid. The operational planning and preparation for SOF missions are often considerably more detailed than those of conventional forces.

14 Joint Special Operations University, *Special Operations Forces Reference Manual* (Tampa, FL: Joint Special Operations University Press, 2023), https://jsou.edu/Home/OpenFile?path=https://jsouapplicationstorage.blob.core.windows.net/press/466/JSOU_R%2025.pdf.

15 Ibid.

16 Devin Kirkwood, “Quiet, Cold, and Vital: ARSOF In the Arctic,” *War Room - U.S. Army War College* (blog), 8 December 2022, <https://warroom.armywarcollege.edu/articles/arsof-arctic/>.

17 Ibid.

18 Charles Faint and Richard Liebl, “Arctic Defense: The US Needs Polar Special Operations Forces Aligned with the 5 SOF Truths,” *Irregular Warfare Initiative*, 2 May 2024, <https://irregularwarfare.org/articles/arctic-defense-the-us-needs-polar-special-operations-forces-aligned-with-the-5-sof-truths/>.

19 James Morton and Troy Bouffard, “Special Operations Forces and the Arctic: Meeting North America’s 21st Century Security Needs,” *Arctic Special Operations Project | Center for Arctic Security and Resilience (CASR)*, 2022, <https://www.uaf.edu/casr/projects/arctic-sof-minds.php>.

20 Kenneth R. Rosen, “The End of American Exceptionalism in the High North,” *Foreign Policy* (blog), 26 November 2024, <https://foreignpolicy.com/2024/06/07/arctic-united-states-military-strategy-competition-coast-guard/>; Ryan Burke, Cameron Carlson, “Operationalizing the Arctic,” *Modern War Institute*, 13 July 2021, <https://mwi.westpoint.edu/operationalizing-the-arctic/>; Chloe Hadavas, “Inside the Battle for the Arctic,” *Foreign Policy* (blog), 12 December 2024, <https://foreignpolicy.com/2024/09/08/arctic-politics-great-power-competition-nato-us-russia-china/>; O’Rourke et al, “Changes in the Arctic.”

21 National Defense University Press, “The Arctic Domain: A Narrow Niche for Joint Special Operations Forces,” <https://ndupress.ndu.edu/Media/News/News-Article-View/Article/607569/the-arctic-domain-a-narrow-niche-for-joint-special-operations-forces/>[https%3A%2F%2Fndupress.ndu.edu%2FMedia%2FNews%2FNews-Article-View%2FArticle%2F607569%2Fthe-arctic-domain-a-narrow-niche-for-joint-special-operations-forces%2F](https://ndupress.ndu.edu/Media/News/News-Article-View/Article/607569/the-arctic-domain-a-narrow-niche-for-joint-special-operations-forces/), accessed October 24, 2024.

22 Steven Domingo, “Ensuring Survivability for Naval Special Warfare Operations in the Arctic,” unpublished paper, Naval Postgraduate School, 2022, <https://hdl.handle.net/10945/71450>.

- 23 U.S. Arctic Research Commission “Agreement on Enhancing International Arctic Scientific Cooperation,” <https://www.arctic.gov/agreement-on-enhancing-international-arctic-scientific-cooperation/>, accessed 2 November 2024.
- 24 Klaus Dodds and Jamie Woodward, *The Arctic: A Very Short Introduction*, 1st ed. (New York: Oxford University Press, 2021).
- 25 Ibid.
- 26 Arctic Council, “The Arctic Council,” <https://arctic-council.org/>, accessed 7 November 2024.
- 27 Dodds and Woodward, *The Arctic*.
- 28 Vicky Stein, “Ursa Major Constellation: Everything You Need to Know about the Great Bear,” *Space.com*, 6 March 2023, <https://www.space.com/ursa-major-constellation-great-bear>; and Dodds and Klaus, “The Arctic.”
- 29 John MacDonald, *The Arctic Sky: Inuit Astronomy, Star Lore, and Legend* (Toronto: Royal Ontario Museum/Nunavut Research Institute, 1998).
- 30 Dodds and Woodward, *The Arctic*.
- 31 O’Rourke et al., “Changes in the Arctic.”
- 32 Ibid.
- 33 Torben Koenigk, Jeff Key, and Timo Vihma, “Climate Change in the Arctic,” in Alexander Kokhanovsky and Claudio Tomasi, eds., *Physics and Chemistry of the Arctic Atmosphere* (Cham: Springer International Publishing, 2020), 673-705, https://doi.org/10.1007/978-3-030-33566-3_11; and G.V. Alekseev, N. I. Glok, A. E. Vyazilova, and N. E. Kharlanenkova, “Climate Change in the Arctic: Causes and Mechanisms.” *IOP Conference Series: Earth and Environmental Science*, Vol. 606, No. 1 (November 2020): 012002, <https://doi.org/10.1088/1755-1315/606/1/012002>.
- 34 Xiangdong Zhang, Asgeir Sorteberg, Jing Zhang, Rüdiger Gerdes, and Josefino C. Comiso, “Recent Radical Shifts of Atmospheric Circulations and Rapid Changes in Arctic Climate System,” *Geophysical Research Letters*, Vol. 35, No. 22 (November 2008): 2008GL035607, <https://doi.org/10.1029/2008GL035607>.
- 35 Michael Previdi, Karen L. Smith, and Lorenzo M. Polvani, “Arctic Amplification of Climate Change: A Review of Underlying Mechanisms,” *Environmental Research Letters*, Vol. 16, No. 9 (September 2021): 093003, <https://doi.org/10.1088/1748-9326/ac1c29>.
- 36 Ibid.
- 37 Ibid.
- 38 Center for Science Education, “Albedo and Climate. Center for Science Education,” <https://scied.ucar.edu/learning-zone/how-climate-works/albedo-and-climate>, accessed 2 October 2024.
- 39 Ibid.

- 40 U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), “New 1991-2020 Climate Normals,” <https://www.weather.gov/tbw/newnormals>, accessed 2 December 2024.
- 41 Jean Louis Etienne, “The Solar Energy Balance,” *Polar Encyclopedia* <https://www.polarpod.fr/en/encyclopaedia/arctic/2-atmosphere-and-weather/4-the-solar-energy-balance>, accessed 29 November 2024.
- 42 Ibid.
- 43 Torbjørn Pedersen, “Polar Research and the Secrets of the Arctic,” *Arctic Review on Law and Politics*, Vol. 10 (2019): 103-129.
- 44 Ibid.
- 45 National Snow and Ice Data Center (NSIDC), “Arctic Weather and Climate,” <https://nsidc.org/learn/parts-cryosphere/arctic-weather-and-climate>, accessed 2 December 2024.
- 46 Ibid.
- 47 Gunter Weller, “The Weather and Climate of the Arctic,” in Jack D. Ives, Roger G. Barry, *The Arctic* (Milton Park, Abingdon, Oxfordshire: Routledge, 2000).
- 48 Shanika Gunaratna, “North Pole, Arctic Temperatures Climb to near Melting Point This Christmas Week,” *CBS News*, 22 December 2016, <https://www.cbsnews.com/news/arctic-warms-near-melting-point-this-christmas-week/>.
- 49 Maxwell Dunbar and Tim Ingold, “Arctic - Polar, Tundra, Climate,” *Encyclopedia Britannica*, <https://www.britannica.com/place/Arctic/Climate>, accessed 29 November 2024.
- 50 Ibid.
- 51 Maxwell Dunbar, “Arctic - Polar, Tundra, Climate,” *National Snow and Ice Data Center*, <https://nsidc.org/learn/parts-cryosphere/arctic-weather-and-climate/science-arctic-weather-and-climate>, accessed 1 October 2024.
- 52 Rick Thoman, “Arctic Autumn Cloud Trends,” *Alaska and Arctic Climate Newsletter*, 26 November 2024, <https://alaskaclimate.substack.com/p/arctic-autumn-cloud-trends>.
- 53 National Snow and Ice Data Center, “The Science of Arctic Weather and Climate,” <https://nsidc.org/learn/parts-cryosphere/arctic-weather-and-climate/science-arctic-weather-and-climate>.
- 54 Ibid.
- 55 National Aeronautics and Space Administration (NASA), “Tundra: Mission: Biomes,” <https://earthobservatory.nasa.gov/biome/biotundra.php>, accessed 29 November 2024.
- 56 NSIDC, “The Science of Arctic Weather and Climate.”

- 57 Ibid.
- 58 NATO, *Naval Arctic Manual*, 2007, <https://publicintelligence.net/nato-naval-arctic-manual/>.
- 59 Yevgeny Aksenov, et al., “Arctic Pathways of Pacific Water: Arctic Ocean Model Intercomparison Experiments,” *Journal of Geophysical Research. Oceans*, Vol. 121, No. 1 (January 2016): 27-59, <https://doi.org/10.1002/2015JC011299>.
- 60 NATO, *Naval Arctic Manual*.
- 61 Bert Rudels and Eddy Carmack, “Arctic Ocean Water Mass Structure and Circulation,” *Oceanography*, Vol. 35, No. 3-4 (April 18, 2022): 52-65, <https://doi.org/10.5670/oceanog.2022.116>.
- 62 Suzanne E. Tank, et al., “Recent Trends in the Chemistry of Major Northern Rivers Signal Widespread Arctic Change,” *Nature Geoscience*, Vol. 16, No. 9 (September 2023): 789-796, <https://doi.org/10.1038/s41561-023-01247-7>.
- 63 Ibid.
- 64 Ibid.
- 65 NOAA, “Climate Change: Arctic Sea Ice Summer Minimum,” <http://www.climate.gov/news-features/understanding-climate/climate-change-arctic-sea-ice-summer-minimum>, accessed 18 October 2022.
- 66 Tank et al, “Recent Trends in the Chemistry.”
- 67 NSIDC, “Science of Sea Ice,” <https://nsidc.org/learn/parts-cryosphere/sea-ice/science-sea-ice>, accessed 2 October 2024.
- 68 Ibid.
- 69 NOAA, “Climate Change.”
- 70 Encyclopedia Britannica, “Greenland: History, Population, Map, Flag, and Weather,” <https://www.britannica.com/place/Greenland>, accessed 2 November 2024.
- 71 NOAA, “Climate Change: Arctic Sea.”
- 72 Ibid.
- 73 Ibid.
- 74 Chao-Yuan Yang, Jiping Liu and Dake Chen, “Understanding the Influence of Ocean Waves on Arctic Sea Ice Simulation: A Modeling Study with an Atmosphere–Ocean–Wave–Sea Ice Coupled Model,” *The Cryosphere*, Vol. 18, No. 3 (March 12, 2024): 1215-1239, <https://doi.org/10.5194/tc-18-1215-2024>.
- 75 Ibid.
- 76 NSIDC. “If You Were in Greenland Last Summer, That’s Cool,” <https://nsidc.org/ice-sheets-today/analyses/if-you-were-greenland-last-summer-thats-cool>, accessed 22 October 2024.

- 77 Ibid.
- 78 Encyclopedia Britannica, "Greenland."
- 79 NASA, "Greenland Ice Loss 2002-2021," *GRACE Tellus*, <https://grace.jpl.nasa.gov/resources/30/greenland-ice-loss-2002-2021>, accessed 20 October 2024.
- 80 NSIDC, "Frozen Ground & Permafrost," <https://nsidc.org/learn/parts-cryosphere/frozen-ground-permafrost>, accessed 2 December 2024.
- 81 Ibid.
- 82 Ibid.
- 83 Tegan O'Neill, "Thawing Permafrost: What Does It Mean? And What Can Be Done?" *The Salata Institute, Harvard University* (blog), 11 June 2024, <https://salatainstitute.harvard.edu/thawing-permafrost-what-does-it-mean-and-what-can-be-done/>.
- 84 Ibid.
- 85 Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD), "2023 Report to Congress on Permafrost Thaw," <https://www.acq.osd.mil/eie/Downloads/FIM/2023%20Report%20to%20Congress%20on%20Permafrost%20Thaw.pdf>.
- 86 Mark C. Serreze, *Brave New Arctic: The Untold Story of the Melting North* (New Jersey: Princeton University Press, 2020), <https://press.princeton.edu/books/paperback/9780691202655/brave-new-arctic>.
- 87 Ibid.
- 88 Ibid.
- 89 Ibid.
- 90 Ibid.
- 91 Ibid.
- 92 Isabell Eischeid, et al., "Disturbance Mapping in Arctic Tundra Improved by a Planning Workflow for Drone Studies: Advancing Tools for Future Ecosystem Monitoring," *Remote Sensing*, Vol. 13, No. 21 (January 2021): 4466, <https://doi.org/10.3390/rs13214466>.
- 93 Serreze, *Brave New Arctic*.
- 94 Kyle Jole and David Klein, "Complexity of Caribou Population Dynamics in a Changing Climate," U.S. National Park Service, <https://www.nps.gov/articles/aps-v10-i1-c7.htm>, accessed 2 November 2024.
- 95 Kristen Pope, "Risk of Conflict between Humans and Polar Bears Rises as Arctic Melts," *Yale Climate Connections*, 31 July 2023, <http://yaleclimateconnections.org/2023/07/risk-of-conflict-between-humans-and-polar-bears-rises-as-arctic-melts/>.
- 96 Audrey Waits, Anastasia Emelyanova, Antti Oksanen, Khaled Abass and Arja Rautio, "Human Infectious Diseases and the Changing Climate in the Arctic,"

Environment International, Vol. 121 (December 1, 2018): 703-713, <https://doi.org/10.1016/j.envint.2018.09.042>.

97 David Grémillet and Sébastien Descamps, “Ecological Impacts of Climate Change on Arctic Marine Megafauna,” *Trends in Ecology & Evolution*, Vol. 38, No. 8 (August 1, 2023): 773-783, <https://doi.org/10.1016/j.tree.2023.04.002>.

98 Ibid.

99 NSIDC, “The Science of Arctic Weather and Climate.”

100 Anna Wielgopolan, “Polar Illusion: Trying to See through Nature’s Tricks - Edu Arctic,” <https://edu-arctic.pl/en/articles/polarillusion>, accessed 29 November 2024.

101 NSIDC, “The Science of Arctic Weather and Climate.”

102 Richard G. Condon, *Inuit Behavior and Seasonal Change in the Canadian Arctic* (Ann Arbor, MI: UMI Research Press, 1983).

103 Ibid.

104 Ibid.

105 The table created by the authors is based on information from sources cited in this document.

106 Joseph S. Bermudez, Heather A. Conley and Matthew Melino, “The Ice Curtain: Modernization on the Kola Peninsula,” <https://www.csis.org/analysis/ice-curtain-modernization-kola-peninsula>, accessed 23 March 2020.

107 Charles Digges, “Russia’s Radioactive Submarines Remain a Toxic Arctic Threat,” *The Moscow Times*, 27 May 2024, <https://www.themoscowtimes.com/2024/05/27/russias-radioactive-submarines-remain-a-toxic-arctic-threat-a85233>.

108 Alexander Nikitin, “The Nuclear Legacy of the Russian Arctic,” *Bellona*, 4 October 2024, <https://bellona.org/publication/nuclear-legacy-arctic>.

109 Ibid.

110 Ibid.

111 Kleinman Center for Energy Policy, “The Potential and Challenges of Off-Shore Nuclear,” <https://kleinmanenergy.upenn.edu/commentary/blog/the-potential-and-challenges-of-off-shore-nuclear/>, accessed December 3, 2024.

112 George Bass, “The U.S. Army Tried to Build a Secret Nuclear City under Greenland’s Ice,” *Washington Post*, 13 November 2023, <https://www.washingtonpost.com/history/2023/11/13/project-iceworm-greenland-nuclear/>.

113 Ibid.

114 Margherita Bassi, “NASA Radar Detects Abandoned Site of Secret Cold War Project in Greenland—a ‘City Under the Ice,’” *Smithsonian Magazine*, 3 November 2024, <https://www.smithsonianmag.com/smart-news/nasa-radar-detects-abandoned-site-of-secret-cold-war-project-in-greenland-a-city-under-the-ice-180985550/>.

- 115 Andersen-Ranberg et al. "Environmental Stressors and Zoonoses in the Arctic: Learning from the Past to Prepare for the Future," *Science of The Total Environment*, Vol. 957 (December 20, 2024): 176869, <https://doi.org/10.1016/j.scitotenv.2024.176869>.
- 116 Ibid. See also Ekaterina Ezhova, et al., "Climatic Factors Influencing the Anthrax Outbreak of 2016 in Siberia, Russia," *Ecohealth*, Vol. 18, No. 2 (2021): 217-228, <https://doi.org/10.1007/s10393-021-01549-5>.
- 117 Andersen-Ranberg et al., "Environmental Stressors and Zoonoses in the Arctic."
- 118 Karl Erich Westerlund, "'Whiskey on the Rocks' -The Submarine Incident off Karlskrona," Department of the Navy - Naval Intelligence Support Center, 1982.
- 119 Ibid.
- 120 Sebastien Roblin, "How a Whiskey on the Rocks Nearly Started a War Between Russia and Sweden," *The National Interest*, 30 June 2018, <https://nationalinterest.org/blog/buzz/how-whiskey-rocks-nearly-started-war-between-russia-and-sweden-24687>.
- 121 Westerlund, "Whiskey on the Rocks."
- 122 Ibid.
- 123 "For 15 Years Sweden Thought Enemy Submarines Were Invading Its Territory. It Turned Out to be Herring Farts," *IFLScience*, 13 November 2020, <https://www.iflscience.com/for-15-years-sweden-thought-enemy-submarines-were-invading-its-territory-it-turned-out-to-be-herring-farts-57782>.
- 124 Ibid.
- 125 Ibid.
- 126 Pasi Tuunainen, "Motti Tactics in Finnish Military Historiography since World War II," *ResearchGate*, 22 October 2024, <https://doi.org/10.1163/22115757-03302003>.
- 127 Daijiro Kanase, "Operationalizing the Army's Arctic Strategy: One Extreme Cold Day at a Time," *Infantry Magazine*, Spring 2023, https://www.moore.army.mil/infantry/magazine/issues/2023/Spring/pdf/Kanase_9.pdf.
- 128 Kurt Diebner, Robert Furman and Werner Heisenberg, "Operation Gunnerside - Nuclear Museum," <https://Ahf.Nuclearmuseum.Org/> (blog), <https://ahf.nuclearmuseum.org/ahf/history/operation-gunnerside/>, accessed 3 December 2024.
- 129 Diebner, "Operation Gunnerside."
- 130 *IFLScience*, "For 15 Years Sweden."
- 131 Sonner Kehrt, "US Military Can't Sustain Arctic Operations, 'Let Alone Dominate,' Experts Say," *The War Horse* (blog), <https://thewarhorse.org/us-military-cant-sustain-arctic-operations-experts-say/>, accessed 18 January 2024.
- 132 Lieutenant Colonel Sky B. Jensen, "Special Operations Command North: Leading Special Operations Forces into the North America," unpublished paper, Air University, 3 October 2022, <https://www.airuniversity.af.edu/JIPA/Display/Article/3172966/special-operations-command-north-leading-special-operations-forces-into-the-nor/>

<https://www.airuniversity.af.edu/JIPA/Display/Article/3172966/special-operations-command-north-leading-special-operations-forces-into-the-nor>

133 Todd South, "A New Cold War: How the Army Is Preparing for a Fight in the Arctic," *Army Times*, 4 November 2024, https://www.armytimes.com/news/your-army/2018/07/30/a-new-cold-war-how-the-army-is-preparing-for-a-fight-in-the-arctic/?utm_source=chatgpt.com.

134 Ibid.

135 Jensen, "Special Operations Command North."

136 Ibid.

137 James Morton and Ryan Burke, "Special Operations Forces and Arctic Indigenous People: Partnering to Defend the North American Arctic Homeland," *Journal of Indo-Pacific Affairs*, 3 October 2022, <https://www.airuniversity.af.edu/JIPA/Display/Article/3171534/special-operations-forces-and-arctic-indigenous-people-partnering-to-defend-the/>.

138 Ibid.

CHAPTER 5

SENTINELS IN THE SNOW: BUILDING SECURITY RELATIONSHIPS BETWEEN SPECIAL FORCES AND LOCAL POPULATIONS IN A CHANGING ARCTIC

Dr. Michele Devlin, Dr. José de Arimatéia da Cruz
and Brian Gellert

"They know the ice better than any man can ever hope to know it."

Roald Amundsen, historic Norwegian polar explorer

The Arctic and Antarctic polar regions are the least explored and often misunderstood regions on Earth, as relatively few people have on-the-ground experience living and working in these areas. However, contrary to the all-too-common stereotype held by many that the Arctic is nothing but a frozen wasteland devoid of humans, culture, and civilization, the circumpolar North is one of the world's most culturally complex, ethnically diverse, and socially fascinating regions. For example, scientists believe humans have inhabited the far North for over 40,000 years, despite the incredibly inhospitable nature of its climate.¹

Today, the Arctic is warming four to seven times faster² than anywhere else on the planet due to climate change; the melting and thawing are contributing significantly to geopolitical interest in the area due to economic riches that are becoming more accessible. For instance, the Arctic is believed to hold 13 per cent of the world's untapped oil, 30 per cent of the world's untapped gas, immense marine protein and fisheries; a trillion dollars of rare earth minerals, new lucrative international shipping routes, polar observation sites for satellite operations, and other resources due to its unique location.³

As the United States, China, Russia, Canada, Norway, and other nations expand their economic, political, and strategic interests in a warming

Arctic, the long-held pattern of global cooperation in the North is transitioning to competition over these strategic resources. The potential for competition to move next to conflict is a reality that many military organizations worldwide are now considering. Special Operations Forces (SOF) are increasingly being asked to become familiar with the region, conduct training and exercises in the harsh environment, and be prepared to function successfully in the Arctic.

Understanding the unique human terrain of the circumpolar North and partnering with local communities on security issues are one of the last considerations of SOF today when planning to operate in Arctic areas. Famed historic explorers during the Golden Age of Polar Exploration in the early 1900s, such as Roald Amundsen and Knud Rasmussen, have attributed much of their success to these remote missions, which included integrating into local Indigenous populations of the High North and learning survival skills directly from these original winter warriors.⁴ Too many other early Western explorers of the Arctic ignored the depth of environmental knowledge among Indigenous populations at their peril. They paid an unnecessarily high death toll on journeys due to iced-in ships, starvation, scurvy, polar madness, hypothermia, and even cannibalism. In today's modern times, with a significant increase in geopolitical interest and activity by allies and adversaries in the Arctic, SOF have a greater need than ever to understand and respect the diverse human populations who live in the Arctic. For these people, the Arctic is their home, where they do more than survive. They are willing to thrive in one of the world's most inhospitable environments.

THE CHANGING HUMAN TERRAIN OF THE ARCTIC

Scientists define the Arctic, like Antarctica, some Pacific atolls, Space, and other areas, as isolated, contained, and extreme (ICE) environments. These ICE regions tend to have extremely low human densities. In the circumpolar North, only approximately four million people live above or near the Arctic Circle, making the area one of the least populated regions on Earth, short of Antarctica. These Arctic dwellers live in the eight nations of Canada, the United States, Denmark (Greenland and the Faroe Islands), Russia, Sweden, Norway, Finland, and Iceland. Russia comprises 53 per cent of the Arctic Ocean coastline, making it the largest of the eight nations with an Arctic population of 2.5 million. The other 1.5

million inhabitants live in the seven other Arctic nations. Approximately two-thirds of Arctic dwellers live in cities, primarily in Russia, while the others are in smaller rural villages ranging from several hundred to a few thousand people.⁵ Most Arctic communities are not well connected to others. Bush planes, helicopters, dog sleds, snow machines, or seasonal ice roads may be the only way some Arctic residents can travel between communities.

Arctic residents are as diverse as the physical terrain in which they live. They may be employed in mining, energy, fishing, government, service, traditional arts, or private businesses.⁶ Contrary to stereotypes, Arctic populations do not live in igloos or ice houses. Most of their homes are similar to those in many other areas of the world but designed to withstand extreme cold, wind, freezing, and thawing. Many, although not all, of their structures are built above the ground to avoid uneven settling due to thawing permafrost or complex installation of pipes into the earth. Even in locations such as the North Slope of Alaska in the United States, northern populations often rely on subsistence hunting of caribou, bowhead whales, seals, walrus, fish, and other animals for the bulk of their diets. Arctic families tend to be tightly knit, although younger people increasingly leave the region for work elsewhere. As such, Arctic communities may skew older and more female, as younger males may seek employment away from the region.⁷ However, the population of the Arctic itself is in flux with climate change and increased demands for labour. To that end, some of the most common local populations who may be encountered by SOF in Arctic communities in the circumpolar North include those discussed in the next section.

SPECIAL POPULATIONS IN THE ARCTIC:

- **Indigenous Peoples:** Within the circumpolar North, Arctic Indigenous Peoples comprise approximately 10 per cent of the population. They come from more than 40 unique ethnic backgrounds and speak approximately 90 different languages.⁸ The percentage of these populations varies by region within the Arctic. For instance, within the entire state of Alaska, one in five persons is Indigenous. Still, within the North Slope Borough above the Arctic Circle, Indigenous populations are the majority and can comprise 90 per cent or more of the residents of certain

villages.⁹ Indigenous populations in the Arctic have unique histories and rich traditions that vary by community and region. They should not be referred to as “Eskimos.” Many trace their presence in the area back thousands of years. Their communities are typically well-governed through tribal leadership, elders, extended family networks, indigenous corporations, etc. Indigenous populations are usually citizens of the country where they reside, although modern national borders often cross their communities today. Some may live on large areas of land their tribe owns in well-defined communities such as the Inupiat on the North Slope of Alaska. In contrast, others, such as the northern European Sàmi, are more integrated into the broader community. Some Indigenous populations reside in regions of the Arctic with great wealth from mining, oil, gas, and other natural resources, and they receive significant dividends from these corporations. Within the Arctic Council, six Arctic Indigenous Peoples are considered Permanent Participants for governance purposes, including the Arctic Athabaskan Council, the Gwich’in Council International, the Aleut International Association, the Inuit Circumpolar Council, the Russian Association of Indigenous Peoples of the North, and the Sàmi Council.¹⁰ The Inuit are the most extensive Arctic Indigenous Peoples, stretching along the Arctic Ocean from northeast Russia to Alaska, Canada, and Greenland. The countries in which these populations reside have different relationships with the Indigenous communities within their borders that can range from semi-autonomous governance, such as in Canada, to hostile authoritarian government control, such as in Russia. Many Arctic Indigenous populations serve in the military at a disproportionately higher rate than many other groups and are proud, highly skilled veterans.

- **Migrant and Temporary Workers:** The circumpolar North has abundant natural resources that are increasingly accessible through global warming and improved remote technologies. As such, migrant workers are becoming more common in many Arctic regions to fill labour voids in these areas with low human density. Temporary workers may be either skilled or unskilled, with some choosing to remain in the Arctic as permanent long-term residents. This ethnic diversity is growing, even in remote

areas. The local population may speak dozens of languages in some communities like Utqiagvik (Barrow), Alaska, Reykjavik, Nuuk, and others due to migrant workers. Depending on the area, 10-15 per cent of the population may comprise these individuals. Some of the most common regions of origin for workers in the Arctic are the Philippines, Hawaii, Thailand, Samoa, Cambodia, Tonga, Ukraine, Poland, Lithuania, Romania, and others. Depending on the nation, these migrants may be working legally as resettled refugees, using temporary labor visas, or overstaying tourist visas. Many are deliberately recruited to the area by local Indigenous corporations and tribal companies needing workers. In some cases, such as with the Alaskan Arctic, citizens from other parts of the United States come from lower-income southern states like Alabama and Mississippi, searching for higher-paying jobs up North. Whether coming from within the Arctic nation or outside of it, many fall in love with the North, intermarry, remain in the area for generations, and become highly integrated residents. Alaska has a long history of immigration, for instance, of people from Hawaii and other Asian-Pacific Islands, who share a common affinity with the Inupiat, for example, as people of the sea despite the temperature differences. Many migrant workers are employed in tourism, manufacturing, transportation, and the service sector.

- **Other Unique Communities:** Arctic populations typically have a well-deserved reputation for their unique lifestyles and independent nature. Far from resenting living in such harsh and remote conditions, they usually thrive in extreme environments, thoroughly enjoy outdoor activities, and practice subsistence skills. In recent years, popular cable documentary shows have highlighted many of these kinds of special populations who live above the Arctic Circle. These communities have a unique knowledge base of the local physical and human terrain and are an essential part of the culture in the Far North. Both Indigenous and non-Indigenous, they can include bush pilots, sled dog mushing association members, competitive snow machine drivers, fishing families, whaling crews, fly-in/fly-out oil and gas workers in energy corporations, remote area medical teams and village health nurses, homesteaders, and other essential populations who

thrive on the sheer adventure of living in one of the world's most extreme and highest paying regions. In Alaska, for instance, most of these populations live in the Arctic bush, requiring them to periodically bring their food and living supplies on airplanes from cities such as Anchorage or summer barges when the sea ice melts.

RECOMMENDATIONS

In conclusion, SOF Operators must not only understand the physical terrain of their missions in the Arctic but also deeply understand and appreciate the surprisingly complex and evolving human terrain of the far North. The knowledge learned from these local populations and the civilian-military security partnerships that can be established is essential in remote, extreme, low-density areas. Some of the most critical strategies that SOF Operators can use to develop meaningful security partnerships with these groups are:

- Once Arctic areas of operation have been determined, identify which Indigenous and local populations are dominant in that area. Use data sources like provincial or county/borough websites, local school district publications, and other sources that describe Indigenous, non-Indigenous, migrant, and other local populations of dominance.
- Supplement computer searches of peer-reviewed articles and readings of reports and books with actual on-the-ground visits to the specific region of the Arctic where exercises and operations will occur. Allow enough time to understand the complexity of the social fabric and visit local populations in their communities. Site visits should be included as some of the first tasks to complete during the planning process.
- Conduct regular community meetings and civil engagements on an ongoing basis between the local populations and Special Operators. Use the same military members to ensure continuity and the ability to develop close personal relationships with local communities where possible. Remember that most Arctic populations are concerned about adversaries taking advantage of their resources and are aware of the increased global interest in their

homelands. Many are willing to partner with SOF on security operations as observers, trainers, polar bear patrols, guides, and other roles, and they should be paid fairly for their services.

- When visiting Indigenous villages and local communities, always bring additional items for local people beyond those materials needed as an individual SOF operator. For instance, locals in remote areas can significantly appreciate gifts of fresh fruit, small toys for children, flashlights, and other such things. Culturally, many Arctic populations greatly value sharing community assets.
- Meet with key community leaders. These include political representatives, tribal elders, village mayors, whaling captains, Indigenous corporation leaders, and other special populations. Many Arctic cultures value age and show profound respect to older individuals.
- Viewpoints in human communities can vary by age, gender, ethnic diversity, clan, and other factors. Ensure that SOF operators interact with a socially proper mix of people from local communities so that they understand the population better.
- Consider the inclusion of interpreters, cultural liaisons, civil affairs units, chaplain corps members, and other military personnel assets to assist SOF in connecting with the community. While many Indigenous populations in Alaska, such as the Inupiat on the North Slope, speak English, elders may speak rare tribal languages. They may have lower literacy skills in their native language. SOF units working in Greenland or Arctic Canada may sometimes need interpreters. SOF operators can take introductory online courses in the Inupiaq language through tribal schools like Ilisagvik Community College on the North Slope of Alaska. Other Arctic regions often have similar introductory online language courses.
- Determine preferred local methods of communication between populations for civilian-military messaging. Many Arctic families, due to their isolation, rely heavily on Facebook, TikTok, local radio stations like KBRW in northern Alaska, community regional

newspapers like the Arctic Sounder, and even VHF village radios to communicate with each other and share essential opportunities, concerns, and community events.

- Identify ways to connect with local populations during “windows of opportunity” where they are already gathered and willing to have visitors. Many Arctic communities are very welcoming and genuinely enjoy educating visitors on their unique culture. Exhibit humility and genuine cultural interest in learning. Consider assisting local communities with processing subsistence marine mammal hunts, which are communal events. Participate in significant community festivals like Naluqataq in northern Alaska, school district events, Arctic youth sports leagues in basketball, hockey, and football, and other community events.
- Reciprocity and sharing of assets are expected in many Arctic cultures. SOF operators should not just focus on what the local populations can do for them but also consider ways the military can aid these communities with medical care, building projects, labor, and other services.

CONCLUSION

The Arctic’s physical and human ecology is in flux. As it warms and new natural resources become more accessible, military personnel such as SOF operators will increasingly conduct operations and exercises in this rapidly growing geopolitical hot spot. Building meaningful relationships with local populations is essential to understanding the challenges inherent in the extreme environment, learning how to survive and thrive in the Arctic, and respecting the wisdom and viewpoints of residents who call the region their home. As famed Polar explorer Knud Rasmussen once stated about the local indigenous populations he encountered, *“To them, the Arctic is home, not a hostile wilderness...It is their world; we are the strangers in it.”*¹¹ With genuine, ongoing, culturally right partnerships, SOF operators and residents can work together to promote a safe, stable, and sustainable circumpolar North now and into the future.

ENDNOTES

- 1 Guy Gugliotta. "The Great Human Migration: Why humans left their African homeland 80,000 years ago to colonize the world," <https://www.smithsonianmag.com/history/the-great-human-migration-13561/>, accessed 8 November 2024.
- 2 Rantanen, M., Karpechko, A.Y., Lipponen, A. *et al.*, "The Arctic has warmed nearly four times faster than the globe since 1979," *Communications Earth & Environment*, Vol. 3, No. 168 (2022), <https://doi.org/10.1038/s43247-022-00498-3>, accessed 8 November 2024.
- 3 "Arctic and natural gas resources," <https://www.eia.gov/todayinenergy/detail.php?id=4650>, accessed 8 November 2024.
- 4 "Roald Amundsen: Polar Explorer," <https://www.rmg.co.uk/stories/topics/roald-amundsen-polar-explorer>, accessed 8 November 2024.
- 5 "International Affairs Arctic Countries," <https://arctic.review/international-affairs/arctic-countries/>, accessed 8 November 2024.
- 6 Congressional Research Services (CSR), "Changes in the Arctic: Background and Issues for Congress," updated 1 October 2024, <https://crsreports.congress.gov/product/pdf/R/R41153>, accessed 8 November 2024.
- 7 Arctic Council Sustainable Development Workgroup, "Pan-Arctic Report: Gender Equality Arctic Phase 3," https://nordregio.org/wp-content/uploads/2021/05/Pan-Arctic_Report-GEA3-2021.pdf, accessed 8 November 2024.
- 8 Arctic Centre, University of Lapland, "Arctic Indigenous Peoples," <https://www.arcticcentre.org/EN/arcticregion/Arctic-Indigenous-Peoples>, accessed 8 November 2024.
- 9 "Circumpolar peoples," *Wikipedia*, https://en.wikipedia.org/wiki/Circumpolar_peoples, accessed 8 November 2024.
- 10 Arctic Council. "Permanent Participants," <https://arctic-council.org/about/permanent-participants/>, accessed 8 November 2024.
- 11 Daven Hafey, "A Northwest Passage Legend: Knud Rasmussen and his Fifth Thule Expedition," *Quark Expeditions*, <https://www.quarkexpeditions.com/blog/knud-rasmussen-a-northwest-passage-legend>, accessed 8 November 2024.

CHAPTER 6

NOT AN INCONSEQUENTIAL BATTLESPACE: ARCTIC THREAT STREAMS

Colonel (retired) Bernd Horn

The Arctic with its distant, vast and inhospitable environment has never been seen as a likely spot that would be ground zero for the next world war. In fact, experts agree that the next global conflagration will not start in the North. It's too isolated and remote. In addition, it lacks critical infrastructure and for most Arctic countries it has limited military consequence. However, the doyens do agree that the Arctic will be a theatre of operations, one with ever increasing importance.

This conclusion is not surprising. Climate change has significantly altered the global perspective on the North. The Arctic is warming two to four times (depending on the source) faster than the rest of the world. Scientific authorities predict the Arctic will have ice-free summers by 2050. This change is, and will increasingly, make the Arctic more accessible. It will open exploitation of natural resources and increase global shipping routes, which can cut down on shipping times and costs.

Predictably, the increasing accessibility to the Arctic and its economic and military consequences have prompted both Arctic and non-Arctic states to increase their capabilities to survive and operate in the North. For the North Atlantic Treaty Organization (NATO) Arctic countries, belligerent actors – the resurgent, bellicose Russia, with its massive equities in the Arctic, as well as China, an emerging global superpower that has declared itself a near-Arctic state – have intensified the Western focus on the North.

This new concern for Arctic sovereignty and control is not hyperbolic. Whether set in a high intensity conflict scenario, or simply as in the present great power competition (GPC), there are a plethora of threat streams that can play out in the North.¹ Before examining military threats, however, it is important to note that RAND researchers have argued:

The likeliest and most-consequential threats will come from the Arctic's physical environment and the present lack of capability, capacity, and preparedness for dealing with these challenges. The dangers of navigating through vast, poorly charted areas with extreme weather conditions; operating in a data vacuum with limited communications; and lacking personnel trained and ready to persist in a harsh, logistics poor environment are—and will continue to be—formidable.²

Additionally, a U.S. Department of Defense (DoD) futures analysis of the Arctic theatre of operation highlighted a number of key factors that would be in play / require consideration when conceptualizing Arctic operations. These included:

- a. Heightened focus and assertiveness by U.S. competitors;
- b. Nuclear deterrence activities in the region;
- c. The intersection of economic, scientific, and security activity in the region;
- d. Adversary influenced if not dominated information architecture;
- e. Unpredictable degradation of communications and space support;
- f. Large geographic dispersion of forces;
- g. Battle rhythms crossing multiple time zones;
- h. Slow and difficult movement and protracted operational time frames;
- i. Dependence upon purpose-built equipment;
- j. Extreme climactic conditions with degraded weather forecasting accuracy;
- k. Less precise fire support due to unique position, navigation, and timing challenges;
- l. Geographically dispersed population centres;
- m. Presence of often disenfranchised cross-border indigenous groups;
- n. General unavailability of maritime support;
- o. Lack of transportation infrastructure;
- p. Vulnerability of sustainment lines;
- q. Extended periods of darkness or daylight;
- r. Elevated attrition rates and inefficiency; and
- s. Experienced, trained, equipped, and well-positioned adversaries.³

Consequently, special operations forces (SOF) have a significant role to play. In an Arctic conflict, or GPC scenario, antagonists will need to operate with degraded situational awareness, precision, and communications than are normally available in operations. The environment will be dramatically different, and forces will need to negotiate long distances across difficult terrain in hazardous, harsh conditions in remote locations. A substantial effort will be devoted to survival rather than conducting decisive action. This disproportionate disbursement of energy and effort on survival will restrain a force's ability to exercise initiative and accept risk. This reality will directly affect the tempo of combat, resulting in episodic battles and slow movement.

Additionally, communications will be unreliable and forces will be dispersed, which will make command and control (C2) and maintaining a common operating picture challenging. Movement and manoeuvre will be slow, difficult, and require purpose-built equipment for efficacy in the North. Terrain, whether winter or summer will be exigent. During winter, darkness, ice and snow will test resilience. In summer, the lack of darkness will make any movement open to observation. Moreover, summer operations will necessitate the passage over / through ubiquitous lakes and peat bogs, as well as varied, mountainous terrain. Finally, sustainment will be extremely difficult. The lack of infrastructure, long distances, environmental challenges and harsh conditions will make timely resupply and replacement of vehicles, equipment and munitions difficult.⁴

As a result of this myriad of challenges, SOF will be the force of choice. Due to their high readiness levels, ability to deploy rapidly and utilize varied insertion techniques, capability to operate in dispersed groups in harsh environments, as well as their capacity to utilize advanced communications and technology, political and military leadership will gravitate to utilizing SOF for both crisis response, as well as planned operations in the Arctic. Therefore, SOF must have a good appreciation of the various belligerent threats they may face in the North.

HIGH INTENSITY CONFLICT THREAT STREAMS

Considering the complexity of the Arctic operating environment, there is little incentive for either NATO or Russia to create overwhelming tension

in the Arctic, much less conduct high-intensity combat operations there. However, the potential for “horizontal escalation” where a crisis or conflict impacting a part of NATO, triggering Article 5, namely, that an attack on one Allied nation is an attack on all, can result in the North becoming a theatre of operations.

Significantly, for a security conscious, if not paranoid, Russia, the Arctic holds great significance both economically and militarily. Russia possesses 24,000 kilometres of Arctic coastline, which represents over half of the Arctic shoreline. Russia also represents nearly half of the people living in the Arctic. For Russia, the idea of being a leading Arctic power is an important symbol of national strength and pride.⁵

Economically, experts estimate that Russia’s Arctic region, both territories and waters, are responsible for approximately 12-15 per cent of Russia’s gross domestic product (GDP) and 80 per cent of Russian natural gas.⁶ Not surprisingly, in December 2023, Admiral Nikolay Yevmenov, head of the Russian Navy, spoke of a “full-scale development beyond the 200-mile limit” of the Russian Exclusive Economic Zone in the Arctic Ocean.⁷

From a security standpoint the Arctic is arguably even more significant. The enlargement of NATO, specifically the addition of the Arctic states of Finland and Sweden, feeds directly into Russian insecurities and perceived vulnerabilities. For the Russians, the high North has always been seen as critical to its defence strategy, policy and planning. The Arctic represents its bastion of defence. The North is where Russia deploys its nuclear-armed submarines on patrol from bases on the Kola Peninsula to the Barents Sea and Arctic Ocean. These submarines are key to its second-strike nuclear capability. It is also a staging base for Russian naval and aerial forces to deploy to disrupt NATO sea lines of communication in the North Atlantic.⁸

Quite simply, Russia has revitalised its concept of ‘bastion’ defence, which seeks to create a heavily defended area where its naval forces can operate unchallenged. Beginning in 2014, the Russian Ministry of Defense confirmed that Soviet-era bases in the Arctic were being reactivated in response to NATO’s renewed interest in the North. The airfield on the Novaya Zemlya archipelago was renovated to accommodate modern and next generation fighter aircraft, as well as advanced S400 air defense

systems.⁹ A portion of the Northern Fleet was also deployed on the island chain, which is ideally positioned for operations in the Arctic region. Importantly, the Northern Fleet, located on the Kola Peninsula, represents two-thirds of the Russian Navy's nuclear strike capabilities. It is also the only navy in the world that operates nuclear-powered icebreakers.¹⁰

In total, since 2014, Russia has constructed in excess of 475 military facilities in the Arctic Ocean. These include bases, airfields, electronic warfare infrastructure and coastal defence systems.¹¹ Its Northern Fleet, which is based in Severomorsk, is the base of more than 30 surface ships and more than two dozen submarines, including nuclear submarines and others that carry long-range cruise missiles capable of reaching all NATO countries.¹²

In fact, Russia's 2022 naval doctrine raised the Arctic region to the highest priority. Not surprisingly then, in the Barents Sea, a multilayered network of sensors, missile systems, coastal defence systems, and electronic warfare technology protects these capabilities, including the strategic submarines.¹³ This posture is not surprising as the Arctic functions as a deployment area for Russia's strategic air force, and the projected path of the Russian intercontinental ballistic missiles destined for North America.

Additionally, the Russian Northern Fleet headquarters is located in Severomorsk close to Murmansk and has other bases on the Kola Peninsula and a base in the White Sea since the Barents Sea is an access route to the White Sea and the Atlantic Ocean. From a strategic perspective, this area is vitally important for Russia because the Gulf Stream ensures that the ports in the north can be accessed year-round.

To achieve its geostrategic objectives in the Arctic, Russia has established the Northern Fleet Joint Strategic Command and in 2021, it upgraded the navy's northern command, which has jurisdiction in the Arctic region, to become one of five Russian military districts, thus underlining the region's perceived importance. Russia has also embarked on large-scale investment in Arctic airfields and ports, and it initiated the development of discreet Arctic military capabilities such as the Northern Fleet's Arctic Motorized Rifle Brigade and "Arctic-proof" drones that can withstand the region's severe climatic conditions.

The *Rosgvardia*, the National Guard of the Russian Federation, is also accountable for the Arctic. It is responsible for the protection of three nuclear objects, seven nuclear-powered ships and nine seaports on the Northern Sea Route.¹⁴ In addition, Moscow announced the formation of a new 6,000-soldier military group in the far north consisting of two motorized infantry brigades located in the Murmansk area and the Yamal-Nenets autonomous region. Moreover, the Federal Security Service plans to increase the number of border guards on Russia's northern perimeter as well.¹⁵

Russia has also focused on special operations in the North. The Northern Fleet unit of marines has "trained for reconnaissance and sabotage operations behind enemy lines."¹⁶ Furthermore, special forces from the Russian National Guard and instructors from the Chechen Spetsnaz University trained in the Arctic including counter-terrorism exercises onboard ice-breaking container vessels. They attacked with snowmobiles, special buggies and helicopters and subsequently took control over a ship.¹⁷ Moreover, naval marines and other troops have conducted exercises along Russia's northern coastline, practising the defence and the retaking of ports from enemy control.¹⁸

Finally, Russia continues to advance its program of rapid renewal and expansion of its icebreaker fleet. Russia has begun trialling 13 new ships being inducted into its fleet and it is arming its aircraft and naval vessels with the newly designed hypersonic missile, the Kinzhal. It has also commissioned three new nuclear icebreakers since 2020, with three more currently under construction. Importantly, Russia's first armed combat icebreaker, *Ivan Papanin*, is currently undergoing open water factory trials. Russia's combat icebreakers are equipped with the 76mm AK-176MA gun and pre-installed launchers for Uran anti-ship and Kalibr-NK cruise missiles. It can cut through five and a half feet of ice and it will be able to access most of the Arctic Ocean except in the dead of winter.¹⁹

Of concern, Russia's Arctic capabilities have the potential to hold the NATO Arctic countries and their allies at risk. The high North is key to all-domain awareness and missile warning. As stated in the U.S. *Arctic Strategy*:

The Arctic holds our northern approaches to the U.S. homeland, and detecting threats from afar is critical to homeland defense. The network of U.S. and Canadian radars and sensors operated by NORAD and U.S. Northern Command (USNORTHCOM) enables the detection and tracking of certain threats from and through portions of the Arctic, but modernization is needed.²⁰

The security concern for the European NATO Arctic countries is similar. They have military installations, as well as a more populated Arctic than North America, both of which are close to the Russian-controlled region. Even non-Arctic NATO countries have equity in the North. A British Government report noted:

The strategic importance of the High North and the North Atlantic to the security of the UK and Europe cannot be overstated. During the Cold War a huge amount of effort was invested in the development of plans and capability to counter the threat that existed to NATO's Northern Flank and the wider North Atlantic. Although we are not facing challenges on the same scale today, the prospect of Russian power being projected from the High North into the North Atlantic has returned and a comprehensive strategy is needed to meet this threat. The historical importance of the maritime space stretching from the Arctic to the North Atlantic is well established, but we can see that many of the strategic considerations which were present in the recent past are now re-emerging.²¹

Quite simply, there is concern that Russia's theatre-ready forces could seize peripheral territory before NATO could fully mobilise and would then employ anti-access/area denial (A2/AD) systems to deter the Alliance from mounting a counterattack.²² Even more debilitating would be a Pearl Harbor-esque type surprise attack on NATO Arctic infrastructure, bases and military equipment that would eliminate an immediate threat to Russian forces and infrastructure in the region. Furthermore, due to distances, logistical challenges, scarce resources during a conflict, particularly for a distant theatre, the ability of NATO to restore its lost infrastructure and equipment would be extremely slow and most likely delayed.

During a high intensity conflict, Russia could also target key sites in the Bear Gap between the Norwegian Svalbard archipelago and Norway proper, as well as the Greenland–Iceland–UK (GIUK) Gaps leading to the North Atlantic.²³ Once again, although conflict over the Arctic is unlikely, if conflict erupts, the Arctic represents a significant theatre, particularly for Russia.

In a high intensity conflict the following threats must be considered:

- a. Ballistic missiles – including potentially nuclear weapons, which are based in the Arctic would be used to target key NATO targets both in the region and beyond;
- b. Large-scale ground assault into Scandinavia due to its close proximity to the Kola Peninsula and Russian military equipment and bases;
- c. Air, naval and amphibious operations, particularly in the strategic maritime chokepoints of the Bering Sea or the Barents Sea opening;²⁴
- d. Small lodgements on NATO territory by SOF. Although only meant as a diversion / distraction, few Western countries could withstand the public outcry of national territory being occupied with no response from the government, which is prioritizing expeditionary operations. As such, even a diversionary lodgement scenario would create an embarrassment, as well as consuming time, personnel and resources to counter;²⁵
- e. Direct Action raids against military (e.g., radar stations, military bases and airfields, storage depots) and key civilian infrastructure (e.g., power plants, mines, oil platforms, large buildings capable of use as staging points for military personnel);
- f. Special reconnaissance to identify targets, confirm areas for infiltration / landing, conduct bomb damage assessment, determine strength and defences;
- g. Conduct guerrilla operations behind enemy lines / unconventional warfare (UW) if resistance networks can be established or imported;

- h. Sabotage of key infrastructure, cables, pipelines, oil platforms, radar systems, aircraft or ships.

A key question becomes would NATO go to war if Russia annexed / attacked a peripheral territory of a NATO Arctic country? How willing would the alliance be to risk a global conflagration or territory in such a remote and difficult region in which to operate?

GREAT POWER COMPETITION – THREAT STREAMS

Few military practitioners, analysts or politicians believe that a war will erupt in the Arctic. Its remoteness, harsh environment, and difficulty in conducting operations negate a willingness to undertake offensive combat action unless absolutely required. However, the valuable economic resource base of the North, combined with the current volatility of the current iteration of the Great Power Competition (GPC) make the Arctic fertile ground for gray zone operations intended to provide economic, political or military advantage to international actors.²⁶

Gray zone operations are “characterized by intense political, economic, informational, military competition more fervent in nature than normal steady-state diplomacy, yet short of conventional war.”²⁷ Gray zone operations are “those covert or illegal activities of nontraditional statecraft that are below the threshold of armed organized violence; including disruption of order, political subversion of government or non-governmental organizations, psychological operations, abuse of legal processes, and financial corruption as part of an integrated design to achieve strategic advantage.”²⁸

Gray zone operations are similar to Hybrid Warfare, which is defined as “synchronized use of multiple instruments of power tailored to specific vulnerabilities across the full spectrum of societal functions to achieve synergistic effects.”²⁹ Hybrid threats are used to “exploit vulnerabilities or opportunities [and] to undermine the opponent’s decision-making process, while maintaining a degree of plausible deniability.”³⁰ These instruments of power are also designed to be conducted under the threshold of what would be considered an act of war.

Gray Zone / Hybrid Warfare provides antagonists with an effective, yet containable, method to disrupt competitors and achieve influence and

access to allies, partners, resources, etc., in order to attain political, military, economic and geographic advantage. Applicable threat streams in the Arctic include:

- a. Challenges to national sovereignty by various state and non-state actors (e.g., private and commercial fishing vessels, state encroachment on areas claimed by Canada, such as in the Northwest Passage, “scientific research” stations). The “warming” of the Arctic making access easier and longer has lured many commercial and non-Arctic country actors into the North.³¹ Often, these interlopers fail to seek permission or flaunt rules and regulations. Moreover, with proprietorship of areas in Arctic embroiled in dispute, the question of national ownership could come under attack. As some Canadian analysts have cautioned regarding Chinese efforts at foreign investment in the North, “if the Chinese are allowed to build infrastructure in the Arctic, if they’re the ones constructing ports and running icebreakers in areas that Canada had failed to develop in over 150 years, then eventually they could turn around and claim the territory as their own.”³² As such, national governments must be able to police and enforce their Arctic territory and ensure that they continue to develop the necessary infrastructure.
- b. Theft /looting of natural resources. Like the previous threat stream, national authorities must be able to prevent, identify, interdict and apprehend those state and non-state actors that attempt to loot natural resources (e.g., illegal fishing, mining, resource extraction). Failure to act against these types of illegal activity can once again dilute sovereignty and claims of national ownership.
- c. Foreign “scientific research.” Unquestionably, scientific research to better understand the environment and its impact on the globe, whether done by national or foreign scientists, is critical to the advancement of knowledge and stewardship of the North. However, countries must not be naïve. Much of research can and does serve scientific, economic and military purposes.³³ The Chinese are well known for their dual civil/military applications of virtually all activity.³⁴ For instance, defence analysts have warned that Chinese buoys in the Arctic that monitor ice sheets can also be

used to track U.S. and NATO submarine movement. In addition, they caution that “Chinese research vessels can conduct polar research but also subsea reconnaissance.”³⁵ Additionally, the U.S. *2024 Arctic Strategy* revealed, “The PRC [People’s Republic of China] operates three icebreakers - the Xue Long, Xue Long 2, and Zhong Shan Da Xue Ji Di - which enable the PRC’s dual civil-military research efforts in the Arctic. Over the course of the PRC’s 13 Arctic research expeditions to date, the vessels have tested unmanned underwater vehicles and polar-capable fixed-wing aircraft, among other activities. People’s Liberation Army Navy (PLAN) vessels have also demonstrated the capability and intent to operate in and around the Arctic region through exercises alongside the Russian Navy over the past several years.”³⁶

- d. Domestic or international terrorism (e.g., eco-terrorists; political or religious terrorists of various motivations willing to use whatever means possible to achieve their political objectives). Realistically, given the vast distances involved, the harsh environment and operating conditions and the limited media access, terrorism in the Arctic currently has a low probability of occurring. However, as ice packs melt and commercial shipping and resource extraction increases, targets become more viable. Oil platforms and terminals, radar sites, as well as pipelines, weather stations and governmental infrastructure are all potential objectives. In addition, cruise ships could become a target. For instance, in July 2024, a Chinese luxury expedition cruise ship visited China’s Yellow River Research Station in remote Ny-Ålesund in the Svalbard Islands as part of a two-week “Three Arctic Islands” tour.³⁷

Environmental sabotage by eco-extremist groups or belligerent governments that wish to distract sovereign nations, create internal dissent and agitation or simply economic loss also pose a viable threat. The environmental disaster that occurred on 24 March 1989, when the *Exxon Valdez*, an oil supertanker struck a reef in Prince William Sound’s Bligh Reef in Alaska provides an excellent example of the damage that can be done. The resultant spill leaked almost 38 million litres (over 10 million U.S. gallons) of crude oil over almost 2,100 kilometres of coast-

line. The lingering impact on local industries, communities and wildlife are still felt to this day. The British Petroleum (BP) oil spill in the Mexican Gulf in 2010 is yet another example of the devastation that can be inflicted in the environment. The Arctic's fragile eco-system and difficulty in undertaking cleaning operations just exacerbates the potential damage that can be done.

- e. Intelligence gathering operations by state and non-state actors. Global rivalry for political, economic and military purposes is a constant, particularly as a result of GPC. International actors are constantly attempting to assess military and technological capability, stature and readiness, as well as resources access and viability. As noted earlier, civil / scientific / commercial pursuits can also provide valuable information for military applications. For example, China has used buoys and balloons near Alaska to collect intelligence on the United States and even went so far as to send Chinese nationals posing as tourists through the Fort Wainwright gate near Fairbanks, Alaska.³⁸

The Russians have remained very active in pursuing intelligence gathering. In mid-October 2022, six Russian citizens were arrested in Norway on suspicion of flying drones to gather sensitive information. Much of this activity took place in Northern Norway near military installations or airports. Four of the six had video footage of locations not accessible to civilians and that were subject to extra levels of security.³⁹ In addition, during the fall of 2022, Norway reported numerous unidentified drones flown over or around important parts of Norwegian communication infrastructure, airports or military facilities. Drones also overflew oil and gas facilities, as well as illegally photographing Svalbard. Furthermore, a number of Russian citizens were arrested for illegal photographing sensitive sites, jamming GPS signals, and cutting subsurface fiber-optic cables and submarine cables.⁴⁰ Moreover, in April 2023, fifteen Russian diplomats were expelled from Norway because they were undercover intelligence officers rather than actual diplomats. Norway has been subjected to both "traditional" human-agent espionage as well as digital forms of espionage.

Finally, in the spring of 2023, four Nordic broadcasting companies (Norwegian NRK, Swedish SVT, Danish DR, and Finnish Yle) collectively tracked Russian fishing trawlers, merchant and research ships that frequently passed over known oil and gas fields. These ships were also often in close proximity to military exercises and to American submarines when they surfaced. The investigation tracked over fifty ships that appeared to be collecting data along the seabed, as well as monitoring military and other activities taking place within Norwegian territorial waters.⁴¹

- f. Counter-intelligence operations attempting to disrupt NATO allied intelligence operations. With the plethora of intelligence gathering operations undertaken by competing countries, not surprisingly all undertake actions to disrupt or deflect competitor intelligence operations. Cyber-attacks, jamming, electronic intercept, bribery and agent recruitment, as well as physical interference by ships and aircraft are some of the possible actions.
- g. Interference with civilian, economic, political day-to-day operations. Western analysts have concluded that Russia has launched more concerted hybrid attacks than the alliance has seen at any point since the end of the Cold War. The European Union (EU) announced that it has “detected an increasing number of a broad range of activities.” It revealed that Russia continues to disrupt satellite communications, violate European airspace and organize physical attacks against people.⁴² Northern Norway has been increasingly subjected to jamming.⁴³ Significantly, Ken McCallum, the head of Britain’s MI5, revealed that President Vladimir Putin’s military intelligence agency, the GRU, is engaged in a strategic effort to destabilize the West. Russian “tactics include sabotage, arson, and even assassinations across European countries.” McCallum cautioned that these “reckless” actions are increasing in frequency and boldness.⁴⁴ In November 2024, U.S. officials warned American and European defence companies that Russia may be targeting their infrastructure and executives.⁴⁵

A senior Russian official declared:

Doing damage everywhere, crippling the work of their businesses and government agencies. Literally destroying

their energy, industry, transportation, banking and social services. Raising fears of the imminent collapse of the entire infrastructure of European countries...Are they afraid of anarchy and the explosion of crime in the big cities? We must help them disorganize their municipal governments! "Are they afraid of social explosions? Let's get them organized! We must throw all their most sinister nightmares into their media, use all their terrible phantom pains. Let's spare their psyche no longer! Let them tremble in their cozy homes, let them stir under the covers...They whine about our use of 'fake news'? Let us turn their lives into a permanent pointless nightmare, in which they will be unable to distinguish wild fiction from everyday realities, hellish evil from the routine of life.⁴⁶

Examples of Russian actions include the April 2024, German arrest of two German-Russian nationals on suspicion of plotting attacks on American military installations across Europe on behalf of GRU. Concurrently, Poland arrested an individual who was gathering information on Rzeszow Airport, Poland, a key hub for weapons destined for Ukraine. Similarly, several men were charged in the UK for an arson attack on a logistics company owned by Ukraine. Russian security services have also been accused of interfering with railways in the Czech Republic, committing arson attacks in the UK and Lithuania, as well as sending incendiary devices through different couriers to cover their tracks. The devices, sent by freight, caused fires at distribution hubs in Birmingham and Leipzig in July.⁴⁷ Other examples include the attempted bombing of a Paris hotel room by a Russian-Ukrainian national, and a Russian plot to assassinate the CEO of Rheinmetall, Germany's largest arms manufacturer.⁴⁸

Russia has also used its military to intimidate its neighbours and NATO at large. During its military manoeuvres it has simulated air attacks on Norway as well as a nuclear attack on Sweden. These veiled threats were intended to coerce their opponents into realizing Russian capability and potential intent.⁴⁹

Additionally, drones disrupted flights at Stockholm’s Arlanda Airport for over two hours in September 2024, further raising concerns about the extent of Russian interference.⁵⁰ In addition, NATO cautioned members of Russian “hostile state activity” against the Czech Republic, Estonia, Germany, Latvia, Lithuania, Poland and the U.K. Furthermore, NATO officials acknowledged the Russian efforts have included cyberattacks, sending waves of immigrants to the border with Finland, removing border buoys along the Narva River with Estonia, as well as suspected arson attacks and assassination plots. Not surprisingly, NATO concluded the Russian actions “constitute a threat to allied security.”⁵¹ Importantly, this pattern of activity can easily be applied to the North if tensions or competition heat up in the Arctic.

- h. Sabotage attacks on critical physical infrastructure (e.g., energy grid, oil infrastructure), space and information / cyber infrastructure / underwater cables.⁵² This line of operations probably represents the greatest threat to NATO Arctic interests. Due to the exposed nature of infrastructure, the difficulty of repair or replacement due to distance, logistical limitations, harsh environmental conditions and cost, sabotage of critical physical infrastructure poses an extremely dire threat to operations as well as population safety in the target area. Exacerbating this threat is the belligerent posture of Russia as it prosecutes the war in Ukraine and attempts to drive a wedge through the NATO alliance and its support for Ukraine.⁵³

In fact, Russia has taken aggressive action against NATO countries through gray zone operations. For example, in November 2020, the Port of Tromsø’s data systems came under attack by a hacker.⁵⁴ The Norwegian port is one of three primary ports included in the country’s national preparedness planning and is a recently established docking area for nuclear-powered submarines.⁵⁵ In addition, Russia interfered with Sweden’s satellite networks after it joined NATO. Russia has also deliberately jammed GPS signals in Estonia, Finland and the larger Baltic Sea region.⁵⁶

Cyber-attacks by state or state-sponsored hacking groups are also a constant threat. American officials have revealed that China's cyber warfare operations are "pre-positioning" themselves in U.S. and allied critical infrastructure to slow the "U.S. military's response and sow societal panic."⁵⁷ As just one example, the U.S. Justice Department has aggressively pursued its investigation and indictments of Russians in the so-called "WhisperGate" malware attack of January 2022 that attempted to destroy computer systems in Ukraine and 26 NATO allies including the United States.⁵⁸

Additionally, in April 2021, a deep-sea cable disappeared above the Arctic Circle just outside the region of Vesterålen in Northern Norway.⁵⁹ The cable was used to collect and transmit information for research and for the Norwegian Armed Forces. Eight months later, the connection to another important cable was damaged just off Svalbard. Significantly, Russian fishing vessels were seen in the area at the same time as the disappearance/removal of, and damage to, the cables in question.⁶⁰

In yet another series of incidents, in November 2021, the Norwegian Marine Research Institute revealed that its Lofoten–Vesterålen Ocean Observatory was out of service after about four kilometres (km) of a 60 km long underwater cable had disappeared. The cable connected the coastal monitoring station with sonar and underwater sensors, which observe Russian submarines and ships leaving the Kola Peninsula.⁶¹ In 2022, one of the fiber-optic cables that connect Svalbard with the Norwegian mainland was disrupted and in 2023, the Chinese-Russian vessel *Newnew Polarbear* was suspected of disrupting a gas pipeline and two communication cables in the Baltic Sea. The ship quickly slipped into Russian Arctic waters once discovered.⁶²

Additionally, on 8 October 2023, the Fenno-Estonian Baltic-connector gas pipeline and two underwater fiber-optic cables linking Estonia with Finland and Sweden through the Baltic Sea were broken. The damage was clearly caused by "external activity" and "mechanical force." It was not an accident but rather an act of deliberate sabotage. A Russian-operated nuclear-powered hydrographic icebreaker, as well as another Russian

vessel, travelled over all three sites at the times of the incidents.⁶³ Finally, in November 2024, an undersea data cable in the Baltic Sea connecting Finland and Germany was severed. Sabotage was suspected.⁶⁴

Importantly, Russia's specialized unit, the Main Directorate for Deep-Sea Research (GUGI), possesses a significant fleet capable of deep-sea operations, including cable sabotage. GUGI is Russia's primary tool for conducting deep-sea sabotage. It has a significant fleet of surface oceanographic vessels, submarines, and marine submersibles, including some with nuclear propulsion. GUGI's main base is located on the Kola Peninsula in Olenya Bay. It is capable of reaching all underwater cables, at depths ranging from several dozen to 6,000 meters.⁶⁵

- i. Sabotage of military infrastructure and equipment. Like the points raised above, it is not solely the Russians who have vast amounts of military bases and hardware to protect in the North. The NATO Arctic countries similarly have military assets (e.g., Radar sites, infrastructure, airfields, ports, fuel and equipment caches) to protect. Clearly, the array of radar belts in NATO territory provides a tempting target for belligerents to destroy. For example, the Canadian government will spend \$1 billion for a new radar system to protect major population centres in North America. The Arctic Over-the-Horizon Radar will "provide long-range surveillance of northern approaches to the major population centers in North America by establishing a northward-aimed high frequency over-the-horizon radar system in southern Canada."⁶⁶
- j. The use of electro-magnetic energy, directed energy, or anti-radiation weapons to attack personnel, facilities or equipment with the intent of degrading, neutralizing, or destroying enemy combat capability or simply the ability for military or non-military personnel to undertake activities in targeted areas poses a potential problem. The "Havana Syndrome" and Indian experiences against the Chinese in Kashmir provide examples of the impact of such devices.⁶⁷

- k. Occupation of disputed territory akin to Chinese actions in the South China Sea. A retired three-star general explained, “I’m not suggesting that Russia or China or others will launch an attack into Canada over the North Pole. But we can expect to see an increasing probability of Russian and Chinese exploration vessels looking for minerals of value, or for drilling in our pristine Arctic, or for laying claim to lands, which they’ve already disputed in court.”⁶⁸ The reality is China has been heavily investing in Canadian resource and mining projects in an ever-tightening grip to monopolize rare earth metals and critical minerals. As noted earlier, if China, or Russia, are the sole investors in Arctic infrastructure, particularly in areas that are already under international dispute, it would not be unreasonable to believe that they would simply lay claim and “fortify” their staked claim. For this reason, it is essential to maintain vigilance in the North, particularly with unauthorized “research stations” or other infrastructure that has not been approved.
- l. Foreign “investment.” Foreign investment is a classic shadowy hybrid warfare / gray zone quandary. Is it a silent, indirect “attack” or simply economic diversification / investment? Is it an attempt to strangle the market and push out competition (e.g., Chinese flooding the global steel production market in the mid-2010s) and creating dependency on key raw and / or processed materials?⁶⁹ Moreover, countries such as China, with their Belt and Road Initiative, can use the dramatic infrastructure deficits (e.g., airports, ports) in the North as an “innocent” economic investment as leverage to get greater access to the Arctic. For example, the Canadian Security Intelligence Service (CSIS) “has warned Inuit leaders that foreign adversaries could gain a foothold in Canada by offering to fill infrastructure gaps in the North.”⁷⁰ The danger has finally been realized as the Canadian government paid \$8.6-million to acquire a privately owned aircraft hangar adjacent to a NORAD air base in the Arctic community of Inuvik, after Russian and Chinese “visitors” demonstrated an interest in the Forward Operating Location Inuvik, as well as the numerous satellite ground stations and remote sensing arrays.⁷¹ Moreover, Canada has also blocked several attempts by China to invest in the

North based on national security grounds in recent years. Significantly, China attempted to invest \$150 million U.S. dollars (USD) in a gold mine roughly 100 kilometers from a NORAD North Warning System radar station in Cambridge Bay, Nunavut.⁷²

Canada is not the only target. In early 2013, Huang Nubo, a property developer who was a former official in the Chinese Communist Party's (CCP) Propaganda Department, attempted to buy land in Grimsstadir in Northern Iceland to build a luxury hotel and eco-golf course. Importantly, on 2 May 2013, the desolate town Grimsstadir recorded a May temperature of -36.4 degrees Fahrenheit. The region also regularly experiences high winds and several feet of snow, causing whiteout conditions throughout the winter and spring. It is not an area conducive to outdoor sports. In 2016, the Chinese mining firm General Nice Group attempted to buy a defunct U.S. naval base in Greenland and tried to build at least two airports in the country. These two examples reinforce the concern and tactic of China trying to procure infrastructure in the Arctic region, which becomes available for dual-use civil/military application. It also supports China's 2018 stated ambition to become a near-Arctic state and its partnership with Russia to create a Polar Silk Road to expand cooperation in trade, high-speed rail construction, and manufacturing.⁷³

In summary, through direct government action and, more commonly, state-owned corporations, China is attempting to invest in multifarious development projects across the Arctic. For example, it is building gas pipelines in Russia and modernizing ports and railways along the NSR for incorporation into the Polar Silk Road. It is also investing in Finland's Arctic remote sensing infrastructure, as well as offering to improve communications infrastructure in the Canadian North. Additionally, it is building scientific outposts in Iceland and Sweden and offering to invest in infrastructure projects that benefit indigenous communities.⁷⁴

- m. Domestic or internationally based organized criminal elements. Domestic organized crime represents a substantial challenge on its own. However, competitors also leverage "criminal networks,

state-sponsored armed and violent proxies, diasporic communities, and professional super-fixers (enablers) to achieve military objectives, including to spread democratic backsliding, and to destabilize the national security interests" of NATO nations.⁷⁵ For instance, Russia has ties to numerous far-right organizations, some of which are violent, and has provided them with money, limited training, encouragement, and other support. In addition, Russia has long flooded Europe with disinformation in an attempt to "bolster pro-Russian far-right parties, worsen preexisting tensions around contentious issues such as immigration, and undermine institutions, particularly confidence in elections."⁷⁶ These criminal networks can be used to commit crime, agitation and sabotage all in the pursuit of distracting and disrupting competitor states, as well as creating chaos. Additionally, Norway suspects that Russia pays Norwegian criminal elements to conduct sabotage.⁷⁷ Finally, the Canadian Integrated Threat Assessment Centre paper on *The Canadian Arctic: Threat from Terrorists and Extremists* highlighted that as the Arctic becomes more navigable, it could also be a possible conduit for terrorist and trans-national criminal organization activities. It noted that "in recent years, vessels with links to human smuggling, drug trafficking, and organized crime have attempted to access the Canadian Arctic."⁷⁸

- n. Disinformation / subversion / agitation to create civil unrest. The proliferation of false, misleading and divisive information online and on social media has become overwhelming. Hostile actors use this approach to disrupt target societies and create social upheaval. The *Insider* obtained hacked correspondence from officers of Russia's foreign intelligence agency (SVR) responsible for "information warfare" with the West. The leaked documents revealed a secret Russian operation codenamed Project Kylo (pick-axe) that targeted government agencies. The intent of the Russian strategy was:

... spreading disinformation on sensitive Western topics, posting falsehoods while posing as radical Ukrainian and European political forces (both real and specially created), appealing to emotions — primarily fear — over rationality, and utilizing new internet platforms instead

of outdated ones like RT and Sputnik. And the key emotions to prey upon, the SVR planners intoned, were “fear,” “panic” and “horror” — a psychosocial manipulation campaign straight out of the Cold War playbook of the Soviet KGB’s First Chief Directorate’s Department D.⁷⁹

In fact, Russia has changed its approach in disseminating disinformation at its Western enemies. It is using “embedded propaganda, increasingly utilizing local voices to sound more plausible and credible.” For example, Russian agents provided \$10 million to Nashville-based Tenet Media, which since 2023 has generated over 2,000 videos that have garnered approximately 16 million views.⁸⁰ The site concentrated their reporting on the United States and its domestic socioeconomic problems, such as immigration and inflation.⁸¹

Russian, as well as Chinese and Iranian disinformation campaigns aim at exacerbating political, racial and social tensions in target countries. Experts contend that race “is an easy engagement generator” and that “social media algorithms prefer news and content that fuels rage and discussion.”⁸² China has even offered to help build civilian infrastructure for Indigenous communities in the Canadian territories that have been neglected by the federal government.⁸³ As one expert explained, “They are trying to create an idea that half of your country is your enemy.”⁸⁴

These types of subversive disinformation campaigns that are designed to create agitation have fertile ground in the Arctic. For example, the Arctic represents 40 per cent of Canada’s land mass more than 70 per cent of its coastline. The Indigenous people, which number 100,000 represent half of Canada’s Arctic population. They live in 51 communities spread out across the region.⁸⁵ Their median individual income is striking 75 per cent lower than that of their non-Indigenous counterparts residing in the same region.⁸⁶

Moreover, in 2009, Inuit leaders from Greenland, Canada, Alaska, and Russia launched a *Circumpolar Inuit Declaration on Sovereignty in the Arctic*, which affirmed their rights to self-determination.⁸⁷

As such, the lack of equity, i.e., wages, standard of living, issues of land and resource ownership and its management, as well as the lack of critical infrastructure provide fertile ground for causing dissension and upheaval.⁸⁸

IMPLICATION FOR SOF

Most Western intelligence agencies would concede that a conventional military conflict in the Arctic / High North is assessed for the near future as a very low risk. As such, capability should be measured in a country's ability to respond to realistic, as well as the most likely threats that they may face in the North currently to the near future. Pragmatically, this means the ability to maintain real time situational awareness; the ability to deploy and sustain appropriate mission-specific teams capable of responding to a myriad of threats and situations and adept at working in joint, inter-agency and allied operations. Considering the distances, logistical complexity, lack of infrastructure and the harshness of the environment, this requirement is a tall order.

Conventional forces, unless they have been trained for operations in the Arctic and have a high readiness status are more than likely not capable of a swift northern response. As a result, SOF, due to their strategic communications, high readiness, rapid deployment and ability to be self-sustaining and operate in harsh, inhospitable environments become a government's "easy button."

Despite a low probability of a high intensity conflict breaking out requiring Arctic operations, SOF, as noted due to their characteristics, will be the first to be "tagged" to respond to conflict in the North. SOF would be expected to provide situational awareness, conduct special reconnaissance and shape the environment for follow-on conventional forces. Additionally, SOF would be expected to carry out counter-SOF operations, as well as offensive action such as direct action raids. Furthermore, depending on the situation, SOF may be required to conduct UW with Indigenous forces as part of a program of resistance.

Important to note is the fact that the Arctic and large parts of the High North, as already detailed, represent a formidable environment that does not lend itself to classical manoeuvre warfare. Quite simply, capability that emphasizes mobility and lethality carry the day. As such, SOF and

light infantry, equipped with requisite over-snow capability, as well as supporting air and naval support become the backbone of Arctic operations. Informative is the fact that Russian special forces have prepared for and have a deep experience of operations in the Arctic. During the Cold War, Spetsnaz teams trained to attack NATO installations in Norway, the Faroes, Iceland and elsewhere. Significantly, up until the invasion of Ukraine in 2022, Russia had increased its training of special forces formations earmarked for deployment in the Arctic. Submarines, aircraft and surface ships were used to deploy these teams, which can seize and hold inaccessible areas, conduct reconnaissance, conduct raids and disrupt communications.⁸⁹

Although one should never say never, high intensity conflict in the North is at present, and the foreseeable future, not a viable high risk. However, as identified above, hybrid warfare threats as part of the current GPC represent a clear and present danger. Russian and Chinese activities below the threshold of triggering a war have proven to be disruptive economically, politically and militarily. The opaque nature of these actions and threats once again highlights the utility and importance of SOF due to its high readiness, rapid deployability and wide range of capabilities.

A recent American exercise demonstrated the reach of SOF with its supporting services. A group of 15 U.S. SOF personnel aboard special operations MH-47G Chinook helicopters flew beyond the northernmost point of the United States, past Uqtiagvik Alaska, deep into the Arctic Circle. In accordance with a report:

They hovered a few feet from the surface, off-loaded a small team to conduct an ice-depth survey and cleared a helicopter landing zone. Once cleared, the Chinooks touched down and snow mobiles exited the aircraft to retrieve an aerial package dropped nearby. The package was then driven across Arctic terrain and handed-off to personnel from the submarine USS Hampton (SSN 767). Just moments before, the Los Angeles-class fast attack submarine had surfaced through the thick sheet of ice, emerging from the sea below. This marked the first-ever integration of SOF personnel, SOF aircraft, and snow mobiles coming together to conduct an operation with a submarine that surfaced that deep in the Arctic Circle.⁹⁰

This scenario, albeit by the premiere military power in the world, demonstrates the ability of SOF working with other Services and agencies can accomplish to rapidly deploy to the Arctic and execute a range of capabilities to deter, disrupt, degrade and deny competitor activity in the far North. Notwithstanding SOF characteristics that make them a preeminent asset for Arctic operations, SOF must take steps to ensure their continued relevance and effectiveness. In this vein, SOF must:

1. Ensure designated personnel / organizations are continually trained for Arctic operations, including northern deployments and exercises.
2. Ensure coordination with applicable Services and agencies to include contingency planning, war gaming, exercises and lessons learned workshops.
3. Conduct continual Research & Development to optimize equipment, particularly mobility, in the North.
4. Conduct relevant joint and interagency exercises that provide experience, training and situational awareness. An example is the Danish military's Sirius Patrol. These patrols consist of six two-man patrols on dog sleds that reconnoiter Greenland's 8,900-mile coastline and 375,000-square-mile protected wilderness while enforcing Danish sovereignty. The teams are resupplied by pre-positioned depots and aircraft.⁹¹
5. Maintain situational awareness of climate change impact in the Arctic and analyze the impact on operations.
6. Nurture a close working relationship with indigenous organizations that could act as early warning, provide situational awareness and act as guides and local support. Robust relationships / partnerships should be developed through continuous interaction and enduring unchanging assignments.
7. Maintain a current understanding of enemy and friendly disposition / strength in the North, as well as the state of political, social and climatic conditions in the relevant theatre of operations.

8. Establish and maintain caches / depots of necessary equipment, petroleum, oil and lubricants (POL), as well as munitions, medical supplies, spare parts and rations. Most Arctic communities, due to the isolation, distance, lack of infrastructure and climatic conditions, have limited resupply and stock on hand. As a result, a sudden military deployment would very quickly wipe out a community's stock, if in fact they even held items that were required. In addition, in a crisis strategic airlift would most likely be at a premium, therefore, pre-positioned supplies could be critical. The caches / depots would require inspection and rotation on a regular basis. They should also be dispersed to allow access across a theatre of operation as well as denying an enemy a single target to destroy.

9. Identify and / or invest in infrastructure. Once again, small Arctic communities have limited infrastructure. Most often the community centre provides the most accessible point for staging on arrival / departure. However, these structures are limited in size and become a magnet for locals thereby creating potential issues with security and especially a nuisance / interference factor.

As a result, opportunities for collaborative undertakings and shared infrastructure should be arranged at communities throughout an area of operation. Since the cost of infrastructure development in the North is about 145 per cent higher than in the south, utilizing existing facilities makes imminent sense.⁹² For example, Coast Guard, airport and policing organizations often have garages, warehouses or hangars that can provide staging / operating locations. Equally, mining operations, scientific research stations and radar installations are potential sites as well.

Importantly, locations must be found and agreements reached prior to any crisis. A detailed map of useable sites should be maintained and updated annually as a minimum. Additionally, thought must be given to chosen locations. In a conflict or even during strategic competition, opponents can very easily target obvious single use or dual use civilian / military locations. As such, particularly for caches and depots, as well as staging in a crisis, thought must be given to security. If low visibility, innocuous sites can be used, survivability will be increased.

In the final analysis, the quietly ignoring the Arctic is no longer feasible. Climate change, with warming temperatures, disappearing perennial ice packs and increasing access to resources and shortened sea routes, has cast a new light and interest in the North. Equally impactful, GPC, an emboldened China and a struggling Russia have created global tensions that have touched even the once ignored Arctic. As a result, Arctic nations face a wide range of threats that must be monitored and countered. To do this, SOF provide a ready shield and sword. However, to be effective in the formidable Arctic environment, prudent planning and preparation are required.

ENDNOTES

1 For decades an “Arctic exceptionalism” was at play. This concept held that “the challenges facing the region encouraged cooperation and not geostrategic competition” between the eight Arctic states (i.e., Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the U.S.). However, the principle of ‘circumpolarity,’ which held that the “Arctic 8” should collectively determine the region’s future, died away with the promise of accessible resources, as well as the Russian invasion of Ukraine in 2022. Mathieu Boulegue and Duncan Depledge, “The Face-off in a Fragmented Arctic: Who Will Blink First?” *RUSI*, 24 May 2024, <https://www.rusi.org/explore-our-research/publications/commentary/face-fragmented-arctic-who-will-blink-first>, accessed 10 June 2024.

2 Abbie Tingstad, “Enhancing Security in a Changing Arctic,” *RAND*, Testimony submitted to the U.S. House Committee on Homeland security, 29 November 2023, 2.

3 Department of Defense, *The Arctic Through 2035* (Fort Leavenworth, KS: U.S. Army Training and Doctrine Command G-2, 2020), 33.

4 *Ibid.*, 22-24.

5 Katarzyna Zysk And Rebecca Pincus, “Getting Sporty in Russia’s Arctic,” *War On The Rocks*, 24 October 2024, <https://warontherocks.com/2023/10/getting-sporty-in-russias-arctic/>, accessed 19 June 2024.

6 See James Black, Stephen Flanagan, Gene Germanovich, Ruth Harris, David Ochmanek, Marina Favaro, Katerina Galai and Emily Ryen Gloinson, *Enhancing deterrence and defence on NATO’s northern flank* (Cambridge, UK: RAND, 2020), 7.

7 Alexander Dalziel, “Russia’s Tough Talk on Arctic Sovereignty Must Be Taken Seriously: Alexander Dalziel in Geopolitical Monitor,” *Geopolitical Monitor*, 7 March 2024, <https://macdonaldlaurier.ca/russias-tough-talk-on-arctic-sovereignty-must-be-taken-seriously-alexander-dalziel-in-geopolitical-monitor/>, accessed 13 June 2024. Yevmenov emphasized the close ties between economic development and the defense of sovereignty

and territorial integrity. He stressed the close relationship between national security, defense and economics and how they are intertwined in Russian economic thinking about the Arctic.

8 See Black et al, *Enhancing deterrence and defence*, 7.

9 As another example, the old Air Force base at Nagurskoye on Alexandra Land Island, which is Russia's northernmost military outpost in the Arctic, has been expanded to allow the basing of modernised MiG-31 long-range, interceptor fighter jets as well as anti-ship and anti-aircraft missile batteries.

10 "Russia's Plans for Arctic Supremacy," *STRATFOR*, 16 January 2015, <https://worldview.stratfor.com/article/russias-plans-arctic-supremacy>, accessed 22 July 2024; and Liselotte Odgaard, "NATO Is Unprepared for Russia's Arctic Threats," *Hudson.org*, 1 April 2024, <https://www.hudson.org/defense-strategy/nato-unprepared-russia-arctic-threats-liselotte-odgaard>, accessed 13 June 2024. The Northern Fleet represents a significant element of Russia's nuclear triad. In fact, 67 per cent of Russia's 576 sea-based nuclear warheads are on nuclear-powered submarines operating from the Northern Fleet's bases on the Kola Peninsula. The Russian Pacific Fleet headquarters is located in Vladivostok with additional bases on the Kamchatka Peninsula, where the Pacific Fleet's nuclear submarines, which also operate at regular intervals in the Arctic, are based. Jorgen Staun, *Report - Russia's Strategy in the Arctic* (Copenhagen: Institute for Strategy, The Royal Danish Defence College, 2015), 24.

11 Satellite images provided a stark and continuous build-up of Russian military bases and hardware on the country's Arctic coastline, together with underground storage facilities likely for the Poseidon and other new high-tech weapons. Nick Paton, "Russia is amassing unprecedented military might in the Arctic," *CNN*, 5 April 2021, <https://a.msn.com/r/2/BB1fj95w?m=en-ca&referrerID=InAppShare>, accessed 5 April 2021.

12 Hollie McKay, "A Russia-China Show of Force in the Arctic," *The Cipher Brief*, 30 April 2024, <https://www.thecipherbrief.com/a-russia-china-show-of-force-in-the-arctic>, accessed 30 April 2024. Russia possesses one-third more military facilities in the Arctic than NATO, according to the International Institute for Strategic Studies (IISS). Some experts assess that it would "take the West at least 10 years to catch up with Russia's military in the region, if it chose to do so."

13 Odgaard, "NATO Is Unprepared."

14 Atle Staalesen, "Militant Islamic fighters train counter-terrorism in Russian Arctic," *The Barents Observer*, 7 April 2021, <https://thebarentsobserver.com/en/security/2021/04/jihadist-trains-anti-terror-russian-arctic>, accessed 8 April 2021.

15 "Russia's Plans for Arctic Supremacy," *STRATFOR*, 16 January 2015, <https://worldview.stratfor.com/article/russias-plans-arctic-supremacy>, accessed 22 July 2024.

16 Colin Wall and Njord Wegge, *The Russian Arctic Threat. Consequences of the Ukraine War*, *CSIS Briefs*, January 2023, 6, <https://www.csis.org/analysis/russian-arctic-threat-consequences-ukraine-war>, accessed 23 July 2024.

17 Helene Cooper, "Military Drills in Arctic Aim to Counter Russia, but the First Mission Is to Battle the Cold," *The New York Times*, 12 April 2019, <https://www.nytimes.com>

com/2019/04/12/world/europe/global-warming-russia-arctic-usa.html, accessed 15 July 2024.

18 Alex Gatopoulos, “What is behind Russia’s interest in a warming Arctic,” *Al Jazeera*, 28 March 2022, <https://www.aljazeera.com/features/2022/3/28/what-is-behind-russias-interest-in-a-warming-arctic>, accessed 23 July 2024. Chechen special forces have been actively involved in training in Murmansk, Franz Josef Land and on the North Pole. Incredibly, a combat group engaged in military training at 90th degrees North, landed on Norway’s Svalbard archipelago.

19 Malte Humpert, “Rendering of Russia’s new ‘combat icebreaker,’” *gCaptain.com*, 2 July 2024, <https://gcaptain.com/russias-new-combat-icebreaker-heads-for-sea-trials/>, accessed 30 August 2024. In comparison, a new U.S. icebreaker remains about six to seven years away at the earliest. In addition, the U.S. Coast Guard’s only heavy icebreaker, the 50-year-old *Polar Star*, is currently undergoing another refit.

20 United States of America, *2024 Arctic Strategy* (Washington D.C.: DoD, 2024), 8.

21 United Kingdom, *On Thin Ice: Defence in the Arctic: Government Responses to the Committee’s Twelfth Report* (London, UK Parliament, 12 October 2018), <https://publications.parliament.uk/pa/cm201719/cmselect/cmdfence/1659/165902.html>.

22 James K. Wither, “Svalbard. NATO’s Arctic ‘Achilles’ Heel,” *The RUSI Journal*, Vol. 163, No. 5, (October/November 2018): 28.

23 See James Black, Stephen Flanagan, Gene Germanovich, Ruth Harris, David Ochmanek, Marina Favaro, Katerina Galai and Emily Ryen Gloinson, *Enhancing deterrence and defence on NATO’s northern flank* (Cambridge, UK: RAND, 2020).

24 DoD, *The Arctic Through 2035*, 30. The U.S. report noted, “China cannot compete militarily in the Arctic at present. However, Chinese ballistic missile submarine patrols in the Arctic could become a reality by 2035.”

25 These lodgements could also include establishing a forward area refueling point behind enemy lines. For example, during a winter exercise in Alaska, U.S. Special Tactics airmen practiced setting up such a facility.

26 GPC is the competition between great and large powers for influence and access to allies, partners, resources, etc., in the quest to attain political, military, economic and geographic advantage.

27 Cited in Frank G. Hoffman, “Examining Complex Forms of Conflict,” *Prism* 7, No. 4, 35.

28 *Ibid.*, 36.

29 Colin Wall and Njord Wegge, *The Russian Arctic Threat. Consequences of the Ukraine War*, CSIS Briefs, January 2023, 8, <https://www.csis.org/analysis/russian-arctic-threat-consequences-ukraine-war>, accessed 23 July 2024.

30 G. Giannopoulos, H. Smith, and M. Theocharidou, “The Landscape of Hybrid Threats: A Conceptual Model,” *European Commission*, 2020, 18, <https://www.hybridcoe.fi/publications/the-landscape-of-hybrid-threats-a-conceptualmodel/>, accessed 24 July 2024.

- 31 “Ship traffic steadily increasing in Canadian Arctic waters, researchers say,” *CBC Radio*, 17 December 2024, <https://www.msn.com/en-ca/news/canada/ship-traffic-steadily-increasing-in-canadian-arctic-waters-researchers-say/ar-AA1w2xLS?ocid=msedgdp&pc=HCTS&cvid=2b927de6db73412da05512a203310772&ei=41>, accessed 18 December 2024.
- 32 Jesse Kline, “Jesse Kline: The pressing need to invest in, and protect, our Arctic territories,” *The National Post*, 25 September 2024, <https://www.msn.com/en-ca/news/world/jesse-kline-the-pressing-need-to-invest-in-and-protect-our-arctic-territories/ar-AA1raQvo?ocid=sapphireappshare>, accessed 25 September 2024.
- 33 The Canadian Security Intelligence Service (CSIS) noted scientific research “is another way for foreign actors to gain access to Canadian soil and to gain information.” Catherine Tunney, “CSIS warning Inuit leaders about covert foreign investment in Arctic, documents show,” *CBC*, 13 October 2023, <https://www.cbc.ca/news/politics/csis-arctic-obed-russia-china-1.6993128>, accessed 19 June 2024.
- 34 Although the Norwegians have a treaty that explicitly forbids military activity by foreign entities on Svalbard, the Chinese have uniformed military personnel employed at China’s Yellow River Research Station in Ny-Ålesund on Svalbard. Tang, “Exclusive: How Chinese nationalism...”
- 35 McKay, “A Russia-China Show of Force.”
- 36 United States of America, *2024 Arctic Strategy* (Washington D.C.: DoD, 2024), 3.
- 37 Jane Tang, “Exclusive: How Chinese nationalism is sending jitters through the Arctic,” *Radio Free Asia*, 7 November 2024, https://www.rfa.org/english/china/2024/11/07/china-arctic-norway-svalbard/?utmsource=substack&utm_medium=email, accessed 8 November 2024.
- 38 Thomas Boehm, Nathan Carada and Patrick Tomaszewski, “Arctic Tourism: An Army Special Forces Problem with a National Guard Solution,” *The Fletcher Forum of World Affairs*, Vol. 48, No. 1 (Winter 2024): 49.
- 39 Gunhild Hoogensen Gjorv, “Security and geopolitics in the Arctic: The increase of hybrid threat activities in the Norwegian High North (Helsinki: European Centre of Excellence for Countering Hybrid Threats, 2024), 15. In addition, in the summer of 2023, the Norwegian Supreme Court overturned the acquittal of British-Russian businessman Andrey Jakunin by the lower courts in Northern Norway, who was charged with illegally flying a drone in Svalbard in summer 2022. This case was the highest profile of all the cases of Russians flying drones in restricted areas, where the majority of incidents took place in Northern Norway.
- 40 Colin Wall and Njord Wegge, *The Russian Arctic Threat. Consequences of the Ukraine War*, *CSIS Briefs*, January 2023, 8-9, <https://www.csis.org/analysis/russian-arctic-threat-consequences-ukraine-war>, accessed 23 July 2024.
- 41 James Glanz and Thomas Nilsen, “The Deadly Losharik Submarine Fire and Russia’s Secret Undersea Agenda,” *The New York Times*, 20 April 2020, <https://www.msn.com/en-ca/news/world/the-deadly-losharik-submarine-fire-and-russias-secret-undersea-agenda/ar-BB12VUP1?ocid=spartandhp> accessed 26 April 2020; and Sigmund Brandvold,

“Norwegian Intelligence Assessment on Russian Interference,” *Eurasia Daily Monitor*, Vol. 21, Issue 163, 8 November 2024, <https://jamestown.org/program/norwegian-intelligence-assessment-on-russian-interference/>, accessed 13 November 2024.

42 “A new system will allow EU to sanction people waging sabotage on behalf of Russia,” *APnews*, 8 October 2024, <https://apnews.com/article/eu-russia-ukraine-sanctions-69b106f14e30653a4a7b5fd15b11d251>, accessed 9 October 2024.

43 Gjorv, “Security and geopolitics in the Arctic,” 21.

44 Kathrine Frich, “Sabotage and Assassinations: Putin’s Hidden Plan Unleashes Chaos Across Europe,” *Dagens.com*, 15 October 2024, <https://www.msn.com/en-ca/news/world/sabotage-and-assassinations-putin-s-hidden-plan-unleashes-chaos-across-europe/ar-AA1shCTm?ocid=msedgdhp&pc=HCTS&cvid=3c2ea54dd0204ea49fbd4e69a33ee06&ei=71>, accessed 16 October 2024.

45 Julin E. Barnes, “U.S. Defense Firms are Warned about Russia’s Sabotage Campaign,” *The New York Times*, 21 November 2024, <https://www.nytimes.com/2024/11/21/us/politics/defense-companies-russia-sabotage.html>, accessed 22 November 2024.

46 “We are going to turn Europeans’ lives into nightmares,” *Tagtik*, 19 August 2024, <https://www.msn.com/en-ca/sports/mma/we-are-going-to-turn-europeans-lives-into-nightmares/ar-AA1p2A1c?ocid=msedgdhp&pc=HCTS&cvid=92a09afffbdb4b8381a6dfa2dd58dd6a&ei=103>, accessed 21 August 2024.

47 Alexander Whiteman, “Four Arrested in Poland following claims Russia Shipped Explosive Parcels,” *The Lodestar*, 28 October 2024, <https://theloadstar.com/four-arrested-in-poland-over-dhl-parcel-explosive-plot/>, accessed 30 October 2024; and Joshua Keating, “ISIS? Russian sabotage? The biggest security threats at these Olympics,” *Vox*, 24 July 2024, <https://www.vox.com/olympics/362512/olympics-paris-isis-russia-terrorism-security>, accessed 24 July 2024.

48 Lisa O’Carroll, “Europe on high alert after suspected Moscow-linked arson and sabotage,” *The Guardian*, 30 May 2024, <https://www.inkl.com/news/europe-on-high-alert-after-suspected-moscow-linked-arson-and-sabotage>, accessed 1 November 2024.

49 Minna Ålander, “Death by a Thousand Paper Cuts: Lessons from the Nordic-Baltic Region on Countering Russian Gray Zone Aggression,” *Carnegie Endowment for International Peace*, 14 November 2024, <https://carnegieendowment.org/research/2024/11/russia-gray-zone-aggression-baltic-nordic?lang=en>, accessed 22 November 2024.

50 Frich, “Sabotage and Assassinations.”

51 Keating, “ISIS? Russian sabotage?”

52 As a Canadian example, a Senate Committee report noted, “Energy infrastructure includes the systems, technology, and management to generate, distribute, and safeguard sources of electricity, steam heating, heating oil and natural gas. Utilities infrastructure is not well defined and could include subsidized housing, sewage treatment and stormwater. Electricity and energy distribution in Northern Canada are faced with long distances to cover with systems ideally suited to warmer climates. Extreme weather poses risks of mechanical breakdown and interrupted resupply. Many communities obtain their

heating oil, diesel and gasoline for vehicles once or twice annually by barge during the summer months, which can cause price shocks based on the geopolitical climate. Many communities produce electricity locally by diesel generators which are costly to maintain and require specialist skills in both engine mechanics and industrial-scale electricity distribution. For example, the Qulliq Energy Corporation in Nunavut, a single entity, provides all the electricity in the territory. Consider the impacts of a computer virus or remote monitoring and management system on the inability to control these systems or prevent their damage. The harsh environment and isolation from alternate energy sources also compound these risks of interruption. Diesel fuel contamination or fuel shortages due to delays in shipping would result in electricity rationing and, in the worst cases, the interruption of critical services such as healthcare, policing and government functions.” Canada, Special Senate Committee on the Arctic, “Northern Lights: A Wake-Up Call for the Future of Canada,” 47, <https://sencanada.ca/en/info-page/parl-42-1/art-northern-lights/>, accessed 21 October 2024.

53 “Up to 100 ‘suspicious incidents’ in Europe can be attributed to Russia, Czech minister says,” *The Guardian*, 4 December 2024, <https://www.theguardian.com/world/2024/dec/04/up-to-100-suspicious-incidents-in-europe-can-be-attributed-to-russia-czech-minister-says>, accessed 4 December 2024.

54 Western intelligence sources have noted that Unit 29155 of Russia’s GRU military intelligence agency, normally responsible for coup attempts, assassinations, and bombings, has branched out into hacking operations with targets across the world. Andy Greenberg, “Russia’s Most Notorious Special Forces Unit. Now Has Its Own Cyber Warfare Team,” *Wired*, 5 September 2024, https://www.wired.com/story/russia-gru-unit-29155-hackerteam/?utm_source=nl&utm_brand=wired&utm_mailing=WIR_Daily_090624&utm_campaign=aud-dev&utm_medium=email&utm_content=WIR_Daily_090624&bxid=6682c7ecb695f08fe8100683&cndid=83475712&hasha=400003506714455bf6db9be69ffd15969&hashb=701dac52ef81db3dc36415756270717f99202b4a&hashc=d77847a92f8b44bbb62e0285e08f7878ca627941dc17e894c2cde21748870cd0&escr=bx_multi1st_dailyext&utm_term=WIR_Daily_Active, accessed 12 September 2024.

55 Gjorv, “Security and geopolitics in the Arctic,” 13.

56 Darnya Vialko, “Russia targets Sweden’s satellite networks following its NATO membership,” *RBC Ukraine*, 21 June 2024, <https://www.msn.com/en-ca/news/world/russia-targets-sweden-s-satellite-networks-following-its-nato-membership/ar-BB1oBOO4?ocid=msedgdhp&pc=HCTS&cvid=1c8f5325ef1e4ce8a65c5c581fe978f8&ei=187>, accessed 21 June 2024.

57 Alex Boutilier, “China ‘pre-positioning’ in U.S. networks for a potential conflict: Canadian Agency,” *Global News*, 30 October 2024, <https://globalnews.ca/news/10839410/china-pre-positions-us-networks/>, accessed 31 October 2024; and “Top U.S. Cybersecurity Official: China Attacks on American Infrastructure ‘Tip of the Iceberg,’” Interview with Cybersecurity and Infrastructure Security Agency (CISA) Director Jen Easterly, 28 April 2022, *The Cipher Brief*, 5 December 2024, <https://www.thecipherbrief.com/top-u-s-cybersecurity-official-china-attacks-on-american-infrastructure-tip-of-the-iceberg>, accessed 12 December 2024.

58 Brian Witte, “U.S. widens indictment of Russians in ‘WhisperGate’ conspiracy to destroy Ukrainian and NATO systems,” *CTV News*, 5 September 2024, <https://www>.

ctvnews.ca/world/u-s-widens-indictment-of-russians-in-whispergate-conspiracy-to-destroy-ukrainian-and-nato-systems-1.7026739, accessed 1 November 2024.

59 Interestingly, the Russians have a deep-diving submarine, the *Losharik*, that can dive to perhaps 20,000 feet. This is more than 10 times deeper than manned American submarines are believed to operate. The *Losarik* caught fire off the coast of Norway and the Russians were not forthcoming with details of the disaster. They insist it is simply a research vessel. A 2017 report by Policy Exchange, a research and educational institute in the United Kingdom, found that seabed cables carry 97 per cent of the data in communications globally, including roughly \$10 trillion in financial transactions a day. The cables are largely unprotected and easy to find. As recently as a few years ago, American military and intelligence officials reported that Russian submarines had often been operating near them. James Glanz and Thomas Nilsen, "The Deadly Losharik Submarine Fire and Russia's Secret Undersea Agenda," *The New York Times*, 20 April 2020, <https://www.msn.com/en-ca/news/world/the-deadly-losharik-submarine-fire-and-russias-secret-undersea-agenda/ar-BB12VUP1?ocid=spartandhp>, accessed 26 April 2020.

60 Gjørsv, "Security and geopolitics in the Arctic," 20. A report noted, "It is possible to track ships due to the Automatic Identification System (AIS) signals specific to individual ships. It took months before the first cable, 4.2 km long and weighing multiple tonnes, was located. Its final resting place was also noted to be a spot where Russian fishing vessels had been sailing. The cable between Svalbard and the Norwegian mainland was damaged, but technicians were able to ensure that the northern island's communication and other information transfer capabilities were restored. It was nevertheless clear that this was a human-induced event rather than a natural one." Ibid.

61 Andrii Ryzhenko, "Russia Looks to Target Achilles' Heel of Western Economies on Ocean Floor," *Eurasia Daily Monitor*, 17 September 2024, <https://jamestown.org/program/russia-looks-to-target-achilles-heel-of-western-economies-on-ocean-floor/>, accessed 18 September 2023.

62 Atle Staalesen, "Military experts suspect sabotage at Andøya," *The Barents Observer*, 13 September 2024, <https://thebarentsobserver.com/en/security/2024/09/military-experts-suspect-sabotage-andoya>, accessed 26 September 2024. The sabotage of two deep-sea gas pipelines, Nord Stream 1 and 2 on 26 September 2022 that transported natural gas from Russia to Germany is an example of how relatively easy sabotaging deep-sea pipelines can be. After numerous recriminations, Germany issued a European arrest warrant for a Ukrainian diving instructor for his alleged role in the sabotage. Since then, a Ukrainian military officer, allegedly involved in the operation, revealed to the *Wall Street Journal* that the sabotage was conducted with a single yacht, a six-person crew, rudimentary diving equipment and a set of light explosives. He divulged the scheme was dreamt up by a few Ukrainian military men amid an alcohol-fuelled bash. Damien McGuinness, "German arrest warrant over Nord Stream blast mystery," *BBC*, 14 August 2024, <https://www.bbc.com/news/articles/cnvyz1472rpo>, accessed 1 November 2024; and "Bombshell report reveals how Russia's Nord Stream pipelines blew up," *Daily Mail*, 15 August 2024, <https://www.msn.com/en-ca/news/world/bombshell-report-reveals-how-russia-s-nord-stream-pipelines-blew-up/ss-AA1oQKba?ocid=msedg dhp&pc=HCTS&cvid=83e2cb1628ea464ba634eec38bf79c8e&ei=66#image=1>, accessed 15 August 2024.

63 Dr. Kristina Spohr with Laurel Baker, “Sanctions, Shipping and Sabotage: China and Russia Enter the ‘Gray Zone’ in the Baltic Sea,” *Polar Perspectives*, No. 14 (November 2023): 1-2. Russia was also blamed for severing a communications cable between mainland Norway and Svalbard in 2022. Similarly, Beijing was responsible for cutting two undersea internet cables connecting Taiwan and its outlying Matsu islands.

64 “Germany and Finland investigate a severed data cable through the Baltic Sea,” *AP News*, 18 November 2024, <https://apnews.com/article/finland-germany-data-communications-cable-9b231aa47501545690a26a442fe106a5>, accessed 19 November 2024.

65 Ryzhenso, “Russia Looks to Target.” Over the past year, reports have propagated that Russia is conducting intensive research on the underwater infrastructure of the Atlantic Ocean. This global network of cables through which almost all Internet and financial traffic flows ensures global connectivity. Any significant damage to this network would threaten global trade, military readiness, logistics, and Internet connectivity. Approximately, \$10 trillion in financial transactions, commercial payments, and trade operations occur worldwide every day. More than 95 per cent of global communications are carried out through a network of approximately 500 cables laid across the world’s oceans. *Ibid.*

66 David Pugliese, “Canada plans new \$1-billion radar to protect North American cities,” *Ottawa Citizen*, 25 April 2022, <https://ottawacitizen.com/news/local-news/canada-plans-new-1-billion-radar-to-protect-north-american-cities>, accessed 25 April 2022. In 2022, the Canadian Minister of National Defence (MND) promised a series of new projects to improve continental security in conjunction with the U.S. to include modernizing the joint U.S.–Canadian North American Aerospace Defence Command (NORAD) as well as the North Warning System radars in the Arctic.

67 See <https://www.gao.gov/assets/gao-23-106717.pdf>, accessed 21 October 2024, <https://armscontrolcenter.org/wp-content/uploads/2024/06/Directed-Energy-Weapons-Fact-Sheet.pdf>, accessed 21 October 2024; and William Echols, “Was a Chinese Microwave Weapon Used Against Indian Troops?” *Voice of America*, 24 November 2020, <https://www.voanews.com/a/china-india-microwave-weapon/6742685.html>, accessed 21 October 2024.

68 Kline, “Jesse Kline: The pressing need.”

69 Alan H. Price and Adam M. Teslik, “China’s subsidies threaten ‘harsh winter’ for global steel industry,” *Wiley*, 29 August 2024, <https://www.wiley.law/article-Chinas-subsidies-threaten-harsh-winter-for-global-steel-industry>, accessed 21 October 2024.

70 Catherine Tunney, “CSIS warning Inuit leaders about covert foreign investment in Arctic, documents show,” *CBC*, 13 October 2023, <https://www.cbc.ca/news/politics/csis-arctic-obed-russia-china-1.6993128>, accessed 19 June 2024.

71 Steve Chase and Robert Fife, “Ottawa buys Arctic hangar next to NORAD base after Chinese, Russian interest,” *The Globe and Mail*, 8 July 2024, <https://www.theglobeandmail.com/politics/article-ottawa-buys-arctic-hangar-next-to-norad-base-after-chinese-russian/>, accessed 10 July 2024.

72 Stephanie Pezard, Stephen J. Flanagan, Scott W. Harold, Irina A. Chindea, Benjamin J. Sacks, Abbie Tingstad, Tristan Finazzo, Soo Kim, *China’s Strategy and*

Activities in the Arctic (Santa Monica, CA; RAND, 2022), 21; and Robert Fife and Steven Chase, “Beijing and Moscow’s no-limits partnership gives China major foothold in Arctic, report finds,” *The Globe and Mail*, 7 February 2024, <https://www.theglobeandmail.com/politics/article-china-arctic-russia-war/>, accessed 18 June 2024.

73 Michael Brodka, “Arctic Competition, Climate Migration, and Rare Earths: Strategic Implications for the United States Amidst Climate Change,” *The Strategy Bridge*, 1 September 2021, <https://thestrategybridge.org/the-bridge/2021/9/1/arctic-competition-climate-migration-and-rare-earths-strategic-implications-for-the-united-states-amidst-climate-change>, accessed 5 September 2021.

74 DoD, *The Arctic Through 2035*, 30.

75 David Luna, “Perspective: Irregular Warfare in Strategic Competition and Gray Zones, Prosecuting Authoritarian Subversion and Exploitative Use of Corruption and Criminality to Weaken Democracy,” *Small Wars Journal*, 24 August 2024, <https://smallwarsjournal.com/jrnl/art/perspective-irregular-warfare-strategic-competition-and-gray-zones-prosecuting>, accessed 30 August 2024.

76 Daniel Byman, “NATO and Countering Hybrid Warfare,” *Center for Strategic & International Studies*, 12 July 2024, <https://www.csis.org/analysis/nato-and-countering-hybrid-warfare>, accessed 16 July 2024; and Jamie MacColl and Kathryn Westmore, “Operation Destabilise: Russia, Organised Crime and Illicit Finance,” *RUSI*, 6 December 2024, <https://rusi.org/explore-our-research/publications/commentary/operation-destabilise-russia-organised-crime-and-illicit-finance>, accessed 6 December 2024.

77 Brandvold, “Norwegian Intelligence Assessment.”

78 “Arctic Terror Threats Real: Security Agencies,” *CBC News*, 10 November 2010, <https://www.cbc.ca/news/canada/north/arctic-terror-threats-real-security-agencies-1.868895>, accessed 22 November 2024.

79 The D stood for disinformation. Michael Weiss, Roman Dobrokhotov and Christo Grozev, “Morality and ethics should play no part”: Leaks reveal how Russia’s foreign intelligence agency runs disinformation campaigns in the West,” *The Insider*, 4 July 2024, <https://theins.ru/en/politics/272870>, accessed 1 August 2024.

80 Sergey Sukhankin, “Russia’s Disinformation Campaign in North America Becomes Smarter and More Flexible,” *Eurasia Daily Monitor*, Vol. 21, Issue 136, 23 September 2024, <https://jamestown.org/program/russias-disinformation-campaign-in-north-america-becomes-smarter-and-more-flexible/>, accessed 25 September 2024.

81 The site asserted that those challenges were made worse because of current U.S. foreign policy, particularly its support for Ukraine, which they argue has caused politicians to disregard domestic issues. Another example of Russia’s embedded approach was the film by Russian-Canadian documentary director Anastasia Trofimova, who has collaborated with Russian Television (RT) in the past. Her infamous documentary “Russians at War” caused significant controversy in Western media. The movie attempts to present Russian soldiers as “deceived victims” of the war in Ukraine and Russia’s aggression against Ukraine as a “brotherly conflict.” Trofimova insists that she did not collaborate with the Russian Federal Security Service (FSB) nor the Russian Ministry of Defense

(MoD) when filming the movie. However, her credibility is severely strained when one considers she and her crew spent seven months on the frontline in the territories of Luhansk and Donetsk, as well as travelling to Russia to film the graves of soldiers killed in Ukraine. Sukhankin, “Russia’s Disinformation Campaign.”

82 Evan Dyer, “How Russia uses race and migration to divide the West,” *CBC News*, 13 September 2024, <https://www.cbc.ca/news/politics/russia-disinformation-putin-trump-ukraine-1.7321506>, accessed 13 September 2024.

83 Tamara Lorincz, “Canada’s militarization of the Arctic threatens Indigenous communities and the climate,” *Canadian Dimension*, 17 June 2024, <https://canadiandimension.com/articles/view/canadas-militarization-of-the-arctic-threatens-indigenous-communities-and-the-climate>, accessed 26 June 2024.

84 Dyer, “How Russia uses...”

85 Lorincz, “Canada’s militarization of the Arctic.”

86 Canada, *Canada’s Arctic and Northern Policy Framework* (Ottawa: Crown-Indigenous Relations and Northern Affairs Canada, 2019), 23, <https://www.rcaanc-cirnac.gc.ca/>, accessed 31 October 2024.

87 Lorincz, “Canada’s militarization of the Arctic.”

88 Abbie Tingstad, “Enhancing Security in a Changing Arctic,” *RAND*, Testimony submitted to the U.S. House Committee on Homeland security, 29 November 2023, 2. Adding to these issues is the fact that Arctic environmental change is creating additional stress that fuels dissatisfaction and can become an avenue for sowing conflict. Concerns regarding access to traditional and other food sources, contamination of water / land, respiratory and heat stress problems, as well as the destruction of seasonal and permanent infrastructure will become friction points. Moreover, climate change can potentially cause the collapse of coastal communities as permafrost and glaciers melt, sea levels rise, summer heat waves and wildfires intensify, and large storms become more frequent.

89 Robert Farley, “Russia is the Most Prepared Nation to Fight and Win an Arctic War,” *The National Interest*, 2 May 2020, <https://nationalinterest.org/blog/buzz/russia-most-prepared-nation-fight-and-win-arctic-war-150596>, accessed 4 May 2020.

90 Lt. J.G. Martin L. Carey, “Allied, Joint Special Operations Forces Secure the Arctic,” *SOF News*, 14 March 2024, <https://sof.news/exercises/arctic-edge-24/>.

91 Kevin D. Stringer, “Competing in The Arctic Through Indigenous Group Engagement and Special Reconnaissance Activities,” *The Modern War Institute*, 8 June 2021, <https://mwi.usma.edu/competing-in-the-arctic-through-indigenous-group-engagement-and-special-reconnaissance-activities/>, accessed 19 April 2022.

92 Kline, “Jesse Kline: The pressing need.”

CHAPTER 7

GUERRILLAS IN THE GLACIERS: ENVIRONMENTAL GRAY ZONE TACTICS IN THE POLAR REGIONS

Dr. Michele Devlin and Dr. José de Arimatéia da Cruz

In recent years, adversaries have significantly used Gray Zone tactics in polar regions of the Arctic and Antarctica. The Arctic and Antarctica present extreme environments, which makes conventional military activities challenging. Gray Zone tactics, a set of strategic manoeuvres that fall between peace and open conflict, have gained traction to achieve influence in areas where direct military engagement may be impractical or politically sensitive. Gray Zone tactics are generally cheaper, less labor-intensive, and require fewer assets than traditional military deployments.

INSTRUMENTS OF NATIONAL POWER IN EXTREME REMOTE AREAS

The concept of instruments of national power has traditionally been captured by the acronym DIME, representing Diplomacy, Information, Military, and Economic power. As climate change increasingly opens remote and extreme environmental areas like the Arctic and Antarctic, it contributes to more significant political security concerns over desirable resources in the polar regions. Given these challenges, the traditional DIME model is increasingly seen as insufficient in polar contexts, prompting calls for an expanded framework to MIDFIELD (Military, Information, Diplomatic, Financial, Intelligence, Economic, Legal, and Developmental). These models recognize that security and influence in polar regions rely on a more nuanced and adaptive approach.

CHARACTERISTICS OF POLAR GRAY ZONE TACTICS

Polar Gray Zone tactics represent a unique set of strategies adversaries have used and/or can use to exert influence and control in the Arctic and Antarctic regions while remaining under the threshold for significant

military retaliation. One defining characteristic of these tactics is that they often stay below the radar of traditional military responses. By design, they fall under the threshold that would necessitate direct military intervention, making it difficult for the United States or other nations to justify retaliation. Furthermore, these tactics can be remarkably simple, utilizing methods that appear innocuous but carry strategic weight. They often employ dual-use fronts with plausible deniability, where civilian, scientific, or economic activities mask ulterior motives.

These tactics can be executed as single-time events or be persistently embedded within a society. Persistent tactics are particularly concerning because they can become deeply integrated into society, operating in the background until an adversary chooses to activate them. Such embedded tactics exploit the democratic, open nature of nations like the United States, where free movement and privacy rights can make it easier for foreign actors to establish a long-term presence without detection.

The pervasive nature of Gray Zone tactics in the polar regions often goes unnoticed by the general public. Intelligence agencies can overlook it due to their subtle and unremarkable appearance. Many such tactics are rarely discussed between agencies, and their connections to Gray Zone operations in other regions are often ignored. Finally, polar Gray Zone tactics embody a “weaponization of everything, everywhere, all at once.” By leveraging the polar region’s extreme conditions and unique geopolitical status, adversaries create a strategic advantage that can be activated when most advantageous to their interests.

EXAMPLES OF POLAR GRAY ZONE TACTICS

In the polar regions, Gray Zone tactics allow adversaries to pursue their strategic interests subtly, often through dual-use operations that exploit the unique characteristics of these remote and extreme environments. Below are specific examples of how Gray Zone tactics have manifested themselves already in the Arctic and Antarctic, or could potentially be implemented by adversaries in these remote, isolated regions:

1. **Dual-Use of Foreign Fishing Fleets as Maritime Militias**

Foreign fishing fleets can serve dual purposes in the Arctic, harvesting fish and acting as maritime militia. These vessels can collect

intelligence, map seabed, and surveil other maritime activities, allowing adversaries to establish a low-profile presence without overt military deployment. This dual-use tactic exploits the guise of economic activity to gain strategic advantages in contested waters.

2. Lawfare to Weaken Polar Environmental Governance Treaties

Legal tactics, or “lawfare,” are increasingly used to challenge and weaken environmental governance treaties in the polar regions. Adversaries may file lawsuits, reinterpret international laws, or lobby for treaty amendment changes to undermine regulatory frameworks restricting their resource extraction or presence.

3. Questionable Environmental Belt and Road Developments

Under the Belt and Road Initiative (BRI), investments in polar infrastructure projects are often dual use, providing economic benefits and potential strategic footholds.

4. Weaponization of Polar Environmental Tourism

Environmental tourism in remote polar areas, often marketed as eco-friendly or research-based, can be a tool for adversaries to establish small, temporary “embeds” in strategic locations. Tourists may include personnel collecting intelligence or mapping routes.

5. Cyber Attacks on Critical Infrastructure

Polar regions house critical infrastructure related to energy, research, and communication. Cyberattacks targeting this infrastructure can disrupt operations and weaken adversarial states’ capabilities, often with plausible deniability.

6. Targeting Environmentally Vulnerable Arctic Indigenous and Local Populations

Development funding or infrastructure projects targeting Indigenous Arctic populations may appear beneficial but can foster dependencies that adversaries exploit to gain influence and establish hegemonic control.

7. Environmental Crimes and Sabotage (e.g., Nord Stream Pipeline)

Acts of sabotage, such as the attacks on the Nord Stream pipeline, exemplify Gray Zone tactics that disrupt energy supplies without directly confronting military forces. These incidents create political instability, drive up energy costs, and weaken national resilience, serving as indirect methods of economic warfare.

8. Drone Sightings Near Energy Facilities

Drone sightings near polar energy facilities have raised concerns about surveillance and potential sabotage.

9. Prostitution and Disaster Trafficking

Trafficking in remote polar regions is a lesser-known tactic that exploits labour shortages and isolation. Through illicit networks, adversaries can introduce personnel into regions under cover of legitimate employment or trafficking, allowing them to embed individuals who can gather intelligence or create disturbances when needed.

10. Dual-Use of Civilian Roads for Military Purposes

In Arctic regions, infrastructure like roads built for civilian use can also support military logistics. These roads may be constructed with specifications that accommodate heavy military vehicles, enabling adversaries to mobilize forces rapidly in times of crisis without infrastructure constraints.

11. Weaponization of Migration Streams

Controlled human migration into polar regions is another method by which adversaries can alter an area's social and political dynamics. By encouraging migration through incentives or forced displacement, adversaries can introduce loyal populations or create socioeconomic pressures that weaken host nations' control and unity in remote areas.

12. Subcontracting of Polar Infrastructure to Adversarial Entities

Increasingly, adversaries secure contracts for construction, communication, electrical, and supply chain projects in polar regions for economic collaboration. However, through subcontracting,

they can embed control points or backdoors in critical infrastructure.

13. Dual-Use of Climate and Environmental Research for Intelligence

Adversaries frequently establish research outposts in polar regions under the pretense of scientific studies. These activities serve dual purposes, allowing adversaries to conduct surveillance, reconnaissance, and intelligence-gathering operations under the cover of academic work or scientific exploration.

14. Sabotage of Undersea Communication Cables by “Icebergs”

The polar seabeds are laced with undersea communication cables essential for international data transmission. Adversaries may use icebergs or other natural elements as cover to damage or cut these cables, disrupting critical communication.

15. Remote Business Fronts and International Money Laundering

Adversaries establish legitimate businesses as fronts for international money laundering. These business fronts can provide additional resources to finance these regions’ covert actions and intelligence networks.

16. New Climate Migration Patterns for Workforce in the Polar Regions

As the climate shifts, migration patterns change, and new employment opportunities emerge in the polar regions. Adversaries encourage their citizens to migrate for work, thereby embedding individuals loyal to foreign interests in strategic polar environments.

17. Micro-Targeting Populations with Environmental Mis-Dis-Mal-information

Micro-targeting polar and neighboring populations with mis-dis-mal-misinformation (MDM) on climate and environmental policies can sway public opinion and disrupt societal consensus on key environmental issues.

18. Weaponization of Environmental Health Information

Adversaries weaponize environmental health data by selectively

releasing information that influences local or international environmental policy in ways that favor their strategic objectives. The COVID-19 pandemic is an excellent example of the weaponizing environmental health information.

19. Geo-Manipulation or Negotiation for Polar Land Claims

This tactic allows adversaries to pressure international organizations to recognize these claims based on manipulated data or dubious historical evidence.

20. Manipulation of Historic Claims to Polar Territories

Adversaries may also manipulate or fabricate historical claims to justify their presence in certain polar regions. This strategy bypasses diplomatic negotiations and normalizes foreign control over contested areas.

21. Breaching or Surveillance of Military Bases

Polar military bases often serve as strategic outposts for monitoring and defense but are also frequent targets of Gray Zone tactics.

STRATEGIES FOR ADDRESSING POLAR GRAY ZONE TACTICS

The complexity of Gray Zone tactics in polar regions necessitates a strategic, multifaceted response to safeguard national interests and address the growing security threats in these vulnerable and resource-rich areas. Below are some suggested strategies that stay within legal and ethical limits but provide robust countermeasures to adversarial Gray Zone tactics:

1. Arctic States must recognize the growing presence of Gray Zone activities in remote polar areas and its ability to cripple the region's "Zone of Peace."
2. Arctic States must pay attention to the anthropogenic environmental changes in the region and ask the tough questions of what kind of future we want.
3. Arctic States must also think of establishing nontraditional partnerships such as the military and the Department of Homeland Security (DHS).

4. Arctic States must also consider taking a whole-of-government approach to the Arctic, but most importantly, with the full participation of an active public who lives in the area and understands its complexities. Any policy without the region's residents considered is bound to fail.
5. Arctic States must also rethink how their knowledge about the region's problems is disseminated or classified. What information should everyone have access to for the good of the region? What is intelligence? It is information that has a national security value.
6. The military must learn from the Department of Homeland Security, the Department of Justice (DOJ), U.S. Customs and Border Protection (CBP), and other groups with specialties in fronts, racketeering, and transnational organized crime.
7. War Colleges worldwide need more wargaming replicating the realistic environmental condition in the Arctic region, and Professional Military Education (PME) Institutions need to offer more courses and training on environmental Gray Zone tactics and expanded instruments of national power.
8. Arctic States must not confuse means with ends; ends matter. The Arctic Paradox is real. The region could be an alternative source of resources, but the exploration and exploitation of those resources have severe environmental consequences.

Additionally, the Arctic States may also need to consider the following issues:

1. **Offensive Gray Zone Tactics Within Legal and Ethical Limits** – To counteract adversaries effectively, implementing legally sound offensive Gray Zone tactics can establish influence and protect national interests in polar regions without escalating into open conflict.
2. **Weaponization of Environmental Insecurity** – Adversaries often exploit environmental vulnerabilities as part of Gray Zone strategies, but this tactic can also be adopted defensively. By highlighting environmental risks posed by adversarial activities

—such as unregulated resource extraction, pollution, or overfishing—nations can shift public opinion and international scrutiny onto those activities.

3. **Environmental Counter-Gray Zone Tactical Teams** – Specialized Counter-Gray Zone teams with expertise in environmental security could be deployed to protect sensitive areas and facilities in polar regions. These teams, trained in both environmental and security operations, would monitor and respond to adversarial tactics, such as surveillance activities under the guise of environmental research or economic projects.
4. **Enhanced Environmental Espionage Operations** – Environmental espionage offers another avenue to gather intelligence on adversarial activities under the guise of ecological monitoring and research. By expanding intelligence operations into the environmental area of operational responsibility (AOR), nations can monitor adversaries' movements, infrastructure projects, and clandestine activities.
5. **Environmental Intelligence Fusion Centres (Joint, Inter-agency, Intergovernmental, and Multinational)** – Establishing environmental intelligence fusion centres would allow for centralized data gathering and analysis on adversarial Gray Zone activities. These centres would bring together agencies and organizations at national and multinational levels to share intelligence and develop a coordinated response to environmental and security threats in polar regions. These fusion centres could also be used as a repository of information.
6. **Enhanced Environmental Security Career Opportunities Through Military Occupational Specialties and Additional Skill Identifiers Systems** – Developing specialized career tracks for environmental security within military academies or PME schools to ensure a steady pool of professionals dedicated to countering polar Gray Zone tactics. Creating Military Occupational Specialties (MOS) and Skill Identifiers in areas like environmental security would foster a skilled workforce adept at navigating the nuances of environmental security.

CHAPTER 8

RUSSIA'S MILITARY POSTURE AND CAPABILITIES IN THE ARCTIC

Tony Balasevicius

Prior to the spring of 2014, Moscow was regarded as an active and co-operative member of the international community. In fact, the thought of conflict occurring between Russia and Western nations was almost inconceivable to many. However, attitudes began to change with the invasion of Ukraine in 2014. Not only did this action signal the long-term occupation of a sovereign country but the beginning of a more aggressive foreign policy posture for Russia. In order to move this new policy direction forward, Moscow undertook a series of initiatives to both expand and modernize its capabilities. And nowhere was its impact more prevalent than in the Arctic.

Until recently, Russia's buildup in the high north has received little to no attention from Western Governments. Yet, this effort has included significant upgrades to a number of Soviet era bases, the deployment of advanced air defence and ground guidance systems and the long-term modernization of its Northern Fleet. In addition, Moscow has announced the formation of several new units specifically trained and equipped for Arctic warfare.¹

Some of these activities did not come as a complete surprise to those that follow Russian developments. The Russians believe much of their future economic prosperity will come from the region's energy production and maritime transport wealth so it was generally believed that Moscow was simply adjusting its security posture to better protect its resources for development.² In fact, this focus on economic development provided a degree of comfort to Western governments as economic prosperity requires a stable environment in order to flourish. This led some analysts to conclude that despite the possibility of tensions increasing elsewhere, Russia would want to keep peace in the Arctic.

Unfortunately, the Russians have never been willing to compromise on issues they perceive to be in their national interest. This unwillingness to back down on their position is clearly evident in the aggressive foreign policy posture we now see playing out in places such as Ukraine, Georgia, Moldova, and Norway.³ Moreover, these actions continue despite the significant economic penalties Moscow is incurring from Western imposed sanctions for their continued activities inside these countries. It is therefore unlikely that Russia will stop pushing its aggressive foreign policy stances largely because they have seen tangible results from employing such methods.

Although, the various military initiatives being undertaken by Moscow should be viewed with concern, there should be far greater unease regarding the current methods being employed to achieve some of its results. For example, throughout the course of the Ukraine conflict, and currently in Georgia and Moldova, Russian operations have showcased a new set of tools outside the scope of military force. Moreover, they provide Moscow with far more reach and flexibility when dealing with perceived security issues.

The implementation of these new tools is collectively being referred to as hybrid warfare. Their employment embraces the concept of using the multiple instruments available to the nation state to achieve specific strategic objectives. This approach includes an assortment of both military and non-military means and can include such things as information warfare, cyber-attacks, sabotage, mass political manipulation, and other forms of intimidation.⁴

By using such capabilities, Russia has expanded its options when pursuing national objectives and can now call upon a host of additional non-military capabilities to achieve its stated goals. This outcome is important because along with its conventional military modernization and buildup programs, hybrid warfare constitutes a new and compounding security threat for North Atlantic Treaty Organization (NATO) and the Arctic region.

This chapter will examine Russia's political ambitions and military/hybrid warfare capabilities in the Arctic. In so doing it will provide an overview of their security concerns, current capabilities and likely future intentions.

Finally, it will highlight the most likely threats and how they might play out in the Arctic.

THE IMPORTANCE OF THE ARCTIC TO RUSSIA

In seeking to understand Russia's military stance in the Arctic one needs to first recognize the strategic importance of the region to the country's economic development, policy objectives and overall defensive posture. According to the Arctic Council, Russia covers just over 24,150 kilometers of coastline along the Arctic Ocean or about 53 per cent of its total land mass. It has approximately two and a half million inhabitants living in the territory, and this accounts for nearly half of the total population living in the Arctic worldwide.⁵ Although the region is home to less than 10 per cent of the country's population, it contributes about 20 per cent of the country's total Gross Domestic Product (GDP). Moreover, up to 60 per cent of the country's raw material exports come from the region, which accounts for 91 per cent of its natural gas and 80 per cent of its proven reserves of industrial gas.⁶

From a strategic perspective, the Russians see the Arctic as a driver of their socio-economic development as well as their strategic reserve and future power base. This belief is due to the fact that the Arctic also holds large deposits of uranium, copper, nickel, iron, natural gas, oil, phosphate, bauxite, iron ore, copper, nickel, and diamonds. Some estimates put the total economic value of Arctic resource extraction at around \$290 billion a year.⁷

Moscow believes these large reserves will intensify geo-economic competition as there will be a growing likelihood of conflict over access to these resources, transit routes and markets.⁸ As a result, the Arctic plays a significant role in Russia's overall strategic development and security outlook for the future. Moreover, they have articulated a clear plan to shape that future moving forward.

According to Nazrin Mehdiyeva, a visiting Academic at the University of Oxford, Russia's strategic documents on the Arctic have consistently highlighted two specific policy strands that the Russians see as fundamental to enhancing the country's sovereignty over the region. She explains, "The first is the assertion of Russian jurisdiction over the Northern Sea

Route” and the second is “extending Russian jurisdiction over the exploration and exploitation of natural resources of Russia’s continental shelf beyond the commonly accepted 200 nautical mile limit.” She adds, “Unimpeded access to, exploitation and transportation of the mineral riches is seen as serving Russia’s national interests and is deemed to become increasingly strategic in the post-2020 framework as global competition for resources and markets intensifies.”⁹ Russia hopes that these two objectives will strengthen its overall national security position by giving it control over a larger share of global resources. If this can be achieved, it would improve Russia’s competitiveness by enabling it to reach export markets via a shorter transportation route.¹⁰

It is important to note that the impact of global warming has also affected Russia’s overall security situation in the north. Polar ice has always protected the country’s northern flank; however, this is becoming increasingly less so over time. As a result, Moscow has had to realign its military thinking to accommodate this new reality.¹¹ The Arctic was already home to the Northern Fleet and the country’s strategic nuclear strike capabilities, much of which is based in and around the Kola Peninsula.¹² Prior to the War in Ukraine it had a limited ground presence of three brigades with a total of approximately 50 tanks, 450 armoured personnel carriers, and a large number of cross-country and multipurpose tracked vehicles. This force was supported by various artillery systems and a small contingent of attack aviation.¹³

With the increase of economic activities in the region, Russia has begun the process of reopening a number of ex-Soviet military outposts in the north. This reactivation has included the addition of research facilities, the conversion of radar sites into search and rescue bases and the creation of new border posts to the existing infrastructure.¹⁴ According to Colin Wall, and Njord Wegge, of the Center for Strategic and International Studies, there are now approximately, “three major bases, around 13 airfields, 10 radar stations, 20 border outposts, and 10 emergency rescue stations.” They also point out that in an emergency, “two Russian airborne assault units are assigned to help protect the Kola Peninsula: the 76th Guards Air Assault Division and the 98th Guards Airborne Division. These divisions, as well as the 106th Guards Airborne Division, have trained for Arctic-specific missions.”¹⁵

THE STRATEGIC IMPACT OF WAR IN UKRAINE ON THE ARCTIC

From a strategic perspective, Russia's invasion of Eastern Ukraine in February 2022, has reshaped the security situation in both Europe and the Arctic. In response to its aggression, Finland and Sweden decided to join NATO, while Western nations collectively have imposed a series of sanctions on Russia. Moreover, almost all cooperation between the West and Moscow was suspended. This cessation included the halting of all regular meetings within the Arctic Council (AC).

The immediate impact of this decision was the elimination of the idea of a "One Arctic" concept, as the region became fractured into two geopolitically distinct and almost equally sized entities. One that is dominated by NATO, and the other by Russia.¹⁶ More importantly, as Russia became increasingly isolated in both Europe and the Arctic it was forced to seek out new partnerships in order to move its development ambitions forward. China was first in line to provide this much needed assistance; however, they are not the only ones.

According to Marko Filijović and Samuel Jardine's article, in the Arctic Institute's commentary, "Russia's Queenside Castling in the High North: A Strategic Risk or Opportunity for the West?" Russia has invited a number of nations to join their development efforts in the High North. They revealed, "At the close of its AC chairmanship (2021–2023), Moscow publicized a document titled "Prospects for BRICS [Brazil, Russia, India, China] Cooperation on Sustainable Development in the Arctic" They then invited China, India, Brazil, and the Republic of South Africa to become more involved in the region."¹⁷ Importantly, during Russia's chairmanship of the AC, it "engaged in discussions regarding initiating cooperation in the High North with the member countries of the Shanghai Cooperation Organization (i.e., China, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, India, and Pakistan)."¹⁸

Moscow's need for assistance with its High North development is creating a new geopolitical reality in the region. Specifically, it is internationalizing the now divided Arctic. In the process it has diminished the AC's relevance and increased the influence of non-Arctic powers in the region.

This new dynamic now means that Arctic states are no longer able to cooperate collectively on regional affairs without outside influence.¹⁹

Despite the need to bring in additional international actors to help with development, the war in Ukraine has not changed Russia's overall strategic outlook for the Arctic. In this regard, Russia stills views the region as its power base and eventually hopes to use it as a staging ground for future power projection. In protecting these vital national interests, it is unlikely to resort to open conflict in the region, unless it sees no other option. However, this does not mean they will do nothing.²⁰

With Sweden and Finland now part of NATO, it is likely that Russia will feel the need to take additional security measures in order to better protect its critical military installations, especially in the Kola Peninsula. This concern includes the Northern Fleet's strategic submarine base at Gadzhiyevo, which is now less than 200 kilometers away from the border of a NATO country.²¹ According to Anna Maria Dyner, an analyst for the Polish Institute of International Affairs, "Estonian intelligence estimates suggest, the 6th Combined Arms Army will be stationed in the Leningrad Military District; the 14th and 44th Army Corps are being formed near the border with Finland, and the 11th Army Corps will operate in the Kaliningrad region."²² How these changes might impact actual troop numbers in the Arctic is currently unclear.

In the unlikely event of a full-scale war with NATO, Moscow would in all probability remain on the strategic defensive. That being said, once it appears war is inevitable, they could carry out a series of limited operational incursions into Norway, Sweden, Finland and/or the Baltic States in an effort to gain greater depth and a better defensive posture to protect critical assets in and around the Kola Peninsula. Further south, an assault on the Baltic countries of Estonia, Latvia, and Lithuania would eliminate a NATO foothold and the immediate threat to St Petersburg from two directions.

Such moves would likely be spearheaded by special forces, and followed up by a number of Motor Rifle units to secure and hold the positions. Any attack such as this would be backed up by long-range precision strikes against high-value assets, including command and control sites,

radar stations, and important bases supporting naval capabilities, anti-submarine warfare or air operations.²³

IMPACTS OF THE UKRAINE WAR ON THE RUSSIAN MILITARY

Setbacks in Ukraine have forced the Russians to make a number of systemic changes to their armed forces. Once implemented, they will impact forces stationed in the Arctic. Overall, operations have revealed major shortfalls in organization, training, doctrine, personnel strength estimates, and air support. In December 2022, the Defence Ministry outlined a series of reforms, intended to address at least some of these issues. The first was to increase the size of the Armed Forces to 1.5 million personnel.²⁴ Moscow also decided to reorganize the Western Military District (MD) back into two smaller ones it replaced in 2010, designated as Moscow and Leningrad MDs. In addition, Moscow is also looking to strengthen the combat capabilities in its services, with priority currently being given to its ground and aerospace forces.²⁵

One of the main challenges facing the Russian army in Ukraine has been the poor training of its soldiers. To overcome this problem, Russia is now allocating additional funding and expanding its networks of training centres for both soldiers and officers. According to Anna Maria Dyer, these changes have acknowledged the fact that simply increasing troop levels through conscription and mobilization will not make the qualitative changes needed for troops to be effective on the modern battlefield.²⁶

Over the longer term, the Russians hope that time and experience will increase the number of better trained soldiers, which if it occurs, should eventually raise the overall level of capabilities within units.²⁷ To compensate for its current deficiencies, the Russians have turned to their elite formations to carry out, or spearhead, their ground assaults while their lower quality soldiers are relegated to manning defensive positions. Putting their better-quality forces into the assaults has led to some interesting innovations.²⁸

Since April 2024, Russian assault units (battalions) have been attacking Ukrainian positions using a combination of off-road motorcycles and all-terrain vehicles (ATVs) for the assault. These tactics are focused around

mobile troops moving deep into the enemy's defensive positions covered by drones. Attacks occur under the cover of an artillery barrage, which allows the assault groups to approach their target quickly to minimize the possibility of detection until they are close to, or on, the objective. As the tactical action unfolds, additional formations are inserted into the battle at different points to unhinge the tactical situation for the enemy.²⁹

From a tactical perspective, the employment of ATVs and motorcycles for combat operations trades off protection for speed and if done correctly offers some advantages. These include enhanced manoeuvrability and speed across various terrains. This method also facilitates the rapid concentration and approach of dispersed forces onto enemy positions, reducing the time exposed to detection and hostile engagement.³⁰ Although not new to the modern battlefield, the introduction of motorcycles and the employment of these innovative tactics suggests a possible shift in the Russian Army's employment of smaller units where greater emphasis will be placed on mobility and the element of surprise.

This greater reliance on elite forces to spearhead attacks has resulted in a major expansion of these forces and is impacting their marine infantry, and airborne troops. For example, the Russians plan to create two additional airborne divisions, and expand their existing naval infantry brigades into five divisions. The plan, if fully realized, would see Marine numbers increase their present strength from about 20,000 soldiers to around 75,000 soldiers.³¹

It is important to remember that the change in tactics and increase in elite force numbers may be intended as a bridging solution until the Russians can transform their defensive army that is good for holding trench systems into an assaulting army that could take and hold ground.

At the tactical level, the biggest change in combat operations has been the introduction of drones. In fact, the evolution of drone warfare has moved quickly during the course of the war. Drones of different sizes and capabilities are now being employed for reconnaissance, surveillance, targeting, bombing, carrying out kamikaze attacks on armored formations, and even assaults on individual soldiers.³² This technology and the tactics being employed have made it extremely difficult for units to conceal themselves, concentrate for attacks and even move without quickly being

spotted and engaged. These limitations have impacted the way Russian units now operate, putting greater emphasis on concealment, movement control, the dispersion of forces and the timing for when they can concentrate to attack.³³

Another area of major concern for the Russians has been their air force. Despite being four times the size of Ukraine's air force it has not been able to gain air superiority. Although, its primary focus is on supporting ground operations, its conduct of these operations has been a disappointment.³⁴ During the opening stages of the war, it was unable to destroy airfields, ammunition dumps, and radar sites.³⁵ In an effort to offset these weaknesses and penetrate Kyiv's comprehensive air defenses, the Russians have been employing standoff attacks using glide bombs, along with medium and long-range missiles. In fact, the Russians are also employing drones in these barrages, to soak up and overwhelm Ukrainian defenses before the actual start of an attack.³⁶

In summary, the war has been a wake-up call for the Russian military. Moreover, it has learned from its mistakes and made improvements over the course of the war. For example, its officer corps is gaining experience, units are better organized and are slowly being modernized. However, the most important reform is the fact that military planners have started moving back to their roots and are now working to play to their army's strengths. This approach includes a focus on heavier formations, operations in depth, the avoidance of strong points, exploiting weaknesses, long-range missile attacks, and extensive artillery barrages. Combined, these changes are slowly turning the tide on the ground for the Russians in Ukraine.³⁷

RUSSIA'S SHAPING OPERATIONS

Although, much of the media attention is focused on the combat operations of the war, the Russians have also been employing other tools to help it shape the war on the ground. In 2014, these weapons were being categorized by Russian commanders as "New Generation Warfare." Lieutenant General Ben Hodges, the commander of Army forces in Europe at the time, summarized the concept as, "Moscow... now seems to favor an approach based on hybrid or multidimensional war...embracing simultaneous employment of multiple instruments of war, including

non-military means where information warfare, such as mass political manipulation, is a major capability.³⁸

Since that time, the concept has continued to evolve with no official designation being established in the West. However, it is often referred to as gray zone operations or hybrid warfare. With the development of modernized / more sophisticated hybrid warfare due to globalization and the proliferation of information technology over the last ten years, the Russians no longer need to rely solely on the threat or use of direct military intervention to achieve their national security objectives. They can now call upon a host of non-military capabilities to reach their strategic goals. This novel approach constitutes a new and possibly greater security threat for NATO in the Arctic region.

In order to better understand how this methodology might be employed in the Arctic it is important to first understand what it is and why the Russians have adopted this form of conflict that we will refer to as hybrid warfare.³⁹ For the purposes of this chapter, hybrid warfare will be defined as the employment of multiple instruments of national power to achieve specific strategic objectives. This employment can comprise an assortment of military and non-military means such as information warfare, cyber-attacks, sabotage, mass political manipulation, and other forms of intimidation.

RUSSIA'S DOCTRINE OF HYBRID WARFARE

Despite their impressive military strength in the Far North, the Russians know they are vulnerable in the region. They have realized that after years of neglecting their military forces they would likely lose an all-out war against NATO. As a result, they have been attempting to modernize their military capabilities since 2008. To compensate for their current weaknesses in conventional military power, the Russians have been researching the possibilities of asymmetric strategies. These strategies are specifically designed to avoid NATO's excellence in joint level operational art by moving the focus of the fight to the strategic level of war. This approach is what Lieutenant General Hodges meant when he talked about the idea of "embracing simultaneous employment of multiple instruments of war." The result of these efforts has been the development of what is being referred to as state level hybrid war doctrine.⁴⁰

This doctrine was first introduced to the public in a paper published by General Valery Gerasimov, the Chief of the Russian General Staff, in February 2013.⁴¹ In it, Gerasimov lays out a number of key principles behind Russia's thinking on the possibilities of this type of warfare. The first is the idea that the world is now in a continual state of conflict. He states that "in the 21st century we have seen a tendency toward blurring the lines between the states of war and peace." He adds, "the conduct of wars has changed as they are no longer declared and, having begun, they move in different and unfamiliar directions."⁴² Gerasimov asserts, "This unfamiliar template refers to asymmetrical operations using a host of [strategic] capabilities to "nullification of an enemy's advantages in armed conflict."⁴³

Gerasimov believed that the specific capabilities needed to affect change would include the use of Special Forces linking up with internal opposition groups within the target country to create an operating front eventually extending throughout the entire depth of the enemy's territory. These actions would be combined with information operations, cyber warfare, legal warfare, economic war and other state level activities that were linked to a strategic outcome and constantly modified to meet the specific needs of a particular operation.⁴⁴

The Russians deem that such methods, employed and sequenced properly, could, in a very short period of time, throw a stable and thriving state into a web of chaos, humanitarian upheaval, and outright civil war, making it susceptible to foreign intervention.⁴⁵ Although, Gerasimov acknowledged that such events were not traditionally part of what would be considered wartime activities he believed that they will now become typical of conflict in the 21st century.

The idea of collapsing a state onto itself through social upheaval, before a declaration of war was issued, was an important part of hybrid warfare's underlying methodology. Gerasimov stated, "The very "rules of war" have changed...[as] the focus of applied methods of conflict has altered in the direction of the broad use of political, economic, informational, humanitarian, and other non-military measures — applied in coordination with the protest potential of the population."⁴⁶ The example he used to illustrate his point was NATO's role in Libya, where

a no-fly zone and naval blockade were combined with the use of private military contractors working closely with the armed formations of the opposition.⁴⁷

Gerasimov understood that new information technologies have allowed much of this change to occur. As a result, the information space has opened the door to the widespread use of asymmetrical possibilities for reducing the fighting potential of the enemy, particularly through the use of influence operations.⁴⁸

Jānis Bērziņš, Managing Director for the Center for Security and Strategic Research, at the National Defense Academy of Latvia, emphasized this specific point. He affirms, “The Russians have placed the idea of influence operations at the very center of their operational planning and use all possible levers of national power to achieve this.”⁴⁹ He adds, that the Russians, “have demonstrated an innate understanding of the key target audiences and their probably behavior... Armed with this information they knew what to do, when and what the outcomes are likely to be.”⁵⁰

The Russians felt these changes reduced the importance of frontal engagements by large conventional military formations, which they believed were gradually becoming a thing of the past. This transition is due to the fact that even if conventional operations are required to finish off the enemy this will be done primarily by using standoff operations throughout the entire depth of its territory.⁵¹ The Russians believed this shift towards irregular war and standoff operations have blurred the lines between the strategic, operational, and tactical levels, as well as between offensive and defensive operations.⁵²

According to Gerasimov, this new doctrine manifests itself in the use of asymmetric and indirect methods along with the management of troops in a more unified informational sphere.⁵³ Should the conflict need to escalate, these activities would be followed by the massive use of high-precision weapons, special operations and robotics. This assault would be followed by simultaneous strikes on the enemy’s units and facilities with battle on land, air, sea, and in the informational space.⁵⁴

RUSSIAN HYBRID WAR ACTIVITIES AGAINST NATO MEMBERS

So, how would Russia's hybrid warfare doctrine translate into specific operations against NATO members? In order to prevent the activation of NATO's Article five, the Russians are likely to focus their efforts on non-military activities against single NATO member countries. This methodology means that they would target a specific country putting emphasis on information operations, cyber warfare, legal warfare, economic war, environmental warfare and any other such activities they feel might be effective. The level of intensity would depend on the situation; however, such an effort is likely to start off slowly to show displeasure and increase steadily until a satisfactory result is achieved.

The Russians could also employ resources such as private military and security companies, criminal organizations and Special Forces for specific operations or circumstances. These organizations could be used to link up with internal opposition groups within the target country in an effort to create dissent toward the established authority should that be an option. Regardless, based on their doctrine, specific activities would include any or all of the following:

- gain physical or cyber control over critical infrastructure including government and military systems;
- employ Information Operations (Information War) against target nations and target groups;
- use criminal organizations or private security companies to carry out intelligence activities, the movement of weapons, and strategic level *espionage* or sabotage if this were to become necessary;
- conduct cyber-warfare including espionage, denial-of-service (DoS) attacks, data modification and infrastructure manipulation;
- employ Airborne or Special Forces to carry out attacks on infrastructure or to create discontent among indigenous peoples and or other minority groups; and

- employ conventional military forces to provide support for ongoing operations by Airborne or Special Forces, criminal organizations, private military and security companies and for intimidation.⁵⁵

In the future, Russia's conventional military forces in the Far North, which have traditionally been the centre of security calculations when dealing with potential Arctic threats, would likely be used to support specific aspects of its hybrid warfare doctrine's non-military operations. For example, they could provide the arms or explosives to criminal organizations who could smuggle them into a target country for the purpose of a terrorist event or act of sabotage. The military would likely confine itself to conventional deployment for exercises or show of force operations unless there was an actual outbreak of war.

NATO is currently seeing aspects of this process unfolding with one of its members. According to Ben Taub, a journalist for the *New Yorker*, "For the past few years, civilian life in northern Norway has been under constant, low-grade attack. Russian hackers have targeted small municipalities and ports with phishing scams, ransomware, and other forms of cyber warfare. Individuals travelling as tourists have been caught photographing sensitive defense and communications infrastructure."⁵⁶ He states, "Norway's domestic-intelligence service, the P.S.T., has warned of the threat of sabotage to Norwegian train lines, and to gas facilities that supply energy to much of Europe. A few months ago, someone cut a vital communications cable running to a Norwegian Air Force base."⁵⁷

The Norwegians believe the Russians are in the process of mapping their critical infrastructure, and that most attacks being carried out are deliberately murky, so it makes it difficult to attribute. They also believe they are acts of hybrid warfare, designed to subdue the enemy without fighting. According to Norwegian officials, the strategy appears to "subvert, to sabotage, to hack, to destabilize, to instill fear—and to paralyze Western governments by hinting at even more aggressive tactics."⁵⁸ Taub reported that ever since Russia annexed Crimea in 2014, Russia's "military and intelligence services have been experimenting with hybrid warfare and influence operations in Kirkenes, treating the area as a "laboratory." Taub went on to report, that the regional police chief put it to him that "Some

attacks were almost imperceptible at first; others disrupted everyday life and caused division among locals. To understand what was happening in her district, she started reading Sun Tzu."⁵⁹

NATO'S NEW SECURITY PRIORITIES

What does Russia's military buildup in the Arctic and, more importantly, its employment of hybrid warfare mean for NATO? From a threat perspective, the Russians now have the ability to circumvent the Arctic's vast distances and strike directly at the heart of any NATO country's critical infrastructure and public confidence as it attempts to provoke internal tensions. Moreover, they can do this without resorting to a formal declaration of war.

If NATO is to effectively deal with this threat it will need to address the security issues specific to the application of hybrid warfare doctrine. These include preventing the acquisition of companies and infrastructure in NATO countries by Russian or any country's state-owned companies, monitoring operations by possible surrogate organizations, countering Russia's information war and cyber warfare activities with active defence postures. Each will be examined in detail:

Cyber Warfare – A central component to Russia's use of hybrid warfare doctrine is cyber warfare. Long before any increase in tensions occur the Russians will attempt to infiltrate NATO's government organizations, research institutes, armed forces, energy distribution facilities, telecoms companies, financial services, and logistics management capabilities within the cyber domain.⁶⁰ In addition to carrying out espionage, specific cyber activities will include such things as propaganda, denial-of-service attacks, data modification and infrastructure manipulation.⁶¹

Should the Russians decide to launch an all-out cyber attack against any NATO county they will likely hit banking, government, media outlets and other targets that rely heavily on the digital medium to function. The primary method of assault will be a series of denial-of-service attacks that could result in shutdowns to many of these essential services.⁶² Also at risk is the internet infrastructure along with government ISP addresses, which will be hit in an attempt

to disrupt communications between government agencies and the various levels of government.⁶³

Information War – Another key component of this strategy is the employment of “information war.” The Russians view these operations in a holistic manner and as such they encompass a wide range of activities including cyber operations, electronic warfare, psychological operations, and influence operations.⁶⁴ As a result, information war not only deals in disinformation campaigns that could contain such things as half-truths and leaks, it actively attempts to reinvent reality in an effort to shape the global narrative.⁶⁵

To reach global opinions the Russians are very active on social media. For example, the BuzzFeed website recently reported that the Russian government is recruiting large numbers of online trolls in an effort to change global sentiment regarding the invasion of Ukraine.⁶⁶ These trolls are currently driving discussions on many of the principal western online media outlets, including “Fox News, Huffington Post, The Blaze, Politico, and WorldNet Daily.”⁶⁷ Such activities are intended to get Russia’s message out while creating confusion and uncertainty within the targeted community.

Should the Russians decide to unleash an information campaign against a NATO country it will be a coordinated effort using psychological and influence operations. They will attempt to capitalize on internal tensions between regions, communities, religions, and ethnic groups. The main focus of any campaign in the Arctic will also include the desire to isolate northern indigenous groups from their government while attempting to disrupt the public’s confidence in the ability of the government to deal with the situation effectively or to protect them should a confrontation escalate.⁶⁸

The Acquisition of Companies in NATO Countries –The Russians will likely attempt to penetrate established companies in NATO countries likely through full or partial commercial acquisition. According to Andrew Davenport, Deputy Executive Director of Prague Security Studies Institute (PSSI) in Washington, “Russia makes significant use of its State-Owned Enterprises for strategic purposes, pursuing key

roles in the energy sectors and power production industries of target countries."⁶⁹ Such control will allow them to use these assets to pressure decision-making, engage in economic warfare, or simply give them a bargaining tool against the Government should an appropriate situation arise. This use of acquisition for economic and political influence means that the NATO Governments must be cautious about what it allows the Russians, or any foreign power for that matter, to acquire, particularly regarding resources and critical infrastructure within a specific country.

Surrogate Organizations – Another aspect of Russia's hybrid warfare's operational approach is the use of surrogate organizations to do much of the dirty work. In this regard, there are two specific threats to all NATO countries that must be monitored, Private Military and Security Companies or PMSCs and criminal organizations.

There has been speculation that the Russians have used criminal organizations to perform various tasks in Eastern Ukraine. For example, Tom Porter, writing for the *International Business Times*, stated, "It is alleged that Russian organized crime figures have served as agents for Russia in east Ukraine, where they have been used to foment pro-Russian unrest, and transport arms and supplies to rebel groups."⁷⁰ José Grinda González, a Spanish prosecutor who has spent a great deal of time looking into the activities of Russian organized crime in Spain reinforces this claim. He believes Russian spies often use senior mafia bosses to carry out criminal operations such as arms trafficking. He states that "Law enforcement agencies such as the police, spy agencies and the prosecutor's office operate a de facto protection racket for criminal networks."⁷¹

The close relationship between Government and crime organizations means that as the Russian military and commercial interest expand their presence in the Arctic, so too will organized crime. More importantly, as Russian organized crime becomes more established in a NATO country the Russian Security Services will have a direct link to a pool of contractors already operating within the country. As a result, these gangs have moved from a purely criminal justice problem to a national security threat and both government and law

enforcement must be extremely vigilant regarding these organizations within a country.

An emerging Russian security threat that the future Arctic will have to deal with is the deployment of Russian-based PSMCs. The Russians have been monitoring the employment of Western PMSCs in Iraq and Afghanistan for some time and are keen to start providing similar services.⁷² Once in operation this capability will likely become an increasingly important part of Russia's hybrid warfare doctrine. As Dr. Mark Galeotti, of "In Moscow's Shadows" points out, "The Kremlin regards all Russian companies and institutions—and especially those owned, backed or facilitated by the state—as potential tools at its disposal."⁷³ He states, "Gazprom turns off the taps when there is a need to squeeze a neighbor; arms companies flock to do deals with despots the government would support..." He adds, "Russia's PMSCs would no doubt be expected to act at the Kremlin's behest when need be."⁷⁴ Galeotti concludes his assessment of PMSCs by stating, "The employment of these companies is "neither the soft power of influence and authority, nor the traditional forms of hard power, this would be a kind of "elastic power"—flexible much of the time, but surprisingly tough and painful when wielded with intent."⁷⁵

Employing Russian PMSCs in the Arctic to protect Russian-owned companies would be viewed by many as nothing out of the ordinary. However, these companies usually employ members with specialized military backgrounds and they could be used by the Russian government to carry out missions ranging from reconnaissance and sabotage on critical infrastructure, to providing assistance to resistance groups or criminal organizations. Because they are working for commercial enterprises, the Russian government has a built-in plausible deniability should they be apprehended.

HOW DOES THIS ASSESSMENT IMPACT SOF OPERATIONS IN THE ARCTIC?

- In the event of war with NATO, Russia will likely remain on the strategic defensive in the Arctic. However, they will carry out limited offensive operations to secure better defensive positions specifically to defend critical assets and infrastructure.

- The most likely form of conflict between NATO and Russia in the Arctic will be Hybrid Warfare.
- **Most Russian units deployed in the region will be well trained and conditioned to live and fight in the High North. In the short term, most will also have combat experience in the Ukraine.**
- Drones have become a major part of Russian's tactical operations and this trend is likely to continue into the future. NATO SOF will need to integrate both drones and counter measures into their force structure and operations.
- Arctic missions will involve the ability to transition operations from land, water, and the ice pack in different seasons. This is not something that can be mastered by tourism. NATO SOF will need to start living in that type of environment if they intend to master it.

CONCLUSION

For years military analysts familiar with the Arctic have stated there is no conventional military threat in the Arctic. However, things have changed. With the aggressive use of a hybrid warfare doctrine the Russians have developed a great deal more flexibility should they wish to pursue their objectives with actions that do not need the employment of conventional military forces. As General Gerasimov proclaimed, "the world is now in a continual state of war ...and in the 21st century the conduct of wars has changed as they are no longer declared and, having begun, they move in different and unfamiliar directions." In fact, there is clear evidence that the Russians have already started penetrating Norway's government and military institutions along with the critical infrastructure of other NATO members, either physically or through the use of cyber operations.

As a result, NATO must now recognize this new reality. More importantly it must start developing strategies to effectively counter, or mitigate the possible effects of Russia's state level hybrid war capabilities. The question is, will NATO members and their SOF become flexible and adaptive enough to meet this new challenge? To do so they will need to acknowledge that the rules of war have changed and that the threat from Russia is no longer the conventional wisdom of yesterday.

ENDNOTES

- 1 Stratfor Global Intelligence, "Russia's Plans for Arctic Supremacy," <https://www.stratfor.com/analysis/russias-plans-arctic-supremacy>, accessed 1 October 2015. Furthermore, the Federal Security Service plans to increase the number of border guards on the country's northern perimeter.
- 2 U.S. Energy Information Administration, *International analysis (Russia)*, <http://www.eia.gov/beta/international/analysis.cfm?iso=RUS>, accessed 3 October 2015. According to the report, Russia is a major producer and exporter of oil and natural gas, and its economy largely depends on energy exports. Russia's economic growth is driven by energy exports, given its high oil and natural gas production. Oil and natural gas revenues accounted for 50 per cent of Russia's federal budget revenues and 68 per cent of total exports in 2013.
- 3 Davit Gasparyan and Christina Harward, "Possible Russian Gains in Georgia and Moldova," *Institute for the Study of War Press (ISW)*, 27 October 2024, <https://www.understandingwar.org/backgrounder/possible-russian-gains-georgia-and-moldova>, accessed 24 October 2024.
- 4 Stephen J. Blank, "Imperial Ambitions: Russia's Military Buildup," *World Affairs*, May/June 2015, <http://www.worldaffairsjournal.org/article/imperial-ambitions-russia%E2%80%99s-military-buildup>, accessed 1 October 2015.
- 5 Arctic Council, *The Russian Federation and the Arctic Region*, <https://arctic-council.org/about/states/russian-federation/>, accessed 1 October 2015. The Arctic Council members include the eight Arctic States: Canada, the Kingdom of Denmark (including Greenland and the Faroe Islands), Finland, Iceland, Norway, Russia, Sweden and the United States. Six international organizations representing Arctic Indigenous Peoples have permanent participant status in the Council.
- 6 Valery P. Pilyavsky, *The Arctic Russian Geopolitical and Economic Interests* (FES Briefing Paper), <https://library.fes.de/pdf-files/id/07925.pdf>, accessed 15 October 2024.
- 7 Tanya O'Garra, "Economic value of ecosystem services, minerals and oil in a melting Arctic: A preliminary assessment," *Science Direct*, 24 April 2017, <https://www.sciencedirect.com/science/article/abs/pii/S2212041616301309#:~:text=Preliminary%20estimates%20are%20provided%20for,at%20%24290%20billion%20a%20year>, accessed 16 October 2024.
- 8 Andrew Monaghan, "Russia's Quest for Polar Power," *Engelsberg Ideas*, 11 January 2023, https://engelsbergideas.com/notebook/russias-quest-for-polar-power/?gad_source=1&gclid=EAIaIQobChMI2Mb67-WMiQMv9h-tBh0gOTJ9EAMYASAAEgLObPD_BwE, accessed 15 October 2024.
- 9 Nazrin Mehdiyeva, *Russia's Arctic Papers: The evolution of Strategic Thinking on the High North* (NATO Defence College, 2018), <https://www.ndc.nato.int/research/research.php?icode=567>, accessed 7 October 2024.
- 10 Ibid.
- 11 Monaghan, "Russia's Quest for Polar Power."

12 Eugene Rumer, Richard Sokolsky, and Paul Stronski, *Russia in the Arctic—A Critical Examination* (Washington D.C.: Carnegie Endowment for International Peace, 2021), <https://carnegieendowment.org/research/2021/03/russia-in-the-arctica-critical-examination?lang=en>, accessed 14 October 2024. Headquartered in Severomorsk the Northern Fleet, boasts approximately 25 submarines and twenty surface vessels. This includes aircraft carrier, cruisers, frigates and amphibious ships.

13 Colin Wall, Njord Wegge, *The Russian Arctic Threat: Consequences of the Ukraine War* (Tromsø: Arctic Council, 2023), <https://arctic-council.org/about/states/russian-federation/>, accessed 23 October 2024.

14 Monaghan, *Russia's Quest for Polar Power*.

15 Wall et al, *The Russian Arctic Threat*.

16 Marko Filijović and Samuel Jardine, "Russia's Queenside Castling in the High North: A Strategic Risk or Opportunity for the West?" *The Arctic Institute*, 8 October 2024, <https://www.thearcticinstitute.org/russias-queenside-castling-high-north-strategic-risk-opportunity-west/>, accessed 21 October 2024.

17 Ibid. BRICS is an acronym for the powerful grouping of the world's leading emerging market economies, namely Brazil, Russia, India, China and South Africa. The BRICS mechanism aims to promote peace, security, development and cooperation.

18 Filijović and Jardine, "Queenside Castling in the High North..."

19 Ibid. This has been a significant departure from Russian policy as the process of developing the Arctic never included other partner countries even ones that maintained close cooperation with the Kremlin in the defence sector.

20 Wall et al, *The Russian Arctic Threat*.

21 Ibid.

22 Anna Maria Dyner, "Russia's Armed Forces Two Years After the Full-Scale Invasion of Ukraine," *The Polish Institute for International Affairs*, 28 February 2024, <https://pism.pl/publications/russias-armed-forces-two-years-after-the-full-scale-invasion-of-ukraine>, accessed 11 October 2024. The Russians have also implemented a number of novel ways to counter the enemy drone threat. This includes better camouflage, changes to SOPs, different types of gun arrays on the back of vehicles, and providing units with EW capabilities.

23 Wall et al, *The Russian Arctic Threat*.

24 Dyner, "Russia's Armed Forces."

25 Ibid. For the Army, it appears that military planners will be replacing the brigade for the division as the basic military unit within the ground forces. In this regard, the Russians have announced the eventual creation of three new motorized divisions along with the re-formation of seven mechanized brigades.

26 Dyner, "Russia's Armed Forces."

27 Ibid.

- 28 Alex Gatopoulos, "Has Russia's military improved enough to take on NATO?" *Al Jazeera*, 30 September 2024, <https://www.aljazeera.com/features/2024/9/30/has-russias-military-improved-enough-to-take-on-nato>, accessed 11 October 2024.
- 29 "History Legends. How Russian Motorbike Squads Changed Battlefield Tactics in Ukraine, *You Tube*, September 2024, <https://www.youtube.com/watch?v=ybSx2Zu8TCQ>, accessed 1 October 2024.
- 30 "Army Recognition, Russian battalion attacks Ukrainian positions on off-road motorcycles," *Global Defence News*, 10 April 2024, <https://armyrecognition.com/focus-analysis-conflicts/army/conflicts-in-the-world/russia-ukraine-war-2022/russian-battalion-attacks-ukrainian-positions-on-off-road-motorcycles>, accessed 21 October 2024.
- 31 Gatopoulos, "Has Russia's military improved..."
- 32 RFE/RL "The Anti-Drone Tech Evolving on Ukraine's Front Lines," *Radio Free Europe*, 3 July 2024, <https://www.rferl.org/a/anti-drone-evolution-ukraine-war-russia/33020303.html>, accessed 23 October 2024.
- 33 Gatopoulos, "Has Russia's military improved..."
- 34 Anna Maria Dyner, *Russia's Armed Forces*.
- 35 Gatopoulos, "Has Russia's military improved..."
- 36 Ibid.
- 37 Ibid.
- 38 Stephen J. Blank, "Imperial Ambitions: Russia's Military Buildup," *World Affairs*, May/June 2015, <http://www.worldaffairsjournal.org/article/imperial-ambitions-russia%E2%80%99s-military-buildup>, accessed 1 October 2015.
- 39 Alexander Dalziel, "Russia's Tough Talk on Arctic Sovereignty Must Be Taken Seriously," *Geopolitical Monitor*, 4 March 2024, <https://www.geopoliticalmonitor.com/russias-tough-talk-on-arctic-sovereignty-must-be-taken-seriously/>, accessed 1 October 2024.
- 40 Maria Snegovaya, *Putin's Information Warfare In Ukraine: Soviet Origins of Russia's Hybrid Warfare* (Washington D.C.: Institute for the Study of War, 2015). 11, <http://www.understandingwar.org/sites/default/files/Russian%20Report%201%20Putin%27s%20Information%20Warfare%20in%20Ukraine-%20Soviet%20Origins%20of%20Russias%20Hybrid%20Warfare.pdf>, accessed 1 October 2015.
- 41 Mark Galeotti, "The 'Gerasimov Doctrine' and Russian Non-Linear," in *Moscow's Shadows*, ND, <https://inmoscowsshadows.wordpress.com/2014/07/06/the-gerasimov-doctrine-and-russian-non-linear-war/>, 16 November 2024. Many authorities on Russia believe that the article may have been written by someone else. Also, the same briefing was presented by the Chief of the Russian General Staff, Army General Valeriy Gerasimov, in January 2013 at the Russian Academy of Military Sciences' annual meeting; key elements of the Gerasimov Doctrine have since been integrated into the new edition of the Russian Military Doctrine, as approved in December 2014.

- 42 Ibid.
- 43 Ibid.
- 44 Ibid.
- 45 Colonel (Reserve) S.G. Chekinov and Lieutenant General (Retired) S.A. Bogdanov, "The Nature and Content of a New-Generation War," *Military Thought*, No. 4 (2013): 13, [http://www.eastviewpress.com/Files/MT_FROM%20THE%20CURRENT%20IS SUE_No.4_2013.pdf](http://www.eastviewpress.com/Files/MT_FROM%20THE%20CURRENT%20IS%20SUE_No.4_2013.pdf), accessed 5 July 2015.
- 46 Ibid.
- 47 Galeotti, "The 'Gerasimov Doctrine.'"
- 48 Ibid.
- 49 Jānis Bērziņš, *Russia's New Generation Warfare in Ukraine: Implications for Latvian Defense Policy* (Riga: National Defense Academy of Latvia, Center for Security and Strategic Research; Policy Paper No. 02, April 2014), 6.
- 50 Ibid., 6.
- 51 Chekinov and Bogdanov, *The Nature and Content*, 13.
- 52 Galeotti, "The 'Gerasimov Doctrine.'"
- 53 Ibid.
- 54 Ibid.
- 55 It is important to note that other activities could be included such as economic warfare and legal warfare. In addition, it is interesting to note that four of the six activities on this list do not fall under the traditional idea of war and these four would be the most likely activities to be employed by Russia against Arctic Council members.
- 56 Ben Taub, "Russia's Espionage War in the Arctic," *New Yorker*, 9 September 2024, <https://www.newyorker.com/magazine/2024/09/16/russias-espionage-war-in-the-arctic>, accessed 8 October 2024.
- 57 Ibid. For years, Russia has been using the Norwegian town of Kirkenes, which borders its nuclear stronghold, as a laboratory, testing intelligence operations there before replicating them across Europe.
- 58 Ibid.
- 59 Ibid.
- 60 Stephen Murimi, "Cyber Warfare Assessment of Russia," *Academia*, August 2014, 1. http://www.academia.edu/9689387/Cyber_Warfare_Assess_of_Russia, accessed 7 October 2015.
- 61 Ibid.
- 62 Jason Richards, "Denial-of-Service: The Estonian Cyber war and Its Implications for U.S. National Security," *International Affairs Review*, <http://www.iar-gwu.org/node/65>, accessed 7 October 2015.

63 Stephen, "Cyber Warfare Assessment of Russia," 1; and Gatopoulos, "Has Russia's military improved," 4.

64 Keir Giles, "Information Troops: A Russian Cyber Command?" in C. Czosseck, E. Tyugu, and T. Wingfield, eds., *3rd International Conference on Cyber Conflict* (Tallinn, Estonia: CCD COE Publications, 2011), 46, <https://ccdcoe.org/ICCC/materials/proceedings/giles.pdf>, accessed 5 October 2015.

65 Ibid.

66 In Internet slang, a troll is a person who sows discord on the Internet by starting arguments or upsetting people by posting inflammatory, extraneous, or off-topic messages in an online community (such as a newsgroup, forum, chat room, or blog) with the deliberate intent of provoking readers into an emotional response. Taken from "Definition of troll". *Collins English Dictionary*. <http://www.collinsdictionary.com/dictionary/english/troll>, accessed 4 October 2024.

67 Pierluigi Paganini, "Russia and Ukraine: Information Warfare," *INFOSEC Institute*, 17 June 2014, <http://resources.infosecinstitute.com/russia-ukraine-information-warfare/>, accessed 4 October 2015.

68 Ibid.

69 Andrew Davenport, "The Agendas of State-Owned Enterprises Raise Foreign Policy, Not Just Domestic Concerns," *Canadian Global Affairs Institute*, December, 2014, http://www.cgai.ca/agendas_of_state_owned_enterprises#SOE%20Activity, accessed 4 October 2015.

70 Tom Porter, "Gangs of Russia: Ruthless mafia networks extending their influence," *International Business Times*, 9 April 2015, <http://www.ibtimes.co.uk/gangs-russia-ruthless-mafia-networks-extending-their-influence-1495644>, accessed 14 October 2015.

71 Luke Harding, "WikiLeaks cables condemn Russia as 'mafia state'," *The Guardian (Russia)*, 1 December 2010, <http://www.theguardian.com/world/2010/dec/01/wikileaks-cables-russia-mafia-kleptocracy>, accessed 11 October 2015.

72 Alexey Eremenko, "Blackwater.ru: The Future of Russian Private Military Companies," *The Moscow Times*, 12 November 2012, <http://www.themoscowtimes.com/news/article/blackwater-ru-the-future-of-russian-private-military-companies/511056.html>, accessed 11 October 2015. In fact, a bill has already been filed with the Russian parliament, the State Duma, to legalize private military corporations in that country.

73 Mark Galeotti, "The Russia and "elastic power": will the burgeoning private security industry lead to private military companies, too?" *Moscow's Shadows*, <https://inmoscowsshadows.wordpress.com/2013/06/16/russia-and-elastic-power-will-the-burgeoning-private-security-industry-lead-to-private-military-companies-too/>, accessed 7 October 2015.

74 Ibid.

75 Ibid.

CHAPTER 9

CREATING A CANADIAN ARCTIC UNCONVENTIONAL WARFARE CAPABILITY

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Canada's Arctic is under threat and the current Canadian response capability is insufficient. The incorporation of a new capability may be a valuable addition to enable an improved state of readiness that would mitigate and address risks that will come sooner than perhaps anticipated.

THE ARCTIC CHALLENGE – THREAT TO CANADA AND NATO

Increasingly over several decades, the high Arctic has been undergoing dramatic climactic changes, especially as exemplified by the melting Arctic ice. These changes have put a spotlight on the Arctic given the new accessibility to navigable waters and commercial access to natural resources. In a matter of a few decades, the Arctic has been transformed from an isolated region with extreme temperatures and low populations, to an area of strategic importance for a variety of countries with territorial and commercial interests, thereby rendering this region a focal point of dramatically evolving geopolitics.

Scientists project that the Arctic waters will be ice-free during the summer as soon as 2030, and possibly ice-free year-round by 2040. The Bering Strait is becoming a vital maritime artery connecting the Pacific and Atlantic oceans through Canada's Northwest Passage. With the impending reality that the Arctic will be open to year-round commercial transport vessels, this region will be exposed to energy exploitation in the form of oil and gas, and the search for precious metals. The opening up of Arctic waters and its passages have brought about unprecedented commercial interests and policy challenges regarding free-access, northern governance, environmental issues, potential resource exploitation, as well as international law, sovereignty and conflicting geopolitical interests. All of

this impacts Canadian sovereignty and has brought to the forefront issues of Canadian security.

Eight nations have circumpolar interests: the United States, Sweden, Norway, Iceland, Finland, Denmark, Russia and Canada. While these countries have recognized and sometimes competing geographic and territorial interests, other nations such as Russia and – increasingly – the People’s Republic of China – have expressed commercial and security interests in this region. The Arctic region has also taken on renewed importance due to the recent inclusion of Finland and Sweden as members of the North Atlantic Treaty Organization (NATO).

Russia is expected to project its authority over its Arctic territory and maintain credible military forces to secure its Arctic critical infrastructures. The mainstay of Russia’s military power is invested in its navy’s Northern Fleet, which is stationed in the historic ports of Murmansk and Severomorsk. There is understandable concern that Russia will seek to expand its area of control in the Arctic, given Russia’s expansionist behaviour since 2014.

In addition to the eight nations, China has clearly staked substantial scientific and regional interests, defining itself as a “near Arctic state” and promulgating its claim in creating a “Polar Silk Road.” China’s aim is to map out and develop shipping routes through the Canadian Northwest Passage while seeking commercial investment opportunities as relates to raw materials, fishing, tourism and infrastructure development. Given Chinese activities to infiltrate and influence various areas of the world, their Arctic activities pose risks to the security and sovereignty of Canada.

This Arctic threat requires a whole of government approach to national defence, including a comprehensive plan to secure and defend northern borders. To address this strategic threat, the security of the Arctic should be anchored to an integrated and layered defence that incorporates the ability to ‘deter and deny’ potential aggressors in this challenging and austere environment.

THE ADVENT OF UNCONVENTIONAL WARFARE

The proposal to develop a formal clandestine paramilitary formation to undertake unconventional warfare (UW) as a means to deter potential

challenges to Canada's Arctic sovereignty is grounded in numerous successful historical examples where the organization and training of local citizens into paramilitary units described as partisans or guerrillas, provided the basis for a successful deterrence, resistance and defence strategy. The development of an UW capability could be an integral part of a multi-dimensional whole of government approach to Canada's Arctic security.

T. E. Lawrence: Tribesmen

In 1916-1918, the British Army officer, archaeologist, soldier and diplomat Thomas Edward Lawrence successfully united, through advice and persuasion, Arab tribes and forged them into a formation of desert fighters to conduct a campaign against the Ottoman Turks. Operating in a what was considered a military sideshow, Lawrence grasped the importance of understanding and operating within the respective competing tribal structures and cultures. Moreover, he had to address the diverse aspirations and complex tribal relationships that existed during this period. The success of the Desert Revolt was partly advanced by employing the Arab's regional knowledge, as well as their ability to survive and operate effectively in the austere desert conditions for extended periods of time.

Lawrence's ability to converse effectively in Arabic combined with his socio-cultural knowledge and well-founded insights into the machinations of the Arab mind earned their respect and trust, which was instrumental to Lawrence's success as both an advisor and leader. His understanding of their respective tribal traditions, as well as his personal leadership and ability to influence and subtly command this unique native force¹ greatly facilitated his ability to unite a disparate group of tribes² into a cohesive guerrilla force. Lawrence's appreciation of military history enabled him to forge an effective strategy in the form of guerrilla insurrection against the occupation of the Ottoman Turks.

Lawrence appreciated that the war in the Hijaz was a rather unique experience for the British military. Understanding the Arab reticence to take casualties, he eschewed the attritional warfare model that seemed to manifest itself on the Western Front in France. For Lawrence, this was a war of manoeuvre, preserving one's forces to interdict the exposed Turkish lines of communication, striking isolated Ottoman outposts and raiding

targets of opportunity when the situation presented itself. Colonel Charles E. Callwell, the author of comprehensive study on colonial war fighting entitled *Small Wars*,³ provided a prescient provocative warning for the conventionally minded professional British soldiers of the time. He wrote that “Guerrilla warfare is what the regular armies always have most to dread, and when this is directed by a leader with the genius for war, an effective campaign becomes will-nigh impossible.”⁴ Lawrence’s desert campaign would prove Callwell’s warning to be most valid.

Like similar unconventional conflicts of the 20th and 21st centuries, Lawrence provided supplementary training⁵ and equipment that further enhanced the innate effectiveness of the Arab tribesmen. This instruction comprised an appreciation for rudimentary tactics, as well as the handling and employment of explosives to interdict Ottoman trains and destroy railways. This training included the introduction of belt-fed machine guns⁶, as well as the introduction of Rolls-Royce armoured cars and aircraft to provide mobile firepower and rapid air and ground reconnaissance capability.

Lawrence’s successful employment of indigenous tribes in the guerrilla campaign against the Ottoman Turks changed dramatically the military perception of the utility and effectiveness of a well orchestrated and coordinated guerrilla campaigns. With the exception of the Boer wars, the dominant professional military perception of the time was that guerrilla strategy was seen as the last resort of a weak enemy, an enemy viewed as intent on avoiding potential destruction through a traditional Clausewitzian force on force confrontation. Lawrence’s successful desert campaign forced open the door to new and innovative approaches to war fighting writ large. As a strategist and military theorist Lawrence provided much food for thought for practitioners of guerrilla warfare throughout the 20th and 21st centuries. Lawrence’s substantial influence as a theoretician and practitioner of guerrilla war was highlighted in a 1946 conversation between French General Raoul Salan and North Vietnamese General Vo Nguyen Giap. According to Salan, General Giap informed him “my fighting gospel is T. E. Lawrence’s *Seven Pillars of Wisdom*. I’m never without it.” Giap’s study of Lawrence and his desert campaign noted “the importance of irregular warfare and how it can confound traditional minded opponents,”⁷ as the French sadly discovered in their failed campaign against Viet Minh insurgents.

For contemporary SOF operators, a cursory study of Lawrence's campaign highlights the importance of languages such as, in this case Arabic, understanding complex traditional tribal cultures, and their way of thinking and motivation. As many special operations forces experienced in the wake of World War II, the litany of small war campaigns in Palestine, Malaya, Borneo, Kenya, Radfan, Aden, Oman, Vietnam, Afghanistan and Iraq amongst others. These operational experiences clearly demonstrated the importance of being able to communicate effectively in the local language, understanding the human geography, garnering local support, and enhancing and utilizing traditional war fighting skills, whilst adapting tactics and strategy to avoid the enemy's strengths and target their weaknesses. Moreover, the ability to recognize useful indigenous skills and fuse them with modern technology and psychological warfare effectively defines "unconventional warfare."⁸

For definitional clarity within this chapter, the author notes that David Kilcullen posits that there are five components of classical unconventional warfare:

- Espionage;
- political warfare in the form of propaganda, deception operations, agitation and subversion;
- sabotage and economic warfare;
- guerrilla warfare conducted by irregulars in the form of resistance personnel; and
- direct action which includes small assassination teams to include formed units such as commando or special forces recruited, trained and designed to undertake sensitive missions sets. Sometimes supported by irregulars/guerrilla forces.⁹

Auxiliary Units: Great Britain

Prior to, and in the early days of the World War II, a number of forward-thinking British officers saw the importance of planning for and developing an organized UW capability to conduct guerrilla operations should

Great Britain be invaded and occupied by German forces. These so-called stay-behind units,¹⁰ better known as Auxiliary Units (AUs)¹¹ were rapidly formed and trained in 1940 under the auspices by major, later Major General, Colin Gubbins.¹² These nascent units were recruited, trained and equipped to conduct UW in the form of resistance/guerrilla and sabotage operations should Great Britain succumb to the German onslaught.¹³

Gubbins, later to head the Special Operations Executive (SOE), was a recognized expert and author of pamphlets focusing on partisan¹⁴ and guerrilla warfare.¹⁵ Gubbins was selected to develop this resistance program predicated upon his extensive personal experience in studying and conducting military operations against terrorists and insurgents in Ireland and Palestine.

These AUs were created in times of immense duress and were highly secret due the selection of personnel assigned, the clandestine nature of the units, combined with their sensitive mission set of conducting ambushes, demolition and sabotage operations against installations, and the conduct of assassinations targeting enemy personnel and informers. Starting in 1940, Gubbins forged a network of AU resistance units throughout Great Britain consisting of eight-man teams.¹⁶

Potential recruits were selected by reason of their military experience, local knowledge, survival skills and field experience. The AU were provided with prepared underground bases to accommodate their food, equipment and personnel, and were hidden in secure locations enabling them to operate with a degree of security. Should Great Britain have been invaded, AU operators would fall back to their secure bases, and were ordered to commence guerrilla activities against German occupation forces *only* when local Home Guard defensive operations had ceased.

To better protect security of these personnel, the AU were nominally disguised under the umbrella as "Home Guard." The Home Guard consisted of men aged 17 to 65 years, who were not in military service, but wanted to participate *to do their bit* in defence of the country. The Home Guard, for the most part, were provided with basic military training in the form of weapons and tactics designed specifically to meet the demands of

homeland defence. The age limits were not strictly enforced, given that many were veterans who had served in World War I.

In contrast to the Home Guard, the Auxiliary Units received specialized training in weapons, patrolling and the conduct of reconnaissance, ambushes and raiding, as well as the employment of explosives, particularly against transport facilities. This included the planning and conduct of sabotage missions targeting important factories and petroleum points, amongst others.

Interestingly, Gubbins was supported in the AU initiative by the Royal Engineer officer Michael Calvert¹⁷ who became notable as one of the leaders of the daring deep penetration columns that operated in Burma, subsequently known as the Chindits.¹⁸ The Auxiliary Units were reportedly disbanded in 1944 and a number of the younger AU personnel, arguably due to their military training and experience, took the opportunity to volunteer with the Special Air Service Regiment (SAS)¹⁹ which was, by this time, fully engaged in planning for the invasion of France and subsequent operations in Northwest Europe. This reflects quite positively as to the recruitment and training provided to the AUs.

With the conclusion of World War II and the evolving threat emanating from the Soviet Union, a number of nations sought to enhance their ability to resist possible invasion. The United States government was concerned that the territory of Alaska could be seized and likely used as a base of operations for projecting Soviet airpower into the United States.

Operation Washtub: Alaska

By the late 1940s, the US government was gripped by the possibility of a Soviet invasion and occupation of Alaska. Drawing upon their recent experience in World War II and the then disturbing geopolitical developments of the early years of the Cold War, the United States government recruited a broad spectrum of resident Alaskans for a clandestine tasking.²⁰ The aim was to recruit, train and develop an intelligence and resistance organization drawn from “fishermen, bush pilots, trappers and other private citizens across Alaska for a covert network to feed wartime intelligence to the military.”²¹ This response to the Soviet threat was predicated on the belief that an attack, according to the Federal Bureau

of Investigation (FBI), would consist of “an airborne invasion involving bombing and the dropping of paratroopers.”²² The FBI memo identified the likely Soviet attacks would be centred on the cities of Nome, Fairbanks, Anchorage and Seward.

Predicated upon this Soviet threat, a contingency plan was undertaken with the aim to provide *wartime* intelligence and likely conduct covert military missions.²³ The then FBI Director J. Edgar Hoover²⁴ was assisted by the newly created Air Force Office of Special Investigations headed by FBI agent Joseph F. Carroll,²⁵ reportedly a protégé of Hoover.

Codenamed “Washtub,” this covert and highly sensitive program was created to talent spot, recruit and train American citizen agents. To support and facilitate these clandestine agent operations, numerous secreted caches consisting of weapons – including rifles and suppressed pistols, rations, cold-weather gear and clothing,²⁶ were established, along with radios and materials for coding messages. Similar to operations in World War II, the American agents would be tasked to monitor, collect and transmit information relating to Soviet activities, to include the deployment and positioning of troops and the conduct of operations within the territory of Alaska.²⁷ This initiative was well beyond the rubric of traditional civil defence activities of the time. Rather, it was the selection, recruitment and enlistment of American citizens specifically designated to conduct intelligence collection and reporting operations on American soil.

Fortunately, this cadre of “stay-behind agents,”²⁸ as they were known, was never required to be operationally activated. As with similar intelligence gathering activities, this program, albeit clandestine in nature, was recognized officially and assessed as extremely risky, based upon Soviet military doctrine which recognized the importance of identifying and rapidly eliminating intelligence assets as well as any formal resistance in an occupied territory.

Operation Gladio: Europe

In comparison to the United States’ early initiative to recruit, train and maintain stay-behind agents, Western European nations that experienced the German occupation recognized the growing menace emanating from

the Soviet Union. To confront this threat, a number of European nations put in place their own clandestine resistance programs.

This initiative to re-create a resistance network throughout Western Europe was initially founded by the Western Union, also known as the Brussels Treaty Organization. Representatives of Belgium, France, Luxembourg, the Netherlands and the United Kingdom signed the Treaty of Brussels in March 1948 to create a military alliance. The signatories agreed to undertake collaboration to facilitate their mutual defence as well as enhance their political, economic and cultural spheres.

With the formation of NATO in 1949, the establishment of the American Central Intelligence Agency (CIA)²⁹ in 1947 and, in collaboration and cooperation with a number of European intelligence agencies, a new resistance network soon evolved. Known by its informal Italian codename of "Operation Gladio," participating NATO partners, including some neutral Western European nations, began the recruitment, training and preparation of stay-behind operators.³⁰

The objective was similar to any other stay-behind forces or resistance organizations – to employ military, paramilitary or civilian operatives to undertake military, economic, intelligence-related and psychological activities against a potential Soviet occupation within the enemy's rear echelons. The objective was to slow the enemy's operational tempo, impose costs in money, time, equipment and lives, create confusion, and psychologically dislocate and demoralize an invading or occupying force and to rescue downed airmen.³¹ This classified NATO operation continued until 1990 when Italian Prime Minister Giulio Andreotti³² announced the existence of a European-orchestrated network of stay-behind operatives that had been organized in the wake of the Cold War. Between the publication of the network and the demise of the Soviet Union, Gladio forces were gradually wound down.

Special Operations Forces

Prime Minister Winston Churchill created the Special Operations Executive (SOE)³³ in 1940 with the mandate of assisting World War II nascent resistance movements to conduct intelligence, sabotage and subversive operations within Nazi-occupied Europe. Amongst a spectrum of

other operations,³⁴ the SOE recruited, trained and deployed three-man JEDBURG³⁵ teams to be inserted into France commencing the night of 5/6 June 1944. In the wake of invasion of Normandy and throughout the French campaign, these Jeds, including a Canadian team, provided critical communications, intelligence, resupply, training and leadership to the French resistance forces, which reportedly numbered up to 100,000 members.³⁶

The American Office of Strategic Services (OSS),³⁷ the forerunner of the CIA was created on 14 June 1942. The OSS formed its own UW capability called Operational Groups (OGs)³⁸ and were first deployed to Italy in 1943. Personnel assigned were trained in infantry tactics, guerrilla operations, demolitions, foreign small arms and were parachute qualified. These OGs³⁹ were the model and forerunner of the present-day US Army Special Forces Operational Detachment Alpha.⁴⁰ The OGs were organized and designed to support European and Pacific resistance organizations providing leadership, training, equipment and communications to facilitate resistance activities in occupied areas.⁴¹

The ability of these units to befriend and operate effectively with indigenous resistance forces proved that small numbers of well-trained special operators can be a force multiplier by assisting and operating with local/indigenous forces, employing the strategy of “by, with and through,” the contemporary mantra of today’s U.S. Army Special Forces.⁴²

In the 1950s to the mid-2020s, the British Army deployed its SAS Regiment⁴³ to conduct a spectrum of counterterrorism⁴⁴ and UW activities in Malaya, Aden, Borneo, Oman, South Arabia and Northern Ireland, Afghanistan and Iraq amongst others.⁴⁵ Throughout a number of these campaigns, British special operators befriended, trained and operated effectively with indigenous peoples and tribes. These interactions provided British special forces with a broad range of experience in developing deep relationships with native populations, as well as functioning in concert with local government officials and leadership.

Historically, Canada participated in SOE operations in World War II,⁴⁶ in both Europe and the Pacific, and developed a short-lived SAS⁴⁷ in the wake of World War II. These experiences reinforced Canada’s inherent potential in developing unconventional warfare/resistance capabilities.⁴⁸

Canadian Special Operations Forces (SOF) operations recently undertook joint and combined undertakings, including mentoring indigenous Afghan forces⁴⁹ with our SOF allies and, more recently, in the Middle East and parts of Africa and elsewhere since 2001.

Resistance & Partisans: Ukraine

More recently, the Ukrainian-Russian conflict has resurfaced the importance of a clandestine program employing civilian personnel to conduct resistance and ISR taskings in Russian-occupied areas and in some cases expanding to sabotage, assassination and other paramilitary operations sometimes with the assistance of Ukrainian special operators.⁵⁰

Prior to the February 2022 Russian invasion of Ukraine, the Ukrainian military had reorganized its ground forces to comprise a Regular Army, a Territorial Army, Partisans and a separate Auxiliary.⁵¹ The partisans and auxiliaries have reportedly come under the command and training umbrella of the Ukrainian Special Forces. To accomplish this, selected Ukrainian citizens, many of whom had previous military service, were trained in small arms weapons use, sabotage, intelligence gathering, secure communications and special warfare tactics to conduct unilaterally or in concert with Ukrainian special operators, intelligence/surveillance/reconnaissance (ISR), sabotage and direct-action missions.⁵² These citizens and their SOF mentors have since successfully conducted intelligence targeting of Russian personnel and assets in Russian-occupied Ukraine and elsewhere.⁵³

A NEW CANADIAN CAPACITY: CANADIAN ARCTIC RESISTANCE NETWORK (CARN)

Canada's Defence of the Arctic

To enforce national sovereignty, Canada needs a multi-dimensional, whole of government and localized approach that leverages a multiplicity of assets based on historical successes and modern challenges. Canada can benefit from traditional naval and air assets which are critical to provide "presence" patrols to demonstrate Canada's domain and that these assets are physically there, with a surveillance capability of unmanned aerial vehicles (UAVs) that are stationed and maintained throughout Canada's Arctic. Royal Canadian Navy vessels accompanied by the Canadian Coast

Guard should incorporate a year-round ice breaking capacity to conduct maritime patrols. There should be long-range reconnaissance platforms, consisting of ISR drones to enhance dramatically our sovereignty initiative and provide effective long-duration land, sea and aerial surveillance while concomitantly providing an integral armed capability. These efforts would be further augmented by orbiting reconnaissance and communication satellites complementing those of our Arctic naval assets.

Army requirements for the high Arctic demand a spectrum of skills and equipment, as well as operational capabilities, designed to enable our ground forces to operate effectively in the coldest of climates. It must be recognized that Arctic warfare is not winter warfare, with significantly increased demands on both personnel, materiel and equipment. An additional challenge is that the Arctic is geographically distanced from Canada's traditional supply chains and lines of communication.

In Canada, the Arctic has been inhabited for millennia by Indigenous peoples who are experienced in surviving, indeed thriving in this demanding regional environment. For the Canadian Armed Forces, and in particular Canadian Special Operations Forces (CANSOF), we have an integral tactical and strategic advantage predicated upon the expertise and distribution of our Indigenous population that has yet to be fully exploited that would enhance our Arctic strategy. Their experiential knowledge provides an "Indigenous advantage" that could be integrated into a multi-dimensional strategy for the defence of Canada's Arctic.

CANSOF Advantage

Many NATO SOF forces encompass the historic legacy and capability of undertaking culturally sensitive missions. Operations during and since World War II have demonstrated the capabilities of SOF personnel in the requisite planning, preparation and conduct of unconventional warfare, including their experience and innate ability of working closely with indigenous and resident citizenry.

Considering the threats envisioned in the Arctic, Canada could benefit from the development of a clandestine capability employing our Canadian citizens residing in the Arctic who have been 'talent spotted' for their respective suitability knowledge and skill sets. This small, select group of

Canadians resident throughout the Arctic would be trained to undertake ISR missions and, if so required, paramilitary operations. History has shown the success in leveraging local citizenry.

While the historical examples above were forged in wartime settings with a focus on intelligence gathering, sabotage and resistance operations, the concept remains valid in the development of a citizen-based UW ISR mission set.

There is a significant role in the Arctic for special operations forces, considering their small footprint and specialized operational skill sets in reconnaissance, tactics, cultural sensitivity and their knowledge and skills in clandestine operations and as trainers. CANSOF is an important asset in providing the requisite planning, guidance and direction, in concert with Canadian intelligence assets, in undertaking the formation and development of an UW capability in Canada's Arctic.

A whole of government and community approach is needed to ensure the success in creating an organization in Canada's Arctic to provide a spectrum of intelligence, surveillance and reconnaissance capability should our Canadian/American ISR sensors and orbital assets be impeded or compromised. This includes not only the Department of National Defence and the Canadian Armed Forces but also the collaboration and cooperation from the Public Safety portfolio, particularly the Canadian Security Intelligence Service (CSIS), Communications Security Establishment (CSE), Royal Canadian Mounted Police (RCMP) and selected federal and provincial departments and agencies which may be called upon to assist.

To develop a UW capability would require training infrastructure as well as accommodations for personnel and a clandestine headquarters of some type, to provide the administration, equipment and training required of developing stay-behind assets for anticipated missions to include intelligence gathering techniques, surveillance and reconnaissance training. The training would include clandestine secure communications, equipment identification, resistance to interrogation, agent running operations, Arctic survival techniques, weapons and rudimentary demolitions, amongst other tactics, techniques and procedures (TTPs) amongst other skills to enable stay-behind agents to conduct their mission set.

Considering the vastness and climate challenges of Canada's Arctic, it is important to have an expanded human intelligence – Humint – capability. These Humint assets could then be recruited, trained and skilled in operating in this challenging climate. Moreover, they would be vital assets should technical command and control, communication, computers, intelligence, surveillance, and reconnaissance (C4ISR) capabilities be compromised or non-functional.

CONCLUSION

An Arctic unconventional warfare resistance capability would provide Canada with another a new and resilient arrow in our defence and security quiver. To make that arrow more lethal, the opportunity of employing Canada's indigenous population, as well as talent spotted members of the Canadian Rangers would add valuable regional knowledge as well as experiential skill sets to operate within Canada's Arctic. Combining these advantages with talent spotted residents whose local knowledge and skill sets could be trained and organized into a formalized approach to recruiting and organizing a clandestine Canadian UW capability.

This approach to unconventional warfare in the form of a resistance movement recruited, trained, organized and functionally supported by Canadian Special Operations Forces and Canadian intelligence agencies could provide an effective and potent "eye on the sparrow" capability for the defence and security of Canada's North particularly if our full-spectrum technical surveillance means be substantially compromised or neutralized. This clandestine network would require appropriate investment and training that is essential to render Canada more secure and protected should our northern sovereignty be compromised.

ENDNOTES

1 For a comprehensive study of T.E. Lawrence as a military leader see James J. Schneider, *Guerrilla Leader: T. E. Lawrence and the Arab Revolt* (New York, NY: Bantam Books, 2011).

2 James Barr, *Setting the Desert on Fire: T. E. Lawrence and Britain's secret war in Arabia, 1916-1918*, (New York, NY: W. W. Norton, 2008), 141, 258 and 299.

3 Colonel Charles E. Callwell, *Small Wars: Their Principles and Practice*, General Staff, War Office Third Edition (London, 1906), Republished by EP Publishing Limited, West Yorkshire, England, 1976.

4 *Ibid.*, 126.

5 A. Kearsley, *A Summary of the Strategy and Tactics of the Egypt and Palestine Campaigns: With details of the 1917-18 Operations Illustrating the Principles of War* (Uckfield, Sussex: Naval & Military Press, undated, second edition revised), 9.

6 James Barr, *Setting the Desert on Fire: T. E. Lawrence and Britain's secret war in Arabia, 1916-1918*, (New York, NY: W. W. Norton, 2008), 124.

7 Cecil B. Currey, *Victory at Any Cost: The Genius of Vietnam's General Vo Nguyen Giap* (McLean, VA: Brassey's, 1997), 154.

8 *Special Operations, Joint Publication 3-05*, 1. Unconventional Warfare is defined as, "activities conducted to enable a resistance movement or insurgency to coerce, disrupt or overthrow a government or occupying power by operating through war with an underground, auxiliary, and guerrilla force in a denied area." A more recent definition can be extracted from (Public Law 114-92 Sec.1097, S.1356-114th Congress (2015-2016), National Defence Authorization Act for FY 2016). In this document Unconventional Warfare is defined as "activities conducted to enable a resistance movement or insurgency to coerce, disrupt or overthrow a government or occupying power by operating through or within underground, auxiliary, or guerrilla force in a denied area." See "Unconventional Warfare Pocket Guide," POC United States Army Special Operations Command, Fort Bragg, North Carolina (undated).

9 David Kilcullen, "The Evolution of Unconventional Warfare," *Scandinavian Journal of Military Studies*, 20 June 2019, <https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/July-August-2021/Stringer-Russian-Occupied-Zone/>, accessed 18 November 2024.

10 Andrew Chatterton, *Britain's Secret Defences: Civilian Saboteurs, Spies and Assassins During the Second World War* (Oxford: Casemate, 2022), 3-25.

11 A. R. B. Linderman, *Rediscovering Irregular Warfare: Colin Gubbins and the Origins of Britain's Special Operations Executive* (Norma, OK: University of Oklahoma Press, 2016). This clandestine organization was given the innocuous title of *Auxiliary Units [AU]*. Those personnel assigned to these units included many veterans who had extensive military experience and knew their assigned areas well. The training was carried out West of London where the new recruits were given intensive basic instruction in tactics and weapons as well as sabotage devices. The AUs would have been operational when the allies were on the strategic defence, in contrast resistance forces in Europe participated when the allies were on the strategic offense. Although the tactics were for both for both were quite similar the auxiliary units emphasized nighttime training and movement, monitoring the activities of the enemy, all the while maintaining tactical silence and discretionary engagement. See *Ibid.*, 114.

12 Peter Wilkinson and Joan Bright Astley, *Gubbins & SOE* (Barnsley, S. Yorkshire: Pen & Sword Military, 2010). See also Brian Lett, *SOE's Mastermind: An authorized*

biography of Major General Sir Colin Gubbins KCMG, DSO, MC (Barnsley, S. Yorkshire: Pen & Sword Military, 2016), 111-113.

13 For an in-depth view of SOE training see *Special Operations Executive, SOE Syllabus: Lessons in Ungentlemanly Warfare, World War II* (Richmond, Surrey: National Archives, 2004). For a compilation of SOE/OSS tactics, techniques and procedures (TTPs) see Stephen Hart and Chris Mann, *Tactics* (Guilford, CT: Lyons Press, 2012). Another other insight into the SOE tactics, techniques and procedures tactics techniques and procedures see The War Department, *Special Operations Executive Manual: How to be an agent in occupied Europe* (London: Williams Collin, 2014).

14 The War Office, *The Partisan Leader's Handbook*, (England: War Office, 1939).

15 Colin Gubbins, *The Art of Guerrilla Warfare* (London: Special Operations Executive, 1940).

16 Andrew Chatterton, *Britain's Secret Defences: Civilian Saboteurs, Spies and Assassins During the Second World War* (Oxford: Casemate, 2022), x.

17 See the autobiography Mike Calvert, *Fighting Mad: One man's guerrilla war*, (Shrewsbury: Airlife, 1996). See also David Rooney, *Mad Mike: A life of Brigadier Michael Calvert*, (London: Leo Cooper, 1997). For an early overview of the Wingate's Burma campaign see Charles J. Rolo, *Wingate's Raiders: An account of the fabulous adventure that raised the curtain on the battle for Burma* (New York: Viking Press, 1944).

18 For an overview of Chindit operations see Tim Moreman, *CHINDIT 1942-45* (Oxford, UK: Osprey Publishing, 2009). See also Troy Sacquety, "Allied long-range penetration groups (LRPG) for Burma: The Chindits, the Marauders, and the Mars Task Force," *Veritas*, Vol. 4, No.1 (2008).

19 Chatterton, *Britain's Secret Defences*, 77-80.

20 Robert Burns, "In early Cold War years, U.S. prepped for possible invasion of Alaska," *PBS News*, 31 August 2014, <https://www.pbs.org/newshour/world/early-cold-war-years-us-prepped-possible-invasion-alaska>, accessed 18 November 2024.

21 Deborah Kidwell, "The Alaska Project: An Underground Spy Network," Office of Special Investigations, 7 April 2020, <https://www.osi.af.mil/News/Features/Display/Article/2140600/the-alaska-project-an-underground-spy-network/>, accessed 18 November 2024.

22 Philip Sherwell, "America's secret plan to stop Russian invasion of Alaska revealed," 31 August 2014, <https://www.telegraph.co.uk/news/worldnews/northamerica/usa/11067608/Americas-secret-plan-to-stop-Russian-invasion-of-Alaska-revealed.html>, accessed 19 November 2024.

23 Federal Bureau of Investigation, "Proposed Plan for Intelligence Coverage in Alaska in the Event of an Invasion," *Government Attic*, https://www.governmentattic.org/12docs/FBI-USAF-AlaskastayBehindAgentProgram_1947-1954.pdf, accessed 18 November 2024.

24 Associated Press, "Fearing invasion, the U.S. once trained Alaskans as 'stay-behind agents'," 1 September 2014. <https://www.cbsnews.com/news/fearing-invasion-the-us-once-trained-alaskans-as-stay-behind-agents/>, accessed 18 November 2024.

25 When the U.S. Air Force was established as a separate executive department in September 1947 by the National Security Act, the secretary of the Air Force requested FBI Director J. Edgar Hoover to loan FBI agent Joseph Francis Carroll to the services to organize an Air Force agency for investigative and counterintelligence functions. As a reserve officer on active-duty he organized and directed this new organization, the Office of Special Investigations.

26 Associated Press, “Fearing invasion....” See also Matt Fratus, “Operation Wash-tub: How Alaskans Were Trained in a Top Secret ‘Stay-Behind’ Program During the Cold War,” *Coffee or Die Magazine*, 25 June 2020, <https://coffeeordie.com/opertion-washtub>, accessed 18 November 2024. The document in question was itself entitled “Proposed Plan for Intelligence Coverage In Alaska In The Event Of An Invasion.” On page five of the document, it identifies the broad training program that was to be instituted for stay-behind assets. These included cover stories, encoding and decoding of messages, surreptitious photography, surreptitious methods of entry, secret inks, selection and training of subagents and informants, methods of communication, airdrop and pick up techniques, scouting and patrolling and navigation, guerrilla techniques in close combat, Russian secret police techniques, amongst others.

27 Deborah Kidwell, “The Alaska Project: An Underground Spy Network,” Office of Special Investigations, 7 April 2020. <https://www.osi.af.mil/News/Features/Display/Article/2140600/the-alaska-project-an-underground-spy-network/>, accessed 18 November 2024.

28 Federal Bureau of Investigation, “Stay-Behind Special Agent Program in Alaska,” parts 01-05, <https://vault.fbi.gov/stay-behind-special-agent-program-in-alaska>, accessed 18 November 2024.

29 Clare Pedrick, “CIA Organized Secret Army in Western Europe,” *Washington Post*, 14 November 1990. <https://www.washingtonpost.com/archive/politics/1990/11/14/cia-organized-secret-army-in-western-europe/e0305101-97b9-4494-bc18-d89f42497d85/>, accessed 18 November 2024. For a controversial study of the program see Paul L. Williams, *Operation Gladio: The unholy alliance between the Vatican, the CIA, and the Mafia* (Amherst, NY: Prometheus Books, 2015). The author describes a secret alliance that was forged at the end of World War II by the CIA, the Sicilian and U.S. mafias, ex-Nazis, and the Vatican. The aim was to thwart any initiatives by communists to invade Europe. He further posits that there were as many as 5,000 to 15,000 military operatives in this program.

30 Kit Klarenberg, “Declassified Files Expose British Role in NATO’s Gladio Terror Armies,” *The Grayzone*, <https://thegrayzone.com/2023/06/19/files-british-natos-secret-terror-armies/>, accessed 18 November 2024.

31 Alp Sevimlisoy and Peter Woodward, “GLADIO: An Insurance Policy to Keep NATO Free,” *The National Interest*, <https://nationalinterest.org/blog/buzz/gladio-insurance-policy-keep-nato-free-203666>, accessed 18 November 2024.

32 Daniele Ganser, “The Puzzling Story of NATO’s Secret Armies During the Cold War: Just what were they up to?,” *History News Network*, <https://www.hnn.us/article/the-puzzling-story-of-natos-secret-armies-during-t>, accessed 18 November 2024.

33 A number of notable studies of the SOE have been produced such as J. G. Beevor, *SOE: Recollections and Reflections 1940-45* (London: The Bodley Head, 1981). Nigel West, *Secret War: The story of SOE, Britain's wartime sabotage organisation* (London: Hodder and Stoughton, 1992), Robert Bourne-Paterson, *SOE in France 1941-1945: An official account of the Special Operations Executive's 'British' circuits in France* (Barnsley, S. Yorkshire: Frontline Books, 2016, first produced in London, 1946). See also M. R. D. Foot, *SOE: An outline history of The Special Operations Executive 1940-1946* (London: The Folio Society, 2008). For a personal experience of an SOE operative see Mark Seaman, *Saboteur: The Untold Story of SOE's Youngest Agent at the Heart of the French Resistance* (London: John Blake 2018).

34 Gavin Mortimer, *Z Special Unit: The Elite Allied World War II Guerrilla Force*, (Oxford: Osprey, 2022).

35 For the recruitment and training of the Jedburgh teams see Julian Thompson, *War Behind Enemy Lines* (Barnsley, S. Yorkshire: Pen & Sword Military, 2018), 285-289. For an overview of their activities see Alexander Stilwell, *Secret Operations of World War II: The clandestine battle fought across occupied countries by the SOE, OSS, Maquis, Partisans and Resistance Fighters* (London: Amber Books, 2018), 16-18, 57-58, 130-131, 133. The Brickendonbury Manor came the site of Station 17 green establishment to forge saboteurs and assassins so that they may conduct a spectrum of distal sabotage as well as targeted assassinations in order to destroy valuable installations and disrupt the German war effort. See Bernard O'Connor, *Churchill's School for Saboteurs: Station 17* (Shroud, Gloucestershire: Amberley, 2013).

36 J. Paul de B. Taillon, "Jedburgh Teams-Lessons for Unconventional Warfare," in Bernd Horn and Patricia J. Blocksome, eds., *Threat and SOF / Special Operations Response* (Kingston, ON: Canadian Special Operations Forces (CANSOFCOM) Education Research Centre Press (ERC), 2024), 64. See also J. Paul de B. Taillon, "Enhancing Small State Capabilities in National Resilience and Resistance", in Bernd Horn and Hans Ilis-Alm, eds., *Force Multiplier: Utilization of SOF from a small state perspective* (Kingston, ON: CANSOFCOM ERC Press, 2024).

37 R. Harris Smith, *OSS: The Secret History of America's First Central Intelligence Agency* (Berkeley, CA: California University Press, 1972). The biography of William Egan Colby, former Jedburgh officer, later director of the CIA under the president's Nixon and Ford describes the challenges faced by the United States and its allies during second world war and postwar period. For an assessment of the Office of Strategic Services see Office of Strategic Services, *War Report of the O.S.S.* (Toronto: Fitzhenry and Whiteside, 1976). See also Christof Mauch, translated by Jeremiah Riemer, *The Shadow War Against Hitler: The covert operations of America's wartime Secret Intelligence Service* (New York: Columbia University Press, 1999).

38 For an overview of movement, training and activities of the OSS see Albert Lulushi, *Donovan's Devils: OSS Commandos Behind Enemy Lines—Europe, World War II* (New York: Arcade Publishing, 2016), 61-74. The legacy of the OSS and its lessons continues to be of interest to special operations. See *The OSS Model and the Future SOF Warrior*, Joint Special Operations University, Report of Proceedings November 2011. <https://jsou.edu/Press/PublicationDashboard/146>, accessed on 20 November 2024.

- 39 Benjamin F. Jones, *Eisenhower's Guerrillas: The Jedburghs, the Maquis, & the liberation of France* (Oxford: Oxford University Press, 2016), 132.
- 40 For an interesting personal insight into Operational Groups and the evolution of American special forces see Aaron Bank, *From OSS to Green Berets: The Birth of Special Forces* (Novato, CA: Presidio Press, 1986).
- 41 Bank, *From OSS to Green Berets*, 205-206.
- 42 Emily Spencer, ed., *By, With, Through: A SOF Global Engagement* (Kingston, ON: Canadian Defence Academy Press, 2014).
- 43 Damien Lewis, *Brothers in Arms: Churchill's forces during WWII's darkest hour* (New York: Kensington Publishing Corp., 2022). See also Damien Lewis, *Forged in Hell: The gripping true story of the special forces heroes who broke the Nazi stranglehold* (New York: Kensington Publishing Corp., 2023).
- 44 For an interesting controversial study of special operations in Northern Ireland see Raymond Murray, *The SAS in Ireland* (Dublin: Mercier Press, 1990).
- 45 For an overview of postwar SAS activities see Tim Jones, *SAS: The First Secret Wars: The unknown years of combat and counter-insurgency* (London: I. B. Tauris, 2005). Tony Jeapes, *SAS: Operation Oman* (Nashville, TN: The Battery Press, 1980). Another book that focused on the Omani campaign is Roger Cole and Richard Belfield, *SAS Operation Storm: Nine Men Against Four Hundred In Britain's Secret War* (London: Hodder & Stoughton, 2011). See also Mike Ryan, *SAS Undercover Operations: From World War II to Afghanistan* (London: Amber Books, 2019). Peter Dickens, *SAS The Jungle Frontier: 22 Special Air Service Regiment in the Borneo Campaign 1963-1966* (London: Arms and Armour Press, 1983).
- 46 For a detailed personal story of Canadians in the SOE see Nahlah Ayed, *The War We Won Apart: The Untold Story of Two Elite Agents Who Became One of The Most Decorated Couples Of WWII* (Toronto: Penguin Random House Viking, 2024).
- 47 Colonel Bernd Horn, "A Military Enigma: The Canadian Air Service Company, 1948-1949," *Canadian Military History*, Vol.10, Issue 1 (2001).
- 48 Roy Maclaren, *Canadians Behind Enemy Lines 1939-1945* (Vancouver, BC: University of British Columbia Press, 1981); Colonel Bernd Horn, *Now Set Europe Aflame: The Canadian connection to the Special Operations Executive* (Kingston, ON: CANSOFCOM ERC Press, 2019); and Colonel Bernd Horn, *We Will Find a Way: The Canadian Special Operations legacy* (Kingston, ON: CANSOFCOM ERC Press, 2018). For an interesting and an eclectic overview of Canada's intelligence and special operations see Lynn Philip Hodgson, *The Birth of Special Operations in Canada* (Ontario: Lynn Philip Hodgson, 2018).
- 49 See also Horn, *We Will Find a Way*. For another view of Canadian special operations see David Pugliese, *Shadow Wars: Special Forces in the New Battle Against Terrorism*, (Ottawa: Esprit de Corps Books, 2003).
- 50 J. Paul de B. Taillon, "Enhancing Small State Capabilities in National Resilience and Resistance," in Horn and Ilis-Alm, eds., *Force Multiplier*, 95-108.

51 Ibid., 95-108.

52 To garner an insight into Ukrainian partisan activities see Bohdan Babaiev, "Ukrainian partisans locate strategic military sites in Moscow region," *RBC-Ukraine*, 13 November 2024 <https://newsukraine.rbc.ua/news/ukrainian-partisans-locate-strategic-military-1731456813.html>, accessed 18 November 2024; and Dmytro Basmat, "Ukrainian partisans say they sabotaged railway in occupied Zaporizhzhia Oblast," *Kyiv Independent*, 17 November 2024, <https://kyivindependent.com/ukrainian-partisans-say-they-sabotaged-railway-in-occupied-zaporizhzhia/>, accessed 18 November 2024.

53 Doug Livermore, "Ukraine's Special Operations Troops Sow Destruction in Russia," *Center for European Policy Analysis* (CEPA), 23 August 2024, <https://cepa.org/article/ukraines-special-operations-troops-sow-destruction-in-russia/>, accessed 18 November 2024; Doug Livermore and Alexander Noyes, "Railroading Russia Through Unconventional Warfare," *Newsweek*, 6 November 2024, <https://www.newsweek.com/railroading-russia-through-unconventional-warfare-opinion-1980580>, accessed 18 November 2024; Maxim Tucker, "Troops are Fighting and Invisible Army in Every Village they Occupy," *The Times*, 20 August 2022; and "Ukrainian partisans locate a rare Russian Tor-M2KM air defense system in Crimea," *Army Recognition*, 3 July 2024, <https://armyrecognition.com/focus-analysis-conflicts/army/conflicts-in-the-world/russia-ukraine-war-2022/ukrainian-partisans-locate-a-rare-russian-tor-m2km-air-defense-system-in-crimea>, accessed 18 November 2024.

CHAPTER 10

THE CANADIAN RANGERS: A CRITICAL ENABLER FOR SOF

Dr. P. Whitney Lackenbauer and
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The Canadian Rangers serve as the “eyes, ears, and voice” of the Canadian Armed Forces (CAF) in isolated regions of Canada, providing a military presence in the remote parts of the country “which cannot conveniently or economically be covered by other elements of the CAF.”¹ They are not intended to act as combat forces and receive no tactical military training. Instead, their regular tasks include surveillance and presence patrols, collecting local data for the CAF, reporting unusual sightings, participating in community events, and assisting with domestic military operations. To facilitate these operations, Rangers share their knowledge and skills with other members of the CAF, teaching them how to survive and function effectively in Arctic, Sub-Arctic, and rugged coastal environments.² As Yukon Member of the Legislative Assembly (MLA) Wade Istchenko (a longstanding Canadian Ranger) noted in April 2022, the Rangers in 1st Canadian Ranger Patrol Group play important roles in surveillance, search and rescue (SAR), demonstrating sovereignty, and in monitoring critical military infrastructure such as the North Warning System.³

The Rangers’ role in support of SOF activities is long established. First, Rangers serve as guides, planning and leading teams into inaccessible areas for reconnaissance and communications. Second, Rangers facilitate intermediate staging base operations, such as securing facilities, providing transportation, repairing/recovery of vehicles, and renting their own environment specialist equipment. Third, Rangers provide access and influence in their communities and regions, securing SOF access to land use, as well as providing essential political liaison within communities, and local organizations (such as with Hunting & Trapping Organizations). This extends to soliciting capabilities and contracting with multinational mining consortiums for support in isolated areas. This defence diplomacy

requirement is often underappreciated but instrumental to enable efficient, effective, low visibility, and sustainable activities in the Canadian Arctic.

Fourth, Rangers provide domain awareness and provide intelligence preparation of the battlespace (IPB) through their networks. These networks are diverse and penetrate deep within Arctic society. Rangers are SAR drone operator. They are employed with Parks Canada, Canadian Coast Guard, the Royal Canadian Mounted Police (RCMP) or are trappers, hunters, miners, or the local teachers. They work with non-governmental organizations (NGOs) like SMARTIce, monitoring sea ice thickness. Although authorities for intelligence gathering in a domestic context require care and precision (as the military risks its relationships if perceived or found to be collecting information on Canadian citizens), the Rangers are inherently well-suited to discern changes or anomalies in their local area of responsibility.

Fifth, the Rangers provide training to SOF operators in cold weather and self-sustaining operations on the land. All intersect with potential SOF missions in the Canadian Arctic.⁴ They are a critical component in generating and maintaining relative superiority in the region. In an environment where carrying capacity is thin and communities isolated, the Rangers provide the persistent presence for SOF operators to select where and when they choose or need to fight.

This chapter seeks to familiarize readers with a basic history of the Canadian Rangers and provides an overview of what they contribute and how they operate in a contemporary context. We focus particular attention on the 1st Canadian Ranger Patrol Group (1 CRPG), which spans Canada's Territorial North. We then furnish a case study on the Rangers' role during the 2023 balloon incident in the Yukon, which involved substantive support to SOF elements deployed in the territory and yielded insights into how the Rangers can serve as a force multiplier. We then provide final reflections on several core considerations that must be addressed to create and sustain a more fulsome Ranger-SOF partnership.

BACKGROUND ON THE CANADIAN RANGERS

The Canadian Rangers were conceived during the Second World War and the Cold War. The force was originally modelled after the Pacific Coast

Militia Rangers (PCMR), a home guard established along the West Coast in 1942 to meet potential Japanese incursions. The Ranger concept was predicated on the idea that unpaid volunteers, often too old or too young to serve overseas, could perform useful military functions while carrying out their everyday civilian lives on the land and sea. Given their intimate knowledge of local areas, these men (as women were excluded from Ranger service until the early 1990s) could provide intelligence, act as guides, and delay an enemy advance using guerrilla tactics. All told, more than 15,000 British Columbians served in the PCMR before it was stood down in late 1945.⁵

By 1947, chilly superpower relations and a new focus on northern security, coupled with renewed sovereignty concerns related to a U.S. military presence in the North, led the government to establish the Canadian Rangers as a Corps of the Reserve Militia. The force was unpaid and members were simply provided with an armband, a .303 rifle, and 200 rounds of ammunition a year. In war, they would serve as coast watchers and guides to regular troops, assist authorities in reporting and apprehending enemy agents and saboteurs, provide local defence against small enemy detachments, and undertake ground search and rescue (GSAR) operations. Their peacetime roles were similar, focusing on guiding troops on exercises, collecting detailed information about their local areas and reporting any unusual activities, and providing GSAR parties when tasked. They were recruited from local areas, commanded by civilian leaders from their communities, and expected to serve as the military's "eyes and ears" while carrying out their daily lives.⁶

The Rangers survived the oscillating cycles of military concern about the North through the second half of the 20th century.⁷ Military and political interest in the Rangers diminished by the late 1950s, when technological solutions like the Distant Early Warning (DEW) Line were conceived to secure the continent. Although the Rangers were left to "wither on the vine," they survived because there was no political benefit to formally disbanding something that cost virtually nothing. During the 1970s, the "Northern" Rangers enjoyed modest growth as a sovereignty-bolstering measure but it was only in the mid-1980s, when the voyage of the U.S. coast guard vessel *Polar Sea* renewed sovereignty concerns related to the Northwest Passage, that the Rangers underwent dramatic growth. By

1992, the national strength of the force rose to 3,200 (and doubled in the territorial north), and a ceremony celebrating the enlistment of the 5,000th Ranger was held on the Arctic tundra in Nunavut in August 2013.⁸

The Rangers grew “North of 60” after 1970 because the basic structure already existed and was very inexpensive, but also because a “new security discourse” emerged. Military activities in the region could no longer be divorced from domestic socio-economic, cultural, and environmental health issues. Indigenous leaders repeatedly called for the demilitarization of the Arctic on social and environmental grounds, often construing a military presence as a threat to their peoples’ security. Conversely, military officers noted that the public and Indigenous leaders took great interest in the Rangers. Beginning in the late 1980s, explicit government statements increasingly stressed the socio-political benefits of having Ranger patrols in Indigenous communities. Consequently, the Rangers enjoyed sustained growth in the 1990s while the Canadian Forces more generally faced austerity measures and personnel cuts, representing a “postmodern militia” that enjoyed strong political and popular support in the North.⁹

This support has continued through the first quarter of the 21st century. There are currently approximately 5,100 Rangers in more than 220 communities across Canada.¹⁰ The Rangers are neither a military nor an Indigenous “program” (as they are sometimes misidentified), but rather a subcomponent of the Reserves that leverages the skillsets of Canadians from diverse ethnic and social backgrounds to support home defence, security, and public safety missions. While official figures suggest that Indigenous Canadians represented 2.2 per cent of the total CAF (2013), they make up more than two-thirds of the Canadian Rangers in Northern Canada.¹¹ Approximately 25 per cent of Rangers are female, and the Rangers in 1 CRPG are a representative cross-section of adults from 18 into their 80s (given that there is no mandatory retirement age for Rangers).¹²



FIGURE 10.1 – CRPG Areas of Responsibility

There are five Canadian Ranger Patrol Groups (CRPGs) across Canada, each encompassing a distinct geographical area. This chapter focuses specifically on 1 CRPG, the largest military unit in Canada with an effective strength of about 1,400 Rangers in 64 patrols across the Yukon, Northwest Territories, Nunavut, and northern British Columbia. The majority of Canadian Rangers in 1 CRPG are Inuit, First Nations, or Métis, and their command structure – wherein community-based patrols vote in their own leadership – reflects the grassroots nature of the Ranger organization. They are also heavily involved in leading and mentoring youth in their communities through the Junior Canadian Ranger (JCR) program, a Department of National Defence (DND) funded initiative that promotes traditional cultures and lifestyles and other developmental activities. Furthermore, Rangers are often called upon to respond to local emergencies and disasters, support humanitarian and search and rescue operations, as well as perform other public safety missions.¹³

The tasks in the following table may be undertaken by a Canadian Ranger (CR) member on duty when authorized by their CRPG HQ:

TASKS	EXAMPLES
Conduct and provide support to sovereignty operations	<ul style="list-style-type: none"> • Conduct and provide support to surveillance and sovereignty patrols, including training in Canada. • Conduct North Warning System site patrols. • Report suspicious and unusual activities. • Collect local information of military significance.
Conduct and provide assistance to CAF domestic operations	<ul style="list-style-type: none"> • Conduct surveillance of Canadian territory. • Provide local knowledge and CR expertise (i.e. advice and guides). • Participate in search and rescue operations. • Provide support in response to natural or man-made disasters and support in humanitarian operations. • Provide assistance to federal, provincial, territorial or municipal government authorities.
Maintain a CAF presence in the local community	<ul style="list-style-type: none"> • Instruct, mentor and supervise Junior Canadian Rangers. • Participate in and support events in the local community (e.g. Yukon Quest, Canada Day, Remembrance Day, etc.).

TABLE 10.1 – Canadian Ranger Tasks (DAOD 2020-2)

The following tasks may not be assigned to a CR member, except when placed on active service under section 31 of the *National Defence Act*:

1. undertaking tactical military training;
2. performing immediate local defence tasks, such as containing or observing small enemy detachments pending the arrival of other forces;
3. providing vital point security (e.g., dams, mines, oil pipelines, etc.);
4. assisting federal, provincial, territorial or local police in the discovery, reporting and apprehension of enemy agents, saboteurs, criminals or terrorists; and
5. serving in aid of the civil power.

THE CANADIAN RANGERS: A SOF ENABLER AND FORCE MULTIPLIER

While Rangers are expected to be self-sufficient when on the land – and to use their own personal gear, snowmobiles, all-terrain vehicles, or boats to conduct their duties (for which they are reimbursed according to nationally-established equipment usage rates, discussed below) – the Canadian Army also provides them with modest equipment and training. Each Canadian Ranger is issued a red hoodie sweatshirt, CADPAT (Canadian Disruptive Pattern) pants, red fleece, a water-resistant shell jacket, combat boots, a baseball cap, a safety vest, navigation aids, and a C-19 .308 bolt-action rifle (for protection against predatory animals, not for military combat). In addition, patrols are generally given a supply of camp stores, including tents and lanterns, satellite phones, and hand-held GPS units.

A ten-day Basic Ranger Qualification Course is held for new Rangers, which includes rifle handling, general military knowledge, navigation (i.e., map and compass, GPS), first aid, search and rescue, and communications. Nevertheless, Rangers are considered “trained upon enrolment,”¹⁴ which means that individual Rangers cannot be assumed to have standardized skills and their capabilities are best gauged based upon their roles in their patrol and, when available, the recommendations of the Regular Force or Primary Reserve Ranger Instructor responsible for mentoring their patrol.¹⁵

Each year, Rangers are paid for up to twelve days of service, which includes annual community-based patrol training and a field exercise, providing patrols with the opportunity to practice essential skills and work together as a team. (Unfortunately, chronic personnel shortages at 1 CRPG Headquarters in Yellowknife mean that some patrols have not received training in their communities for several years.) In addition to these training activities, Rangers are paid when activated for official CAF tasks, which include emergency response activities and SAR operations. Importantly, beyond their paid service, Rangers perform their “eyes and ears” function as part of their everyday lives and are always present in their communities, ready to respond as required.

Although some southern Canadian media commentators and politicians criticize the lack of pay, equipment, and clothing provided to Rangers

compared to their Regular and Reserve Force counterparts, conversations with Rangers from across the North over the last two decades suggest that these criticisms are generally ill-informed or misplaced. Although Rangers are not paid for their year-round service as “eyes and ears” on the land, Rangers are paid for force generation activities such as annual training patrols, monthly meetings, and leadership workshops. Furthermore, they are paid when they participate in force employment activities such as Operation Nanook, when they provide support to southern units (including SOF elements) on Northern training exercises, or when they are officially tasked to conduct search and rescue. Although the influx of several thousand dollars into a community at the end of a Ranger patrol or military exercise might appear paltry, this Ranger pay can constitute a substantive part of an Indigenous economy that balances short-term paid labour with traditional harvesting activities, thus supporting distinctive northern social economies.¹⁶

The diverse landscapes in which Rangers live and operate also require different equipment and clothing. The philosophy of treating the Rangers as self-sufficient, lightly equipped members of the defence team recognizes this reality, as well as the military’s limited capabilities for providing logistical support and sustainment to community-based patrols distributed across the territorial North. The Rangers are known for their much-publicized “red hoodies,” and are also provided with t-shirts, pants, jackets, ball caps, and other parts of their distinctive uniform. In using their own personal, environmentally appropriate clothing when going out on the land rather than being assigned standard military gear, Rangers retain the power to wear whatever they deem best suited to local conditions.

The Rangers lack of uniformity in clothing while operating on the land embodies a respect for Indigenous culture, allowing Rangers to make their own decisions about what they should wear to operate comfortably and effectively in their home environments. It also lends itself to low visibility operations: it is a unique hybrid environment, where conventional and unconventional are the norm. It also provides strategic opportunities, as it injects uncertainty into the adversary’s estimates of Canadian military presence in the Arctic. SOF activities with the Rangers are both the only current means of legitimizing their activities with the local populous, while also being the means of adding significant nuance and flexibility to Canadian deterrence signalling.

This same logic extends to transportation and hunting equipment. During training and official taskings, Rangers are paid for the use of their own equipment and vehicles (such as snowmachines, all-terrain vehicles, and boats) according to an established equipment usage rate. This arrangement provides Rangers with tax-free reimbursements that they can invest in their own equipment and tools, appropriate to their local environment, which they can then use in their everyday lives without having to ask the government for permission to do so. By allowing individuals to invest in their own, privately-owned equipment, this approach represents a material contribution to local capacity building and resilience, while simultaneously reducing the logistical burden on the CAF, and maintaining a low-profile military presence as an option.¹⁷ There are also soft skills and a bricolage spirit the Rangers can bring. For example, Rangers construct built-for-purpose skimmers (treeline sleds pulled behind light over snow vehicles), wear traditional clothing that provides a significant survival advantage, and conduct field vehicle maintenance with scraps left over from the Second World War or in ration packs.

As leaders in their local communities, Rangers represent an important source of personal and in many cases formal political power within their communities.¹⁸ While the Rangers fall within 1 CRPG at the unit headquarters in Yellowknife, their local leadership is reflective of community culture and norms.¹⁹ Many Ranger sergeants are prominent politicians, Elders, and representatives of Indigenous nations. This reality makes all military operations in the Arctic take on an element of defence diplomacy. The further fusion of Rangers and SOF operations will deepen both parties' interconnectivity within the joint, interagency, multinational and public Arctic security network. At the strategic level, this will improve Canada's crisis response options and strategic coherence, while increasing Canadian national power projection in the Arctic within all elements of national power.

The compression of the strategic to tactical level is pronounced in the Arctic, meaning emphasis needs to be placed on the tactical level cultural relationships that can have over unproportionate effects – either positive or negative. Rangers' interconnectivity represents a means for SOF engagement with diverse civilian populations while simultaneously “illuminating their worldviews and values, appreciating their interests, and translating significant social, cultural, and political information into

operational analysis.”²⁰ If ignored, or bypassed, there is the real risk of losing local support, and opening up gaps for our adversaries to exploit.

The Rangers also provide an important outlet for Indigenous peoples and other Northerners who wish to serve in the defence of their country without having to leave their communities. “Indigenous peoples occupy an important place among the 5,000 Canadian Rangers,” Yukon Party MLA Wade Istchenko observed on National Indigenous Veterans Day in 2021. “I would say that here in the Yukon, at least 50 per cent or more are Indigenous, and across the other territories, it is probably even higher. The role of the Rangers is so important to protecting Canada’s sovereignty in the north.”²¹

Military service and its sense of unlimited liability is a critical component of reconciliation. Nations have the monopoly on violence and sanction its legitimate use. The unique concessions and form of service are adaptations that are sources of strength and legitimacy. The relationship between the Government of Canada, CAF, and Indigenous nations within Canada frames how we fight. It is existential in scope and a critical component of community resilience as the foundation of our fighting strength. SOF operators should recognize and respect this proud history of differentiated military service. Ranger activities have military applications while allowing community members to practice and share traditional skills, such as living off the land, not only with people from outside their cultures but also across generations within.

By celebrating traditional and local knowledge and skills, encouraging and enabling community members to go out on the land, and facilitating relationships that allow Northerners to share their knowledge and expertise, the Rangers play an important role in supporting the retention or expansion of core cultural competencies. In turn, the Ranger concept is inherently rooted in the idea that the unique knowledge of Northern peoples can make an important contribution to effective military operations. By providing culturally-attuned information and relevant support to SOF teams, the Rangers can serve as a force multiplier that better enables work with regional civilian authorities, organizations, and populations in Northern Canada.²²

THE 2022 BALLOON INCIDENT: A CASE STUDY IN RANGER-SOF PARTNERSHIP

On 11 February 2022, an F-22 Raptor aircraft from Joint Base Elmendorf-Richardson in Alaska downed a high-altitude balloon over the Yukon, about 160 kilometres (km) east of the Alaska border. This was one of four high-altitude aerial objects that the North American Aerospace Defense Command (NORAD) shot down in North America early that month, representing the first kinetic action that the binational command had taken in defence of the continent. This action was directed by Canada's Minister of National Defence and Chief of the Defence Staff. The RCMP led the ensuing search effort, with coordination by Public Safety Canada and assistance from the Canadian Special Operations Forces Command (CANSOFCOM) and Yukon-based Canadian Rangers, that encompassed a large portion of the Yukon between Dawson City and Mayo. The U.S. military, Federal Bureau of Investigation (FBI), and U.S. Coast Guard also participated. The search was eventually called off on 17 February after snowfall made it difficult to locate debris and the risks were determined to outweigh the benefits.

The object over the Yukon, which NORAD had tracked across Alaska and into Canadian airspace, was reported by *The Wall Street Journal* as a “small metallic balloon with a tethered payload”²³ flying at about 40,000 feet. There has been no evidence indicating that the object was perceived to pose a kinetic military threat to North America, although some Canadian commentators immediately tied it to the Chinese surveillance balloon. The low altitude made it a flight safety hazard for civilian aircraft, however, and the object could have offered an adversarial actor with a surveillance capability (akin to worries about the massive balloon shot down over the Atlantic). Consequently, NORAD identified a location to shoot down the object which would minimize the risk to the civilian populace in the Yukon. As a result, a U.S. Air Force (USAF) F-22 aircraft shot down the object in Canadian airspace, about 160 km from the Canada-U.S. border between the Yukon communities of Dawson City and Mayo, at 1341 hours local time on 11 February 2022.²⁴

The details of CANSOFCOM's response remain classified, and we have produced the following summary from interviews with Rangers and open-source documentation. First, it is important to emphasize that there

was limited communication with Yukoners, including the Canadian Rangers, to make them aware that something was going on and, in the case of the Rangers, that they might be called upon to assist. Several Rangers in the Dawson patrol explained that something strange was going on when they could not fly out of their community because the authorities closed down the airspace around the town, a precautionary measure that was entirely appropriate but came with no public explanation. Local Rangers called up 1 CRPG headquarters in Yellowknife to find out more information, but secrecy meant that not much could be passed along. Fortunately, a Ranger Instructor was in the Yukon supporting the Rangers on Exercise Tay Naydan (the annual Ranger training activity that supports the Yukon Quest) and he coordinated a response team with local Rangers in Dawson.

It is also telling that the Rangers in Dawson quickly identified the SOF personnel who arrived in town, even when they did not announce their presence to the Rangers, because they know their home community and are attentive to new people arriving. The Rangers provided substantive help with ensuring accommodations for the visiting personnel, as well as identifying places on a map and feasible routes to access them. The Rangers expressed to me how impressed they were with the professionalism and intelligence of the operators who came to Dawson, but they wished that they had received more notification so that they could have prepared to head out in their capacity as guides and enablers. As a lesson for future operations of this nature, CANSOFCOM might think about how it can share more timely information with the Rangers, without jeopardizing operational security.

Yukon First Nations leadership also complained about the lack of proactive engagement. The land claims contain provisions about the CAF and notification and access to Indigenous lands for military operations pursuant to the *National Defence Act*.²⁵ In any case, relationships are essential. It appears that DND officials in Ottawa were confused about which First Nations should be contacted (and particularly those upon whose lands the military would be operating), meaning delays in communications as they sought out the information from territorial sources. This fed uncertainty amongst Yukoners.²⁶

On 14 February, the Na-Cho Nyäk Dun along with the Dawson City-based Tr'ondëk Hwëch'in First Nation and the Vuntut Gwitchin First Nation in

Old Crow, Yukon, issued a statement saying they had had discussions with federal and territorial officials about the incident. Based on these interactions, the First Nations called for a “collaborative process to be formalized for any matters of Arctic sovereignty and security.” They emphasized that “it is imperative the North Yukon First Nations are consulted in all matters that affect our people, lands, waters and skies.”²⁷ These statements echoed calls by Yukon First Nation leadership in November 2022, when Assembly of First Nations (AFN) Regional Chief Kluane Adamek and Tr’ondëk Hwëch’in Chief Roberta Joseph both testified before the Senate Committee on National Defence and Security and lamented how their people had been left out of national security discussion involving the North. “Our lack of inclusion to date has been an oversight, and we ask for this to be rectified,” Chief Joseph testified. “It is not acceptable that we may face military and/or other security forces coming into our communities without input from us as First Nation governments. We have seen in the past what can occur when there is military intervention and a security presence on our lands and in our community without our implicit permission.”²⁸ For her part, Chief Adamek insisted that the principles of the United Nations Declarations on the Rights of Indigenous Peoples (UNDRIP) must apply, and “Canada needs to bring direct outreach to First Nations to safely address their security and safety concerns for both the land and people that come with an increased military presence.”²⁹

On a positive note, Rangers recounted how the SOF elements that deployed to the Yukon quickly realized that they had a lot to learn – and came to highly value and respect Canadian Ranger knowledge. It was an epiphany for the southern-based personnel operating around Dawson to understand how the Rangers could really help them to get to a location quickly. This helps to dispel the myth of the Rangers as a symbolic or “token” military force, which some media commentators perpetuate based upon a deliberate mischaracterization of their role and capabilities.³⁰

In terms of locating the debris, NORAD shot down the balloon over a remote location to minimize the risk to people, which made it difficult to find. The USAF could not provide a precise location, and Minister Anand told the news media that the debris was “in a remote location northeast of Dawson City, in complex alpine terrain that is prone to challenging northern weather conditions.”³¹ Almost immediately, officials cautioned

that, due to the vastness and harsh conditions of the central Yukon, it was possible that the object would not be located. This proved prescient.

Given their expert knowledge of the area, the Rangers advised that there was significant risk associated with pushing by snowmobile into the area where the balloon likely went down. The military decided that the risk of trying to prosecute a search versus the probability of the balloon actually representing a foreign threat did not warrant continuing the effort. On 17 February, the RCMP issued a press release noting that it had decided to discontinue the search efforts in the Yukon. A search of the “highest probability area” had not located any debris. “Given the snowfall that has occurred,” the police explained, “the decreasing probability the object will be found and the current belief the object is not tied to a scenario that justifies extraordinary search efforts.” The RCMP thanked “the Canadian Armed Forces, RCMP members, the Yukon community and Indigenous Communities that have supported this effort.”³²

The Rangers and the SOF personnel who had been sent to Dawson took advantage of the opportunity to conduct some training together after the search efforts ended. Though only initial engagements, they are encouraging. They are cognizant of the requirement to slowly build the relationship and include Rangers in planning and design of the activities. 1 CRPG has opened up Ranger patrols to CANSOFCOM units initially as observers, assessing opportunities for growing the relationship and integrating into the social fabric. This platform presents the opportunity of inclusion of international SOF elements from the Nordic countries, who also possess skilled Indigenous peoples but do not have a military organization comparable to the Rangers.

The Yukon Government astutely notes that “the Canadian Rangers are deeply embedded members of each Yukon community, and serve as the ‘eyes and ears’ of the North. They are valued by our communities as an important group that will answer the call of duty, lend a hand, and be a part of coordinated responses.”³³ These coordinated responses include working with SOF teams, which can “provide discriminate precise kinetic and non-kinetic effects” with “a generally lower profile and less intrusive presence than larger conventional forces.”³⁴

For SOF forces working with the Rangers, being capable of operating in an austere Northern environment with limited support does not mean having

no support. Rangers are also specialized CAF members who can provide “ground truth” and situational awareness, set the conditions to “mitigate risk and facilitate successful introduction of follow-on forces,” and leverage culture competencies and connections to foster whole-of-government and whole-of-society cooperation.³⁵ Accordingly, conversations indicate eagerness on both sides to work together in the future.

CONCLUSION

The Canadian SOF relationship will need to navigate the realities of communities in the Canadian North, including nation-to-nation relationships between the Crown and Indigenous Peoples.³⁶ Bridging cultural divides between their communities and the CAF will represent the defining characteristic of Ranger support to SOF. This is important for establishing parameters and legitimizing the force employment of joint SOF-Ranger operations in the Arctic. A made-in-Canada solution must be nested in what outcomes we are looking to achieve in the North combined with a realistic, evidence-based model of the threat.³⁷

The Directorate of Canadian Rangers at Canadian Army Headquarters in Ottawa is currently overseeing Canadian Ranger Enhancement at the direction of the Army Commander, which involves ongoing conversations related to how Rangers fit with new Canadian and continental defence requirements. These deliberations should include a specific focus on how the Rangers interact with SOF and how they can enable operators “to act in austere and remote environments that rely on [the Rangers’] deep connection with the land and with the people who populate it.”³⁸

To facilitate a more deliberate and sustained Ranger-SOF partnership, we suggest that various fundamental questions must be answered. First, CANSOFCOM must clarify what type of activities it is looking to conduct in the Arctic. While most Arctic experts downplay the threat of an adversarial kinetic attack on the Canadian North and suggest that most threats fall outside of the conventional military security domain, many popular commentators continue to raise the spectre of attacks to acquire Canadian territory, challenge its internal waters position in the Arctic, steal resources, or disrupt continental defences (such as radar sites).³⁹ This debate is relevant to envisaging challenges requiring a SOF response and Ranger support. Is it special reconnaissance or augmenting internal defence? Is it

building a capability for crisis response operations within a train, advise, assist, equip, and enable framework? This is tricky, since no Canadian doctrine defines these terms and their associated tasks, making it unclear what authorities need to be requested or what level of consultation required with Indigenous governments. While an imperfect doctrine, the range of tasks will likely require fundamental changes in the authorities granted to Class A Reserve employment, and a corresponding acceptance of potential risks or an increased mandate with SOF operations.

Second, SOF operators must better understand the unique skills that Rangers offer as local subject matter experts and CAF members. This includes their ability to hunt and extend classes of supply and significantly reduce the logistical footprint; to establish tactical caches in anticipation of conflict or SAR requirements; and to facilitate insertions or do a conceal/reveal approach with community outreach and engagement as a part of strategic deterrence signalling. Rangers are also key spokespeople, saturating multi-levels of government and private industry. This allows SOF to fully participate in the information domain within the Arctic, addressing ever-changing security threats facing Canada's North by actors seeking to "generate mischief at levels below those that might provoke large-scale international responses."⁴⁰ Given that the fifth of the "SOF Truths" holds that "most Special Operations require non-SOF assistance,"⁴¹ Rangers are a prime example of how Northern-grounded assistance is a force multiplier.

Third, the Rangers should be viewed as a stable, integral part of a comprehensive force that provides domain awareness and control over Canadian lands and waters. They are not "combat capable" in a conventional sense, and therefore only represent a piece in the larger Northern defence puzzle. *Our North, Strong and Free* emphasizes that:

The most urgent and important task we face is asserting Canada's sovereignty in the Arctic and northern regions, where the changing physical and geopolitical landscapes have created new threats and vulnerabilities to Canada and Canadians. This includes upgrading our continental defences to ensure they can deter threats or defeat them when necessary. In achieving this we will engage closely with Indigenous partners and northern

communities, whose homes and lifestyle are directly impacted by Canada's security and sovereignty. In defending the region, we will continue to support the Arctic and Northern Policy Framework's principle of "nothing about us, without us".⁴²

Rangers' involvement in Arctic operations fulfils the policy statement's explicit "obligation to work with communities in defending the region" and also serves as a key enabler for "greater presence, reach, mobility, and responsiveness in the Arctic and North to deal with disasters, threats and challenges to our sovereignty."⁴³ The Ranger-SOF partnership represents an opportunity to develop collaborative networks that amplify situational awareness, create conditions for North-South cooperation, and achieve unconventional missions with an economy of force.⁴⁴ Furthermore, the organization also contributes to capacity building in the North by helping to create political self-determining, sustainable communities, indirectly enhancing Indigenous, informal governance structures and bolstering regional resilience.⁴⁵

As the Canadian Rangers continue to evolve with their communities and within an evolving Arctic security environment, there will be pressures to move along a continuum from a relatively informal organization rooted in communities towards more formal and standardized structures. Any changes to the Ranger organization must be carefully monitored to ensure that they do not corrode the local foundations upon which the long, proud history of Ranger service has been built. Much of the Rangers' smart power is derived from their power sharing and democratically elected leadership, blessed by the local communities. Rangers, much like SOF, cannot be mass produced. They are the product of slowly built credibility through the demonstration of skills and leadership. By respecting what the Rangers bring to the Northern defence equation, SOF can leverage culturally- and environmentally-attuned niche capabilities that are "ideally suited to this harsh and complex environment given their expertise, training, and resilience, which are not found in conventional military forces or law enforcement organizations,"⁴⁶ a descriptor given to U.S. Special Forces that applies equally well to the Rangers.

ENDNOTES

- 1 Defence Administrative Order (DAOD) 2020-2, Canadian Rangers, <https://www.canada.ca/en/department-national-defence/corporate/policies-standards/defence-administrative-orders-directives/2000-series/2020/2020-2-canadian-rangers.html>.
- 2 See P.W. Lackenbauer, *The Canadian Rangers: A Living History* (Vancouver: UBC Press, 2013); P.W. Lackenbauer, *Vigilans: The 1st Canadian Ranger Patrol Group* (Yellowknife: 1st Canadian Ranger Patrol Group, 2015); P. W. Lackenbauer, Magali Vullierme, and Stéphane Roussel, *L'histoire des Rangers canadiens du Québec: 2^e Groupe de patrouilles des Rangers canadiens* (Saint-Jean and Peterborough: 2nd Canadian Ranger Patrol Group and North American and Arctic Defence and Security Network (NAADSN), 2022); and P. W. Lackenbauer, ed., *The Canadian Armed Forces' Eyes, Ears, and Voice in Remote Regions: Selected Writings on the Canadian Rangers* (Peterborough: NAADSN, 2022), <https://www.naadsn.ca/wp-content/uploads/2022/01/Lackenbauer-Cdn-Rgrs-selected-writings-NAADSN-jan22.pdf>.
- 3 Wade Istchenko, Yukon *Hansard*, 28 April 2022, <https://yukonassembly.ca/sites/default/files/hansard/35-1-74.pdf>.
- 4 See, for example, Kevin Stringer, "The Arctic Domain: A Narrow Niche for Joint Special Operations Forces," *Joint Force Quarterly*, Vol. 78 (2015): 24-31; Jon Harper, "Cold Front: Special Operations Forces Bracing for Arctic Missions," *National Defense Magazine*, 14 May 2021, <https://www.nationaldefensemagazine.org/articles/2021/5/14/special-operations-forces-bracing-for-arctic-missions>; and *Special Operations Forces in the 21st Century Arctic Roundtable*, virtual event co-hosted by CASR and the North American and Arctic Defence and Security Network (NAADSN), University of Alaska Fairbanks, 21 April 2022.
- 5 P. Whitney Lackenbauer, "Guerillas in Our Midst: The Pacific Coast Militia Rangers, 1942-45," *BC Studies*, Vol. 155 (2007): 31-66.
- 6 On the history of the Rangers, see Lackenbauer, *The Canadian Rangers*.
- 7 See Kenneth Eyre, "Forty Years of Defence Activity in the Canadian North, 1947-87," *Arctic*, Vol. 40, No. 4 (1987): 292-299; and Kenneth Eyre, *Custos Borealis: The Military in the Canadian North, 1898-1975*, ed. P. Whitney Lackenbauer (Peterborough: NAADSN, 2020), <https://www.naadsn.ca/wp-content/uploads/2020/02/custos-borealis-eyre-lackenbauer-NAADSNweb-jan20.pdf>.
- 8 Lackenbauer, *Canadian Rangers*.
- 9 P. Whitney Lackenbauer, "The Canadian Rangers: A Postmodern Militia That Works," *Canadian Military Journal*, Vol. 6, No. 4 (2006): 49-60.
- 10 The established strength of the Rangers is set at 6,821 positions, with an approximate effective strength of 5,100 according to DND's *2024-25 Departmental Plan* (27 February 2024), <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/departmental-plans/departmental-plan-2024-25/planned-results/defence-team.html>.
- 11 This official figure of Indigenous people's participation in the CAF does not include the Canadian Rangers because they are neither Regular Force, nor Primary Reserves.

Self-identification surveys related to the Rangers are highly unreliable. See P. Whitney Lackenbauer, "Diversity Statistics, Self-Identification Data, and the Canadian Rangers: Underestimating Indigenous Peoples' Participation Rates in the Canadian Army," NAADSN Policy Brief (19 April 2021), https://www.naadsn.ca/wp-content/uploads/2021/04/Lackenbauer_Rgr-Diversity-Statistics-final.pdf. See also P. Whitney Lackenbauer, "Canada's Northern Defenders: Aboriginal Peoples in the Canadian Rangers, 1947-2005," in Lackenbauer and Craig Mantle, eds., *Aboriginal Peoples and the Canadian Military: Historical Perspectives* (Kingston: Canadian Defence Academy (CDA) Press, 2007), 171-208; and P. Whitney Lackenbauer, "Aboriginal Peoples in the Canadian Rangers: Canada's 'Eyes and Ears' in Northern and Isolated Communities," in Cora Voyageur, David Newhouse, and Dan Beavon, eds., *Hidden in Plain Sight: Contributions of Aboriginal Peoples to Canadian Identity and Culture, Vol. 2* (Toronto: University of Toronto Press, 2011), 306-328.

12 P. Whitney Lackenbauer, "The North's Canadian Rangers," in Alistair Edgar, Rupinder Mangat, and Bessma Momani, eds., *Strengthening the Canadian Armed Forces through Diversity and Inclusion* (Toronto: University of Toronto Press, 2019), 67-86.

13 P. Whitney Lackenbauer and Peter Kikkert, *Measuring the Success of the Canadian Rangers* (Yellowknife: 1st Canadian Ranger Patrol Group, 2020), <https://www.naadsn.ca/wp-content/uploads/2020/10/Rangers-Success-Metrics-Lackenbauer-Kikkert-high-res.pdf>; Peter Kikkert and P. Whitney Lackenbauer, "The Canadian Rangers: Strengthening Community Disaster Resilience in Canada's Remote and Isolated Communities," *Northern Review*, Vol. 51 (2021): 35-67, <https://thenorthernreview.ca/nr/index.php/nr/article/download/901/937>; and Peter Kikkert and P. Whitney Lackenbauer, "Broadening Human Security: The Canadian Rangers and Community Disaster Resilience," in Shannon Lewis-Simpson and Sarah Jane Meharg, eds., *Evolving Human Security: Frameworks and Considerations for Canada's Military*, (Kingston: CDA Press, 2023), 148-151.

14 DND Main Estimates 2024-25, Key Issue Notes: Domestic and Continental Defence, <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/proactive-disclosure/nddn-main-estimates-2024-2025/key-issues-notes/domestic-continental-defence.html>.

15 On Ranger Instructors, see P. Whitney Lackenbauer, "Teaching Canada's Indigenous Sovereignty Soldiers ... and Vice Versa: 'Lessons Learned' from Ranger Instructors," *Canadian Army Journal* Vol. 10, No. 2 (2007): 66-81; Magali Vullierme, "Cultural Understanding and Dialogue within the Canadian Armed Forces: Insights from Canadian Ranger Patrols," *Northern Review* 52 (2021): 127-144; Vullierme, "The Social Contribution of the Canadian Rangers: A Tool of Assimilation or Means of Agency?," *Journal of Military and Strategic Studies*, Vol. 19, No. 2 (2018): 193-211; and Bianca Romagnoli, "Patrolling North of 60: Military Infrastructure in Canada's Arctic Communities," unpublished Ph.D. dissertation, University of California, Los Angeles, 2023.

16 Lackenbauer and Kikkert, *Measuring the Success*.

17 DND Main Estimates 2024-25, Key Issue Notes: Domestic and Continental Defence; and Lackenbauer and Kikkert, *Measuring the Success*.

18 Chief of Land Staff, "Army Support Plan Immediate Reaction Unit – Northern Contingency Plan," 14 December 2011, DND file 3350-1 (Army G35).

19 See Peter Kikkert with Doug Stern, “Finding Ihuma: Inuit Leadership Norms and Canadian Ranger Operations,” in Adam Lajeunesse and P. Whitney Lackenbauer, eds., *Canadian Armed Forces Arctic Operations, 1941-2015: Lessons Learned, Lost, and Relearned* (Fredericton: Gregg Centre for the Study of War & Society, 2017), 370-386, <https://www.unb.ca/fredericton/arts/centres/gregg/what/publications/CdnArcticOps2017.pdf>.

20 See Robert Greene Sands and Darby Arakelian, *Advancing SOF Cultural Engagement: The Malinowski Model for a Qualitative Approach* (Joint Special Operations University (JSOU) Report 18-2), <https://jsouapplicationstorage.blob.core.windows.net/press/88/18-2.pdf>.

21 Wade Istchenko, Yukon *Hansard*, 8 November 2021, <https://yukonassembly.ca/sites/default/files/hansard/35-1-28.pdf>. In a statistical analysis conducted in 2017, Lackenbauer estimated that about 26 per cent of the active Rangers in the Yukon were Indigenous people. See Lackenbauer, “Diversity Statistics, Self-Identification Data, and the Canadian Rangers.”

22 See Bernd Horn and Hans Ilis-Alm, “Introduction,” in Bernd Horn and Hans Ilis-Alm, eds., *Force Multiplier: Utilization of SOF from a Small State Perspective* (Kingston: CANSOFCOM ERC Press, 2024), iii.

23 Gordon Lubold and Paul Vieira, “Flying Object Shot Down Over Canada on Orders of Biden and Trudeau,” *Wall Street Journal*, 11 February 2023, https://www.wsj.com/articles/flying-object-shot-down-over-canada-on-trudeaus-orders-a9e638e9?mod=hp_lead_pos1.

24 Evidence presented to House of Commons Standing Committee on National Defence (NDDN), 7 March 2023, <https://www.ourcommons.ca/DocumentViewer/en/44-1/NDDN/meeting-52/evidence>.

25 See appendices in P. Whitney Lackenbauer, *Situating the Yukon in Canadian Defence and Security* (Peterborough: NAADSN, April 2024), <https://www.naadsn.ca/wp-content/uploads/2024/07/2024apr-Lackenbauer-Yukon-defence-security.pdf>.

26 For example, Roberta Hager, deputy chief of the Na-Cho Nyäk Dun in Mayo, explained how hearing about the object being shot down was “quite concerning.” “What can you do when things come out of the sky, right? You don’t have anything to protect you ... And we really never got any kind of alert or, you know, like saying to be aware of anything,” she said. Given that community members are often out on the land, she noted that it was “a potential safety concern.” See “Search for ‘suspected balloon’ has people talking in nearby Mayo, Yukon,” *CBC News*, 15 February 2023, <https://www.cbc.ca/news/canada/north/mayo-yukon-suspected-balloon-search-1.6750138>.

27 *CBC News*, “Search for ‘suspected balloon.’”

28 Chief Robert Joseph testimony to Standing Senate Committee on National Security, Defence and Veterans Affairs (SECD), 28 November 2022, 20:25, <https://sencanada.ca/en/Content/Sen/Committee/441/SECD/20EV-55858-E>.

29 Chief Kluane Adamek testimony to SECD, 28 November 2022, 20:27, <https://sencanada.ca/en/Content/Sen/Committee/441/SECD/20EV-55858-E>.

- 30 P. Whitney Lackenbauer, “Indigenous Communities are at the Heart of Canada’s North’: Media Misperceptions of the Canadian Rangers, Indigenous Service, and Arctic Security,” *Journal of Military and Strategic Studies*, Vol. 19, No. 2 (2018): 158-192, <https://jmss.org/article/view/62819>.
- 31 Dana Hatherly, “Canadian officials looking for correlation in recent pattern of aerial objects — including 1 shot down over the Yukon,” *Yukon News*, 14 February 2023, <https://www.yukon-news.com/local-news/canadian-officials-looking-for-correlation-in-recent-pattern-of-aerial-objects-including-1-shot-down-over-the-yukon-7004208>.
- 32 <https://www.rcmp-grc.gc.ca/en/news/2023/yukon-search-debris-suspended>.
- 33 *YG Submission to SSCNSDVA*, 10.
- 34 Horn and Ilis-Alm, “Introduction,” ii.
- 35 Horn and Ilis-Alm, “Introduction,” iii.
- 36 For Inuit context, see P. Whitney Lackenbauer with Peter Kikkert, *Canadian Inuit and North American Defence Modernization: Background Considerations* (Peterborough: NAADSN, 2023), <https://www.naadsn.ca/wp-content/uploads/2023/07/23jun-Inuit-NA-defence-modernization-report-PWL-final.pdf>. For considerations related to Yukon First Nations, see P. Whitney Lackenbauer, *Situating the Yukon in Canadian Defence and Security* (April 2024), <https://www.naadsn.ca/wp-content/uploads/2024/07/2024apr-Lackenbauer-Yukon-defence-security.pdf>; and Arctic Defence and Security Council, *Report of the Yukon and Arctic Defence and Security Council* (Whitehorse: Yukon Government, November 2024), https://yukon.ca/sites/default/files/eco/eco-arctic-security-advisory-council-report_0.pdf.
- 37 See Bernd Horn and Patricia Blocksome, eds., *Threat & SOF/Special Operations Response* (Kingston: CANSOFCOM ERC Press, 2024), <https://jsouapplicationstorage.blob.core.windows.net/press/476/Bk%2016%20-%20Threat.pdf>; P. Whitney Lackenbauer, *Understanding the Future Arctic Security Environment: Applying NATO Strategic Foresight Analysis to Canadian Arctic Defence and Security* (Peterborough: NAADSN, 2020), <https://www.naadsn.ca/wp-content/uploads/2021/01/NAADSN-Arctic-Strategic-Foresight-Analysis-WEB-Final-2020.pdf>; and NATO Allied Command Transformation, *Regional Perspectives Report on the Arctic: Strategic Foresight Analysis* (2021), <https://www.act.nato.int/wp-content/uploads/2023/05/regional-perspectives-2021-04.pdf>.
- 38 Canadian Army, *Advancing with Purpose: The Canadian Army Modernization Strategy* (December 2020), 44-45.
- 39 On the Canadian debate, see Rob Huebert and P. Whitney Lackenbauer, eds., *Debating Arctic Security: Selected Writings by Rob Huebert and P. Whitney Lackenbauer, 2010-2021* (Peterborough: NAADSN, 2021), <https://www.naadsn.ca/wp-content/uploads/2021/11/DebatingArcticSecurity-RH-PWL-nov2021.pdf>. See also P. Whitney Lackenbauer, “‘We are undefended’? Andrew Leslie, Arctic Defence, and the need for more sophisticated framing,” *NAADSN Quick Impact*, 13 May 2024, <https://www.naadsn.ca/wp-content/uploads/2024/05/24may13-Lackenbauer-response-to-Leslie.pdf>.
- 40 JSOU, *Special Operations Forces Interagency Reference Guide*, 4th ed. (MacDill AFB, Tampa: JSOU, 2020), 1-1.

- 41 Cited in *Ibid.*, 1-3.
- 42 Canada, *Our North, Strong and Free* (Ottawa: DND, 2024).
- 43 *Ibid.*
- 44 On SOF and “gray zone conflict,” see Howard Coombs and Christopher Marsh, *Operating on the Margins: SOF in the Gray Zone* (Kingston: CANSOFCOM ERC, 2023), <https://jsouapplicationstorage.blob.core.windows.net/press/449/Bk%2014%20-%20SOF%20in%20th%20Gray%20Zone.pdf>; and Bernd Horn, “Leveling the Playing Field: SOF in the Gray Zone,” in Bernd Horn and Hans Ilis-Alm, eds., *Force Multiplier: Utilization of SOF from a Small State Perspective* (Ottawa: CANSOFCOM ERC, 2024), 69-94.
- 45 On SOF contributions to informal governance as a force multiplier, see also Margaret Ariotti and Kevin Fridy, *Informal Governance as a Force Multiplier in Counterterrorism: Evidence for Burkina Faso* (JSOU Report 20-3), <https://jsouapplicationstorage.blob.core.windows.net/press/40/20-3.pdf>.
- 46 Stringer, “The Arctic Domain,” 24.

CHAPTER 11

SOF ROLES IN THE ARCTIC: JOINT ENABLER, WHOLE-OF-SOCIETY INTEGRATOR, REVERSE SECURITY FORCE ASSISTANCE PROVIDER

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The Arctic takes on increasing significance in strategic competition from the confluence of several key factors – a Russian military build-up with concurrent power projection to attain Kremlin national security objectives; increasing Chinese geopolitical pressure and hybrid operations to assert influence in the Arctic and gain access to seabed raw materials and economic benefits; and climate-related changes to the Arctic ecosystem. For Russia, the Arctic is a sensitive strategic region for its nuclear weapons capabilities, with the Kola peninsula housing its ballistic missile submarine fleet and second-strike nuclear capabilities.¹ Since July 2023, and in response to Finland and Sweden joining the North Atlantic Treaty Organization (NATO), Russia formed a new Combined Arms Army for the defence of the Kola Peninsula, and its pre-existing High North brigades will likely be expanded to divisions.² With these assets, Russia intends to protect its relevant Arctic installations while disrupting NATO access towards the North Atlantic and the sea lines of communication (SLOC) around the Greenland–Iceland–UK (GIUK) and Greenland–Iceland–Norway (GIN) gaps.³

Concurrently, China asserts a self-proclaimed status as a “Near Arctic” power. It attempts to insert itself into Arctic governance, commercial, and scientific matters while conducting maritime missions to exert regional influence. For example, the 2018 *Chinese Arctic White Paper* rationalizes China as a significant stakeholder in Arctic governance based on scientific requirements, environmental stewardship obligations, and the promotion of search and rescue capabilities.⁴ The document exhorts that “States from outside the Arctic region...have rights in respect of scientific research, navigation, overflight, fishing, laying of submarine cables and

pipelines in the high seas and other relevant sea areas in the Arctic Ocean, and rights to resource exploration and exploitation in the Area, pursuant to treaties such as the United Nations Convention on the Law of the Sea (UNCLOS) and general international law.”⁵

Concretely, China has conducted extensive, but opaque research activities encompassing climatic, meteorological, and geomagnetic studies including ocean acoustics and bathymetric surveys in the North American Arctic.⁶ The same research occurs in the European High North.⁷ These undertakings appear to have dual civilian-military purposes and threaten the sovereignty and national security of the affected NATO Arctic states. In 2024, the Chinese Coast Guard exercised its first joint patrols with Russian Border Guard vessels, and Chinese research vessels and icebreakers regularly transit the Arctic waters.⁸ Both Russian and Chinese efforts occur against a backdrop of a changing Arctic ecosphere characterized by melting ice, altering habitats, shifting sea salinity, and opening sea lanes.

This strategic region, defined by its harsh and remote environment and high economic potential, and subjected to increasing hybrid warfare activity, creates national security and sovereignty risks for the NATO Arctic states. This situation merits an ideographic assessment regarding the optimal utilization of special operations forces (SOF) as an instrument of national power in the contested polar realm. This chapter posits that SOF achieves their most significant value proposition in the Arctic as joint strategic enablers, Arctic whole-of-society integrators, and “reverse” security force assistance (SFA) providers. It will explore each of these roles in sequence, and the conclusion offers considerations for adapting and preparing NATO SOF for these roles.

SOF AS A JOINT STRATEGIC ENABLER

Several scholar-practitioners have already proposed tailored SOF employment in the Arctic as enablers for the conventional joint force in the traditional air, land, and maritime domains.⁹ This chapter breaks new ground by examining the SOF Arctic role in concert with the newer cyber and space domains. As a pioneer, the United States has led the thinking to confront Russian and Chinese actions in strategic competition through a proposed TRIAD combining space, cyber, and special warfare elements.¹⁰ Special operations forces play a crucial role in supporting the TRIAD

within Arctic operations by: enhancing conventional force adaptability with SOF's specialized training and organizational mindset; attaining greater precision in cyber targeting; and integrating joint efforts within the TRIAD as well as with the traditional warfighting domains.

The Arctic's demanding environment necessitates unique capabilities that SOF can provide. Direct action and special reconnaissance are among the specific capabilities that make SOF units exceptionally equipped for operating in extreme conditions. Their mobility, adaptability, and covert action proficiency enable them to perform strategic tasks like securing critical infrastructure, gathering intelligence, and conducting targeted strikes on adversaries. When combined with space and cyber capabilities, SOF can access satellite communications, space-based reconnaissance, and cyber tools to disrupt enemy activities while maintaining operational stealth. This blend enhances the effectiveness of multidomain operations in the Arctic, providing strategic and tactical advantages against near-peer competitors in this increasingly contested region. SOF's main value proposition for the TRIAD in the Arctic is to provide proximate, physical access to sensitive and strategic targets.¹¹

For specific illustrations of TRIAD capabilities in Arctic operations, Russia's newly reopened military airbases and floating nuclear power plants represent potential targets for multidomain efforts involving special operations, space, and cyber warfare. The airbases, reactivated by Russia in the Arctic, serve as pivotal logistical hubs for projecting power and controlling strategic airspace over the region.¹² They are a critical infrastructure that can be disrupted through TRIAD capabilities. SOF could be deployed for direct action missions targeting command centres, runways, and key equipment. Covert SOF actions, combined with cyber operations, could cripple airbase communications and operational capabilities by affecting data networks and radar systems. Additionally, space-based Intelligence, Surveillance, and Reconnaissance (ISR) can monitor base activities, track movements, and provide real-time situational awareness for pre-emptive strikes or future sabotage missions.

Similarly, current and future floating nuclear power plants (FNPPs) along the Arctic coast provide Russia with energy independence and strategic resilience in the polar region. Russia has one active FNPP, the Akademik Lomonosov, based in the Arctic town of Pevek in the Chukotka region

of northeast Siberia. Since December 2019, the Akademik Lomonosov FNPP has produced electricity and district heating for the locality.¹³ Rosatom, the state corporation specializing in nuclear energy, foresees a requirement for 15 floating nuclear power units for Russia's Arctic zone.¹⁴ These FNPPs, though primarily civilian in nature, are dual-use assets that support military infrastructure and can be vital for sustained Arctic operations.¹⁵ They also represent high-value targets where any attack would have far-reaching consequences, requiring adjustments to existing NATO and national command and control arrangements, NATO SOF target engagement authorities, and overall escalation ladder management.

TRIAD capabilities could focus on non-kinetic options, such as cyber warfare, to disable operational systems on these plants without causing environmental catastrophe. For instance, SOF could infiltrate physical sites to sabotage key systems or install cyber tools to compromise control networks. Simultaneously, space assets could be utilized to monitor and assess vulnerabilities, ensuring precision in any potential attack on the plants' security or operational integrity. Both these target examples offer a glimpse of the potential for unified SOF, cyber, and space operations to weaken Russia's Arctic military posture without necessarily escalating to full-scale conflict.

SOF AS AN ARCTIC WHOLE-OF-SOCIETY INTEGRATOR

Several SOF scholar-practitioners have already articulated SOF's role as the premier integrator for the joint force, national interagency partners, and multinational allies.¹⁶ For the Arctic, this claim must be extended to encompass its civil society and the numerous indigenous cultures that reside in the Arctic. With over 40 ethnic groups inhabiting the region, persistent NATO SOF engagement with these communities will lead to "a greater understanding of their local issues—economic, environmental, and social—which enhance SOF operations and capabilities in the polar region, and....(developing) long-lasting relationships with indigenous leadership could lead to unforeseen positive effects in the future."¹⁷ James Morton and Ryan Burke reinforce this perspective and advocate that "SOF must align with and learn from the Indigenous people of the High North and share the responsibility for defending the homeland."¹⁸ Furthermore, unique and complex governance arrangements exist in the region which have devolved power to the local Indigenous peoples and northern

communities, making them key actors in polar resource development, territorial management, and by default, national defence.¹⁹ This fact makes them essential partners for all Arctic operations.

Given their cultural, linguistic, and civil affairs expertise, an excellent example where the SOF of the NATO Arctic states can perform this critical integrator function in the Arctic is with the Sámi peoples of the European High North. The Sámi population live in the northern parts of Norway, Sweden, Finland and the north-western corner of Russia, primarily on the Kola Peninsula.²⁰ While the Sámi people maintain strong cross-border ties, they have historically experienced different models of governance and varying levels of inclusion depending on their respective domiciles. Still, in the NATO countries, their local political influence has grown over the years.²¹

Specifically, “in Norway, Sweden and Finland, the Sámi have long been able to participate in border-transcending activities through international networks that involve both civil society and state-based actors.”²² For governance, Norway, Sweden and Finland established their nationally-approved Sámi Parliaments in 1989, 1993, and 1996 respectively.²³ This path was an initial step to political power sharing.²⁴ While the explicit authorities granted to the different national Sámi Parliaments differ slightly, the intent is universal; to ensure that the Sámi population can influence decisions and policies related to their sphere of interest.²⁵ All the Sámi Parliaments have the right to speak on behalf of the Sámi of their states.²⁶ They are also allocated decision-making authority via funds management or through representation in local governance networks, such as boards, councils, and committees.²⁷

The case of Norway and its Sámi community is instructive for three possible SOF whole-of-society avenues of collaboration. These approaches could be replicated in other Arctic nations with similar indigenous populations. In Norway, Finnmark is the country’s northernmost county above the Arctic Circle and physically borders Russia. There, the Sámi Parliament is delegated partial national authority for the County, and the Sámi are represented on the Board of the Finnmark Estate. This institution governs local natural resources.²⁸ For national collaboration with the Sámi, Norwegian SOF (NORSOF)’s strong connections throughout the Norwegian total defence structure and its habitual relationship with the

Home Guard (Norway's territorial defence force), make NORSOFF predestined for an Arctic integration role with the Sàmi.²⁹

Under Norway's constitution, all Norwegian citizens, including the Sàmi, are conscripted for military service, and if a citizen is not on active-duty, that person is in the Home Guard. Hence, this system relies on the Arctic population, especially the indigenous Sàmi in their local communities, to participate in ongoing national defence activities.³⁰ NORSOFF collaboration and engagement with the Sàmi Parliament and the local Home Guard offer avenues for building societal resilience in the region during peacetime, while maintaining careful observation and surveillance of a strategic border location.

There are manifold examples of possible NORSOFF-aided resilience building activities with the Sàmi. For instance, NORSOFF provision of dual-purpose training and education such as basic first aid and medical training, basic long-range shooting and marksman training, basic cyber-awareness training, support to small, local infrastructure-development projects, support to voluntary search and rescue organizations, first-person view (FPV) drone-pilot courses, and facilitating testing of new types of all-terrain vehicles would have application and relevance for the Sàmi population.³¹

Similarly, NORSOFF participation in both the existing Sàmi cultural awareness-training program for soldiers conducted at the Arctic garrison of Sør-Varanger, where the soldiers learn about Sàmi culture and interact with members of the Sàmi population, and the pilot project directed towards societal readiness initiated by the County Governor, the Police and the Home Guard in Finnmark, would facilitate deeper ties between NORSOFF and Sàmi organizations.³² Importantly, NORSOFF could take on the role of enabling interaction with, and be an additional touchpoint for, the Sàmi Parliament. While the conventional Finnmark landforsvar Regiment has already initiated this interaction, it is currently ad-hoc, and there is potential for elevating this relationship to the national military strategic level by utilizing NORSOFF as the vehicle.³³

A second opportunity for enhanced Arctic defence relies upon the complementary, cross-border networks of Sàmi governance melded with those of the High North SOF organizations. Since threats in the Arctic

do not stop at national borders, boundary-spanning networks become crucial in providing a comprehensive regional defence. The accession of Sweden and Finland into NATO offers prospects for harmonizing total defence preparation across the entire High North region. The High North SOF “tribes” already have strong formal and informal ties that could be coupled with the longstanding pan-Sàmi cooperation and their respective Parliaments. This transnational collaboration would offer the ability to strengthen the local population against adversary information operations, deter and prevent both Russian and Chinese hybrid operations and coercion, and as mentioned, strengthen societal resilience. From a special operations perspective, such relationships could also assist non-standard maritime and logistical operations in crises and conflict, as well as facilitate the recruitment and use of persons for intelligence collection and target acquisition purposes in war.

Finally, the Russian Sàmi population has remained disenfranchised with no national Sàmi Parliament.³⁴ While several attempts were made to create such an entity, none were successful. This outcome can be attributed to two reasons. First, there are differences in opinion within the substantial “Russian indigenous population” (a population which consists of an extensive number of different groups with different geographical affiliations and interests) on the need for a uniquely Sàmi governing body.³⁵ Equally, there has been strong reluctance from the local, regional, and federal governing Russian entities to create a theoretically influential Sàmi entity in the sensitive and strategic region of Murmansk. This situation creates potential political grievances among the Russian Sàmi that NATO SOF could exploit during strategic competition in the information and cyber domains. To influence this audience, though, NATO SOF requires a deeper understanding of and closer collaboration with the High North Sàmi culture and society to succeed.

“REVERSE” SECURITY FORCE ASSISTANCE (SFA) PROVIDER

The Arctic and its unique environment create an unusual situation for the classical security force assistance (SFA) relationship between Allied providers and Arctic receivers. The polar climate and weather are extremely harsh. The polar regions are characterized by eight months of winter with constant darkness and summers with continuous daylight.³⁶

During the winter, the average temperature in many areas can drop to -40°C (-40°F), and the region is cool by any measure, with the average monthly temperature below $+10^{\circ}\text{C}$ ($+50^{\circ}\text{F}$) throughout the year, even in the summer period.³⁷ Storms are prevalent in all seasons. These conditions require Arctic trained and equipped formations for both survival and combat effectiveness.³⁸ Since the defence requirements of the NATO Arctic states, except for the United States, rely heavily on Allied reinforcements and support to be realistic and effective, close cooperation and integration will be essential. Reinforcing NATO allies will need specific training due to the Arctic operational environment, resulting in the peculiar need for “reverse” security force assistance (SFA) from the Arctic recipient/host. The SOF of the receiving countries are uniquely qualified to provide this “reverse” SFA to facilitate the Allied reception, staging, onwards movement and integration (RSOMI) process and ensure individual unit effectiveness in the unforgiving Arctic climate and landscape.

For illustration, a Portuguese SOF formation deploying to the European High North must have specific training from its SOF hosts if the detachment is to be effective and survive outdoors. The same prerequisite applies to American and Canadian SOF elements, even though both originate from Arctic states. The environmental, climatic, and weather conditions in the North American Arctic differ significantly from the European High North. In the case of Norway, this markedly different situation often results in SOF Allies from SFA-providing lead nations like the United States arriving unfit and incorrectly equipped, and therefore only partially interoperable. Several RSOMI experiences at the NATO exercises Trident Juncture 2018, Cold Response 2020, Cold Response 2022 and Nordic Response 2024 confirm this latter point.³⁹

A good example is that of U.S. SOF deploying into the Arctic to support NORSOE. The U.S. SOF possesses the generic hardware, software, niche capabilities, and personnel needed to augment Norwegian defence in the polar regions. Nevertheless, neither U.S. conventional forces nor U.S. SOF possess true all-season Arctic capability. As the article “The Unconventional Approach to Arctic Security” noted:

[The U.S.] military’s recent execution of training and operations—such as Arctic Edge, Vigilant Shield, and Arctic Warrior—might

best be classified as Arctic tourism. Military units deploy for a few weeks to train but do not really build true Arctic capabilities...military Arctic tourism does little to build the capabilities needed for military forces to survive, thrive, and effectively operate in the harsh Arctic environment, especially for prolonged durations.⁴⁰

The situation contrasts with that of partners like Norway, where personnel are raised in Arctic or subarctic environments and assigned to units explicitly designed for Arctic warfare.⁴¹ To ameliorate this situation, an organization like NORSOE will need to be prepared to conduct a “reverse” SFA mission to re-train, adapt tactics, techniques and procedures (TTPs) and innovate on behalf of the incoming SFA-provider in order to actually make the SFA effective. This situation can be expected to occur also in Sweden, Finland, Canada, and Greenland (Denmark).

THOUGHTS ON THE FUTURE

The Arctic is a prime theater for the employment of special operations forces. These elements can achieve their most significant value proposition in the Arctic as joint strategic enablers, Arctic whole-of-society integrators, and “reverse” security force assistance providers. In considering each of these roles, this chapter offers three ideas for enhancing the SOF polar approach. First, for the joint enabler function in the Arctic, especially within the TRIAD structure, NATO SOE, with the U.S. as the lead nation given its advanced work in this field, should develop a Space Joint Terminal Attack Controller (JTAC) specialty for selected operators. This expertise would be beyond current multi-domain SOE capabilities. Still it would be essential for SOE formations, especially from smaller states like Norway, Sweden, and Finland, to call directly upon Allied space assets from remote and austere polar locations.

Second, for the whole-of-society integration role, NATO Arctic SOE units should emphasize more civil affairs training within the SOE military assistance task. While this proposal might not apply to U.S. SOE given their integral civil affairs units, for the others, civil affairs skills and expertise, especially in governance, economics, and public health will be useful in Arctic indigenous community engagement and establishing long-term relationships.

Finally, the NATO SOF community needs to change its mindset regarding SFA. SOF Allies accustomed to being “in the lead” and the “supported entity” need to adjust to a supporting role and be ready to learn from the local SOF subject matter experts who have lived in the High North / Arctic their entire lives.

ENDNOTES

- 1 Colin Wall and Njord Wegge, “The Russian Arctic Threat: Consequences of the Ukraine War,” *CSIS Brief 2*, 2023, 1-16.
- 2 Roman Kretcul and Aleksei Ramm, “Полярный округ: в составе Северного флота создадут общевойсковую армию (Arctic circle: A new combined arms army will form as part of the Northern Fleet),” *Izvestia* (large pro-government Russian daily), 1 July 2023, <https://iz.ru/1538203/roman-kretcul-aleksei-ramm/poliarnyi-okrug-v-sostave-severnogo-flota-sozdadut-obshchevoiskovuiu-armiiu>, accessed 16 October 2024.
- 3 Mathieu Boulegue, “The militarization of Russian polar politics,” *Chatham House Research Paper*, June 2022, updated October 2023, 02; and “The European Arctic, the Kola Bastion and the High North,” Chatham House – International Affairs Think Tank, <https://www.chathamhouse.org/2022/06/militarization-russian-polar-politics/02-european-arctic-kola-bastion-and-high-north>, accessed 15 October 2024.
- 4 The State Council Information Office of the People’s Republic of China, *China’s Arctic Policy*, 26 January 2018, https://english.www.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm, accessed October 16, 2024.
- 5 Ibid.
- 6 Swee Lean Collin Koh, “China’s strategic interest in the Arctic goes beyond economics,” *Defence News*, 12 May 2020, <https://www.defensenews.com/opinion/commentary/2020/05/11/chinas-strategic-interest-in-the-arctic-goes-beyond-economics/>, accessed October 16, 2024.
- 7 Johannes Fjeld, “Amerikansk alarm om forskning i Norge,” *Dagbladet*, 3 November 2024, <https://borsen.dagbladet.no/nyheter/amerikansk-alarm-om-forskning-i-norge/82139907>, accessed 15 November 2024; Didi Kirsten Tatlow, “Exclusive: Act on ‘Problematic’ Chinese Arctic Research, US Officials Urged,” *Newsweek*, 17 October 2024, <https://www.newsweek.com/exclusive-lawmakers-letter-us-state-defense-department-china-military-arctic-research-1969618>, accessed 9 December 2024.
- 8 Astri Edvardsen, “China’s Coast Guard on First Patrol in the Arctic With Russia,” *High North News*, 4 October 2024, <https://www.highnorthnews.com/en/chinas-coast-guard-first-patrol-arctic-russia>, accessed 15 October 2024.

- 9 Kevin D. Stringer, "The Arctic Domain: A Narrow Niche for Joint Special Operations Forces," *Joint Force Quarterly*, Vol. 78 (3rd Quarter 2015): 24-31; and Mats Rjaanes and Marius Kristiansen, "Campaigning with partners in the fourth age of SOF – the case of Norwegian – U.S. High North collaboration," *Comparative Strategy*, 11 October 2024, DOI: 10.1080/01495933.2024.2409043.
- 10 Jason Cutshaw, "Leaders give update on 'modern triad,'" https://www.army.mil/article/268971/leaders_give_update_on_modern_triad, accessed 17 October 2024.
- 11 Interview with Subject Matter Expert on TRIAD operations, Zurich, Switzerland, 17 October 2024.
- 12 Malte Humpert, "Russia Upgrades Key Arctic Military Base with Expanded Runway," *High North News*, 20 August 2024, <https://www.highnorthnews.com/en/russia-upgrades-key-arctic-military-base-expanded-runway>, accessed 17 October 2024; and Nicole Franiok, "Russian Arctic Military Bases," *American Security Project*, 22 April 2020, <https://www.americansecurityproject.org/russian-arctic-military-bases/>, accessed October 17, 2024.
- 13 Alfie Shaw, "Russian floating nuclear power plant set for first refuel," *Power and Technology*, 17 October 2023, <https://www.power-technology.com/news/floating-nuclear-power-plant-in-russia-set-for-refuel/>, accessed 18 October 2024.
- 14 "Floating nuclear power plant plan for Russia's Far Eastern coast," *World Nuclear News*, 27 March 2024, <https://www.world-nuclear-news.org/Articles/Floating-nuclear-power-plant-plan-for-Russia-s-Far>, accessed 18 October 2024.
- 15 Lucy Ashton, "Floating Nuclear Power Plants: Benefits and Challenges discussed at IAEA Symposium," International Atomic Energy Agency, 21 November 2023, <https://www.iaea.org/newscenter/news/floating-nuclear-power-plants-benefits-and-challenges-discussed-at-iaea-symposium>, accessed 18 October 2024.
- 16 Steven Hunter, "CANSOFCOM: A Leaders Perspective on Great Power Competition and SOF Integration," *Insights, Kingston Consortium on International Security*, Vol. 1, Issue 7 (November 2021), <https://www.thekcis.org/publications/insights>, accessed 18 October 2024; and Kevin D. Stringer, "Special Operations Forces (SOF): The Integrators for Total Defense and Resistance," *Journal on Baltic Security*, Vol. 8, Issue 1 (2022): 67-76.
- 17 Kevin D. Stringer, "Competing in the Arctic through Indigenous Group Engagement and Special Reconnaissance Activities," The Modern War Institute and Project 6633 Essay Winner, *Modern Warfare Institute*, 06.08.21, <https://mwi.westpoint.edu/competing-in-the-arctic-through-indigenous-group-engagement-and-special-reconnaissance-activities/>, accessed 18 October 2024.
- 18 James R. Morton, Jr. and Ryan Burke, "Special Operations Forces and Arctic Indigenous People: Partnering to Defend the North American Arctic Homeland," *Journal of Indo-Pacific Affairs*, 3 October 2022, <https://www.airuniversity.af.edu/JIPA/Display/Article/3171534/special-operations-forces-and-arctic-indigenous-people-partnering-to-defend-the/>, accessed 18 October 2024.
- 19 Gaëlle Rivard Piché and Bradley Sylvestre, "Vulnerabilities and hybrid threats in the Canadian Arctic: Resilience as defence," Hybrid CoE Working Paper 24, May 2023.

- 20 Mikkel Berg-Nordlie, "Who Shall Represent the Sámi? Indigenous Governance in Murmansk Region and the Nordic Sámi Parliament Model," in M. Berg-Nordlie, J. Saglie, and A. Sullivan, eds., *Indigenous Politics: Institutions, Representation, Mobilization* (Colchester: ECPR Press, 2015), 213.
- 21 Mikkel Berg-Nordlie, "Striving to Unite. The Russian Sámi and the Nordic Sámi Parliament model," *Arctic Review on Law and Politics*, 2.1, (2011): 54.
- 22 Berg-Nordlie, "Who Shall Represent the Sámi?", 213.
- 23 Mikkel Berg-Nordlie, "The Iron Curtain through Sápmi. Pan-Sámi Politics, Nordic Cooperation and the Russian Sámi," *L'image du Sápmi II, Études comparées. Textes réunis par Kajsa Andersson. Humanistica Oerebroensia. Artes et linguae* (2013), 442; The Norwegian Sámi Parliament: <https://sametinget.no/>; The Swedish Sámi Parliament: <https://www.sametinget.se/>; The Finnish Sámi Parliament: <https://samediggi.fi/en/>, accessed 15 November 2024.
- 24 Eva Josefsen, "Samene og de nasjonale parlamentene: kanaler for politisk innflytelse," *Kompetansesenteret for urfolks rettigheter*, 2004, 18-22.
- 25 Berg-Nordlie, "Who Shall Represent the Sámi?", 218.
- 26 E. Josefsen, E., "Stat, region og urfolk – Finnmarksloven og politisk makt," in H-K Hernes and N. Oskal, eds., *Finnmarksloven* (Oslo: Cappelen Damm, 2008), 102, 107, 115.
- 27 Berg-Nordlie, "Who Shall Represent the Sámi?", 215, 218.
- 28 *Ibid.*, 218.
- 29 Marius Kristiansen, Njål Hoem, and Brage Larssen, "Forsvarsgrenenes rolle i samfunnskriser," [The branches of the military's role in societal crisis situations], in Ann-Karin Larsen, ed., *Beredskap og krisehåndtering – Utfordringer på sentralt, regionalt og lokalt nivå* [Readiness and response to crises – Challenges at the national, regional, and local level], (Oslo: CappelenDamm Akademiske, 2021), 259-294; and Heimevernsbladet, "Heimevernets rolle i norsk spesialstyrketankegang etter 1945: Hvorfor skal Forsvarets Spesialkommando (FSK) interessere seg for Heimevernets tidlige historie?" *Forsvaret.no*. https://www.forsvaret.no/heimevernet/heimevernsbladet/heimevernsbladets-arkiv-2/2015%20Nr%2001%20Heimevernsbladet.pdf/_/attachment/inline/c7e3a3ed-3e5a-4c9d-9e29-fa847720db18:e952f69cb6fb1a209f95b8122261a9fa8464d88d/2015%20Nr%2001%20Heimevernsbladet.pdf, accessed 5 July 2024.
- 30 Heimevernsbladet, "Den lokale fikseren," *Forsvaret.no*. https://www.forsvaret.no/heimevernet/heimevernsbladet/heimevernsbladets-arkiv-2/2021%20Nr%2002%20Heimevernsbladet.pdf/_/attachment/inline/6082defb-c747-406b-a0fc-c2db3a077ddb:e3d40238c45797cb93bbcc6d0e1d3ed2f6ba9599/2021%20Nr%2002%20Heimevernsbladet.pdf#2021, accessed 7 July 2024; and Forsvarets forum, "HV-soldater fikk avslag på bruk av samisk armtegn," 2h *Forsvaretsforum.no*, <https://www.forsvaretsforum.no/finnmark-heimevernet-heraldikk/hv-soldater-fikk-avslag-pa-bruk-av-samisk-armtegn/343466>, accessed 6 July 2024.
- 31 Regjeringen, "Et løft for beredskap og digital sikkerhet," *Regjeringen.no*, 7 October 2024, <https://www.regjeringen.no/no/aktuelt/et-loft-for-beredskap-og-digital-sikkerhet/id3055846/>, accessed 8 December 2024.

- 32 Statsforvalteren i Troms og Finnmark, "Styrker samfunnsberedskapen i Finnmark – et pilotprosjekt," *statsforvalteren.no*, 3 June 2024, <https://www.statsforvalteren.no/troms-finnmark/nyheter/2024/06/styrker-samfunnsberedskapen-i-finnmark---et-pilotprosjekt/>, accessed 9 December, 2024; and Maien Gaup Sandberg & Nils John Porsanger, "Soldater i Finnmark skal lære om samer," *NRK.no*, 9 February 2023, <https://www.nrk.no/sapmi/na-skal-soldater-i-finnmark-laere-om-samisk-kultur-1.16289616>, accessed 9 December 2024.
- 33 Kjersti Binh Hegna, "Finnmark landforsvar og Sametinget forener krefter: -Det skulle bare mangle at Forsvaret tar tak," *Forsvaretsforum.no*, 7 February 2023, <https://www.forsvaretsforum.no/finnmark-forsvaret-gsv/finnmark-landforsvar-og-sametinget-forener-krefter-det-skulle-bare-mangle-at-forsvaret-tar-tak/308879>, accessed 8 December 2024.
- 34 Mikkel Berg-Nordlie, "Striving to Unite. The Russian Sámi and the Nordic Sámi Parliament model," *Arctic Review on Law and Politics*, Vol. 2, No. 1 (2011): 53.
- 35 Berg-Nordlie, "Who Shall Represent the Sámi?" 243.
- 36 CIA, *The World Factbook – Arctic Ocean*, <https://www.cia.gov/the-world-factbook/oceans/arctic-ocean/>, accessed 10 February 2024.
- 37 Arctic Centre, University of Lapland, "Arctic Region," <https://www.arcticcentre.org/EN/arcticregion>, accessed 10 March 2024.
- 38 This axiom is a central point for any military units operating in arctic conditions in that simply to survive takes considerable effort, let alone be able to fight. See D. Craig Aitchison and H. Christian Breede, "The Arctic and the Operational Art: Planning and Leadership Considerations for Arctic Security" *KCIS Policy Insights*, Vol. 1, No. 4 (2021).
- 39 Lieutenant-Colonel Marius Kristiansen's experience.
- 40 W. Barrett Martin, Michael K. Tovo, and Devin Kirkwood, "The Unconventional Approach to Arctic Security: Increasing Domain Awareness through the US Army Special Operations Forces' Indigenous Approach," *The Journal of Indo-Pacific Affairs*, 3 October 2022, <https://www.airuniversity.af.edu/JIPA/Display/Article/3171599/the-unconventional-approach-to-arctic-security-increasing-domain-awareness-thro/>, accessed 17 November 2024.
- 41 Ibid.

CHAPTER 12

SPECIAL OPERATIONS IN THE CANADIAN NORTH: ENABLING HUMAN SECURITY

Colonel Howard G. Coombs

“Climate change is both the most pressing and proximate threat to Canada’s security in the Arctic and the people who live there. Its causes and effects are not bound by countries’ official borders.”¹

Global Affairs Canada

This statement from Canada’s recently released *Arctic Foreign Policy*, as well as similar conclusions in the 2024 defence policy update *Our North Strong and Free: A Renewed Vision for Canada’s Defence*, point to climate change as the most dangerous threat to the security of the Canadian North and the well-being of those who live there.² Both documents indicate vigorous actions must be taken, providing broad options to address this and other northern security issues. Still, neither gives much focus on how contributions can be made to enable the security of the population – their human security.³ This chapter will look at how Canadian Special Operations Forces’ can enable human security in the Canadian North, the region comprised of the territories of Yukon, Northwest Territories and Nunavut.⁴

Human security, a concept that has gained significant traction in recent decades, is a comprehensive framework that extends beyond the mere absence of violence. It encompasses the protection of human rights, the promotion of good governance, the guarantee of access to education and healthcare, and the provision of opportunities for individuals to realize their full potential. Understanding the depth and breadth of these priorities is crucial for addressing poverty, fostering economic development, and preventing conflict.⁵

Related to these ideas, in 2018, the North Atlantic Treaty Organization (NATO) introduced a “Military Concept on the Protection of Civilians,”

turning its policy into four main objectives: gaining a deep knowledge of the human environment, including its culture, history, demographics, strengths, and vulnerabilities; protecting civilians from harm caused by conflict; ensuring access to essential services and necessities; and assisting local governments and institutions in creating a safe and stable environment. From that, NATO's 2022 "Strategic Concept" emphasizes that human security, including protecting civilians and minimizing harm, is a core element of NATO's approach to preventing and managing crises.⁶

At the same time, one must consider how these ideas and objectives can be realized. Recent research published in *Human Security: Frameworks and Considerations for Canada's Military* indicates several approaches exist to operationalize human security concepts for the Canadian Armed Forces (CAF). Firstly, partnering with other entities to address these many-faceted threats to human security is paramount. Defining the foundation of instability and working with the right organizations is critical to successful outcomes. Secondly, while partnering, the military must operate in a fashion that emphasizes human security, focusing on lines of effort and specific roles which utilize military means to further human security within a particular situation. This approach is as much philosophical and practical, focusing on military ways and means that can work collaboratively with others to advance human security. Thirdly, identifying primary threats and cross-cutting disintegrating influences will be critical in reaching aspirational human security goals. Lastly, understanding the culture of host populations is necessary to ensure that all solutions are contextually specific, relevant and useful.⁷

From this, it is necessary to acknowledge that human security operations are inherently complex and multi-dimensional, with many actors and conducted in a highly complicated operational environment. In the case of the Canadian North, there are existential threats like climate change, and at the same time, major powers may be contesting the region. One paradigm that has arisen to delineate this type of competition in the contemporary security setting is the idea of "gray zone conflict," also known as "sub-threshold conflict." The gray zone, like most of an iceberg, is underwater and not visible from the surface. Resultantly, the gray zone lacks transparency for observers. Despite its ambiguity, most definitions of gray zone conflict revolve around three core principles.

First, gray zone activities are deliberately crafted to avoid provoking a military response. Second, these hostile actions are intentionally unclear, making identifying and understanding what occurred challenging. Finally, technology is heavily utilized to target specific audiences and achieve the most significant possible impact.⁸ Multi-dimensional human security operations involving partnered military and civilian agencies can address the challenges posed by threats arising from the gray zone, particularly in situations where military force alone is not the appropriate response.

This concept of the gray zone is closely connected to the broader idea of “hybrid warfare.” Like gray zone conflict, the interpretation of hybrid warfare often depends on the user’s perspective. Fundamentally, contemporary hybrid warfare blends conventional and unconventional methods across various domains of conflict. These domains span all elements of national power, including diplomacy, information, military, and economics.⁹ Combining gray zone conflict and hybrid warfare creates a highly intricate and fragmented security environment. This complexity underscores the need for thorough analysis and understanding before embarking on human security operations. Such insight is crucial for developing strategies to address specific challenges and ensure a lasting resolution.¹⁰

To see these conflict modalities at work in a non-Arctic environment, one need look no further than the current conflict in Ukraine, which began with Russia’s annexation of Crimea in 2014 and has since evolved into a complex war involving both conventional and unconventional tactics. This conflict presents not only traditional war challenges but also hybrid and gray zone aspects – all within the context of worsening global violence. In United Nations Secretary-General António Guterres’ 2023 remarks to the Security Council, he stressed the importance of collaborative efforts to address these threats – as well as omnipresent climate change:

Russia’s invasion of Ukraine, in clear violation of the United Nations Charter and international law, is aggravating geopolitical tensions and divisions, threatening regional stability, increasing the nuclear threat, and creating deep fissures in our increasingly multipolar world. All this comes when cooperation and compromise for multilateral solutions are needed more than ever to

tackle challenges from the climate crisis to unprecedented levels of inequality to disruptive technologies.¹¹

Despite these sentiments, the war in Ukraine continues.

Considering this, Canadian Special Operations Forces (CANSOF) will need to facilitate human security in the context of worsening climate change and potential dangers like gray zone conflict and hybrid warfare. The focus of Special Operations actions should be to increase societal resilience and help northern communities withstand the disintegrative influences of this range of threats. In this fashion, one can enable human security in a manner that practically furthers the Canadian government's agenda in the North.

Norwegian peace and conflict researcher Gunhild Gjørsv explains that various crises can arise during the early phases of insecurity within gray zone activities. These sub-threshold actions precede intentional oppositional behaviours that could escalate into conflict. Adversarial activities during full-scale war, or "above-threshold conflict," result in significantly greater and more enduring instability. Positioned higher on the "continuum of social insecurity," such conflicts bring heightened violence, leading to profound societal disruptions and socio-political fractures.

Until deliberate antagonistic actions provoke an armed response, much of the activity in the lower range of the insecurity continuum remains non-military. While potentially aggressive, these actions stay below the threshold of open conflict. Notable examples include Russia's 2014 annexation of Crimea and its pre-2022 aggression in Ukraine, which exemplify gray zone conflicts. Similarly, one could opine that the increasing frequency of Russian and Chinese incursions near Canada's northern regions is a form of gray zone warfare.¹²

Gjørsv emphasizes that addressing and preparing for this complex spectrum of threats in the lower gray zone requires robust civil-military coordination among various actors. She identifies this as a key area where nations, coalitions and alliances, leveraging their military and non-military components, can play a vital role. Given challenges like the 2020 COVID-19 pandemic and the potential disruptive impact of gray zone

activities, Gjørsv advocates for a comprehensive approach. This approach would combine military and non-military strategies to address various threats holistically.

Increasing societal resilience is at the core of Gjørsv's argument. She advocates for fostering an informed and prepared citizenry capable of enduring "major shocks" through education and information initiatives to raise public awareness.¹³ This idea of enhanced societal resilience is a space that Special Operations Forces (SOF) can exploit using already gained knowledge and experience in creating integrated activities.

Modern partnership models have evolved as a Western response to the small-scale conflicts of the late-20th and early-21st centuries. The United States adopted the term "inter-agency" to describe its approach, while the United Kingdom introduced the "joined-up" method. Canada pioneered the "3D" framework – diplomacy, defence, and development – to address conflict and post-conflict stabilization, drawing on insights from peace-keeping and peace enforcement missions in the 1990s. Similarly, NATO adopted a "comprehensive" strategy in the early 21st century. Both the United States inter-agency model and Canada's whole-of-government approach reflect the multifaceted strategy needed to manage the complexities of modern security challenges.¹⁴

The conflicts in Afghanistan and Iraq posed unprecedented difficulties for military forces, government agencies, non-governmental organizations, and the international community. These missions required the American and Canadian governments to establish collaborations among entities that seldom worked together on such a scale, aiming to align national efforts with international objectives. This entailed reconciling conflicting national policies with those of allies – particularly the United States – and managing the dynamics of alliances and coalitions. These efforts occurred amidst fragile Afghan and Iraqi governance systems, underestimated insurgencies, and shifting views on counter-insurgency and nation-building.¹⁵

In this setting, SOF played a pivotal role in inter-agency and whole-of-government initiatives, serving as integrators across various organizations, groups, and individuals with a shared goal of achieving favourable

outcomes. Their work encompassed counter-terrorism, stability operations, and building capacity within host nation security forces. This learning created a foundation from which SOF can pivot into the changing post-Afghanistan and Iraq security environment.

Northern Canada presents unique challenges to CANSOF, not the least of which is the harsh and unforgiving climate. SOF have trained in the region with other federal government departments, like the Royal Canadian Mounted Police (RCMP), to deal with northern contingencies.¹⁶ However, while an excellent start, more needs to be done to fulfill the desires of the 2020 Canadian Special Operations Forces Command policy document *Beyond the Horizon: A Strategy for Canada's Special Operations Forces in an Evolving Security Environment*. This direction stresses the need for Canada's special operators to continuously evaluate how global trends and events might develop and analyze their potential effects on Canada's economy, politics, and security. They must be prepared to adapt their knowledge, skills, partnerships, and operational approaches to address these shifting dynamics. Special operators must consider a range of threats from the unconventional to the conventional and be sufficiently flexible and prepared to change focus and effort quickly.¹⁷ Translating that to the demands of human security in the Canadian North, threatened by climate change within a rapidly shifting global security environment, demands practicable options regarding the roles that CANSOF can fulfill. One possible partner for CANSOF to further this ambition is the Canadian Rangers.

The Canadian Rangers, a sub-component of the Canadian Armed Forces Reserve, were officially established in 1947 to provide a military presence in Canada's remote, northern, and coastal areas. Initially formed in response to the heightened security concerns of the Cold War, the Rangers were designed to monitor and protect Canada's vast, sparsely populated regions and coastlines. They succeeded the Pacific Coast Militia Rangers, which had guarded British Columbia's shores during the Second World War.¹⁸

Operating under the motto *Vigilans*, or "The Watchers," the Rangers are composed mainly of Indigenous peoples, local hunters, trappers, and residents with intimate knowledge of the regions in which they operate. Their

primary roles include patrolling and surveillance, assisting search-and-rescue missions, providing disaster response support, and contributing to sovereignty operations in isolated areas. Their expertise in navigating extreme weather conditions and treacherous landscapes provides Canada's military with much-needed capability. Consequently, the Rangers have grown significantly over the decades, becoming a vital element of Canada's defence strategy in the Arctic. They are recognizable by their distinct red uniforms and use of commercially available off-the-shelf equipment, such as snowmobiles, boats, and rifles, all suited to local conditions.¹⁹

Today, the Canadian Rangers symbolize community resilience, cultural heritage, and dedication to safeguarding Canada's remote frontiers. Their contributions are integral to national security and signalling support for isolated communities. The Canadian Rangers have evolved from a relatively unknown military formation to prominent "sovereignty soldiers,"²⁰ exemplifying Canada's sovereignty in its remote northern and coastal regions. Organized into five Canadian Ranger Patrol Groups in 1998, they comprise nearly 5,000 Rangers across 178 patrols.²¹ Their expertise is rooted in their connection to their homelands and traditional skills. These qualities allow them to act as the Canadian Armed Forces' "eyes and ears,"²² providing defence and community protection in emergencies.

The Rangers' activities have expanded significantly in response to national and global challenges, including climate change, the opening of the Northwest Passage, and heightened Arctic geopolitics. Their Sovereignty Patrols, part of annual sovereignty operations like the 2022 Nanook-Nunavut, showcase their role in exercising sovereignty in the Arctic. Many of these missions often occur in previously unvisited regions.²³

In that 2022 military exercise, over 200 personnel from land, sea, and air units joined forces with American and French partners to strengthen interoperability. They undertook activities like long-range patrols, under-ice diving, and various other exercises to enhance their ability to operate successfully in the challenging conditions of the Arctic.²⁴ These mission types combine local knowledge with collaboration across the North, transforming the Rangers into symbols of resilience and Canadian presence. Beyond sovereignty operations and surveillance patrols, the Rangers contribute

to search-and-rescue missions, disaster response, survival training, and supporting youth through the Junior Canadian Rangers. Integrating national security with community-oriented activities highlights their enduring importance to Canada's defence and sovereignty.²⁵ The recently released "Enabling Full-Time Capability Through Part-Time Service: A New Vision for the Reserve Force" further supports these efforts, which suggests that the Canadian Rangers need greater breadth and depth of training to achieve increased functional capability within Canadian defence. "A New Vision for the Reserve Force" also reinforces combined and joint exercises with other Arctic-focused partners to strengthen situational awareness and knowledge sharing.²⁶

For the Canadian Special Operations Forces Command (CANSOFCOM), this means actively collaborating with Indigenous communities to deepen security and cultural understanding, particularly in the North. This partnering is vital for understanding the region's unique challenges while building stronger relationships between the military and Ranger Patrol Groups. Similarly, that means SOF cooperate with Canadian Rangers through joint training exercises and knowledge-sharing initiatives. Canadian Ranger patrols will be critical in supporting CANSOF operations, particularly in the remote and unforgiving terrain of Canada's North. These joint efforts should focus on improving navigation and operational capabilities in the harsh northern environment, taking advantage of the Rangers' deep understanding of the land and its challenges. Their expertise in navigation, survival, and environmental awareness is invaluable, allowing special operators to operate more effectively in these extreme conditions.²⁷

Not surprisingly, cultural awareness is a cornerstone of these collaborations. To ensure respectful and effective interactions, CANSOF personnel should undergo cultural training that helps them better understand indigenous traditions, values, and perspectives. This approach will create trust and facilitate smoother cooperation during joint efforts.²⁸

Working with other cultures is not new to CANSOFCOM; this need for cultural awareness and understanding has occurred, as previously mentioned, in Afghanistan, Iraq, and, more recently, Eastern Europe. All of this work has occurred within security force capacity building.²⁹ Security

Force Capacity Building involves strengthening foreign security forces' institutional and operational capabilities to establish effective and legitimate security institutions. The process of building foreign security force capabilities occurs in stages. CAF personnel may work with host nation security forces as individuals or in small teams, assisting, mentoring, advising, training, or enabling. These efforts can occur across various levels of command, from training tactical units to supporting the development of security-related government institutions, strategic infrastructure, and the management of security forces at operational or strategic levels. Each Security Force Capacity Building program is tailored to meet the local population's and foreign security forces' unique needs, challenges, and cultural or societal expectations. The goal is to develop a skilled, accountable, independent, and credible force recognized as legitimate by the community it serves.³⁰ One can discern how CANSOFCOM efforts like this with the Canadian Rangers and northern governance structures would significantly enable them and enhance societal resilience in the contemporary security environment.

When explicitly considering augmenting the resilience of northern communities, the most effective way that SOF might contribute may be in a fashion suggested by United States Army War College researcher Michele Devlin – helping understand the changing human terrain of a northern region beset by climate change. In “The Changing Human Terrain of a Warming Arctic: Expanding Partnerships between Special Forces and Diverse, Local Populations,” Devlin discusses the evolving demographic trends in the Arctic due to climate change and their implications for Special Forces operations. She highlights Arctic populations' increasing diversity and complexity, including the growth of indigenous communities and the influx of migrants to warming regions. This research emphasizes the importance of understanding these demographic changes and building meaningful partnerships with local populations to enhance security and operational effectiveness. From her perspective, United States Special Forces should be encouraged to engage with indigenous communities, leverage local knowledge, and participate in cultural events to build trust and cooperation. It also underscores the need for Special Forces to be present in the Arctic to gain credibility and respect from local communities, ensuring successful operations in this challenging environment.³¹ Similarly, by understanding shifting demographics and

capturing that information, Canadian special operators can contribute positively to providing the essential knowledge that will assist the CAF and the Government of Canada to help sustain northern communities in the face of climate change.

This chapter argues that climate change is the most pressing threat to Canada's security in the Arctic, impacting the well-being of its inhabitants. It stresses the need for concrete action to address this threat, as well as that of great power competition in the North. This can only be achieved through comprehensive human security measures, which go beyond traditional military responses to safeguard human rights, promote good governance, and ensure access to essential services. The Canadian Special Operations Forces Command can play a crucial role in enabling human security in the North by partnering with local entities, particularly the Canadian Rangers, to address multifaceted threats. Cultural awareness, civil-military coordination, and leveraging local knowledge to build societal resilience against threats like gray zone conflict and hybrid warfare are required. Security and stability in the Canadian North can only be augmented through a holistic approach that combines military and non-military strategies.

Looking ahead, Canada's special operators must expand their capabilities to address evolving gray-zone and hybrid challenges in the North. This research highlights that SOF will continue operating in joint, multinational, and multi-agency environments involving state and non-state actors with diverse alignments. However, these efforts must transcend traditional inter-agency or whole-of-government frameworks to achieve a unified approach. This comprehensive strategy requires greater integration of defence, diplomacy, development, and other elements and improved interoperability among organizations that often need shared coordination mechanisms. Building consensus and mutual understanding among stakeholders is essential. The Canadian Rangers will play an important role in this approach, and CANSOFCOM needs to increase this reserve component's capacity similarly to that in Security Force Capacity Building. Along with this requirement are necessary efforts by special operators to understand the human terrain of Canada's North. Only in this way can societal resilience be increased.

To succeed in this integrated context, CANSOFCOM establish strong northern connections through joint training, shared education, liaison activities, exchanges, and formal agreements. SOF can effectively address gray zone and hybrid challenges through these actions while fostering partnerships, supporting ongoing operations, and achieving strategic goals. Ultimately, these efforts will result in tangible and actionable courses of action that will help detect, define, deter, or destroy the threats to Canada's North identified in the 2024 *Canada's Arctic Foreign Policy*.

ENDNOTES

1 Canada, *Canada's Arctic Foreign Policy* (Ottawa: Global Affairs Canada, 6 December 2024), <https://www.international.gc.ca/gac-amc/publications/transparency-transparence/arctic-arctique/arctic-policy-politique-arctique.aspx?lang=eng>.

2 Canada, *Our North Strong and Free: A Renewed Vision for Canada's Defence* (Ottawa: Department of National Defence, 2024), ix, <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/north-strong-free-2024.html>.

3 It has been argued that this lack of practical solutions to governance dilemmas has been characteristic of both the Harper and Trudeau governments. See John Scott Cowan, "Stalled Government: Causes and Possible Remedies," *OttawaLife Magazine* (06 December 2024), n.p., <https://www.ottawalife.com/article/thoughts-on-the-failures-of-centralize-power-in-ottawa/>. Cowan opines, "The languid, awkward and incomplete delivery of effects seems to be widespread in most operations of government, with some of the most commented-upon examples being the delayed and ineffective efforts to increase the stock of housing, the dithering, delays and excessive politicisation of all aspects of defence procurement, the egregious delays in adjudicating refugee claims, and the unbelievably slow progress in getting clean drinking water into Indigenous communities. In all cases there were encouraging announcements followed by abysmal implementation."

4 "Canada Guide: The Northern Territories" (2024), n.p., <https://thecanadaguide.com/places/the-north/>.

5 United Nations, General Assembly, "A/RES/66/290: Resolution adopted by the General Assembly on 10 September 2012 66/290" (25 October 2012), 1-2, <https://documents.un.org/doc/undoc/gen/n11/476/22/pdf/n1147622.pdf>; and United Nations, United Nations Development Program, "25th Anniversary of the Human Security concept" (28 February 2019), n.p.

6 North Atlantic Treaty Organization, “Human Security” (30 August 2024), n.p., <https://www.undp.org/speeches/25th-anniversary-human-security-concept>https://www.nato.int/cps/en/natohq/topics_181779.htm.

7 David Lambert, “Chapter 9: Operationalising Human Security for the Canadian Armed Forces,” in *Evolving Human Security: Frameworks and Considerations for Canada’s Military*, eds, Shannon Lewis-Simpson and Sarah Jane Meharg (Kingston, ON: Canadian Defence Academy Press, 2023), 178-180.

8 Lyle J. Morris, Michael J. Mazarr, Jeffrey W. Hornung, Stephanie Pezard, Anika Binnendijk, and Marta Kepe, *Gaining Competitive Advantage in the Gray Zone: Response Options for Coercive Aggression Below the Threshold of Major War* (Santa Monica, CA: RAND Corporation, 2019), 7-12, https://www.rand.org/pubs/research_reports/RR2942.html.

9 James K. Wither, “Making Sense of Hybrid Warfare,” *Connections*, Vol. 15, No. 2 (2016): 74-83.

10 See Alex J. Bellamy and Charles T. Hunt, “Twenty-first century UN peace operations: protection, force and the changing security environment,” *International Affairs*, Vol. 91, No. 6 (November 2015): 1277-1298.

11 Cited in United Nations, United Nations Peacekeeping: “United Nations Charter ‘A How-To Manual’ on Conflict Resolution, Secretary-General Tells Security Council, Urging Governments to Work Towards Peace in Ukraine,” (23 September 2023), n.p., <https://peacekeeping.un.org/en/united-nations-charter-how-to-manual-conflict-resolution-secretary-general-tells-security-council>.

12 Adam Petrin, “Operationalizing the Gray Zone: A Challenge For Canada” (unpublished paper, Canadian Forces College, 2019), 10 and 23, <https://www.cfc.forces.gc.ca/259/290/308/305/petrin.pdf>.

13 Gunhild Gjorv, “Coronavirus, invisible threats and preparing for resilience,” *NATO Review* (20 May 2020), n.p., <https://www.nato.int/docu/review/articles/2020/05/20/coronavirus-invisible-threats-and-preparing-for-resilience/index.html>. Such resiliency is built by providing a safe environment and supporting or reinvigorating societal institutions through the preceding approaches, which enhance security, development and good governance. To achieve this goal, comprehensive multi-organization peace operations that enhance societal resilience can be focused on using measures like the eight pillars of positive peace. For more information, see Institute for Economics and Peace, “Positive Peace,” n.p., <https://www.economicsandpeace.org/research/positive-peace/>; and Steve Killelea, “Peace Is the Answer for Our Post-Pandemic World,” *New England Journal of Public Policy*, Vol. 33, No. 2 (2021): 1-8.

14 Howard Coombs, “Strengthening the Canadian Defence Team – Integrating Reserve and Regular Forces,” in Joakim Berndtsson, Irina Goldenberg, and Stéfanie von Hlatky, eds., *Total Defence Forces in the 21st Century* (Montreal and Kingston: McGill-Queen’s University Press, 2023), 254.

15 See Howard G. Coombs, “Afghanistan 2010-2011: Counterinsurgency through Whole of Government,” *Canadian Military Journal*, Vol. 13, No. 3 (Summer 2013): 16-24.

16 Canada, Department of National Defence, “Canadian Special Operations Forces Command: Latest news” (06 December 2023), n.p., <https://www.canada.ca/en/special-operations-forces-command.html>.

17 Canada, *Beyond the Horizon: A Strategy for Canada’s Special Operations Forces in an Evolving Security Environment* (Ottawa: CANSOFCOM, 2020), 11, <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/cansofcom-beyond-horizon.html>.

18 P. Whitney Lackenbauer, “The Canadian Rangers: A “Postmodern” Militia that Works,” *Canadian Military Journal*, Vol. 6, No. 4 (Winter 2005-2006): 50-51.

19 Canada, Department of National Defence, “Canadian Rangers” (11 March 2021), n.p., <https://www.canada.ca/en/army/corporate/canadian-rangers.html>; and, for a detailed exploration of the history of the Canadian Rangers, see P. Whitney Lackenbauer, *The Canadian Rangers: A Living History* (Vancouver and Toronto: UBC Press, 2013).

20 P. Whitney Lackenbauer, *Canada’s Rangers: Selected Stories 1942-2012* (Kingston, ON: Canadian Defence Academy Press, 2013), xxii.

21 These five Canadian Ranger Patrol Groups, or CRPGs, are: 1st CRPG (Nunavut, Yukon Territory and Northwest Territories); 2nd CRPG (Québec); 3rd CRPG (Ontario); 4th CRPG (British Columbia, Alberta, Saskatchewan and Manitoba); and 5th CRPG (Newfoundland and Labrador). Canada, “Canadian Rangers.”

22 Lackenbauer, *Canada’s Rangers*, xx.

23 Ibid., xxii-xxiv; and Canada, Department of National Defence, “Canadian sovereignty operations” (14 March 2024), n.p., <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/types/canadian-sovereignty.html>.

24 Canada, Department of National Defence, “Canadian Army: News Publications: Operation NANOOK-NUNALIVUT builds readiness and respect” (08 March 2022), n.p., <https://www.canada.ca/en/army/news-publications/2022/03/operation-nanook-nunali-vut-builds-readiness-respect.html>.

25 Lackenbauer, *Canada’s Rangers*, xxii-xxiv; and Canada, “Canadian sovereignty operations.”

26 Canada, Department of National Defence, “Enabling Full-Time Capability Through Part-Time Service: A New Vision for the Reserve Force” (2023), 24 & 27, <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/enabling-full-time-capability-through-part-time-service.html>.

27 James R. Morton, Jr., and Ryan Burke, “Special Operations Forces and Arctic Indigenous People: Partnering to Defend the North American Arctic Homeland,” *Air University Journal of Indo-Pacific Affairs*, 3 October 2022, <https://www.airuniversity.af.edu/JIPA/Display/Article/3171534/special-operations-forces-and-arctic-indigenous-people-partnering-to-defend-the/>; and Ken S. Coates, P. Whitney Lackenbauer, William R. Morrison, and Greg Poelzer, *Arctic Front: Defending Canada in the Far North* (Toronto: Thomas Allen Publishers, 2008), 203.

28 See Jean-François Savard and P. Whitney Lackenbauer, "The Role of Indigenous Peoples in Armed Forces: Canadian and International Perspectives," *Journal of Military and Strategic Studies*, Vol. 19, No. 2 (2018): 1-8, accessible at <https://jmss.org/article/view/62812>.

29 C.J.J. Quinlan, "Canadian Army and Canadian Special Operations Forces Roles in Security Force Capacity Building," unpublished paper, Canadian Forces College, 2016, 1, <https://www.cfc.forces.gc.ca/259/290/318/192/quinlan.pdf>.

30 Canada, Department of National Defence, "Peace Support Training Centre: Security Force Capacity Building (SFCB)" (01 December 2021), n.p., <https://www.canada.ca/en/department-national-defence/services/benefits-military/education-training/establishments/peace-support/courses/security-force-capacity-building-sfcb.html>.

31 See Michele Devlin, "The Changing Human Terrain of a Warming Arctic: Expanding Partnerships between Special Forces and Diverse, Local Populations," in Michael E. Lynch and Howard G. Coombs, eds., *International Competition in the High North: Kingston Conference on International Security 2022 Conference Volume* (Carlisle, PA: United States Army War College Press, 2024), 163-176.

CONCLUDING THOUGHTS

A SUMMARIZATION OF OPERATING IN THE ARCTIC

There is little debate that global warming has accelerated the melting of the polar ice cap, which has begun to impact the Arctic in several significant ways. In addition to exposing the region's potential reserves of natural resources for development, there is the possibility of opening up significantly shorter shipping routes between Asia and Europe. Although these developments provide great opportunities, they also present significant challenges for the Arctic's ecosystem and security. According to Jesper Hansen, a senior advisor to the Arctic Council Secretariat at the Norwegian Polar Institute, these challenges are likely to be varied and could include:

- “Social destabilization resulting from changes to the environment, increases to criminal activity, such as illegal entry of people and goods, and human and drug smuggling;
- Civil unrest could become a major issue if it is perceived that indigenous peoples are not getting a fair distribution of the wealth or concerns about development and its impact on the environment are not being addressed in an appropriate manner; and
- The possibility of foreign military activity resulting from territorial claims or the possibility of a terrorist attack or attacks resulting from perceived grievances by disenfranchised groups.”¹

Adding to these issues, is the fact that Russia has stepped up its military presence in the region. It has recently announced increases to its Arctic forces, including the possibility of special Polar Brigades based on motor rifle forces, and increases to its Special Forces and Airborne troops. Moreover, various open-source reports continue to show the growing presence of Russian air and naval forces throughout the Arctic, with overflights of the region being carried out by Russian Long Range Aviation assets regularly departing from Russian Arctic bases.²

With Russia's increasing military presence in the Arctic and its expansionist policies in Eastern Europe, the need for Western SOF to adapt to Arctic conditions has never been more urgent. The key to meeting the challenges of operating in the High North is clear – they must dominate the Arctic. This requires not just learning to live and fight there, but also adapting their strategies and tactics to the unique conditions of the region.

From an operational perspective, there are few contemporary examples in military history of campaigns being carried out in the Arctic on which to draw specific experience. However, the Soviet-Finnish War of 1939 (The Winter War) is one such experience where some general lessons can be drawn.³ Moreover, this example is particularly interesting to the study of NATO's future Arctic operations as it was a contest between a current NATO member, Finland and the former Soviet Union (Russia).

Although the war contrasted the difference between well-trained general-purpose light forces on the Finnish side and heavy mechanized forces on the Soviet side, it also highlighted the differences between troops properly equipped and trained for the Arctic winter environment and those that were not. In this respect, a number of important and valuable lessons can be drawn from the war and placed in today's context for the benefit of SOF.

RUSSIAN-FINNISH WAR OF 1939 (THE WINTER WAR)

In the autumn of 1939, the Soviet Union demanded that the Finns move their border back from Leningrad about 25 kilometres. More importantly, the Russians also wanted a 30-year lease of the Hanko Peninsula for use as a naval base. The Finnish government rejected these demands, and on 30 November 1939, the Soviets invaded across the entire front of the country with four Armies consisting of 27 divisions, totalling around 630,000 men.⁴

The Soviets pushed into the border regions with heavy mechanized forces and expected a rapid advance into the Finnish heartland. However, they quickly became bogged down fighting in the heavily forested terrain that covered much of the country. Their situation was made more difficult by their almost complete dependence on a sparse road network that was constantly being cut off or blocked by highly mobile Finnish ski-borne

light infantry properly equipped to fight in deep snow and freezing temperatures.

Having initially stopped the Soviet advance along the border region, the Finns attacked using a tactic called *motitus*.⁵ *Motitus* is the Finnish word for a stack of firewood piled up to be chopped. This tactic, which involved cutting off and encircling the enemy, was a key part of the Finnish strategy. Once this was accomplished, larger Soviet formations would be attacked at vulnerable points and cut into smaller, more manageable groups. These smaller groups, cut off from support, were picketed until they became too weak to defend themselves. The most notable example of these tactics was the Battle of Suomussalmi, which occurred between 7 December 1939 and 8 January 1940, where two Soviet mechanized divisions (14,000 troops) were annihilated by three Finnish regiments (11,000 men).⁶

The battle's genesis started when the Soviet Ninth Army crossed the Finnish border with the 163rd Division north of Lake Ladoga at Raste and advanced towards the village of Suomussalmi on its way to the city of Oulu. Had the operation succeeded, it would have effectively cut Finland in two.⁷ Initially, the Finns were stunned by the size and scope of the Soviet advance in the area. Consequently, the Soviets were able to push forward with little effective resistance. They reached Suomussalmi, which fell easily on 7 December.⁸

With Suomussalmi secure, the Soviets attempted to continue their advance. Still, they started to meet stiff resistance as the Finns were able to bring in just enough resources to halt the Soviet offensive. Further attempts by the Soviets to break out of the area failed, and on 9 December 1939, the Finns took back the initiative with a series of counterattacks designed to drive the Soviets back. However, these initial attempts met with little success.⁹

After being reinforced with the 9th Division, the Finns again launched a series of attacks in mid-December 1939. This time, they retook the village of Suomussalmi, forcing the Soviets to withdraw in panic into the forests. The situation continued worsening for the Soviets as the 44th Division, which was moving towards Suomussalmi, was also stopped and cut off.

Road bound, these two divisions were divided into isolated groups and eventually beaten down or destroyed by the combination of Finnish tactics and the cold weather.¹⁰

The battle of Suomussalmi was a turning point in the Winter War, resulting in a significant victory for the Finns. The battle, which saw the effective use of *Motitus* tactics and the adaptation of strategies to the Arctic landscape, demonstrated the superiority of Finnish forces in the harsh Arctic conditions. In addition to boosting the morale of the Finnish army, the battle also provided the country with a large amount of badly needed military equipment, including tanks, field guns, and anti-tank weapons. At the tactical level, the *Motitus* tactics became a common feature of the battles north of Lake Ladoga. They were adapted to the barren landscape around Petsamo, at the time Finland's only Arctic port.

Battle of Petsamo

Further to the north, the Finns expected operations to be generally limited to raiding parties and reconnaissance patrols simply because they believed the terrain and distances did not allow anything else. However, the Soviets could concentrate a sizeable force in the region and launched a full-scale assault with two divisions.¹¹ The Soviet objectives in the area were to have the 104th Division take Petsamo and continue towards the capital of Finnish Lapland – Rovaniemi. There, they were expected to link up with the Soviet 88th and 122nd Divisions that aimed to take Salla before moving on to Rovaniemi.¹²

Initially, the Soviets could advance to Salla with little difficulty and continued to the west on two axes of advance. The northern axis moved toward the town of Pelkosenniemi while the main force pushed on toward Kemijärvi.

Unfortunately for the Soviets, their northern group was outflanked by the Finns and forced to retreat, leaving much of its heavy equipment and vehicles behind. Once this threat was eliminated, the Finns moved their main effort to the force advancing on Kemijärvi. The Soviets attempted to carry out a series of local attacks but could not advance in this sector, and both sides settled into a stalemate for the rest of the war.¹³

Finland's only ice-free port in the Arctic along the coast was at Petsamo, which was a prime objective for Soviet operations. In the fight for the port, the Soviet 104th division went up against a Finnish company-size force that was defending the area. The Finns had little option but to abandon Petsamo in the face of the Soviet advance, so they concentrated their efforts on a series of delaying actions. As the area was treeless and windy with relatively flat terrain, it offered few defensible features, and the Finns could do little to stop the Soviet advance. Fortunately, the area was in almost constant darkness during the winter, and temperatures were frigid. This situation allowed the Finns to continue using hit-and-run attacks against Soviet supply lines. Although these patrols could not stop the Soviets from occupying the port city, they were able to keep them contained while slowly wearing them down.¹⁴

By the spring of 1940, Finnish forces were exhausted. For the Soviets, their casualties were extremely high, and their inability to defeat the much smaller Finns became a major source of political embarrassment. With the Soviets starting to progress in the South, by late February 1940, both sides were looking for peace, and in March, a treaty was signed, effectively ending hostilities. In the end, the cost of the conflict was significant for both sides. During three-plus months of fighting, Soviet casualty estimates are believed to be as high as 270,000, while Finland's losses were in the area of about 22,830 men.¹⁵

KEY LESSONS FOR SOF FROM THE WINTER WAR

Finnish operations and tactics were based on their knowledge of the area and the best use of the restricted forest landscape to neutralize Soviet firepower and superior mobility. The Finns enhanced their mobility by using skis and sleds to move troops and equipment around the battlefield and their area of responsibility.¹⁶ Moreover, they made significant efforts to care for their troops, regularly serving hot meals from the support area. These meals were provided in hot tents erected in secure areas near the front. The exception was when under attack; troops were also rotated to warm up and have hot drinks inside those shelters every two hours or so.¹⁷

In contrast, the Russians were both cold and hungry. Adding to this discomfort was the fact that Finnish patrols deliberately targeted their field kitchens and warming areas, which weakened and demoralized

the Russians even further. Moreover, Finnish mobility allowed their ski patrols to keep their road-bound enemy under continuous surveillance. At the same time, the Russians remained, for the most part, ignorant of the Finnish strength and dispositions.

Greater mobility also allowed the Finns more tactical flexibility. As a result, they could use relatively small forces to cut off and encircle much larger enemy formations, which were quickly isolated and attacked at vulnerable points. Over time, these formations were cut into smaller, more manageable groups.¹⁸ These smaller groups cut off from support, were picketed until they became too weak to defend themselves. When the Finns lacked sufficient firepower to reduce strong *mottis*, some of which contained scores of tanks, they targeted Soviet rear areas and supply lines while relying upon the cold and hunger to destroy their enemy.¹⁹

Knowing that shelter was essential to survival in cold weather and that villages and their road networks became focal points for local battles during the Winter War, Finnish commanders could channel attacking forces along those routes, concentrating them for decisive battles at a time and place of their choosing.²⁰

During the Winter War, the Finns also realized that the vast spaces of the Arctic and the breadth of the Soviet attacks would not allow them to defend the entire country. However, they did know that greater mobility, in both summer and winter, gave them greater tactical flexibility, and they could use that flexibility to their advantage.²¹ Large local forces consisting of territorial guerrilla units that operated in depth were charged with reconnaissance, demolition and laying of mines to immobilize and isolate the enemy. Once the invader was pinned down, the general purpose forces, with their heavy firepower, concentrated for a decisive engagement.²²

The general-purpose force structure and military doctrine that evolved during the war worked exceptionally well for the Finns. This structure, for the most part, has remained in place to this day and was built on the following key lessons:

- *Motitus* tactics worked very well when combined with regular and irregular forces working in front and behind the enemy;

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- Shelter was essential to survival in cold weather. As a result, villages and their road networks became the focal points of local battles, particularly during the winter, which served to channel the enemy;
- The unique aspect of Arctic fighting meant that, for the most part, mobility for heavy vehicles and logistical support is restricted to roads;
- Cross-country transport, if possible, requires wide-tracked vehicles or sleds. Infantrymen moving through deep snow rapidly become exhausted, which means that extended marches require skis or the assistance of over-snow vehicles;
- Human efficiency and survival require adequate shelter. If this is not available locally, portable shelter must be provided to the troops;
- Frostbite casualties can easily exceed battle losses unless troops are wearing proper clothing, including warm gloves and footgear;
- Speedy removal of the wounded from the battlefield to shelter is essential to prevent even minor wounds from resulting in death from exposure; and
- The advantages of specialized training and equipment: Sleeping on pine boughs in heated tents kept the Finns comfortable while their opponents were freezing to death a few hundred yards away.²³

FINNISH SPECIAL OPERATIONS FORCES IN THE ARCTIC

Given Finland's belief in hitting the enemy from all directions, its SOF play an important role in the nation's defence and its doctrine. Finnish SOF can trace their history to the long-range patrol units of the 4th Detached Battalion, which fought in the Continuation War (1941-1944). These units carried out over 150 missions before disbanding on 30 November 1944.²⁴ Today, the *Utti* Jaeger Regiment is the Finnish Army Training and Development Centre for Special Forces. It handles Army

aviation (through a helicopter battalion), airborne operations (through an airborne jaeger battalion) and Special Forces operations (through a special jaeger battalion).²⁵

Training is focused on long-range reconnaissance, *Sissi* (guerrilla operations), *military operations in urbanized terrain* and air assault operations. Finnish doctrine envisions SOF units operating outside the area of responsibility (AOR) of general and local forces and deploying as far behind enemy lines as necessary to carry out special reconnaissance, guerrilla operations and direct-action missions on key enemy targets.²⁶

SOF AND FUTURE ARCTIC WARFARE

Based on this historical analysis of the Winter War, what can SOF learn from the Finnish Army's experience fighting in the Arctic and the High North? The biggest conclusion is that SOF's core missions will not change in the Arctic. However, the missions they must carry out will likely be reprioritized.

As the Winter War highlighted, the loss of a key logistics node, the failure of a convoy to reach its destination, or the destruction of a critical bridge along a line of communications can be vital to success. As a result, the Finns' emphasis on long-range reconnaissance, guerrilla and air assault operations aligns with achieving these objectives. Moreover, Finnish doctrine envisions SOF units operating outside the AOR of their general purpose and local forces to conduct special reconnaissance, guerrilla operations and direct-action missions on key enemy targets. As a result, special reconnaissance, unconventional warfare (UW), and direct-action operations will likely be SOF priority missions in the Arctic.

That being said, it is clear that certain principles and restrictions will have to guide the development of any military capabilities required to operate in the region. These limitations will impact the development and employment of SOF. Overall, it is expected that military operations will be characterized by highly mobile forces operating in a very dramatic environment with few or no fixed lines of operations. The significant distances, lack of commercial and military infrastructure, and harsh climate have historically made Arctic campaigning contests between relatively small and dispersed forces, often operating at the limits of operational feasibility.

The American Army's strategy, *Regaining Arctic Dominance the U.S. Army in the Arctic*, put these challenges into perspective. It states:

This small margin of [allowable] error has generally had two implications. First, the quality of individuals and units has often been decisive. The side best able to overcome challenges has tended to prevail. For this reason, the mindset or ethos of Arctic units has been an even more important element than any specialized equipment.²⁷

The document explains:

The environment favors the defense more heavily than in other climates. It has been difficult for attacking forces to achieve numerical superiority without pushing sustainment to its limits. The loss of one key logistics node, the failure of one convoy, the destruction of one critical bridge, or the stubborn resistance of one strongpoint along a line of communications has brought many Arctic operations to an unsuccessful close.²⁸

This analysis means extended-range movements featuring dispersed operations will be a key feature of future Arctic warfare. Moreover, SOF will operate in an environment where conventional forces will have the same level of mobility as they do or possibly better. As SOF cannot move or operate with much of their organic support, reviewing their operating structure and the ability to call in and converge logistics and mission effects with joint and multinational partners will become critical to their future success.²⁹

SPECIFIC TRAINING REQUIREMENTS FOR SOF

Despite the need for minor changes to force structure and SOPs, the focus of preparing SOF operating in the Arctic needs to be placed on training to live and work in the Arctic environment. This emphasis should be placed on conducting long-range movements (patrols) in severe weather conditions, over rugged terrain, and with limited visibility in sub-zero temperatures.³⁰ Training should also include understanding the challenges of shifting magnetic fields to navigation, working over vast distances, dealing with a lack of standing water or vegetation, and the exhausting challenge of simply moving around in a harsh environment.³¹

Moreover, SOF must learn how to plan, organize, coordinate, conduct, and supervise deployments, as well as train and operate in the Arctic Region, particularly during its coldest months. They must possess the knowledge and skills to deal with communications, patrol the ice pack, and conduct ice reconnaissance. They must also become experts in survival techniques such as self-rescue after falling through the ice and self-navigation should they become separated from their team. SOF must master constructing/establishing improvised camps, sites or shelters under the most difficult conditions.³² SOF must also transition their capabilities between fighting/operating conditions in the Arctic summer and winter.

The key to preparing SOF for the Arctic is to live and work in that environment with allied nations (i.e., Norwegian, Finnish and Swedish SOF) and understand best practices. With Finland and Sweden now in NATO, setting up an Arctic school specifically for SOF is a viable option.

In addition to upgrading their general training standards for Arctic operations, SOF must develop two other specific skill sets. These include developing indigenous relationships within Arctic communities and the ability to assist conventional forces in counter-SOF operations.

Developing Indigenous Relationships

In many regions of the Arctic, there are dispersed pockets of indigenous communities. These communities have the knowledge and skills to live, survive, and operate in Arctic and near-Arctic conditions. Any military force wishing to operate in the High North should leverage this critical knowledge base to its full potential. As SOF often work with different indigenous cultures worldwide, they are the ideal choice to connect with these Arctic communities.

The key difference for NATO SOF is that most of these indigenous people are also citizens of their country and not of a foreign nation. As such, they have sovereign rights rooted in each nation's laws. To be successful, SOF will have to chart different approaches for the different indigenous peoples inhabiting the High North.³³

Building enduring relationships between each country's indigenous citizens and the different militaries operating in the region will be complex.

As Lieutenant Colonel James R. Morton, Jr., PhD and Dr. Ryan Burke state in their article, “Special Operations Forces and Arctic Indigenous People: Partnering to Defend the North American Arctic Homeland,” that, “historical trauma, Native sovereignty challenges, and differences in worldview, produce significant obstacles to establishing trusting relationships. These are not insurmountable challenges, though. Planners and policy-makers must focus on particular aspects of indigenous–military relations to achieve lasting partnerships to secure and defend the homeland.”³⁴

When developing indigenous relationships and capabilities, it will be important to do so within the context of understanding that they are not there to fit into a military formation; rather, the military must adapt to fit into their ways and means. No group better understands an AOR than the people that live there. SOF will likely play an essential role in the future of defence in the High North. As such, indigenous people will likely be an integral part of that overall effort. Moreover, indigenous leaders, communities, and institutions can be crucial in expanding SOF’s Arctic knowledge and capabilities.³⁵ Finding the best model to utilize that expertise will be critical to future success.

Finding the right model is usually about finding something that can work and adjusting it based on time, circumstance and experience. One such model that should be considered is the Canadian Ranger program. They are recruited from local communities and provide a limited military presence in Canada’s remote areas. They receive 12 days of formal training each year (often, more training days are offered, but attendance is not mandatory). They are considered somewhat always on duty, observing and reporting as part of their daily lives. There are approximately 5,000 Canadian Rangers, split between five Canadian Ranger patrol groups (CRPGs), living in more than 200 communities throughout the Canadian North. Collectively, they speak 26 different languages and dialects. Unlike the traditional CAF promotion practices, Canadian Rangers elect their patrol leaders, who are Canadian Ranger sergeants.³⁶

The tasks and operations each country’s indigenous people could provide include:

- Conduct and provide support to sovereignty operations such as reporting suspicious and unusual activities as well as collecting local information of military significance;
- Conduct and assist with SOF operations, including providing local knowledge and expertise (i.e. advice and guides) or participating in various other operations; and
- Provide local defence for their community.³⁷

Counter-SOF Operations

Over the last decade, SOF has proven itself to be a war-winning asset. As a result, it is not surprising that peer competitors have evolved their SOF in the likeness of Western SOF. Therefore, peer competitors will also employ SOF to aid in achieving their war aims. Moreover, the Russians appear to be increasing the number of SOF they have in the Arctic region. As a result, greater emphasis will need to be placed on counter-SOF operations.

Although conventional forces can be utilized in a counter-SOF role, SOF must play a central role in the planning and preparation to fight this battle. Specifically, they need to work with conventional forces to develop a joint strategy to fight the counter-SOF battle and ensure its effectiveness prior to the start of any conflict.³⁸

As a rule, the following principles should be considered when developing such a counter-SOF strategy:

- Specialized intelligence processes will be critical;
- Identifying friendly force vulnerabilities can provide invaluable insight;
- Anticipating friendly force line penetration by SOF will be important;
- Creating adaptability in friendly forces to contend with enemy force infiltration;
- Rapid countering actions may prove decisive;
- Targeting specialized platforms is worth the effort;

- Massed Arctic capable conventional forces are a credible deterrent and
- Overwhelming firepower should be part of the plan to isolate and defeat SOF.³⁹

CONCLUSION

The Arctic is a hostile environment that will test the skills and endurance of even the best-trained and equipped soldiers. Although the tasks SOF will be expected to carry out will not change, the environment they must perform in is unfamiliar to many. Overcoming the challenges of the environment is not enough. SOF must be able to thrive in the Arctic. Historically, this has been done with proper selection, training and adaptation of employment methods to meet the specific circumstances SOF operators have to face. Still, in the Arctic, this will not be enough. This shortfall is because operating in the Arctic will test those capabilities to the limit, and the environment will be unforgiving of any mistakes.

In this respect, it is almost impossible for soldiers to maintain proficiency in this environment with a tourist mentality that believes some initial Arctic training along with an annual exercise will be sufficient to prepare soldiers. To be successful, SOF will need constant immersion into that environment as getting forces to the necessary standard of operational proficiency will require long lead times.

ENDNOTES

1 Jesper Hansen, "Crime in the Arctic: As the climate gets warmer the crime in the Arctic will increase," Arctic Council Website, 14 August 2009, http://arctic-council.org/article/2009/8/crime_in_the_arctic, accessed 20 August 2009.

2 "Russian bombers fly over international waters in Arctic," *Reuters*, 14 August 2023, <https://www.reuters.com/world/russian-bombers-fly-over-international-waters-arctic-2023-08-14/>, accessed 15 December 2024.

3 "The Winter War," *Winter War Website*, <http://www.winterwar.com/>, accessed 10 December 2008. During the conflict small numbers of Finnish light infantry fought against and defeated large Soviet armoured and mechanized formations in heavily forested areas that were punctuated with numerous lakes.

4 Ibid. On 26 November 1939, the Soviets staged a shelling incident near the Russian village of Manila. They publicly announced that it had been a Finnish artillery attack that killed Soviet troops. Although the Finns denied any responsibility for the shelling the Soviets used the incident as a provocation to launch the attack.

5 Dr. Allen F. Chew, *Fighting the Russians in Winter: Three Case Studies* (Fort Leavenworth, KA: Combat Studies Institute, U.S. Army Command and General Staff College, 1982), 17.

6 Chew, *Fighting the Russians in Winter*, 29.

7 Ibid., 18-19.

8 Ibid., 18. The Finns did not withdraw before destroying the village, thus, denying the Soviets shelter.

9 Ibid., 18.

10 Ibid., 18-21.

11 Van Dyke, *The Soviet Invasion of Finland.*, 171-174.

12 "The Winter War," *Fire and Ice*, (Website) <http://www.wfyi.org/fireandice/history/battles.htm>, accessed 15 December 2024.

13 Ibid.

14 William R. Trotter, *The Winter war: The Russo-Finnish War of 1939-40*, 5th ed. (New York: Workman Publishing Company, 1991), first published in the United States under the title *A Frozen Hell: The Russo-Finnish Winter War of 1939-40*.

15 Ibid., 191.

16 The Finnish Army transported their equipment on ski-like sleds called *akhio*, which was harnessed to three skiers and guided by a fourth from behind to steady the load. These *akhios* were also used to haul mortars, heavy machine guns, and supplies and to evacuate wounded.

17 Chew, *Fighting the Russians in Winter*, 30.

18 Carl Van Dyke, *The Soviet Invasion of Finland, 1939-40* (London: F. Cass, 1997), 38-40.

19 Chew, *Fighting the Russians in Winter*, 30. The main advantage that the Finns had over the Soviets was their preparation for fighting in the winter environment and their mobility. For example, the Finns had tents heated by a wood-burning stove that could keep twenty men comfortable even on the coldest nights. In contrast, the Russians huddled around open campfires or dug holes in the snow for shelter. At best, they had an improvised lean-to, a shallow hole covered with branches, or a branch hut fashioned at the roadside or in a ditch. The fortunate ones had a fire in a half barrel. Many literally froze to death in their sleep. Lack of proper footgear aggravated their misery. The summer leather boots which most wore contributed to many frostbite cases.

20 Ibid., 30.

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21 “The Winter War,” *Fire and Ice*. At its most basic level troops need warm and dry clothing and footwear, extra nutritious food, appropriate camouflage, tents or other portable shelter, sleeping bags, heaters and fuel, and modified weapons that permit firing while wearing environmental clothing. At the tactical level mobility is a critical factor in operations. Individual mobility can be increased by the use of skis, cleats, and snowshoes. For example, Swedish, Finnish and Norwegian defence forces use skis for cross country movement either by teaching their troops to ski or by being pulled with tracked transport vehicles or snow mobiles. Such specialized Arctic vehicles as the Sisu Nasu, BvS 10, or MT-LV are a necessary for any force seeking to operate in the Arctic for extended periods.

22 Ibid., 30-32.

23 Chew, *Fighting the Russians in Winter* 29-37.

24 Javier Sutil Toledano, “FINSOFs: Finland’s Special Operations Forces,” Gray Dynamics Website, <https://graydynamics.com/finsofs-finlands-special-operations-forces/>, accessed 17 December 2024.

25 Army Command Finland, *Utti Jaeger Regiment (UTJR)*, Government of Finland Website [English], <https://web.archive.org/web/20170613111715/http://maavoimat.fi/en/utti-jaeger-regiment>, accessed 17 December 2024.

26 Toledano, “FINSOFs: Finland’s Special Operations Forces,”

27 Department of Defence, *Regaining Arctic Dominance the U.S. Army in the Arctic* (Washington, Department of the Army, 19 January 2021), 24-25, https://www.army.mil/e2/downloads/rv7/about/2021_army_arctic_strategy.pdf, accessed 16 December 2024.

28 Ibid., 24-25.

29 Ibid., 24-25.

30 Kiona Miller, “Special Operations Forces Exercise in Arctic Conditions,” U.S. Indo-Pacific Command Website, 16 March 2018, <https://www.pacom.mil/Media/News/News-Article-View/Article/1468810/special-operations-forces-exercise-in-arctic-conditions/>, accessed 10 December 2024.

31 Canada, “Arctic Operations Course addresses emerging Arctic Challenges,” Department of National Defence website, <https://www.canada.ca/en/army/news-publications/2022/03/arctic-operations-course-addresses-emerging-arctic-challenges.html>, accessed 12 December 2024.

32 Ibid.

33 LTC James R. Morton, Jr., PhD, USAR; & Dr. Ryan Burke, “Special Operations Forces and Arctic Indigenous People: Partnering to Defend the North American Arctic Homeland,” *Journal of Indo-Pacific Affairs*, 3 October 2022, <https://www.airuniversity.af.edu/JIPA/Display/Article/3171534/special-operations-forces-and-arctic-indigenous-people-partnering-to-defend-the/#:~:text=Just%20as%20SOF%20are%20integral,SOF's%20Arctic%20knowledge%20and%20capabilities>, accessed 17 December 2024.

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34 Ibid.

35 Ibid.

36 Canada, "About the Canadian Rangers," Department of National Defence website, <https://www.canada.ca/en/ombudsman-national-defence-forces/education-information/caf-members/career/canadian-rangers.html>, accessed 16 December 2024.

37 Ibid.

38 Lieutenant Commander Alex Crosby, "The Joint Force Needs a Counter-SOF Strategy," *Proceedings*, Vol 149/9, September 2023, <https://www.usni.org/magazines/proceedings/2023/september/joint-force-needs-counter-sof-strategy>, accessed 15 December 2024. See also Colonel (retired) Bernd Horn, "A Clash of Shadows: The Requirement for Counter-SOF Operations," in Bernd Horn and Hans Ilis-Alm, eds., *Force Multiplier: Utilization of SOF from a Small State Perspective* (Kingston, ON: CANSOFCOM ERC Press, 2024), 109-128.

39 Ibid.

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GLOSSARY OF ABBREVIATIONS

3D	Diplomacy, Defence and Development
A2/AD	Anti-Access/Area Denial
AC	Arctic Council
ACS	Arctic Capabilities Study
AFN	Assembly of First Nations
AFSOC	Air Force Special Operations Command
AOPS	Arctic/Offshore Patrol Ships
AOR	Area of Operational Responsibility
ARCG	Arctic Response Company Groups
ATC	Arctic Training Centre
ATV	All Terrain Vehicle
AU	Auxiliary Units
BP	British Petroleum
BRI	Belt and Road Initiative
BRICS	Brazil, Russia, India, China
C2	Command & Control
C4ISR	Command and Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance
CAF	Canadian Armed Forces
CANSOFCOM	Canadian Special Operations Forces Command
CASR	Center for Arctic Security and Resilience
CCGS	Canadian Coast Guard Ship
CCP	Chinese Communist Party
CFDS	<i>Canada First Defence Strategy</i>
CGS	Chief of the General Staff
CIA	Central Intelligence Agency
CJOC	Canadian Joint Operations Command
COVID-19	Coronavirus Disease 2019
CPRG	Canadian Ranger Patrol Group
CR	Canadian Ranger

G L O S S A R Y

CBRN	Chemical, Biological, Radiological, Nuclear
CSE	Communication Security Establishment
CSIS	Canadian Security Intelligence Service
DEW	Distant Early Warning Line
DHS	Department of Homeland Security
DIME	Diplomacy, Information, Military, Economic
DND	Department of National Defence
DoD	Department of Defense
DoS	denial-of-service
DOTMLPF-P	Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policies
DSOKOM	Danish Special Operations Command
EEZ	Exclusive Economic Zones
EU	European Union
FBI	Federal Bureau of Investigation
FID	Foreign Internal Defence
FIS	Foreign Intelligence Service
FOL	Forward Operating Location
FPV	First-Person View
GDP	Gross Domestic Product
GIN	Greenland, Iceland and Norway
GIUK	Greenland, Iceland and the United Kingdom
GPC	Great Power Competition
GPS	Global Positioning System
GRU	<i>Glavnoye razvedyvatel'noye upravleniye</i> [Main Intelligence Directorate] (Russian)
GSAR	Ground Search and Rescue
GUGI	Main Directorate for Deep-Sea Research (Russian)
ICBM	Intercontinental Ballistic Missile
ICE	Isolated, Contained, Extreme
ISR	Intelligence, Surveillance, Reconnaissance
IW	Irregular Warfare

G L O S S A R Y

JCR	Junior Canadian Ranger
JTAC	Joint Terminal Attack Controller
JTFN	Joint Task Force North
Km	Kilometre
MAJAID	Major Air Disaster
MARSOC	Marine Corps Forces Special Operations Command
MCDV	Maritime Coastal Defence Vessel
MD	Military District
MIDFIELD	Military, Information, Diplomatic, Financial, Intelligence, Economic, Legal, and Developmental
MINDS	Mobilizing Insights in National Defence and Security
MLA	Member Legislative Assembly
MND	Minister of National Defence
NAADSN	North American and Arctic Defence and Security Network
NATO	North Atlantic Treaty Organization
NDHQ	National Defence Headquarters
NGO	Non-Governmental Organizations
NORAD	North American Aerospace Defence Command
NORSOF	Norwegian Special Operations Forces
OAI	Operations, Activities and Investments
OG	Operational Groups
OGD	Other Government Department
OSS	Office of Strategic Services
PCMR	Pacific Coast Militia Rangers
PJBD	Permanent Joint Board for Defence
PLAN	People's Liberation Army Navy
PME	Professional Military Education
POL	Petroleum, Oil and Lubricants
POP	Persistent Organic Pollutant
PRC	People's Republic of China

G L O S S A R Y

RCAF	Royal Canadian Air Force
RCMP	Royal Canadian Mounted Police
RCN	Royal Canadian Navy
RSOMI	Reception, Staging, Onwards Movement, and Integration
SAR	Search and Rescue
SAS	Special Air Service
SFA	Security Force Assistance
SLCM	Submarine Launched Cruise Missile
SLOC	Sea Lines of Communication
SOCNORTH	Special Operations Command North
SOF	Special Operations Forces
TTP	Tactics, Techniques and Procedures
U.S.	United States [of America]
UAV	Unmanned Aerial Vehicles
UK	United Kingdom
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNDRIP	United Nations Declarations on the Rights of Indigenous Peoples
USASOC	United States Army Special Operations Command
USNORTHCOM	U.S. Northern Command
USNSWC	United States Navy Special Warfare Command
USSR	Union of Soviet Socialist Republics
UW	Unconventional Warfare
VEO	Violent Extremist Organizations
VHF	Very High Frequency
WWII	World War II

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