

US MILITARY OPTIONS TO ENHANCE ARCTIC DEFENSE

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EXECUTIVE SUMMARY

Despite all the focus on strategic competition in Europe and Asia, one region of the world has at long last begun receiving the attention it warrants from the U.S. military: the Arctic. The Arctic is of unique importance to all Americans. First, the United States is one of just eight sovereign Arctic states — joined by Canada, Denmark (thanks to its autonomous territory Greenland), Finland, Iceland, Norway, Russia, and Sweden — which allows for the exercise of certain sovereign rights in the region and bestows member status in the international Arctic Council.¹ China is, of course, notably absent, despite its self-proclaimed (and at best dubious) status as a “near-Arctic” state² and its observer status on the Arctic Council. Second, the effects of global climate change are increasing access to previously inaccessible Arctic areas and important transit and trade routes. This increased access results in yet another theatre for strategic competition, and thus, it is curious that the Arctic was not mentioned in the Biden administration’s Interim National Security Guidance³ — although it has engaged on Arctic issues around this month’s Arctic Council summit.⁴

To better elevate Arctic issues to their proper place in strategic dialogue, especially amongst the armed forces, we argue that the U.S. military should prioritize engagement through international, defense-oriented bodies like the Arctic Security Forces Roundtable, redraw geographic combatant command borders to include the Arctic region under NORTHCOM, and continue improving operational relationships with allied and partner nations through joint exercises and training. Additionally, we outline specific actions that each military service can individually implement to improve overall U.S. military posture and readiness in the region.

BACKGROUND

I’m agnostic to the causes... All I know is there is water where there was once ice.

— Admiral Thad Allen, former commandant of the Coast Guard⁵

The effects of climate change are reducing Arctic ice, which is leading to more access, exploration, economic exploitation, and perhaps eventually the attempted exclusion of those who are not present. And with presence, of course, comes influence.⁶

But, in the Arctic, it is extraordinarily challenging to sustain defense operations because of the inherently hostile environment, great distances, and lack of support infrastructure.

Regardless of these challenges, both Russia and China claim strategic interests in the region. The Arctic is part of Russia’s national identity. The 2014 Russian Military Doctrine states that the safeguarding of Russian interests in the region is a main task.⁷ Russia exercises commercial administrative control over the Northern Sea

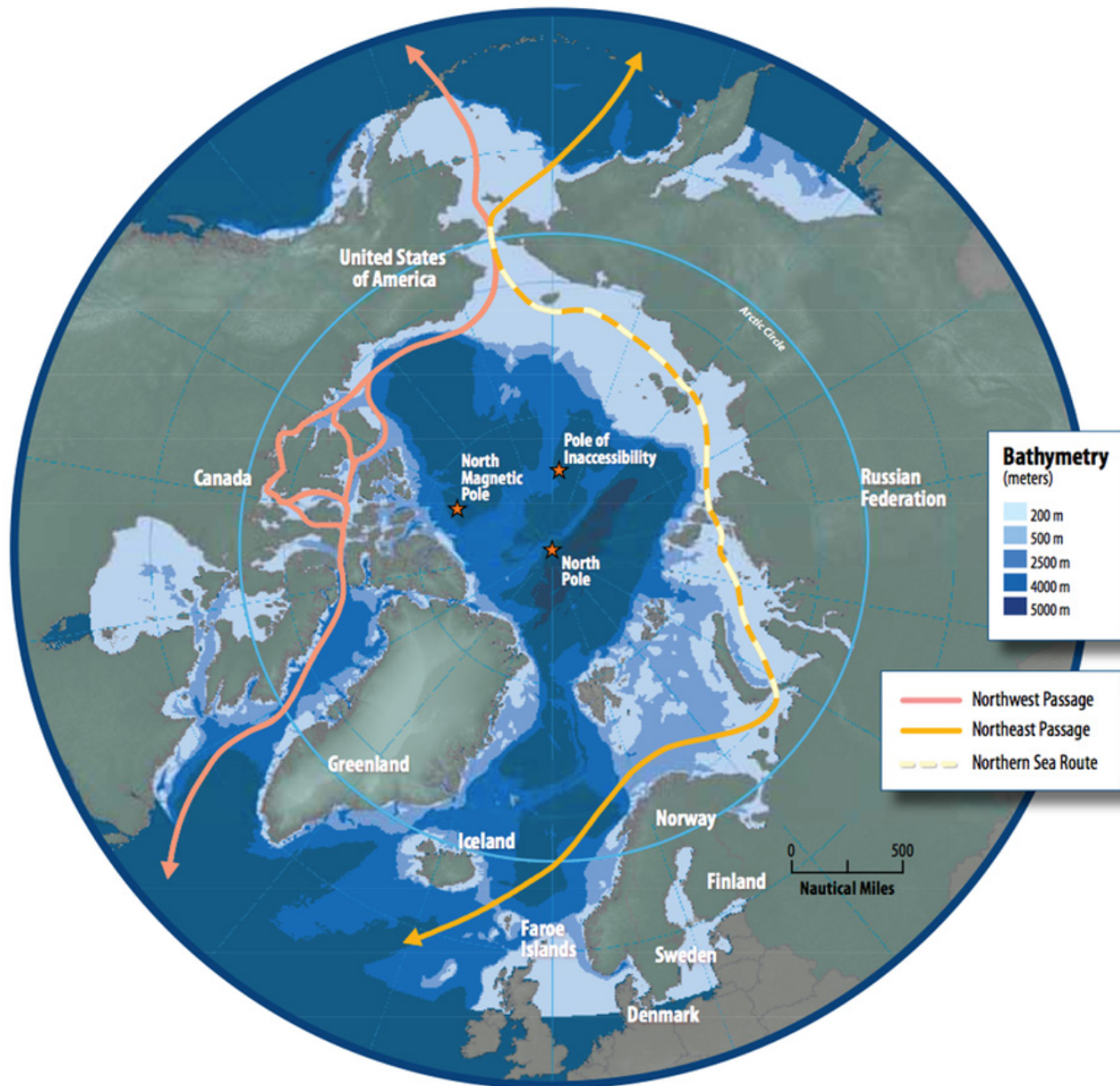
Route⁸ by requiring transiting commercial vessels to pay for pilotage and icebreaking services and has claimed an estimated 80% of the oil and gas under the Arctic shelf.⁹ Further, Russia is aggressively investing in infrastructure and improving its Arctic military posture.¹⁰ In fact, the Russian military has recently upgraded its bases, reallocated more air and naval assets to the region, and increased the frequency of regional shows of force.¹¹

China lobbied for and was granted observer status on the Arctic Council as a self-proclaimed “near-Arctic state”¹² in 2013.¹³ Currently, China claims that it is primarily interested in the economic benefits of the region, but as is the case with its other initiatives around the globe, it is also keenly mindful of the related security implications of its presence there.¹⁴ Indeed, dual-use pursuits¹⁵ and holistic, ends-based strategic thinking¹⁶ are hallmarks of China’s 21st century rise. China also views the region as a means to expand its Belt and Road Initiative and as an alternate route for its energy supply.¹⁷

The United States, its partners, and allies should seek to deepen regional cooperation amongst themselves,¹⁸ and as appropriate, with both Russia and China, but they must also be mindful of actions that could serve to push Russia and China closer together. While the current conventional wisdom is that there is an upper boundary for Sino-Russian security collaboration and that as such, their partnership in the Arctic is unlikely for a whole host of reasons,¹⁹ the two recently publicized their intent for a near-future joint moon base, perhaps signaling a renewed tolerance to partner in areas once thought to be beyond their existing geopolitical relationship.²⁰

Arctic activity has largely focused on nuclear sub-surface power projection and deterrence in addition to scientific research during the Cold War and its immediate aftermath. But the decrease in year-round sea ice and sea ice thickness has global effects on weather systems and ecology, and will inevitably increase human activity due to the desire to exploit resources, engage in recreational activity, and increase commercial activity and shipping via two trans-Arctic routes.

FIGURE 1: TRANS-ARCTIC ROUTES



Source: Arctic Council²²

This makes the Arctic of growing strategic value, especially in the realm of security competition. Many Arctic states are developing Arctic critical infrastructure and establishing more robust Arctic military presence to some extent or another. Ongoing and foreseeable future increases in Russian and Chinese military activity will likely create a security dilemma whereby the United States, Canada, and the Nordic countries find themselves in need of reciprocation.

The Arctic Council was established in 1996 as “the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic States.”²² However, its mandate, as articulated in the Ottawa Declaration, explicitly excludes military security. The increased strategic competition in the region makes it crucial for Washington to have an open security dialogue with Moscow regarding Arctic security issues, beyond the Arctic Council. Moreover, even though the

melting Arctic presents many challenges, it also offers opportunities to create military advantages. The U.S. armed forces have recognized this and have generated a host of new Arctic strategies.

DEPARTMENTS OF DEFENSE AND HOMELAND SECURITY'S STRATEGIES FOR THE ARCTIC

The goal of the Department of Defense (DOD)²³ and the Department of Homeland Security (DHS) in the Arctic is to defend the homeland and to cooperate with allies and partners to address shared interests. These departments do this by building awareness of threats, improving operational capabilities, and supporting a rules-based order in the region.

Department of the Army

The Department of the Army's recently released Arctic strategy²⁴ focuses on regaining Arctic dominance by establishing an Army able to generate and project forces that are trained, equipped, and sustained to fight, win, and survive in extreme cold weather and high-altitude conditions. To achieve this, the Army plans to establish an operational two-star headquarters with uniquely trained and equipped combat brigades to increase the Army's cold-weather capabilities. The strategy also highlights the Army's need to improve the material readiness of Arctic-capable units to conduct extended operations in the Arctic region as well as the need to improve individual and collective training of forces to operate in the region. The Army also believes returning to the Arctic provides new opportunities to engage and train with allies and partners who also operate in extreme cold and high-altitude environments.

Department of the Air Force

The Department of the Air Force is a key DOD player in the Arctic and its new strategy reflects this.²⁵ Crucially, the Air Force plays a lead role in homeland defense through its missions via the North Warning System which helps detect, track, and engage air and missile threats. The Air and Space forces

provide land and space-based awareness in addition to rapid response options in the region through fighter and refueling aircraft. This makes the Arctic a key area to project combat-credible power into Eurasia. The department also runs an Arctic Weather Survival school and operates the only ski-equipped aircraft, LC-130, in the U.S. military's inventory. Gaining skills to operate in the environment is also key for generating combat power. The unique advantages of using airpower in the region meets the need to overcome the challenges inherent in such a vast area. In fact, the nation's largest airspace range used for high-threat training is in Alaska.

Department of the Navy

The Department of the Navy released its strategic blueprint for the Arctic on January 5, 2021.²⁶ The blueprint outlined the challenges and opportunities resulting from a more accessible region in an era of increased great power competition. It also highlighted the need for enhanced naval presence by integrating specific Navy and Marine Corps capabilities, strengthening of cooperative partnerships with Arctic nations, and the building of a more capable Arctic naval force through modernization, training, and updated employment concepts. These objectives are intended to better defend the homeland, promote and preserve U.S. national interests in the region, and protect sea lines of communication.²⁷

Department of Homeland Security and Coast Guard

DHS promulgated an updated "Strategic Approach for Arctic Homeland Security" on January 11, 2021.²⁸ The U.S. Coast Guard, a DHS component and the only U.S. armed force²⁹ to reside outside of the DOD, features prominently in the DHS strategy. This Coast Guard focus is for good reason, as the service has provided security and safety presence in the Arctic for over 150 years.³⁰ Through its bases and deployable cutters and aircraft,³¹ the Coast Guard conducts maritime safety, security, and governance operations every day³² to "reinforce

U.S. sovereignty, strengthen rules and norms for a safe and stable Arctic, enhance partner nation cooperation, and promote a resilient and safe and secure Arctic.”³³

The DHS strategy is noteworthy in that for the first time, it articulates a whole-of-department approach to Arctic homeland security and calls out express roles and responsibilities for other operational components like the Critical Infrastructure Security Agency (CISA), Customs and Border Protection (CBP), and the Federal Emergency Management Agency (FEMA). This whole-of-department approach is a critical first step to wielding a true whole-of-government solution set to the panoply of Arctic challenges.

THE WAY AHEAD

The new service strategies are good initial steps, but further efforts are needed to improve U.S. military posture and readiness in the region. Successful Arctic defense operations require significant international engagement, simplified military command relationships, and improved joint exercises and training.

First, the U.S. military should prioritize engagement through the Arctic Security Forces Roundtable (ASFR) and among the Arctic states’ armed forces chiefs to help mitigate the risk of rising military tensions in the Arctic. The ASFR, which includes Russia, is an important international defense-specific body. It exists in addition to broader Arctic governance structures like the Arctic Council, the Barents Euro Council, and the Arctic Coast Guard Forum. Indeed, all these multilateral arrangements are important venues to clearly articulate national strategic interests and build cooperation amongst Arctic states, where it is appropriate to do so.

The U.S. military should simplify command relationships and streamline authorities by including the entire Arctic region under one geographic combatant command.

Second, the U.S. military should simplify command relationships and streamline authorities by including the entire Arctic region under one geographic combatant command. Currently, the region cuts through the areas of responsibility of three relevant geographic combatant commands — NORTHCOM, EUCOM, and INDOPACOM — and directly bears on the roles and responsibilities of all the functional combatant commanders. Arctic issues are admittedly transnational and currently do not fit neatly into a single four-star commander’s area of responsibility. But, designating a primary combatant command for Arctic issues and redrawing boundaries accordingly would elevate the visibility of the strategic importance of the region and facilitate coordinated operations and mission support.

We recommend NORTHCOM as the primary geographic combatant commander for the Arctic. NORTHCOM is the best choice because of its inherent responsibilities for the defense of the homeland and its shared responsibilities with Canada through the North American Aerospace Defense Command for defending the northern Arctic approaches to the North American continent.³⁴ NORTHCOM could then use its convening authority to bring together stakeholders (INDOPACOM, EUCOM, etc.) to synchronize efforts behind unified DOD guidance. There are likely authorities that each combatant command has that might be brought to bear to solve each other’s problems. But finding solutions starts with placing a specific combatant commander “in charge” who can ask the hard questions and begin working possible solutions.

Some may argue that including the Arctic region under NORTHCOM may reduce visibility on other influential actors affecting the region such as Chinese hybrid military and paramilitary activities intended for the Arctic, but this issue can easily be mitigated through close coordination between INDOPACOM and NORTHCOM. Additionally, designating NORTHCOM as the nation's Arctic defense champion would not only facilitate closer integration amongst the DOD services but also has the advantage of capitalizing on the preexisting close relationships between that combatant command and DHS, in addition to streamlining coordination with other U.S. government departments and agencies.

Third, the U.S. military must continue improving operational relationships with allied and partner nations through joint exercises and training. Compounding decades of allied and partner Arctic operational and logistics support expertise will improve the U.S. joint force's ability to operate in the region and enhance interoperability. Russia's and China's strategic interests and increased activities in the region have led to an increase of NATO countries participating in training exercises across the Arctic region and the U.S. military should continue to build on Arctic operational relationships. The upcoming Nordic-U.S. Arctic Challenge aviation exercise is a great example of an air-focused, multinational, Arctic training event that will no doubt benefit all its participants.³⁵

RECOMMENDATIONS FOR THE U.S. MILITARY SERVICES

Army

As the Army looks to increase its cold-weather capabilities by improving the material readiness of Arctic-capable units, it will also be important for it to include Arctic requirements as part of its modernization priorities: long-range precision fires, next generation combat vehicles, future vertical lift, network, air missile defense, and soldier lethality.³⁶ The unique environment of the Arctic will require

developing concepts for operating there that will, in turn, drive the requirements and capability development that support mobility and sustainment of its modernization platforms in Arctic conditions.³⁷

Improving Arctic capabilities across the force is a priority in the Army's Arctic strategy. The Army's proponent for cold-region training is the Northern Warfare Training Center (NWTC) at Fort Wainwright, Alaska. NWTC provides essential training to unit leaders and individual soldiers, enabling small unit operations in cold-weather environments and mountainous terrain. However, the Army should also look to invest in training complexes that will enhance its ability to exercise command and control and combined arms maneuver of the Arctic-capable units they are building.

The Army will also need to work with the other services to improve operational effectiveness as well as reduce sustainment demands in the Arctic region. The Army should continue to advance collaboration on Combined Joint All-Domain Command and Control (CJADC2) with the Air Force and naval services, and consider how best to fold in the Coast Guard, as appropriate. The substantial presence of all the services in Alaska will allow for multi-domain formations to experiment and train to achieve true convergence as a joint force. The harsh environment, extended distances, and inadequate sustainment infrastructure also necessitates the need for the Army to work with all of its sister services to explore and leverage alternative technologies for new power generation systems to lessen the sustainment requirements while operating in the Arctic region.³⁸

Space Force

The U.S. Space Force (USSF) should continue to develop advanced capabilities and expand its understanding to support polar operations. As such, the USSF should advance its efforts to organize, train, and equip the forces and resources necessary to maintain and advance complete Arctic domain awareness. The service should also look for ways to build relationships with civilian agencies charged

with similar missions, including relevant members of the Intelligence Community (IC) and other space-faring agencies like the National Oceanographic and Atmospheric Administration. In doing so, the USSF should champion both quantitative and qualitative improvements to resilient space-based Arctic intelligence, surveillance, and reconnaissance (ISR) coverage for the entire U.S. government. Likewise, U.S. Space Command should consider what unique challenges, if any, Arctic operations pose to its responsibilities to support terrestrial defense operations with U.S. space assets operating in increasingly congested, contested, and competitive³⁹ earth orbits and whether the similarly increasingly competitive high latitudes present additional risk to those assets, and particularly those that operate in polar orbits.

Air Force

In the air domain, little has changed in the Arctic. The Air Force should focus on what it does best: contribute to awareness and defense of the homeland via defense of air and missile threats. However, it will not always be the case that a good defense will be enough. With the other services, the Air Force should look into operational concepts that provide options to military commanders across the four “C”s: contingency, competition, crisis, and conflict.

The Air Force could aggregate and “scale-up” new operating concepts that deal with long distances and survivability already being used in the Pacific. For instance, F-35s practice island-hopping⁴⁰ and F-22s use the “Rapid Raptor” concept to deploy four aircraft to an austere environment.⁴¹ Another operational issue is how to keep the fighters refueled. Innovative Airmen recently tested the first ever “engine running refuel” of a KC-135 Stratotanker that reduced time on the ground from four-to-six hours to one hour.⁴² What is in common among these three types of aircraft? They are all based in Alaska. It is worth taking a hard look at how these concepts may or may not be useful in the competition in the Arctic.

Navy and Marine Corps

The Navy has traditionally focused on sub-surface operations in the Arctic. However, rapidly melting Arctic waters will result in the doubling of seaborne movement and trade through the region during the next two decades, uncovering undiscovered natural gas and oil reserves, and — despite existing moratoriums⁴³ — enticing international fishing fleets into the region.⁴⁴ The melting Arctic waters also expose the northern maritime approaches to the North American continent, requiring practical ways to defend and control sea lines of communication. Both China and Russia are significantly investing in civilian and military Arctic capabilities to either control or dominate the region’s resources and sea lines of communications.⁴⁵

The recently released Naval Arctic strategy refocuses the naval services on enhancing presence in the region and modernizing capabilities to meet these rising challenges. The Navy should focus on sea control to enhance deterrence efforts in the Arctic by increasing surface ship presence there. It should also explore building expeditionary mobile bases that could be used as support stations for air and maritime assets.⁴⁶ Another option would be to employ an Expeditionary Sea Base ship to act as a mobile sea base with a limited four-spot flight deck, providing forward-based command and control, facilitating access to prepositioned equipment, enabling employment of Special Operations Forces, and supporting airborne mine countermeasure capabilities.⁴⁷

The Marine Corps should support naval deterrence efforts by habitual deployments of Marine littoral regiments (MLR)⁴⁸ units into the Arctic. These MLR units can facilitate sea control and sea denial by employing small, mobile, long-range anti-ship missiles forces as well as expeditionary forward arming and refueling of aircraft; ISR coverage of key maritime terrain; air-defense, and early warning in various regions of the Arctic. The MLR units’ ability to conduct expeditionary advanced base operations implies the employment of mobile, low-signature, and relatively easy to sustain Marine amphibious

units from austere, temporary locations across a large area of operation.⁴⁹ MLR units should also deploy on board Coast Guard cutters operating in the Arctic to help establish some strategic ambiguity, distribute lethality, and enhance these ships' power projection and defensive capabilities, as appropriate.

The naval services should also leverage advances in artificial intelligence and drone automation to deploy long-endurance and extended-range unmanned surface ships capable of launching swarming anti-ship drones while providing persistent ISR capabilities to deployed U.S. and allied forces in the region. Finally, the naval services should strengthen cooperative partnerships with allied Arctic nations through both episodic and habitual training exercises and security cooperation activities.

Coast Guard

As the "era of Coast Guards"⁵⁰ takes hold and the age of strategic competition with state-based rivals shows no sign of slowing anytime soon, we must continue to question whether traditional conceptions of "defense" truly meet U.S. national strategic priorities, especially in the phase of national interaction short of armed conflict.

This makes it critical that the Coast Guard continue to serve in its post-9/11 role as an integrator between the DOD, the IC,⁵¹ and DHS, especially as more DHS components establish larger Arctic footprints and undertake additional Arctic operations. The DHS strategy specifically acknowledges this role for the Coast Guard in that there is little direction in the strategy that does not include at least nominal Coast Guard leadership or participation.

But most importantly, the Coast Guard must closely partner with the administration and Congress to continue the advancement of its new icebreaker construction program, the Polar Security Cutter (PSC), and any follow up icebreaker recapitalization program.⁵² As a start, this means an overt, clear, and consistent message from the Coast Guard

and unmistakable support from the Biden administration regarding the number of necessary ships and their envisioned capabilities, along with the the necessary logistics and infrastructure tail to effectively operate them.

The Coast Guard currently has two aged operational icebreakers, one heavy and one medium, and has received funding for the procurement of the first of at least three planned new polar icebreakers.⁵³ By way of comparison, the Navy just laid the keel for the 74th Arleigh Burke-class destroyer.⁵⁴ *Seventy-four*. Destroyers are not icebreakers and it is not an entirely fair direct comparison, but the difference in scale between naval shipbuilding and Coast Guard shipbuilding is stark.

This difference is made more stark in the Arctic because while it is the Coast Guard's conscious object to trade hard-power punch for multi-mission flexibility, Coast Guard forces are, at all times, military forces, and thus with proper design forethought in preserving sufficient space, weight, and power can "up arm" as appropriate, to facilitate more defense-oriented missions. This is not to say that the Coast Guard should mirror the hard-hitting kinetic capabilities of the Navy. Doing so would be folly and change the fundamental character of the service. But it does mean that with the right kit, Coast Guard icebreakers, starting with the PSC, should be able to serve, when necessary, as secure communications relay platforms and satellite uplink/download stations; mobile staging sites; resupply vessels; "lily pads" for manned and particularly unmanned aviation, surface, and subsurface vessels; and if history provides any guide, perhaps even anti-submarine⁵⁵ detection force multipliers. This last role, while a bit novel in this context, may prove the most important given recent reporting on the Russian military's interest in undersea communications and cable junctions, some of which flow through the Arctic, that carry nearly 100% of communications traffic between the United States and Europe.⁵⁶

There continues to be rumblings about funding additional icebreaker hulls, so that the United States can close the “icebreaker gap”⁵⁷ with its strategic rivals and field enough purpose-built breakers provide at least nominal regular coverage in both the Pacific and Atlantic Arctic,⁵⁸ as well as meet the service’s operational requirements to support the National Science Foundation in the Antarctic.⁵⁹

However, statutory restrictions on potential icebreaker design and cost efficiencies⁶⁰ may actually now be slowing icebreaker acquisition plans. DHS, the DOD (particularly the Navy and Marine Corps), and the Coast Guard should thus actively work with the administration and Congress on smartly addressing these existing restrictions in a manner that acknowledges that Arctic security, safety, and governance, and thus icebreaker construction, is a rare, truly national issue⁶¹ that transcends parochial interests.⁶² Further, the Coast Guard in particular must double down on the development and public articulation of the necessary national strategic ice-breaking capacity and interoperability capabilities, beyond the current “6-3-1” (6 total, 3 heavy, and 1 now!) icebreaker talking point.⁶³ While, to its great credit “6-3-1” certainly has helped frame the discussion for somewhat initially skeptical lawmakers and the Trump administration’s Office of Management and Budget and National Security Council staff,⁶⁴ greater clarity is necessary with respect to vessel type, number, and equipment outfit.⁶⁵ Now is the time to gain that clarity, so that Coast Guard icebreakers, starting with the PSC, can truly be the critically important, go-anywhere, do-everything lynchpin of the type of joint defense and security operations necessary to prevail in the Arctic.⁶⁶

CONCLUSION

There’s a saying in the Beltway that the urgent often overcomes the important. We should address the Arctic as an important issue before it becomes urgent.

There’s a saying in the Beltway that the urgent often overcomes the important. We should address the Arctic as an important issue before it becomes urgent. A growing sense of urgency is driven by the effects of climate change and intensifying strategic competition in the region.

A general policy approach should be Janus-like: balancing cooperation and competition. Diplomatically, with like-minded partners, the United States should continue to underscore the importance of a rules-based order and building a shared awareness of the region, its challenges, and opportunities. But there is more to be done. For one, investment in risk reduction, mitigation efforts, and defense diplomacy via mechanisms like the Arctic Security Forces Roundtable reduces tensions and increases cooperation in the region. Additionally, the DOD can consolidate responsibility and authority for the region under one military command structure. Assigning the Arctic region to NORTHCOM would provide unity of effort and a single actor to champion capability development and interoperability between services and allied nations. It also enhances deterrence through enhanced presence and increases U.S. and allied readiness through joint exercises and training. Each service has a unique role to play in order that their unified effort becomes more than the sum of its parts.

REFERENCES

- 1 “Arctic States,” Arctic Council, <https://arctic-council.org/en/about/states/>.
- 2 “China’s Arctic Policy,” (Beijing: The State Council, The People’s Republic of China, January 2018), http://english.www.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm.
- 3 Joseph R. Biden, Jr., “Interim National Security Guidance,” (Washington, DC: The White House, March 2021), <https://www.whitehouse.gov/wp-content/uploads/2021/03/NSC-1v2.pdf>.
- 4 Nikolaj Skydsgaard and Humeyra Pamuk, “Blinken says Russia has advanced unlawful maritime claims in the Arctic,” Reuters, May 18, 2021, <https://www.reuters.com/world/europe/russia-has-advanced-unlawful-maritime-claims-arctic-blinken-2021-05-18/>.
- 5 Bob Reiss, “Barrow, Alaska: Ground Zero for Climate Change,” *Smithsonian Magazine*, March 2010, <https://www.smithsonianmag.com/science-nature/barrow-alaska-ground-zero-for-climate-change-7553696/>.
- 6 David Vergun, “Coast Guard Commandant Wants Bigger Arctic Presence – How Cool is That?” U.S. Department of Defense, December 4, 2018, <https://www.defense.gov/Explore/News/Article/Article/1705544/coast-guard-commandant-wants-bigger-arctic-presence-how-cool-is-that/>.
- 7 “The Military Doctrine of the Russian Federation,” The Embassy of the Russian Federation to the United Kingdom of Great Britain and Northern Ireland, June 29, 2015, <https://rusemb.org.uk/press/2029>.
- 8 Olga Tanas and Dina Khrennikova, “Russia Aims to Boost Arctic Shipping by Subsidizing Higher Costs, Including Insurance,” *Insurance Journal*, October 21, 2019, <https://www.insurancejournal.com/news/international/2019/10/21/546018.htm>.
- 9 Anna Kireeva, “For all of Russia’s talk about oil drilling in the Arctic, most Arctic oil will go untouched,” *Bellona*, April 24, 2019, <https://bellona.org/news/arctic/2019-04-for-all-of-russias-talk-about-oil-drilling-in-the-arctic-most-arctic-oil-will-likely-go-untouched>.
- 10 Nick Paton Walsh, “Satellite images show huge Russian military buildup in the Arctic,” CNN, April 5, 2021, <https://www.cnn.com/2021/04/05/europe/russia-arctic-nato-military-intl-cmd/index.html>.
- 11 Kyle Mizokami, “Watch 3 Russian nuclear submarines smash through Arctic ice at once,” *Popular Mechanics*, March 30, 2021, <https://www.popularmechanics.com/military/navy-ships/a35970170/watch-russian-missile-submarines-break-through-arctic-ice/>.
- 12 Andrew Wong, “China: We are a ‘near-Arctic state and we want a ‘polar silk road,’” CNBC, February 14, 2018, <https://www.cnbc.com/2018/02/14/china-we-are-a-near-arctic-state-and-we-want-a-polar-silk-road.html>.
- 13 Patricia Zengerle, “China granted observer seat on Arctic governing council,” Reuters, May 15, 2013, <https://www.reuters.com/article/us-arctic-council/china-granted-observer-seat-on-arctic-governing-council-idUSBRE94E0IJ20130515>.

- 14 Heljar Havnes and Johan Martin Seland, "The increasing security focus in China's Arctic policy," The Arctic Institute, July 16, 2019, <https://www.thearcticinstitute.org/increasing-security-focus-china-arctic-policy/>; Rush Doshi, Alexis Dale-Huang, and Gaoqi Zhang, "Northern expedition: China's Arctic activities and ambitions," (Washington, DC: The Brookings Institution, April 2021), <https://www.brookings.edu/research/northern-expedition-chinas-arctic-activities-and-ambitions/>.
- 15 Missy Ryan, "The U.S. system created the world's most advanced military. Can it maintain an edge?" *The Washington Post*, April 1, 2021, https://www.washingtonpost.com/national-security/china-us-military-technology/2021/03/31/acc2d9f4-866c-11eb-8a67-f314e5fcf88d_story.html.
- 16 Thomas Wright, *All Measures Short of War: The Contest for the Twenty-First Century and the Future of American Power* (New Haven: Yale University Press, 2017).
- 17 Philip Wen, "China unveils vision for 'Polar Silk Road' across Arctic," Reuters, January 26, 2018, <https://www.reuters.com/article/us-china-arctic/china-unveils-vision-for-polar-silk-road-across-arctic-idUSKBN1FFOJ8>.
- 18 Paul McLeary, "Norway, US bolster Russian Sub Watching With New Bases," *Breaking Defense*, April 19, 2021, <https://breakingdefense.com/2021/04/norway-us-bolster-russian-sub-watching-with-new-bases/>.
- 19 Elizabeth Buchanan, "There is no Arctic axis," *Foreign Policy*, July 7, 2020, <https://foreignpolicy.com/2020/07/21/no-arctic-axis-china-russia-relationship-resources-natural-gas-northern-sea-route/>.
- 20 Scott Neuman, "China, Russia announce plan to build moon research station," NPR, March 10, 2021, <https://www.npr.org/2021/03/10/975579975/china-russia-announce-plan-to-build-moon-research-station>.
- 21 "Arctic Marine Shipping Assessment 2009 Report," (Tromsø, Norway: Arctic Council, April 2009), https://www.pmel.noaa.gov/arctic-zone/detect/documents/AMSA_2009_Report_2nd_print.pdf.
- 22 "Arctic States," Arctic Council.
- 23 "Report to Congress: Department of Defense Arctic Strategy," (Washington, DC: U.S. Department of Defense, June 2019), <https://media.defense.gov/2019/Jun/06/2002141657/-1/-1/1/2019-DOD-ARCTIC-STRATEGY.PDF>.
- 24 "Regaining Arctic Dominance: The U.S. Army in the Arctic," (Washington, DC: Headquarters, U.S. Department of the Army, January 19, 2021), <https://api.army.mil/e2/c/downloads/2021/03/15/9944046e/regaining-arctic-dominance-us-army-in-the-arctic-19-january-2021-unclassified.pdf>.
- 25 "Arctic Strategy," (Washington, DC: U.S. Department of the Air Force, July 21, 2020), <https://www.af.mil/Portals/1/documents/2020SAF/July/ArcticStrategy.pdf>.
- 26 "A Blue Arctic: A Strategic Blueprint for the Arctic," (Washington, DC: U.S. Department of the Navy, January 5, 2021), <https://media.defense.gov/2021/Jan/05/2002560338/-1/-1/0/ARCTIC%20BLUEPRINT%202021%20FINAL.PDF/ARCTIC%20BLUEPRINT%202021%20FINAL.PDF>.

27 Ibid.

28 “Strategic approach for Arctic Homeland Security,” (Washington, DC: U.S. Department of Homeland Security, January 11, 2021), https://www.dhs.gov/sites/default/files/publications/21_0113_plcy_dhs-arctic-strategy_0.pdf.

29 10 U.S.C. § 101, <https://www.law.cornell.edu/uscode/text/10/101>; Establishment of Coast Guard, 14 U.S.C. § 101, <https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title14-section101&num=0&edition=prelim>.

30 William Thiesen, “150 Years of U.S. Arctic Operations,” *The Maritime Executive*, September 13, 2020, <https://www.maritime-executive.com/editorials/150-years-of-u-s-arctic-operations>.

31 Craig Hooper, “Big Coast Guard choppers go to sea as America eyes new polar challenges,” *Forbes*, March 31, 2021, <https://www.forbes.com/sites/craighooper/2021/03/31/big-coast-guard-choppers-go-to-sea-as-america-eyes-new-polar-challenges>.

32 “Arctic Strategic Outlook,” (Washington, DC: U.S. Coast Guard, April 2019), https://www.uscg.mil/Portals/0/Images/arctic/Arctic_Strategy_Book_APR_2019.pdf.

33 “Strategic approach for Arctic Homeland Security,” U.S. Department of Homeland Security.

34 “Report to Congress: Department of Defense Arctic Strategy,” U.S. Department of Defense.

35 “Letter of Intent signed on Nordic-US joint exercise ‘Arctic Challenge,’” Nordic Defense Cooperation (NORDEFCO), February 17, 2021, <https://www.nordefco.org/Letter-of-Intent-signed-on-Nordic-US-joint-exercise-Arctic-Challenge>.

36 “2019 Army Modernization Strategy,” U.S. Army, October 17, 2019, <https://www.army.mil/standto/archive/2019/10/17/>.

37 “Regaining Arctic Dominance,” Headquarters, U.S. Department of the Army.

38 Ibid.

39 James H. Dickinson, “US Space Command’s mission: ‘Preparing for the war not yet fought,’” *The Hill*, April 19, 2021, <https://thehill.com/opinion/national-security/549008-us-space-commands-mission-preparing-for-the-war-not-yet-fought>.

40 Patrick Tucker, “Island-Hopping F-35s Test Pacific Air Forces’ Agility Concept,” *Defense One*, February 24, 2021, <https://www.defenseone.com/technology/2021/02/island-hopping-f-35s-test-pacific-air-forces-agility-concept/172282/>.

41 Kris Osborn, “‘Rapid Raptor’: The Air Force Can Attack Anywhere with a Stealth F-22 in 24 Hours,” *The National Interest*, March 13, 2019, <https://nationalinterest.org/blog/buzz/rapid-raptor-air-force-can-attack-anywhere-stealth-f-22-24-hours-47377>.

42 Karen Abeyasekera, “100th ARW conducts first USAFE KC-135 hot-pit refuel,” Royal Air Force Mildenhall, January 11, 2021, <https://www.mildenhall.af.mil/News/Article-Display/Article/2467684/100th-arw-conducts-first-usafe-kc-135-hot-pit-refuel/>.

- 43 Levon Sevunts, "U.S. ratifies moratorium on fishing in High Arctic seas," *The Barents Observer*, August 27, 2019, <https://thebarentsobserver.com/en/arctic/2019/08/us-ratifies-moratorium-fishing-high-arctic-seas>.
- 44 "A Blue Arctic," U.S. Department of the Navy.
- 45 Matthew P. Funaiole, Joseph S. Bermudez Jr., and Colin Wall, "Russia's Northern Fleet deploys long-range interceptors to remote Arctic base," Center for Strategic and International Studies, April 14, 2021, <https://www.csis.org/analysis/russias-northern-fleet-deploys-long-range-interceptors-remote-arctic-base>.
- 46 David B. Larter, "The US Navy returns to an increasingly militarized Arctic," *Defense News*, May 12, 2021, <https://www.defensenews.com/naval/2020/05/11/the-us-navy-returns-to-an-increasingly-militarized-arctic/>.
- 47 "Expeditionary Sea Base (ESB)," U.S. Navy, January 21, 2021, <https://www.navy.mil/Resources/FactFiles/Display-FactFiles/Article/2169994/expeditionary-sea-base-esb/>.
- 48 Todd South, "New Corps formation: Marine littoral regiment may be how the Corps fights future battles," *Marine Corps Times*, January 29, 2020, <https://www.marinecorpstimes.com/news/your-marine-corps/2020/01/29/new-corps-formation-marine-littoral-regiment-may-be-how-the-corps-fights-future-battles/>.
- 49 Megan Eckstein, "Marines begin experimentation to refine manual for expeditionary advanced based operations," *USNI News*, April 15, 2021, <https://news.usni.org/2021/04/15/marines-begin-experimentation-to-refine-manual-for-expeditionary-advanced-base-operations>.
- 50 Lyle J. Morris, "The era of Coast Guards in the Asia-Pacific is upon us," RAND Corporation, March 8, 2017, <https://www.rand.org/blog/2017/03/the-era-of-coast-guards-in-the-asia-pacific-is-upon.html>.
- 51 "Members of the IC," Office of the Director of National Intelligence, <https://www.dni.gov/index.php/what-we-do/members-of-the-ic>.
- 52 Karl Schultz and James P. DeHart, "Arctic Issues: Perspectives on the Arctic Coast Guard Forum and U.S. Arctic Policy Leading up to the Arctic Council Ministerial," U.S. Department of State, May 12, 2021, <https://www.state.gov/briefings-foreign-press-centers/arctic-issues-perspectives-on-the-arctic-coast-guard-forum-and-u-s-arctic-policy-leading-up-to-the-arctic-council-ministerial/>.
- 53 "Report to Congress on Coast Guard Polar Security Cutter," *USNI News*, August 5, 2020, <https://news.usni.org/2020/08/05/report-to-congress-on-coast-guard-polar-security-cutter-8>.
- 54 "Bath Iron Works lays keel of 74th Arleigh Burke-Class Destroyer for US Navy," *Naval News*, April 8, 2021, <https://www.navalnews.com/naval-news/2021/04/bath-iron-works-lays-keel-of-74th-arleigh-burke-class-destroyer-for-us-navy/>.
- 55 David Van Dyk, "Bring Back Coast Guard Sub Hunters," U.S. Naval Institute, September 2020, <https://www.usni.org/magazines/proceedings/2020/september/bring-back-coast-guard-sub-hunters>.
- 56 Alexandra Brzozowski, "NATO seeks way of protecting undersea cables from Russian attacks," *Euractiv*, October 23, 2020, <https://www.euractiv.com/section/defence-and-security/news/nato-seeks-ways-of-protecting-undersea-cables-from-russian-attacks/>.

- 57 Christopher Woody, “As US tries to close ‘icebreaker gap’ with Russia, its only working icebreaker is making a rare trip north,” Business Insider, November 9, 2020, <https://www.businessinsider.com/us-worried-about-icebreaker-gap-with-russia-in-arctic-2020-11>.
- 58 Mallory Shelbourne, “Coast Guard sails medium cutter north of Arctic Circle as Nanook exercise kicks off,” USNI News, August 5, 2020, <https://news.usni.org/2020/08/05/coast-guard-sails-medium-cutter-north-of-arctic-circle-as-nanook-exercise-kicks-off>.
- 59 Mike Schuler, “USCGC Polar Star visits Dutch harbor for first time since 2013,” gCaptain, January 6, 2021, <https://gcaptain.com/uscgc-polar-star-visits-dutch-harbor-for-first-time-since-2013/>.
- 60 William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, H.R. 6395, 116th Cong. (2020), 1248 (sec. 8105), <https://www.congress.gov/116/bills/hr6395/BILLS-116hr6395enr.pdf>.
- 61 Dan Sullivan, “Icebreakers for the Arctic should be based in our Arctic state,” *Roll Call*, October 5, 2020, <https://www.rollcall.com/2020/10/05/icebreakers-for-the-arctic-should-be-based-in-our-arctic-state/>.
- 62 Edward Lundquist, “Bill introduced to boost Coast Guard icebreaking mission, Great Lakes icebreaking capacity,” *Seapower Magazine*, March 9, 2021, <https://seapowermagazine.org/bill-introduced-to-update-coast-guards-icebreaking-mission-increase-great-lakes-icebreaking-capacity/>.
- 63 Ronald O’Rourke, “Coast Guard Polar Security Cutter (Polar Icebreaker) Program: Background and Issues for Congress,” (Washington, DC: Congressional Research Service, updated March 11, 2021), <https://fas.org/sgp/crs/weapons/RL34391.pdf>.
- 64 Ben Werner, “White House Orders Review of Coast Guard Heavy Icebreaker Program,” USNI News, June 10, 2020, <https://news.usni.org/2020/06/10/white-house-orders-review-of-coast-guard-heavy-icebreaker-program>.
- 65 Michael Sinclair, “How Polar Security and Arctic Security Are Linked—And Why the US Coast Guard Should Bridge The Gap,” Modern War Institute at West Point, April 4, 2021, <https://mwi.usma.edu/how-polar-security-and-space-security-are-linked-and-why-the-us-coast-guard-should-bridge-the-gap/>.
- 66 Walker D. Mills, “In the Arctic, Look to the Coast Guard,” U.S. Naval Institute, August 2020, <https://www.usni.org/magazines/proceedings/2020/august/arctic-look-coast-guard>.

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