Arctic Airpower: Searching for an Air Force Strategy

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Arctic Airpower: Searching for an Air Force Strategy

The North American Arctic is a vital region for the United States (U.S.) and the Air Force. Decreasing polar ice has allowed for increased maritime access to the Arctic. Additionally, it has brought a renewed focus by American allies and potential adversaries on the Arctic’s strategic importance. The U.S. national and military strategies are designed for a primarily maritime Arctic region but are under-resourced and reveal many gaps in capabilities regarding security in the Arctic. The U.S. Air Force has the assets and mission experience to provide a joint solution to close three gaps: domain awareness, communications, and rapid response. This paper will examine the Arctic environment and strategic actors with interests in the region, then review current U.S. national and Department of Defense (DoD) strategies for the Arctic to identify the ends, ways, means and risks for each. It concludes with an analysis of existing Air Force Arctic capabilities and a potential framework for an Air Force strategy to adapt to regional changes, support U.S. partner agencies, and secure the Arctic air and space domains.

Polar, Alaska, Russia, China, Search and Rescue

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Abstract

The U.S. national and military strategies are designed for a primarily maritime Arctic region but are under-resourced and reveal many gaps in capabilities regarding security in the Arctic. The U.S. Air Force has the assets and mission experience to provide a joint solution to close three gaps: domain awareness, communications, and rapid response. This paper will examine the Arctic environment and strategic actors with interests in the region, then review current U.S. national and Department of Defense (DoD) strategies for the Arctic to identify the ends, ways, means and risks for each. It concludes with an analysis of existing Air Force Arctic capabilities and a potential framework for an Air Force strategy to adapt to regional changes, support U.S. partner agencies, and secure the Arctic air and space domains. The North American Arctic is a vital region for the United States (U.S.) and the Air Force. Decreasing polar ice has allowed for increased maritime access to the Arctic. Additionally, it has brought a renewed focus by American allies and potential adversaries on...
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I believe in the future he who holds Alaska will hold the world, and I think it is the most important strategic place in the world.

—Brigadier General William “Billy” Mitchell

The North American Arctic is a vital region for the United States (U.S.) and the U.S. Air Force. During World War II and the Cold War, this region played a key role in guaranteeing the defense of the American homeland and ensuring the Air Force’s ability to support a multitude of operations in Europe and Asia. Military emphasis on the Arctic declined post-Cold War, and so did the importance of resourcing and maintaining appropriate Arctic infrastructure and capabilities. Decreasing polar ice has allowed for increased maritime access to the Arctic. Additionally, it has brought about a renewed Arctic focus by the American allies, and potential adversaries on the region’s strategic importance. With the release of the national and defense strategies for the Arctic in 2013, the United States slowly began to refocus on its interests in the Arctic.

The Air Force plays a role in ensuring American strategic success in the Arctic. The Air Force unwaveringly monitors American territorial airspace and defends the homeland in the Arctic region. For example, on May 3, 2017, the Air Force identified a Russian TU-95 bomber and two SU-35 fighter aircraft near Alaskan airspace and intercepted them with two F-22 fighters. Additionally, the Air Force maintains Arctic safety through its coordination and execution of over 1,800 search and rescue missions in the region since 1991. Air Force satellites, radars, and command and control units monitor the Arctic continually. These assets provide Arctic navigation guidance and enhanced polar communication. The Air Force has relied on broad strategies at the national and the Department of Defense (DoD) levels to develop its plans for the Arctic.
The increasing international interest in the Arctic raises questions about the Air Force’s lack of a specific strategy for the Arctic.

This paper will examine the Arctic environment and strategic actors with interests in the region. Next, the paper will review current U.S. government and DoD strategies for the Arctic to identify the ends, ways, means and risks for each. The paper concludes with an analysis of existing Air Force Arctic capabilities and a potential framework for an Air Force strategy.

The Arctic Environment

The national territories, seas, and straits north of the Arctic Circle, which is the line that circles the globe at 66° 34’ N latitude, defines the Arctic region. Additionally, the Arctic Research and Policy Act of 1984 added to the definition “all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering, and Chukchi Seas; and the Aleutian chain” (see Figure 1). Canada, Denmark, Iceland, Norway, Russia, Sweden and the United States are Arctic nations because they possess sovereign territory north of this line. This mix of allies and adversaries, along with increased access to the region, creates a complex geopolitical environment.
In recent years, the climate of the Arctic region has experienced a significant increase in annual average temperature. The increased polar temperatures have reduced the polar ice caps by 40 percent since 1979. This has cleared parts of the Arctic Sea for maritime transit for more extended periods each year (see Figure 2). As the polar ice recedes, it provides increased maritime access for American and international commercial, governmental, and military activities in the Arctic.
The Arctic region holds a vast amount of natural resources that are crucial to the Arctic nations. A recent U.S. Geological Survey report estimated vast deposits of subsea oil and natural gas along with substantial traces of precious minerals, such as nickel, copper, and cobalt. This region potentially holds up to 13 percent of the world’s undiscovered oil reserves and 30 percent of the world’s natural gas reserves (see Figure 3). Fisheries make up another important Arctic renewable resource. For instance, the Bering Sea fisheries provide more than half of the annual wild-caught fish and shellfish for the United States.

Figure 3. Arctic Sea Routes and Potential Oil and Gas Fields
Diminishing sea ice will likely increase the commercial shipping and maritime tourism traffic throughout the region. The future may see the opening of three sea lanes for full or seasonal maritime use: the Northern Sea Route, the Northwest Passage, and the Central Arctic route (See Figure 3). There was a 118 percent increase in Bering Strait commercial shipping from 2008 to 2012 due to more navigable Arctic Oceans. The Arctic shipping route from Asia to Europe reduces transit time by thirty percent as compared to the Suez Canal route. In August 2016, the Crystal Serenity traveled from New York to Alaska, marking the first ever transit of the Northwest Passage by a giant luxury cruise ship. More cruise lines are expected to continue this route as the receding polar ice makes the Arctic routes more tempting for commercial shippers. The increased activity and presence increasingly highlight the future importance of the region and the U.S. role in providing safety and security to the Arctic.

A recent Heritage Foundation report listed the Arctic “as an important operating environment” for the United States, but America “is not well positioned in the region.” As nations such as Russia, China, and other allies focus on the Arctic, it will present new and significant security challenges to the United States. Increased access means increased activity and more chances for disputes, accidents, and disaster. The shortest air route from Europe and Asia to North America is over the Arctic. A navigable Arctic Ocean provides potential adversaries a shorter maritime route to America’s northern border. The Arctic provides the northern flank for U.S. homeland defense strategy. The 2017 National Security Strategy highlights this interest, as it states the first and most fundamental American responsibility is to “protect the homeland.”
The Arctic plays a role in the potential future success of America's economy and access to resources which contribute to this success. The increased access to oil, natural gas, fisheries, and commercial maritime routes makes the Arctic a significant region for potential economic growth. However, this access increases international competition for these resources, as well as intensifying existing disputes over territories and boundaries to secure these assets.\textsuperscript{25} The current National Security Strategy promotes American prosperity as another national interest that further highlights the importance of this region.\textsuperscript{26}

The 2017 National Security Strategy also highlights the importance of maintaining partnerships and alliances.\textsuperscript{27} Several international organizations are shaping U.S. Arctic interests in this regard. In 1996, Canada, Denmark, Iceland, Norway, Russia, Sweden, and the United States formed the Arctic Council.\textsuperscript{28} The Arctic Council is a forum to discuss common regional issues, focusing on sustainable development, environmental protection, cooperation, and coordination. Elements of U.S. defense requirements for the region stem from two recent agreements made through the Arctic Council: \textit{Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic} in 2011 and \textit{Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic} in 2013.\textsuperscript{29} This paper will discuss both in more detail. While such cooperation is key to American interests in the Arctic, several U.S. near-peer competitors are developing capabilities to compete in the region.

Russia was one of the first nations to expand its Arctic government and military presence. This regional competitor and potential U.S. adversary is developing a new Arctic joint military command, four Arctic brigades, ten air defense radar stations, 14
operational airfields, 16 deep water ports and 40 new icebreakers. This Russian military development appears significant when compared to the U.S. Arctic military infrastructure, as seen in Figure 4. The new airfields give Russia a quick strike capability against the United States and its northern NATO allies.

These airfields are the base for Russian interceptors, fighter, and attack aircraft, along with various electronic warfare and transport aircraft. Russia’s air patrols over the Arctic have also increased since 2007. Strategic Russian bombers, such as the Tu-95 and Tu-22M3, have increasingly penetrated air defense zones of the United States, Finland, and Norway since 2014. Russia’s stated goal for its regional expansion is to exercise sovereignty over its territories and waterways and to counter the perceived NATO expansion and threat.

Figure 4. Russian Arctic Military Presence
Russia asserts that it will continue to use a cooperative strategy with the other nations in the Arctic. In this complex geopolitical environment, it is difficult to interpret whether Russian actions are cooperative or aggressive, similar to their operations in Ukraine in 2014. Military actions in Ukraine demonstrate Russia's willingness to use force to guarantee its interests. Russian military leaders have made statements which contradict their stated desire for Arctic cooperation. In 2014, the Russian Land Forces commander, Colonel General Oleg Salyukov, stated that Russian militarization of the Arctic was to “demonstrate to other Arctic nations Russia’s military presence in the increasingly contested region.” The Eleventh U.S. Air Force commander, Lieutenant General Kenneth Wilsbach, recently commented on the development of Russian Arctic amphibious units: “Amphibious operations are clearly for inserting troops and taking territory.”

China has also shown increased interest in the region. In 2013, the Arctic Council accepted China’s request to be named a “permanent observer state.” While not an Arctic nation, China is interested in the region for shipping routes, fisheries, and natural energy resources. China looks to cooperate in the region but has also introduced a military aspect to their regional engagement. In 2015, five Chinese naval vessels took part in a joint Russian-Chinese military exercise only 12 nautical miles from U.S. territory in the Alaskan Arctic. A recent Center for Strategic and International Studies report stated that “the incident reflects a growing Chinese ambition to establish itself as a player in the Arctic region.”

In January 2018, China released its Arctic policy which solidified those comments. Overall, China’s objective is “to understand, protect, develop, and participate
in the governance of the Arctic." China’s rhetoric appears to support a stable Arctic, where nations work together to enhance mutual interests. However, China has stated similar intentions for the South China Sea but has shown disregard for regional sovereignty and international freedom of navigation laws there. Russia and China are not the only nations looking to increase national presence in the Arctic, as many of America’s allies are developing Arctic security strategies with similar priority.

Canada and Norway are advancing their respective national strategies to safeguard their Arctic interests. Canada, in its 2017 National Defense Policy, outlined plans to upgrade its military surveillance, communication and aircraft capabilities in the Arctic. Additionally, it announced plans to expand its northern Air Defense Identification Zone and forward deploy CF-18 fighter aircraft to increase patrol capabilities.

Norway has also focused on expanding its military presence in the Arctic to protect their national interests. Fundamental to Norway’s Arctic strategy is its procurement of the F-35 Lightning II multi-role fighter aircraft and the development of AEGIS frigates. Ensuring airspace sovereignty and providing missile defense are the primary reasons for these acquisitions. Norway’s Defense Minister describes Norway’s Arctic region as “more challenging and less predictable,” and these military additions highlight their desire to improve security and defense. In 2017, Norway clarified its strategy by deploying an armored battalion to deter undesired Russian actions near its northern border. While these two U.S. allies believe the Arctic region will continue to be peaceful, neither wishes to fall behind Russia in their regional presence or ability to influence.
Assessing U.S. Arctic Strategies and Agreements

A review of national-level, defense, and individual military service Arctic strategies is in order. Doing so will identify strategic capabilities gaps which the Air Force is uniquely positioned to fill, and this will drive the need for its own Arctic strategy. The 2017 National Security Strategy asserts that protection of American borders is the highest priority for U.S. national security. Following this interest is securing the U.S. economy, rebuilding the American military, and developing partnerships to advance U.S. interests and values. While the 2017 National Security Strategy does not explicitly mention the Arctic region, the Arctic environment presents a challenge to U.S. interests and objectives.

The first U.S. strategic document to direct actions in the Arctic is the 2009 National Security Presidential Directive (NSPD) 66, Homeland Security Presidential Directive (HSPD) 25. The NSPD 66/HSPD 25 is broad in its approach, directing policy to “meet national security and homeland security needs relevant to the Arctic region” and to “strengthen institutions for cooperation among the eight Arctic nations.” The directive lays out U.S. national security interests for the region, including “missile defense and early warning systems…strategic deterrence and ensuring freedom of overflight.” The directive tasks the Secretary of Defense to “develop greater capabilities and capacity…to protect American air, land and sea borders” and “preserve the global mobility of U.S. military and civilian vessels and aircraft.”

The NSPD 66/HSPD 25 provided the first direction for the DoD to begin focusing resources on the Arctic, highlighting America’s interest in the region to the international community. The document emphasized the maritime nature of the Arctic and sought to establish an Arctic policy primarily focusing on that domain. Critics of the directive also
note the United States “remains a somewhat reluctant Arctic actor” and demonstrates a lack of urgency in dealing with Arctic issues. The NSPD 66/HSPD 25 acknowledges there is a lack of U.S. Arctic infrastructure and capabilities but does little to resource the means for future development.

In 2013, the White House released the *National Strategy for the Arctic Region*. The objective of this strategy is to position America “to efficiently respond to challenges and emerging opportunities arising from significant increases in Arctic activity.” The national strategy provides direction for two broad defense tasks. The first is to “advance U.S. security interests” and the second is to “pursue responsible Arctic region stewardship.”

Critics of the national Arctic strategy note that it falls short in many areas of ensuring U.S. interests in this region. They argue that it is vague and does not lay out specific tasks or ways to meet the desired objectives. Additionally, the objectives are unattainable until they receive funding. Finally, the *National Strategy for the Arctic* does not assign any direct tasks to the military or any other federal agency.

In 2016, the interagency Arctic Executive Steering Committee released the *Implementation Framework for the National Strategy for the Arctic Region*. This document provided more detailed, specific guidance to the DoD. This plan tasks the DoD to lead the evaluation of space-based observation capabilities; conduct maritime exercises and operations in the Arctic region; and lead international Arctic search and rescue exercises. While this framework provides increased detail for ways to ensure national interests, it does not instill a sense of urgency to support the region because it required three years to develop.
The 2013 *Department of Defense Arctic Strategy* delivers the initial strategy for the DoD in the Arctic. The strategy defines a DoD end-state to maintain “a secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is protected, and nations work cooperatively to address challenges.” This strategy outlines two supporting objectives for the DoD. It directs the DoD to “ensure security, support safety, and promote defense cooperation” and “prepare for a wide range of challenges and contingencies.”

In 2016, the DoD released its *Report to Congress on Strategy to Protect U.S. National Security Interests in the Arctic Region* as an updated military strategy for the Arctic. The U.S. national end-states and objectives for the Arctic remain unchanged in this strategy while it clarifies the DoD’s Arctic interests. These interests include shaping military activity “to avoid conflict while improving its capability to operate safely” and the seeking to preserve “the rights and freedoms regarding navigation and overflight.”

Specifically, this document outlines broad strategy ways which include:

- enhance the capability of U.S. forces to defend the homeland and exercise sovereignty,
- strengthen deterrence at home and abroad,
- strengthen alliances and partnerships,
- preserve freedom of the seas,
- improve domain awareness in the Arctic,
- evolve DoD Arctic infrastructure and capabilities,
- support civil authorities and foreign humanitarian assistance,
- partner to support safety,
- promote regional cooperation and rule of law.
The 2016 Report to Congress identifies many of the DoD gaps in meeting the objectives of the 2013 strategy. This report discusses the challenges of the military to maneuver, employ and sustain capabilities due to the harsh Arctic environment. The report briefly mentions the limited polar navigation aids, poorly mapped terrain and waterways, and the challenges of satellite communication above 65 degrees north latitude. Overall, the 2016 Report to Congress does an excellent job of defining the objectives and the resource gaps in pursuing a national Arctic strategy.

The Report to Congress is the first document which mentions Air Force requirements for the Arctic, though the statements are brief. Specifically, it mentions the need to modernized existing platforms for improved air mobility to access the region. Furthermore, it addresses the requirement for enhanced personnel recovery capabilities, “particularly for long-range operations in or over the Arctic Ocean.”

Colonel John Conway, a retired USAF intelligence officer and military defense analyst, delivers a critique of the 2016 DoD Arctic strategy when he notes the current DoD strategy reflects “no great urgency to improve its Arctic posture.” This criticism is due mainly to a lack of DoD and national focus on the Arctic while American competitors advance their capabilities and infrastructure. Conway also states that the DoD strategy focuses solely on maritime capabilities and fails to address the need for airpower in the Arctic.

The Unified Command Plan establishes responsibilities among combatant commands for organizing and coordinating military action in the Arctic (Figure 5).

Two geographic combatant commands share primary responsibility for military operations in the Arctic: U.S. Northern Command (USNORTHCOM) and U.S. European Command (USEUCOM) … USNORTHCOM has geographic combatant command responsibility for
Alaska and a subordinate unified command, Alaskan Command, which focuses on planning and execution of USNORTHCOM missions in Alaska and the USNORTHCOM portion of the Arctic ...The Forces for Unified Command document assigns most Federal forces based in Alaska to U.S. Pacific Command (USPACOM).67

Additionally, the Commander of USNORTHCOM is responsible for defining the requirements and capabilities required for Arctic military operations and advocating for future requirements.68

![Figure 5. Combatant Command Arctic Areas of Responsibility](image)

The Navy developed its Arctic Roadmap in 2014 to support the DoD’s objectives for the Arctic. Due to the region’s maritime nature, the Navy acts as the de facto lead Service in the DoD for Arctic matters. The strategic objectives for the Navy are to
ensure U.S. sovereignty and provide homeland defense; provide forces to respond to crisis and contingencies; provide access to global commons; and develop and promote Arctic partnerships.  

The Navy’s strategy describes the environment, climate, vast distances, and limited U.S. Arctic infrastructure as primary challenges for current and future naval operations. The Navy states, “Given the vast distances and virtually no supporting infrastructure, naval forces without specialized equipment and operational experience face substantial impediments”; consequently, their ability to operate in the Arctic is a “flexible, periodic presence.” The Navy will support and execute missions in the region including sea control, power projection, search and rescue, disaster response, and defense support to civil authorities.

The Center for International Maritime Security notes the reluctance of the Navy to prioritize the Arctic. The Navy admits its unwillingness to commit its limited resources to develop a more significant Arctic capability. Currently, the Navy focuses its resources on regions where they are engaged in conflict or the probability of future conflict is higher. While the Navy is the de facto lead Service for the Arctic, Conway notes they do not mention working with any of the other Services to secure national interests in the Arctic.

In 2013, the Coast Guard released its Arctic Strategy, which is rooted in the NSPD 66/HSPD 25 and the 2013 National Strategy for the Arctic Region. The Coast Guard’s role in the Arctic is to provide homeland security, safety management, and stewardship of U.S. waters, and guarantee freedom of navigation and overflight in U.S. Arctic waters as described in their strategy. Like the Navy, the lack of infrastructure
and Arctic capability prohibits the Coast Guard from achieving an enduring presence in the region.

A nation’s power in the Arctic is often measured by the number of icebreakers they possess and the capabilities of those ships. The U.S. Coast Guard currently maintains only one heavy polar icebreaker and a medium polar icebreaker. Icebreakers are crucial to providing yearlong access to the Arctic Ocean and the lack of these assets limits maritime access to the ice-filled ocean. Every year the heavy icebreaker deploys for part of the year to Antarctica, straining this limited capability. Additionally, the Coast Guard strategy notes limited basing in the Arctic. The nearest Coast Guard facility to the northern Alaska Coast is its air station at Kodiak, over 900 miles south of Barrow, Alaska.

Absent from the discussion are the Arctic strategies of the U.S. Army and the U.S. Marine Corps. Like the Air Force, these Services have yet to develop a specific Arctic strategy while still acknowledging the importance of the region. Both Services recognize the unique skills and requirements for operating in the Arctic. The Army established the Northern Warfare Training Center in Alaska, while the Marines operate the Mountain Warfare Center in eastern California to train individual soldiers and Marines in basic Arctic skills.

Both Services regularly exercise in the Arctic to demonstrate capability and develop future skills. In February 2017, the Army (with support from the Air Force) completed exercise SPARTAN PEGASUS, which involved the airborne insertion and ground operations of 150 soldiers. The Marines have enough equipment to support a brigade prepositioned in underground mountain bunkers in Norway’s Arctic region.
Since January 2017, over 300 Marines have deployed as a rotational force to Vaernes, Norway, for training and as a deterrence to Russia.

The DoD’s strategy to engage in the Arctic lacks urgency. Additionally, it lacks a comprehensive DoD plan to modernize existing equipment or develop new Arctic capabilities. The gaps in the DoD and the Coast Guard capabilities include the lack of persistent presence; degraded navigation, and communication capability; the lack of infrastructure to operate; and the vastness of the region. The stated national and military objectives and ends for the Arctic are clear. The ways and means are still lacking, which increases the risk for the strategies seeking to guarantee American Arctic interests.

Air Force Arctic Missions and Capabilities

The National Strategy for the Arctic Region and the DoD’s Arctic Strategy do not discuss exploitation and control of the air and space domains in sufficient detail to ensure the success of U.S. strategies in the Arctic. The Air Force currently executes several of its core missions in the Arctic to achieve national objectives. Air and space superiority, intelligence, surveillance, and reconnaissance (ISR), rapid global mobility, and command and control need modernization and enhancement as involvement in the Arctic environment continues to develop.

Essential to Arctic domain awareness and the homeland defense is the ability of the Air Force to conduct its ISR mission. Early warning radars are part of America’s defense against ballistic missiles and enemy aircraft. For missile warning and defense and space awareness, the Air Force has radars and personnel stationed at Clear Air Station, Alaska and Thule Air Base, Greenland.
Defense of America’s homeland and deterrence of adversaries occurs in the Arctic through the Air Force's air and space superiority mission. A squadron of F-22 Raptors, stationed at Elmendorf-Richardson, provide air dominance while Joint Base Elmendorf-Richardson, Alaska hosts a squadron of E-3 Sentry Airborne Early Warning and Control (AWACS) aircraft. The fighters and the AWACS are responsible for Russian military aircraft intercepts on America’s Arctic border. The Air Force plans to base a squadron of F-35 Lightning II multi-role fighters at Eielson Air Force Base, Alaska to ensure this capability remains in the future

The Air Force’s global mobility mission encompasses several national tasks for the Arctic. It gives the nation the ability to defend the homeland and provide support to civil authorities and foreign humanitarian assistance. Two subsets of the global mobility mission, airlift and combat search and rescue, directly support these national requirements.

Two squadrons of C-17 Globemaster III and a squadron of C-130H Hercules mobility aircraft provide tactical and strategic airlift from Elmendorf-Richardson. These aircraft provide support to homeland defense and support contingency support for homeland disaster response. In November 2015, a C-17 delivered four U.S. Army Stryker vehicles and 40 soldiers north of the Arctic Circle to Deadhorse, Alaska. This exercise highlights the importance of rapid mobility to overcome the vast distances faced by the DoD in the Arctic.

While not stationed near the Arctic, the Air National Guard also operates a squadron of ski-equipped LC-130 Hercules aircraft. These aircraft have the niche capability to “operate from prepared and unprepared snowfields, floating ice sheets,
glaciers, and traditional paved runways. These aircraft are based at Stratton Air National Guard Base, Scotia, New York and can rapidly deploy to support a range of Arctic operations.

Air Force airlift capabilities can support Arctic intergovernmental agreements in the region where there is limited support infrastructure and disaster response is slow. In 2013, the Arctic Council coordinated the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic. This agreement works to coordinate the response to clean up oil spills in the Arctic. Few nations, other than the United States, can expeditiously bring personnel and equipment in large amounts to an Arctic emergency area.

The Air Force also supports the DoD’s requirements for support to civil authorities and humanitarian assistance with its Alaska-based aircraft. Joint Base Elmendorf-Richardson provides dedicated personnel recovery capability through two Alaska Air National Guard aircraft squadrons (HC-130J Combat King II aircraft and HH-60G Pavehawk helicopters) that are manned by Air Force Special Operations personnel in a Guardian Angel squadron. These squadrons train for Air Force combat search and rescue missions while providing Alaska with a civilian search and rescue capability. Both the HH-60G and the HC-130J are air refuelable assets giving them unlimited range. This capability gives the Air Force the ability to provide search and rescue and humanitarian assistance missions outside the range of similar Coast Guard, Navy and Army assets.

The Air Force’s search and rescue capability is also key to supporting another Arctic Council agreement. In 2011, members of the Arctic Council signed the
Agreement on Cooperation on Aeronautical Maritime Search and Rescue in the Arctic.

The agreement assigns responsibility to the United States for the coastline around Alaska, with Russia supporting in the west and Canada to the east, north across the Arctic Sea to the North Pole (see Figure 6). Under this agreement, the Coast Guard is the authority for search and rescue coordination in the U.S. Arctic sector. Alaska’s most northern city, Barrow, lies 1,200 miles from the North Pole, which is a significant distance for ships to cover; airpower provides the quickest response.

Figure 6. Arctic Search and Rescue Regions
Finally, the Air Force provides a critical command and control mission for both Air Force and joint operations in the Arctic from the North American Aerospace Defense Command’s Air Operations Center in Colorado. The Alaska Air National Guard’s 11th Rescue Coordination Center coordinates interagency and joint search and rescue operations in Alaska. The Air Force will launch two satellites in 2018 as part of the Enhanced Polar System to provide secure military communications above the Arctic Circle.

The current national and DoD Arctic strategies adequately define the ends and outline the ways for the Air Force to support national Arctic interests. However, they do not effectively integrate the air and space domains because of their heavy maritime focus.

Components of an Air Force Arctic Strategy

When asked about the development of an Arctic strategy, Lieutenant General Mark Nowland, Air Force deputy chief of staff for operations, stated, “What do the plans say we have to do now, what are the gaps between the changing conditions, what are the concept of operations that fill those gaps?” An Air Force Arctic strategy could ensure the Air Force means to secure national objectives for the Arctic.

A senior fellow from the American Security Project recently stated that, in regards to the Arctic, “There is a danger that other countries may perceive U.S. inattention as weakness.” Countries, such as Russia or China, may attempt to take advantage of the United States’ lack of capabilities and presence in the Arctic to advance their own interests. To enhance homeland defense and security, the U.S. Air Force’s Arctic objectives should be: 1) provide a postured, prepared, and modernized force to defend
the nation and respond to wide range of contingencies, and 2) strengthen joint and strategic partnerships. 

Developing new and modernizing existing Air Force Arctic surveillance and communication capabilities, space-based infrastructure, and aircraft are top priorities. Arctic maritime, air, and space domain awareness will all increase due to these capabilities. The development of enhanced communication and navigation infrastructure will increase the security, safety, and ability to command and control future Arctic operations. Another priority is upgrading air assets that support disaster response, humanitarian aid, and search and rescue missions. This requires improving the niche capabilities of the LC-130 ski aircraft and the aging HH-60G helicopter fleet to meet future challenges.

The Air Force will need to revitalize and expand Arctic training for airmen through its Arctic Survival School at Eielson Air Force Base. The Air Force should reinstate Arctic research and studies at the Air University. Previously, the Air Force maintained this capability through its education and training command with a specialized center which conducted Arctic research and published its findings in manuals and newsletters. Air Force research should be coordinated with the Army's Cold Regions Research and Engineering Laboratory in Fairbanks, Alaska, and the National/Navy Ice Center in Suitland, Maryland. Joint solutions to Arctic challenges might fill the gaps in the various Service Arctic strategies.

The second objective of the Air Force's Arctic strategy must focus on strengthening joint and strategic partnerships with the other Services and agencies to ensure national and DoD objectives. The Air Force should participate in U.S. Northern
Command’s Arctic Capabilities Advocacy Working Group to advance knowledge of Arctic requirements, capabilities, and problems.\textsuperscript{109}

The Air Force must continue to train with joint partners, allies, and strategic competitors to be prepared for a range of Arctic contingencies. The Air Force should continue to support and participate in homeland defense exercises such as VIGILANT SHIELD, a combined United States and Canada air sovereignty exercise.\textsuperscript{110} The Air Force needs to train all Arctic Council nations—not just U.S. allies. Expanding exercises like ARCTIC CHINOOK, a search and rescue simulation exercise that Russia observed in 2016, will bring all Arctic nations into closer cooperation for mutual benefit.\textsuperscript{111}

Conclusion

Secretary of Defense James Mattis described the Arctic as “key strategic terrain.”\textsuperscript{112} He continued by stating, “I believe that our interests and the security of the Arctic would benefit from increasing the focus of the Department of Defense on this region.”\textsuperscript{113} The gaps in DoD focus, capabilities, and the rapidly changing environment put American Arctic interests at risk. Military gaps in domain awareness, communication, and rapid response capabilities decrease U.S. ability to achieve its strategic objectives in the Arctic. These gaps in the Arctic military capabilities could potentially allow the United States to fall behind adversaries and limit America’s ability to influence the region. The Air Force has the assets and mission sets to provide a joint solution to the challenges in this theater. A dedicated Arctic strategy will allow the Air Force to focus on developing its capabilities, adapting to regional changes, and securing the air and space domains to safeguard American interests in the Arctic.
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