Command and Control: Toward Arctic Unity of Command and Unity of Effort

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This study examines issues facing U.S. military command and control structure in the Arctic. Given recent climate changes, the resulting potential threats, and the given missions, what is the most effective command and control structure to provide the requisite unity of command and unity of effort in the Arctic?
Through the lens of design, this study first defines the Arctic environment as it relates to the national security threat. This environmental frame discusses recent climate change effects on transportation, shipping, resources, and international relationships. Four potential problems are identified that would require military employment: military to military relationships, disaster relief, search and rescue, and violent conflict. Next, three command and control options are proposed: redefining geographic combatant command boundaries, assigning a standing Joint Task Force, and maintaining the existing structure. Finally, the three options are subjectively analyzed and a recommendation given. Although all of the command and control options are acceptable, not all provide the same level of unity of command and unity of effort. A standing Joint Task Force has the affect of viewing the Arctic as one region, speaking with one voice, and coordinating efforts of three combatant commands without confusing or undermining existing relationships.

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Abstract

Command and Control: Toward Arctic Unity of Command and Unity of Effort by Major Michael J. Peeler, United States Air Force, 61 pages.

This study examines issues facing the U.S. military command and control structure in the Arctic. Specifically, given recent climate changes, the resulting potential threats, and the missions set forth by the commander in chief, what is the most effective command and control structure to provide the requisite unity of command and unity of effort in the Arctic?

Looking through the lens of the U.S. Army's design model this study first defines the environment of the Arctic Region as it relates to the changing national security threat facing the United States. This environmental frame discusses recent climate changes and their effects on transportation, shipping, natural resources, and international relationships. Next, given the environmental context, this study establishes four potential problems that would require military employment. These military employment problems are military to military relationships, disaster relief, search and rescue, and violent conflict. This monograph proposes three command and control options to be examined as they relate to the previously identified problems. These three options include redefining geographic combatant command boundaries, assigning a standing Joint Task Force, or maintaining the existing command and control structure. Finally, through a subjective analysis of various command and control options available to the U.S. military, this study provides a recommendation as to the most effective option.

The significance of this study is its examination of an emerging national security threat on our nation's northern border through the lens of design. While many military scholars have written on the changes in the Arctic Region, and its implications, few posit any real change to our military structure that would prepare the U.S. to meet the corresponding challenges. Using the Army's new design paradigm provides an opportunity to examine this complex issue more holistically and provide a better solution set to policy makers.

Although any of the three options discussed in this paper can be used to successfully command and control forces in the Arctic, not all options provide for the same level of unity of command and unity of effort. A standing Joint Task Force has the positive affect of viewing the Arctic as one region, speaking with one voice to the interagency and international community, coordinating efforts of three combatant commands without the negative effects of confusing existing multinational relationships or undermining unity of effort. Based on this subjective analysis, this study recommends using a standing Joint Task Force to meet the doctrinal requirements of unity of command and unity of effort.

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Chapter I: Introduction

In 1867 the U.S. purchased the Alaska territory from Russia, making the U.S. an Arctic bordering nation. Since that time the Arctic region has been of strategic importance economically, militarily, and diplomatically. With the proliferation of intercontinental weapons (missiles, bombers, and warships) military threats from over the North Pole became an increasing concern. The establishment of the first Unified Command Plan in 1946 saw significant effort given to protection of the United States from attack through the Arctic Region.[1] However, since the fall of the Soviet Union, and the subsequent end of the Cold War, the Arctic Region has received less emphasis militarily. Only in the last few years has the region become an arena of renewed global competition. Although the ice cap on the North Pole that covered much of the Arctic Ocean has been receding for the past several decades, results of that recession became strategically significant beginning in 2008. That year marked the first time in recorded history that two navigable routes opened in the far north.[2] Shipments of goods from Europe to Asia that previously had to travel through the Suez Canal could now travel much more cheaply and quickly north of the continents.[3] Navigable routes, however, were not the only results of the regional climate change. Scientists believe that considerable natural resources remain to be discovered in parts of the Arctic Ocean previously covered by thick, multi-year ice. The thinning of that ice has sparked a subsequent race in exploration and exploitation of valuable oil and mineral resources thought to exist in the region. The resource race is not limited to the eight Arctic bordering

[1]Ronald H. Cole et al., *The History of the Unified Command Plan 1946-1999* (Washington, D.C.: Office of the Chairman of the Joint Chiefs of Staff, Joint History Office, 2003), 11-14.

[2] Unpublished briefing prepared by Alaskan Command Plans Directorate for Commander U.S. Pacific Command, Commander U.S. Northern Command, and Deputy Service Chiefs, winter 2009.

[3] Scott G. Borgerson, "Arctic Meltdown: The Economic and Security Implications of Global Warming," *Foreign Affairs* (Volume 87 No. 2): 69-70.

nations. Many other countries are vying for rights to the potentially rich region as well.[4] Largely as a result of this economic potential many countries have made claims and disputes regarding territorial limits, economic exclusion zones, resource rights, and sovereign waterways.

The United States, as an Arctic bordering nation, has several concerns about the region. From its own territorial limits and economic rights to freedom of navigation and environmental partnership much has been written recently about U.S. national security implications of changes in the Arctic. Threats to national security have been discussed in presidential policy documents, naval roadmaps and defense reviews. In 2009, the President of the United States signed National Security Presidential Directive – 66 establishing a clear regional purpose in the Arctic.[5] The U.S. Navy published an Arctic Roadmap, which identified focus areas and desired effects over a multiphase program.[6] The 2010 *Quadrennial Defense Review Report* included an Arctic focus and put forth guidelines for bridging existing gaps in communications, domain awareness, and search and rescue.[7] Despite this policy and the increased focus in the region, however, little has been done to establish a military structure with sufficient unity of command and unity of effort to deal with the threat or accomplish the missions set forth. Currently, the shared regional responsibility by three Geographic Combatant Commanders (GCCs) complicates the military's quest for effective unity of command and unity of effort.

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[4] William P. Hayes, "The Arctic: One Region, One Commander" (monograph, U.S. Naval War College, 2009), 9; James H. Whitehead, "Taking Command in the Arctic: The Need for a Command Organization in the Arctic Theater" (monograph, U.S. Naval War College, 2008), 4.

[5] President, "Arctic Region Policy, National Security Presidential Directive and Homeland Security Presidential Directive," NSPD-66/HSPD-25, (January 9, 2009).

[6] U.S. Department of the Navy, *U.S. Navy Arctic Roadmap.* Sponsored by Task Force Climate Change, Oceanographer of the Navy, Washington, D.C.: October 2009).

[7] U.S. Department of Defense, *Quadrennial Defense Review Report 2010.* (Washington, D.C.: Government Printing Office, February 2010).

Purpose and Significance

The purpose of this study is to examine issues facing the U.S. military command structure in the Arctic. Looking through the lens of the U.S. Army's design model this study first defines the environment of the Arctic Region as it relates to the changing national security threat facing the United States. Second, this study examines the problem of unity of command and unity of effort facing the U.S. military in the Arctic region. Finally, by investigating various command and control options available to the U.S. military, this study provides a recommendation as to the most effective option.

The significance of this study is its examination of an emerging national security threat on our nation's northern border through the lens of design. While many have written on the changes in the Arctic Region, and its implications, few posit any real change to our military structure that would prepare the U.S. to meet the corresponding challenges. Using the Army's new design paradigm provides an opportunity to examine this complex issue more holistically and provide a better solution set to policy makers.

Definitions

Before examining the issues that shape this problem it is important to have a clear understanding of some key terms used in this paper.

Arctic Circle

The Arctic Circle is a line in the northern hemisphere north of which the sun is above the horizon for 24 hours at least once per year and below the horizon for 24 hours at least once per

year. It is approximated by the line 66° 33' north latitude.[8] While this definition is helpful in providing a symmetrical shape that describes the Arctic as a general location, it is not based on climate.

Arctic Region

An Arctic definition preferred by scientists is the 10° isotherm. This defines the Arctic region as the land and sea area in the northern hemisphere where the average temperature for the warmest month is below 10° Celsius.[9] While the resulting irregular shape is more difficult to conceptualize than the Arctic Circle, it is helpful in categorizing climate affects and resulting capabilities required. This paper will use the 10° isotherm definition when referring to the Arctic Region.

Arctic Countries

Eight countries have territory north of the Arctic Circle. They are The United States, Canada, the Russian Federation, Norway, Sweden, Finland, Denmark (by virtue of Greenland), and Iceland.[10] These countries constitute the membership of the Arctic Council.[11]

Arctic Coastal States

A subset of the Arctic Council is the five countries that make up the Arctic Costal States. These are the United States, Canada, the Russian Federation, Norway, and Denmark.[12]

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[8] The American Heritage College Dictionary, 3rd ed., s.v. "Arctic Circle."

[9] Ronald O'Rourke, *Changes in the Arctic: Background and Issues for Congress* (Washington, DC: Congressional Research Service, March 30, 2010), 2.

[10] Ibid.

[11] The Arctic Council, "Member States," http://arctic-council.org/section/the_arctic_council (accessed November 22, 2010).

[12] O'Rourke, *Changes in the Arctic*, 2.

Canadian Arctic Archipelago

The Canadian Arctic Archipelago is a cluster of islands north of the North American landmass. It consists of 94 major islands (greater than 130 km2) and more than 30,000 minor islands covering 1.4 million square kilometers.[13]

Unity of Command

Army Field Manual 1-02 defines Unity of Command as "One of the nine principles of war: For every objective, ensure unity of effort under one responsible commander."[14] However, this definition is relatively ambiguous and not useful in this discussion. Instead this paper will use the definition provided by Joint Publication 1 *Doctrine for the Armed Forces of the United States.* Joint Publication 1 states, "Unity of Command means that all forces operate under a single commander with the requisite authority to direct all forces employed in pursuit of a common purpose."[15]

Unity of Effort

Unity of effort, as defined in Joint Publication 1 *Doctrine for the Armed Forces of the United States* is "coordination and cooperation toward common objectives, even if the participants are not necessarily part of the same command or organization – the product of successful unified action."[16]

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[13] *The Canadian Encyclopedia*, "Arctic Archipelago," http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&Params=A1ARTA0000292 (accessed November 22, 2010).

[14] Department of the Army, FM 1-02, *Operational Terms and Graphics* (Washington, DC: Government Printing Office, February 2010), 1-194.

[15] Department of Defense, JP 1, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Printing Office, May 2007), A-2.

[16] Ibid., GL-11.

Theory

The theoretical framework upon which this study is based appears in military doctrine. "Joint operations doctrine is built on a sound base of warfighting theory and practical experience. Its foundation includes the bedrock principles of war and the associated fundamentals of joint warfare."[17] Unity of command is one of the nine "bedrock" principles of war that have existed since the inception of U.S. Joint Doctrine. Joint Publication 3-0 *Joint Operations* clearly articulates the importance of unity of command as a "primary consideration" in military operations.[18] Joint Publication 3-0 further emphasizes the need for unity of effort to achieve national goals. Unity of effort, according to doctrine, is achieved through unified action, or the "comprehensive approach that requires effective coordination and integration among federal government departments and agencies, NGOs, IGOs, the private sector, and among nations in any alliance or coalition throughout the entire operation."[19]

Research Question

Given recent climate changes, the resulting potential threats, and the missions set forth by the commander in chief, what is the most effective command structure to provide the requisite unity of command and unity of effort in the Arctic?

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[17] Department of Defense, JP 3-0, *Joint Operations, Incorporating Change 1* (Washington, DC: Government Printing Office, February 2008), II-1.

[18] Ibid., II-12.

[19] Ibid., II-3.

Delimitations

Delimitations used in this paper were determined by the desire to steer away from the politically and emotionally charged issues of environmental protection and global warming. Instead, this paper focused solely on the national security implications of recorded changes and the military command and control structures required to meet those changes. As a result, this examination accepted only factual accounts of recent historic climate changes in the region and avoided any future projections of temperature change, ice melt, or water level rise. Additionally, this paper did not explore any opportunities to retard or arrest climate change or its affects.

Two other delimitations exist in this paper; both deal with the number of scenarios examined in the analysis section. First, although many options exist for command and control structures, this study focused on only three: Geographic Combatant Command realignment, a standing Joint Task Force, and the existing construct. Finally, despite the number of potential threats in the Arctic, this paper examined command and control options based upon only four different scenarios: military to military relationships, disaster relief, search and rescue, and violent conflict.

Organization of Paper

This monograph has six chapters. Chapter I includes background and purpose of the study, definition of terms, theoretical framework, the research question and delimitations. Chapter II provides an environmental frame with regard to changes resulting from the shrinking ice cap. This environmental frame describes the opening of transportation routes, availability of natural resources, territorial limits, economic exclusion zones, and existing international and multinational relationships, as well as U.S. Arctic policy. As a problem frame, Chapter III establishes potential missions in the Arctic requiring an operational response. Missions, based upon understanding of the environmental frame and existing U.S. Arctic Policy, include military to military relationships, disaster relief, search and rescue, and violent conflict. Chapter IV

presents three possible solutions to command and control relationships. These options are to redefine geographic combatant command boundaries, assign a standing Joint Task Force, and maintain existing command and control structure. Chapter V is a subjective analysis of the command and control options. Each command and control option presented in the solution space is evaluated for its ability to meet the Arctic missions proposed in the problem frame. Evaluation criteria are based upon the doctrine of unity of command and unity of effort. Finally, Chapter VI summarizes the results of the study and provides a recommendation on the most effective command and control structure for the Arctic.

Chapter II: Environmental Frame

Climate Changes in the Arctic

The Arctic region has experienced climate change at a much faster rate than the rest of the world. While global average surface air temperatures have increased by 0.6 to 0.7 degrees centigrade since the start of the industrial revolution, mean surface air temperatures in the Arctic have increased by 2 or 3 degrees centigrade just since the middle of the 20th century.[20] In addition to surface air temperatures, recent historic changes in the far north include ice cap recession, sea level rise, coastal erosion, and permafrost degradation.[21] Although all of these add to the complexity of the environmental situation, this study focuses on the national security implications of changes in the Arctic caused specifically by ice cap recession.

This "Arctic Amplification" is largely attributed to a phenomenon called the ice-albedo feedback loop, where a loss of reflectivity in ice creates a vicious cycle of ever-increasing

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[20] Mark Boslough et al., "The Arctic as a Test Case for an Assessment of Climate Impacts on National Security," *Sandia Report*, Sandia National Laboratories (November 2008), 7, 11.

[21] Ibid., 11-20.

melting.[22] The annual cycle of sea ice recession and advance is a normal occurrence where the young, thin, annual ice melts and refreezes every year. Minimum sea ice extent is measured in September, when the ice cap is the smallest. According to data compiled by the National Snow and Ice Data Center the average monthly Arctic Sea Ice extent has been decreasing for the last three decades with a record low set in 2007 (see Figure 1).[23] That year "the area covered by sea ice shrank by more than one million square miles, reducing the Arctic icecap to only half the size it was 50 years ago."[24]

[22] Borgerson, "Arctic Meltdown," 65; Boslough et al., "The Arctic as a Test Case for an Assessment of Climate Impacts on National Security," 7.

[23] National Snow and Ice Data Center Press Room "Arctic Sea Ice Extent Remains Low; 2009 Sees Third-Lowest Mark," National Snow and Ice Data Center (6 October 2009), http://nsidc.org/news/press/20091005_minimumpr.html (accessed on November 22, 2010).

[24] Borgerson, "Arctic Meltdown," 63.

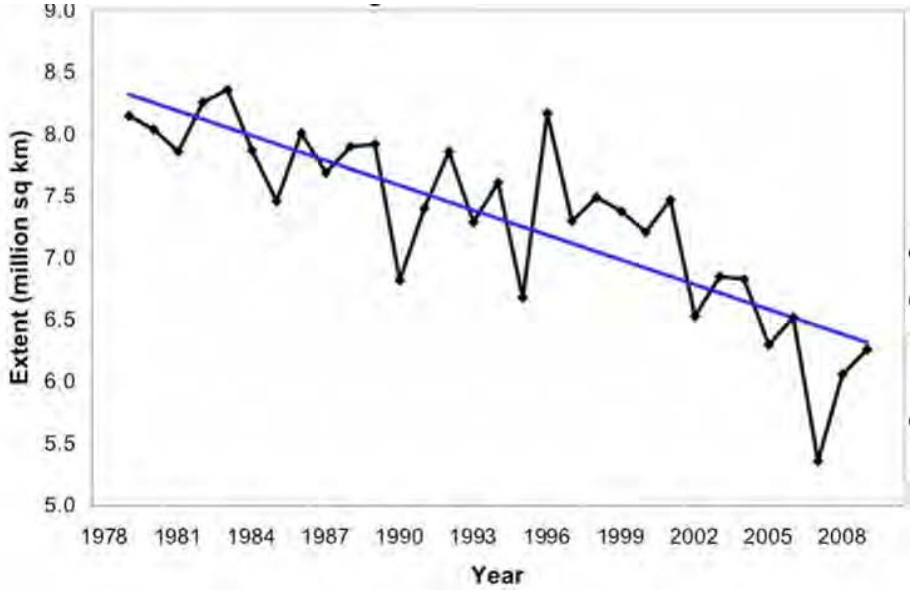

Figure 1. Average monthly Artic Sea ice extent, 1979-2009

Source: **National Snow and Ice Data Center Press Room "Arctic Sea Ice Extent Remains Low; 2009 Sees Third-Lowest Mark," National Snow and Ice Data Center (6 October 2009), http://nsidc.org/news/press/20091005_minimumpr.html (accessed on November 22, 2010).**

Arctic ice consists of basically two types: multi-year ice and annual ice. Multi-year ice does not melt and refreeze annually; it is very dense and can be more than ten feet thick. Multi-year ice causes problems for even the heaviest icebreakers. Annual ice, also called one-year ice, results from freezing that took place the previous winter. This ice is less than one year old, is usually less than three feet thick, and relatively less dense than multi-year ice. Annual ice can be easily broken up by icebreakers or ice class ships.[25] Although Arctic waters do not need to be ice-free to afford shipping, a lack of ice brings new players to the region.

[25] O'Rourke, *Changes in the Arctic*, 13.

Results of the receding ice cap have taken several forms. Navigable routes have opened shipping and tourism lanes in the Arctic while simultaneously starting a race for valuable resources and invigorating territorial disputes in the region.

Transportation and Shipping

One of the most significant impacts of the receding polar ice cap is the opening of transportation and shipping routes in the Arctic. In the summer of 2007, for the first time in recorded history, two navigable routes opened to ocean-going vessels: the Northwest Passage and the North Sea Route. In 2008, the North Pole for the first time could be circumnavigated in open waters.[26]

From west to east the Northwest Passage is traversable north of Alaska and Canada through the Canadian Arctic Archipelago to the west of side of Greenland. It consists of several potential routes. The southern route, which has remained open for the last few years, is shallow, imposing draft restrictions on ships. The northern route, while deeper and more direct, has a shorter season of navigability. The North Sea Route, along Russia's northern border is about 2,600 nautical miles in length and runs north of Norway and Russia from east of Greenland to the Bering Strait (see Figure 2).[27]

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[26] Boslough et al., "The Arctic as a Test Case for an Assessment of Climate Impacts on National Security," 23.

[27] O'Rourke, *Changes in the Arctic*, 12.

Figure 2: Arctic Sea Ice Extent in September 2008, Compared with Prospective Shipping Routes and Oil and Gas Resources

Source: **Ronald O'Rourke, *Changes in the Arctic: Background and Issues for Congress* (Washington, DC: Congressional Research Service, March 30, 2010), 10.**

The largest direct beneficiary of these seasonal routes is the commercial maritime shipping industry. Although currently most Arctic shipping consists of regional movement of natural resources from the Arctic Ocean to the mainland, trans-Arctic shipping has grown significantly as a result of ice cap recession. Moving goods between Europe and Asia through one of these passages is 25-40 percent shorter than going through the Suez or Panama canals,

resulting in billions of dollars in savings every year.[28] Prior to 2007 the shortest shipping distance from Hamburg to Yokohama, a warm water route using the Suez Canal, was 11,073 nautical miles.[29] The distance using the Northwest Passage is only 5,864 nautical miles.[30] These significant cuts in shipping distances result in savings in time, fuel, and manpower. A shipping container that costs about $1500 dollars to move from Europe to Japan through the Suez Canal will cost only $500 through the Northwest Passage.[31]

While the trans-Arctic routes are opening up to shipping, danger still exists in the icy waters. As annual ice melts and the ice cap recedes large chunks of multi-year ice finds itself floating further and further south. The flow of these ice blocks is difficult to predict, and they have occasionally blocked potential routes for shipping. Adverse weather is also a factor. Intense cold and sever storms can adversely affect a ship's equipment, not to mention it's personnel. And even in the summer months, when shipping is most likely, the Arctic region is plagued by significant fog.[32] To add to the danger, basic navigation and communication infrastructure in the Arctic are severely lacking.

While shipping remains the primary maritime focus in the far north, tourism has also increased. In 2007 a reported 140 cruise ships sailed off of Greenland's coast and three sailed the

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[28] Borgerson, "Arctic Meltdown," 70.

[29] "The Arctic Circle: Development and Risk," National Defense University, 13. http://www.google.com/url?sa=t&source=web&cd=1&sqi=2&ved=0CBMQFjAA&url=http%3A%2F%2Fwww.ndu.edu%2FCTNSP%2FdocUploaded%2FTFX_Arctic%2520Summary.pdf&ei=_Q_rTP2SF4P4sAPBvfzFDw&usg=AFQjCNGYAPqKSRzhj_oCWA5gfQJHDGA91Q (accessed November 22, 2010).

[30] Ibid.

[31] "Global Warming Boosts Arctic Shipping, Oil: Report," *Reuters*, March 18, 2007. http://www.reuters.com/article/idUSN1823477420070318 (accessed November 22, 2010).

[32] O'Rourke, *Changes in the Arctic*, 13-14.

Northwest Passage from east to west.[33] This tourism into the icy waters of the far north presents its own set of challenges regarding search and rescue capability. The harsh environment of the Arctic Ocean coupled with the time distance issue of getting land-based rescue assets on station has caused international organizations to consider conventions for ships operating in the region. Although it cannot levy requirements, the International Maritime Organization, a United Nations agency, has approved guidelines for ships operating in the Arctic.[34]

With increased maritime accessibility to the Arctic comes the higher propensity for the transit of vessels of hostile nations or non-state actors who have no incentive to follow the internationally accepted conventions and guidelines or even notify Arctic coastal states of their presence.[35] This threat is reflected in the Arctic policy of the U.S. and Canada as expressed in presidential policy, defense review, and naval roadmaps.[36]

Natural Resources

The opening of navigable routes in the Arctic has afforded more opportunity for seasonal seismic undersea exploration and mapping. The result of this exploration is the increasing realization of oil fields that lie beneath the Arctic Ocean. Oil, gas, and minerals make up the untapped economic potential of the region. While natural resources have become more valuable worldwide, access to potential reserves in the high north is seen as a huge opportunity. According

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[33] Borgerson, "Arctic Meltdown," 73; O'Rourke, *Changes in the Arctic,* 13.

[34] O'Rourke, *Changes in the Arctic*, 15.

[35] Elizabeth L. Chalecki, "He Who Would Rule: Climate Change in the Arctic and its Implications for U.S. National Security," *Journal of Public and International Affairs 18* (Spring 2007), 213.

[36] President, "Arctic Region Policy, National Security Presidential Directive and Homeland Security Presidential Directive," NSPD-66/HSPD-25; U.S. Department of Defense, *Quadrennial Defense Review Report 2010*; U.S. Department of the Navy, *U.S. Navy Arctic Roadmap.*

to a U.S. Geological Survey, up to "90 billion barrels of oil, nearly 1,700 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids may remain to be discovered in the Arctic."[37] Scientists speculate that the Arctic accounts for 25 percent of the world's remaining reserves of oil and natural gas.[38] This equates to trillions of dollars waiting to be cultivated from beneath the ice. And new accessibility is particularly enticing, especially at a time when ever-increasing demands for these fuels meets with increasingly higher prices.

While the U.S. has existing oil fields on the North Slope of Alaska, additional hydrocarbons remain to be found off the coast of the Arctic Ocean. Nearly 40 percent of the nation's remaining reserves, over a trillion dollars worth, are estimated offshore under the Chuckchi and Beaufort Seas.[39]

As the growing amount of ice-free ocean in the summer months has led to more exploration and the discovery of potential oil fields, less sea ice over longer periods also means the seasonal window for offshore oil drilling remains open longer. This affords the opportunity not just to locate through seismic exploration the potential for oil, but also to exploit that oil through drilling. Despite the accessibility, however, hydrocarbon discovery in the region is still a great distance away from existing storage pipelines and shipping facilities, which means a build up of infrastructure is required to see economic gains. In past decades transportation of hydrocarbons from oil field in the far north has been conducted through pipelines, like the 800-

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[37] O'Rourke, *Changes in the Arctic*, 18.

[38] "The Arctic Circle: Development and Risk," 15.

[39] Ibid.

mile Trans Alaska Pipeline that runs from Prudhoe Bay to Valdez.[40] The opening of shipping routes in the Arctic means the potential for much of this oil to move by way of oil tanker.

To anticipate some of the potential issues, the Arctic Council, made up of the eight Arctic countries, has set forth a set of guidelines specifically for offshore oil and gas. The 2009 document provides cooperative principles in the areas of environment, safety, and emergency procedures for nations to follow in their exploration and exploitation of the region.[41] The potential for exploiting natural resources in the Arctic, however, is not limited to the eight countries bordering the region. China and Japan have invested in icebreakers and are conducting research in the Arctic, and South Korea is lobbying for observer status on the Arctic Council.[42]

For some nations, including Russia, Canada, and Norway, hydrocarbon exploitation in the Arctic is a central component of their economy.[43] The search for this untapped potential and its associated claims has fueled debate by many of the Arctic bordering nations.

International and Multinational Relations

When the United States purchased Alaska from Russia and became an Arctic nation in 1867, a bilateral agreement, known as the "1867 Convention Line" was signed identifying

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[40] Alyeska Pipeline Service Company, "Pipeline Facts," http://www.alyeska-pipe.com/pipelinefacts html (accessed November 22, 2010).

[41] Arctic Council, *Arctic Offshore Oil and Gas Guidelines 2009*, "Protection of the Arctic Marine Environment Working Group," http://arctic-council.org/filearchive/Arctic%20Offhsore%20Oil%20and%20Gas%20Guidelines%202009.pdf (accessed November 22, 2010).

[42] Hayes, "The Arctic," 9; Whitehead, "Taking Command in the Arctic," 4.

[43] Niave F. Knell, "The Reemergence of the Arctic as a Strategic Location" (monograph, School of Advanced Military Studies, U.S. Army Command and General Staff College, 2008), 64.

maritime boundaries.[44] These boundaries denoted limits to both territorial sea and exclusive economic zone jurisdiction. In 1990 a renewed agreement between the two nations further delineated previously unclear areas of territorial sovereignty and exclusive economic zones.[45]

While the 1867 Convention Line provided a convenient bilateral agreement between the United States and Russia, another framework was developed to provide maritime legal authority throughout the globe. As early as 1958 the United Nations had set the framework for international laws governing the seas.[46] In 1994, previously established conventions were agreed upon by member nations and what is now known as the United Nations Convention on the Law of the Sea (UNCLOS) entered into force, establishing "a treaty regime to govern activities on, over, or under the world's oceans."[47] Although this set of rules has global implication (it is not Arctic-specific), it does address which nations should have territorial sovereignty and economic exclusion on an international (not just bilateral) level. As a function of this, the UNCLOS does two important things that have very real implications to the Arctic region. First, it applies a standard set of criteria for economic exclusion zones; and second, it establishes a vehicle for adjudicating disputes. According to the convention, a nation can exercise exclusive rights to all natural resources within 200 nautical miles of its shore.[48] Further, if a nation can prove that an extension of continental shelf exists beyond 200 miles, then that nation can make a claim for up to 350

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[44] President, "Agreement with the Union of Soviet Socialist Republics on the Maritime Boundary" (Washington, DC: U.S. Government Printing Office, 1990).

[45] Ibid.

[46] O'Rourke, *Changes in the Arctic*, 6.

[47] Ibid.

[48] "The Arctic Circle: Development and Risk," 5.

nautical miles of economic exclusion.[49] Russia, for example, has submitted a claim that includes the North Pole and would extend their economic exclusion zone by 1.2 million square kilometers.[50] Experts estimate that the U.S. could also submit a 1.2 million square kilometer claim for economic exclusion, an area roughly the size of Alaska.[51] Where more than one country's economic exclusion zone covers the same area, a UN tribunal would decide on a convention line. To date, more than 155 nations have ratified the UNCLOS, and as a result have a seat at the table when decisions are being made.[52]

Although the United States adheres to the provisions of the 1994 UNCLOS, it has not ratified the convention. Congressional opponents have blocked ratification arguing that it compromises U.S. sovereignty by making international disputes subject to third party arbitration.[53] By not being a party to the UN convention, the U.S. cannot participate as a member of the commission, cannot submit a claim to extend its economic exclusion zone, and cannot participate in the adjudication of other nations' claims.

The UN is not the only multinational player in the north. Two other organizations have taken a consultative role in the region. The first is the Arctic Council, an intergovernmental body focused on issues of sustainable development and environmental protection.[54] Its membership includes the United States, Canada, Russia, Norway, Sweden, Finland, Denmark (by virtue of

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[49] "Arctic Countries Vying for a Piece of the Ice Seek to Strengthen Regional Presence," *Jane's Navy International* (August 21, 2008), 2.

[50] "The Arctic Circle: Development and Risk," 6.

[51] Ibid.

[52] Ibid.

[53] Ibid.

[54] The Arctic Council, "About Arctic Council," http://arctic-council.org/article/about (accessed November 22, 2010).

Greenland), and Iceland.[55] The second is the Conference of Parliamentarians of the Arctic Region, which holds conferences and provides reports on a variety of issues.[56] This parliamentarian body is composed of delegations from the eight Arctic countries and the European Union.[57]

Territorial Claims

In large part due to the resource potential and accessibility of the Arctic region, a dispute over sovereignty and territorial claims has emerged. The UNCLOS becomes problematic where states' rights might overlap one another or where significant natural resources might exist. Four Arctic coastal states (Canada, Russia, Norway, and Denmark) are in the process of preparing or have submitted territorial claims in the Arctic by way of this convention.[58]

Currently, the most visible territorial dispute in the Arctic is over a 0.5 square mile, uninhabitable rock between Canada and Greenland. The rock, known as Hans Island, rests along a convention line that separates waters belonging to Canada from waters belonging to Denmark. Although the possession of the island has no affect on maritime territorial limits or economic exclusion, posturing by both nations has been significant. Both Denmark and Canada have planted symbolic flags on the rock, and both have filed protests against the other. Both countries have utilized a military show of force through the deployment of long-range military aircraft,

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[55] The Arctic Council, "Member States," http://arctic-council.org/section/the_arctic_council (accessed November 22, 2010).

[56] "The Arctic Circle: Development and Risk," 5.

[57] Conference of Parliamentarians of the Arctic Region (CPAR), http://www.arcticparl.org/ (accessed November 22, 2010).

[58] Boslough et al., "The Arctic as a Test Case for an Assessment of Climate Impacts on National Security," 24-25.

sometimes "buzzing" the island during government visits.[59] Although the two countries have maintained a sense of humor throughout the dispute, and an escalation of force is unlikely, political scientists argue that resolution of this border dispute may have broader ramifications for territorial disputes throughout the Arctic.[60]

In addition to claims for economic exclusion is a political disagreement about the nature of the Northwest Passage. For its part Canada claims the Northwest Passage, through the Canadian Arctic Archipelago as sovereign seaway while the United States claims this to be an international strait. At issue is control over the narrow route. As a sovereign seaway, Canada would exercise full control over who could pass through, while if the Northwest Passage was deemed to be an international strait, then any nation could freely traverse its waters.

U.S. Arctic Policy

Since the U.S. became an Arctic state, enemy avenues of approach, via air or sea, have existed in the Arctic. Military presence in the region has been a part of U.S. defense policy for decades. Missile defense and early warning in the far north has been a concern since the end of World War II, as evidenced by integrated radar sites that made up the Distant Early Warning (DEW) line along Alaska's north coast. Alaskan Command, which exists in a different form today, was established in 1947 as one of the first three unified commands.[61] Its mission was to "protect Alaska, including sea and air communications, and protect the United States from attack

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[59] Michael Byers, *Who Owns the Arctic? Understanding Sovereignty Disputes in the North*, (Vancouver: Douglas & McIntyre Publishers, 2009), 26.

[60] Byers, *Who Owns the Arctic?*, 28; Christopher Stevenson, "Hans Off!: The Struggle for Hans Island and the Potential Ramifications for International Border Dispute Resolution", *Boston College International & Comparative Law Review 30*, (2007), 263.

[61] Cole et al., *The History of the Unified Command Plan 1946-1999*, 12.

through Alaska and the Arctic regions."[62] In 1950 the Secretary of Defense established U.S. Northeast Command to maintain security of Newfoundland, Labrador, and Greenland in order to defend the United States against attack through the Arctic regions in the northeast.[63] Throughout the Cold War the Arctic remained "an arena of military competition between the United States and the Soviet Union."[64] Military planners during that time considered the Arctic of primary strategic concern. Since the fall of the Soviet Union, and the subsequent end of the Cold War, however, the Arctic region has had less emphasis militarily.

Presidential Decision Directive–26 (PDD-26), issued by President Bill Clinton in 1994, provided guidance for the Arctic and Antarctic regions.[65] This directive focused largely on environmental protection and scientific cooperation. On January 9, 2009, outgoing President George W. Bush superseded PDD-26 with respect to the Arctic when he signed National Security Presidential Directive – 66 (NSPD-66) entitled "Arctic Region Policy."[66] This presidential directive identifies the Secretary of State as the lead agency for all of its seven components of national policy regarding the Arctic, the Secretary of Defense has responsibilities listed in only two of the components: national security and homeland security interests, and maritime transportation in the Arctic region.[67] The new directive listed the President's top priority as national and homeland security, and said in part, "The United States has broad and fundamental

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[62] Cole et al., *The History of the Unified Command Plan 1946-1999*, 12.

[63] Ibid., 16.

[64] O'Rourke, *Changes in the Arctic*, 34.

[65] President, "United States Policy on the Arctic and Antarctic Regions, Presidential Decision Directive," NSC-26, (June 9, 1994).

[66] President, "Arctic Region Policy, National Security Presidential Directive and Homeland Security Presidential Directive," NSPD-66/HSPD-25.

[67] Ibid., 2-8.

national security interests in the Arctic region and is prepared to operate either independently or in conjunction with other states to safeguard these interests."[68] In the policy the president further defined these "interests" as missile defense, strategic sealift, strategic deterrence, maritime presence, maritime security, and freedom of navigation.[69]

In response to NSPD-66 and in concert with the 2007 Cooperative Strategy for 21st Century Seapower, the Vice Chief of Naval Operations released the "U.S. Navy Arctic Roadmap" in November 2009.[70] In addition to establishing a quarterly status report requirement, the Arctic Roadmap identifies focus areas and desired effects over a three-phased program. The focus of Phase I, scheduled for FY10, is on assessment, development, and advocacy.[71] During this phase the Navy intends to take a close look at mission requirements and fleet readiness in order to inform future development and procurement.[72] Phase II is scheduled for FY11-12 and will carry out the recommendation of the previous phase as well as bolster cooperative relationships and exercise participation.[73] Finally, Phase III intends to execute the budget initiatives set out previously and initiate combined and bilateral activities to support safety, security, and stability.[74] The Arctic Roadmap is the U.S. Navy's vision for preparation and participation in this changing environment.

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[68] President, "Arctic Region Policy, National Security Presidential Directive and Homeland Security Presidential Directive," NSPD-66/HSPD-25, 2.

[69] Ibid.

[70] U.S. Department of the Navy, *U.S. Navy Arctic Roadmap*.

[71] Ibid., 3.

[72] Ibid.

[73] Ibid., 3-4.

[74] Ibid., 4.

Arctic emphasis also made its way into the 2010 Quadrennial Defense Review (QDR).[75] The QDR says in part that the DOD needs to work with the Coast Guard and the Department of Homeland Security to address gaps in communications, domain awareness, search and rescue, and environmental observation.[76] The QDR emphasizes the requirement for interagency, multilateral approaches to Arctic policy and homeland defense.[77]

Existing Arctic Command and Control

The Unified Command Plan divides responsibilities around the globe among GCCs based largely upon national borders. This method for dividing the globe clearly defines command and control responsibilities on landmasses and with existing governments. However, when landmass or national borders do not define a region, as is the case in the Arctic, Geographic Combatant Command boundaries are based instead upon lines of longitude.

The Unified Command Plan divides the Arctic region geographically among three GCCs. U.S. Northern Command (USNORTHCOM), U.S. European Command (USEUCOM), and U.S. Pacific Command's (USPACOM) boundaries converge on the North Pole, and each command has responsibilities in the Arctic region. See Figure 3.

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[75] U.S. Department of Defense, *Quadrennial Defense Review Report 2010.*

[76] O'Rourke, *Changes in the Arctic*, 35.

[77] Ibid.

Figure 3: Geographic Combatant Command Boundaries as viewed from the North Pole

Source: **United States Department of Defense, "The World with Commanders' Areas of Responsibility" Edition 8 NGA, Based on Unified Command Plan 17 December 2008, http://www.defense.gov/specials/unifiedcommand/images/unified-command_world-map.jpg (accessed November 22, 2010).**

While the Department of Defense has the Arctic region divided among three commanders, the Department of State, the President's lead agency for Arctic policy, views the Arctic as one region. Responsibility for diplomacy in the Arctic rests with the Bureau of Oceans and International Environmental and Scientific Affairs under the purview of the Undersecretary for Democracy and Global Affairs.[78] This difference in alignment of responsibilities is not unusual between the Departments of State and Defense, but has the potential for

[78] U.S. Department of State, "Bureau of Oceans and International Environmental and Scientific Affairs," http://www.state.gov/g/oes/ (accessed on November 22, 2010).

misunderstanding between the departments. For its part, the U.S. Navy has taken a lead role for the Department of Defense on Arctic issues, not because the region has been assigned to the Navy per se, but because, according to the Vice Chief of Naval Operations, "the Arctic is primarily a maritime environment, the Navy must consider…future policy, strategy, force structure, and investment."[79]

Chapter III: Problem Frame

While opportunities may be self evident for transportation and natural resources, the implications to national security are not so obvious. The Congressional Research Service published a 2010 paper on "Changes in the Arctic," suggesting that the region "is increasingly being viewed by some as a potential emerging security issue."[80] It further states that, "in varying degrees, the Arctic coastal states have indicated a willingness to establish and maintain a military presence in the high north."[81] Despite planting a flag at the North Pole, and publically suggesting a shift in strategy toward protecting national interests in the Arctic, this willingness to establish a military presence is more than just rhetoric.[82] Canada, for example, intends to spend $3 billion on new Arctic patrol vessels.[83] Russia has armed its icebreakers in the north and made multiple bomber flights in the region.[84]

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[79] U.S. Department of the Navy, *U.S. Navy Arctic Roadmap,* cover sheet.

[80] O'Rourke, *Changes in the Arctic*, 33.

[81] Ibid.

[82] Whitehead, "Taking Command in the Arctic," 4.

[83] David Pugliese, "Wake Up Call? Canadian Sovereignty, Economic Concerns Increase As Russia Flexes Muscle in the Arctic," *Seapower*, (October 2007), 20.

[84] "The Arctic Circle: Development and Risk," 3; Whitehead, "Taking Command in the Arctic," 4; Byers, "Who Owns the Arctic?" 1-4.

Current U.S. policy provides a set of potential missions to be accomplished in the Arctic region. While many of these involve multiple government agencies, several are defense-specific. The first policy listed in NSPD-66 is to "Meet national security and homeland security needs relevant to the Arctic region."[85] The directive further establishes the policies of "[Protecting] the Arctic environment" and "[strengthening] institutions for cooperation among the eight Arctic nations."[86] The Presidential Directive articulates in more specificity how this policy will be implemented and how U.S. national interests will be preserved.

For the purpose of this monograph four key aspects of the President's directive are used to establish potential areas for military employment in the Arctic region. These four potential problems are assessed in Chapter V as they relate to the command and control structure options identified in Chapter IV. First, the Department of Defense has a role in the geopolitical cooperation among the Arctic nations through existing military to military relationships, theater security cooperation plans, and combined exercises. Second, NSPD-66 articulates the need to protect the environment, and specifically calls for "measures…to address issues likely to arise from expected increase in shipping," such as "pollution prevention and response standards."[87] Third, a clear requirement for capable Arctic search and rescue is identified in the directive. Finally, in order to meet national security and homeland security obligations, NSPD-66 levies the

[85] President, "Arctic Region Policy, National Security Presidential Directive and Homeland Security Presidential Directive," NSPD-66/HSPD-25, 2.

[86] Ibid.

[87] Ibid., 5.

requirement "to protect United States air, land, and sea borders in the Arctic region."[88] This drives the need for the Department of Defense to be prepared for violent conflict in the Arctic.

Potential Problem 1: Military to Military Relationships

As mentioned above, NSPD-66 sets forth a policy of strengthening cooperation among the eight Arctic nations.[89] The Department of Defense advances this cooperation through collaboration with other militaries, bilateral and multilateral military relationships, theater security cooperation plans, and combined exercises. The U.S. Navy Arctic Roadmap, for example, lists international offices, agencies, governments, and militaries that it will collaborate with on Arctic issues. Military to military relationships and theater security cooperation plans are standard practice for the Department of Defense. Probably the most visible example of these relationships is with Canada through the bi-national North American Aerospace Defense Command (NORAD).[90] Other similar relationships exist with each of the Arctic nations either on a bi-national or multi-national level. Often this coordination is expressed through exercises such as the 2010 Operation Nanook with the U.S., Canada, and Denmark, or the 2007 Search and Rescue Exercise (SAREX) with the U.S., Canada, and Russia.[91] For its part, the U.S. Coast Guard

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[88] President, "Arctic Region Policy, National Security Presidential Directive and Homeland Security Presidential Directive," NSPD-66/HSPD-25, 2.

[89] Ibid., 2.

[90] North American Aerospace Defense Command, "About NORAD," http://www.norad mil/about/index html (accessed November 22, 2010).

[91] "Operation Nanook Continues in Pond Inlet," *CBC News*, August 19, 2010, http://www.cbc.ca/canada/north/story/2010/08/19/op-nanook-pond-inlet html (accessed November 22, 2010); Jeff Manney, "Confronting an Arctic Nightmare - Canadian, U.S., Russian SAR Experts Train for Arctic Air Disaster," *SARSCENE, the Online Search and Rescue Magazine*, Vol 16, Issue 3, (Summer/Fall 2007) http://www.nss.gc.ca/site/ss/magazine/vol16_3/articles/Arctic_Sarex_e.asp (accessed November 22, 2010).

District 17, based out of Juneau Alaska maintains a strong bi-national relationship with the Russian Border Guard.

Formal treaty alliances, such as NORAD, and less formal relationships such as with the Russian Border Guard provide for the security of the United States in very real and measurable ways. Military exercises, international relationships and security cooperation plans such as these are imperative to strengthening cooperation among the Arctic nations and protecting national sovereignty.

Potential Problem 2: Disaster Relief

In order to protect the environment and address the pollution prevention and response standards associated with increased maritime traffic, the Department of Defense must be prepared for disaster relief. This requirement, identified in NSPD-66, is further discussed in the U.S. Navy Arctic Roadmap where it lists disaster relief as a component of its fleet readiness assessment.[92] Expanded shipping opportunity coupled with increased oil exploitation in the Arctic raises the probability of a large-scale oil spill in the region. Significant oil spills requiring DOD response are not uncommon. In 1989 a task force was established to provide military assistance in the wake of the Exxon Valdez oil spill in Prince William Sound and the Gulf of Alaska.[93] To address the 2010 oil spill in the Gulf of Mexico the President of the United States established the Gulf

[92] President, "Arctic Region Policy, National Security Presidential Directive and Homeland Security Presidential Directive," NSPD-66/HSPD-25, 5; U.S. Department of the Navy, *U.S. Navy Arctic Roadmap*, 12.

[93] George Stewart, Scott M. Fabbri, Adam B. Siegel. "JTF Operations since 1983," *Center for Naval Analyses*, (July 1994): 55.

Coast Ecosystem Restoration Task Force, which included elements from the Department of Defense.[94]

The far reaches of the Arctic would significantly magnify the issue of an oil spill of any magnitude. With a bulk of the nation's global mobility and Arctic capability as well as basing infrastructure, military response and assistance would certainly be required for disaster relief in the north. An oil spill in the Arctic similar in scale to either of the two previously mentioned disasters would require significant timely support from the DOD if only just to reach the site.

Potential Problem 3: Search and Rescue

The increased incidence of maritime traffic through the Arctic has increased requirements for search and rescue in the region.[95] National Security Presidential Directive-66 identified "improved plans and cooperative agreements for search and rescue" as a requirement for safe Arctic maritime transportation. As the National Maritime Search and Rescue (SAR) coordinator, the U.S. Coast Guard has the responsibility of maintaining SAR capability in the waters surrounding Alaska.[96] However, search and rescue in such a vast region requires capabilities that do not currently reside within the Coast Guard. Additionally, given the location of current Coast Guard operating bases, airborne search and rescue response could take several hours and cutters could take days to arrive.[97] The problem is exacerbated by the increase in cruise ship traffic over the last few years. To mitigate this risk in the short term the U.S. Coast Guard has been setting up

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[94] President, "Executive Order Establishing the Gulf Coast Ecosystem Task Force," (October 5, 2010).

[95] O'Rourke, *Changes in the Arctic*, 32.

[96] National Search and Rescue Committee, *United States National Search and Rescue Supplement to the International Aeronautical and Maritime Search and Rescue Manual*, Washington, D.C. (May 2000).

[97] O'Rourke, *Changes in the Arctic*, 32.

a seasonal forward operating base near Barrow, on Alaska's north coast. Additionally, the Coast Guard has used the radar, communication, and airlift capabilities resident in the Alaska Air National Guard's 11th Rescue Coordination Center and 176th Wing.[98]

In November 2007, a 91-passenger cruise ship had to be evacuated before it sank in the middle of its 19-day voyage to Antarctica. Passengers and crew abandoned ship and floated in the Southern Ocean for nearly two hours before another cruise ship was able to reach them. Fortunately, all 154 aboard were saved.[99] Polar search and rescue, however, is not limited to the south. As Arctic travel increases so does the propensity for catastrophe. An August 2010 grounding of a cruise ship in the Northwest Passage called into doubt the existing capability of Canadian Arctic search and rescue in anything but ideal conditions.[100] Sunny weather and calm seas allowed a Canadian icebreaker to arrive on scene and rescue 200 passengers and crew from the stuck ship.[101] Canadian Arctic experts and government officials are now examining the country's search and rescue capability based on the explosive increase in Arctic travel.

Due to the U.S. Coast Guard's limited capability (they have only one heavy icebreaker operating in the Arctic), and its limited range, an incident similar to the 2007 cruise ship sinking

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[98] Alaska Air National Guard 176th Wing, "211th Rescue Squadron (211RQS)," http://www.176wg.ang.af.mil/units/176og/211rqs.asp (accessed November 22, 2010).

[99] Monte Reel, "Cruise Ship Sinks Off Antarctica," *The Washington Post*, November 24, 2007. http://www.washingtonpost.com/wp-dyn/content/article/2007/11/23/AR2007112300189.html (accessed November 22, 2010).

[100] Tobi Cohen, "Canadian Rescue Capacity Questioned in Wake of Arctic Ship Grounding," *Postmedia News*, http://www.canada.com/news/Canadian+rescue+capacity+questioned+wake+Arctic+ship+grounding/3457291/story html (accessed November 22, 2010).

[101] Ibid.

off the Antarctic coast, or the 2010 cruise ship grounding in the Northwest Passage would require an immediate joint force search and rescue response.[102]

Potential Problem 4: Violent Conflict

While Russia expands its nuclear icebreaker fleet and continues to aggressively pursue claims to the Arctic seabed, Canada is constructing a military base and deepwater facility adjacent to the Northwest Passage and clashing with Denmark over tiny Hans Island. In light of this increased posturing and the potential for valuable resources beneath the ocean floor the United States must be prepared to defend its sovereignty and national interests through the use of force.[103] In an effort to "meet national security and homeland security needs relevant to the Arctic region" NSPD-66 requires the United States to "assert a more active and influential national presence to protect its Arctic interests and to project sea power throughout the region."[104] Specifically, the directive requires the DOD to develop the capabilities required to "protect the United States air, land, and sea borders in the Arctic region."[105]

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[102] O'Rourke, *Changes in the Arctic,* 30-31. Two of the Coast Guard's three polar icebreakers—Polar Star and Polar Sea—have exceeded their intended 30-year service lives. The Polar Star is not operational and has been in caretaker status since July 1, 2006. The Coast Guard's third polar icebreaker—Healy—entered service in 2000. Compared to Polar Star and Polar Sea, Healy has less icebreaking capability, but more capability for supporting scientific research. The ship is used primarily for supporting scientific research in the Arctic; Reel, "Cruise Ship Sinks Off Antarctica," *The Washington Post*; Cohen, "Canadian Rescue Capacity Questioned in Wake of Arctic Ship Grounding," *Postmedia News.*

[103] Boslough et al., "The Arctic as a Test Case for an Assessment of Climate Impacts on National Security," 25.

[104] President, "Arctic Region Policy, National Security Presidential Directive and Homeland Security Presidential Directive," NSPD-66/HSPD-25, 2.

[105] Ibid., 3.

According to a Sandia report "conflict can be precipitated over disagreements over sovereignty, over economic and exploration rights, or over freedom of passage."[106] Although all of the Arctic countries, with the exception of the United States, have ratified the UN Convention on the Law of the Sea, and all are members of the United Nations, peaceful cooperation in the Arctic is not guaranteed.

Libraries are filled with titles on resource wars and border disputes, and many have posited already that Russia is training for a resource war in the Arctic.[107] The concept of fighting over sovereign rights in a region, be it diplomatic or economic, is not at all unreasonable. Much of the colonization and subsequent fighting in Africa and the Indies, for example, was based on the exploitation of natural resources. An example of such an armed conflict, not far removed from our collective memory, occurred over the Suez Canal in 1956. Although not entirely an issue of access through a limited resource (the canal), the Suez Crisis of 1956 involved UN member nations (Great Britain, France, Israel, Egypt, and to some extent the U.S. and the Soviet Union) fighting over rights to a region of the globe.[108] When the Egyptian president nationalized the canal in 1956 and diplomacy failed to resolve he dispute, Great Britain, France, and Israel

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[106] Boslough et al., "The Arctic as a Test Case for an Assessment of Climate Impacts on National Security," 26.

[107] Bradley Cook, "Russian Army Trains for Arctic Resource War," *National Post*, June 24, 2008. http://www.nationalpost.com/Russian+army+trains+Arctic+resource/610362/story html (accessed November 22, 2010); Toni Halpin, "Russia Warns of War Within a Decade Over Arctic Oil and Gas Riches," *The Times*, May 14, 2009. http://www.timesonline.co.uk/tol/news/environment/article6283130.ece (accessed November 22, 2010).

[108] United Nations, "Member States of the United Nations," http://www.un.org/en/members/ (accessed November 22, 2010).

mobilized and launched attacks against Egypt in an attempt to regain unrestricted access through the canal from the Mediterranean to the Indian Ocean.[109]

For the purposes of this study, military response in the Arctic region is categorized by the four potential problems identified above. While not all-inclusive, these four potential problems generally reflect policy guidance and published roadmaps for the future. They represent the broad areas of expected military response, or expected mission sets. These missions will be used in Chapter V to examine potential command and control options for the Arctic.

Chapter IV: Solution Space

To meet the various mission requirements and maintain unity of command in the Arctic the Department of Defense has several options available for command and control. For the purpose of this paper, three options are examined. These options are to redefine geographic combatant command boundaries, assign a standing Joint Task Force, and maintain the existing command and control structure.

Solution 1: Redefine Combatant Command Boundaries

This option redefines Geographic Combatant Command Boundaries in the Arctic and assigns the entire Arctic region to one commander. Three natural potentials arise as a part of this option. The Arctic region could be assigned to USEUCOM, USPACOM, or USNORTHCOM. Despite which Geographic Combatant Command would inherit the Arctic, in this option, rather than using arbitrary lines of longitude, boundaries would be defined around land mass. For example, if the Arctic were assigned to USNORTHCOM, then USEUCOM's northern boundary

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[109] Selwyn Ilan Troen and Moshe Shemesh, ed. *The Suez-Sinai Crisis 1956: Retrospective and Reappraisal* (New York: Columbia University Press, 1990), 3-14.

would be limited to Russia's north coast and USPACOM's northern boundary would be limited to the Bering Strait. Likewise, if the Arctic were assigned to USEUCOM, then USNORTHCOM's northern boundary would be limited to the Canadian Arctic Archipelago, and USPACOM's boundary would again end at the Bering Strait.

In this option two GCCs have a net loss in operational area while one has an increase. This realignment of boundaries and area assignment under one commander is consistent with traditional Unified Command Plan organization. All operations and exercises in the Arctic would then fall under one commander, despite the other contributing nations or existing relationships.

A variant of this realignment solution is to create an additional Arctic GCC and assign the Arctic region to that commander, similar to the establishment of USAFRICOM in 2007.[110] In this case USEUCOM, USPACOM, and USNORTHCOM would all lose geographic area conceded to the new Arctic GCC. While this is a command and control option, traditional GCC lines are established around national borders in order to delineate those countries with which a GCC has authority to engage. Since there is no land mass, and subsequently no nation that would fall under the purview of an additional Arctic GCC, this paper does not discuss the option of establishing an entirely new Arctic GCC.

Significant challenges exist with redefining combatant command boundaries. While GCC boundaries define for the U.S. who is responsible for a region, it also defines for other nations how the U.S. perceives them. Changing GCC boundaries has the potential to significantly change the political and military landscape for U.S. relations with the rest of the world. As a result of

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[110] Hayes, "The Arctic," 2, 13-14.

second and third order effects of such a change, adjustments to the Unified Command Plan require presidential approval.[111]

Solution 2: Assign a Standing Joint Task Force

The second command and control option is to assign a standing Joint Task Force to the region. In this option GCCs would retain their existing boundaries for the purposes of existing relationships with other Arctic countries. However, a standing Joint Task Force would be put in place with specific command and control responsibilities for the entire Arctic region. This standing Joint Task Force would be subordinate to one of the three GCCs with responsibilities in the region while having direct coordination with the other two. In the event military response is required, the standing Joint Task Force Commander would be the supported commander while the GCCs would be supporting. Geopolitically, the standing Joint Task Force would be the primary point of contact with the U.S. Government's lead agency for the Arctic, the Department of State. The standing Joint Task Force would also represent the U.S. Department of Defense with regard to the Arctic.

Although this command and control relationship is not consistent with existing Unified Command Plan constructs, it is not without precedent. In 1989, responding to the President's war on drugs, Joint Task Force-Six (JTF-6) was established within the southwest border region to counter the flow of illegal drugs into the U.S.[112] Not assigned to a GCC until the establishment of USNORTHCOM, JTF-6 provides an example of standing joint task forces working a specific

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[111] Cole et al., *The History of the Unified Command Plan 1946-1999*.

[112] Gene Renuart, "Coordinated Efforts of Border Security: How the Military Supports Homeland Security" (Reprinted with permission from *Proceedings*, 2009 U.S. Naval Institute). http://usacac.army.mil/cac2/call/docs/10-52/ch_2.asp (accessed November 22, 2010).

geographic issue in a region not easily defined in the Unified Command Plan. A second example is in Alaska where a single three-star commander works directly for two different combatant commanders. Alaskan Command is a sub-unified command subordinate to USPACOM and "responsible for maximizing theater force readiness for 21,000 Alaskan service members and expediting worldwide contingency force deployments from and through Alaska as directed by the Commander, USPACOM."[113] Joint Task Force-Alaska (JTF-AK) is a standing joint task force under USNORTHCOM with the mission to, "in coordination with other government agencies, deter, detect, prevent and defeat threats within the Alaska Joint Operations Area (AK JOA) in order to protect U.S. territory, citizens, and interests, and as directed, conduct Civil Support."[114] Alaskan Command/JTF-AK represents a geographic command with responsibilities to two different combatant commanders.

Additional challenges exist, however, when establishing Joint Task Forces. Traditionally, JTFs have been "set up to accomplish well-defined objectives and then disbanded when those objectives [were] accomplished."[115] Experience shows that traditional (not standing) Joint Task Forces have been stood up on extremely short notice, lacked established relationships, and been short-lived.[116] To counter some of these issues GCCs have created "semi-permanent," or standing JTFs.[117] Standing Joint Task Forces, like JTF-Alaska, JTF-Horn of Africa, and JTF- North,

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[113] Joint Base Elmendorf-Richardson, "Alaskan Command," http://www.jber.af mil/alcom/index.asp (accessed November 22, 2010).

[114] Unites States Northern Command, "Joint Task Force Alaska," http://www.northcom.mil/about/index.html#JTFAK (accessed November 22, 2010).

[115] Stewart, Fabbri, Siegel. "JTF Operations since 1983," 15

[116] Ibid., 6, 11, 14.

[117] John M. Bushman, "Standing Joint Task Forces: Resource Relics" (monograph, School of Advanced Military Studies, U.S. Army Command and General Staff College, 2010), 1.

maintain a semi-permanent status due to their enduring missions. They have the advantage of not being hastily established, and the ability to build relationships with interagency and multinational partners.

Standing Joint Task Forces, however, come with their own challenges. At least one author has argued that standing JTFs are resource burdens that came to prominence as a result of failed military missions, high visibility commissions, and damaging reports on service parochialism.[118] While the argument has been made that these semi-permanent organizations lack termination criteria and are subject to constantly evolving missions, their existence is examined regularly by the Joint Staff.[119] Current doctrine establishes guidance for the establishment of semi-permanent Joint Task Forces based on the nature of the operation, the desire for continuity and efficiency, and to establish relationships with non-DOD agencies.[120] These JTFs are designed to operate in "an interconnected joint, interagency, intergovernmental, nongovernmental, and multinational environment in which the [JTF Commander] and staff must work with and through many agencies and organizations."[121]

Solution 3: Maintain Existing Command and Control Structure

The third option discussed in this paper is to maintain the existing Combatant Command boundaries in the Arctic. Currently three GCCs have responsibilities in the Arctic. Under this option USEUCOM, USNORTHCOM, and USPACOM would retain the geographic areas of

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[118] Bushman, "Standing Joint Task Forces," 5.

[119] Ibid., 16-18.

[120] Department of Defense, JP 3-33, *Joint Task Force Headquarters* (Washington, DC: Government Printing Office, May 2007), I-3.

[121] Ibid.

responsibility as identified in the Unified Command Plan and no standing JTF would be established to cover the seams.

While this option is the easiest to implement (because it is already established), many military scholars have argued that it does not meet doctrinal requirements and neglects command and control and resource management.[122] The strongest argument against maintaining the existing command and control relationship, however, is centered on how the Arctic is viewed. With the 2009 publication of NSPD-66, the Arctic is viewed as a single region by the administration, requiring regional preparation and responses by the different executive departments.[123] The DOD however, still has the region divided, allowing for overlapping security responsibilities, blurred authorities, coordination delays, and inefficient interagency coordination.[124]

Chapter V: Analysis

The following subjective analysis intends to evaluate the capability of each command and control option presented in Chapter IV. This analysis is done by examining the expected unity of command and unity of effort in each hypothetical headquarters given the challenges of the proposed Arctic missions presented in Chapter III.

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[122] Knell, "The Reemergence of the Arctic as a Strategic Location," 82, 98; Alan L. Kollien, "Toward an Arctic Strategy" (Strategy Research Project, U.S. Army War College, 2009), 17; Hayes, "The Arctic," 4.

[123] President, "Arctic Region Policy, National Security Presidential Directive and Homeland Security Presidential Directive," NSPD-66/HSPD-25.

[124] Hayes, "The Arctic," 4-5, 10; Whitehead, "Taking Command in the Arctic," 9.

Analysis 1: Redefine Combatant Command Boundaries

Potential Problem 1: Military to Military Relationships

Redefining Geographic Combatant Command boundaries would mean giving responsibility for the entire Arctic region to one GCC. However, all three Combatant Commanders with current responsibilities in the Arctic have existing relationships with the governments and militaries in their region, and two of them (USNORTHCOM and USEUCOM) maintain very strong relationships with other Arctic Nations. Redefining the boundaries could potentially confuse these relationships.

United States Northern Command, for example, by virtue of both its geographic responsibilities and its close association with NORAD has a very strong relationship with Canada and Canada Command.[125] Assigning the Arctic to a GCC other than USNORTHCOM would require the new Arctic GCC to coordinate with Canada and Canada Command on Arctic issues and Homeland Defense north of the North American landmass. Northern Command would be responsible for cooperative homeland defense issues only in North America proper. Additionally, another level of coordination would be required between the new Arctic GCC and NORAD. Synchronization in identifying, tracking, and intercepting air and maritime threats would be needed in the Alaskan and Canadian NORAD regions.[126]

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[125] United States Northern Command, "U.S. Northern Command, Canada Command Establish New Bilateral Civil Assistance Plan," February 14, 2008. http://www.northcom.mil/news/2008/021408.html (accessed November 22, 2010).

[126] North American Aerospace Defense Command, "Alaskan NORAD Region," http://www.norad mil/about/ANR.html (accessed November 22, 2010); North American Aerospace Defense Command, "Canadian NORAD Region," http://www norad mil/about/CANR.html (accessed November 22, 2010).

Likewise, USEUCOM maintains similarly strong relationships with the other six Arctic countries. Some of these relationships are bi-national, like the ties between USEUCOM and the Kingdom of Denmark's military. Others are expressed through such organizations as the North Atlantic Treaty Organization's (NATO) Supreme Headquarters Allied Powers Europe (SHAPE). The commander of SHAPE, known as the Supreme Allied Commander Europe (SACEUR), has traditionally been the USEUCOM commander.[127] This "dual hat" responsibility affords a strong military to military relationship between the United States European Command and the militaries of the European Arctic countries.

United States Pacific Command's tie to the Arctic region, aside from its current geographic responsibility, is also an important consideration. The state of Alaska contains the U.S.'s only Arctic coastline, and Alaska alone makes the U.S. an Arctic country. Forces in Alaska, however, are assigned to USPACOM, and realignment of the Arctic to a GCC other than USPACOM would place U.S. forces in the Arctic coastal state outside the control of the Arctic GCC.

Realignment of the GCC boundaries would unnecessarily complicate existing relationships between Combatant Commanders and the militaries of the countries in their regions. On the other hand, exercises like Operation Nanook and the Arctic SAREX, which currently integrate the efforts of countries from different GCC regions, could be coordinated and executed without the need to work outside the Arctic GCC's geographic region.

Given this scenario unity of command could be achieved with the assignment of Alaska-based forces to the new Arctic GCC, but unity of effort is a bit more complicated. With regard to

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[127] North Atlantic Treaty Organization, "Supreme Allied Commander Europe (SACEUR)," http://www.nato.int/cps/en/natolive/topics_50110.htm (accessed November 22, 2010).

military to military relationships a single GCC in the Arctic has negative second and third order effects on unity of effort. As discussed, our allied Arctic countries would be required to coordinate with one GCC regarding the Arctic issues and another for non-Arctic issues.

Potential Problem 2: Disaster Relief

Geographically viewing the Arctic as one region, by assigning a single Arctic GCC, removes the seams that currently exist between geographic boundaries. This may, in turn, reduce confusion as to who is responsible for responding to a disaster, such as an oil spill, that occurs on one of these geographic seams. The forces available to respond to such a disaster, however, should be assigned to the Arctic GCC. United States Pacific Command, by virtue of having forces in Alaska, and USEUCOM, by virtue having forces in Europe, could have some immediate response capability without requiring forces from a force provider, like United States Joint Forces Command. United States Northern Command, on the other hand, with no forces assigned in the north, would need to be assigned operational control of forces outside of its current structure. While agreements of this type are in place, coordination can be cumbersome.

A single GCC responsible for the Arctic would have the capacity to plan for and coordinate disaster relief efforts for the whole region. A single Arctic GCC could also maintain the appropriate relationships with other federal agencies to ensure the right capabilities exist and the proper interagency coordination is conducted.

Given the limited number of ice-class ships available to any one nation, disaster relief in the Arctic would likely prompt a coalition response. One GCC with Arctic responsibilities would have the opportunity to foster relationships with other Arctic countries in order to facilitate quicker response by a coalition force. Through training, exercises, and planning, a single GCC could establish coordination and collaboration with all of the other Arctic countries, ensuring the right capability was available.

Given this scenario, and the proper forces assigned, unity of command would be preserved within the U.S. military. Unity of effort would also be maintained with other U.S. federal agencies and any coalition partners resulting from a single point of contact and coordinated planning guidance in the Arctic.

Potential Problem 3: Search and Rescue

Much like disaster relief, geographically viewing the Arctic as one region removes the seams that currently exist between GCC boundaries. Assigning one GCC the entire Arctic region may eliminate confusion as to who is responsible for coordinating and conducting search and rescue, such as an a sinking cruise ship. Also like disaster relief, the forces available to conduct search and rescue operations should be assigned to the Arctic GCC as this would require an immediate response by forces available without cumbersome coordination and transfer from a force provider.

A single GCC responsible for the Arctic would have the capacity to plan for and coordinate search and rescue efforts for the whole region. A single Arctic GCC could also maintain the appropriate relationships with other federal agencies to ensure the right capabilities exist and the proper interagency coordination for search and rescue is conducted.

Given the limited search and rescue assets available to any one nation, such as ice-class ships and long-range aviation, search and rescue in the Arctic could require a coalition response. One GCC with Arctic responsibilities would have the opportunity to foster relationships with other Arctic countries in order to facilitate quicker response by a coalition force. Through training, exercises, and planning, a single GCC could establish coordination and collaboration with all of the other Arctic countries, ensuring the right capabilities are available.

Given this scenario, and the proper forces assigned, unity of command would be preserved within the U.S. military. Unity of effort would also be maintained with other U.S.

federal agencies and any coalition partners resulting from a single point of contact and coordinated planning guidance in the Arctic.

Potential Problem 4: Violent Conflict

Preparing for violent conflict, projecting power and protecting Arctic borders is accomplished in peacetime through planning, training, and exercising. A GCC has the responsibility to have contingency plans in place and forces arrayed and trained in preparation for armed conflict in his assigned region. By viewing the Arctic as a single region, instead of the extension of three separate regions, a single Arctic GCC has the opportunity to develop plans and military responses to escalation in the Arctic as a whole. With forces assigned, a single GCC with an Arctic focus could eliminate training inconsistencies, and exercise his forces across the entire region, resulting in a higher degree of readiness. Assigning a single GCC would also help to ensure the appropriate capabilities were resident for potential conflict.

Violent conflict is not a military-only issue; it requires a whole-of-government approach. Having only one commander responsible for a region allows for a more consistent relationship with the military's interagency partners. Eliminating the geographic seams in the Arctic would also eliminate some of the cognitive seams that exist. Instead of having three GCCs providing potential military responses to an escalating conflict and coordinating with other government agencies, the military could speak of the region from one voice.

Once violence erupted in the Arctic a single commander would be assigned over the operation. With redrawn GCC boundaries that operational commander would traditionally come from the Arctic-assigned GCC. For example, if USNORTHCOM were assigned the Arctic region, then the commander of the military operation in the Arctic would likely come from USNORTHCOM. However, if the violent conflict were with a European country, then this operational commander from USNORTHCOM would be orchestrating a military response in one area of operations against a country that lies within someone else's area of operations. This

arrangement has the potential of misaligning the USEUCOM's political-military response and USNORTHCOM's geographic-military response. This scenario has the potential to play out the same way despite which GCC is assigned the Arctic mission. While unity of command may be preserved for the GCC responsible for operations in the Arctic, unity of effort for resolving the conflict could be seriously undermined.

Analysis 2: Assign a Standing Joint Task Force

Potential Problem 1: Military to Military Relationships

Assigning a standing Joint Task Force to the Arctic would not impede upon current military to military relationships that exist between GCCs and the militaries from other Arctic countries. The vital and long-standing rapport between the U.S. military and the armed forces of our allies would not be drastically changed. United States Northern Command would still maintain its strong bond with Canada, from USNORTHCOM-Canada Command relations to NORAD. Likewise, the USEUCOM commander would retain his strong relationships with the other six European Arctic countries, bilaterally and through his NATO hat as the SACEUR.

Instead of confusing existing military to military relationships, a standing JTF would serve to coordinate the Arctic-specific issues and interests of the three GCCs while keeping an eye on Arctic national policy, regional readiness, and international forums. The JTF would not get in the way of the existing international military relationships, preventing allied nations from having to potentially work with two different GCCs (as seen with the realignment of GCC lines) depending on the issue.

In the U.S. the standing JTF would provide a single point of contact for interagency partners, focusing on the Arctic as a single region and allowing the U.S. military to speak with a coordinated, single voice. Regional multinational training and exercises, such as Operation

Nanook and the Arctic SAREX would also come with a more synchronized approach as the standing Joint Task Force coordinates planning and response efforts of all three GCCs.

Given this scenario, unity of command for each of the three Arctic GCCs would remain the same, while unity of effort would be enhanced through better international and interagency coordination.

Potential Problem 2: Disaster Relief

Traditionally, the U.S. military responds to a disaster by assigning a Joint Task Force, responsible for coordinating military relief efforts.[128] Where a JTF already exists with a focus on a region, it follows that that task force would be assigned the responsibility for coordinating military relief. This is the case in Alaska, where a standing Joint Task Force exists prepared to provide disaster relief, with an existing focus an understanding of the unique operating environment.[129] A large Arctic oil spill in any of the three GCC areas of responsibility would likely result in the establishment of just such a JTF.

Assigning a standing JTF allows for geographically viewing the Arctic as one region and removes some of the cognitive seams that currently exist between geographic boundaries. This standing JTF could plan for disaster relief operations with an understanding of the unique operating environment, as well as the military assets available. One, comprehensive military disaster response plan in the Arctic will facilitate a more concise list of training and resource requirements for the forces involved. However, since disaster relief will not be a military-only operation, interagency coordination will be required. A single planning organization, viewing the

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[128] Stewart, Fabbri, Siegel. "JTF Operations since 1983."

[129] Unites States Northern Command, "Joint Task Force Alaska."

Arctic as one region and speaking with one voice, has the ability to better facilitate this interagency planning and coordination prior to the disaster.

Once disaster strikes, and relief efforts are required, the standing JTF would be in a position to command and control the military portion of the relief effort. Through existing relationships and support agreements with the three Arctic GCCs, a supported JTF commander could have quick access to vast resources, resulting in a rapid coordinated response.

Given the limited number of ice-class ships available to any one nation, disaster relief in the Arctic would likely prompt a coalition response. A regionally-focused standing JTF would have the opportunity to help GCCs foster relationships with other Arctic countries through planning, training, and exercises. These relationships, combined with the focused efforts of the standing JTF would help ensure the right resources and capabilities were available and facilitate a quicker response by coalition forces.

Given this scenario, unity of command would be maintained by the GCCs. Unity of effort, however, would be enhanced by the standing JTF's understanding of the unique operational environment as well as the interagency and international relationships built through a regional focus.

Potential Problem 3: Search and Rescue

Like disaster relief, assigning a standing JTF allows for geographically viewing the Arctic as one region and removes some of the cognitive seams that currently exist between geographic areas of responsibility. A standing JTF responsible for the Arctic would have the capacity to plan for and coordinate search and rescue efforts for the whole region. A standing Arctic JTF could maintain the appropriate relationships with other federal agencies to ensure the right capabilities existed and the proper interagency coordination for search and rescue was conducted.

Given the limited search and rescue assets available to any one nation, such as ice-class ships and long-range aviation, search and rescue in the Arctic could require a coalition response. While each Arctic GCC maintains relationships with the Arctic countries in his geographic area, a standing JTF would have knowledge of the resources available from the U.S. as well as other Arctic allied nations. With its established plans as well as its understanding of the unique operating environment, a standing JTF would be ready to assume command of any international search and rescue effort.

Given this scenario, unity of command would be preserved within the U.S. military geographic combatant command structure, while unity of effort would be enhanced by the standing JTF's preparedness and interagency coordination.

Potential Problem 4: Violent Conflict

Establishing a standing JTF allows for the military to view the Arctic as one region for the purposes of preparing for violent conflict, projecting power and protecting Arctic borders. In peacetime this is accomplished through planning, training, and exercising. While the GCCs have the responsibility for establishing contingency plans, a standing JTF can facilitate regional coordination of those plans and establish subordinate plans. With a focused view on the region as a whole, a standing JTF can facilitate a comprehensive approach to responding to the escalation of violence in the Arctic. A standing JTF can further facilitate readiness by helping to coordinate training and capability requirements as well as exercises, reducing inconsistencies between the GCCs.

Any violent conflict will require a whole-of-government approach, and a standing JTF can facilitate that coordinated approach. Having a single voice representing all three combatant commanders on issues related to an escalation of violence in the Arctic will afford smoother interaction with other government agencies and a more consistent relationship with interagency

partners. Instead of having three GCCs providing potential military responses to an escalating conflict to other government agencies, the military could speak of the region from one voice.

Once violence erupts in the Arctic, the standing JTF commander would be in a position to command the operation, be it unilateral or coalition based. With the standing JTF commander orchestrating the military response from a whole-of-the-Arctic perspective, it would not matter if the conflict were with a European or North American country, because the JTF commander has each of the GCCs interests in mind. In this scenario there is less potential for discontent between the geographic-military and the political-military responses. While unity of command is preserved, unity of effort is enhanced.

Analysis 3: Maintain Existing Command and Control Structure

Potential Problem 1: Military to Military Relationships

All three Combatant Commanders with current responsibilities in the Arctic (USNORTHCOM, USEUCOM, and USPACOM) have existing relationships with the governments and militaries in their region. Both USNORTHCOM and USEUCOM maintain very strong relationships with other Arctic Nations. United States Northern Command, for example, by virtue of both its geographic responsibilities and its close association with NORAD has a very strong relationship with Canada and Canada Command. Likewise, USEUCOM maintains similarly strong relationships with the other six Arctic countries. Some of these relationships are bi-national, while others are expressed through NATO's SHAPE where the commander USEUCOM commander is dual-hatted as the Supreme Allied Commander Europe.

Retaining the current geographic responsibilities would mean not interfering with these very important military to military relationships. Training and exercises like Operation Nanook and the Arctic SAREX would be left to continue, but may not have the synchronizing affect

afforded by a standing JTF or a single GCC. While unity of command would be retained by the existing GCCs, an opportunity to enhance unity of effort would be lost.

Potential Problem 2: Disaster Relief

Without changing geographic boundaries, or assigning a standing JTF, GCCs may be required to respond to a disaster in their operations area initially with only the forces available to them. The forces available to a specific GCC, however, may not be the closest or the best prepared. An oil spill off the north coast of Alaska, for example would lie within USNORTHCOM's operations area, but the closest available response might be from USPACOM's forces in Alaska. Although processes exist to facilitate the transfer of forces from one GCC to another, those processes take time. Further, if a spill were to cross GCC boundaries, even more coordination would be required.

Additionally, viewing the Arctic as an extension of three disparate operations areas, instead of as a single region would likely result in vastly different response plans to such a spill. United States European Command's view of the Arctic and interests in it are very likely to be different from USPACOM's. Different response plans would likely lead to different levels of training, readiness, and resource availability for such a disaster. Three separate commanders maintaining three separate plans for disaster relief in the same region is not beneficial to the interagency and coalition coordination process. While maintaining the same GCC operations areas without a coordinating JTF preserves unity of command, the inability for DOD to speak of the region with one voice inhibits unity of effort.

Potential Problem 3: Search and Rescue

Search and rescue in a region commanded by three distinct commanders has issues similar to those discussed above regarding disaster relief. To begin with, the seams that exist between GCC operations areas require close coordination to determine who will respond to an

emergency. Additionally, as with disaster relief, the commander with forces closest to the incident may not have command of that region.

Geographically viewing the Arctic as the extension of three disparate areas instead of as one region affords differences in planning for search and rescue operations. Differences in planning will result in differences to training, readiness, and resource availability. This is all likely to lead to less efficient interagency and coalition coordination and cooperation, and could cost valuable time in an Arctic search and rescue.

Given this scenario, unity of command is preserved by the GCC and the forces assigned to him. However, unity of effort is degraded compared to other command and control options because there is no Arctic coordination and cooperation between the GCCs and no single DOD Arctic voice speaking to the other governmental agencies.

Potential Problem 4: Violent Conflict

Preparing for violent conflict, projecting power and protecting Arctic borders is accomplished in peacetime through planning, training, and exercising. Each GCC has a responsibility to have contingency plans in place and forces arrayed and trained in preparation for armed conflict in his assigned region. By viewing the Arctic as three separate regions, each GCC has to consider his own contingency plan for potential violent conflict in the Arctic. As with the other potential problems, having three disparate plans for response to violent conflict in the region is likely to result in three different levels of training, readiness, and resource availability.

Since violent conflict will not be a military-only issue, close cooperation with other governmental agencies will be required. The second result of three different contingency plans in the Arctic is that the DOD lacks a single voice with which to coordinate with its interagency partners. Similarly, coordination, training, and exercises with our allies remains more challenging with three separate commanders having uncoordinated interests in the region.

Once violence erupts in the Arctic, a single commander would likely be assigned over the operation. But that violence may not be limited to one GCC's operational area, so boundaries would have to be adjusted, at least temporarily, to provide necessary space to the operational commander. Additionally, a situation may develop where the GCC responsible for the conflict area is not the GCC responsible for relationships with the conflict country. For example, violence could erupt in USPACOM's operational area against a European adversary. This arrangement has the potential of making USEUCOM's political-military response inconsistent with USPACOM's geographic-military response. This scenario has the potential to play out the same way for each GCC. While unity of command may be preserved for the GCC responsible for operations in the Arctic, unity of effort for resolving the conflict could be seriously undermined.

Chapter VI: Conclusion

The preceding subjective analysis examined three command and control options against four potential military problems in the Arctic. Unity of command and unity of effort were used as benchmarks for evaluation. Results of the analysis are presented in Figure 4 below.

		Problem 1 **Military to Military Relationships**	Problem 2 **Disaster Relief**	Problem 3 **Search and Rescue**	Problem 4 **Violent Conflict**
Redefine GCC Boundaries	*Unity of Command*	Marginal	Good	Good	Good
	Unity of Effort	Poor	Good	Good	Poor
Standing Joint Task Force	*Unity of Command*	Good	Good	Good	Good
	Unity of Effort	Good	Good	Good	Good
Maintain Existing Structure	*Unity of Command*	Good	Good	Good	Good
	Unity of Effort	Marginal	Poor	Poor	Poor

Figure 4. Analysis Results

Viewing the Arctic militarily as a single region instead of as the extension of three disparate regions would afford a comprehensive approach to an arena with increased geopolitical importance. However, giving control of the Arctic to one Geographic Combatant Commander has the potential to confuse bi-national and multinational relationships as well as undermine unity of effort during a violent conflict.

Bi-national and multinational military to military relationships are key to U.S. security policy. Few, if any, military operations are commenced without coalition support. That coalition support begins not at the scene of a conflict or relief operation, but in the strong relationships between militaries. While retaining existing GCC boundaries would maintain existing relationships and unity of command, an opportunity to enhance unity of effort multi-nationally would be lost. Conversely, redefining GCC boundaries has a potential negative effect on both unity of command and unity of effort; the former due to force assignment, and the latter resulting from awkward military to military relationships. On the other hand, a standing Joint Task Force would allow GCCs to maintain existing relationships while providing a coordination and collaboration entity to enhance unity of effort among all international partners.

Structurally, disaster relief and search and rescue operations have similar command and control results in the Arctic. With regard to these two mission sets, maintaining the existing GCC boundaries provides poor unity of effort as the military would be unable to speak to interagency and international partners from one position or one coordinated voice. Poor unity of effort is further aggravated by differences in planning, training, and preparedness between the GCCs. However, either assigning the entire Arctic to one GCC or assigning a standing Joint Task Force enhances unity of effort. With a single Arctic GCC, one commander sets the training, planning, and preparedness posture for the region. Assigning a standing Joint Task Force ensures coordination and collaboration among the GCCs and provides a single voice and single point of contact for Arctic disaster relief and search and rescue.

The primary job of the U.S. military is to provide the forces necessary to deter war, and when necessary use those forces to protect the security of the United States.[130] In the Arctic, as in the rest of the world, the U.S. military has a responsibility to respond to violent conflict in order to protect U.S. national interests. While all three command and control options provided for good unity of command in this scenario, only a standing Joint Task Force provides good unity of effort. Both retaining existing GCC boundaries, as well as them sets up potential scenarios where the Combatant Commander is fighting against a country that lies outside of his area of operations. A standing JTF commander, however, would be in a position to command a joint, coalition, whole-of-government response that would take all GCC interests and influences into account.

Overall, assigning a standing Joint Task Force for the Arctic has the positive effect of viewing the Arctic as one region, speaking with one voice to the interagency and international community, coordinating efforts of three combatant commands without the negative effects of confusing existing multinational relationships or undermining unity of effort. Based on this preceding subjective analysis the establishment of a standing Joint Task Force should be considered to cover the existing seams and gaps in the Arctic created by the Unified Command Plan in light of the emerging National Security implications of changes in the Arctic. Additionally, the analysis used in this paper and the resulting recommendation of establishing a standing Joint Task Force to cover GCC seams in the Arctic has potential implications for examining how GCC seams are covered in other regions.

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[130] U.S. Department of Defense, "Mission," http://www.defense.gov/about/#mission (accessed November 22, 2010).

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