The American Polar Pivot
Gaining a Comparative Advantage in Great Power Competition

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Abstract: This article demonstrates the rationale for the U.S. military to pivot its concentration toward defending the global commons in the polar regions of the Arctic and Antarctic. By defining the geopolitical significance of the polar regions, this article identifies actions the United States must take to strengthen current alliances and create new ones, while emphasizing investments in robust military assets to operate in the harsh polar environment conditions with extremely cold and long winters. This article concludes with recommendations on how U.S. military forces and basing should be integrated into a grand strategy to ensure that China and Russia cannot exert their control and influence over the polar regions of the Arctic and Antarctic.

Keywords: great power competition, polar warfare, Arctic alliances, Antarctic alliances, cold-weather military operations, Marine expeditionary units (MEUs)

In the frigid Arctic waters off the coast of Norway, Russian-trained whales are harassing local fishing boats. The Russians have reinvigorated their Cold War-era marine mammal training program as a part of their broader shift

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toward polar region emphasis.[1] The Chinese, not to be outdone, have built their first nuclear-powered icebreaker, deployed a squadron of polar-capable aircraft, and have sent an armada of fishing boats to Antarctica to exploit vast untapped and unprotected biological resources (e.g., fish, krill, etc.).[2] Meanwhile, the United States remains distracted by combat operations throughout the Middle East and Africa. In addition, the United States is attempting a strategic rebalance back to the Asia-Pacific region as a result of Chinese expansionism, coupled with North Korean aggression. With this, the Indo-Pacific Command (INDOPACOM) area of responsibility (AOR) logically follows as the next great power struggle taking shape. Similarly, hostile behavior by Russia throughout the European AOR has forced the United States to redeploy forces back to the region.

With current strategic rebalancing focused on countering great power adversaries such as China and Russia, the United States has—mistakenly—emphasized the specific geographic regions near these nations as the renewed focus of military operations. In doing so, the United States continues to overlook Russian and Chinese actions in other regions of influence, missing strategic opportunities to influence and control the Antarctic and Arctic regions; this could be a potentially devastating strategic error decades in the making. An American pivot to these regions is needed. This pivot includes a militarization of assets and capabilities (and alliances) intended to contain, constrict, compete, and contest the evolving Russian and Chinese expansion, which threatens global commerce. The Arctic and Antarctica are the most overlooked arenas of twenty-first century great power competition.

Actions by China and Russia present emerging strategic problems to how the United States balances its military force structure in each AOR. This new era of near-peer competition in two different AORs compels the Department of Defense (DOD) to make the Global War on Terrorism (GWOT) a tertiary concern in an attempt to have the necessary military personnel to counter aggressive postures by China and Russia. As indicated in the Donald J. Trump administration's *National Security Strategy* (NSS), "China and Russia want to shape a world antithetical to U.S. values and interests" in an attempt to "challenge American power, influence, and interests . . . to erode American security and prosperity."[3] Moreover, before retiring, Secretary of Defense James N. Mattis explicitly identified China and Russia as "revisionist powers" that are trying "to create a world consistent with their authoritarian models."[4] Flowing from such logic, the 2018 *National Defense Strategy* (NDS) views China and Russia as strategic competitors requiring a renewed American military focus on lethality, strengthened alliances (and making new partners), and reforming the DOD for the right balance of performance and affordability.[5] Despite such intense focus on China and Russia, it is superficially bent on their respective regions. Current

American strategic visions overlook what China and Russia are doing outside of American defined AORs: the regions of the Arctic and Antarctica. Such a strategic omission is highly salient; neither region is explicitly identified as an area needing focus in the NSS or NDS.[6] Even more telling, while the Russians continue their military buildup in the Arctic, as of April 2019, the post of the special U.S. representative for the Arctic is vacant in the Trump administration.[7]

Numerous European and Asian counties share similar diplomatic, military, and economic interests and seek enhanced security partnerships with the United States. The Indo-Pacific rebalance—as it is referred—intends to "strengthen, enhance, and broaden alliances" in this vital AOR.[8] Relevant as it may be, though, we contend that Asia and Europe are not the most pressing concerns for U.S. global security interests today. Whereas the United States has established diplomatic, military, and economic interests and infrastructure throughout Europe and Asia from which it can exert influence, the Arctic and Antarctic regions (specifically the Arctic Circle) remain conspicuously bare in terms of equivalent infrastructure—or even demonstrated U.S. interest relative to other regions. This is a strategic failure that, absent increased military focus, will keep the United States woefully behind China and Russia in these regions. These near-peer states seek influence and control in this vibrant geographic region due to resources and new shipping lanes. While the United States and its allies have invested somewhat into each region, they must explicitly demonstrate resolve to control maritime trade routes, guarantee freedom of navigation, respect the rule of law, and commit hard and soft power approaches in the protection of them against revisionist states, such as Russia and China. In short, the United States needs to strategically rebalance toward the polar regions. The American polar pivot is needed for the maintenance of American hegemony in the twenty-first century and beyond. Such logic falls in line with American antecedents of guarding global maritime commons, which have supported American trade and economic liberalism in global affairs.[9]

This article serves as a call for American action to execute the polar pivot: reorienting U.S. military power and strategy toward the polar regions. It echoes the sentiment of the first American strategic thinking on this topic, Navy Rear Admiral R. H. Cruzen, who identified the necessity of military leaders needing to make "thoughtful consideration of the problems of polar warfare" in a 1948 lecture to the U.S. Navy War College.[10] Given the rise of bellicose activities by China and Russia, a new form of great power competition is rapidly emerging in the Northern and Southern Poles. The United States and its allies lag behind in terms of policy, coordination, and military capability, as Russia and China began their own form of a polar pivot and military buildup in 2007 and 2017, respectively.[11]

There are tremendous resources present in each polar region; China and

Russia have displayed substantial intent to exploit them.[12] Moreover, as the Arctic Circle is expected to see further reductions in ice pack, this will expand existing shipping lanes—notably the Northeast Passage (NEP) and its western twin, the Northwest Passage (NWP)—potentially creating widely viable direct routes, such as the Transpolar Sea Route (TSR) bisecting the center of the Arctic Circle. China and Russia seem poised to control the NEP and NWP, which would be a significant challenge to American control of sea lanes and the global commons. Antarctica faces a similar accelerated melt off of marine ice that will open up new areas for resource extraction, which were once too expensive to access and exploit.[13]

A new gold rush is on for the "Cold Gold" polar resources that will shape and influence the twenty-first century of great power competition.[14] This article contends that this new polar threat environment requires a robust military buildup by the United States and its allies to properly counteract hostile actions by China and Russia. Finally, this article concludes with recommendations on how Marine expeditionary units (MEUs) and other rotational force deployments should be redistributed and where new alliances might be forged to give the United States a competitive advantage in the polar regions to ensure American hegemony through the protection of global commons.

Geography Matters: The Poles versus Everything Else

In March 2019, the DOD Joint Staff solicited expert analysis from a targeted group of academics and practitioners seeking answers to the most pressing military questions of the so-called twenty-first century great power competition.[15] One such question that flows from the NSS and NDS is particularly important: How can the United States best prepare itself for an evolving global conflict with the likes of China and/or Russia? Another question posed by the Joint Staff inquired about the character of global conflict and competition during the next 10 years. In answering these questions, we posit that the future of strategically significant great power competition will not happen in the South China Sea or Eastern Europe as so many prominent scholars predict, but rather it will be a fight over the spoils in the polar regions.[16]

Moreover, while the United States continues to emphasize twenty-first century technological innovations and weapons development over building alliances and expanded burden sharing, Russia and China are well ahead of the United States in securing their stake in the Arctic's vast energy resources and vital commerce lanes. Already, China has inked a deal with Russia for its so-called Polar Silk Road, while Russia is maneuvering and rebalancing itself to reach the estimated U.S. $35 trillion worth of untapped oil and natural gas—not to mention other unknown amounts of precious minerals—in the thawing Arctic.[17] Each nation is taking numerous steps to attain a robust position of power

in the Arctic and Antarctic as a means of counterbalancing American primacy elsewhere. The twenty-first century great power competition will not be won by technology alone; it will instead be won by those nations possessing the right balance of modern platforms, basing infrastructure from which to station troops and employ weapon systems and maintaining strong alliances.

One of the leading challenges in the way of realizing the necessity of the polar pivot is the continued and vocal advocacy of weapons modernization. If these great power competition questions were presented to defense hawks, some answers would no doubt emphasize the so-called Revolution in Military Affairs (RMA) concept. RMA implies that evolving technology will change the nature and character of warfare, and that those military powers possessing the most advanced technology will prevail in future military conflicts of the twenty-first century.[18] While possession of superior technology almost certainly provides advanced military capability, superior technology alone does not win wars. The American efforts in Vietnam, Iraq, and Afghanistan to date are archetypical examples of such technology-driven efforts where superior military force enabled by superior technology was insufficient to combat insurgents and terrorists intent on resisting American occupation and Western influence. This is not to say that technology is irrelevant or that it will not aid in military victory. It is to say, rather, that reliance on superior technology alone—and the resulting perception of competitive military advantage stemming from such superior technology—is ill-founded and, frankly, ignorant.

The technology trend that so many defense advocates stand behind in search of the next silver bullet in weapon system technology development is not the only fad that will drive future change in global competition and conflict. Those lacking superior technology tend to be more adaptable and creative; even the most technologically advanced militaries in the world find themselves, at times, vulnerable to relatively primitive—yet successful—attacks. To utilize modern technology, militaries require, at the very least, bases and infrastructure from which to employ it. The nature and character of future conflict will be influenced equally by geography and technology. Global expansionism via military infrastructure, while discredited as unnecessary by strategy of restraint advocates, enables continued influence in strategically vital areas of geographic interest.[19] In this way, military powers with the greatest global influence, regardless of their technology, will be most likely to shape global competition and the resulting conflict far into the twenty-first century.

The Chinese effort to expand territorial claims in the South China Sea and East China Sea are ongoing.[20] With control—or at least geographic influence—of such critical waters to the global economy, Chinese land and power grab efforts in these areas should come as no surprise to those familiar with the international security landscape. For the Chinese, as with the Russians, the

Arctic may be the next region in their sights for continued global economic influence.

Anthropogenic climate changes have objectively altered polar landscapes in the twenty-first century, making these regions some of the most strategically important areas on the planet for both influence and control.[21] In particular, the Arctic Circle provides a direct avenue of approach for military powers with the capability to exploit dwindling sea ice obstructions and to traverse what was once considered an impassable region of the world. Melting sea ice combined with improving icebreaker capabilities allows some polar capable countries (i.e., those with access and technological abilities) progressively greater access to more of the Arctic Circle. This is one area, however, where Russia has the comparative technological and numerical advantage for tactical polar operations.

The most capable U.S. heavy polar icebreaker—the USCG *Polar Star* (WAGB 10)—is capable of navigating ice up to six feet thick at continuous speeds of three knots.[22] This U.S. icebreaker can navigate 159,426 km² of the 271,304 km² winter time ice totals in the Arctic, or approximately 59 percent of the winter ice coverage. The United States has one such heavy operational icebreaker in its inventory. Russian icebreakers, in contrast, are capable of navigating ice up to 13 feet thick; more than double that of the most advanced U.S. icebreaker.[23] Russia maintains more than 40 icebreakers and has another 11 under production.[24] This capability gives Russia access to 269,958 km² of Arctic winter ice, or 99 percent, far surpassing current U.S. accessibility. With 99 percent of winter ice coverage available, Russia enjoys exclusive access to the NWP and NEP, each with potential oil and gas reserves. Not to be left out, China built a nuclear-powered icebreaker in 2018 and created an Antarctic flying squadron to support operations at the South Pole.[25] American capabilities to project power in the polar regions are severely lacking. With only one operational icebreaker, current budgetary plans are in place to acquire six operational icebreakers by 2023—assuming defense budget hawks will permit this polar pivot.[26]

The direct approach via the TSR (and other potential yet unrealized routes) is one of many such motivations for Arctic expansion. More importantly, controlling territory in the Arctic may yield tremendous economic benefits via oil and liquid natural gas extraction and the possible presence of other valuable minerals.[27] With 15–20 percent of its gross domestic product (GDP) reliant on Arctic resources, Russian claims to this region are both an economic and military imperative.[28] In addition to Russian interests in the region, China expressed interest in the poles via a white paper policy document released by their State Council Information Office. It emphasized protection of the environment, pursuit of scientific research, and support of multinational governance in the region.[29] Since 1980, the Arctic Sea ice coverage has steadily

declined at a rate of 12.8 percent per decade.[30] This steady decline in sea ice and expanding navigable waters underscores the developing opportunity for ambitious nations.

Russian interest in the Arctic Circle is multifaceted, given the country's northern border is immediately adjacent to the Arctic Circle. With Russia's apparent interest, or at least signaling, in reunifying territories of the old Soviet Union, a northern flanking approach via expanded military presence in the Arctic Circle may enable surrounding regional influence on the Scandinavian nations first and the Baltic states by extension. This is entirely possible given that, besides geographic advantage, Russia maintains a robust number of military assets in the Arctic Circle, with clear intentions to increase this presence. A 2015 report showed that Russia stationed 19 icebreakers and 34 submarines in the Arctic, paling in comparison to one American icebreaker and no submarines.[31] From a 2018 estimate on the Russian military presence in the Arctic, there were six Russian bases, each equipped with the highly effective long-range S-400 Triumph air defense systems, and 40 icebreakers.[32] More worrisome is that the *Canadian Press* reports that Russia is developing 11 additional icebreakers, and it has deployed more resources and created new infrastructure in the Arctic, including 4 new Russian brigade combat teams, 14 new operational airfields, and 16 deepwater ports.[33]

Complicating matters is the lack of law governing international waterways. Currently, the United Nations Convention on the Law of the Sea (UNCLOS) is the only document governing maritime conduct in international waters. Russia twice petitioned UNCLOS—in 2001 and again in 2015—to grant them extended territorial waters in the Arctic.[34] UNCLOS has yet to grant such an extension, but this is a strong indication of continued Russian interest in establishing an enforceable territorial boundary in the Arctic. The problem with UNCLOS is that it is not an authoritative treaty, and there are few enforceable deterrents that could dissuade Russia or China from complying with UNCLOS parameters if their procedural requests are denied. In other words, the Arctic is ripe for military expansion. With a lack of American emphasis on the polar regions and with no robust military presence or capability to operate there, this emerging problem requires a drastic reorientation of U.S. strategic priorities and capabilities to confront the emerging Russo-Sino polar alliance.

The Polar Pivot—Defined

With the polar environments in the Arctic and Antarctica changing, the United States must prepare to defend these protected regions from any nation that may exploit them in violation of international law (e.g., Exclusive Economic Zones [EEZs], etc.). Crucial shipping lanes (e.g., NEP, NWP, Africa's Cape of Good Hope, etc.) and an abundance of natural resources make the polar regions in-

creasingly valuable, especially as oceanic temperatures melt sea ice and glaciers. The rising geopolitical importance of the polar regions must be considered (and mentioned) in the U.S. 2018 *National Military Strategy* (NMS) and in future iterations of the NSS and NDS. The DOD's 2019 *Arctic Strategy* identifies the Arctic as an "avenue for expanded great power competition and aggression."[35] While an updated Arctic strategy is a welcomed effort, this should be reoriented or updated to include a comprehensive polar strategy that includes the Antarctic region that, while not geographically close to America, has similar geopolitical ramifications. This is indicated by China's similar distance from Antarctica, but its willingness to invest resources and operate in Antarctica.[36]

Russia continues to push the boundaries of what is deemed acceptable, especially against the Arctic Circle neighbors of Canada, Greenland (an autonomous territory of Denmark), Iceland, Norway, Sweden, and Finland. Around the Antarctic Circle, China poses the greatest threat to South Africa, Australia, New Zealand, Chile, and Argentina. NATO members, Norway especially, are concerned that Russian military activities are creating an "anti-access/area denial 'bubble' that would cover a significant portion of their territory and prevent NATO from coming to its defense."[37] Similarly, Australia has demonstrated substantial apprehension regarding China's numerous activities and new scientific bases in Antarctica that blur lines of legality in the region.[38] The Arctic is a coastal body, presenting potential great power competition at the border of the U.S. homeland, and it is therefore understandable that the United States should adopt a formal Arctic strategy. However, these challenges are not reserved to the Arctic alone but rather to the polar regions as a whole. The United States needs to acknowledge a true polar emphasis in these new strategies rather than one that solely focuses on the geographic proximity of the Arctic.

As environmental factors make the polar regions easier to traverse, Russia will continue actions that undermine the rules of the sea as well as other laws regarding EEZs and international waters. Similarly, while China is far from each polar region, 2018 was the first time China had introduced a white paper policy on this issue. This official government document highlighted the importance of melting ice caps facilitating a so-called Polar Silk Road for trade and various ways in which China might economically benefit from resources in each region.[39] While "fully ice-free summers probably remain a decade or more away," this gives America (and its allies) time to prepare.[40] This means developing hard power capabilities, such as improved icebreaker ships, creating/training specialized polar-capable troops, and military weapon systems to operate in such harsh climates. Additionally, it will require improving soft power capabilities, such as strengthening alliances and information/media discourses against China and Russia, all while creating legal frameworks so as to avoid the tragedy of the commons dilemma, in which individual nations act in their own self-interest rather

than for the good of the world as a whole. These courses of action will likely deter illegal and antagonistic actions in the region, while ensuring economic prosperity for those abiding by all laws and norms in each polar region.

Nevertheless, the potential for a hot war over the Arctic (and to a certain extent, the Antarctic) remains.[41] A U.S. government estimate notes the Arctic region could have about 90 billion barrels of oil, 1,700 trillion cubic feet of natural gas, and 44 billion barrels of liquid natural gas.[42] The abundant (and untapped) natural resources of the polar regions may incentivize states to begin making territorial claims, including creating new military bases and conducting military exercises as a way of demonstrating control of contested areas, much as Russia has already been doing.[43] The decrease in ice coverage also opens up new and more efficient maritime routes.

Aggressive and antagonistic actions by China in the South China Sea demonstrate their resolve to control and exploit maritime routes; China will likely act in a similar manner in each polar region, especially with reports that they are investing in military capabilities to operate in each pole.[44] Because of these threats to free trade, which is a vital U.S. national interest, the United States must engage its national instruments of power vis-à-vis a polar pivot to assert the need for a rules-based authority in each polar region. However, such a grand strategy for the polar regions requires more than words and policy documents; concrete actions are required by the United States and its allies in each region to demonstrate a robust resolve to counter adversarial actions by China and Russia. Whereas the multinational Arctic interest is complicated by environmental as well as geographic factors, the Antarctic region presents a distinctly different series of considerations informing any future polar strategy.

Antarctica hosts three year-round American research stations: McMurdo Station (on Ross Island), Amundsen-Scott South Pole Station (at the geographic South Pole), and Palmer Station (on Anvers Island). These U.S.-funded stations fall under the National Science Foundation (NSF) and serve as multinational research centers with an array of scientists from all over the world.[45] This is the only established U.S. government infrastructure and there is no form of militarization anywhere on this continent. Besides the American presence, 32 countries maintain about 50 research bases.[46] Finally, Antarctica serves an indirect military purpose, as many countries have built satellite relays for the purposes of improving navigation precision and secure communications.

The first article of the Antarctic Treaty System (ATS) outlines that military assets are to only be used in Antarctica to assist with scientific research, logistics, and search-and-rescue missions.[47] While this treaty does not extend to the Arctic, members of the Arctic Council are attempting to define their territorial boundaries according to the ATS and UNCLOS.[48] Just as territorial boundar-

ies and treaties can be set, they can also be infringed upon. Already, Chinese involvement in Antarctica is a blurred, gray line between research and military operations, as China builds Antarctic airstrips and modifies/upgrades military aircraft for polar operations.[49] Continued Chinese militarization in Antarctica cannot be disregarded by the United States as insignificant. The Chinese are intent on globalizing their military influence; Antarctica is no exception. The United States must recognize this reality and consider its commitment to the ATS relative to its strategic priorities. While Antarctica may not rival the Arctic in terms of geographic relevance or economic importance to the United States in terms of great power competition, it is an area of likely exploitation and of great strategic importance to an American rules-based order. The United States should revisit the terms of the ATS and give due consideration to whether continued commitment is warranted given Chinese actions on the continent to develop infrastructure and extract resources.

Military conflict (and/or competition) in the polar regions could significantly impair critical research, impact seafaring trade, and through exploitation, lead to the degradation of both environments.[50] Any actions—intentional or unintentional—in each polar region might accelerate current ice cap melt trends, contributing to rising sea levels that submerge and destroy coastal cities, including putting at least 128 U.S. military bases around the world at risk.[51] Without a doubt, each polar region is a vital national interest of the United States, requiring an active and direct intervention by American political and military leaders. The *DOD 2014 Climate Change Adaptation Roadmap* reaffirms the rationale of involvement—and the dire risks associated with failing to address the challenges emerging in each polar region.[52] American and allied direct action in each region is a necessary precondition given the unresolved issues of sovereignty in the Arctic and Antarctic.

The Polar Pivot—Executed

A necessary precondition for maintenance of American hegemony is to realize that the gains of the proposed polar pivot requires control—or at least influence—over the polar regions. Such reasoning appears to influence the *how* and *why* of Chinese and Russian thinking in their attempts to supplant the United States as the hegemon—in the polar regions, at least—justifying their large investments in military assets and infrastructure in each polar region.

Unfortunately, there is too much U.S. emphasis on competing in Asia and Eastern Europe. American deterrence efforts in the South and East China Seas have been largely ineffective to date; China continues expanding its artificial island construction, with the total reclaimed area exceeding 3,200 acres.[53] American rhetoric has only amounted to veiled threats and toothless policy statements that lack budgeted intent. These statements are irrelevant and ineffective, re-

gardless of focus, as there have been numerous occasions in which Congress has budgeted for polar capabilities but funds are reallocated for a different priority, such as the border wall along Mexico.[54] The Arctic situation is a potential multipeer adversarial environment with geographic proximity more concerning to the United States than the situation in the South and East China Seas. To the south, Antarctica is also a multipeer environment with many powers claiming to have discovered the continent—or least expressing imagined claims to its resources.[55] Both China and Russia seek influence in the polar regions and are decades ahead of the United States in securing their place as regional influencers given their level of polar military capabilities (and provisions to further increase their numerical advantage). This should concern the United States and its allies, compelling real action, as climate change will make it increasingly difficult for America and its allies to respond to polar threats if capabilities do not exist to respond and deter.[56]

If we accept the logic that Chinese actions in the South and East China Seas is a transit of the commons issue and a violation of international law and EEZs, the Arctic is exponentially more important in terms of the global commons because of the plentiful resources and the potential trade routes established by continually melting sea ice. Further, if we operate from the assumption that executing the proposed polar pivot is difficult because the United States is the defender of the commons, then we must extend the same logic to respond to bellicose Chinese obfuscation in the South and East China Seas. The United States continues to define itself as a defender of the global commons and freedom of navigation, supported most recently by expanded military involvement in the INDOPACOM AOR. But the defender of the commons title should not be limited to convenience; rather, should the United States desire to maintain such status and act in its accordance, it must also emphasize the greater threat to global trade in both polar regions. The real question is: Does this polar problem warrant attention and action, and can anything be done about it?

Rebalancing Military Forces for the Polar Regions: Send in the Marines?

Currently, the American prepositioned global military presence far exceeds that of any other nation. However, despite U.S. force postures influencing diplomatic, military, and economic efforts in a myriad of global hot spots, America sorely lacks geographic influence in the polar regions. Specifically, U.S. military force posture and infrastructure are nearly nonexistent in these regions. For instance, Marine Corps Forces, Pacific, maintains the Marine Rotational Force—Darwin program, deploying about 1,500 Marines on six-month continuous rotations to Darwin, Australia.[57] While firmly entrenched in the Southern Hemisphere, this rotational force presence is situated on the extreme north central coast of

Australia, still thousands of miles north of the Antarctic continent, making it rather difficult to influence Antarctic matters from this distance.

Thousands of miles away, smaller contingents of Marines have in recent years participated in European theater training exercises in Poland, Norway, and the Baltic states as part of Exercise Baltic Operations (BALTOPS) and Exercise Saber Strike.[58] Such rotational force deployment programs should not be limited to these few areas of keen geopolitical U.S. interest. Rotational force programs as the Marines employ them necessitate consideration as a means of executing the proposed polar pivot. Deploying Marines, at the least, to the poles via rotational forces sends a clear message of U.S. commitment to the security and stability of the polar regions to great power adversaries. Additionally, deploying temporary rotational forces such as those in Australia and northern Europe to the polar regions provides the United States a visible yet resource-efficient military power projection platform requiring minimal logistical and infrastructure support relative to more traditional and resource intensive deployment options.

Marine rotational forces, in particular, enjoy the flexibility of seabasing options, in addition to forward operating base locations. A Marine rotational force deployed to either pole may not require established land-based infrastructure to be an effective operational force, provided the availability of alternative amphibious ship platforms to serve as expeditionary seabases patrolling navigable international waters. Weather, high seas, seasonal darkness, and ice coverage may render seabasing via naval vessels impossible in and around the polar regions much of the year, but such rotational deployments remain an option for targeted periods of more tenable conditions and locations in or near the poles. Beyond seabasing in the polar regions, the United States should consider Marine rotational force deployments within the Arctic Circle in northern Alaska to signal American resolve to Russia.

Alaska's territory in the Arctic Circle makes for less than hospitable environments for most military Services requiring the traditional niceties of modern society. However, the Marine Corps' ability—and willingness—to operate independently in "any clime and place" makes it the ideal force for rotational land-based deployments to unpopular but strategically imperative global regions such as the poles. Small inhabited areas on the northern Alaskan coast offer airstrips and minimal grid infrastructure to potentially support rotational military forces in the vicinity. In 2015, the U.S. Coast Guard established temporary forward operating locations near Prudhoe Bay (Deadhorse) and Barrow, Alaska.[59] These locations can serve as potential locations for temporary Marine rotational forces, provided there is local, state, tribal, and federal government coordination. Failing to establish a forward, sustainable presence in this way leaves the United States further behind the Russians while they employ a similar approach

on their northern Arctic-facing borders and islands.[60] Many Russian bases have advanced missile defense systems and surface-to-air missile capabilities.

While Marine rotational forces actively deploy to Australia and/or northern Europe as part of training and readiness efforts, MEUs deploy rotationally around the world and are far more expeditionary than their Darwinian-, Baltic-, and Scandinavian-deployed rotational counterparts. Given the new Arctic strategy's call for an "Arctic deterrent" requiring "expeditionary forces," the MEU deployment option provides yet another potential power-projection option for the United States to consider as it executes the proposed polar pivot.[61] Of the seven standing MEUs, three are based on the West Coast of the United States; three on the East Coast; and one in Okinawa, Japan. Two or three MEUs—one each from the East and West Coasts, and potentially the Okinawa-based MEU, depending on rotational cycles—are forward deployed at all times, while the remaining MEUs conduct predeployment training workups or reset in dwell from previous deployments.[62] MEUs possess the multidomain power projection capabilities of a Marine Air-Ground Task Force (MAGTF), complete with an aviation combat element, ground combat element, logistics combat element, and command element. These tailorable, scalable, and expeditionary force packages are uniquely suited to influence military operations from ship to shore in expeditionary and logistically limited environments in the polar regions.

MEU deployments typically follow predictable deployment patterns and trajectories emphasizing threats in Central Command (CENTCOM), Africa Command (AFRICOM), and INDOPACOM. If the polar regions present insurmountable budget and logistics difficulties in establishing static basing infrastructure to assert influence and control, the MEU-centric seabase provides a viable alternative in executing the proposed polar pivot and projecting multidomain combat capability in areas that China and Russia have otherwise enjoyed uncontested access to. Deploying Marines to these inhospitable locations will produce valuable domain awareness and a sustained, albeit rotational, military presence in the polar regions much needed in the evolving landscape. This is not to say that MEUs can access the polar waters without limitation. Rather, redirecting and reorienting established MEU deployments in the vicinity of the polar regions may be required in an effort to compete with, contest, and contain the ongoing Russian and Chinese polar expansion efforts.

Such considerations of alternative MEU deployment areas, provided sufficient capability and seasonal conditions to enter or approach polar waters, is a necessary indication of U.S. interest in securing the polar regions. The United States should continue in this vein, reorienting carrier strike group (CSG) and other surface ship package deployments to the polar regions, much like the deployment of the USS *Harry S. Truman* (CVN 75) Strike Group 8 into the Arctic Circle in October 2018.[63] There is some discussion on this front as of late

2018 under then-Secretary Mattis's "dynamic force employment" concept. Discussions about avoiding unpredictability while integrating newly determined strategic locations are vital to continued global competition.[64] In this way, the United States should consider reorienting amphibious ready groups, MEU, and CSG deployments to include unannounced rotations through the accessible polar regions. A show of force in this context will augment the ongoing U.S. military exercises in the Arctic, such as ICEX and Arctic Edge. Deploying additional forces committed to training in these harsh conditions may also send a strong message of U.S. commitment to securing the polar regions. Such a message would be significant to influence further action from current and future U.S. allies committed to gaining and maintaining a comparative advantage over China and Russia but require U.S. logistics and support to do so. Moreover, it would provide the experience of operating in a polar environment, which would benefit American military forces in a future deployment to the region.

Finally, some strategic airlift capability exists near Antarctica, as the U.S. Air Force maintains a seasonal summer contingent of Boeing C-17 Globemaster IIIs and Lockheed C-130 Hercules in Christchurch, New Zealand, to resupply McMurdo Station.[65] In the Arctic, the nearest American military installation is at Thule Air Base, Greenland, but there are no assigned aircraft, as its primary mission is to support the "global network of sensors providing missile warning, space surveillance and space control."[66] The next closest American base to the Arctic is Eielson Air Force Base, Alaska. Located in central Alaska near Fairbanks, and about 1,700 miles away from the North Pole, it is hardly close enough to intimidate Russia.[67] Commitments of such visible military force posture via air, land, and maritime domains to strategically vital regions of the world would speak volumes to Russian and Chinese expansionism in the poles. Increased U.S. presence and orientation toward the polar regions is not without potential risk. Such reoriented efforts may lead to currently uncontested and noncompetitive regions evolving into competitive and eventually contested regions. This, in turn, could well lead to a miscalculation, escalation, and eventually confrontation. The United States must account for these possibilities in developing a future polar strategy that increases force posture in the regions. But simply expanding and increasing force postures in the poles is, by itself, insufficient to realize the full effects of the polar pivot. The United States must also consider, as it has elsewhere, the potential benefits of improved alliances and burden sharing for nations with similar interests in the security and navigability of international polar waters for geopolitical reasons.

Polar Military Partners: Alliances and Burden Sharing

Simply put, the American polar pivot cannot become reality absent the support and engagement of other polar-invested nations. The current political and

defense budgetary climates are such that the poles are an afterthought in policy making. Despite the U.S. status as a nation that borders the Arctic, Arctic force posturing is relegated in favor of near-term threats instead of long-term strategic problems. Arctic emphasis ebbs and flows; it rises and falls with the changing of administrations.[68] This is ironic given the billions of dollars spent on foreign military assistance efforts that are thousands of miles removed from U.S. territories.[69] Meanwhile, Russia currently has missile sites in the Arctic capable of reaching the U.S. homeland, naval vessels that can navigate via Arctic routes uncontested right up to American coastlines, and an electronic warfare system that covers the entirety of the Arctic Circle.[70] Further complicating matters is the current bifurcation of polar command responsibilities.

The Arctic, for instance, transcends the AORs of U.S. Northern Command (NORTHCOM), European Command (EUCOM), and INDOPACOM. Given its outward orientation toward the homeland defense mission, NORTHCOM advocates for and understands the importance of the Arctic as a militarily relevant region. Other geographic commands focus on the problems within their AORs rather than those emanating from beyond their borders. As such, whether the other commands are (or should be) equally concerned about the Arctic is a matter of debate among defense policy circles.

Antarctica falls within the AORs of the U.S. Southern Command (SOUTHCOM), AFRICOM, and INDOPACOM, and is equally on the periphery of each command's focus. Beyond these concerns, polar orientation must contend with the unique bureaucratic hurdles specific to each region. Indigenous populations in Canada must be consulted during military exercises in their areas and prior to the construction of any basing infrastructure (temporary or permanent). The ATS restricts military operations except for research and safety support functions. And finally, the logistics of polar operations is extraordinarily complex. Everything slows in the cold; construction of infrastructure takes longer and costs more in these harsh and seasonally limiting conditions, particularly when dealing with construction on tundra. Between bifurcated command lines and budgetary, bureaucratic, environmental, and logistic limitations, one can understand why the United States does not have a robust polar strategy in place, but it should nonetheless. For the reasons mentioned, the United States cannot succeed alone in the proposed polar pivot. Such a strategy requires strong alliances and diffused burden-sharing arrangements with other polar-interested nations to be effective.

American Polar Alliances against China and Russia?

American alliances with polar-interested nations need to expand to ensure continued force posture and future influence in these soon-to-be contested regions. Focusing on alliance building and maintenance first will enable resource

deployment and diffused burden sharing in the future rather than a mostly U.S.-supported military posture. Given the difficulty of shifting resources toward polar capabilities, American alliances would help partner nations execute a similar polar pivot. Convincing polar allies to shift resources toward polar military capabilities under the guise of newfound or renewed security cooperation with the country would allow the United States to maintain its conventional military edge, while partner militaries would provide a comparable advantage in polar military operations. We have already seen examples of such alliance efforts countering China in the Arctic, with the Pentagon convincing Denmark to fund infrastructure (e.g., airports) in Greenland to prevent Chinese investment and basing there.[71]

With a firmer security cooperation agreement in place, there will presumably be more diffused burden sharing as more nations will determine vital interests in the polar regions and seek to contribute to the situation to ensure their own interests are supported by a growing coalition of cooperative nations. A coalition of such measures will generate the perception of a competitive advantage for participating nations that cannot otherwise compete with the likes of Russia and China in the polar regions and in other domains. With the help of the United States, near-polar states can rise to a formidable level in the era of twenty-first century great power competition.

Building, fostering, and maintaining polar-based alliances is a necessity for future U.S. interests in the Northern and Southern Hemispheres. American adversaries show interest and intent with substantial investment in these regions as China and Russia have extended this into military action. The United States needs to rebalance military and alliance capabilities toward countering the polar postures of Russia and China. Their current combined polar military capability vastly exceeds the United States, its allies, partners, and friendly nations (e.g., Chile, Finland, and South Africa) around the Arctic and Antarctic Circles.

Given Canada's proximity and close relations with the United States, the polar pivot could be actualized through U.S. support of base development and manning at Canadian Forces Station (CFS) Alert, Ellesmere Island, Nunavut, Canada. Given that CFS Alert is a weather and intelligence station, and as Canada's most northern military base, developing it into a robust military installation with barracks, airport, and a deepwater port would send another strong signal to China and Russia about U.S. intentions of countering the polar militarization efforts they are pursuing in the Arctic Circle.[72] Moreover, it would serve Canada's strategic interests as well, given the vast amounts of resources trapped within the Canadian-Arctic EEZ.[73]

If Russia and China continue to expand their efforts and operate uncontested and unchecked in the polar region, they will soon dominate the region. This could include control of economic trade routes, imposition of passage tolls, and

restricted access to (and control of) vital and profitable energy resources. One could even envision a scenario where Russia, in asserting uncontested military control, would extract tolls and impose permit requirements to operate in and transit the Arctic. While more difficult to impose such control in Antarctica, China has already demonstrated its desire to exploit fisheries to the maximum extent possible, causing major disruptions to Antarctic food chains.[74] If Russia and China were to further militarize the Arctic and violate laws and norms there, the United States and allies would need to consider revoking the Svalbard Treaty, which prevents Norway from militarizing this archipelago that is about 600 miles away from the North Pole.[75] Such an action would enable Norway and other NATO allies to build up a sizable military force and infrastructure on Svalbard, which hosts a population of about 3,000, as a means of deterring future hostilities from China and Russia. It would also require the expulsion of Chinese and Russian intelligence personnel that work on Svalbard, which is considered a critical node for communicating with their respective spy satellites. American efforts should also be pursued with Sweden and Finland, nonaligned countries that are participating in U.S.-NATO Arctic military exercises as "enhanced opportunities partners."[76]

Newly expanded trade routes and strategic interest in the Arctic region will fundamentally change global trade and provide advantages to those who control it. This is a race for territorial control and expansion, garnering influence over global trade. Control of the Arctic produces gains for the controlling nation—diplomatic, military, information, and especially economic capital, potentially beyond the scope and capacity of any other region of interest. The polar regions are similar to the South China Sea dispute in that they are controllable to those committed to doing so. If the polar regions come under the control of hostile powers intent on winning the future great power competition, freedom of navigation in international waters will be challenged. Russia and China can and will asymmetrically challenge the United States in an area that will generate a strategic advantage they have sought for decades.

Conclusion: Making the Polar Pivot Stick—Finally

While some might believe such a polar pivot is overhyped and unnecessary, presidential administrations since Richard M. Nixon have directed the National Security Council to have an Arctic policy.[77] Unfortunately, very little of this policy has been substantiated through military power to counteract Russia, and now recent Chinese activity, in their efforts to militarize the polar regions toward the objective end of exploiting natural resources and securing commercial shipping lanes. The United States needs a strategic rebalancing effort that extends beyond the current INDOPACOM AOR. As large and sustained com-

bat operations are reduced in CENTCOM, the American government must consider its geographic presence in the contested polar regions. Reorienting rotational force efforts to expand operations at the poles will deter continued Russian and Chinese military expansion in these geographically critical regions of the world that, until now, few policy makers have truly emphasized as areas of global interest in the future of great power completion and conflict.

A failure to defend U.S. (and ally) interests in the Arctic and Antarctica will have lasting impacts on the environment, free trade, and global security. If the Western status quo remains, the question is not if disagreements over resources and territorial claims will spark conflict in the Arctic and Antarctica, but rather when and how. The polar regions are critical to scientific efforts to reduce the effects of climate change, which could change the face of the world's coastlines, causing irreparable economic damage, even submerging numerous strategically vital military bases and ports around the world.[78] Losing critical American and allied military infrastructure would greatly reduce U.S. global reach, weakening American military power projection in the twenty-first century.

It is imperative that the United States and allies prepare to defend (and deter) the exploitation of the poles from revisionist states attempting to expand their influence and power. With extreme climates at each pole, the American military must have the right equipment (e.g., icebreaker ships), training (e.g., cold weather military exercises), and strategy (i.e., American political willpower) to diplomatically and militarily fight for each region. Without such resolve, China and Russia *will* rapidly establish an advantage in each pole. If the West loses its foothold, there will be no leverage in negotiating settlements and treaties that are a win-win for all near-polar countries that seek a rules-based order. Returning to Admiral Cruzen's thoughts on polar operations in 1948: "strategic thinking and our military and naval training" cannot be "confined to the tropic and temperate zones."[79]

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