



Up North

Confronting Arctic Insecurity

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ABOUT CEPA

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Cover photo: Royal Danish Navy frigate HDMS Triton patrols the seas around the Arctic.
Credit: NATO via Flickr.

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Confronting Arctic Insecurity Implications for the United States and NATO

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Acknowledgements

The author is grateful to the peer reviewers of this report who shared their thoughts and feedback.

The author is thankful to Minna Ålander and Charlotta Collén for their constructive comments and suggestions on earlier versions of the draft as well as for their support during the research process.

The author is particularly thankful to Edward Lucas for his editorial advice and consistent help in focusing the paper on its key elements.

Special thanks to Catherine Sendak and Krista Viksnins at CEPA for their assistance and encouragement throughout the research and editing process.

The author is also grateful to the participants of the two research workshops and to the interviewed experts and officials who helped shape this report.

Finally, the author is thankful for the support of General Atomics Aeronautical Systems, Inc., in making this publication possible.

This report was funded by General Atomics Aeronautical Systems, Inc.

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Methodology

The project draws upon a variety of sources, notably an in-depth literature review; around 20 virtual and in-person interviews between May and August 2024 with senior government officials, analysts, and experts from the “Arctic 7” countries and NATO; two virtual closed-door sessions that brought together high-level experts in March and May 2024; and a CEPA delegation trip to Sweden and Finland in August 2024.

Executive summary

- Geopolitics and strategic competition are fast changing the Arctic security landscape, a trend compounded by climate change.
- Russia represents a threat to NATO and regional stability, marked by increased low-intensity warfare operations. Hostile activities include air incursions, snap military exercises, Global Navigation Satellite System/Global Positioning System (GNSS/GPS) jamming and electronic warfare operations, and subsea warfare against critical underwater infrastructure.
- Potential miscalculations and tactical errors risk unintended escalation across critical Arctic choke points and beyond.
- US and allied presence are still lacking. Persistent gaps prevent full domain awareness while command structures and responsibilities tend to overlap.
- The “NATO 7,” boosted by Finland’s and Sweden’s membership in the alliance, must find innovative ways to increase and coordinate their efforts. NATO itself must define its approach, notably its role and place in regional security.
- A predictable and transparent military security framework, including an Arctic Military Code of Conduct, is urgently needed.
- Regional stability is highly contingent upon successful Arctic-specific deterrence against existing regional threats. A carefully crafted regional presence will help the US and its six allies create appropriate deterrence.
- The threat environment requires emerging technologies to achieve overall domain awareness. Uncrewed platforms, autonomous systems, space-based assets, and other Arctic-capable technologies offer a crucial first step in improving defense and deterrence.

Introduction

The Arctic has reemerged as a critical region for global security and stability. For years, the United States and its partners and allies have sought a “low-tension” environment. However, geopolitics and strategic competition mean the circumpolar security landscape is changing fast.

Arctic governance is suffering. The full-scale invasion of Ukraine in 2022 prompted a limitation of activities involving the Russian Federation in the Arctic Council¹ and other circumpolar cooperative frameworks. This institutional limbo² will likely persist. Fragmented cooperation marks a long step back from the spirit of the 2008 Ilulissat Declaration.³

The “High North, low tension” and “exceptional Arctic” mantras are increasingly outdated. Since the 1987 Murmansk Initiative,⁴ the logic of “Arctic exceptionalism” relied on stakeholders focusing on cooperative governance. Underlying drivers of insecurity, including adversarial and competitive geopolitical dynamics, were always present, if hidden.

Climate change adds complexity.⁵ On top of diminished ice coverage, submarine operations — from torpedo launches to hydro-acoustics — are challenged by changes in seawater quality and salinity.⁶ Boreal wildfires also require military assistance to aid overrun civilian responses. Most importantly, climate change means more physical access to the Arctic across all domains. As the civilian (e.g., commercial shipping, resource extraction, fishing, tourism) and military (e.g., standing forces and constabulary operations) presence increases in Arctic waters and skies, more incidents and accidents will undeniably happen — especially risks linked to environmental degradation due to environmental catastrophes and human-made disasters (especially radioactive waste management in Russia).⁷ Unfortunately, the most affected are likely to be local and Indigenous communities.⁸

Russia began reinvesting in Arctic affairs in the mid-2000s.⁹ The Kremlin remains adamant in asserting complete control over the Arctic Zone of the Russian Federation (AZRF), extending defense in depth through interdiction capabilities away from the Russian Arctic, and protecting perceived vital interests along the Northern Sea Route (NSR). Russia has been rapidly militarizing NSR approaches, especially across critical choke points,¹⁰ and modernizing local infrastructure.¹¹



Photo: Beaufort Sea - USS Connecticut surfaces in support of Ice Exercise 2018.
Credit: Michael Lee/North American Aerospace Defense Command.

Under the impact of climate change, more waters and coastlines in and close to the AZRF and the NSR are becoming accessible. In Moscow's calculations, receding sea ice coverage means that the once "natural" border no longer offers sufficient protection. The Kremlin consequently fears that the US and NATO will soon increase surface, subsurface, and air deployments closer to the AZRF. This situation is fraught with miscalculation and tactical errors that could lead to dangerous escalation with global consequences.

This fear has been amplified by Sweden's and Finland's NATO accession, fueling a sense of encirclement¹² and vulnerability.¹³ Ukrainian drone strikes on the Olenya air base,¹⁴ home to strategic aviation assets, in July 2024, raises the question of how potent Russia's multilayered defense capabilities truly are.

China's approach to Arctic security is very different. The self-aggrandizing "near-Arctic" state proclamation in 2018¹⁵ prompted a diplomatic backlash and forced China into "tactical retreat."¹⁶ Beijing's approach to the Arctic is linked to resource access diversification as part of the Belt and Road Initiative for fossil energy, rare earths, and fishing stocks. China is hoping to impose more Beijing-friendly governance rules for regional access and resource exploitation.¹⁷



Photo: NATO's marines brave the Norwegian arctic for exercise Nordic Response 24.
Credit: NATO via Flickr.

Chinese Arctic activities must be understood as fundamentally dual-purpose. Its military presence in the Arctic has thus far remained limited but suspicions arise that scientific research presence feeds intelligence and domain awareness¹⁸ — not least to bridge China's learning curve in cold weather operations. China is also managing a fleet of polar-specific satellites as part of the BeiDou system and investing in modern satellite technology.¹⁹ It plans to deploy a large-scale network of dual-use listening devices in the Arctic Ocean²⁰ as part of the Underwater Great Wall²¹ — all of which could be used for military purposes. Suspicions also abound that Beijing is seeking to increase its military footprint in the Arctic,²² notably with the People's Liberation Army Navy, to sustain its strategic ambitions, and its commercial presence with the Transpolar Sea Route and future resource exploitation.²³

Russia and China have been displaying symbolic attempts at closer Arctic cooperation — such as the signature in April 2023 of a memorandum of understanding strengthening cooperation between the Russian Federal Security Service (FSB) Border Service (Coast Guard and Border Guard) and the Chinese Coast Guard²⁴ — although the agreement is not Arctic specific. They are also conducting a growing

number of joint aerial exercises and patrols close to the Pacific Arctic, such as near the Japanese,²⁵ South Korean,²⁶ and Alaskan²⁷ air defense identification zones (ADIZs), as well as joint maritime drills,²⁸ including close to the Aleutian Islands and off the US exclusive economic zone (EEZ) in the Bering Sea.²⁹ However, such bilateral cooperation has remained mostly symbolic and politically valuable — not least because these efforts retain Western attention and lead to exaggerations about their significance.

Overall, Sino-Russian Arctic interactions are characterized chiefly by friction and mistrust rather than partnership.³⁰ As in energy or economic development, the deepening of bilateral defense and military cooperation in the Arctic is shadowed by each country's long-term objectives in governance and security. Greater Chinese activity may lead to a “strategic culture clash.”³¹

Against this picture, **US and allied presence** is still lacking. Though the Arctic is no longer a blind spot for the United States, persistent gaps in critical capabilities prevent complete domain awareness. These include

- cold weather hardware;
- ice-strengthened assets;
- early warning threat detection systems and air defense;
- radar coverage; and
- aerial domain awareness, subsea sensing, logistics, and resupplies.

Command-and-control responsibilities still overlap among US commands, NATO structures, and North American Aerospace Defense Command (NORAD). More fundamentally, the United States, Canada, Denmark, Iceland, Norway, Sweden, and Finland, known as the Arctic 7, do not fully agree in their approach to the region — especially in terms of diverging national views on circumpolar security, what constitutes defense priorities, and geographical priorities across the Arctic theater.

As the Arctic continues to open, the security challenges will deepen. The Arctic 7 must prevent a genuine return of a Cold War–style “strategic Arctic.”³²

This paper closely follows the release of recent US strategic documents related to the Arctic — namely the 2022 “National Strategy for the Arctic Region” (NSAR),³³ the 2023 implementation plan for the NSAR,³⁴ and the US Department of Defense's (DoD's) “2024 Arctic Strategy.”³⁵ It places these documents in the context of changing geostrategic dynamics in the Arctic and offers policymakers ways forward in approaching the role and place of NATO in the region, discussions on Arctic military security affairs, Arctic-specific deterrence, and the development of modern technology for future circumpolar security.

Military security affairs in a changing Arctic

Future US, NATO, and allied policy toward the Arctic must ensure that the region remains stable and predictable. Many unknowns remain, including the role and place of NATO in Arctic military security affairs and governance frameworks. Policy must determine NATO's Arctic future, streamline US priorities, and envision a dedicated military security architecture for the region.

The role and place of NATO in Arctic security

The accession of Sweden and Finland to NATO is geographically and strategically putting more emphasis on the Northern dimension of the Atlantic alliance. The de facto creation of the "NATO Arctic 7"³⁶ also strengthens the link between the Baltic Sea theater and the European High North, especially considering strategic competition with Russia.

If, on paper, NATO represents a good framework for circumpolar military cooperation among the Arctic 7, two main unknowns remain:

- What is the exact role and place of NATO in an Arctic environment — namely "how much NATO" is needed?
- What should be the contour of NATO's missions and endeavors in the Arctic — namely "what kind of NATO" should be in the region?

How much NATO? Outlining the role and place of the alliance in Arctic military security

Some commentators have rightly pointed out that NATO has always been an Arctic alliance.³⁷ Indeed, the Cold War saw a high level of competition and contestation between the Union of Soviet Socialist Republics (USSR) and NATO and its allies in an Arctic environment — from circumpolar subsea warfare to nuclear testing in Russia's Arctic and the threat of strategic bomber overflights through North Pole approaches. With the recent inclusion of Sweden and Finland in the alliance, there is now equally more Arctic in NATO and more NATO in the Arctic.

For the past few years, NATO's Arctic efforts and footprint have grown, such as with the activation of Joint Force Command (JFC) Norfolk in 2018 under Allied Command Operations, the recent joint operational coordination mechanisms between NATO's Maritime Command and the Danish Joint Arctic Command,³⁸ and other efforts coordinated through NATO Allied Command Transformation.³⁹

A genuine “Arctic awakening” within NATO structures still awaits. The alliance has an opportunity to properly define its regional role as well as calibrate Arctic policy among allies. The main objective is to determine NATO’s exact perimeter of operation in the region while establishing deterrence against competitors,⁴⁰ but without overtly escalating or militarizing Arctic discussions.

NATO and its allies must fundamentally answer the question of how much NATO is needed and necessary in the Arctic. Geographically, this means not only North Atlantic approaches and sea lines of communication (SLOC), but “north of the North Atlantic” in the European High North, through North Pole approaches, and further out in the Pacific Arctic for US and Canadian homeland defense — in other words, achieving genuine transarctic defense.

NATO should avoid approaching the Arctic by thinking through the usual prism of regional flanks or by compartmentalizing the region into a specific area of operation or domain. Because of geography, the Arctic spans multiple theaters, creating an integrated strategic continuum from the European High North to the Pacific Arctic, with North Pole approaches in between, that goes beyond NATO’s usual remit. Comprehensive regional security for the alliance encompasses a wide range of issues and discussions, especially for North American and North Pacific defense.

Commentators have been calling for a NATO strategy in the Arctic.⁴¹ Such a move might be premature — not least to avoid an overlap among existing command structures. More than a “strategy” or an “Arctic command,” NATO must first find its credible voice⁴² in circumpolar security as well as internally build its Arctic dimension and framework of operations. Unfortunately, the final declaration of the 2024 NATO Summit in Washington did not mention the Arctic as an area of interest.

Before having a properly defined strategy for the Arctic, NATO first needs an operational roadmap in terms of presence and capabilities. It should start by strengthening internal awareness of Arctic affairs as well as taking stock of existing endeavors and streamlining them under one umbrella.

A second step would be to discuss with partners and allies the most organic role and place for NATO in Arctic military security affairs. This should avoid overlapping with existing regional endeavors such as the Arctic Security Forces Roundtable, the Arctic Chiefs of Defence Staff meetings, Nordic Defence Cooperation (NORDEFCO), the UK-led ten-country Joint Expeditionary Force, or the newly created Arctic Security Policy Roundtable.⁴³ The goal would be to achieve a genuine transatlantic perspective on circumpolar security⁴⁴ while bridging diverging views on Arctic security. Such initial work will help determine what gaps NATO could potentially fill.

NATO's role and place in Arctic military security affairs must be caveated by a thorough discussion on the limits of NATO's regional presence. Indeed, the alliance should not monopolize the debate on regional hard security issues, nor should it be the sole and only arena of discussion. NATO must find an appropriate balance between minimal presence and over-militarizing Arctic affairs.

“Too much” NATO would essentially strengthen Moscow's “besieged fortress” mentality⁴⁵ — with the greater risk of increasing miscalculation, tactical errors, and unintended escalation.⁴⁶ Should NATO's capabilities and footprint expand in the region, members of the alliance must accept the potential for regional escalation. As NATO is going through an adjustment period about its role and place in the Arctic, information sharing among allies and partners will be key to success.

So far, Nordic members of NATO have agreed to strengthen the land component of the alliance. In June 2024, Norway, Finland, and Sweden announced the establishment of a trilateral military transport corridor to streamline logistics and resupplies across the High North.⁴⁷ The same month, alliance Ministers of Defense greenlighted the establishment of the Multi Corps Land Component Command as well as Forward Land Forces in Finland.⁴⁸ Under JFC Norfolk, the new land command will host the multinational battle group, initially with Finland, Norway, and Sweden. These initiatives, and others to come, will steadily pave the way to an integrated NATO policy for the Arctic.

What kind of NATO? Relations with allies and command structures

Another set of issues NATO must approach is the exact perimeter of Arctic operations and the internal division of labor among command structures, military forces, and Arctic-specific concepts of operation. Even though the Arctic region remains peripheral in NATO thinking, it is now taking up more space, especially from a maritime command point of view. The exact division of labor remains undetermined but will shape NATO's role in an Arctic context.

The accession of Sweden and Finland impacts how NATO should approach command and control (C2) organization as well as the future force model and structure for the Arctic.⁴⁹ The debate on C2 organization must consider the balance between Arctic and Baltic security — in command structure terms, between JFC Norfolk and JFC Brunssum. Further policy planning is something Nordic policymakers are particularly eager to determine as it will impact the division of responsibility and area of operation within NATO.

The debate has been somewhat closed now as Sweden and Finland will join JFC Norfolk, under US command, to streamline North Atlantic and potentially Arctic operations. Yet the exact perimeter of interaction with JFC Brunssum remains to be determined. These boundaries between both JFCs need to be clear and understood early in the process to ensure that they can act effectively in a potential crisis.

An important aspect of the discussion relates to the interconnection between NATO and NORAD. NORAD modernization must go hand in hand with further integration and cooperation with NATO structures⁵⁰ — not least because the Supreme Allied Commander Europe's area of responsibility (AoR) blends into NORAD's and vice versa.

A final aspect of the debate is the integration of US command structures within NATO in an Arctic context. As more dialogue and information sharing will be necessary among allies, the US must find appropriate ways to streamline the different commands responsible for various aspects of Arctic operations — Northern Command (NORTHCOM), European Command (EUCOM), Indo-Pacific Command (INDOPACOM) — and coordinate them efficiently within NATO to avoid overlaps. Of particular relevance is the interaction between US NORTHCOM and NATO JFC Norfolk in the context of NATO's Regional Plan Northwest. These aspects are clearly identified in the US DoD "2024 Arctic Strategy."⁵¹

Overall, the NATO 7 must increase their collaborative and cohesive approach to Arctic security. This will require more information and intelligence sharing, and ultimately better coordination. NATO members must better coordinate military exercises and strategic communication around Arctic operations. For instance, US NORTHCOM's Arctic Edge,⁵² Canada's Operation Nanook,⁵³ and NATO's Cold/Nordic Response exercises took place within weeks of each other, yet with a striking and regrettable lack of coordination.

Another key question relates to finding the balance of response between national and collective defense in an Arctic context. Since the Arctic is a question of homeland security for circumpolar states, there is a need to expand it to layered, allied defense in an integrated way.

A final question pertains to broader human presence and forward deployments. In a NATO context, forces will have to focus on deployment agility and sustainability, but not necessarily on permanent regional presence. Recent NATO drills have already identified several vulnerabilities in operating in a cold weather environment.⁵⁴ Future work must also consider interfacing with the Centre of Excellence for Cold Weather Operations⁵⁵ in Norway as well as with the Joint Expeditionary Force, led by the United Kingdom (UK), which could become a spearhead force for Arctic operations.

Arctic training must deepen at the NATO level, with the caveat that the alliance must find a balance between training *for* Arctic conditions without always being present *in* the Arctic.⁵⁶ The recently renamed annual Nordic Response exercise will become the staple of NATO's Arctic coordination in the years to come⁵⁷ as it includes Arctic states and key partners such as the UK and the Netherlands.

The US role and presence in the Arctic

Since the early 2020s, a flurry of Arctic-related strategic documents and actions in the United States — from the 2022 NSAR,⁵⁸ the 2023 implementation plan for the NSAR,⁵⁹ the creation of the DoD Arctic Strategy and Global Resilience Office,⁶⁰ and the release of the 2024 DoD Arctic strategy⁶¹ — has successfully enshrined the Arctic as an area of vital importance for the US in terms of homeland defense, cooperation with allies, and regional stability.

Arctic security, beyond Alaska and NORAD, is no longer a blind spot for the United States. In military security affairs, the DoD 2024 strategy will allow for the implementation and resourcing of the security pillar of the NSAR. Understanding is growing that wider Arctic security directly impacts homeland defense, not least in the face of increased Russian and Chinese competition.⁶²

The US must avoid being a bystander in the wider Arctic and rather focus on having a global perspective regarding presence and access to the region. This would entail better connections and communication — especially around strategic exercises and readiness. The 2024 DoD strategy clearly outlines that NORTHCOM is and will remain the key Arctic capability advocate⁶³ as part of the Unified Command Plan and Total Force.

To that end, bilaterally, the US expanded its agreement (DCA) with Norway and entered into DCAs with Finland and Sweden in 2024.⁶⁴ These agreements are critical for partnership including access to basing for US military personnel and pre-positioning of military materiel. These three DCAs will allow for more than 40 locations with US military access, including 15 in the north of each of these countries.⁶⁵ They solidify critical capacity and capability as the region and alliance continue to strengthen their presence, deterrence, and defense.

Further coordination with EUCOM (North Atlantic AoR) and INDOPACOM (military assets and troops in Alaska) will also be necessary to prevent further overlap in responsibilities and deployments. Another coordination aspect is between the US 2nd and 6th Fleets with EUCOM and NATO's JFC Norfolk.⁶⁶

Moving forward, US stakeholders must identify key priorities for capabilities and procurement of Arctic-enabled systems. Despite budget constraints, the US government can better calibrate efforts internally as well as with NATO allies and beyond. An important first step is to match capabilities with operational design for cold weather operations and future presence.

Since 2020, successive strategic documents released by the US armed services have helped identify capabilities gaps that have been streamlined under the 2022 NSAR and the 2024 DoD Arctic strategy.⁶⁷ To fill the “icebreaker gap,” a major part



Photo: Royal Navy Merlin Helicopter coming into land to drop off simulated supplies as part of Exercise Joint Viking. Credit: NATO via Flickr.

of procurement is the extension of the Polar Security Cutter program for the US Coast Guard⁶⁸ and the upcoming Arctic Security Cutter program.

In the context of the US Army's 2021 "Regaining Arctic Dominance" strategy,⁶⁹ the reactivation of the 11th Airborne Division in 2022⁷⁰ is a positive step to tune US forces into Arctic operations. The goal is to turn the Alaskan division into an Arctic-capable force by design that can be rapidly deployed across the circumpolar theater and beyond — including expeditionary multidomain operations in the Indo-Pacific theater.

Decisions to reactivate the Navy 2nd Fleet as part of NATO's JFC Norfolk,⁷¹ increase airlift capabilities at the Keflavík airfield in Iceland,⁷² and expand F-35 presence at the Eielson air base in Alaska⁷³ are also positive steps forward in fulfilling US regional strategy.

Through permanent and rotational deployments, the US approach to Arctic "calibrated presence"⁷⁴ is considering a form of "agile basing" through modular forward operating presence. One issue remains, however, in terms of division of

labor, notably with Canada. For instance, if US troops in Alaska under INDOPACOM are drawn out to the Asia-Pacific theater, this will automatically increase pressure on Canada to have a greater regional security role to defend North American approaches.

Finally, as part of the “monitor and respond” approach, the 2024 DoD Arctic strategy and the 2022 NSAR emphasize the need to exercise presence in the Arctic independently and alongside allies. Presence will be further established through continued cycles of training and drills in the US and within a NATO context.⁷⁵ US Arctic operations will focus specifically on circumpolar security choke points such as the Bering Strait and the Greenland–Iceland–United Kingdom (GIUK) and Greenland-Iceland-Norway (GIN) gaps.

A framework for Arctic military security affairs

The Arctic needs a dedicated military security architecture.⁷⁶ Expert discussions before the 2022 full-scale invasion of Ukraine considered key factors that could help the Arctic 7 outline what a military security architecture would look like.⁷⁷

Since 2014, Russia’s war against Ukraine has dented the ability of Arctic-related governance frameworks to carry out their missions and kindle the spirit of “low tension.” With circumpolar governance at risk of a geopolitical takeover, a predictable and transparent military security framework in the Arctic is needed.

The need for a designated military security architecture is compounded by risks of miscalculation and tactical errors between the Arctic 7 and Russia. With more human presence across the region, the potential for accidents and incidents will undoubtedly increase. Left unchecked and in the absence of clear lines of communication and deconfliction with Moscow, such events carry the risk of (un)intended escalation.⁷⁸

Furthermore, even though Russia has little incentive to voluntarily escalate in the Arctic, restraint and transparency cannot be taken for granted. Past Arctic incidents no longer offer a benchmark of the Kremlin’s behavior in crisis situations.⁷⁹ Russian leadership has also not been transparent regarding recent serious environmental catastrophes (for instance, the 2019 Nyonoksa radiological incident, the 2020 Norilsk spill, and the 2021 Siberian wildfires).

Building a proper security architecture

The Arctic 7 must bridge diverging national views on circumpolar security. If all Arctic NATO countries now recognize that Russia represents a security threat to the region, they lack an integrated view on what constitutes defense and security priorities within that threat environment.⁸⁰

For instance, Russia as a circumpolar security threat conveys a different meaning and response between the European Arctic and the North American/North Pacific Arctic.⁸¹ Arctic security in Nordic countries, especially in Finland and Sweden, is a matter of territorial defense and a prerequisite for national security.

Geography also matters: The definition of the “Arctic” diverges from a Canadian, American, Danish, or Finnish point of view. While Sweden and Finland focus as much on Baltic Sea and Lapland security, US and Canadian defense focus remains circumscribed within NORAD’s AoR. Yet, the US and Canada also have different approaches to security in the North American Arctic — military focused for the US and “defense centric” for Canada.⁸²

The Arctic 7 must avoid a bifurcation between the North American NORAD-centric Arctic and the European High North. Thankfully, Arctic allies have strong complementarities — for instance, Norway’s naval focus; Finland’s land presence and ground forces; and North America’s air defense, air power, remote sensing, and space operations.

A second paramount factor is the need to obtain a common understanding of what represents acceptable, legitimate, and nonthreatening military operations at peacetime in the region. This could be achieved by creating an Arctic Military Code of Conduct (AMCC).⁸³ By defining the rules of the road of peacetime military activity, an AMCC would help diffuse tension and limit the risk of miscalculation. The AMCC should be extended to Russia and to all non-coastal states able to deploy and sustain military assets in the Arctic (which would undeniably include China).⁸⁴

The AMCC would increase transparency and predictability in regional military security affairs. In terms of format, a code of conduct should remain light and noninvasive enough to avoid over-institutionalizing military security affairs in the Arctic.

Caveats to Arctic military security

Finally, two caveats must be introduced about Arctic military security discussions. First, the intrusion of geopolitics and a hard security discourse in the Arctic must not take wider discussions hostage or overshadow the conversation on the impact of climate change, environmental protection, or human security in the region.

Second, Arctic nations must be careful not to create overlaps with existing frameworks and cooperative endeavors touching upon regional security affairs. As noted above, many formats already deal with circumpolar security issues. An important question moving forward is to determine whether such frameworks should be completely subordinate to NATO or simply support the alliance without overlapping with it.



Photo: A Dutch Marine watches over the beach at Sandstrand, Norway as a landing craft nears shore as part of Exercise Nordic Response 24. Credit: NATO via Flickr.

Any discussion on hard security must avoid being over-institutionalized and streamlined within existing endeavors to prevent a “mille-feuille” of initiatives. The recently created Arctic Security Policy Roundtable, at the defense-policy level, will also have to interface with existing endeavors.

Beyond low tension in the Arctic, what matters most in the situation is the predictability of the operating environment and transparency over regional military activities. The ultimate objective will not necessarily require building trust with Moscow, but will involve minimizing misunderstandings and therefore limiting the risk of miscalculation.

Yet, as the Kremlin is now absent from existing cooperative frameworks, it could eventually be reengaged or re-invited.⁸⁵ Arctic stakeholders should ask themselves whether they fear reintegrating Russia more than accepting the collapse of the existing architecture in the Arctic. The policy corollary is to understand under which circumstances reintegrating Moscow would be an acceptable proposition for the European Arctic countries closest to Russia as well as for the United States.

Deterrence in an Arctic context

Arctic stability is highly contingent upon successful deterrence against existing regional threats — from Russia’s aggressive behavior to low-intensity, subthreshold destabilization efforts across critical regional choke points. The US and the Arctic 7 must determine what constitutes proper deterrence in an Arctic context, not least by exercising regional presence while preventing horizontal escalation and subthreshold operations.

Deterring security threats in the Arctic

Deterring Russia’s aggressive posture

In the European High North, the protection of the AZRF and NSR is achieved through the Soviet-inherited *Bastion* defense concept. *Bastion* is a multi-domain, multilayered “protective dome” of air defense, sea denial, coastal defense systems, and domain awareness capabilities located along critical choke points of the AZRF.⁸⁶ It aims to heavily deny adversary military operations and degrade the operating environment at sea, in the air, and in the electromagnetic spectrum.

Bastion is designed to ensure the safety and survivability of the sea-based, second-strike nuclear deterrent deployed with the Northern Fleet on the Kola Peninsula as well as on the Kamchatka Peninsula with the Pacific Fleet. A major concern is also the protection of the air-based nuclear deterrent that can be deployed throughout the network of bases across the AZRF, critical energy infrastructure on the Yamal Peninsula and beyond, as well as the Plesetsk Cosmodrome in the Arkhangelsk Oblast.

Beyond the AZRF, Russia is seeking to extend interdiction capabilities away from the Arctic itself and deeper into NATO and allied territories. Moscow essentially wants to create more defense in depth by extending out-of-area denial capabilities on both sides of the Arctic as well as across North Pole approaches.⁸⁷

Russia’s regional military posture is increasing risks linked to horizontal escalation to and from the Arctic theater to regional theaters of operation.⁸⁸ If it remains unlikely that a conflict directly erupt *in* the Arctic and *about* the Arctic, escalation in other theaters such as the Baltic Sea and the North Atlantic as well as Northeast Asia and the Sea of Japan could spillover over *into* and *through* both sides of the Arctic itself.⁸⁹

Russian behavior and the risk of miscalculation could place regional NATO and US assets in dangerous situations. Several US and NATO military assets could be theoretically at risk from Russian long-range missile systems and air capabilities⁹⁰

New NATO members help alliance to match Russian military presence in the Arctic region



Sources: Natural Earth; International Institute for Strategic Studies; Telegeography; Reuters Reporting; Center for European Policy Analysis
Vijdan Mohammad Kawoosa; Michael Newton | Reuters; Center for European Policy Analysis Oct. 26, 2024

— especially considering the extension of Arctic runways in coastal airfields as well as the range extension of Russian tactical aviation.⁹¹ These assets include the US Eielson Air Force Base in Alaska, the US naval air station at Keflavík in Iceland, the Pituffik space base in Greenland, the Bodø air station in Norway, and the US theater missile defense systems in Northeast Asia.⁹²

Despite this situation, deterrence against the Kremlin's ambitions of denial must factor in that Moscow does not have the assets or the capabilities to conduct interdiction operations beyond the AZRF. Regardless of Russian messaging, Moscow should not be allowed to believe it can close off critical Arctic choke points in the Bering Sea or the High North (GIUK-GIN-Bear gaps)⁹³ or that Russian forces could interdict US and NATO access to the North Atlantic SLOC through long-range and standoff systems. In other words, deterrence should focus on "bursting the *Bastion* bubble" and deny Russia the ability to message regional superiority that it can conduct "SLOC interdiction operations."⁹⁴

Low-intensity warfare and subthreshold operations

Another important aspect of deterrence against Russian activities relates to Moscow's low-intensity warfare operations against NATO interests. Moscow has a strong incentive to continue testing and probing Western resolve as well as imposing cost on NATO peacetime exercises and future potential operations in a contested Arctic environment.

Low-intensity warfare operations and subthreshold destabilization efforts by Russia (and increasingly China) now have a clearly established track record and take several well-identified forms:⁹⁵

- **"Buzzing" and brazen behavior:** Offensive peacetime maneuvers at sea and in the air such as aircraft ranging NATO's and NORAD ADIZs, shadowing NATO air and naval assets,⁹⁶ dangerous combat formations flying close to Norwegian military assets such as the Vardø coastal radar installations,⁹⁷ or submarine activity close to territorial waters of NATO members around the North Atlantic.⁹⁸ Such brinkmanship-prone activities carry the risk of accidents, not least due to unprofessional and risk-taking behavior.
- **Overflights and military exercises:** Russian assets, including strategic bombers,⁹⁹ are regularly patrolling the circumpolar airspace, especially in the Barents Sea, across North Pole approaches, as by the Bering Sea¹⁰⁰ (including airspace incursions just outside NORAD's AoR.)¹⁰¹ This also now includes air maneuvers with China close to NORAD's ADIZ in Alaska¹⁰² as well as drone overflights over civilian critical national infrastructure in the European High North.¹⁰³
- **GNSS/GPS jamming and electronic warfare operations,** especially in Lapland and Finnmark.¹⁰⁴ These activities create temporary losses in satellite navigation coverage as well as radio and radar navigation interference.¹⁰⁵ The Kremlin is also known for attempting to electromagnetically disrupt regional NATO exercises.¹⁰⁶ Disrupting GNSS/GPS signals could lead to serious civilian aircraft accidents as well as commercial disruption at sea.¹⁰⁷



Photo: Finnish and Swedish marines practice amphibious operations with other NATO Allies in northern Norway. Credit: NATO via Flickr.

- **Weaponization of Notices to Air Missions:** With very short notice, Russia sends notices for live-fire air and naval exercises¹⁰⁸ in waters and airspace adjacent to Norwegian territory — and sometimes even overlapping Norway's EEZ by the Barents and Norwegian Seas.¹⁰⁹ The goal is to disrupt regional NATO and allied exercises with attempts at sea denial,¹¹⁰ which conveys the risk of horizontal escalation to and from the Baltic Sea.
- **Seabed warfare and disruption against critical undersea infrastructure:** Moscow has both the dedicated assets and military structures in place to conduct sabotage attempts against critical undersea infrastructure — mostly energy pipelines, and fiber optic data and communication cables.¹¹¹ There is now a track record of such activities connected to Russia — for instance, the Svalbard Undersea Cable System in 2022¹¹² and the Baltic connector pipeline in October 2023.¹¹³ In the case of the Newnew Polar Bear, Russian involvement was through the ownership structure of the Chinese vessel responsible for the damage as well as simultaneous Russian activity around it.¹¹⁴

Building Arctic deterrence

The US and NATO need better signaling about their intentions in the Arctic. So far, both strategic communication and deterrence in the region have been uncoordinated among allies. The current situation asks the question: What does actual Arctic deterrence look like against existing and future military threats?

Integrated deterrence across Arctic choke points

The concept of integrated deterrence is useful in an Arctic-specific environment. The US 2022 “National Defense Strategy” defines integrated deterrence as working “seamlessly across warfighting domains, theaters, the spectrum of conflict, all instruments of U.S. national power.”¹¹⁵ This essentially means coordination with partners and allies — which, in an Arctic context, boils down to the interconnection between the Arctic 7 at the NATO level, multilaterally, and with regional allies such as the United Kingdom and Japan.

Arctic-specific integrated deterrence rests on several principles considering the unique geography and operational constraints. Integrated deterrence means expanding the geographical remit to fully encompass the wider circumpolar geography. For instance, Nordic allies cannot ignore the security repercussions of joint Russian and Chinese naval activities in the North Pacific, with direct consequences for the Pacific Arctic. Conversely, North American allies must be equally worried about recurring GNSS/GPS jamming in Finnmark and Lapland in the European High North.¹¹⁶

Arctic-specific deterrence must consider effectively limiting nefarious behavior while avoiding the risk of horizontal escalation. Indeed, deterring one set of behaviors must be achieved holistically while thinking about spillovers to other theaters. Indeed, isolated events in diverse locations should always be accompanied by multilateral condemnation and consistent response.

The need for Arctic deterrence is compounded by the existence of regional choke points:

- **The GIUK-GIN-Bear gaps** between the North Atlantic and the European High North.¹¹⁷ These are at risk of contestation by Russia’s out-of-area capabilities,¹¹⁸ which is adding pressure on the North Atlantic sea lines of communication and on the Nordic-Baltic continuum with regard to access and reinforcement to the Baltic Sea theater. The situation raises the question of the security of the Svalbard archipelago.¹¹⁹
- **The Bering Strait in the Pacific Arctic**, where Russian military infrastructure located on the Kamchatka Peninsula and the Sea of Okhotsk, along the Kuril-Chukchi defensive line,¹²⁰ is key to Moscow’s regional architecture.¹²¹

If Moscow decides to contest the 1990 USSR-US Maritime Boundary Agreement,¹²² it will put US and Alaskan interests at risk and potentially hamper future access toward the strait across the North Pacific SLOC.¹²³ The situation is also worsened by Russia's aggressive behavior toward Japan over the disputed Kuril Islands/Northern Territories with Japan and, together with China, against US theater missile defense deployments with Japan and South Korea.¹²⁴

In a NATO context, the adhesion of Finland and Sweden allows the alliance to strengthen its deterrence by denial posture against Russia and subthreshold activities, notably through better domain awareness, air defense capabilities, and airspace and subsea dominance.¹²⁵

With regard to China, Arctic-specific deterrence must continue to deny Beijing the ability to impose its vision on Arctic governance and increase its direct access to the region, especially concerning future military presence with or without Russia. Beijing sees itself as a regional “public good provider”¹²⁶ able to slowly shape future norms and governance structures while investing time and effort now to secure the best position possible in a changing Arctic.

Integrated Arctic deterrence must also focus on imposing cost on continued low-intensity-warfare operations and other forms of subthreshold destabilization. This is particularly relevant for the protection of Arctic critical underwater infrastructure, and notably fiber-optic data cables in key regional choke points.¹²⁷

Extended deterrence through presence

As recalled in the DoD Arctic strategy, Arctic-specific integrated deterrence against existing regional threats must be accomplished through more physical presence.¹²⁸ For the US, this takes the form of joint operations with NATO and allies as well as regular exercises, especially naval drills, across circumpolar geography.¹²⁹

Increasing the scope and range of missions of the UK-led Joint Expeditionary Force would also represent a valuable step forward as it would offer the European High North a high readiness force in the Arctic. In a NATO context, the alliance must deepen the range of Arctic-specific drills, not least to bridge the operational learning curve in circumpolar operations — with the caveat of finding the appropriate balance between sufficient presence and over-militarizing the region.

The idea of forward presence for extended deterrence is not Arctic specific. What makes it “Arctic” in essence is the need to uphold international law by demonstrating continued access and innocent passage through potentially contested bodies of water. Deterrence through the protection of freedom of navigation in the Arctic under the United Nations Convention on the Law of the Sea (UNCLOS) is at the heart of the US NSAR.¹³⁰

The concept of freedom of navigation, however, is feeding Russia's obsessive quest for control over Arctic waters in the AZRF and access beyond. Indeed, Russia persists in interpreting the NSR as a body of "internal waters" under Article 234 of UNCLOS (also known as the Ice Clause). Under the impact of climate change and seasonal sea-ice reduction, the issue is that ice coverage is no longer guaranteed, threatening the viability of the Ice Clause. The first successful Russian passage of energy vessels through the NSR without icebreaker escort in September 2023 is a case in point.¹³¹

For the past few years, Moscow's rhetoric has been particularly aggressive toward purported Western-led freedom of navigation operations (FONOPs) — with the US and NATO seeking to "storm"¹³² or "snatch"¹³³ the NSR from the Kremlin's control. Naval forces and the FSB alike are also adapting training and capabilities to counter perceived "aggressive action from other countries."¹³⁴ The US NSAR and DoD strategy were undoubtedly pored over in Russia, where propaganda outlets have been denouncing Western efforts at "deciding the region's future by force"¹³⁵ or "inviting confrontation"¹³⁶ in the Arctic.

Moscow's FONOP paranoia reached a new high when the Kremlin went to great lengths to protect its perceived Arctic interests through legal means. Russia passed a law in December 2022 updating the NSR legal status and rights of transit overtly restricting foreign flag navigation through the Kara Gate, the Vilkitsky Strait by Severnaya Zemlya, and the Sannikov Strait by the East Siberian Islands.¹³⁷ Closing navigation through specific NSR choke points represents an attempt to preempt potential foreign FONOPs.¹³⁸ Such legal changes also represent highly discriminatory rules that go against UNCLOS.

Regardless of actual Western intentions, the Kremlin is adamant (or has self-constructed the belief) that its contested interpretation of the NSR's status under the Ice Clause will soon be tested by the US or NATO through the organization of a FONOP. This would arguably take the form of a NATO or US naval operation trying to sail through contested choke points along the NSR, or naval assets breaching the December 2022 law to ascertain innocent passage and freedom of navigation under UNCLOS.

The Arctic 7 must be careful to avoid a "FONOP vicious circle" where tit-for-tat demonstrations of access would become routine, with the risk of increasing incidents.¹³⁹ The current situation represents a unique risk of Arctic miscalculation that the Arctic 7 will have to carefully monitor. Indeed, conducting a US- or NATO-led FONOP in the Arctic — let alone close to the AZRF — carries costs. Conversely, inaction would vindicate Russia's belief that the NSR represents an ice-covered internal body of water.¹⁴⁰

The role and place of modern technology in the Arctic

The Arctic is ripe for contestation with emerging and disruptive technologies. The regional threat environment requires new technologies to better identify threats, especially low-intensity warfare activities coming from Russia and China, as well as to achieve overall domain awareness. Future deterrence concepts will also have to stay relevant in the face of modern technologies, and especially considering remote access to a changing Arctic.

Arctic-specific capabilities

Continued investments in Arctic-specific hardware and equipment are paramount for successfully deterring Russia's contestation efforts and Chinese regional encroachments. More than ever, Arctic capabilities must respond to specific missions.

NATO and allies must define what capabilities they will require to operate in the region. As noted above, across the NATO 7 nations critical capabilities gaps abound, in cold weather hardware, ice-strengthened assets, ice-capable ships with anti-aircraft and anti-submarine capabilities,¹⁴¹ infrastructure suited for effective early warning threat detection systems and air defense,¹⁴² radar coverage and aerial domain awareness, subsea sensing, and Arctic-related logistics and resupplies, among others.

An essential part of the US DoD Arctic strategy's "monitor-and-respond" approach is to enhance US Arctic capabilities in critical areas such as domain awareness and dedicated cold weather equipment.¹⁴³ Yet the US and the Arctic 7 as a whole have a low starting point in terms of cold weather and ice-strengthened capabilities.

Regarding conventional capabilities, the current environment has shown the need to increase physical access and presence in the region thanks to icebreakers. Recognizing that it will not close the "icebreaker gap" on its own, the US recently unveiled a trilateral partnership with Canada and Finland called the Icebreaker Collaboration Effort, or ICE Pact.¹⁴⁴ The ICE Pact will help build polar icebreakers and other surface assets in the logic of burden sharing and comparative advantages — although it heavily leans on ensuring job security and retaining skills in US shipyards.

Another paramount priority in conventional capabilities is the continued modernization of North Warning System assets and NORAD more widely. The 2023 incident with "Chinese spy balloons"¹⁴⁵ depicted not only the importance of NORAD for threat identification and destruction but also how vulnerable the system



Photo: US Air Force augments Baltic Air Policing from Estonia. Credit: NATO via Flickr.

was in terms of blind spots, especially early threat identification and wider domain awareness.

NORAD modernization is slow to materialize but essential: A modern and robust air defense is instrumental in keeping the whole Arctic secure, and not just North American skies. As part of North Warning System upgrades, new over-the-horizon radars will partly solve the issue of early threat detection and tracking. This must happen in parallel with improvements in multilayered and multipurpose remote sensing capabilities, including for space-based threats.

Finally, the Arctic 7 must continue to invest in offensive, standoff capabilities that can help counter Russian regional military assets. This includes better air defense and long-range missile systems to contest Russian ambitions of control (*Bastion* defense) and denial (extended anti-access and area denial systems) beyond the AZRF. It also involves anti-submarine warfare, mine counter-measure capabilities, and maritime patrol aviation capabilities — an area where NATO lacks operational practice.¹⁴⁶ Another important aspect is to harden Western Arctic military infrastructure and systems against Russian cyber and electromagnetic warfare capabilities.

Arctic domain awareness

The US and the Arctic 7 critically lack comprehensive aerial, maritime, and situational domain awareness in the Arctic. In simple terms, the lack of eyes and ears means gaps. Yet domain awareness is key to anticipating current threats and predicting future ones in a region characterized by vast distance, complex geography, and harsh climate.

The Arctic 7 has largely acknowledged and identified existing domain awareness gaps and the need for increased capabilities on both sides of the launch.¹⁴⁷ First, more situational awareness capabilities are required such as radars and tracking and forecasting remote sensors. These assets will also be instrumental for search-and-rescue operations, environmental protection, and climate change mitigation.¹⁴⁸

Second, C5ISR (Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance, and Reconnaissance) capabilities will help improve communication, positioning, and navigation across the region. Such capabilities will also be used for civilian operations such as search and rescue.

Finally, domain awareness rests on better left-of-launch threat detection and tracking.¹⁴⁹ With the introduction in the US of the concept of missile defeat,¹⁵⁰ modern early detection and remote sensing capabilities are needed to better identify and target adversary launch complexes before missile launch.

As part of multidomain threat detection, comprehensive domain awareness must take place across all domains:

- Aerial surveillance — notably with maritime patrol aircraft rotations, NATO Air Policing missions in Iceland, and the deployment of F-35 fighter jets in Norway, Greenland, and Finland¹⁵¹
- Maritime domain awareness — for instance, surface and subsurface sensors for seabed warfare threat detection and Arctic underwater listening posts
- Space-based assets for missile warning and observation
- Cyber domain and across the electromagnetic spectrum

Better domain awareness must also happen jointly between the Arctic/NATO 7 and their partners. Individually, the Arctic 7 possess highly developed capabilities but often lack the capacity to seamlessly share data and consequently achieve full circumpolar awareness. This will therefore require increased intelligence sharing and interagency cooperation. Ultimately, the goal is to reach full seabed-to-space circumpolar awareness with multidomain data fusion; intelligence, surveillance, and reconnaissance (ISR); and networks of overlapping sensors.¹⁵²

Like elsewhere, the alliance and its allies must retain its advantage over time, space, and information — especially considering how complicated the environment is. Overall, NATO must find a proper “speed of relevancy” in the Arctic. In this, leveraging modern technology is critical to achieving comprehensive domain awareness and enhancing common knowledge of future Arctic challenges.

Is remote access the future of Arctic presence?

As part of discussions on domain awareness in the Arctic, another aspect of the debate on modern technology is to assess the balance between physical human presence and remote access through uncrewed platforms and autonomous systems in a changing Arctic. Under the impact of climate change, year-round, ice-free access to the Central Arctic Ocean will not happen for several decades.

By mid-century and beyond, uncrewed and autonomous technology, boosted by the recent artificial intelligence revolution, might be the best solution for commercial, civilian, and military operators to ensure remote presence and overall domain awareness in the Arctic. If sovereignty enforcement will continue to require constant human presence, certain operations might be entirely devoted to modern remote systems.

Climate change will completely disrupt coastlines across the Arctic, leading to a form of depopulation — especially for Indigenous communities. Yet Arctic communities represent the best domain awareness possible: direct human intelligence and acute local knowledge. In this, decreased human presence across the region might give more opportunities for nefarious state-based activities. In other words, climate change-induced Arctic depopulation represents an additional threat to domain awareness.

Finding the appropriate balance between human presence and remote access will inform US and NATO procurement requirements for future Arctic operations in key technology sectors for domain awareness and beyond.

Space capabilities

Space-based surveillance capabilities are integral to domain awareness. The US is generally lacking Arctic-specific space capabilities. The situation is compounded by the region’s high latitude, provoking coverage gaps, as well as unique electromagnetic disruptions.¹⁵³

Today, spatial resolution with current satellites is high enough to track and monitor movements in the Arctic. What is lacking, however, is increased resolution and year-round high-resolution imagery. In this context, synthetic aperture radar (SAR) imaging onboard satellites offers an innovative technology for greater resolution



Photo: US Marines in Norway prepare for Steadfast Defender 2024. Credit: NATO via Flickr.

and near-real-time imagery. The technology has become paramount for polar observation, navigation, and overall Arctic ISR.

SAR allows seeing through thick Arctic cloud coverage, an important feature for low Earth orbit circumpolar observation. SAR represents a booming technology, primarily carried by private companies, especially from Arctic nations such as Finland's ICEYE.¹⁵⁴ In the coming decades, quantum computing will offer solutions for ground-based space stations and satellite antennas.

Satellite technology is paramount for Arctic communications and connectivity. Many projects are at play, such as the new polar Enhanced Satellite Communication Project funded by Canada¹⁵⁵ and the recent arrival of Starlink for basic connectivity in the Arctic. The recent signature of a partnership between the US and Norway to jointly launch and deploy polar-dedicated satellites is another positive step forward.¹⁵⁶

On top of space-based assets, ground stations will also have to be upgraded to download the exponential data traffic. In the future, ground stations might be entirely replaced by satellite relays directly embedded in the satellite constellations. More satellites, and more launchpads for satellites, will be necessary as well as better constellation and debris management across Earth's orbits.¹⁵⁷

More competition with China in space is inevitable, especially as Beijing develops optical satellite architecture for polar operations and seeks to increase the amount of ground-based infrastructure in polar regions.¹⁵⁸

Uncrewed platforms and autonomous systems

The integration of uncrewed platforms equipped for Arctic operations will likely grow exponentially in the coming decades. Modern capabilities will include fleets of aerial (UAV) and underwater (UUV) uncrewed vehicles that will be used for tracking, navigation and fleet management, domain awareness and ISR, and the protection of critical undersea infrastructure and other assets. The exact degree of autonomy of these systems remains up for debate.

Moving forward, UAVs and UUVs will be equipped with sensors for early-warning detection and more offensive systems, notably electronic countermeasures. Considerable investment remains to be made to operate fleets of UAVs in the Arctic — not least because of network and communication issues, as outlined by NORAD and NORTHCOM Commander General Glen D. VanHerck.¹⁵⁹

Experts have been calling for a rotational UAV presence in the Arctic to boost domain awareness across NORAD's and NORTHCOM AoRs and beyond.¹⁶⁰ This represents a sound and achievable first step that should be closely considered. The rest of the Arctic 7 should also follow suit. A first step in this direction is the announcement by Norway in April 2024 that it will turn the Andøya Air Station into a base for long-range drones for domain awareness as part of a multinational endeavor.¹⁶¹

Overall, future procurement of Arctic capabilities and platforms requires that deployed technologies are cold weather and Arctic enabled by design rather than by default.¹⁶² This will require adaptations in military research and development and procurement to determine what makes a specific asset "Arctic specific."

Another part of the debate is the balance between deployed systems into the Arctic and assets remaining there year-round. The deployment of more assets in Arctic conditions will require better winterizing solutions — mostly bases and infrastructure development and modernization across Arctic allies.¹⁶³

Ultimately, however, the role and place of modern Arctic-specific technology will be determined by political and budgetary constraints more than anything else. The US and the Arctic 7 will have to craft smart investment plans, increase capabilities sharing, and pool resources.

Summary of policy recommendations

- In the context of the United States' 2022 "National Strategy for the Arctic Region" and the Department of Defense's "2024 Arctic Strategy," the US government should continue to **expand its global perspective regarding presence and access to the Arctic**.
- US stakeholders should identify **key priorities for capabilities and procurement** of Arctic-enabled systems, specifically domain awareness capabilities and ice-capable ships with anti-aircraft and anti-submarine capabilities, as well as streamline coordination efforts internally as well as with NATO allies.
- US NORTHCOM must become the "Arctic capability advocate" envisioned by the 2024 DoD Arctic strategy. This will require **increased coordination** with EUCOM (North Atlantic Area of Responsibility) and INDOPACOM (military assets and troops in Alaska), especially regarding deployments, readiness, and exercises.
- NATO must both determine its **role and place in circumpolar security** and internally build its Arctic dimension and framework of operations — without necessarily creating a full-fledged strategy or an "Arctic command." In other words, the Atlantic alliance should answer the questions "how much NATO" is needed and necessary in the Arctic as well as "what kind of NATO" is relevant to the region.
- **NATO needs an operational roadmap for the Arctic.** This can be achieved by building internal awareness and knowledge of Arctic affairs as well as taking stock of already existing endeavors and streamlining them under one umbrella. This will require more information and intelligence sharing, and ultimately better coordination, such as with the help of a dedicated Arctic working group.
- The Nordic allies should **seek opportunities to lead in the alliance on regional security challenges**. As cooperation and collaboration continue to grow, particularly among Norway, Sweden, and Finland, these nations can provide needed insights and recommendations to the alliance on how to approach the High North security challenges and lead on a comprehensive NATO strategy.
- NATO also needs to **determine the contour of command and control** organization for Arctic operations, likely under JFC Norfolk. Critical to this debate will be the interconnection with JFC Brunssum, NORAD, and US command structures within NATO in an Arctic context.

- NATO's role and place in Arctic military security affairs must be caveated by a thorough **discussion on the limits of NATO's regional presence**. The alliance should not monopolize the debate on regional hard security issues, nor should it be the sole and only arena of discussion. NATO must find an appropriate balance between minimal presence and over-militarizing Arctic affairs.
- In terms of future governance, the Arctic needs a **dedicated military security architecture** — although the exact format and what it would fall under remain to be determined. The Arctic 7 must learn to bridge diverging national views on circumpolar security, especially what constitutes defense and security priorities within the current threat environment.
- The Arctic 7 should collectively agree on what represents acceptable, legitimate, and nonthreatening military operations at peacetime in the region. This could be achieved by creating an **Arctic Military Code of Conduct**.
- Discussions around Arctic military security affairs should come with the caveat that they should as far as possible **not securitize the debate**. The intrusion of geopolitics and a hard security discourse in the Arctic must not take wider discussions hostage or overshadow the conversation on the impact of climate change, environmental protection, or human security in the region.
- **Arctic-specific deterrence** must consider effectively limiting nefarious behavior from Russia, while avoiding the risk of miscalculation and horizontal escalation. Deterrence must also factor in critical regional choke points such as the GIUK-GIN gaps and the Bering Strait.
- Integrated Arctic deterrence should focus on **imposing cost on continued low-intensity warfare operations** and other forms of subthreshold destabilization visible in the region such as air incursions, snap military exercises, GNSS/GPS jamming and electronic warfare operations, and subsea warfare activities.
- The Arctic is ripe for contestation with **emerging and disruptive technologies**. The regional threat environment requires new technologies to better identify threats — especially low-intensity warfare activities coming from Russia and China — and achieve overall domain awareness.
- **Future deterrence concepts** will have to stay relevant in the face of modern technologies, especially considering remote access to a changing Arctic.
- Finding the **appropriate balance between human presence and remote access** will inform US and NATO procurement requirements for future Arctic operations in key technology sectors, particularly uncrewed platforms, autonomous systems, and space-based assets.

- Continued investments in Arctic-specific hardware and equipment are paramount for successfully deterring Russia's contestation efforts and potential Chinese encroachments. As part of **multidomain threat detection**, comprehensive domain awareness must be prioritized through aerial surveillance, maritime domain awareness, space-based assets, and in the cyber domain and across the electromagnetic spectrum.
- Better domain awareness must also happen jointly between the Arctic/NATO 7 and their partners. This will require increased intelligence sharing and focus on interagency cooperation. Ultimately, the goal is to reach full **seabed-to-space circumpolar awareness** with multidomain data fusion, ISR, and networks of overlapping sensors.

Biography

Mathieu Boulègue is a nonresident senior fellow with the Transatlantic Defense and Security program at the Center for European Policy Analysis as well as a global fellow with the Polar Institute at the Wilson Center.

In his research, he focuses on polar geopolitics, military-security issues in the Arctic and the Antarctic, post-Soviet defense policy and military affairs, Russian-NATO relations, as well as Russian-Sino defense and security relations. Boulègue is also a consulting fellow with the Russia and Eurasia Programme at Chatham House, the Royal Institute of International Affairs.

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