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U.S. Coast Guard Activity
in the Arctic Region

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U.S. COAST GUARD ACTIVITY IN THE ARCTIC REGION

G.M. Sulmasy and A.P. Wood

Introduction

The United States is an Arctic nation.¹ As such, as arctic ice recedes and maritime activity increases, the Coast Guard must be prepared to expand operational capabilities, and serve at the forefront to administer and execute national objectives.

As detailed in the U.S. Coast Guard Arctic Strategy (May 2013),² environmental changes and economic incentives are driving a transformation of maritime activity in the Arctic region. Climate change has resulted in higher water and air temperatures, causing permanent ice cover to diminish to record low levels seasonally. For whatever reason, it is clear the Arctic environment is changing dramatically. Satellite observations over time show decreasing multi-year ice and increasing open water during the Arctic summer.³ Coastal villagers have experienced environmental changes that have made their communities more prone to storm surges, diminishing permafrost, and coastal erosion. Although winter sea travel is still severely limited due to extensive ice coverage, recent, previously unrecorded retreat of summer and early autumn sea ice has made maritime navigation more feasible. Economic development, in the forms of resource extraction, adventure tourism, and trans-Arctic shipping, drives much of the current maritime activity in the region.

Sovereign commercial and entrepreneurial activities will continue to evolve in the region – interest has increased significantly as a result of potentially new access to an abundance of resources. These resources include an estimated 13 percent of the world’s undiscovered oil, 30 percent of undiscovered gas, and some one trillion dollars worth of minerals including gold, zinc, palladium, nickel, platinum, lead, rare-earth minerals, and gem-quality diamonds.⁴ More than 35 percent of Alaska’s jobs are tied to the energy sector, and onshore production of oil in Alaska is diminishing. With decreasing sea ice, the incentive for further exploration offshore is rapidly increasing. This new, fresh interest and “speculation,” however, is not without risk. Clearly, the best means to mitigate such inevitable risk is through creation of a comprehensive maritime governance regime. Of course, creating such governance is a tremendously difficult and will likely take years to take effect once established. .

In addition to oil, gas, and minerals, more than 50 percent of America’s fish stock comes from the Nation’s Exclusive Economic Zone (EEZ) off of Alaska.⁵ Moreover, trans-shipment of cargo through the Arctic region is increasing. In 2012, over one million tons of cargo transited the Northern Sea Route, an Arctic passage that reduces thousands of miles off of traditional voyages between the

Atlantic and Pacific Oceans. Arctic tourism is also rising rapidly. Due to undeveloped shore-based infrastructure, much of the increased tourism is expected to involve transportation via passenger vessels, further increasing near- and offshore activities in Arctic waters.

Protest activities and other demonstrations that advocate for a variety of interests – including the environment, indigenous ways of life, and climate change issues – are expanding. The nature of maritime activity in the Arctic is evolving from exploration and scientific research to resource extraction, commercial shipping, and a broad array of other pursuits.

A host of legislation, policy, and strategies direct and guide the Coast Guard as it moves toward a more viable presence and effective mission execution in the Arctic including the President’s National Security Strategy, National Military and Maritime Strategies, National Strategy for the Arctic Region, Arctic Region Policy National Security Presidential Directive(NSPD)-66/Homeland Security Presidential Directive(HSPD)-25, National Strategies for Homeland Security and Maritime Domain Awareness, National Ocean Policy, Executive Order 13580-Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska, as well as the Quadrennial Defense, Diplomatic, and Homeland Security reviews.⁶

Executive Summary

With significant national interest in the region, the Coast Guard, as the maritime component of the U.S. Department of Homeland Security (DHS), has specific statutory responsibilities in U.S. Arctic waters. The Coast Guard, being responsible for ensuring safe, secure, and environmentally responsible maritime activity manages its current suite of cutters, boats, aircraft, and shore infrastructure to meet these near-term mission demands by employing mobile command and control platforms such as large cutters and ocean-going, ice-strengthened buoy tenders, as well as seasonal air and communications capabilities through leased or deployable assets and facilities. These mobile and seasonal assets and facilities have proven to be important enablers for front-line priorities in the region, including search and rescue operations, securing the maritime border, collecting critical intelligence, responding to potential disasters, and protecting the marine environment.

The Coast Guard Arctic Strategy communicates three strategic objectives for the Arctic over the next 10 years:

Improving Awareness: Coast Guard operations require precise and ongoing awareness of activities in the maritime domain. Maritime awareness in the Arctic is currently restricted due to limited surveillance, monitoring, and information system capabilities. Persistent awareness enables identification of threats, information-sharing with front-line partners, and improved risk management. Improving awareness requires close collaboration within DHS, as well as with the

Departments of State, Defense, Interior, the National Science Foundation and other stakeholders to enhance integration, innovation, and fielding of emerging technologies. The Intelligence Community and non-federal partners are also vital stakeholders.

Modernizing Governance: The concept of governance involves institutions, structures of authority, and capabilities necessary to oversee maritime activities while safeguarding national interests. Limited awareness and oversight challenge maritime sovereignty, including the protection of natural resources and control of maritime borders. The Coast Guard works within its authorities to foster collective efforts, both domestically and internationally, to improve Arctic governance. The Coast Guard is reviewing its own institutions and regimes of governance to prepare for future missions throughout the Arctic.

Broadening Partnerships: Success in the Arctic requires a collective effort across both the public and private sectors. Such a collective effort must be inclusive of domestic regulatory regimes; international collaborative forums such as the Arctic Council, International Maritime Organization (IMO), and Inuit Circumpolar Council, domestic and international partnerships, and local engagements in Arctic communities focusing on training and volunteer service. Success in the Arctic also depends upon close intergovernmental cooperation to support national interests, and for the Coast Guard working closely within DHS, as well as with the Department of State, Department of Interior, and other Federal partners is crucial as the U.S. prepares to assume Chairmanship of the Arctic Council in 2015.

Beyond these three strategic objectives, there are a number of additional factors that position the Coast Guard well for achieving long-term national success in the Arctic. These factors include building national awareness of the Arctic and its opportunities, strengthening maritime regimes, improving public-private relationships through a national concept of operations, seeking necessary authorities, and identifying future requirements and resources to meet the challenges ahead. The Coast Guard can leverage the entire DHS enterprise and component capabilities to secure our borders, prevent terrorism, adapt to changing environmental conditions, enable community resilience, and inform future policy.

Operating in the Arctic is not a new venture for the Coast Guard.⁷ However, adapting to changing conditions requires foresight, focus, and clear priorities. As noted, the Coast Guard seeks safe, secure, and environmentally responsible maritime activity in the Arctic by implementing three key strategic objectives – improving awareness, modernizing governance, and broadening partnerships to ensure long-term success.

This paper will detail existing roles and governance, both international and national, address state, local, tribal and territorial issues and highlight some of the

recent activity of the Coast Guard as it implements the objectives from the Arctic Strategy.

Existing Roles and Governance

International

The 1982 **Convention on the Law of the Sea**, as modified in 1994, sets forth a comprehensive legal framework for activities on and in the sea, the seabed, and its subsoil, as well as the protection of the marine environment and its natural and cultural resources. The United States is not a party to the Convention, but accepts and acts in accordance with the provisions of the Convention relating to traditional uses of the oceans – such as navigation and overflight – as reflective of customary international law and practice.⁸ In 2008, the United States, along with four other Arctic coastal states (Canada, Russia, Norway, and Denmark/Greenland) adopted the **Iulissat Declaration**. This Declaration states, in part, “the law of the sea provides for important rights and obligations concerning the delineation of the outer limits of the continental shelf, the protection of the marine environment, including ice-covered areas, freedom of navigation, marine scientific research, and other uses of the sea.” Signatory nations remain committed to this legal framework and see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean.⁹

The Ottawa Declaration of 1996 established the **Arctic Council** as a high-level, consensus-based intergovernmental forum for cooperation in the Arctic. While not a governing body, the Arctic Council provides the primary institutional framework for international Arctic issues. Council participants consist of Arctic nations: Canada, Denmark (Greenland), Finland, Iceland, Norway, Russia, Sweden, and the United States. Moreover, six permanent participants are non-governmental organizations (NGOs) that represent most of the Native groups living above the Arctic Circle. These include: Aleut International Association, Arctic Athabaskan Council, Gwich’in Council International, Inuit Circumpolar Council, Saami Council, and the Russian Association of Indigenous People of the North. Non-Arctic states, inter-governmental and inter-parliamentary organizations, and non-governmental organizations may apply for observer status to the Arctic Council. Recently, observer status has been granted to six more countries: China, Italy, India, Singapore, Japan, and South Korea.

The International Maritime Organization (IMO), a United Nations specialized agency charged with responsibility for the safety and security of shipping and the prevention of marine pollution by ships. All Arctic States are members of the IMO. In 2009, the IMO agreed to develop a mandatory Polar Code that would offer construction, operating, and environmental guidelines for shipping through polar waters.¹⁰ In the interim, an IMO voluntary Polar Code provides guidelines for ships operating in the polar regions.

Security matters in the Arctic, as it is well known, are governed by the United Nations Security Council. Of interest, at least two of the permanent members with veto power on the UNSC have significant interests in the region, Russia and the United States. Thus, any real hope of providing necessary security is likely ineffective due to the veto power of these vast maritime nations.’ To be clear, however, the risk of direct conflict in the Arctic region currently appears remote. The North Atlantic Treaty Organization (NATO), the Permanent Joint Board on Defense (U.S.-Canada), the European Union, and other multi-lateral and bilateral forums focus on specific issues to advance sovereign interests.

In September 2010, Norway and the Russian Federation successfully resolved a long-standing maritime boundary dispute in the western Barents Sea through diplomatic means. Current regimes of international governance provide consistent processes and structures to discuss and resolve multi-lateral issues in the region. However, recent Russian military deployments and President Putin asserting a more robust Russian seagoing, military presence in the Arctic being a key component of his next few years in office, have created legitimate concern among many nations interested in Arctic affairs.¹¹ As before, although the risk for conflict remains low, the unintended consequences of accidents at sea, or other activities that could quickly accelerate into conflict, could be best mediated by a strong governance regime. Without that in place, there will consistently be a need for some maritime security presence in the Arctic to protect U.S. interests.

National Directives

National Security Presidential Directive 66/Homeland Security Presidential Directive 25 (NSPD-66/ HSPD-25) sets forth United States Arctic Policy guidance and directs actions of implementation.¹² The policy outlines the U.S. Government’s priorities including: National Security and Homeland Security interests in the Arctic Region, International Governance, Extended Continental Shelf and Boundary Issues, International Scientific Cooperation, Marine Transportation in the Arctic Region, Economic Issues (including energy), Environmental Protection and Conservation of Natural Resources; and the Involvement of Indigenous Communities.

The National Security Strategy of May 2010 outlines U.S. Arctic interests. It states in part: “The United States is an Arctic nation with broad and fundamental interests in the Arctic region, where we seek to meet our national security needs, protect the environment, responsibly manage resources, account for indigenous communities, support scientific research, and strengthen international cooperation on a wide range of issues.”¹³

“Changing Conditions in the Arctic” is one of the nine priority objectives included in the President’s National Ocean Policy.¹⁴ The U.S. Arctic is also one of nine regions in the United States where the National Ocean Policy contemplates regional-based marine planning. Among other things, these policy approaches advocate for improved situational awareness in the Arctic maritime

domain, greater scientific certainty with regard to environmental conditions and resources, and the need for intergovernmental and international cooperation to promote shared interests.

Executive Order 13580, issued July 20, 2012, established the Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska. The Working Group facilitates orderly and environmentally sound development of renewable and conventional energy in Alaska. Led by the Department of Interior, the Working Group is charged with coordinating activities among agencies which possess permitting-related authority.

The President signed the National Strategy for the Arctic Region¹⁵ on May 10, 2013. That document identifies strategic priorities for the U.S. Government to advance U.S. security interests, promote responsible Arctic stewardship, and strengthen international cooperation.

State, Local, Tribal, and Territorial

The U.S. Arctic domain includes a significant land area within the State of Alaska as well as Federal waters offshore. The Northwest Arctic Borough, North Slope Borough, and Bering Strait region cover an area of nearly 41,000 square miles and include more than one dozen villages and towns. The State of Alaska is the primary advocate for Arctic issues to the Federal government, and legislative committees such as the North Waters Task Force work to advance regional priorities. Alaskan State agencies, such as the Department of Fish and Game, play a major role in Arctic resource management.

Indigenous Native communities have many diverse organizations structured around ethnicity, geography, subsistence, and other factors. The Alaska Native Claims Settlement Act of 1971 created 13 regional corporations and over 200 village corporations as revenue-producing mechanisms for Tribes, granting rights to land and resources. Twelve Native associations were also created to address non-profit social services. Additionally, there are Native political federations, associations, and councils, such as the Alaska Inter-Tribal Council, to address priorities for Native communities.

Subsistence hunting of caribou, moose, seals, walrus, and whales provides a food source for Native communities. Indigenous and commercial activities coexist through ongoing communication and mediation.¹⁶ Non-governmental organizations promote and advance Native tradition, subsistence, and conservation. These include the Alaska Eskimo Whaling Commission, the Alaska Walrus Commission, and the Inuit Circumpolar Council of Alaska.

Present Situation

The Arctic is a region of highly complicated networks, interests, and governance structures that will continue to evolve with the expansion of maritime activity.

A number of non-Arctic nations and non-state organizations maintain awareness and engage in Arctic maritime activity. China is expanding polar research capabilities and is considering the consequences of diminishing sea ice. China is also interested in resource extraction, as well as the advantages of shorter sea routes to and from Siberia, Western Europe, and the eastern United States.

Environmental advocacy groups, such as the International Union for the Conservation of Nature, Natural Resources Defense Council, Audubon Society, Oceana, World Wildlife Fund, and PEW Environmental, promote conservation and protection of natural resources and traditional culture. Research Institutions, such as the University of Alaska, Fairbanks, maintain and sponsor extensive Arctic advocacy and studies. Commercial business ventures, such as the petroleum and mining industries, and business service providers, such as the Alaskan Marine Exchange, have Arctic interests, infrastructure, and presence in the region.

An oceanic trade route across the Arctic from the North Atlantic to the North Pacific would represent a transformational shift in maritime trade, akin to the opening of the Panama Canal in the early 20th century. While a shipping route through Canada's Northwest Passage has yet to prove economically viable, trans-Arctic traffic through Russia's Northern Sea Route is increasing.

The increase in vessel traffic presents challenges to sovereign capacity for incident prevention and response in the Arctic. Increasing vessel traffic requires a commensurate increase in search and rescue capabilities throughout the region.

As mentioned, the environmental changes could sometime in the future (near term or long term) result in seasonally open water, increasing human access to the Arctic, and increasing maritime activity. Commercial activities are expanding in the Arctic in two primary areas: the extraction of oil and natural gas, and the mining of hard minerals. According to a 2008 U.S. Geological Survey (USGS) report, "The extensive Arctic continental shelves may constitute the geographically largest unexplored prospective area for petroleum remaining on Earth." The USGS estimates that 13 percent of the world's undiscovered oil reserves (90 billion barrels) and 30 percent of the undiscovered gas reserves (1,700 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids) are in the Arctic.¹⁷

These estimates are in addition to more than 240 billion barrels of petroleum reserves that have already been discovered.¹⁸ Eighty-four percent of these reserves estimated by USGS are predicted to lie offshore. The report estimates that one-third of the oil is in the circum-Arctic region of Alaska and the Alaska Outer Continental Shelf (OCS). The area is ranked second behind the Gulf of Mexico for volume of resources.¹⁹ The USGS estimates that the Russian Arctic contains far more oil and gas resources, including over one quadrillion cubic feet

of undiscovered natural gas.²⁰ Hard mineral extraction, which is expected to grow in the U.S. Arctic will contribute to the increase in shipping.

Increased activity in the Arctic associated with the search and extraction of these oil and mineral reserves by the United States, and Russia and possibly other nations, necessitates promotion of an enhanced relationship between the U.S. Coast Guard and their Russian counterparts.

Commercial ship traffic in the Arctic falls into three categories: destination shipping, trans-Arctic shipping, and adventure tourism. Destination shipping refers to shipping into or out of the Arctic, in support of commercial activity, and comprises the majority of traffic passing through the Bering Strait. Examples include vessels supporting seasonal oil drilling operations in U.S. Arctic waters, tugs and barges resupplying commodities to remote Alaskan villages, and vessels transporting ore from Arctic mines to markets in North America and Asia.²¹

Trans-Arctic shipping refers to a route between two destinations outside of the Arctic. The two trans-Arctic routes connecting Europe and eastern Asia are the Northwest Passage over the North American continent and the Northern Sea Route over Eurasia. Northern Sea Route traffic is growing each year, primarily in response to energy and mineral resource demands from Asia. Due to adverse weather conditions, unpredictable ice conditions, and limited navigation infrastructure, neither route is expected to become extensively trafficked during the next 10 years. However, the Russian Federation continues to develop and promote the Northern Sea Route as a viable option for commercial trans-shipment which could increase maritime activity over time. The Northern Sea route shaves approximately 5000 miles, or about two weeks of voyage time off of the traditional route via the Suez Canal for a vessel transiting between Asia and Europe.²²

Expanding commercial ventures in the Arctic have caused a resultant increase in maritime traffic through the Bering Strait. From 2008 to 2012, such activity increased by 118 percent.²³ As an emerging economic front, the vessel traffic is significantly influence by enterprise activities. Preliminary data reveals a slight drop in 2013, due to the temporary reduction in offshore oil exploration activity. Increased traffic, accompanied by polar weather, and potential ice conditions could create a limited navigation area are factors that increase the likelihood of maritime casualties in the Bering Strait and make it a priority for future traffic management services. In late 2010, the Coast Guard published its intent to conduct a Port Access Route Study of the Bering Strait. While this lengthy process is still on-going, potential outcomes could include recommendations for a traffic separation scheme, designation of areas to be avoided, and/or other provisions necessary for safe navigation and protection of the marine environment. Implementing such recommendations requires consultation with the Russian Federation and other appropriate stakeholders to prepare a proposal for consideration by the International Maritime Organization (IMO), a United

Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships.

Although northern Alaskan waters are not currently as popular a tourist destination as waters in southeastern Alaska, Norway, or Greenland, the cruise industry schedules adventure tours through the Northwest Passage and into the U.S. Arctic. While tourism is not yet a significant contributor to local economies in the U.S. Arctic, it is likely to grow in decades ahead. There is also an increase in noncommercial adventure travel with small, recreational private vessels transiting the Arctic region.

The remoteness of this region and vast distances present a challenge to a Coast Guard response to a maritime incident. Extreme weather and scarcity of physical infrastructure add to the logistical complexity of response. These factors also accentuate the formidability of operations considered routine in other regions or a response to a major event in the Arctic with exponential growth in response complexity associated with a major contingency or catastrophe. Barrow is the major population center on the north slope of Alaska and is only accessible by air or in a limited fashion by sea. Dutch Harbor in the Aleutian Islands is the closest U.S. deepwater port to the Arctic; roughly 1,100 nautical miles from Barrow. The closest Coast Guard Air Station to Barrow is 945 nautical miles south in Kodiak, Alaska. There is limited commercial air and sea infrastructure along Alaska's western and northern shores. Nome has a small, modern harbor with a 175-foot pier and depth of 21 feet. While there is a pier and loading facility north of the Bering Strait designed to support mining operations with barges, deep draft vessels must anchor offshore. While there are commercial airports in Nome, Barrow, and Deadhorse/Prudhoe Bay, the harsh operating environment, geographic spread of these facilities, lack of roads, transportation infrastructure in general, and vast distances from major Coast Guard support hubs make the Coast Guard's Arctic missions challenging.

Arctic operations require reliable command, control, communications, computers, and information technology (C4IT) capabilities. The Arctic region is known for poor propagation of radio signals, geomagnetic interference, limited satellite coverage and bandwidth, and only limited networks have been established for the transferring of data within and outside the region. Thus, reliable communications is a concern and will potentially inhibit a more robust, committed U.S./USCG capability/involvement in the region.

The Coast Guard Mission

Some of the Coast Guard's main missions are to ensure the safety, security, and stewardship of U.S. waters. This responsibility extends to the increasingly accessible Arctic. Expanding maritime activities in the Arctic requires increased presence, oversight, regulatory enforcement, and contingency response. In this context, the people, industries, and interest groups of Alaska expect the same

level of services as other regions of the Nation. This expectation is cause to assess long-term requirements and plan strategically for the future.

Safety: Increased energy exploration and production require additional regulatory oversight, facility inspections, domestic commercial vessel examinations, merchant marine credentialing, and investigations. Increased commercial vessel activity, fishing, transits, and tourism will also stress search and rescue capabilities. As the lead Federal agency for maritime search and rescue, the Coast Guard must ensure the marine public is prepared for Arctic operations. The Coast Guard must provide search and rescue capabilities when self-rescue options are not sufficient. The increase in vessel traffic will require modern charting, waterways management, and maritime infrastructure to reduce risk. The Coast Guard must also work closely with front-line partners to enhance operational efficacy.

Security: The Arctic includes areas of sovereign U.S. territory and rights which have resources requiring protection and security. The Nation's EEZ extends up to 200 nautical miles from shore and provides exclusive rights to the rich natural resources within the water column and on and beneath the seafloor. The Coast Guard must provide a surface presence to safeguard this region and its resources. The United States also safeguards freedom of navigation throughout the world's international waters, including those in the Arctic region.

Stewardship: Safe marine transportation is fundamental to U.S. maritime interests in the Arctic. The Coast Guard will promote efforts to establish and maintain a Marine Transportation System capable of meeting the safety, security, and environmental protection needs of current and future stakeholders.²⁴ Moreover, as a lead organization for oil and hazardous materials incident responses in our Nation's waters, the Coast Guard will spearhead efforts to plan for and respond to environmental threats under the National Oil and Hazardous Substances Pollution Contingency Plan. Spill response in the Arctic presents major operational challenges due to the distances involved, limited infrastructure, and inherent difficulty of recovering oil from ice-covered waters. Increased fishing activities will require coordinated oversight to ensure the preservation of resources, protection of endangered species, and safety of commercial operators.

Implementing the Coast Guard Arctic Strategy

The Coast Guard is committed to ensuring safe, secure, and environmentally responsible maritime activity in Arctic waters. The Coast Guard Arctic Strategy focuses on three specific objectives, which draw upon the Coast Guard's strengths as a military, multi-mission, maritime service, leveraging authorities and partnerships, flexible operational capabilities, and relevant expertise within the international community to achieve an integrated, coherent approach to maritime operations and regional governance.²⁵

Improving Awareness: The U.S. government requires effective understanding of maritime activity in the Arctic region in order to enforce maritime sovereignty and address threats as early as possible. Accurate awareness requires greater collection and sharing of maritime data, as well as increased cooperation in analyzing and disseminating near-real-time information. The Coast Guard works with other agency partners, Department of Defense, state, tribal, and local governments, the private sector, advocacy groups, academia, and the international community to improve maritime intelligence and information-sharing. Improvements require proper infrastructure for sensing, collecting, fusing, analyzing, and disseminating information. Improved awareness is critical for ensuring preparedness to respond to contingencies and is consistent with strategic priorities delineated in the National Strategy for Maritime Security and the National Plan to Achieve Maritime Domain Awareness. As long as there is maritime activity in the Arctic, the Coast Guard must maintain appropriate presence to monitor, regulate, and respond to threats and hazards. Effective presence on shore and at sea enables the awareness necessary to focus resources on highest risks and threats.

Modernizing Governance: The safety, security, and economic well-being of the United States rely upon sound governance of the world's oceans. To advance U.S. interests in the region, the Coast Guard works with other Federal, state, tribal, and local government entities, international counterparts, relevant industries, and other stakeholders to promote maritime safety, security, and environmental responsibility in the Arctic region. Efforts include participation in international organizations, such as the Arctic Council and the International Maritime Organization, and support of accession to the 1982 Convention on the Law of the Sea.

Broadening Partnerships: Limited operational resources and expanding maritime risks underline the need for increasing collaboration in the region. The Coast Guard must foster domestic and international partnerships to specifically increase coordination, enhance efficiency, and reduce risk. Mutually beneficial relationships with and among our international, interagency, state, tribal, local, and other partners are essential for mission success. The Coast Guard collaborates with academia and non-governmental partners to expand Arctic research and the base of Arctic-related literature. The leadership of the US Coast Guard recognizes the need for intellectual contributions, and coordination with human rights groups, NGO's, think tanks, industry, etc. is critical for any real policy implementation and coordination in the region. The United States Coast Guard Academy, one of the four military academies within the United States, has reacted to this reality and now convenes forums/debates on the Arctic to learn from others, coordinate thoughts, debate policies and collaborate with non-military entities to best capture the intellectual capital necessary to provide a framework for success in the Arctic.

The Coast Guard Arctic Activities Nation-wide

The Coast Guard is advancing U.S. priorities in the region. The Coast Guard is focusing its efforts both internally and externally. Internally, the Service examines and adapts to ensure frameworks, competencies, and resources address distinct regional challenges. Externally, the Coast Guard will continue to partner across sectors to build knowledge, capacity, and resilience.

The Coast Guard is modifying command elements and building a foundation of Arctic knowledge and specialization to enable successful mission execution in the region.

To share information and build competence, the Coast Guard is promoting forums to advance understanding and appreciation for challenges and opportunities in the region. At the national level, Coast Guard Headquarters' Deputy Commandant for Emerging Policy developed the Coast Guard's Arctic Strategy and, in coordination with the Director of marine Transportations Systems Management and other Headquarters directorates, is developing guidance and policy for its implementation. Additionally, Headquarters offices are working to establish the Arctic Policy Board, the Arctic Coast Guard Forum, and planning other international activities, exercises, and engagements.

U.S. Coast Guard Center for Maritime Policy and Strategy

Understanding the importance of academic resources for building knowledge and developing solutions to complex regional challenges, the Coast Guard has engaged academia strategically to promote education, research, and policy innovation in the Arctic region.

Unique to the service, the Coast Guard established the Center for Maritime Policy and Strategy (CMPS), which is located within the Department of Humanities at the U.S. Coast Guard Academy in New London, Connecticut. CMPS serves as an interdisciplinary research center on maritime policy and strategy, bringing together diverse maritime communities from academia, government, and the private sector to facilitate dialogue, and proposed solutions to today's maritime challenges. Although the CMPS is for all areas of maritime policy, reacting to the current, often fluid activity in the Arctic, the Center is presently and for the foreseeable future, fully engaged with Arctic policy issues as one of its main areas of emphasis.

In April, 2012 the U.S. Coast Guard Academy hosted a two-day conference entitled "Leadership for the Arctic." This conference, under the joint auspices of the U.S. Coast Guard Academy and the Law of the Sea Institute of the University of California Berkeley School of Law (Boalt Hall), brought together more than 100 international maritime history, science, safety, stewardship, law, and governance experts from the academic, government, diplomatic and non-governmental sectors. Participants discussed and debated issues facing global leaders tasked with shaping and implementing policies to address the

opportunities, threats and challenges posed by changing Arctic conditions and the increasing human activities in the Arctic. This conference enabled maritime affairs specialists to share their views with those charged with exercising leadership on Arctic policy formulation and implementation in the coming decade.

More recently, in September 2013, the Center for Maritime Policy and Strategy hosted a workshop, which included indigenous communities and Arctic shipping representatives.

This one-day workshop brought together a diverse group of scholars, practitioners, and stakeholders to discuss how to achieve resilient ports and marine transportation systems in an era of extreme storms, rising seas, and the potential melting Arctic ice sheet. The workshop featured two panels that highlighted research being conducted by Research Fellows at the Center for Maritime Policy and Strategy. A panel entitled Indigenous Communities and Arctic Shipping, examined ways in which increased vessel traffic due to the melting Arctic ice sheet is and may further affect Alaska Native livelihoods and subsistence practices.

One panel addressed the impact on these Bering Strait communities as well as the role of Alaska Native peoples in the process of mitigating adverse impacts of shipping. The panel looked at the process of collaboration and consultation with Alaska Natives, to discuss the best means of establishing marine transportation systems that are safe for the environment, mariners, and indigenous communities.

During the fall semester 2013, the Department of Humanities offered an Arctic Studies Course where cadets worked with organizations in the U.S. Arctic to help promote maritime safety. Through exchanges with various stakeholders, the cadets developed an informational tri-fold brochure and poster that improved communication between waterway users from indigenous communities and the Coast Guard units operating in the area. Future courses offered to cadets by the Department of Humanities will continue to explore Arctic issues of security, resilience and maritime governance.

Native Alaskans, industry, and other Arctic stakeholders have untapped knowledge and resources that can help close information and operational gaps while minimizing risk. Regular information exchanges with Arctic stakeholders will take place both formally and ad hoc within the parameters of current laws and regulations. Such dialogue will help the Coast Guard to build awareness and knowledge of Arctic issues, and inform and guide development of policy, and on this emerging front, engaging the Coast Guard's future officer corps in this dialogue now is critical. No single agency or nation has the sovereignty, capacity, or control over resources necessary to meet all emerging challenges in the Arctic.

The Coast Guard is developing a network of partnerships to deliver the platforms, people, and protocols necessary to secure the region against transnational threats, facilitate legitimate commerce, and protect the environment. The Coast Guard continues to seek out new areas of mutual interest to build strategic partnerships, which promote innovative and affordable solutions, and enhance burden-sharing throughout the region.

Specific Actions to Improve Governance

Interagency Working Group on Coordination for the Domestic Energy Development and permitting in Alaska

The Coast Guard is a member of this organization established by the President on July 12, 2011, with the signing of Executive Order 13580 to establish an Interagency Working Group to coordinate the efforts of Federal agencies responsible for overseeing the safe and responsible development of onshore and offshore energy resources and associated infrastructure in Alaska. The Working Group has met regularly ever since, under the chairmanship of the Department of the Interior, to improve the efficient and responsible development of oil and natural gas resources in Alaska, both onshore and on the Outer Continental Shelf (OCS), while protecting human health, the environment, and indigenous peoples.

International Maritime Organization

The Coast Guard works international maritime issues through the International Maritime Organization (IMO) in London. In 2009 the IMO agreed to develop a Polar Code to provide construction and environmental guidelines to promote safe shipping in and through polar waters.

Inuit Circumpolar Council

The Inuit Circumpolar Council (ICC) is a multi-national, non-governmental organization and indigenous peoples' organization representing approximately 160,000 Inuit living in Alaska, Canada, Greenland, and Siberia. The organization first met in June 1977 in Barrow, Alaska, and initially represented Native Peoples from Canada, Alaska, and Greenland. In 1980, the charter and by-laws of ICC were adopted. The goals of the ICC are to strengthen ties between Arctic peoples and to promote wise human, cultural, political, and environmental policies at the international level.

Specific implementation and execution activities

Arctic Policy Board

The Coast Guard is establishing the Arctic Policy Board (APB) under the Federal Advisory Committee Act to provide advice to the Secretary of Homeland Security, acting through the Commandant of the Coast Guard, on any matter of interest relating to the Arctic region. This 21 member board would be available to the Secretary and Commandant to carry out specific assignments and respond to specific requests for information or advice related to the many challenges and

opportunities in the Arctic region. It will conduct studies, inquiries, and fact-finding investigations in consultation with individuals and groups in the private sector and/or with state, tribal, and local government jurisdictions among others. The board is expected to be fully functional in early 2015.

Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic

This international SAR agreement is an international treaty signed on May 12, 2011, by the member states of the Arctic Council. It coordinates international SAR coverage and response in the Arctic region and establishes areas of SAR responsibilities for each party. The Arctic SAR Agreement is the first binding agreement negotiated under the auspices of the Arctic Council.

Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic

At a Ministerial meeting of the Arctic Council held on May 13-15, 2013 in Sweden, the members signed an agreement on cooperation to combat oil spills in the Arctic region. The treaty is designed to improve international procedures for preparing and responding to offshore oil spills in the Arctic region

Recent Coast Guard Activities in the Arctic

The Coast Guard has a long history of experience in the Arctic, spanning nearly 150 years. In 1891, Revenue Cutter Bear and its famous commanding officer, Capt. Michael "Hell Roaring Mike" Healy, acquired herds of reindeer from nearby Siberia to help ease the transition of indigenous peoples from hunters to herdsman, thus ensuring a steady food supply. During the fall of 1897, eight whaling vessels with 265 persons aboard were trapped in the ice near Point Barrow. Again, Revenue Cutter Bear sailed north to assist. An overland expedition was sent to the whaling fleet with provisions to ensure survival through the winter until the Bear could arrive months later to break free the trapped whaling fleet, saving hundreds of lives.

In 2012, the Coast Guard Cutter Healy, rendezvoused with the Russian fuel tanker Renda and then escorted the tanker, breaking through ice upwards of eight feet thick to enable a critical delivery of fuel to Nome and avoid a crisis.

Recently it has begun increasing its presence significantly without additional funding or resources. As the nation's lead federal agency for ensuring maritime safety and security in the Arctic, the Coast Guard remains committed to performing its statutory missions to ensure the Arctic remains a safe, secure and environmentally protected region.

In 2007 a Coast Guard C-130 Hercules aircraft left Barrow, Alaska and flew over the North Pole, commencing the Coast Guard's Arctic Domain Awareness flights. This program boosted the Coast Guard's presence during the Arctic summer along with increased cutter operations utilizing icebreakers and ice

strengthened buoy tenders. The Coast Guard began tailored deployments to Arctic Ocean villages for community engagement and to conduct Search and Rescue (SAR) exercises.

In 2010, the Coast Guard Commandant, Admiral Robert Papp, visited the Arctic to draw attention to the environmental changes and their impact. The Coast Guard installed the first U.S. navigational beacon in the Arctic at Point Hope and participated with Canada in the first joint table top exercise to combat an oil spill in Arctic waters.

In 2012 the Coast Guard launched Arctic Shield, a major undertaking which focused on operations, outreach and an assessment of the Coast Guard's capabilities above the Arctic Circle. The Coast Guard established a Forward Operating Location (FOL) in Barrow and positioned two Kodiak-based MH-60 Jayhawk helicopters with supporting air, ground and communications crews there.

The Coast Guard deployed several surface assets to the Arctic including the Coast Guard Cutter *Bertholf*, providing a persistent operational presence and command and control capability in an area where the Coast Guard lacks the permanent infrastructure of a coastal sector. Two light-ice capable 225-foot seagoing buoy tenders, a 282-foot medium endurance cutter, and a 378-foot high endurance cutter were also deployed to the region to increase offshore operational capability, ensure the safety of mariners, patrol international borders and provide additional search and rescue capabilities.

The Coast Guard had crews in the Arctic ready to support search and rescue, environmental protection and law enforcement operations. This first season they were directly responsible for saving or assisting 10 people and supporting partner agencies in conducting numerous operational missions.

Paralleling the work of a century ago, in February 2012, the Coast Guard visited 33 Arctic communities and 27 Arctic village schools to conduct outreach through core missions that included: water safety, ice safety, boating safety and commercial fishing vessel safety training with local rescue organizations. Additionally, medical, dental, and veterinary assistance was provided to several communities. The Coast Guard estimates more than 5,000 people participated in this effort. This outreach opened the door for future community engagement and operations in the region.

The Coast Guard also conducted capability assessments including a successful joint field training exercise with U.S. Northern Command, Navy Supervisor of Salvage and Diving and other agency partners to develop experience in the deployment of different types of oil skimmers in Arctic waters. Three systems were successfully deployed, including the Coast Guard's Spilled Oil Recovery System carried on board all Coast Guard seagoing buoy tenders, a Navy fast-sweep boom system deployed from Anchorage, and a pocket skimmer specifically

designed for use in ice covered waters. The use and applicability of amphibious craft was also tested. In addition, the Coast Guard conducted an assessment of vessel traffic density to determine the need for additional aids to navigation and other safety improvements.

The Coast Guard utilized partnerships with federal, state, local, and tribal agencies and frequently interacted with regulated industries, to prepare for Arctic operations. Consistent with U.S. Coast Guard practice, the organization used lessons learned from this experience to develop plans for the safe and effective coordination of Coast Guard missions in the future.

At the conclusion of Arctic Shield 2012 the Coast Guard remained committed to adapt to the environment and find the right mix of resources to protect mariners, the environment and U.S. interests in the region.

To continue its commitment to a sustained presence in the region, and to protect the maritime community and strengthen partnerships with federal, state, local, tribal and community members, the Coast Guard launched Arctic Shield again in 2013. This time, instead of a focus on the North Slope and Barrow, operations focused on Western Alaska and the Bering Strait, and continued the three-pronged approach used in 2012:

Operations – Cutters, aircraft and personnel maintained a presence in the Arctic region and engaged in operations encompassing a variety of Coast Guard missions.²⁶

Outreach – The Coast Guard leveraged its partnerships with federal, state, local, and tribal partners to combine efforts to ensure the safety of the maritime community.²⁷

Capability Assessment – Operating in the Arctic provided another opportunity to exercise capabilities to ensure the right resources to conduct maritime operations are available.²⁸

The Coast Guard met at the local level with local government and tribal officials in Nome and Kotzebue to discuss the Coast Guard's continued presence in the region and to address mutual concerns about increased maritime traffic.

The Coast Guard had several surface assets, deployed to the Arctic, including both ice breakers Polar Star and Healy, the National Security Cutter Waesche, the patrol boat Naushon, and the seagoing buoy tender Spar. The crews aboard these vessels conducted Coast Guard missions, while providing an operational presence and command and control capability in an area where the Coast Guard lacks the permanent infrastructure that is more common in the rest of the United States.

Healy conducted science missions and supported staff from the Coast Guard Research and Development Center to evaluate equipment, and Polar Star tested the overall readiness of the icebreaker and crew after completing a major refit.

Waesche deployed as a command and control platform that to conduct various missions including maritime domain awareness, search and rescue, and law enforcement.

Other essential elements to operations were the establishment of a Forward Operating Location at the Alaska National Guard hangar in Kotzebue and the positioning of a Coast Guard C-130 aircraft at Eielson Air Force Base in Fairbanks. These resources enabled the Coast Guard to leverage existing infrastructure and to conduct search and rescue, law enforcement, and maritime domain awareness flights and respond to maritime incidents and emergencies.

The C-130 facilitated conducting science experiments by scientists from the University of Washington's Polar Science Center team and from the National Oceanic and Atmospheric Administration (NOAA).

A key component to all Coast Guard operations and engagements in Alaska is outreach and broadening partnerships as highlighted in the Coast Guard's Arctic Strategy.²⁹ Strong relationships with tribal and local governments are key to success. The Coast Guard strives to build and strengthen relationships throughout the Arctic by having an open dialogue, actively listening and responding to tribal and local government concerns.

During Arctic Shield the Coast Guard directly engaged in more than 50 meetings to discuss subsistence, shipping and other Arctic concerns. To ensure that such interaction continues year round and that Coast Guard operations do not conflict with tribal rights, interests, or subsistence activities, the Coast Guard 17th District established a dedicated tribal liaison who facilitates two way communication between the Coast Guard and Arctic tribal leaders and local governments.

Part of this outreach has included visits to schools in Point Hope and Wainwright to teach children about water safety and the importance of life jackets. The Coast Guard also conducted exams on commercial fishing vessels, subsistence hunter and fishing vessels, and boating safety exams as part of the protection and prevention outreach efforts and to reinforce the importance of good safety practices.

To help develop and integrate the Coast Guard into existing Arctic international, federal and state policy forums, the Coast Guard hired a full-time Arctic planner to ensure Coast Guard activities are aligned more efficiently to address interests in the region.

These efforts provided a foundation and continuity to the Coast Guard and their Arctic partners as the Coast Guard seeks a “whole of systems” approach to managing the challenges of increased human activity.

Novel and evaluative operations in the Arctic gives the Coast Guard an opportunity to exercise its capabilities to assess resources needed for expanded future Arctic operations. In 2013 a 110-foot patrol boat, Coast Guard Cutter Naushon, was deployed to test its operational capability in this challenging environment. The crew conducted law enforcement boardings and fisheries patrols in the Bering Sea, Bering Strait, Kotzebue and Norton Sounds. The Coast Guard learned that a patrol boat can be effective in the Arctic, in the right season and with proper support. The goal continues to search for the right mix of resources with the right capabilities to effectively operate in an area with limited infrastructure and extreme weather.

The U.S. Coast Guard also engaged with the State of Alaska Department of Environmental Conservation and the Canadian Coast Guard to deploy a U.S. Coast Guard Vessel of Opportunity Skimming System (VOSS) in Port Clarence, to maintain crew proficiency with the system, and to strengthen the relationship between both services.

In addition to the cutters, aircraft and personnel conducting operations and outreach, the Coast Guard tested other capabilities. Coast Guard Cutter SPAR, a buoy tender, along with a Canada Coast Guard ship, tested a vessel of opportunity skimming system (VOSS) to reinforce crew familiarization with the equipment and build upon the U.S. and Canada partnership. The Coast Guard led a Spill of National Significance (SONS) seminar in Anchorage which identified improvements for regional coordination for major oil spills. The service also held mass rescue workshops in Kotzebue, Unalaska, Nome and Barrow to identify potential opportunities for improvement in preparedness and response to a maritime emergency involving a vessel with a large passenger capacity.

The U.S. Coast Guard Research and Development Center (RDC), based in New London, Connecticut led a multi-agency team of engineers and scientists aboard USCGC Healy to test and evaluate oil spill detection and recovery technologies in the Arctic Ocean. They also tested and evaluated capabilities of various unmanned aerial systems (UAS), an unmanned underwater vehicle (UUV) and a remotely operated vehicle (ROV) to search for simulated oil spills.

This research advanced existing oil in ice work, unmanned systems evaluations, and underwater research conducted by the RDC. Future Arctic technology collaborations li to include involvement by both public and private sector partners, and in locations throughout the United States, including winter tests conducted in the Great Lakes and equipment testing and evaluation by faculty and cadets at the U.S. Coast Guard Academy.

The Way Ahead

As human activity increases in the region and challenges and opportunities intensify, the Coast Guard will require a larger and more permanent Arctic presence guided by prudent investments supporting national objectives.

The Coast Guard has an obligation to be in the Arctic, to provide the same service that it provides everywhere else in the country. The Coast Guard will continue to be in the region, to ensure safe, secure, and environmentally responsible maritime activity in the Arctic by shifting priorities, reallocating resources, and using temporary facilities to keep pace with growing maritime activity. But this emphasis necessarily comes with difficult tradeoffs.

However, fiscal constraints require thoughtful approaches for advancing priorities in science, resource development, environmental resilience, and security. A collaborative and innovative approach is needed to address governance, coordination, and requirements of capability across these areas.

The Coast Guard remains committed to developing an active, adaptive, fiscally responsible approach to meet the service's maritime safety, security and stewardship requirements in the Arctic. As the potential for increased commercial maritime traffic, exploration and exploitation of natural resources, tourism and other areas of interest in the region intensify as a result of possible "melting" in the Arctic take place, the United States Coast Guard, as a unique instrument of national security, is ensuring and positioning itself to live up to its motto, *Semper Paratus*.

Notes

1. National Security Strategy, May 2010
2. US Coast Guard, United States Coast Guard Arctic Strategy, May 2013
3. Ibid
4. Ibid
5. Ibid
6. Ibid
7. The Coast Guard has carried out missions in the Arctic region since 1867 when, following the Alaska purchase, the Revenue Cutter Lincoln transported some of the first U.S. officials to tour the new territory. Since that time, the Coast Guard has been enforcing living marine resource regulations for fish stocks and fur seals, saving stranded whalers caught on ice flows, enabling the establishment of cold war defense infrastructure, the Coast Guard has protected those on Arctic waters, protected the Nation from threats delivered from Arctic waters, and protected Arctic resources themselves. Some of the Coast Guard's greatest heroes and namesakes earned their reputations in the Arctic. For the Coast Guard, the Arctic is a legacy, heritage, pedigree, and domain of profound importance. US Coast Guard, United States Coast Guard Arctic Strategy, May 2013
8. Statement on United States Ocean Policy, 1 Public Papers of the Presidents 378, March 10, 1983
9. "The Ilulissat Declaration," Arctic Ocean Conference, Ilulissat, Greenland, 27–29 May 2008.
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<http://www.imo.org/MEDIACENTRE/HOTTOPICS/POLAR/Pages/default.aspx>
11. Luke Harding and agencies, "Russia to boost military presence in Arctic as Canada plots north pole claim," The Guardian, December 10, 2013.
<http://www.theguardian.com/world/2013/dec/10/russia-military-arctic-canada-north-pole>
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17. USGS Fact Sheet 2008-3049: Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle.

<http://pubs.usgs.gov/fs/2008/3049/>

18. Ibid.

19. Department of Interior, “Estimated Undiscovered, Economically Recoverable Resources.”

www.doi.gov/whatwedo/energy/ocs/upload/UERR-map-2012-2017-80-NoYear-Note.pdf

20. D.L. Gautier, U.S. Geologic Survey, presented at US Coast Guard Academy Leadership for the Arctic Conference, 12 Apr. 2012.

<http://www.uscga.edu/WorkArea/DownloadAsset.aspx?id=2717>

21. US Coast Guard, United States Coast Guard Arctic Strategy, May 2013

22. Ibid

23. Ibid

24. “The Marine Transportation System”, or MTS, consists of waterways, ports, and intermodal landside connections that allow the various modes of transportation to move people and goods to, from, and on the water. More information can be found at:

http://www.maradot.gov/ports_landing_page/marine_transportation_system/MTS.htm

25. US Coast Guard, United States Coast Guard Arctic Strategy, May 2013

26. Official Blog of the Seventeenth Coast Guard District
<http://alaska.coastguard.dodlive.mil/2013/05/rear-adm-thomas-ostebo-discusses-arctic-operations-in-nome-and-kotzebue-alaska/>

27. Ibid

28. Ibid

29. US Coast Guard, United States Coast Guard Arctic Strategy, May 2013