Improving U.S. Posture in the Arctic

Airmen conduct quick-care under fire training at Joint Base Elmendorf-Richardson, Alaska

U.S. Air Force (Zachary Wolf)

By PETER OHOTNICKY, BRADEN HISEY, *and* JESSICA TODD

The United States became an Arctic nation when it purchased Alaska from Russia in 1867. Since then, the U.S. military has had a presence in this vast territory. Indeed, both the U.S. Army and Navy were responsible for administration of the territory in the course of its history. Alaska has been the site of World War II battles and Cold War conflict. Airpower pioneer Brigadier General Billy Mitchell went so far as to testify during 1935 congressional hearings that "Alaska is the most strategic place in the world."[1]

Until this point, the Arctic Ocean north of Alaska has been easily protected and of limited strategic importance due to the ice that has shielded it, impeding both access and use. Now the ice is melting, creating new opportunities and potential threats to U.S. national interests. This shift in the geopolitical environment requires prompt reexamination of U.S. military capabilities, roles, responsibilities, organizations, and command structure in Alaska. To ensure that U.S. national interests in the Arctic are met, the United States needs a realigned subunified command in Alaska that is empowered, resourced, and organized to coordinate the implementation of national and Department of Defense (DOD) Arctic strategy within the U.S. Northern Command (USNORTHCOM) area of responsibility (AOR).

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The Growing Importance of the Arctic

There is no universally accepted definition of what the Arctic is or where its borders lie. Generally speaking, the Arctic is predominantly an oceanic region plus the northern landmasses of its encompassing continents. More specifically, it can be considered the circumpolar region, including both marine and terrestrial systems extending southward from the North Pole, covering over 15 million square miles (about 8 percent of Earth's surface) and home to a population of about 4 million.[2] Territories of eight countries are within the Arctic: Canada, Denmark (representing the dependencies of Greenland and the Faroe Islands), Finland, Iceland, Norway, Sweden, the Russian Federation, and the United States. For a significant proportion of each year, these countries are "continentally" united by winter's spread of Arctic sea ice.

Sea ice has been a feature of the Arctic Ocean for at least 47 million years. According to best current estimates, there has been year-round sea ice in the Arctic for at least 800,000 years.[3] Nevertheless, the average size of the polar ice sheet in September—generally the time of the year when it is smallest—has dropped by more than 30 percent since 1979, when satellite records began.[4] In particular, the last 5 years (2007–2011) have had the five lowest September ice extents in the satellite record, and the thaw in 2011 was second only to the record melt in 2007 when 40 percent of the central Arctic Ocean became open water.[5] Owing to historical data extending back to 1880 that show recent years as being some of the warmest on record, predictions are that the Arctic will be free of summer ice by the end of the century. Moreover, current data suggest this could happen between 2020 and 2050.[6]

As the icepack shrinks, new opportunities for commerce and trade appear. In addition to making the few routes near shore navigable for a greater duration of the short Arctic summer, new sea lanes are opening. More abundant year-round ice had made these routes impassable, but in recent summers the annual ice melt has revealed new oceanic routes significantly shorter than traditional coastal Arctic lanes. Indeed, if predictions hold true that the polar icecap will completely disappear, then new sea lanes would traverse the North Pole itself. Irrespective of which polar sea lane is used, in comparison to a journey across more temperate oceans, routes through the Arctic are attractive because the distance traveled is significantly shortened.

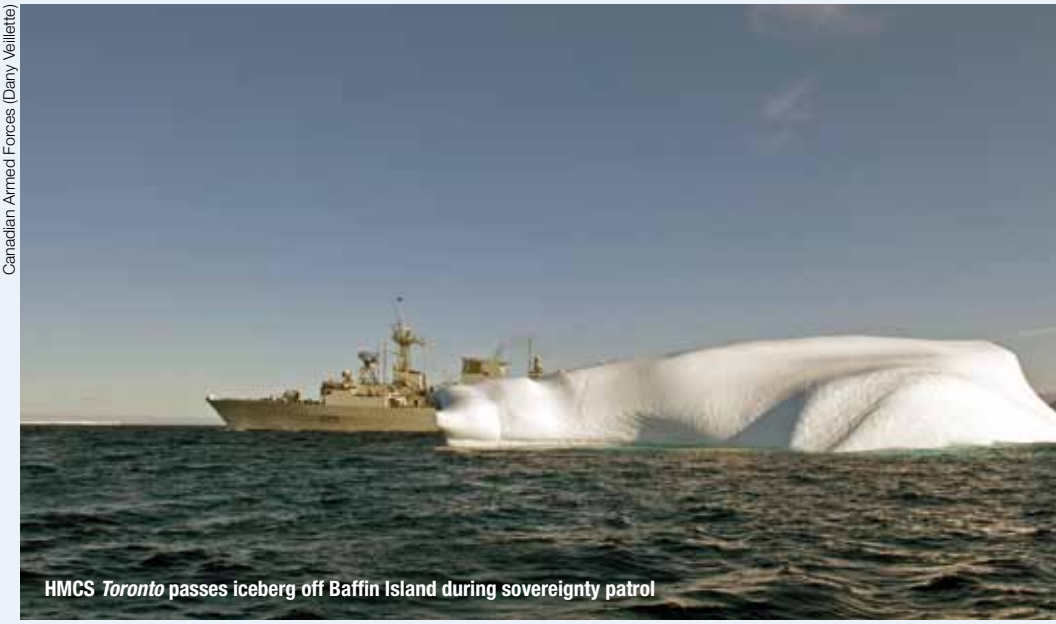
For example, hugging the northern coast of Siberia is the Northeast Passage (the Russians refer to it as the Northern Sea Route). The voyage from the Dutch port of Rotterdam to Yokohama, Japan, along the Siberian coast, is about 4,450 miles shorter than the currently preferred route through the Suez Canal.[7] By trimming days off the trip and the associated savings in fuel costs, the inherent risks of Arctic oceanic voyages become increasingly outweighed by the progressive advantages of the disappearing icepack.

Along the northern coast of North America amid the Canadian Arctic Archipelago is a sea route known as the Northwest Passage, which connects the Atlantic Ocean to the Pacific. By using this route ships cut huge distances off their transits. Nevertheless, the Northwest Passage is not without controversy—Canada is concerned about its use and regulation.

The Canadian government considers the Northwestern Passage (a name also used for the Northwest Passage) part of Canadian Internal Waters, thus giving Canada the right to bar transit. However, most maritime nations, including the United States, consider the passage an international strait where foreign vessels—such as commercial or naval ships, planes, and submarines—have the right of "transit passage." The Northwest Passage is particularly enticing for massive supertankers too big to pass through the Panama Canal and must navigate around the tip of South America.

As the polar icecap melts, it not only creates new routes for transoceanic travel, but it also makes new international waters available for fishing. The Arctic Ocean is encircled by the littoral states of Canada, the United States, Russia, Greenland, and Norway. Waters within 200 nautical miles of shore are the Exclusive Economic Zones of these countries. In the center of that northern ring known as the "Arctic Donut," however, lies 1.1 million square miles of international waters—an area as big as the Mediterranean Sea—not currently governed by any international fishery agreements.[8] Unless an international agreement is completed, the region remains entirely open to the type of exploitation that severely depleted fish stocks in the Bering Sea in the 1980s due to unregulated fishing by Poland, South Korea, and Japan.[9]

The receding polar icecap also exposes more of the sea floor to exploration. By some estimates, the Arctic is believed to hold 15 percent of the world's undiscovered oil reserves and 30 percent of its natural gas.[10] As Arctic waters become increasingly used for trade routes and a source of offshore oil and gas deposits, enormous commercial interests are at stake. Concerns have been raised about the ability to respond to an oil spill in the Arctic—certainly a more difficult and technically challenging response than those confronted in open waters or in more temperate climes.



Canadian Armed Forces (Darry Veillette)

HMCS *Toronto* passes iceberg off Baffin Island during sovereignty patrol

In addition to commercial shipping, ecotourism must also be taken into account. The growing popularity of ocean travel and the desire for exotic destinations have led to increasing numbers of passenger ships in the polar seas. Any ship operating in the remote Arctic environment is exposed to a number of unique risks. The increased interest and traffic in this region and the unique operational, environmental, and search-and-rescue concerns peculiar to the area make rescue or cleanup operations difficult and costly.

No broad international accord covers the Arctic, unlike the Antarctic, which has an international treaty specifically governing its use. The Arctic's prevailing arrangement is via the umbrella treaty United Nations Convention on the Law of the Sea. This is a binding agreement ratified by 161 countries that empowers regulation of fisheries in international waters through regional agreements negotiated between countries. It has been signed by all Arctic nations except the United States. This unratified treaty and, more particularly, the lack of an international accord that governs ventures in the Arctic will continue to make the region and especially its international waters vulnerable to exploitation by far-ranging nations. The U.S. official position is that the Arctic does not need a specific overarching international accord—a position that affords greater sovereignty but also increases the risks associated with a lack of stability.

Notably, the eight Arctic nations do participate in a consultative body known as the Arctic Council, which is an intergovernmental organization exclusive to the Arctic nations but that also grants observer status to interested states, several indigenous tribes, and select or nongovernmental organizations. Its purpose is to provide "a means for promoting cooperation, coordination and interaction among the Arctic states, with the involvement of the Arctic indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic."[11] Founded in 1996 to address environmental issues, its scope has gradually broadened as the warming Arctic has created more opportunity. In 2011, the first legally binding accord was signed by the council's members. This new agreement is singular in scope: it simply coordinates search-and-rescue operations across the millions of square miles of ocean that are becoming more navigable as Arctic sea ice decreases. Although the Arctic Council creates an overall atmosphere of cooperation for the Arctic among stakeholders, it is important to note that, by charter, it does not address security issues.

Unsurprisingly, the increasingly accessible Arctic has attracted more attention from countries farther south. A warming Arctic is opening up new competition for resources that until recently were out of reach, protected under a thick layer of ice. Consequently, countries such as China are showing more than a casual interest in the Arctic. To illustrate, China has an unusually large embassy in Iceland and an Arctic science center on Norway's Svalbard Archipelago.[12] Recently, a large Chinese development company made a bid to buy land in Iceland to build a hotel development. The vast plot of land sought makes up 0.3 percent of the island's landmass, and raises suspicion of a Chinese attempt to gain a strategic foothold in Iceland as melting Arctic ice creates navigable inroads.[13]

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Even though the potential for armed conflict in the Arctic is low, the increased interest in the region could become a conduit for "strategic spillover," whereby conflicts that do not originate in the Arctic still affect it. As the Arctic becomes progressively more accessible, its importance will grow. As an Arctic nation, the United States has a range of enduring interests there and must ensure it is properly positioned to protect them.

In particular, DOD has a strong role to play because many nations are currently increasing their military presence in the Arctic, which in a broad sense is along American borders. Public statements and strategy documents indicate that other nations seek peace and cooperation as they expand their involvement and protect their sovereignty in the region. Meanwhile, military build-up is occurring at varying speeds, but there remains a shared singular focus of placing military forces forward into the Arctic. For instance, Russia's military has increased its air and naval patrols[14] and has established its presence in several ports. Russia has also contracted for a new fleet of icebreakers—three nuclear and six diesel—and is training specialized brigades to be based in the Arctic.[15] Similarly, Canada is establishing deep-water ports as well as naval and army bases dedicated to cold weather training. In August 2011, Canada held a military exercise in the north with over a thousand troops.[16] For its part, Denmark is coordinating with Greenland and the Faroe Islands on a North Atlantic operational command structure and is creating an Arctic Response Force.[17] Norway was the first country to move its military command leadership to the Arctic. These actions exhibit a military tendency northward for which the United States must prepare in order to protect its own national interests and be able to support its allies.

National Security Policy for the Arctic

The Department of State is the lead government agency for the Arctic, and strategic-level whole-of-government efforts are further coordinated through the Interagency Arctic Policy Group that was established in December 1971 by National Security Decision Memorandum 144. The group provides a forum for overseeing U.S. policy and for reviewing and coordinating activities in the Arctic.[18] Contemporary U.S. policy concerning the Arctic region was established in January 2009 in National Security Presidential Directive 66 and Homeland Security Presidential Directive 25. The policy recognizes the strategic importance of the region and directs implementation actions to protect U.S. safety, security, and economic interests. These actions include improving U.S. ability to protect its air, sea, and land borders and increasing maritime domain awareness capability in order to support commerce, critical infrastructure, and key resources. The policy also addresses issues such as governance, boundary lines, scientific research, energy development, environmental protection, and maritime transportation.[19]

The Unified Command Plan (UCP) 2011 was revamped to remove areas of responsibility in the Arctic from U.S. Pacific Command (USPACOM). U.S. European Command (USEUCOM) and USNORTHCOM now share responsibility for the region, with USNORTHCOM being the designated advocate for Arctic capabilities.[20] The realignment

streamlines what had been previously shared among the three combatant commands.

DOD Command Structure in Alaska—Historic and Current

During World War II, pivotal lapses in unity of command during the battle for the Aleutian Islands highlighted the need for a stronger, more cohesive approach to defense of the homeland regarding Alaska. Consequently, Alaskan Command (ALCOM) was stood up in 1947 under the Joint Chiefs of Staff to defend Alaska and provide humanitarian assistance throughout the region in the event of a natural disaster. A defense drawdown after the Vietnam War resulted in the piecemeal reassignment of Alaskan Command's responsibilities until the unit was eventually deactivated in 1975.

After a 1987 joint exercise underscored the disorganized defense effort in the region, ALCOM was reactivated in 1989. Headquartered at what is now Joint Base Elmendorf-Richardson in Anchorage, ALCOM is a subunified command under USPACOM that was given responsibility for the land and maritime defense of Alaska as well as all air missions not assigned to Alaskan NORAD (North American Aerospace Defense Command) Region (ANR), such as air rescue and other civil support. Its role was again modified when the September 11, 2001, attacks led to the 2002 creation of USNORTHCOM and its broad mission to unify command and control of homeland defense efforts and to coordinate defense support of civil authorities. To better manage its northern responsibilities, USNORTHCOM created Joint Task Force–Alaska (JTF-AK) and charged it with the mission "to deter, detect, prevent and defeat threats within the Alaska Joint Operations Area . . . in order to protect U.S. territory, citizens, and interests, and as directed, conduct Civil Support."[21] Through a Command Authorities Agreement between USPACOM and USNORTHCOM, JTF-AK is primarily manned and executed by ALCOM.[22] The outcome is that there is a single commander and staff that must report to two different combatant commanders.[23]

Most military forces in Alaska remain under USPACOM because of their focus on the USPACOM AOR. ALCOM's role as USPACOM's subunified command is coordinating all military activities in Alaska, and planning and conducting joint training for rapid long-range deployment missions in support of USPACOM. ALCOM's subordinate commanders include the commander, 11th Air Force, and commanding general, U.S. Army Alaska (USARAK). In total, forces in Alaska number more than 20,000 Army, Navy, Marine, and Air Force personnel, and 4,700 Guardsmen and Reservists—though only approximately 80 personnel from all military branches staff the "pooled" command of ALCOM/JTF-AK.[24] When commander, Alaskan Command, functions as commander of JTF-AK and ANR, he provides unity of command to USNORTHCOM for U.S. and Canadian forces and all of these missions in Alaska through his designation as commander ANR and JTF-AK. Thus, JTF-AK and ANR are the "Alaska equivalent" to the dual command of USNORTHCOM and NORAD for all of North America.

Also of importance is that the commander of ALCOM is the lieutenant general who commands 11th Air Force. He is additionally designated as the commander of JTF-AK and ANR. The Army's major general who commands USARAK is by design also the deputy commander of ALCOM and JTF-AK.

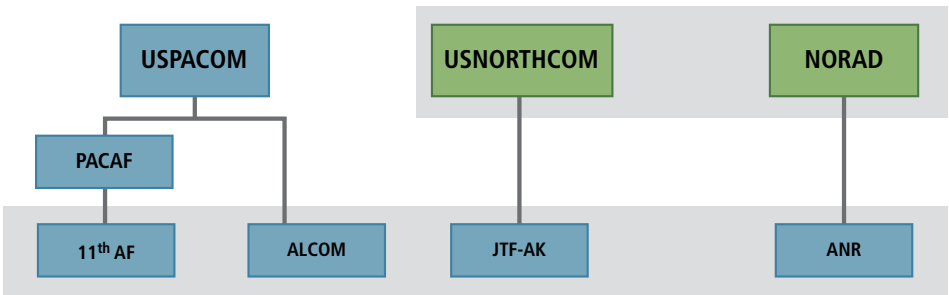
Operational Command for the Arctic

The history of inadequately organized operational command in Alaska is once again repeating itself. USPACOM retains the most clout in the region as the combatant command with authority over the joint headquarters (ALCOM) and the major operational forces stationed in Alaska (11th Air Force and USARAK) even though the 2011 revision of the UCP removed the Arctic from USPACOM's AOR. This limits USNORTHCOM's real authority in the region, thus hindering its responsiveness at the operational level to rising national interests in the Arctic.

The current UCP is an important evolution in the correct strategic direction because it reduced the division of responsibilities in the Arctic region. However, a significant seam is now obvious at the operational level when it comes to ALCOM and JTF-AK. Having a "pooled" headquarters working for two different combatant commanders violates the principles of simplicity and unity of command. It is true that ALCOM does have the important responsibility to support the USPACOM exercise and training program, and this mission cannot be discarded. However, the overall balance of strategic interests due to the rising importance of the Arctic requires a realignment of command arrangements for ALCOM.

The current command arrangement is not well postured to address the Arctic. USNORTHCOM's mechanism to conduct its mission in this region is the provisional JTF-AK—which contributes minimally to the resourcing of the joint headquarters—and thus JTF-AK is totally reliant on ALCOM to conduct its mission. In essence,

Figure 1. Current Command Structure



USNORTHCOM is dependent on USPACOM's goodwill when it comes to the Arctic. Meanwhile, USPACOM no longer has Alaska or the Arctic as part of its AOR, and thus the region is no longer part of its strategic focus. So there is a risk that national security interests in the Arctic will not be adequately met despite the fact that the ideal mechanism to address these needs already exists.

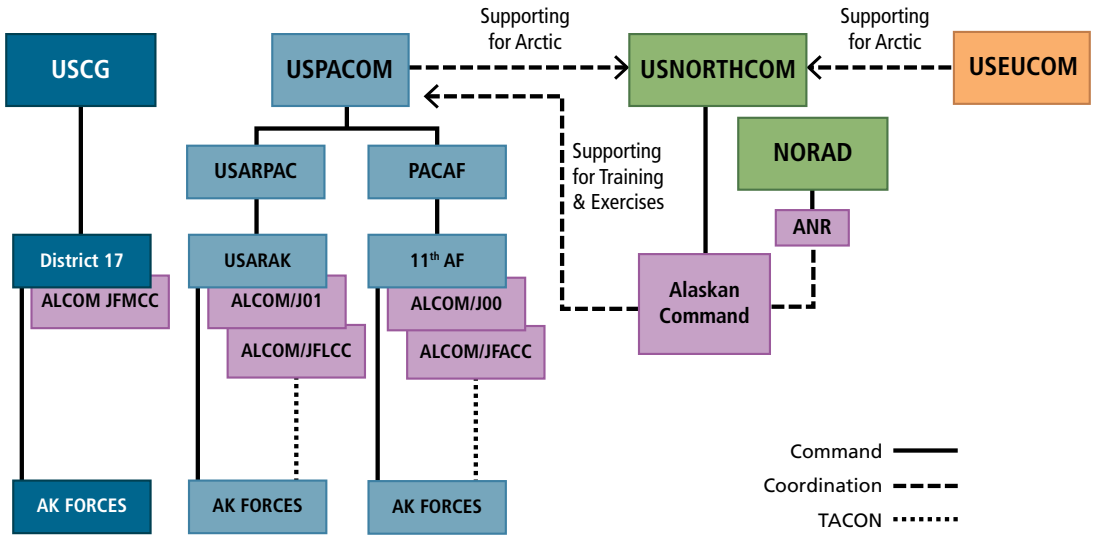
The problem can be resolved by dissolving the JTF-AK organization, assigning its responsibilities and resources to ALCOM, and then making this "new" ALCOM a subunified command under USNORTHCOM, while leaving forces in Alaska assigned to USPACOM. USPACOM should retain command over the forces in Alaska due to the possibility of significant, time-critical, major contingency operations that could occur in its AOR. This arrangement is appropriate since outright conflict is much less likely to occur in Alaska or the Arctic.

Reorganizing ALCOM under USNORTHCOM would make for a better arrangement to address national security interests. ALCOM would be able to serve as a true mechanism for joint operations in the Arctic, a capability that is currently lacking, according to the Congressional Research Service.[25] ALCOM is the joint headquarters in the region, with established relationships with the Service components in Alaska. It maintains a continuing focus on the Arctic and sponsors frequent joint exercises in the region. USNORTHCOM needs to fully command ALCOM in fulfilling its Arctic responsibilities since ALCOM is in an excellent position to identify these capabilities from a joint perspective.

Dissolving JTF-AK and aligning ALCOM completely under USNORTHCOM simplifies the joint command relationships in the region and makes them consistent with what one would expect from the UCP. This approach is also consistent with joint doctrine on subunified commands—which exist to "conduct operations on a continuing basis"—and JTFs, which are for "specific, limited missions."[26] Similar subunified commands exist in DOD. U.S. Strategic Command has a subunified command, U.S. Cyber Command, to centralize command of cyberspace operations.[27] Joint Special Operations Command, a subunified command of U.S. Special Operations Command, performs specific research, standardization, and planning tasks.[28] Perhaps the best analogies to a repositioned ALCOM are U.S. Forces Korea and U.S. Forces Japan; both are subunified commands under USPACOM with continuing responsibilities to defend the security interests of the United States and its allies in a specific geographic region.

A significant portion of the Arctic falls also within the USEUCOM AOR. Consequently, USEUCOM, and the North Atlantic Treaty Organization (NATO) along with it, have roles in ensuring the security interests of Western nations in the Arctic, especially vis-à-vis Russia.[29] Rather than a Brussels-based or Stuttgart-based military presence in the Arctic, the United States might be better served to have its military presence in Alaska, especially since its national policy is to "encourage the peaceful resolution of disputes in the Arctic region,"[30] and it is Alaska that makes the United States an Arctic nation. Canadian Prime Minister Steven Harper has argued against NATO involvement in the Arctic, noting that the push was coming from nations in Europe that want to exert their influence in the region but who are not themselves Arctic nations.[31] In short, NATO's involvement could complicate the achievement of U.S. national interests. USEUCOM should be the supporting commander to USNORTHCOM for the overall Arctic theater campaign strategy, which should be developed by and executed through ALCOM. Additionally, USNORTHCOM and NORAD already enjoy a close and longstanding relationship with Canada in defending the continent's northern border. The establishment of a strong joint force headquarters in Alaska with a particular focus on the Arctic strengthens the bilateral coordination with Canada already present in NORAD, and elsewhere, it sends an important message that the United States is ready

Figure 2. Proposed Command Structure



to defend its interests and fulfill its responsibilities in the region.

Roles for a New Alaskan Command

As a standing joint subunified command, Arctic- and Alaska-specific contingency planning would be the focus for ALCOM, along with answering the need for a comprehensive Theater Campaign Plan that addresses important issues such as military-to-military engagement with Arctic nations, security needs of native Alaskan peoples, maritime surveillance, and search and rescue. The unique operating environment of Alaska and the Arctic requires its own specific contingency plans for Homeland Defense and Defense Support of Civil Authorities, especially as compared to most of the USNORTHCOM AOR. The extraordinary challenges of operating in the Arctic and Alaska are plentiful: weather extremes of wind, cold, snow, and sea ice; daylong periods of darkness or light; harsh geography with mountains, glaciers, boggy tundra, volcanoes, and earthquakes; vast distances; electromagnetic interference; and lack of a robust infrastructure. This taxing environment makes maintenance and operation of equipment strenuous and demanding. It will fall to ALCOM to ensure the existence of, or advocate for, appropriate joint capabilities to function in this extreme environment.

The overall concept for this reorganized and realigned ALCOM is that it will be the focal point for a comprehensive and consistent effort to implement defense policy and address national security concerns in this unique region. When it comes to defense, the following organizations are currently stakeholders in Alaska and the Arctic: all four Services, USNORTHCOM, USPACOM, U.S. Strategic Command, USEUCOM, NORAD, NATO, the National Guard, and the Missile Defense Agency. Clearly, on the defense side alone, synchronizing efforts among all these organizations is difficult. The Arctic effort is substantially more complex when the whole of government is considered. The Department of State, the state of Alaska, local governments (especially on the north slope of Alaska), the U.S. Coast Guard (USCG), Bureau of Indian Affairs, Bureau of Land Management, and U.S. Customs all fulfill national security roles in the Arctic. The USCG is especially important since it is essentially the "maritime" component in the region on a persistent basis. (The territory defined by USCG District 17 is basically Alaska and its surrounding waters.) Fortunately, ALCOM already has relationships with many of these agencies. The realignment of ALCOM under USNORTHCOM, coupled with a mandate to implement national security strategy in the region, would be a significant step toward ensuring unity of effort for the Arctic.

The proposed rearrangement of ALCOM would be equivalent to other Arctic nations' joint headquarters in the north and would facilitate military-to-military coordination and engagement. Canada already has a significant presence in Alaska: the combined Alaska NORAD Region headquarters is collocated with ALCOM, and ALCOM/JTF-AK and Canada's JTF-North in Yellowknife frequently send observers to each other's exercises.

Alaska's 229 Federally recognized tribes are significant stakeholders in the Arctic. Unfortunately, environmental change, competition for mineral and fishing resources, increased shipping and tourism traffic, and the possibility of international conflict all threaten their ways of life. Some encroachment is perhaps inevitable, but our nation would do well to avoid the mistakes it made 150 years ago with native peoples in the western United States. The voice of indigenous peoples in the Arctic must be heard and their rights respected. Defense planning and joint operations must include special considerations of these tribes, as required by Executive order 13175.[32] ALCOM will remain postured to ensure this happens since this headquarters employs a full-time native liaison who is involved and engaged in planning and operations.

Maritime surveillance is another important role for ALCOM. Already, there is the long-established history of successful combined defense between the United States and Canada on airspace surveillance through NORAD. This relationship, along with its associated personnel and infrastructure, should be expanded to include maritime surveillance in the two countries' Arctic waters. The United States would especially benefit since the Canadians have already tested and deployed capabilities, including Radarsat satellites, sonar arrays, and surface wave radars.[33] The United States can bring the Broad Area Maritime Surveillance Unmanned Aerial Vehicle capability and develop a concept of operations for its employment in the Arctic region. Most important is the headquarters function to fuse the various sensor inputs to provide awareness to operational decisionmakers in the theater. The expansion of NORAD for maritime surveillance makes sense because a maritime threat for one nation is a threat for the other—threats which include adversary military presence, but also international smuggling, terrorism, and illegal fishing

F-16C Fighting Falcon lands at Eielson Air Force Base during exercise Distant Frontier and Red Flag–Alaska

U.S. Air Force (Christopher Boitz)

vessels. If Arctic nations do not exert their sovereignty in the region, other actors could seek to exploit the ungoverned spaces. ALCOM and ANR should begin working now with the U.S. and Canadian navies to begin to build this capability.

Another operational function for ALCOM to develop further is search and rescue. The primary agents for this mission are the USCG at sea, and the 11th Air Force Rescue Coordination Center, Alaska State Troopers, and local authorities on land. However, all agencies recognize that the U.S. military and even international countries will have important roles to play in a large-scale search-and-rescue incident in the Arctic. In 2011, the Arctic Council approved an accord establishing international search-and-rescue support in the Arctic.[34] This agreement is especially significant because it lists the USCG and DOD as the U.S. search-and-rescue agencies. ALCOM must continue to support, plan, and advocate for multilateral exercises concerning this important mission, particularly since international cooperation in this area can be an important means of building dialogue and trust in the Arctic.[35]

Conclusion

Although a joint headquarters exists in Alaska, it is not correctly organized and aligned to meet U.S. security needs. By bringing ALCOM into line completely under USNORTHCOM and empowering it to become DOD's primary operational-level headquarters for the Arctic, the United States would be better postured to address its national interests in the region. Although conflict in the Arctic or Alaska is unlikely, it is not unprecedented, nor can it be assumed away given the competing national interests in a region where homeland defense is not an easy task. Climate change, global economic trade, and energy demand have converged in the 21st century to bring a new level of activity to the region, along with a corresponding need to defend U.S. national interests. Clearly, the Arctic is entering a new era; an ALCOM subordinated to USNORTHCOM and vested with the role of sole Arctic coordinator will best carry U.S. interests northward. **JFQ**

NOTES

[1] U.S. Congress, House, Committee on Military Affairs, *Permanent Stations for Army Air Corps* (Washington, DC: U.S. Government Printing Office, 1935).

[2] United Nations Development Program. *Arctic Regional Human Development Report 2004*, accessed October 24, 2011, at <http://hdr.undp.org/en/reports/regionalreports/other/name,3262,en.html>.

[3] The Pew Environmental Group, *Arctic FAQ*, accessed October 24, 2011, at <http://oceansnorth.org/arctic-faq>.

[4] Katherine Leitzell, National Snow and Ice Data Center, *Summer Predictions for Arctic Sea Ice*, June 16, 2011, at <http://nsidc.org/ice-lights/2011/06/16/summer-predictions-for-arctic-sea-ice/> (accessed October 24, 2011).

[5] Ibid.; The Pew Environmental Group, *New Maps of Melting Ice*, accessed October 24, 2011, at <http://oceansnorth.org/new-maps-melting-ice>.

[6] "Climate Change in the Arctic: Beating a Retreat; Arctic Sea Ice is Melting Far Faster Than Climate Models Predict. Why?" *The Economist*, September 24, 2011, accessed October 24, 2011, at <www.economist.com/node/21530079>.

[7] Andrew E. Kramer, "Warming Revives Dream of Sea Route in Russian Arctic," *The New York Times*, October 17, 2011, accessed October 24, 2011, at <www.nytimes.com/2011/10/18/business/global/warming-revives-old-dream-of-sea-route-in-russian-arctic.html?_r=2>.

[8] The Pew Environmental Group, *Oceans North International*, accessed October 24, 2011, at <http://oceansnorth.org/international>.

[9] Ibid.

[10] "Climate Change in the Arctic," *The Economist*.

[11] Arctic Council Secretariat, *About the Arctic Council*, accessed October 24, 2011, at <http://arctic-council.org/article/about>.

[12] Helena Spongenberg, *Nordic Countries Get an International Voice in the Arctic*, June 23, 2011, at <www.norden.org/en/analys-norden/tema/the-fight-for-the-arctic/nordic-countries-get-an-international-voice-in-the-arctic> (accessed October 24, 2011).

[13] "Iceland and China: Hands Off Our Wilderness; An Ambitious Chinese Entrepreneur Spooks Wary Icelanders," *The Economist*, September 24, 2011, at <www.economist.com/node/21530165> (accessed October 24, 2011).

[14] Peggy Stolyarova, "Engage in the Arctic Now or Risk Being Left Out in the Cold: Establishing a JIATF-High North," thesis (Newport, RI: Naval War College, 2010).

[15] *Alaska Dispatch*, accessed October 18, 2011, at <www.alaskadispatch.com/article/russia-moves-bolster-arctic-military-presence>.

[16] Ibid.

[17] Arctic Council, "Denmark, Greenland and the Faroe Islands, Kingdom of Denmark Strategy for the Arctic 2011–2020," accessed October 20, 2011, at <http://arctic-council.org/filearchive/Arktis_Rapport_UK_210x270_Final_Web.pdf ()>.

[18] Henry A. Kissinger, *United States Arctic Policy and Arctic Policy Group*, National Security Decision Memorandum-144 (Washington, DC: National Security Council, December 22, 1971).

[19] George W. Bush, *Arctic Region Policy*, National Security Presidential Directive-66/Homeland Security Presidential Directive-25 (Washington, DC: The White House, January 9, 2009).

[20] Barack Obama, Unified Command Plan 2011 (Washington DC: Department of Defense, April 8, 2011).

[21] U.S. Northern Command, About *USNORTHCOM*, accessed November 3, 2011, at <www.northcom.mil/About/index.html>.

[22] U.S. Alaskan Command, *Joint Base Elmendorf-Richardson*, March 23, 2011, at <www.jber.af.mil/library/factsheets/factsheet.asp?id=5286> (accessed October 10, 2011).

[23] Ibid.

[24] "Alaska Command," *Techbastard*, October 18, 2011, accessed October 19, 2011, at <www.techbastard.com/afb/ak/ac.php>.

[25] Ronald O'Rourke, *Changes in the Arctic: Background and Issues for Congress*, Congressional Research Service Report for Congress (Washington, DC: Congressional Research Service, 2010).

[26] U.S. Joint Chiefs of Staff, *Joint Publication 3-0, Joint Operations* (Washington, DC: Department of Defense, 2011).

[27] U.S. Strategic Command, US *Cyber Command*, October 2011, at <www.stratcom.mil/factsheets/cyber_command/> (accessed October 25, 2011).

[28] U.S. Special Operations Command, *Joint Special Operations Command*, at <www.socom.mil/Pages/JointSpecialOperationsCommand.aspx> (accessed October 25, 2011).

[29] Sven G. Holtsmark, *Towards Cooperation or Confrontation? Security in the High North*, Research Paper (Rome: NATO Defence College, 2009).

[30] Bush.

[31] J. Barrera, "While Harper Talked Tough with NATO on Arctic, US believed PM All Bark No Bite," *APTN National News*, May 11, 2011, at <aptn.ca/pages/news/2011/05/11/while-harper-talked-tough-with-nato-on-arctc-u-s-believed-pm-all-bark-no-bite>.

[32] William J. Clinton, *Consultation and Coordination With Indian Tribal Governments*, Executive Order 13175 (Washington, DC: The White House, November 6, 2000).

[33] Jim Hodges, "Commanding the Arctic: Canada Leads Search for Surveillance Solutions," *C4ISR Journal*, March 2011.

[34] Arctic Council, *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic* (Nuuk, Greenland: Arctic Council, 2011).

[35] Reginald R. Smith, "The Arctic: A New Partnership Paradigm or the Next 'Cold War'?" *Joint Force Quarterly* 62 (3d Quarter 2011), 117–124.