

# The Arctic in an Age of Strategic Competition

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In 1850, Robert McClure and the crew of the HMS *Investigator* completed the first recorded transit of the Northwest Passage from the Pacific Ocean to the Atlantic Ocean via the Arctic Ocean. After arriving in the Arctic, the expedition spent three years locked in the ice before abandoning their ship and completing their trip by dragging their gear in sledges on a 14-day march over the ice. Subsequently, a different ship transported them home to England. During the expedition, five men died, and the survivors suffered from starvation and scurvy. After being gone four years, McClure finally returned to England and was knighted, promoted in rank, and given a monetary award by the British Parliament.<sup>1</sup> In August 2016, the tourist ship *Crystal Serenity* sailed from Vancouver, Canada, through the Northwest Passage to New York, taking 32 days. They also stopped along the way for golf, shopping, and hiking. When cruising resumes after COVID-19, anyone can make the trip, provided they can pay the 22,000 USD ticket price.<sup>2</sup>

The changing climate and advancing technology have created a new environment and resultant impetus for increased activity in the Arctic. The Arctic is warming two times faster than the rest of the world.<sup>3</sup> Temperatures in Utqiagvik, the northernmost village in Alaska, have broken records, as the fastest-warming location on the continent.<sup>4</sup> This warming has led to a historical loss of sea ice, with the October 2020 measurement being the lowest recorded. In 2002, the northern ice pack was measured at 5.83 million km<sup>2</sup> while the 2020 extent was 3.74 million km<sup>2</sup> for a loss of 35.8 percent in just 18 years.<sup>5</sup> Ice thickness has also decreased from an average of 3.64 m in 1980 to as low as 1.89 m in 2008.<sup>6</sup>

Due to these changes, the Arctic is rapidly becoming a new frontier of strategic importance. Once a remote region, sparsely inhabited and impenetrable, the Arctic is quickly becoming an enticing opportunity for faster merchant shipping, expanded exploration for natural resources, increased human habitation and tourism, and military deployments to secure northern borders. Beyond the nations bordering the Arctic, others such as the People's Republic of China (PRC) have increased their physical presence in the Arctic Ocean while investing heavily in

the region. A new period of competition has commenced at the top of the world that will influence the security of the entire planet.

Speaking at the Arctic Council Ministerial meeting in Rovaniemi, Finland, in May of 2019, US Secretary of State Mike Pompeo indicated that melting Arctic sea ice is set to unlock new “opportunities for trade” and create a “forefront of opportunity and abundance.”<sup>7</sup> The Northern Sea Route (NSR), which runs along the north coast of Russia and within its exclusive economic zone (EEZ), is rapidly becoming ice-free for longer times during the year. Although unrecognized by the United States, Russia claims the NSR is within territorial waters and has subsequently imposed fees and various requirements for ships transiting the passage. In 2017, the first ship was able to transit the NSR without an icebreaker,<sup>8</sup> and in May 2020, the earliest transit within the calendar year was achieved.<sup>9</sup> By 2040, if current ice loss rates continue, it could be ice-free year-round.<sup>10</sup> Already showing signs of increased traffic, 331 ships used the NSR in 2020, versus 277 in all 2019.<sup>11</sup> Ships transiting from Japan to Europe via the NSR shave 11,000 km off their trip.<sup>12</sup> Ships transiting from China to Northern Europe save hundreds of thousands of dollars in fuel costs. Annually, an Arctic shipping route from China to Europe would save the PRC 60–120 billion USD per year. The Chinese refer to this as the “Polar Silk Road” and consider it a key element to their success as a world power.<sup>13</sup>

The Northwest Passage is an alternative route that runs along the northern coast of North America from the Bering Strait to Europe. Like the NSR, the Northwest Passage is becoming economically viable as its sea ice melts. In 2014, the first cargo ship to travel unescorted by icebreakers delivered nickel from Quebec to China. It made the trip in 26 days, beating the timing of the normal route through the Panama Canal by more than two weeks. In all, 27 ships made the full transit through the passage in 2019.<sup>14</sup> With numerous islands but far fewer ports and rescue assets, this route typically has more ice than experienced along the NSR. To make Arctic shipping in North America safer, Senator Lisa Murkowski (R-AK) proposed a new initiative, named The Shipping and Environmental Arctic Leadership Act (SEAL Act). In exchange for a fee, the United States and private fleets would provide icebreaker assistance, harbors of refuge, ice forecasting, oil spill response, and a rescue tug if needed. Funds earned would be used to support construction of deep-water ports in Alaska to support shipping.<sup>15</sup>

Retreating sea ice has opened additional on-land and at-sea locations for resource extraction. The US Geological Survey assessed that above the Arctic Circle rests about 13 percent of the world’s undiscovered oil and 30 percent of the world’s undiscovered gas, mostly in depths less than 500 m of water.<sup>16</sup> This equates to 90 billion barrels of oil, 17 trillion ft<sup>3</sup> of natural gas, and 44 billion barrels of natural gas liquids.<sup>17</sup> Numerous nations plan to mine rare earth metals, copper, phospho-

rus, and platinum in this vast expanse. Greenland's southern regions hold approximately 25 percent of the world's rare earth metals, critical to the manufacture of modern electronic components.<sup>18</sup> Additionally, Russia constructed a liquid natural gas (LNG) extraction plant on the Yamal Peninsula, where gas reserves estimated to be worth billions of dollars await.<sup>19</sup> In Alaska, the Qilak LNG North Slope Project plans to directly export natural gas to Asia.<sup>20</sup> Norway, whose oil industry comprises 18 percent of its gross domestic product (GDP) and is Europe's biggest oil producer, cleared the way for expanded oil exploitation in the Arctic Barents Sea.<sup>21</sup> While the United States may choose to forego resource extraction due to environmental concerns, the list of projects and investors continues to grow as access to the Arctic increases. Complicating this issue are competing—and potentially contentious—claims by several Arctic nations on declared extended continental shelves. If recognized, the claimants would have exclusive rights to resources on or below the seabed beyond the normal EEZ.

Protein in the form of fish is becoming a high-demand item worldwide. Fishing stocks have declined in areas that are commercially fished, and many nations are scrambling for new locations. As the Arctic warms and ice declines, it exposes new fishing areas to exploit. In addition, some species of fish are migrating north due to rising ocean temperatures.<sup>22</sup> In 2017, nine nations and the European Union signed a treaty to ban commercial fishing in 2.8 million km<sup>2</sup> of the Arctic for 16 years. This area is about the size of the Mediterranean Ocean and encompasses all the area north of the Arctic nations' northern EEZs. The goal is to study the impacts of climate change, research the unique marine ecological system, and establish sensible quotas and rules before fishing resumes. The agreement automatically renews every five years, unless superseded by a set of established rules, or if a single nation objects.<sup>23</sup>

Tourism is another commercial venture gaining traction in the Arctic. As ocean routes open to traffic, the cruise industry is exploring new experiences for paying passengers. Beyond concerns over its impact on the environment and an influx of visitors into small, remote communities, the prospect of rescuing a cruise ship in the Arctic is challenging. As mentioned earlier, the Northwest Passage winds through a very remote region of Upper Canada where rescue forces are either scarce or nonexistent.<sup>24</sup> In March 2019, the MV *Viking Sky* lost power while cruising between cities in Norway. High seas prevented the use of lifeboats, and six helicopters began an evacuation. In the end, after 19 hours, only 479 of the over 1,300 people on board were evacuated when the engines were restarted. The ship was only 1.5 miles offshore in the Norwegian Sea throughout the evacuation.<sup>25</sup> This same scenario hundreds of miles from the nearest rescue forces is much more sobering.

## **Great-Power Competition in the Arctic**

To take advantage of these opportunities, many nations—particularly Russia and China—have initiated a multifaceted national-level campaign to capture resources while securing their territory and interests. Around 20 percent of Russia's GDP originates in the Arctic,<sup>26</sup> and the NSR transits the country's northern border—which is a full 50 percent of the total coastline above the Arctic Circle. China, despite not having any territory in the Arctic, is securing trade routes and resources through a campaign of increased presence, both physically and politically, and investment in the Arctic nations. Beijing's and Moscow's efforts are bearing fruit and are paying off economically, militarily, and politically.

Russia, by nature of having one-fifth of its territory located inside the Arctic Circle, has always considered the region of vital national importance. Its most recent Arctic Strategy, "Strategy of Development of the Arctic Zone of the Russian Federation and the Provision of National Security for the Period to 2035," outlined Russia's national interests in the Arctic and what Moscow considers to be threats to Russia's national security.<sup>27</sup> When the Soviet Union dissolved, the military bases and other infrastructure in Russia's northern regions were allowed to decay. After decades of quiet, and as tensions between Russia and other nations increased, a new program of rebuilding and reoccupying these bases is under way. Russia has extensively fortified and militarily occupied its once remote, sparsely populated, and thinly guarded northern border. The military buildup seeks to provide defense of the Russian homeland, control of the NSR, and access to the Arctic Ocean.<sup>28</sup> Near the Bering Strait, Russia has improved airfields and built radar stations, allowing its forces to monitor the flow of traffic into the region from the Pacific. Along the NSR, a series of coastal defensive systems have been erected to secure territory and defend Russia's Northern Fleet. In 2017, Russia published its naval doctrine, which highlights Moscow's desire to "dominate the high seas, including in the Arctic."<sup>29</sup> The Northern Fleet, which includes surface and subsurface vessels, is tasked with ensuring access to not only the Arctic Ocean but also the North Atlantic and the Greenland–Iceland–UK Gap. Russia's fleet of conventional and nuclear missile submarines can access the Atlantic and Pacific Oceans via the Arctic. Supporting Russia's Northern Fleet is the world's largest armada of icebreakers, 46 in service with 11 more planned. Additionally, several of these icebreakers have the capability to carry cruise missiles and electronic warfare systems.<sup>30</sup>

Without territory that lies within the Arctic, China is focused primarily on access to resources and physical presence for military and merchant vessels. The PRC's Arctic policy, released in January 2018, asserted that as a "Near Arctic State" China will "participate in the exploration for and exploitation of oil, gas,

mineral, and other non-living resources.”<sup>31</sup> It is estimated that between 2012 and 2017 the Chinese invested over 1.4 trillion USD in the Arctic nations, primarily in the energy and mineral sectors. In Greenland, Chinese investments accounted for 11.6 percent of GDP, and in Iceland it reached 5.7 percent.<sup>32</sup> China expressed a desire to open a research station and satellite facilities in Greenland to match those already in operation in Sweden and Finland. The PRC even attempted to buy a former US Navy base in Greenland that would have provided China a port for civilian and military ships.<sup>33</sup> China has also invested in the Russian Yamal Peninsula LNG production, and in 2019, President Xi Jinping visited Russia for the launch of a joint venture to build ice-capable LNG tanker ships.<sup>34</sup>

Chinese investments in Arctic infrastructure will enable physical access for its commercial and military vessels. China has offered to rebuild airfields in Greenland, oil rigs in Norway, railroads in Russia, and rolling stock in Canada. As noted in the US Coast Guard’s *Arctic Strategic Outlook*, the PRC’s persistent challenges to “the rules-based international order around the globe cause concern of similar infringement to the continued peaceful stability of the Arctic region.”<sup>35</sup> China’s malign behavior in the Indo-Pacific region provides insight and is a harbinger of what is to come, as China’s economic, military, and scientific presence grows in the Arctic. One can easily surmise that China will attempt to use its future footholds in the Arctic to further undermine the international rules-based order.

In response to the increasing strategic significance of the Arctic, the US Department of Defense, US Navy, US Coast Guard, and US Air Force have each produced an Arctic strategy or outlook. The US Army expects to unveil its own strategy in 2021. These strategies aim to drive America’s actions to maintain a peaceful, rules-based Arctic. These strategies are characterized by respect for national sovereignty and constructive engagement among the Arctic nations, while maintaining America’s own freedom of navigation and ensuring the defense of the homeland. Each strategy calls for an increased and sustained presence, greater cooperation with Arctic allies, additional joint-force training and exercises in the Arctic, and corresponding investment in capacity and capabilities that yield an advantage in the unique environment. Implementing these strategies will be difficult, as the US defense budget is expected to remain relatively flat through 2025—with only a mild 10-percent increase in the following 10 years.<sup>36</sup> Further complications include budgetary pressures for substantial investments needed for nuclear modernization and the shift to high-end capabilities to dominate near-peer adversaries.

Eleventh Air Force is leading the efforts to execute the USAF Arctic strategy, using decades of experience in the Far North. Activated as the Alaskan Air Force in January of 1942 to defend the Territory of Alaska during World War II, the unit was redesignated the Alaskan Air Command in 1945 and tasked with man-

aging the air defense of North America. Throughout the Cold War, Alaska-based fighter aircraft sat alert, acting as “Top Cover for America” and ready to react to Soviet bombers around the clock. Today, in support of the North American Aerospace Defense Command, fighters, air-refueling tankers, airborne early warning and control systems (AWACS), and ground-based radar systems integrated with our Canadian allies continue to guard the North American Arctic.<sup>37</sup>

Eleventh Air Force has seen firsthand the increased activity in the Arctic. Intercepts of Russian aircraft entering the North American Air Defense Identification Zone (ADIZ) set records in 2020. Not only are ADIZ penetrations more common but the geographic range has also increased and the types of aircraft and their associated missions have changed. Tu-142 maritime patrol aircraft have overflowed the Aleutian Islands, Il-38 antisubmarine aircraft flew within 50 miles of US territory, and Su-35 fighters have escorted Tu-95 Bear bombers while being provided situational awareness from an A-50 AWACS. In June 2020, two such formations came within 32 miles of the Alaska coastline.<sup>38</sup>

Eielson AFB (EAFB), in the Alaskan interior, has begun receiving two squadrons of F-35s. Initial testing of all F-35 variants at EAFB proved their ability to operate in the extreme cold weather found there. Winter temperatures routinely reach – 40°F and have required EAFB Airmen to develop techniques and procedures to operate and maintain the USAF’s newest fighter in this most extreme environment.<sup>39</sup> Combined with the two F-22 squadrons on Joint Base Elmendorf-Richardson in Anchorage, the State of Alaska will host the largest force of fifth-generation aircraft in the world.

Education is critical to success in the Arctic and in the 2021 National Defense Authorization Act, the US Congress directed the establishment of the Ted Stevens Center for Arctic Security Studies, a new Department of Defense Regional Center. The USAF is inserting Arctic-focused studies into all levels of professional military education and is seeking partnerships with Arctic-focused civilian universities to build educational programs for future leaders. There will be more exercises in the Arctic and more participants will be attending. The exercise schedule will also change from avoiding the winter to actively seeking it out. Finally, increased participation in international organizations, Arctic think tanks, international exercises, and robust partnerships with Arctic indigenous communities will allow the Joint Force to expand its Arctic expertise using tactics, techniques, and procedures developed by other Arctic experts.

Increased US presence in the Arctic will place pressure on already strained capacity. This augmented presence cannot be achieved by only air assets, occasional naval patrols, or sporadic land training; rather, sustained engagement requires air, sea, and land forces to be assigned and operated in the Arctic. Additionally, space-

based assets must be established in proper polar orbits to be effective at high elevations and need to have their limited operating time devoted to Arctic taskings.<sup>40</sup> The lack of infrastructure in Alaska, which includes roads, ports, and railroads, combined with great distances, requires investment in training and operational infrastructure to support joint forces. The environment, despite warming, will drive research and development in Arctic-capable technologies, building materials, clothing, and other resources that are more expensive than their fair-weather equivalents. Any increased focus on the Arctic drives resource and manning bills that reduce availability and effectiveness in other regions.

### **Future of the Arctic**

The future of the Arctic as a peaceful region open to shipping, responsible resource extraction, and security for its nations is not assured. Its delicate natural environment and climate are affected by activities originating thousands of miles away and creates additional problems that cannot be solved solely within the Arctic. While some nations seek cooperation and mutual benefits, others desire to shape the region in a manner that benefits only their own singular national priorities. The East and South China Seas rapidly developed into hotspots and potential crisis locations based on China's disregard for international laws and norms. The Arctic is now poised to become an area where China and others attempt to exert their economic power and influence. The desire for commerce, natural resources, and fishing will drive increased investments, greater spending on foreign infrastructure, more requests for scientific access, and additional expeditions to the Arctic to exert self-proclaimed rights in the region.

The effort to shape the Arctic's future has grown beyond a NATO, US European Command (EUCOM), US Indo-Pacific Command (INDOPACOM), or US Northern Command problem. The Arctic transects all these geographic commands and requires a combined effort. US joint forces must be shared among the European, Pacific, and North American Arctic regions to balance demands. A new approach can create a balance of presence in the Arctic, while increased INDOPACOM and EUCOM activities in the Far North can increase America's national presence in the region. Efforts within the services to create global multi-domain command and control will optimize the deployment and execution of all joint forces, which subsequently creates efficiencies and reduces resource drain.

The new Arctic has already changed the dynamics of international commerce, the search for raw materials, access to the Far North, and military presence. History has shown that when America is slow to react to global challenges, the nation may find itself in a game of catch-up with the nations that acted quickly. However, the realities of US global commitments make it impossible to focus on the Arctic

without accounting for the other regions of global competition. Only by thoughtfully executing, evaluating, and improving the nation's Arctic security strategies will the nation be able to achieve the allocation and sharing of critical resources that secure US national Arctic interests to better guarantee the Arctic's future as a secure and stable region. ❄️

#### **Lt Gen David Krumm, USAF**

General Krumm is the Commander, Alaskan Command, United States Northern Command; Commander, Eleventh Air Force, Pacific Air Forces; and Commander, North American Aerospace Defense Command Region, North American Aerospace Defense Command, Joint Base Elmendorf-Richardson, Alaska. He is the senior military officer in Alaska, responsible for the integration of all military activities in the Alaskan joint operations area, synchronizing the activities of more than 21,000 active-duty and reserve forces from all services. As Commander of the Alaskan Region of the North American Aerospace Defense Command, General Krumm directs operations to ensure effective surveillance, monitoring, and defense of the region's airspace. He is also responsible for the planning and execution of all homeland defense operations within the area of responsibility, including security and civil support actions. General Krumm also commands Eleventh Air Force, overseeing the training and readiness of five wings and Air Force installations located in Alaska, Hawaii, and Guam.

General Krumm entered the Air Force as a distinguished graduate of the Air Force ROTC program at Auburn University. He has served in a variety of flying, staff, and command assignments and has commanded at the flight, squadron, and wing levels.

General Krumm is a command pilot with more than 3,000 hours in the T-37, T-38, F-15C and F-22. During his career, he flew combat missions in support of Operation Southern Watch.

#### **Col Matthew Nicholson, USAF**

Colonel Nicholson serves as the Deputy Commander, Eleventh Air Force, JBER, AK. He serves as chief advisor to the Commander in executing the air component mission in Alaska, Hawaii, and Guam.

Colonel Nicholson graduated from the United States Air Force Academy in 1996. He has held a variety of operational, flying, and staff assignments, including Squadron Command, Eleventh Air Force Director of Operations and Plans, F-15C Instructor Pilot, Air Liaison Officer, HQ Air Force Staff Officer, Pacific Command Staff Officer, US Forces-Iraq Staff officer, and Wing Director of Staff.

Col Nicholson is a Command Pilot with more than 2,100 hours in the F-15C/D, B-52H, AT-38, T-38, and T-37. He has been qualified as a combat ready pilot since 2000, deploying in support of Operations Southern Watch, Iraqi Freedom, and Noble Eagle.

#### **Notes**

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